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“BIG, SMELLY, SALTY LAKE THAT I CALL HOME”:
SENSE OF PLACE WITH A MIXED AMENITY SETTING

by

Carla Koons Trentelman

A dissertation submitted in partial fulfillment
of the requirements for the degree

of

DOCTOR OF PHILOSOPHY

in

Sociology

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2009

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ABSTRACT

“Big, smelly, salty lake that I call home”: Sense of Place with a Mixed Amenity Setting

by

Carla Koons Trentelman, Doctor of Philosophy

Utah State University, 2009

Major Professor: Dr. Richard S. Krannich
Department: Sociology

Drawing from literature on place, this dissertation studies place dynamics in relationships between people and a mixed amenity place. Using Great Salt Lake (GSL), Utah, as a case study, I use a social constructionist approach to examine the sense of place held by those who live nearest to the lake. I analyze qualitative interview and focus group data as well as quantitative survey data to discern the meanings the lake holds for these nearest neighbors and to examine distinctions between people who see the lake differently.

This study is relatively unique in its examination of relationships with a mixed amenity place, as prior place research has focused on high amenity places such as resort locations. A number of distinctions were found. Place attachment to GSL was less widespread than seen with high amenity places, and there were some residents for whom the lake held negative meanings. The lake held multiple meanings for many research participants, including combinations that appeared incongruous in mixing both positive

and negative lake images. Some participants appeared to have no sense of the lake.

Additionally, there was evidence of social stigma related to living near the lake.

This study can help natural resource managers, community leaders, and policy makers to better understand the relationships between local residents and GSL, which prior place research has shown to be a useful indicator of environmental concern, commitment to the place, and support for resource management. There were many things residents did not appear to know about the lake, including, for example, the natural workings of the lake ecosystem, the effect built features have had on this ecosystem, and the economic contributions to local communities, counties, and the state from lake-related enterprises. Also of interest, these nearest neighbors talked about how changes related to the lake have affected them.

This study provides justification for further work on people-place dynamics with mixed amenity places, as it revealed dynamics not seen in research on higher amenity settings. The study also demonstrates the need for continued social science research on GSL, to provide further understanding of people's relationships with this important place.

(617 pages)

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The rest of my committee members were patient both with the long stretches

between my updates and the long page count when I had material for them. Peg Petrzelka and Doug Jackson-Smith have been there for me from the start of this grad school adventure, working with me through two projects as well as coursework, not to mention their role as mentors. Mark Brunson's familiarity with the place literature and with Great Salt Lake helped keep me on track, and Sandy Marquart-Pyatt's seeing this tome as an opportunity to learn about the lake made her feedback fun (and yes, I promise to use the amazing stats stuff you taught me in future work...).

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Carla Koons Trentelman

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LIST OF ABBREVIATIONS AND ACRONYMS

BLM: Bureau of Land Management
COE: United States Army Corps of Engineers
COR: Certificates of Registration, like a harvesting permit for brine shrimp companies
DAQ: Division of Air Quality
DEQ: Utah Department of Environmental Quality
DFFSL: Utah Division of Forestry, Fire and State Lands
DNR: Utah Department of Natural Resources
DOGM: Utah Division of Oil, Gas and Mining
DPR: Utah Division of Parks and Recreation
DWQ: Division of Water Quality
DWR: Utah Division of Wildlife Resources
DWRe: Division of Water Resources
DWRi: Division of Water Rights
EIS: Environmental impact statement
EPA: Environmental Protection Agency
FEMA: Federal Emergency Management Authority
FoGSL: Friends of Great Salt Lake, a grassroots conservation organization
GSL: Great Salt Lake
GSLEP: Great Salt Lake Ecosystem Project, a research program administered by DNR
HAFB: Hill Air Force Base
LDS: Church of Jesus Christ of Latter-day Saints (the Mormon Church)
MagCorp or US Mag: US Magnesium Corporation of Salt Lake City (formerly, the Magnesium Corporation of America)
SAMP: Special Area Management Plan
SRC: The Scientific Review Committee used to review the Great Salt Lake Comprehensive Management Plan, 2000
TNC: The Nature Center, a private non-profit organization
UDOT: Utah Department of Transportation
UGS: Utah Geological Survey
USBR: U.S. Bureau of Reclamation

USFWS: United States Fish and Wildlife Service

WC Weber: West Central Weber County, the study area aggregate of rural, unincorporated communities in northwest Weber County

WHSRN: Western Hemispheric Shorebird Reserve Network

WMA: Waterfowl Management Area

CHAPTER 1

INTRODUCTION

“Big, smelly, salty lake that I call home.”
--Survey respondent’s answer to the question, “What does the Great Salt Lake mean to you?”

Great Salt Lake (GSL) is one of the geographical features most associated with Utah (Isaacson, Hachman, and Robson 2002). It is, after all, the one thing that can be seen on any map, and has played an important role in much of the history and culture of the state (e.g. Morgan 1947; Topping 2002). While known locally for its sunsets, and internationally as a hemispheric place of importance for migrating bird populations, many people in northern Utah seem to think of more negative aspects of the lake—when they think about it at all. A journalist in Salt Lake City wrote, “Most of the 1.6 million people who live along the Wasatch Front rarely think about their vast neighbor... When the topic of the lake comes up, the first image that flashes through many minds is of a stinking, brine-fly-infested cesspool that occasionally floods highways and low-lying subdivisions” (Woolf 1999:274). FRIENDS of Great Salt Lake (FoGSL), a local conservation group, observes that the phrases they hear used most frequently to describe the lake are that it is big, it’s salty, it’s buggy, and it stinks—leading them to talk about the Big Salty Buggy Stinky Club when describing how many locals think about the lake (FoGSL 2004a).

There are those who appear to think of the lake in more positive terms as well. For example many comment on its unique qualities, the beautiful view, and the recreation opportunities. However media stories about these positive aspects of the lake often begin

along the lines of, “Forget everything you know about visiting the Great Salt Lake” (Francis 2002; Swensen 1999a), or with a reference to the lake’s reputation as a “dead lake” or “Dead Sea” (e.g. Arave 1999; DeMoss 2006b). “Perceptions of GSL vary among local residents. Some find that the lake offers great beauty, quality recreation and significantly enhances the quality of their lives. Others view the lake negatively and find little value in GSL” (GSLPT 2000b:123).

Although these characterizations of how local residents perceive Great Salt Lake may be accurate for some, we currently have no way of knowing that, since no systematic research has been conducted. Given the socially constructed views of the lake described above, as well as other representations that follow, the goal of this research is to begin to understand how those who live nearest to the lake actually think and feel about it. Does their experience of the lake fall into the categories suggested by any of these portrayals? Do they think of these negative aspects or more positive ones—or perhaps a mix of both? What is their sense of this place they live next door to? Do these closest neighbors live there because of the lake, or in spite of it? Or is the lake something they even think about, something they have any real sense of?

Developing some understanding of how local people feel about the lake is important, since they are a part of the lake’s ecosystem, and are among those who can be strongly affected by any problems within that ecosystem. It would be useful to know how those who live closest feel about it, in part to be able to gauge their degree of protectiveness and willingness to behave in conservation-oriented manners. Research on sense of place, place attachment, and caring for a place has indicated that these dynamics can be positively associated with valuing the environmental traits of the place,

environmental concern and environmentally responsible behavior, sensitivity to environmental impacts, and increased commitment to the place (Kaltenborn and Williams 2002; Vaske and Kobrin 2001; Vorkinn and Riese 2001; Williams et al. 1992). For example, Kaltenborn found that those with a strong sense of place seem “more rooted, less indifferent and more committed to solving problems” (Kaltenborn 1998:185). The level of one’s attachment to a place has been linked to the degree of support for various resource management actions and the perception that management objectives are important (Kaltenborn and Williams 2002; Warzecha, Lime, and Thompson 2000). Clearly, having an understanding about how the lake’s neighbors feel about the lake can assist resource managers in knowing how much of a resource these residents are for GSL.

Background

Some local scientists have speculated that the more negative views of the lake may be partially responsible for the paucity of scientific research on GSL until recently, citing a “historic disgust” with a lake that has been “viewed as a cesspool” (Hummel 2006b). Whatever the reason, much about GSL had not been studied in a systematic manner until fears of a possible collapse of the lucrative brine shrimp industry on the lake led to the formation of the Great Salt Lake Ecosystem Project (GSLEP) in 1996. The goal of this project is methodically researching and monitoring the ecosystem (GSLEP 2008; GSLPT 2000b). Since then, a good deal of research has been conducted on the lake and its environs, including how best to manage its various biologic and geologic systems. Although there is much work left to do (GSLPT 2000b), these studies have led to a greatly improved understanding of ecosystem dynamics. However, thus far the people

who live in or near that ecosystem have been neglected in these studies. Their beliefs, attitudes, and feelings about GSL are unknown, making it impossible to take their needs and preferences into consideration in management decisions, or to know the degree of support these residents have for management issues related to the lake and its surrounding ecosystem.

People who live in lake-adjacent areas are likely not uniform in their relationships with GSL, since the shoreline is diverse, with open lake, bays, and wetlands bordering different communities. At the average lake elevation of 4,200 feet above sea level, Great Salt Lake is roughly 75 miles long and 30 miles wide, covering a 1,500 square mile area (GSLPT 2000b). It is always necessary to specify lake elevation because, as one scientist who studied GSL for decades observed, everything about this lake depends on the elevation (Don Paul, as quoted by Perschon, 2006). GSL is a shallow, terminal lake, terminal meaning there are no outlets—no rivers carrying water away. Terminal lakes release water only by evaporation, leaving behind the residual minerals from the water that feeds them; this is why GSL is salty. Because it is a shallow lake, with an average depth of only 14 feet,¹ lake water takes up increasing amounts of area as more is added, like pouring water into a shallow plate rather than a bowl. The lake grows and shrinks annually, as it swells with spring run-off only to be reduced back down by the summer sun. If there was heavy precipitation, the year ends with more water than it began with; if water is scarce, the elevation dips lower than it was at the year's beginning. While the variation between high and low elevation refreshes the wetlands, it has created development problems since the European settlement of the surrounding area 150 years

¹ At its average elevation of 4200, GSL is 33 feet deep at its deepest point

ago (Bedford 2006; GSLPT 2000b), and long before that for Native American settlements (Simms and Stuart 2002).

At the historic low elevation point reached in 1963, the elevation was only 4191 feet above sea level and the lake covered 950 square miles. At the historic high, reached in both 1986 and 1987, the lake hit 4211.85 in elevation,² and covered 2,300 square miles. Estimates of damage from flooding totaled over \$240 million, including costs incurred by transportation, industry, public lands and facilities, private lands, and habitat. Flooding occurred in rural and residential areas to the south, east, and northeast of the lake (GSLPT 2000b; UDWR 2007).

The salinity level of the lake is directly related to the elevation. Simply put, the higher the water elevation, the more diluted the saline levels, the lower the elevation, the higher the concentration of salt. The lake's ecosystem is dependent on the salinity remaining within a particular range. If the salinity drops too low, fresher water algae grow, which brine shrimp are unable to feed on; if it rises too high even the salt-tolerant algae they feed on cannot survive. At either extreme, the brine shrimp starve, leaving the millions of migrating shorebirds (Warchol 1999) and waterfowl that feed on them to seek a rare food source elsewhere.

Living Near the Lake

It could be argued that, unlike owners of more typical lakeshore property, those living closest to Great Salt Lake are situated to experience fewer of the more positive

² The early Mormon pioneers went through a similar time, with the lake at its (current) average elevation of 4200 when they arrived in UT in 1847, and then hitting its historic high, until 1986, of 4211.5 in 1873, having risen 12 feet in 11 years (Arnow 1980).

aspects of the lake while suffering more of the negative. These closest neighbors experience the brunt of ever-shifting lake elevations, with briny waters at times threatening to flood and at others, receding from view, leaving dust from the lake bed to blow in the wind. A strong hydrogen sulfide³ odor locals call “lake stink” (Bedford 2006; Hummel 2003) is associated with the lake;⁴ during some atmospheric conditions the odor blows into communities far from GSL (FoGSL 2005). The odor is strong enough that, in a survey of Davis County residents, 68% of the 117 respondents agreed with the statement, “the lake smells bad” (Brunson and Nicholson 1999:4). Many locals and visitors consider the clouds of brine flies, mosquitoes, gnats and other insects another nuisance. Both the odor and the insects are more bothersome the closer one is to the lake. This constellation of challenges has affected land uses and property values near GSL.

At the same time, some of the best views of the lake are seen miles away from the shores, on the benches of the mountains to the east, where some homes have large picture windows that capture the beauty of GSL. Due to the lay of the land nearer to the lake, many of those who live closest cannot see the lake from their property at all, especially when GSL is lower in elevation.

There are a number of lake-related recreation activities, and those living nearest have close access to wetlands and public Waterfowl Management Areas (WMAs) or other wildlife refuges that ring much of the east and north sides of the lake. Birdwatchers and waterfowl hunters may find this a positive aspect of living nearby. However, due to few points of public access to the lake itself, living close to GSL does not necessarily

³ Also referred to as “rotten egg gas.”

⁴ Although associated with the lake, the odor comes mainly from Farmington Bay, in the southeast corner of the lake, not from the lake itself. It is related to human-influenced over-abundant algal growth (FoGSL 2005).

give one close access to it, in fact it can be 30 minutes away, or more, for many of these nearest neighbors. Additionally, many are not aware of the recreation amenities available at GSL (Brunson and Nicholson 1999).

The lake has shoreline in five substantially different Utah counties. The shoreline borders a desert military bombing range, isolated and remote rural areas, small rural communities, and rapidly growing subdivisions. Much of the settled land nearest to the lake has been agricultural since the European settlement (e.g. McFarland 2007). The agriculture near GSL, as well as that higher up in the watershed, competes with growing municipalities for water that feeds the lake (Jenkins 2002). Some of these farms and ranches remain remote and isolated, others are located in rural communities. However in the two counties in the study area, Davis and Weber, the communities closest to the lake are part of an increasing move towards suburbanism. New housing developments in these areas have increased in the last decade (Busselberg 2007a; Clark 2006; GSLPT 2000b), moving more densely populated neighborhoods closer to the shoreline than have existed historically, despite long-term difficulties with development near the lake, particularly due to flooding and a high water table (GSLPT 2000b; Sanchez 1999b).

Challenges to This Resource

Great Salt Lake and its environs are ecologically important. It is of hemispheric importance as a migratory flyway and breeding habitat for shorebirds such as grebes and pelicans (e.g. Purdy 2006). The lake is also an economic resource, with a number of lake-related industries such as the brine shrimp industry and mineral extraction, both of which have had to adjust and adapt to changes in salinity and lake level (Isaacson et al. 2002).

The size and chemistry of the lake interact with climate patterns, creating a “lake effect” on weather, exacerbating winter storms in the surrounding areas and playing a critical role in the creation of the powdery snow Utah’s ski slopes are known for (Alder 2002; Bean 1998b; Bedford 2005). A good many people from outside of Utah find the lake interesting and unique, making it a much-visited tourism destination (GSLPT 2000b; Park 2007a).

However, there are a number of factors pressuring this critical ecosystem, leaving it vulnerable to ecological collapse. Sizable population growth and resulting suburban encroachment on historically agricultural land in the area surrounding GSL are putting unprecedented pressure on the lake, its surroundings, and those attempting to manage this resource (GSLPT 2000b). Other pressures include a history of pollution, destruction of wetlands, competition for the fresh water that feeds the lake, treated waste water discharges into the lake from three of the state’s most populated counties, and a lack of water quality standards (Bean 1998a; Jenkins 2002; Westby 2002). Scientists and resource managers have recently found that the lake ecosystem is far more fragile than was previously believed (GSLPT 2000b). The unequal distribution of salinity throughout the lake due to human interference has been of particular concern, caused primarily by an earthen railroad causeway that crosses the north end of the lake. The causeway interferes with normal circulation of lake water, in effect splitting the lake into a north arm, which gets almost no fresh water, and a south arm fed by all three rivers that feed the lake. The salinity has, at times, become so unbalanced that neither arm supported the brine shrimp critical to the lake system, with the south arm too fresh and the north, too saline, requiring intervention to prevent long-term damage to the ecosystem (GSLPT 2000b).

Recently, levels of mercury found in Great Salt Lake were among the highest anywhere in the United States (Henetz 2005). In 2005 and 2006, advisories were issued to hunters against eating Northern Shoveler, Goldeneye, and Cinnamon Teal ducks found around Great Salt Lake (e.g. Petersen 2005b, 2006). It is feared that mercury is accumulating in brine shrimp and their eggs, which could have harmful effects on migrating shorebirds that eat them, as well as the lake's brine shrimp industry. There are those whose thoughts of GSL are along these lines, that it is a polluted, foul lake (e.g. Hummel 2006b). There are also those who describe it as a dead lake because of the high salinity, too high for fish or most other wildlife (e.g. Swensen 1999a).

Great Salt Lake and much of its environs are publicly held, falling under the jurisdictions of a mosaic of state and federal agencies. Managers work at taking care of ecological problems that arise without creating undue problems for industry and other stakeholders. The GSLEP and a number of other research projects are now systematically examining the ecosystem dynamics through resource inventories and other studies, to inform resource managers and others of the ecosystem needs (GSLPT 2000a, 2000b).

These management agencies acknowledge the interaction between these natural resources and the humans in their environment: "GSL resources are interconnected and human use influences ecosystem response. GSL components and interactions are closely associated, thus making the management of GSL ecosystems complex and challenging" (GSLPT 200b:93). However, there has been little consideration of the roles humans play in this ecosystem, other than through industry. The GSL Planning Team states that, "Sustainability is achieved by 'knowing the state of the environment'" (GSLPT 2000b:102). While resource inventories are an essential component of sustainable

management for the lake, I argue it is also critical to have some knowledge and understanding of the people who are part of that environment. While those who live closest to the lake are only a small percentage of those in the larger environment, it is a place to start, and they are the people who may well experience some of the most direct effects of lake-related issues and the management thereof (e.g. increases or decreases in odor levels related to managing the salinity and discharges into the lake, consequences of decisions affecting lake elevation, decisions regarding access, etc.).

Social Constructions about Great Salt Lake

I have noted a number of different images GSL holds by people in northern Utah. These various social constructions about the lake, some of them positive, some not, can be seen in local newspaper and magazine stories, on websites, and in materials from organizations affiliated with GSL. These social constructions have been contributed to and/or disseminated by groups and organizations with interests in their representation becoming the one that is taken for granted, the one “everyone knows” is what is *really* real about Great Salt Lake. An example of this is the marketing of the lake as a tourist destination, particularly for potential visitors from out of state and abroad. This image of the lake focuses on its beauty, its uniqueness and its history, and is peddled most fervently by Davis County officials and business leaders (e.g. Palmer-Stephens 2007; Park 2008). It attempts to counter the competing social construction of GSL that focuses on generally irritating traits of the lake, including it being buggy and stinky, and too nasty and salty to be good for anything of interest or fun. A prime example of this construction was found in an article discussing a recently made independent film, “Pirates of the Great

Salt Lake,” where the producers were “reluctant” to film onsite at the lake. The writer and producer of the movie was quoted, “The Salt Lake is disgusting and not a pleasant place, especially...when the brine flies were out” (Liljegren 2007:4).

Other social constructions I have noted include Great Salt Lake as a dead lake, wasting the water that feeds it; or as creating difficulties for commercial and private development, primarily because of issues related to lake dynamics (e.g. high water table), but also because of the sort of stigma the area nearest the lake has carried. It has been constructed as an important economic resource, particularly due to extraction industries, the brine shrimp industry, and tourism, noted above. It has been portrayed as a beautiful place, with particularly lovely sunsets. The last construction I will mention is GSL as a sensitive ecosystem. This construct is portrayed in various ways by different interests and becomes another illustration of the complexities with how GSL is viewed by locals. It is portrayed as a polluted place, which motivates some to work for protection, conservation, and restoration. For others this becomes a reason not to get too worried about what happens to the lake, since it is already seen as polluted. In the latter case it is seen as yet another negative aspect of the lake that often goes with the “dead lake” construct. Birders note GSL’s importance as a migratory flyway and breeding ground for shorebirds, while other people discount the lake’s importance and accuse environmentalists of trying to stop progress, for example when environmentalists sued to stop a highway from being built through GSL wetlands (e.g. Henetz and Warchol 2005).

Whether considering the ambivalence local residents reportedly feel about GSL (e.g. Woolf 1999), or this variety of social constructions seen in the media, portraying

both strongly positive and strongly negative aspects of the lake, it is fair to refer to Great Salt Lake as a “mixed amenity place.”

The Current Study

The key problematic of this study is to discover the dynamics of nearby residents’ senses of place with a mixed amenity place of ecological importance. I use Great Salt Lake and its environs as an exemplar of how these dynamics play out; as can be seen already, there are a number of complexities. The study will examine the nature of people’s senses of place with the lake and its surroundings. It asks a question not addressed thus far in the place literature: how do place dynamics work in a setting characterized by high ecological value, but lower amenity value? A number of studies have found links between sense of place or place attachment and areas with strong recreation and aesthetic amenities—places that could be described as easy to love. Researchers have considered, for example, connections to place near national parks and monuments in southern Utah (Eisenhauer, Krannich, and Blahna 2000), in the lakes country of Vilas County, Wisconsin (Stedman 2003a), along the Appalachian Trail (Kyle et al. 2004), and in wilderness areas in various states (Williams et al. 1992). However, although Great Salt Lake does provide some recreation amenities and rather unique aesthetics, they are considerably less obvious (Brunson and Nicholson 1999). Residences located nearest to the lake do not have the characteristics typical of lakefront property. Examining sense of place and place attachment in a setting like this can provide a better understanding of how these processes work.

My research focuses on the meanings of, beliefs and attitudes about, and feelings

toward the Great Salt Lake ecosystem held by local residents—the closest neighbors of the lake. This group is perhaps the most generally affected by GSL and its natural, social, political, economic, and environmental dynamics. The socially constructed meanings of the lake and its environs held by different groups of residents likely vary widely, as has been suggested about landscapes and places more generally (Greider and Garkovich 1994; Riley 1992). These constructions of meaning and associated senses of the place are key to understanding the social relationships associated with GSL. In addition to expanding the research on place, results of the study add a much-needed sociological component to what is currently known about the GSL ecosystem, thus assisting resource managers, policy makers, community officials and other leaders in the decision-making that affects the properties, livelihoods and lives of these residents. Finally, with all the mixed images that exist about Great Salt Lake, this research allows the discovery of the lived experience and perceptions of people who actually live near the lake.

In the following chapters I lay out the theoretical and empirical background for this work, focusing on the literature on place. After outlining my own definitions of place concepts and my research questions for this study, I provide an expanded description of the study area and the people who live there, and explain the research design. My study utilizes both qualitative and quantitative research, with the former informing the latter and the latter serving as a check on the reliability of the former. After outlining the methods for each, I report on both qualitative and quantitative findings, and discuss their significance to GSL and the people affected by it, as well as how these findings can inform the place literature. Although this is a sociological inquiry, I am tremendously indebted to the scholarship done in other social science disciplines, and review those

perspectives as well.

Beckley suggests that by working towards understanding attachment to place, we may learn why people “make ‘irrational’ decisions” to stay in places despite failing economies (2003:107). Increased understanding of attachment and other dynamics of the relationships between people and places may help uncover explanations of decisions to stay despite other challenges, as well. We may even discover why people choose to live close to the big, salty, buggy, stinky Great Salt Lake.

CHAPTER 2

LITERATURE REVIEW

“The subject of place is potentially enormous, as all human action and experience occurs in some place of context” (Steele 1981:9).

Place

Although one definition of “place” is simply “a geographic area that has meaning to people” (Galliano and Loeffler 1999:1), the social science work addressing place has been a complex, widely diverse, inter- and multi-disciplinary literature from its beginnings. This can be seen not only in the disciplines in which it developed, but also in the research methodologies and paradigmatic approaches used to study it. This diversity has resulted in a very large literature.

The complexities become clearer as the definition above is fleshed out from the literature. Galliano and Loeffler went on to say, “It is through the mental construct of place that people relate to and understand a geographic area” (1999:1). Places, as distinguished from generic spaces, have been referred to as “environments that support an investment of meaning” (Hashisaki, as quoted in Brandenburg and Carroll 1995); “What begins as undifferentiated space becomes place as we get to know it better and endow it with value” (Tuan 1977:6). Gieryn explained further that, “Places are made as people ascribe qualities to the material and social stuff gathered there: ours or theirs; safe or dangerous; public or private; unfamiliar or known; rich or poor; Black or White; beautiful or ugly; new or old; accessible or not” (2000:472). These meanings, values, and ascribed qualities are often accompanied by the development of attachments, or emotional bonds, with places, and then a “theoretical complexity is inevitable, for the emotional bonds of

people and places arise from locales that are at once ecological, built, social and symbolic environments” (Hummon 1992:253). Further, not only are people affected by places, but places are also affected by people—by their presence, their activities, and their expectations (Steele 1981). And finally, “Each place is unique from every other place in the particular pattern of events and meaning that come to be associated with it” (Williams 2008:10).

In the section to follow I address the history of “place” within the social science disciplines and some of the issues that have arisen from this inter- and multidisciplinary topic. I outline the various place-related constructs that have been explored in this broad scholarship. I then review place literature along some broad thematic lines, and conclude the section with a discussion of issues of world views and place.

Place in the Social Science Disciplines

Within the social science place literature, geography, sociology, psychology and others have each developed distinct theoretical and research traditions for exploring issues related to “place” within their own disciplines. It is also a multidisciplinary literature with much cooperation and collaboration between disciplines, particularly among natural resource social scientists (e.g. those in areas such as recreation, leisure and tourism studies, or those working for natural resource management entities such as the Forest Service). Because of the complex intertwining of the material, biophysical, geographic setting, and the human, social, meaning-rich elements of place, as well as the tendency for disciplines to see fragments rather than whole pictures, “understanding place in its true complexity is a multidisciplinary exercise” (Stedman 2003b:824).

A commonality among many of these disciplines is the argument that spatial issues, including place, should receive more attention. Who authors argue with is a point of departure, however. Geographers Entrickin (1989) and Agnew and Duncan (1989; see also Agnew 1989) argued for recognition of the importance of geographical place (including specific places and regions) as a “defining element of geography” (Agnew 1989:9), and as important to social science and history more broadly. Giddens (1984), Gieryn (2000), and Lobao (1996), all sociologists, argued along the lines that there should be “a space for place in sociology” (Gieryn 2000). Meanwhile, natural resource social scientists argue from the other side, that resource managers need to include the social, human dimension in management decisions about “places”—in this case, meaning ecosystems (e.g. Galliano and Loeffler 1999).

Despite the interweaving of diverse disciplinary threads in the current place literature, the different disciplines have separate histories of perspectives and scholarship on place issues. I begin by reviewing the role of place in sociology, followed by a brief discussion of place in the other social sciences, and then return to the larger picture of place scholarship as a whole.

Place and Sociology

Sociologists have given the appearance of not being interested in place—perhaps preferring to leave the matter to specialists from geography, or fearing that environmental determinism would rob social and cultural variables of their explanatory oomph, or worrying that the particularities of discrete places might compromise the generalizing and abstracting ambitions of the discipline.

(Gieryn 2000:464)

The issue of geographic place or space has been a rather curious one in sociology. Things that are sociologically interesting do not occur independent of place. All social phenomena happen *someplace*, and those places can matter a great deal to the social interactions that occur within them. Yet, place and space have not been incorporated into general sociological theory and research, and only recently have had more focus in the discipline (Gieryn 2000; Lobao 1996). Durkheim introduced his conceptualization of social space in the 1890s which was later elaborated by Sorokin, however neither located that social space in a geographic spatial context, intentionally focusing on a purely sociological framework of social location. Spatially-oriented identities such as regionalism or nationalism were seen as barriers to a united proletariat in Marxist frameworks. The urban sociology developed in the Chicago School,¹ referred to as urban or human ecology, was a notable exception to this general aspatial approach. This ecological approach considered the environment of the city and the neighborhood as important to the social interactions that occurred there. Despite the importance of this work to the sociological canon, the spatial orientation of urban sociology, as well as rural sociology, remains somewhat of an anomaly in sociology (Lobao 1996; Wilson 1980).

One of the primary problems has been context invariant, aspatial generalizations, where the assumption seems to be that space or place matters little, if at all. If the place or space is focused on at all other than as a mere backdrop to social interaction, it is likely tossed in as a possible explanation of why hypotheses were unsupported in the data, with

¹ The Chicago school refers to sociology from the University of Chicago, one of the most dominant forces in American sociology in the first half of the twentieth century. The Chicago School is known for its urban sociology studies and for the development of symbolic interactionism (Abercrombie, Hill and Turner 2000).

little analysis as to how these place considerations might work; more often the space or place of social interactions is ignored entirely (Gieryn 2000; Lobao 1996).

There has been some increased recognition that space matters in sociology. The best example of this is Giddens' explicit concern with physical space. He argued that social theory needs to concretely confront the "'situatedness' of interaction in time and space" (1984:110). This included the need to be mindful of how the term "place" is used—for example, it should not be used to simply "designate a 'point in space', any more than we can speak of points in time as a succession of 'nows'" (p. 118). Giddens introduced the concepts of locale and regionalization as ways to discuss place-related issues with more specificity.² He argued that social interaction does not just consist of moving in time, but is also located in space—this intersection of space and time plays an important role in the reproduction of structure and institutional patterns in Giddens' theory of structuration.

Gieryn (2000) also argued for "emplacing" sociology and the key problems it addresses; for Gieryn these included inequality, difference, power, politics, interaction, community, social movements, deviance, crime, life course, identity, and others. Arguing that place "persists as a constituent element of social life and historical change" (p. 463), he pointed out that place remains invisible in sociology because studies of place are not framed as such. In his conceptualization of place, he included three features he considered necessary and sufficient: (1) A geographic location—the "where." Places

² Giddens defines "locale" as, "A physical region involved as part of the setting of interaction, having definite boundaries which help to concentrate interaction in one way or another" (1984:375). He defines "regionalization" as, "The temporal, spatial or time-space differentiation of regions either within or between locales; regionalization is an important notion in counter-balancing the assumption that societies are always homogeneous, unified systems" (p. 376).

have finitude, but with elastic boundaries that allow for nestedness. (2) Material form—the “what” the place is made of. This is the physicality of the place, including whether it is built, natural, or a combination of the two. (3) Investment with meaning and value—what the place means. This includes the human endowed qualities that separate a particular place from what Tuan (1977) called “undifferentiated space.” Arguing that, “A spot in the universe, with a gathering of physical stuff there, becomes a place only when it ensconces history or utopia, danger or security, identity or memory” (p. 465), Gieryn explained that these place meanings are labile, “malleable over time, and inevitably contested” (p. 465).

Gieryn argued that this construction of place describes something more than a mere setting or backdrop for social action or a proxy for a variable of interest. Place is an “agentic player in the game—a force with detectable and independent effects on social life” (p. 466). Agreeing with Giddens, Gieryn stated, “Place saturates social life: it is one medium (along with historical time) through which social life happens” (p. 467). He went on to paraphrase Giddens, “...place stands in a recursive relation to other social and cultural entities: places are made through human practices and institutions even as they help to make those practices and institutions” (Gieryn 2000:467).

Partially because of this more recent attention to spatial topics within sociology, and more so, because sociology has so long ignored these concerns, Lobao (1996) argued that rural sociology, with its long history of working with issues related to space and place, has much to contribute to the discipline. The subfield’s focus on spatially peripheral areas has included the economic periphery as well, since there is a great deal of correlation between the two. One could argue that rural sociology’s focus on the

relationship between rural areas and poverty, inequality, and uneven development, as well as the social interaction that occurs in rural places because of their ruralness, has made rural sociology a subfield that is already tackling some of the challenges Gieryn described. Lobao would likely argue that rural sociology has already “emplaced” sociology.

In addition to continuing work in rural and urban sociology, recent place-oriented sociological work has included several approaches. Applications of Mead’s symbolic interactionism to place-based perspectives have been used by a number of social scientists. Wilson (1980) expanded Mead’s premise of things having shared meanings (i.e. intersubjectivity) to include things as located in space, positing that “the meanings of things located in space is derived in large part from social interaction” (p. 139). More recently, adaptations of interactionist theory by sociologists have been used to examine place creation (Brandenburg and Carroll 1995), place attachment (Milligan 1998), and special places (Eisenhauer, Krannich, and Blahna 2000). Sociologists have used social constructionist themes to consider topics such as multiple constructions of a place (e.g. Greider and Garkovich 1994), discourse and place identity (Petzelka 2004), and the politics of place (e.g. Greider and Garkovich 1994; Petzelka 2004; Stokowski 2002; Yung, Freimund, and Belsky 2003).

Place and Geography, Psychology, and Other Social Sciences

Geography. Much of the social science literature on place traces the origins of the construct (as used within this literature) to phenomenological geography, where Tuan (1974, 1977) and Relph (1976) took their cues on “place” and “sense of place” from

traditions within geography. Relph asserted that place holds an integral role in human identity: “To be human is to live in a world that is filled with significant spaces: to be human is to have and to know *your* place... It is a profound and complex aspect of man’s experience of the world” (1976:1, emphasis in original). In opposition to these meaningful, specific places, Relph discussed “placelessness,” or a “placeless geography” lacking diversity and significant places. Tuan’s (1977) distinction between space and place, referred to earlier, continued this focus on the particularity of places.

After this beginning, though, this focus has not been constant in geography. Entrikin (1989) argued that interest in specific places had gone out of fashion for some time, due to an emphasis on a “nomothetic science of geography” with generalizable, general laws of spatial organization—an approach that was not particularly specific place-oriented (p. 39). Because place-specific work was typically idiographic, the assumptions were that it did not use general concepts and was not interested in causal explanations. Entrikin noted a resurgence of interest in place and region within cultural geography, with a focus on human experience and “the cultural significance of everyday life” (p. 40), including a renewed interest in what he called the “existential core” of geography: “the fact that human experience is always rooted in place” (p. 41). Buttimer (1980) advocated the use of several distinct levels of analysis in work relating to space and spatial experience, including population characteristics, affective identification with a territory, a symbolic level that includes cognitions and images, a behavioral level that includes activity and circulation, and a social-psychological level focusing on people’s positions in society, which she called “sociological space” (p. 25). She argued the levels of analysis should be considered together, that any level cannot be understood

independently of the others, but observed that in many studies of environmental behavior, the sociological dimension has been missing—including issues such as lifestyle, social stratification, status and roles. Buttner saw these, as well as group participation, interactions, and reference groups, as having great importance in such studies. The failure of geographers to adequately include humans in studying spatial patterns has also been raised by Wilson (1980).

However Agnew and Duncan (1989) took issue with the opposite concern: they argued that the social sciences have, to a great deal, privileged a sociological perspective over a geographical one where place or spatial issues are concerned, moving towards the abstract and national in scale, and away from particular places. They posited that scholarship that includes place within the social sciences has typically taken one of three approaches, either place as location, a “spatial distribution of social and economic activities;” place as locale, settings for social interaction in a place; or sense of place, the identity with a place due to living there. “Rarely have the three aspects been seen as complementary *dimensions* of place” (p. 2, emphasis in original). They speculated that this has been because of the popularity of modernization theories, which they characterized as functionalist, positivist and evolutionist, along with a focus on nations, although they noted that this latter is becoming out of fashion with the increasing focus on a global level. Agnew and Duncan (1989) argued that these philosophical approaches to places have made the type of geographical scholarship Entrikin advocated out of fashion. They advocated using the concept of place as an area of scholarship where the geographical imagination, with a focus on places, and the sociological imagination can “be simultaneously engaged” (p. 2).

Psychology. In psychology, place has been explored primarily in two somewhat interrelated subfields, social psychology and environmental psychology.³ They are interrelated in that environmental psychology grew out of social psychology, and historically there was a good deal of overlap in practitioners.⁴ Because of this, any attempt at distinguishing between them with much of the place literature is not productive. However, there are some differences in the perspectives each brings to the literature that I will point out.

Social psychology, defined as “an attempt to understand how the thoughts, feelings, and behaviors of individuals are influenced by the actual, imagined, or implied presence of others” (G.W. Allport as quoted in Aiello, Thompson, and Baum 1981:424), was the first to emerge as an independent subfield of psychology, in the early 1900s (Aiello et al. 1981). Known for theory-driven, testable hypotheses, and for its rigorous scientific method, including laboratory experiments, social psychology has contributed to the literature on place in two different ways. The first is the focus on the social that distinguishes this subfield from other fields in psychology. Although much of this focus has carried over into environmental psychology, Bonaiuto and Bonnes (2000) have noted that this is an area where environmental psychology could be strengthened. They argued that there has been too much focus on individualistic approaches both in theory and

³ I have also seen place addressed in a source from ecopsychology, or green psychology, a postmodern “re-envisioning” of psychology rather than the attempt to create a new subdiscipline of psychology (Metzner 1999). This revision purports to be different in that it “would take the ecological context of human life into account” (p. 2), which is *not* what environmental psychology does, Metzner argues (p. 183, emphasis in original). Ecopsychology aligns itself with deep ecology and other postmodern “movements of ‘radical ecology’” (p. 3). Metzner’s description of place offers nothing new, however, his descriptions are taken from Tuan and Relph.

⁴ A survey conducted in 1976 by the American Psychological Association, almost 75% of those who identified themselves as environmental psychologists were also social psychologists (Aiello et al. 1981:426).

research methods on place as well as other topics, although they noted that more recently there has been a more social psychological approach to this work in terms of including the importance of the collective and social-cultural.

Focusing more on the theoretical and methodological traditions, Stedman has called specifically for a social psychological approach to the study of place and its related concepts (2002; see also Jorgensen and Stedman 2001). Arguing that different aspects of place are similar to concepts often focused on in social psychological theory and research, specifically beliefs, attitudes, identity, and behavior, Stedman applied attitude and identity theories to hypotheses he formed from earlier phenomenological work on place. His arguments, and his measurements, are cited routinely in place work from a variety of perspectives. I return to both later.

Environmental psychology makes for a striking contrast with social psychology. The emergence of this later subfield was partly a response to the heightened awareness of environmental issues in the late 1960s, but also a response to disciplinary tensions within social psychology, particularly over validity (specifically the external or ecological validity) of the experimental methodologies noted above (Proshansky 1978; Williams and Patterson 1999).

Environmental psychology has been described as being much more difficult to define than social psychology (Aiello et al. 1981), but a definition that seems to cover the main concerns is that of Williams and Patterson (1996), who referred to it as “a branch of psychology that seeks to situate the individual in a macroscale, ecological context. It views the individual both as embedded in the environment and as actively defining and giving shape to it” (p. 509). In an overview of environmental psychology, Bonnes and

Bonaiuto (2002) argued the place construct is a “central sociophysical unit of analysis,” describing the construct as including spatial-physical properties, the activities that occur there, and the meanings the place holds. They asserted, “This place specificity of behavior is the fundamental fact of environmental psychology” (p. 30). Parallel to sociological place work, actions are seen as always situated in a specific place; the nature of that place is important to understanding the action and experience.

The primary concerns of environmental psychology have included the effects of the built environment on behavior, how the physical environment can be manipulated during human social interaction, and applying the concepts of human-environment relationships—referred to as “life space” by Lewin (1936)—to physical settings (Aiello et al. 1981; Proshansky 1978). The methodologies and levels of analysis used in environmental psychology are more problem-driven than in social psychology; theory is less central and often brought in from other disciplines. Methods are often triangulated, and an interdisciplinary approach is philosophically important (Aiello et al. 1981; Rivlin 2000). The subfield’s place orientation assumes complex causal relationships between environment and behavior. Williams and Patterson (1999) noted that environmental psychology is “contextually rich and methodologically diverse” (p. 141), and that a key feature that distinguishes it from all other branches of psychology is its emphasis on seeing psychological phenomena within a large-scale, physical environment.

Both branches could be said to have gotten their initial spatial orientation from Kurt Lewin, referred to above, an early social psychologist who has also influenced environmental psychologists (see, e.g., Bonnes and Bonaiuto 2002; Seagert and Winkel 1990; Stokols and Shumaker 1981). His conceptualization of “life-space” (1936) and his

use of that concept in his field theory (1951) were both an effort to consider all possible events and things within one's environment that could influence one's behavior—including one's physical environment (although this was not a primary focus for Lewin)—as part of the context and explanation of that behavior. Furthermore, his methods, although still including laboratory experimentation, also included flexible, varied, strongly idiographic, inductive work that used qualitative analysis (de Rivera 1976; Wilson 1980). Many environmental psychologists were originally trained as social psychologists, following this early pioneer.

Likely the most prolific in place studies, environmental psychology makes place meanings a core focus. The most widely used concepts in place literature were developed in this subfield, including place identity (Proshansky 1978; Proshansky, Fabian, and Kaminoff 1983) and place dependence (Stokols and Shumaker 1981), as well as place attachment (e.g. Altman and Low 1992). Environmental psychologists have used a wide variety of perspectives, including phenomenology (e.g. Seamon 2000), social constructionism (e.g. Williams 2000, 2002a), and a transactional approach (e.g. Brown and Werner 1985; Stokols and Shumaker 1981), as well as more psychometric approaches (e.g. Pretty et al. 2003). Empirical works have used quantitative methods (e.g. Kaltenborn 1998), as well as qualitative techniques including, for example, semi-structured interviews (e.g. Twigger-Ross and Uzzell 1996) and phenomenological methods (Fishwick and Vining 1992). This diversity exemplifies the above description of the discipline.

Natural resources social sciences. As a group, natural resource social scientists have played a substantial role in theory building and research on place. This group

includes social scientists trained in a wide variety of disciplines,⁵ who typically work either for federal or state governmental agencies charged with natural resource management (e.g. the Bureau of Land Management, the Forest Service), or for multidisciplinary academic departments focused on resource management.⁶ It quickly becomes clear that, as a group, these scholars are likely not “bilingual” but rather multilingual in being able to communicate across perspectives, since they bring a diversity of disciplines, methodological and paradigmatic approaches, and interests in issues related to place. Disciplinary boundaries appear to matter less here; the shared commonality is representing the *social* sciences in areas that typically focus on other interests in physical, geographic locations.

As a whole, the goal of natural resource social science is to produce work that can be used by resource management agencies such as the Forest Service, the Bureau of Land Management, as well as wildlife management or parks and recreation agencies at the federal, or state or provincial levels within government or within nongovernmental entities, etc. Because of this objective, although much of the literature from this field is published in academic journals such as *Society and Natural Resources*, *Leisure Sciences* or environmental psychology journals, a good deal of it is published in venues such as *Journal of Forestry*, proceedings from natural resource conferences and symposia, and in government agency publications such as Forest Service general technical reports, where it is more accessible to resource managers.

⁵ For example, sociology, psychology, and geography, as well as anthropology, economics, political science, history, social policy, planning, landscape architecture, and other disciplinary areas.

⁶ Academic departments include, for example, Parks, Recreation and Tourism Management; Environment and Society; Natural Resources Science and Management; Fisheries, Wildlife, and Conservation Biology; etc.

The contributions to place scholarship from this group of scholars are, perhaps not surprisingly, even more diverse than was seen with environmental psychologists. Coming from such a broad cross-section of social scientists, this literature is often useful in bridging and synthesizing various aspects of place scholarship; with authors demonstrating understanding for varied disciplinary approaches, evidenced in essays suggesting theoretical approaches (e.g. Snyder, Williams, and Peterson 2003) and methodological approaches (e.g. Beckley 2003). They have included a wide variety of qualitative methods, such as open-ended survey questions (e.g. Schroeder 2000, 2002), in-depth interviews (Davenport and Anderson 2005; Mitchell et al. 1993), case studies (e.g. Yung et al. 2003), and resident-employed photography (Stedman et al. 2004), as well as participatory action research (e.g. Kruger 1996; Kruger and Shannon 2000). Their quantitative work has included surveys of residents (e.g. Vorkinn and Riese 2001), of park or refuge visitors (e.g. Mowen and Graefe 2000; Payton, Fulton, and Anderson 2005), and of recreationists (e.g. Bricker and Kerstetter 2000). This scholarship has also given rise to extensive literature reviews such as Farnum, Hall, and Kruger (2005).

Contributions from philosophy. In addition to all of these various disciplines that are actively studying “place,” another discipline drawn from in much place work is philosophy, in particular, phenomenology. This approach has been used by some geographers, most notably Tuan and Relph, as well as some environmental psychologists (e.g. Fishwick and Vining 1992; Seamon 2000), anthropologists (e.g. Low 1992), and others. Most of these have used the perspectives of Edmund Husserl (e.g. Yi-Fu Tuan), or Martin Heidegger (especially Edward Relph), and the work of a few place scholars has been informed by Alfred Schutz, or his students, Peter Berger and Thomas Luckmann

(sociologists Anthony Giddens, Lorraine Garkovich, and Thomas Grieder). I return later to the role of phenomenology in place studies.

A Messy Literature?

As can be imagined, this inter- and multidisciplinary literature, characterized by great diversity in theoretical, methodological, and paradigmatic⁷ approaches, has been criticized by many as being “messy.” Researchers coming from different disciplinary backgrounds as well as different research areas have developed place-related terminology and usages that best suit the needs of that area (e.g. recreation, leisure, and/or tourism, as compared to community sociology, or human geography). This can be seen particularly in a number of place-related concepts that have come into wide, but inconsistent, use, including sense of place, place attachment, place identity, and place dependence, each of which has received its own set of criticisms for these inconsistencies. For example:

The specifications of concepts subsumed under sense of place, particularly place identity, place attachment, and sense of community, have not been clearly articulated... The theoretical quagmire reflected in this blurring of conceptual boundaries is also evident in the lack of precision of the operational definitions that are used to study these sense of place dimensions. (Pretty Chipuer, and Bramston 2003:274)

...the main difficulty the researcher has encountered when dealing with the study of place attachment has been the diversity of approaches available at the theoretical level as well as the empirical. There was no agreement regarding its name, definition or the methodological approach best suited to deal with it. We can find many similar terms...such that it is

⁷ I use “paradigm” here following Patterson and Williams (2005), who develop an organizational framework for differing approaches to research or research traditions. At the level of scientific application, where theoretical concepts are developed and tested empirically, they refer to research programs, typically organized within a discipline. They link research programs to paradigms, which are the source of “normative philosophical commitments” that guide the approach. “Paradigms often transcend disciplinary boundaries” (p. 363). At the next level, world views inform paradigms—at this level people are concerned with the nature of science itself. My use of “paradigm” is in this sense of a particular approach informing multiple research programs, at a level that transcends disciplines. An example within place literature would be the paradigm of phenomenology, which has been used by geographers, psychologists and sociologists.

often difficult to tell whether we are talking about the same concept with a different name or different concepts. ... This terminological and conceptual confusion has seriously blocked advances within this field as many authors have pointed out.... (Hidalgo and Hernandez 2001:273-74)

Obviously this creates problems in direct comparability of studies, concepts and operationalization of those concepts. For example, one cannot assume that one study purporting to research place attachment is examining the same conceptual thing as another study of place attachment. However, I would argue that this situation is not at all surprising given the great diversity of scholarship involved in this research and the wide variety of interests, foci, and challenges the research is driven by. Some of these differences between research areas, including the approaches and conceptualizations used, are a result of different goals, and in some cases, differences in what the place work was a reaction to. For example, the challenge for natural resource social scientists working in resource management agencies has been to work towards including people (humans/society) in studies of the physical place, whereas in sociology and psychology, it has been to consider the physical place in studies of people (humans/society). Given the wide diversity of disciplines, research areas, and perspectives interested in place, if we all used the same definition it would be a very broad, generalized and abstract definition indeed. It is likely more useful for all concerned to use those conceptualizations that best fit our own work, making it clear exactly what we mean and how we will measure those concepts, as well as identifying our approach—theoretical, methodological, and where appropriate, disciplinary.

Patterson and Williams (2005) made these points far more eloquently. They argued that not only are there disciplinary and paradigmatic differences in theoretical and

methodological approaches to place work, but even larger world view differences in how place is explored and discussed. We will return to these world view differences later. Pointing out that both disciplines and paradigms inform the research programs that come out of them, and that, for example, this can even shape the meanings of terms and the terms used, Patterson and Williams argued that the critiques referred to above are overstated, and that this is a result of three issues: (1) that the definition of specific concepts is being focused on too narrowly instead of looking at what is meant in the context of the research, (2) that the critics are not distinguishing between approaches used by different research traditions, and (3) that there are inaccurate assumptions that place research is encapsulated by a “single research tradition from which a single overarching theory of place could and should emerge” (2005:363). They went on to argue that the “body of place research is more appropriately viewed as a domain of research informed by multiple research traditions” (p. 376), and that the issue of conceptual clarity within research traditions is a different matter than across traditions. There is a reasonable expectation for consistency within any given tradition, however expecting that same consistency across widely varying research traditions can be problematic. They noted that some philosophical assumptions that differ between the various approaches are “so incompatible they cannot be wedded into a single operational approach” (p. 376).

In their wide review of natural resources recreation and tourism literature on the broad construct, “sense of place,” Farnum et al. (2005) indicated that because so many fields have contributed to the development of the concept, “definitions and interpretations of sense of place have varied and been adapted according to the practical applications and subject matter of each field” (p. 1). This only makes sense. “There will always be some

degree of segregation across disciplines due both to differences in orientation and to the rapid proliferation of knowledge and information in any give discipline” (Patterson and Williams 2005:367). Patterson and Williams (2005) argued that, for example, the general, overarching terms, such as sense of place or place attachment, tend to evolve separately in different disciplines, leading to the adoption of varying terminologies as well as subtleties in meaning. They argued further that with a more abstract and philosophical concept, such as place, the variability of interpretation is higher, particularly as interpretations become second and third hand considerations.

Patterson and Williams (2005) argued that distinctions must be made between inconsistencies *within* individual research projects and their reported findings, as well as within research programs, compared to differences *across* research traditions, which is inevitable. Those interested in using cross-disciplinary literature have the responsibility to be attentive to usage differences without assuming this indicates “a failure in the literature” (p. 368), and researchers must “translate their work,” for those outside of their discipline or research program, “with sufficient clarity and transparency so that practitioners can meaningfully engage in their own synthetic endeavors” with the scholarship (p. 378). Farnum et al. (2005) added, “There is no single accepted definition of sense of place. As with many other concepts in social science, it has traditionally fallen to the author to be clear how she applies the concept” (p. 49).

Having thus prepared the reader, I now venture into the messy literature on place-related constructs, to be followed by a review of the broader place literature as organized into evolutionary stages of the scholarship.

Common Concepts Used in the Literature on Place

As the social science literature on place has evolved over the last thirty years, a catalogue of concepts has emerged. “Place” has evolved to mean a culturally constructed designation given to spaces that have come to have meaning for people; the manner in which “place” has been constructed by social scientists was noted earlier. One last clarification would be the difference between what this literature calls “place,” which includes the meanings and values of, and intimate connections with specific geographic settings, and what might be thought of as “environment,” that is, the biophysical aspects of geographic settings, components of the landscape that exist whether or not there are human connections to them (Farnum et al. 2005).

Concepts such as place dependence, place identity, place satisfaction, place attachment, and sense of place have been developed to consider the ways people have relationships with places. Since meaning is explicitly referred to in most definitions of place, “place meanings” has also taken its place in the lexicon.

Place Meanings

Social scientists are fairly united in thinking one of the things that makes place interesting is meaning—most assert that meaning is primary in making a setting a “place.” Despite the broad subscription to this description, few social scientists have defined “meaning.” In their review of place-related scholarship in the recreation and tourism arena, Farnum et al. (2005) observed that most of the literature they reviewed presents meanings as encompassing “both symbolic and evaluative beliefs” as well as ideas and values important to giving order to people’s worlds (p. 3). Stedman (2003a)

found that place meanings can change over time, and that these changes in meanings are not necessarily correlated with changes in levels of attachment to the place in question. Farnum et al. (2005) used “place meanings” to refer to cognitive (rather than affective) components of attachment.

Relph (1976) argued that the significance of places has less to do with the places themselves and more to do with the meaning people give them. Basic elements constituting places include “the static physical setting, the activities, and the meanings.” Furthermore, “The meanings of places may be rooted in the physical setting and objects and activities, but they are not a property of them—rather they are a property of human intentions and experiences... they possess their own qualities of complexity, obscurity, clarity or whatever” (Relph 1976:47).

One example of using place meanings as the topic for research and theory-building is found in Gustafson’s (2001) qualitative, inductive study, where respondents were asked about personally important places and their level of attachment to these places. Gustafson used his findings to build a model of place meanings that included their importance in relationship to the self, to others, and to the environment.

In addition to considering the meanings places hold for individuals, place meanings have also been addressed at the collective or community level. Galliano and Loeffler (1999) observed that, despite the fact that different individuals in a community may have differing interpretations of a place, there may be “broad experiential patterns expressed in a collective sense by the members of a community. Thus, people frequently share a communal interpretation of place” (p. 6). Greider and Garkovich (1994) argued that symbols and meanings of landscapes [places] are sociocultural phenomena—that is,

social constructions that result from “ongoing negotiations in a cultural context” (p. 2).

In other words, meanings are not inherent in settings, but rather reflections of “what people in cultural groups define to be proper and improper relationships among themselves and between themselves and the physical environment” (p. 2).

Place Dependence

Place dependence is used to evaluate one place as compared to other places, to determine the level of agreement with the idea that, particularly due to emotional bonds, “no other place will do as well as this one,” or a dependence on the particular place of interest for the things one wants to do. The development of this concept is credited to Stokols and Shumaker (1981), and it is used more within recreation and leisure, and other natural resource-related scholarship. It bears some similarity to the concept of community satisfaction within the community sociology literature in that both are evaluative and focus on the functionality of the place or the community. The primary difference is that place dependence is explicitly comparative, whereas community satisfaction is not. Place dependence has been used as an indicator of sense of place (Jorgensen and Stedman 2001; Stedman 2002, 2003a) as well as place attachment (e.g. Bricker and Kerstetter 2002; Kyle et al. 2003; Moore and Graefe 1994; Williams et al. 1992).

Place Identity

The concept of place identity most commonly used in place literature was developed by Proshansky (1978; see also Proshansky et al. 1983) in the urban-oriented environmental psychology literature. It has been used widely in place work focusing on one’s dwelling, community, and region (e.g. Cuba and Hummon 1993; Hull, Lam, and

Vigo 1994; Lalli 1992; Twigger-Ross and Uzzell 1996), as well as on natural places and other settings for recreation and leisure (e.g. Blake 2002; Williams 2002b). The primary focus of this concept is that “this place” is part of my identity, my affiliation to “this place” is part of how I want others to think of me. It could be thought of as the degree of pride one has, and the degree to which any apology is lacking, when one says, “I am from [place],” or “I spend a lot of time at [place].” Place identity has been used as an indicator of sense of place (Jorgensen and Stedman 2001; Stedman 2002, 2003a) as well as place attachment (e.g. Bricker and Kerstetter 2002; Kyle et al. 2003; Moore and Graefe 1994; Williams et al. 1992). For the latter, it is conceptualized as an indication of emotional bonds between people and places.

Place identity has also been used by some, particularly sociologists, to describe a more reciprocal identity process. Here, individuals and groups contribute to and shape the identity of places while the places help shape the identities of these same people (e.g. Petrzalka 2004).

Place Satisfaction

The concept of place satisfaction was developed by Stedman (2002, 2003b) in his exploration of place issues in high amenity places. He proposed this concept as a parallel to “community satisfaction” within community sociology, a concept designed to be evaluative, where the respondent can indicate the degree satisfaction or dissatisfaction is felt about the community. Stedman used place satisfaction similarly, asking about the degree of satisfaction respondents had with various aspects of the place. The concept is used as a judgment of the quality of a place (see also Shumaker and Taylor 1983 for a

discussion of satisfaction with place that mainly focuses on what they refer to as “residential satisfaction”). Place satisfaction has been used as an indicator of sense of place (Stedman 2002, 2003b).

Place Attachment

The theoretical and empirical literature on place attachment constitutes a large percentage of the scholarship on place more generally. At least a part of this is related to place attachment being the catch-all place phrase for environmental psychologists, one of the most prolific groups of writers for place-oriented scholarship. Additionally, place attachment has been explored by other psychologists, sociologists, geographers, anthropologists, architecture, urban planning, and others (Low and Altman 1992). The phrase has been used broadly and inclusively—or “holistically” (Low and Altman 1992:4)—by some, and very particularly by others. Of these latter, some have used place attachment as one dimension of several that make up sense of place (e.g. Jorgensen and Stedman 2001; Pretty et al. 2003; Stedman 2003a), while others have seen place attachment itself as multi-dimensional, measuring it through place identity and place dependence (e.g. Warzecha, Lime, and Thompson 2000; Williams et al. 1992; Williams and Vaske 2003). Because of the breadth of this scholarship, and because much of the work on place issues, including sense of place, has used place attachment as a conceptual base, more attention must be paid to this literature than with the other place concepts.

Place attachment considers the emotional or affective component of people’s relationship with places, with those emotions typically presumed to be positive, although place scholars generally agree that place attachment is a “complex, multifaceted concept”

(Farnum et al. 2005:3). Defining attachment as “an affective relationship between people and the landscape that goes beyond cognition, preference, or judgment,” Riley (1992:13) continued, “Attachment to the landscape is not simple. It is a complex set of threads woven through one’s life” (p. 18). Low and Altman (1992) argued that the social relationships affiliated with places, not just the place itself, make up a large portion of place attachment. They saw places as “repositories and contexts within which interpersonal, community, and cultural relationships occur” (p. 7). Beckley (2003) argued that attachment may be based on social relationships and processes more than particular landscape features, with the result being that when landscapes change, sentiments may not. Alternatively, attachment may be very connected to unique, physical characteristics—it may depend at least some on the geography of the place itself (Gieryn 2000) or to ‘how it’s always been’—in these cases, even the idea of change may threaten attachment (Farnum et al. 2005).

Some authors have described place attachment as the result of a long-term process of interaction and experience with a place. For example, Galliano and Loeffler (1999) saw attachment as formed through “association and interaction with geographic areas, whether physically, spiritually, or through various media” and that this attachment is then “passed down through generations, becoming part of people’s heritage in a personal way” (p. 1). Others have argued that the intensity of experience can also serve to build place attachment without needing a long exposure to the place. For example, Tuan (1977), despite arguing that knowing a place takes time, and that attachment “is seldom acquired in passing” (p. 184), acknowledged that “the quality and intensity of experience matters more than simple duration” (p. 198), and that even a brief experience, if intense enough,

can leave one feeling a sense of connectedness strong enough that it seems one has always known that place. Place attachment has been used more narrowly in recreation and tourism literature (Farnum et al. 2005; Williams 2004), for example Kyle et al. (2003) defined the concept, “The extent to which an individual values or identifies with a particular environmental setting” (p. 250). The research on place attachment in recreation and tourism has focused on high amenity places and, typically, on visitors and recreation users (e.g. Bricker and Kerstetter 2000; Kyle et al. 2003; Moore and Scott 2003; Warzecha et al. 2000). Other research on attachment to places has included the perspectives and feelings of local residents (e.g. Eisenhauer et al. 2000; Kaltenborn and Bjerke 2002; Kaltenborn and Williams 2002; Vorkinn and Riese 2001).

Place attachment has been used to examine the affective portion of the relationships between people and both natural and built environments and landscapes, with tremendous range in the level of analysis. The construct has been used to look at extremely micro “places”, such as buildings (e.g. Milligan 1998), rooms within buildings (e.g. Mazumdar and Mazumdar 1993), or even possessions (e.g. Belk 1992); considerably larger places such as national parks and other public lands (e.g. Eisenhauer et al. 2000; Mitchell et al. 1993; Warzecha et al. 2000); and places in between, like neighborhoods (e.g. Brown, Perkins, and Brown 2003, 2004). A portion of the literature has focused on home, or “homeland” (e.g. Tuan 1977), with other scholarship exploring place attachment to natural environments and landscapes. This latter has primarily examined people’s relationships with areas with high amenity value, including wilderness (e.g. Williams et al. 1992), rivers (e.g. Bricker and Kerstetter 2000) and trails (e.g. Kyle et al. 2003). This research has provided a wealth of information for resource management in

these settings.

Much of the work on place attachment tracks the concept back to Tuan ([1974] 1990, 1977), although earlier phenomenological works also used the phrase. Tuan's focus can be exemplified by his discussion of attachment to homeland. "Attachment of a deep though subconscious sort may come simply with familiarity and ease, with the assurance of nurture and security, with the memory of sounds and smells, of communal activities and homely pleasures accumulated over time" (Tuan 1977:159). Much of Tuan's discussion of place attachment is interwoven with family and community ties, including historical ties. He argued that, although urban people may have weaker "sentiment for nature," they may become "strongly attached to a natural feature because more than one tie yoke them to it" (p. 158). For example, people may have practical or instrumental ties, affective ties, family and/or community ties all to the same natural feature, this layered relationship strengthens the connection between people and the feature. Tuan asserted that highly visible features of a homeland can enhance people's sense of identity, increasing both awareness and loyalty to place.

Another key development in the scholarship on place attachment was the publication of Altman and Low's *Place Attachment* (1992), which brought together a variety of perspectives on the concept. Multi-disciplinary, addressing place attachment conceptually (e.g. Riley 1992) and empirically (e.g. Cooper Marcus 1992), the collection brings together a variety of approaches described as "holistic philosophical views," including transactional, contextualist and phenomenological orientations. The diversity of applications in this volume made it a classic, cited by scholars from a wide variety of disciplines, paradigmatic approaches, and methodologies; the scholarship has informed

not only work on place attachment, but on all social science place-related topics. At the core is the assumption that place attachment is a “complex phenomenon that incorporates several aspects of people-place bonding” with “many inseparable, integral, and mutually defining features, qualities, or properties; it is not composed of separate or independent parts, components, dimensions or factors” (Low and Altman 1992:4). Low and Altman asserted that place attachment does not just consider affective components of human-place relationships, but rather “involves an interplay of affect and emotions, knowledge and beliefs, and behaviors and actions in reference to a place” (p. 13). This is similar to how others have used the sense of place concept (e.g. Jorgensen and Stedman 2001).

Community and place attachment. A number of works within the place attachment scholarship, as well as other place literature, have little, if anything, to do with geographic place and are focused instead on attachment to one’s community. These works come mainly from environmental psychology, where the social (including the community) is part of one’s “environment” since the focus in psychology is at the individual level. This use of place attachment is fairly comparable to community attachment as used by community sociologists (which some scholars cite as an example of confusion and muddiness within the place literature).

A difference between the two perspectives seems to be that, for place scholars, a community is just another place to consider the relationships between humans and their localities, another setting to examine attachment to place or sense of place—it is mainly an issue of scale. For community sociologists on the other hand, the community is the setting for particular types of social relationships that vary from those in other kinds of locales. For them, attachment is one of many community dynamics to consider; others

include, for example, the social structure of the community including the normative order, power, inequality, communication and networks. In other words, for place scholars, community attachment can be seen as attachment to a type of place, while for community sociologists, community attachment is one of many social dynamics within a community.

In the place literature, the community-oriented works referred to above include both conceptual, theoretical pieces (e.g. Fried 2000) as well as empirical works (e.g. Brown et al. 2003; Hidalgo and Hernández 2001; Pretty et al. 2003). Some of these empirical works have used measures of attachment similar to those used in community sociology (e.g. Brown et al. 2003), while community attachment studies have often used attitude survey techniques (i.e., Likert-like response categories) similar to those used by place researchers, although the community sociology studies have not typically been explicitly informed by attitude theory (e.g. Brehm, Eisenhauer, and Krannich 2006).

Both the place studies of communities and the community sociology studies have tended to leave out the physical, geographic setting the community is located in, or references to it are mere background to the points of real interest. Exceptions to this can be found, for example, in rural and natural resource sociology, where the spatial setting is part of the social dynamic (Lobao 1996). Hester's (1985) "Sacred Structure," consisting of those places within the community that townspeople identified as inviolable, included both built and natural places—what they held in common was the strength of meaning the places held for community members and the level of commitment community members had for the places. Hummon (1992) very intentionally wove together the literature of "community sentiment" and "people's feelings about places" (p. 253) to propose a model

for how differing dimensions of community attachment produce different kinds of sense of place. Other scholars have followed, in some cases integrating community attachment-type measures into sense of place (e.g. Hidalgo and Hernández 2001; Pretty et al. 2003).

On the other hand, natural resource sociologists with a community orientation have increasingly expressed frustration with the neglect of the geographical setting, arguing that the physical may play a substantial role in attachment to a community, particularly in high amenity settings (e.g. Brehm et al. 2006; Clark and Stein 2003). These sociologists have responded by using place attachment conceptualizations to bring the natural, geographic place into the discussion of community attachment. Beckley (2003) suggested a research approach to place attachment that addresses this issue explicitly. In his construct, attachment to place includes attachment both to the sociocultural dynamics of the place as well as to the “geological, biophysical, landscape attributes of their regional ecosystems” (p. 106). He asserted a need to learn more about this complex combination of feelings, and suggested the possibility of separating out individuals’ attachments to the “ecological versus sociocultural attributes of places” (p. 107; cf. using a sense of place construct, Stedman 2002). Beckley saw landscape features as some of the most important symbols of many places, and argued there is a need to look at ways community residents are attached to the physical or ecological attributes of landscapes near their communities (p. 109), something done by only a few researchers to present. This emphasis appears to highlight the importance the natural setting may play, as a response to the geographic being left out of the equation of most community studies.

In these recent attempts to either bring community dynamics into research on place attachment, or place dynamics into studies of community attachment, there has been much intermingling of the literature from both areas. While the former includes citations for literature on community attachment, the latter includes place attachment literature.

Other studies that consider both place and community dynamics have included the role of the community and community residents in creating place identity (Petrzelka 2004); compared place dynamics, such as relationships with special places, across communities (Eisenhauer et al. 2000); and argued that sense of place (including community attachment) could serve as an indicator of community sustainability among forest dependent communities (Stedman 1999). For the purposes of this study I will not be discussing community-oriented literature unless it also addresses people's relationships with the physical, geographic place.

Empirical work on place attachment. As noted, in addition to the conceptual and theoretical works above, there is also a large body of empirical works on place attachment, both qualitative and quantitative, covering a wide variety of topics, informed by a number of theoretical approaches. Some of these qualitative approaches include an inductive, grounded theory approach, for example using in-depth interviews of recreation visitors to the Chiwawa River drainage in Washington to consider attachment to special places (Mitchell et al. 1993); a social interactionist explanation of place attachment using a case study of a coffee shop on a West Coast university campus (Milligan 1998); and a transactional study of neighborhood attachment that considers the environmental influence of the configuration of a cul-de-sac as compared to through streets (Brown and

Werner 1985). Stedman et al. (2004) used resident-employed photography near Jasper National Park in Alberta, Canada, to increase understanding of attachment to high amenity places, arguing that local residents may value places that tourists, as well as professionals such as architects, historians, or real estate developers, may find unappealing. In Hester's (1985) study of the "sacred structure" of a community, he used interviews with community leaders, community surveys with open-ended questions, behavior mapping, and ethnographic methods. Open-ended questions on written surveys have been used to explore attachment to special places (e.g. Eisenhauer et al. 2000; Schroeder 2000). Using place attachment as an independent variable, in-depth interviews were used to consider the role of place attachment in the decisions residents make regarding use of personal wildfire mitigation options in Larimer County, Colorado (Brenkert 2005).

Although there are a large number of quantitative studies of place attachment, I will mention only a few exemplars. Place attachment has typically been operationalized as a combination of place identity (or the affective bonding with places) and place dependence (a more functional or instrumental connection with places), or through items specifically measuring people's emotional ties and feelings of connectedness to places (Farnum et al. 2005).

Finding no standardized scales for measuring place attachment in prior literature, Williams and Roggenbuck (1989) developed survey questionnaire items to measure place identity and place dependence, informed by earlier works on place attachment as well as

recreation specialization. The items were evaluated for construct validity and reliability.⁸ In addition to identity and dependence dimensions, a third factor involving negative appraisals of the setting also emerged, suggesting that negative feelings toward a place may be distinguishable from affective and functional/instrumental connections to a place. The questionnaire items measuring place identity and place dependence have been used in a wide number of studies since, sometimes in adaptations of the index developed by Williams and Roggenbuck (1989) and later refined by Williams et al. (1995) (e.g. Bricker and Kerstetter 2000; Kyle et al. 2004; Moore and Graefe 1994; Payton et al. 2005; Vaske and Kobrin 2001; Warzecha et al. 2000; Williams et al. 1992); as well as some of them being incorporated into standardized scales of sense of place (see e.g., Jorgensen and Stedman 2001; Stedman 2002), and more recently, place dependence (e.g. Davenport 2006). A number of studies have further developed and tested these constructs (e.g. Moore and Graefe 1994; Moore and Scott 2003; Warzecha et al. 2000; Williams et al. 1992).

Williams and Vaske (2003) observed that some 61 potential questionnaire items have been identified and evaluated for inclusion in building a measure of place attachment, including items typically used to measure place identity and place dependence. These items have been used by researchers in a variety of natural resource contexts (e.g. Bricker and Kerstetter 2000; Jorgensen and Stedman 2001; Kaltenborn 1998; Moore and Graefe 1994; Vaske and Kobrin 2001; Vorkinn and Riese 2001), however most have considered visitors, such as recreationists. Williams and Vaske (2003) examined validity and generalizability of the place attachment construct.

⁸ The index included 11 dependence items and 16 identity items. 129 students from four universities completed the questionnaire, the interest in this study was inter-item correlation.

Analyzing data from four locations in Colorado they found that place dependence and place identity successfully differentiated the strength of individual attachments across the various places. Additionally, their analysis supported the idea that familiarity and experience with a place is strongly associated with attachment (Williams and Vaske 2003). Other studies have considered factors that may affect the level of place attachment held by people. For example, Kyle et al. (2003) examined the effects of various dimensions of activity involvement on place attachment, as measured by place identity and place dependence, among hikers of the Appalachian Trail.

Of particular interest in considering the processes that lead to the development of place attachment is a meta-analysis of data from ten studies of recreationists and conservation volunteers (Backlund and Williams 2004). This research was designed to examine the relationship between past experience and place attachment. Despite a number of studies finding correlations between the two (e.g. Williams et al. 1992; Williams and Vaske 2003), this meta-analysis finds only moderate to weak correlations. There were no consistent associations between past experience and place identity, nor past experience and place dependence. For that matter, Backlund and Williams found no consistent associations between place identity and place dependence, despite all ten studies using similar measures of place identity and place dependence. On further analysis, the researchers found that the larger studies involved, with more variation in both past experience and attachment, tended to produce weaker associations. Backlund and Williams (2004) posited that perhaps some of people's attachment to places may come, not from direct personal experience, but rather from hearing the stories and memories others have of those places.

Other studies have examined place attachment's role in predicting other phenomena. Place attachment has been found to be a positive predictor of environmentally responsible behavior (Vaske and Kobrin 2001) and environmental concern (Vorkinn and Riese 2001). Vaske and Kobrin (2001) found that among the youths in their study, higher levels of place attachment, as measured through place dependence and place identity, were predictors of increased environmentally responsible behaviors such as joining community cleanup projects, sorting recyclables, conserving water, and talking with friends, family and others about environmental issues. In examining attitudes toward a proposed major hydropower development among local residents, Vorkinn and Riese (2001) found that increased levels of place attachment, as measured by an adaptation of Williams and Roggenbuck's (1989) index in combination with a modification of Shamai's (1991) scale to measure strength of attachment, were associated with environmental concern.

Kaltenborn and Williams (2002) compared the perspectives of local residents and of tourists and seasonal residents (considered in combination) to examine the effect the level of place attachment has on resource management preferences. They found the level of attachment had a positive effect on valuing environmental traits of the place, and that increased attachment increased the perception that management objectives were important. Of interest in this study is the finding that history of resource use, as well as residence, has limited effects on attachment.

Other studies have examined the effect of place attachment on landscape preferences (Kaltenborn and Bjerke 2002); on people's perceptions of social conditions of a place (Kyle et al. 2004); how place attachment, as compared to activity involvement

and the kinds of experiences people desire, might effect how frequently people visit a particular place, like an urban park (Mowen and Graefe 2000); and whether place attachment, mediated by trust, is a positive predictor of civic action levels in wildlife refuge visitors (Payton et al. 2005).

Sense of Place

The phrase “sense of place” likely originated within geography. Relph (1976) quoted the National Academy of Science Ad Hoc Committee on The Science of Geography, from 1965: “the modern science of geography derives its substance from man’s sense of place and his curiosity about the spatial attributes...of the earth.” The report concluded that “...little is known as yet about what we earlier called the ‘sense of place’ in man. Its secrets are still locked from us in our inadequate knowledge...” (as quoted by Relph 1976:2). A good deal of attention has been spent focusing on this concept since then, and some might argue that many of its secrets are *still* locked from us.

Sense of place is a concept with which the differences in approach are quite pronounced, along with place attachment; there are some usages of the two phrases that overlap. Both get used as the overarching concept having to do with place, for example, the term “sense of place” is the broad term that gets used in geography and design, while “place attachment” tends to serve this purpose in environmental psychology (Farnum et al. 2005; Patterson and Williams 2005). Some have used the two terms fairly interchangeably, others see sense of place as a multi-dimensional construct of which place attachment is one dimension (e.g. Jorgensen and Stedman 2001; Pretty et al. 2003; Stedman 2003a). Additionally, sense of place has been used by some to indicate a very

deep level of experience and attachment with a place (e.g. Hay 1998; Relph 1976).

Given these differences in usage, it is important to consider the context of the work to understand what is meant by the concepts.

Despite these differences, for most place scholars sense of place typically includes all types of cognitions and affective sentiments held regarding a particular geographic setting and the meanings it holds for people, as well as the relationships between people and places. It also includes the character of a place, which may be seen narrowly as the image of the place, or more broadly as whether a place is authentic or has integrity. Many have referred to sense of place as a holistic concept, and it has most commonly been considered to be based in experience with the place, both subjective personal experience and often shared, collective experience (Farnum et al. 2005; Galliano and Loeffler 1999; Williams 2004). Sense of place can refer “to the perception people have of a physical area with which they interact, whether for a few minutes or a lifetime, that gives that area special meaning to them, their community, or their culture” (Galliano and Loeffler 1999: 1). Hummon argues, “Sense of place is inevitably dual in nature, involving both an interpretive perspective *on* the environment and an emotional reaction *to* the environment... Whatever the balance of emotive and cognitive components, sense of place involves a personal orientation toward place, in which one’s understandings of place and one’s feelings about place become fused in the context of environmental meanings” (Hummon 1992:262, emphasis in original). Or as Walter (1988) put it, “The real ‘sense’ of a place...is twofold. On the one hand, people feel it; on the other hand, they grasp its meaning.” Walter continued, “The whole synthesis of located experience—

including what we imagine as well as the sights, stories, feelings, and concepts—gives us the sense of a place” (p. 2).

Relph’s (1976) definition likely required the deepest sense of the place, somewhat parallel to Tuan’s (1977) description of place attachment. For Relph, the strongest (“authentic”) sense of place was unselfconscious, and involved “being inside and belonging to *your* place both as an individual and as a member of a community, and to know this without reflecting upon it” (1976:65, emphasis in original). In this unselfconscious sense of place, places are accepted as they are. One can also be self-conscious of the relationship, in which case the relationship is more superficial, and includes understanding and reflecting on the place. Relph saw sense of place as more than this sort of very deep experiential phenomena, though. He argued that it is actually a fourth component of the identity of a place (along with physical setting, activity, and meaning). He used “sense of place” synonymously with “spirit of place,” to mean the character or personality of a place—this is what constitutes “the very individuality and uniqueness of places” (pp. 48-49).

Hay (1998) saw sense of place similarly to Relph: very deep, as the result of years of residence (it is best if one is raised in the place). Hay described it as “feeling at home and secure there, with feelings of belonging for the place being an anchor for his or her identity” (p. 6). He went on to say that continued physical contact is necessary to maintain that sense of place, otherwise it becomes nostalgic. Hay proposed that developing sense of place can be compared to the maturation process people go through, it is developmental over time, and is tied directly to residency, and familial and cultural

roots. He argued that sense of place should be recognized as fundamental to “the maturation of both the individual and society” (p. 26).

Williams and Stewart (1998) attempted to make sense of the sense of place concept for natural resource managers, acknowledging that the term has been “elusive, ill defined, and controversial as a resource management concept” for ecosystem management (p. 18). They suggested thinking of it as “the collection of meanings, beliefs, symbols, values, and feelings that individuals or groups associate with a particular locality” (p. 19). They raised concerns about the ease with which this can be reduced to a less meaningful chunk of this larger whole, and suggested considering it as a multi-faceted or multi-dimensional concept in order to capture the full complexity of the construct. They included, as facets of sense of place, emotional bonds people form with places; strongly felt values, meanings and symbols that can be difficult to identify if one is unfamiliar with the place; the kinds of valued qualities of a place that even insiders may be unaware of unless those qualities are threatened or lost; the group of socially constructed place meanings attributed to the place; and the awareness of the local context—cultural, historical and spatial (p. 19). In considering the people part of the equation for ecosystem management they emphasized the importance of the idea that places have meaning to people.

Another approach to the dimensionality of sense of place has been taken by Stedman (e.g. 2003b), along with Jorgensen (Jorgensen and Stedman 2001). Stedman argued, first, that place is a multidimensional concept that depends on meanings, which in turn are based on experiences with both the physical landscape and social actors therein (Stedman 2003b). Pulling from theories about place by Tuan, Relph and others, as well as

prior research, Stedman listed place attachment, place identity, place dependence, place satisfaction, and place meanings as distinct aspects of sense of place. He asserted that sense of place is the overarching concept here (as opposed to place attachment), since sense of place can contain all of these various aspects. Using a social psychology approach, Jorgensen and Stedman (2001) proposed using attitude theory's⁹ affective, cognitive and behaviorally-oriented components to explore these various aspects of sense of place, arguing, "Sense of Place is a complex psychosocial structure that organizes self-referent cognitions, emotions and behavioral commitments" (p. 237). They asserted that this approach also allowed them to examine the relationships these sense of place components have to each other. Jorgensen and Stedman argued strongly for the use of positivistic quantitative methods to test hypotheses about these constructs, their relationships to each other, and also the relationship between sense of place and behavior—specifically whether higher levels of sense of place are related to willingness to engage in place protective behaviors (Stedman 2002).

Scholars considering sense of place have also used other approaches and perspectives. Stokowski (2002) took a social constructivist approach to focus on issues of power, politics and place. She argued for moving away from the individual as the unit of analysis in place studies, and instead examining collective dynamics. Stokowski encouraged focusing on language and discourse in considering the political consequences of the social construction of places. In a conceptual paper that incorporates economic and

⁹ Attitude theory has most typically been credited to social-psychologists Fishbein and Ajzen (e.g. 1975). An attitude is defined as "a response to an exogenous event, object or stimulus" (Jorgensen and Stedman 2001:237). Responses to attitudes include three components—affective, cognitive and conative (behavioral intentions and behavioral commitments, but not actual behavior). Attitudes cannot be directly observed, but can be measured by people's responses to statements or questions, often set up in surveys using Likert-like response patterns (responses ranging from, e.g., strongly disagree to strongly agree).

anthropologic foci, Snyder et al. (2003) argued that sense of place has economic and cultural value, and should be considered when calculating damages awarded for human-caused environmental disasters, such as the Exxon-Valdez oil spill. In this interesting use of place concepts and extension of place theory, they made the point that, particularly in subsistence cultures, local indigenous people experience losses that monetary valuation cannot capture, nor replace. Here “sense of place” includes the local knowledge of how to live in *this* place, off *this* land, knowledge that is specific to the geographic place. They also argued that if part of the consequence of the environmental crisis is the need to relocate, this kind of sense of place must be taken into consideration.

A number of different factors have been used to explain the origins of people’s sense of place (Farnum et al. 2005). Psychologists in particular have argued that there is a biological, evolutionary foundation to sense of place that depends on biological propensities towards particular features of the environment (e.g. psychoevolutionary theories of landscape preference, see Kaplan and Kaplan 1989); and/or that there are other psychological developments as well as sociocultural processes involved. Galliano and Loeffler (1999) argued that a combination of personal memory, community history, appearance of the physical landscape, and emotional attachment is what gives rise to sense of place, and that because of media images, folklore, and tradition, people who have never visited a particular place may have a sense of a place based on these constructions. Based on their reading of the literature, Farnum et al. used a framework that saw the development of sense of place coming from “separate (although intertwined) biological, individual, and sociocultural processes” (2005:6).

Empirical work on sense of place. Stedman, with Jorgensen, used the multidimensional approach they advocated (above) in a series of articles reporting the research findings of quantitative analyses of data from a survey of lakeside property owners in Vilas County, Wisconsin (Jorgensen and Stedman 2001; Stedman 2002, 2003a). They used the data to refine measurement techniques for their construct of sense of place and its several dimensions.

Another quantitative approach that has been cited and drawn from in the work of others (e.g. Jorgensen and Stedman 2001; Kaltenborn 1998; Vorkinn and Riese 2001) was taken by Shamai (1991), who, drawing on theory from Relph and others, constructed an ordinal scale to measure sense of place. She created a continuum that includes seven levels of gradually increasing sense of place, with the bottom level being a lack of any sense of place. This is followed, in ascending order, by knowledge of being located in a place without any feelings of attachment; belonging to a place; and attachment to a place, which is higher than just a feeling of belonging—here the place has meaning, based in personal and collective experience as well as identity. At the next level one identifies with place goals, which Shamai saw as a deep level of attachment accompanied by devotion, allegiance and loyalty to the place. The next level is involvement in a place, where one is committed enough to the place that one takes an active role in the community—this level (and the next) can be measured by behavior. And finally, sacrifice for a place, “the ultimate and highest stage of sense of place,” which involves a deep commitment to the place; here there is a “readiness to give up personal and/or collective interests for the sake of the larger interest of the place” (p. 350). Shamai used her scale to examine sense of place in a nested setting (city, province, and country), particularly to

see the relationships between the different levels of settings. She concluded that it is possible to test different intensity levels of sense of place, and that independent variables can be included in the consideration as well. For example, in her data, the respondents' school system had some explanatory power for levels of sense of place. Shamai did not include any sort of measurement or focus on the physical, geographic setting in her instrument nor her discussion.

In an attempt to see if sense of place might be a useful tool for environmental impact assessments, Kaltenborn (1998) studied the effects of sense of place on people's perceptions of wilderness, environmental conditions, and responses to environmental problems in the Norwegian high Arctic. He modified Shamai's scale to include place meanings and importance, and to relate it to the particular area under study. Using survey data from residents in the area, he found that although sense of place appeared to be useful for predicting residents' responses to environmental impacts, it was less useful for predicting other perceptions, and thus, although these measures could be useful for some questions environmental impact assessments need answers for, other measures would need to be used to get at other issues, for example, environmental meanings. He did find that those with a strong sense of place seemed "more rooted, less indifferent and more committed to solving problems" (p. 185).

Jorgensen and Stedman, Shamai, and Kaltenborn all addressed sense of place as the main focus of their studies, the former two looking at dimensionality of the construct and measuring sense of place through its several dimensions, the latter two at possible scales to measure sense of place more directly. In other empirical works, researchers have discussed sense of place as more of a vague overarching concept, but have focused very

specifically on various dimensions. An example of this is the quantitative study by Pretty et al. (2003), who stated they were interested in studying the dimensions of sense of place, described their usage of “place” and defined what they mean with each of the dimensions they considered (place identity, sense of community, place attachment, and place dependence), but never defined what they meant by “sense of place.” This study is also an example of a number of works within environmental psychology that use the terms “sense of place” or “place attachment” to describe community or urban studies that do not consider what Stedman refers to as “the physical landscape” (Stedman 2003b:824). It is also an example of the need to pay careful attention to how phrases and concepts are defined and used in any given study: Pretty et al. (2003) considered whether place identity could be predicted by the rest of the sense of place dimensions listed, however not only did they include sense of community where others have not, they also used a very different definition and measure of place identity.

Additional Issues on How Place Concepts are Used and Understood

In addition to the explanations of the place-related concepts above, three other issues in how place is conceptualized and perceived by place scholars should be noted at this time. They are the social and physical/geographic aspects of places and the tension between them; the range of affect associated with places; and the role of personal experience with places.

The perceptions of social and physical/geographic aspects of places. Social scientists routinely define place as constituted by both physical, geographic aspects of a material locale, and the way humans make it meaningful. However, there is ongoing

tension among scholars as to which aspect is seen as more central, often expressed in anxiety that either the social or the physical aspects will not receive the focus one scholar or another believes it should have.

As was noted earlier, Low and Altman (1992) argued that a large part of place attachment is related to the social relationships connected to places, not just the places (locales) themselves. Although interested in the role the physical landscape plays, Riley (1992) argued that place attachment may have more to do with place-related meanings and experiences. This assertion that a locale is not a place unless people have given it meaning has been emphasized by a number of place scholars (e.g. Galliano and Loeffler 1999; Relph 1976; Tuan 1977).

On the other hand, Stedman expressed concern that the physical is getting left out of academic discussions on place: “Although in theory people may turn ‘blank space’ into ‘meaningful place,’ in reality, physical features of the environment play an important role in producing sense of place” (2002:823). He argued further that the place literature has focused too much on the constructed nature of places (2003a) and that, “physical features play an important role in producing sense of place. ...the biophysical environment—aspects of the forest itself—shapes sense of place meanings and attachment” (2003b:823).

Beckley (2003) observed that sociologists have been more interested in the “relations between humans that occur in a defined place” and less interested in the relationships between the people and the places themselves (p. 106); he advocated focusing on the latter. Eisenhauer et al. (2000) and Brandenburg and Carroll (1995) also emphasized the relations between people and places, discussing “a reciprocal relationship

between places in nature and social interactions” (Eisenhauer et al. 2000:422), a perspective also found in the transactional approach in environmental psychology (Stokols and Shumaker 1981). Stedman et al. (2004) observed that a number of studies (including Stedman 2003a) measure “social and environmental factors as analytically distinct, rather than examining how they may influence each other and work *jointly* to foster attachment” (p. 583, emphasis in original). Gieryn’s (2000) solution was his conceptualization of place that consisted of location, material form, and meaningfulness, together. He saw these three as irreducible, needing to remain bundled in any discussion or analysis, since they inform each other dialectically. Gieryn’s conceptualization in particular offers a way to consider place that is not *just* socially constructed; not *just* the location or material, but both, working autonomously *and* in a mutually dependent way. “A place is remarkable, and what makes it so is an unwindable spiral of material form and interpretative understandings or experiences” (Gieryn 2000:471).

The range of affect associated with places. In his foundational book on place, Relph (1976) argued, “any exploration of place as a phenomenon of direct experience...must be concerned with the entire range of experiences through which we all know and make places” (p. 6). Later he added, “...our relationships with places are just as necessary, varied, and sometimes perhaps just as unpleasant, as our relationships with other people” (p. 141). Yet much of the research that has been conducted on affect regarding place focuses on positive feelings, or in the case of Shamai (1991), nothing more negative than neutral. This problem has been noted by a number of place scholars (e.g. Giuliani and Feldman 1993; Kyle et al. 2004; Manzo 2003). For example, Manzo (2003) noted, “The literature has tended to focus on place as a source of rootedness,

belonging and comfort, and has not explored the role of negative/ambivalent feelings and experiences as fully” (p. 48), and argued that by examining all of the kinds of relationships people have with places we can see the full range of feelings as well as experiences that are part of those relationships. In their review of *Place Attachment* (Altman and Low 1992), Giuliani and Feldman (1993) argued that there is a need to consider the full range of affect in relationship to place, although they were unsure as to how to best pursue that end within the place attachment literature they were reviewing, since negative affect seems antithetical to attachment. They encouraged researchers to consider “the plurality of emotional bonds with place” (p. 272).

Most of the place research that does consider negative feelings about a place, or negative sense of place, focuses on feeling trapped. For example, Relph (1976) indicated that some places may feel oppressive and like prisons in noting that relationships to places will not always feel positive. Hay (1998) noted that ancestral or cultural sense of place may have negative aspects, for example, people may feel trapped in a place due to economic or family circumstances. Another issue altogether is having neutral to negative feelings about a place setting, i.e. the geographical/biological place. As Taylor, Gottfredson, and Brower (1985) observed, “Not only are some people more attached to place than others but there are also some places to which people can become attached more easily” (p. 525). The issue of place satisfaction gets at this somewhat, as described by Stedman (2003b) as being a way to know how much a place is “liked or disliked.” However, satisfaction appears to assume at least a degree of utility in the relationship with the place, as in satisfied with the place as somewhere to do a particular thing or enjoy a particular pastime. There are relationships with places, particularly places not

particularly known for their amenities, where an evaluative measure like satisfaction seems less useful.

Negative attachment does seem antithetical, as Giuliani and Feldman noted (1993). One is either attached (to varying degrees) or not, to propose negative degrees of attachment seems a stretch of the concept. The same argument can be made about “dependence,” but the other concepts described above can be imagined negatively. A place can have negative meanings, for example, Auschwitz or Columbine High School; liking a place others consider questionable can negatively affect one’s identity; and, I argue, one can have a negative sense of a place. Evidence of this last can be found in the third place dimension found by Williams and Roggenbuck (1989). When testing their data for the dimensionality of their overarching construct, place attachment, in addition to the identity and dependence dimensions a factor involving negative appraisals of the place emerged. This suggests that negative feelings about a place may be distinguishable from dimensions measuring affective and functional connections.

In reviewing the literature on place attachment and sense of place, Kyle et al. (2004) observed that there have been some differences in the research contexts of the two constructs, in terms of locales and populations of interest. They noted that studies using place attachment as a multi-dimensional, overarching construct have typically been conducted in recreational contexts, where respondents, primarily visitors/recreationists, have more sporadic interaction with the setting (e.g. Bricker and Kerstetter 2000; Kyle et al. 2003). Studies using sense of place as the multi-dimensional, overarching construct (and typically including place attachment as a dimension) have more typically included respondents with a more extensive history with the place in question (e.g. fulltime and

seasonal residents, Jorgensen and Stedman 2001; Stedman 2003a). Some research has found stronger sense of place among those with generational, social and cultural ties than in tourists and others with more transient relationships with a place (Hay 1998). Kyle et al. (2004) asserted that it is likely the nature of attachment differs between these groups (see also Stedman et al. 2004). It makes intuitive sense that residents, with their exposure to all aspects of the places they live, through their lived experience, in all seasons and conditions, including what Relph referred to as “the drudgery of place” (1976:41), would have more nuanced senses of these places, likely including a fuller range of affective responses to them. As Riley (1992) noted, because the experience of a common landscape is shared, it is “a source of shared meaning and emotion, whether liked or disliked, whether tasteful or ugly” (p. 27). To truly capture the experiences and feelings people have with places, the entire range must be examined.

The role of personal experience with places. Much has been written about the role experience plays in people’s feelings about places (e.g. Fishwick and Vining 1992; Stedman 2003b; Stedman et al. 2004; Tuan 1977). However, some have posited the possibility of developing strong feelings without any experience with a place: “It is possible to experience places in a secondhand or vicarious way, that is, without actually visiting them, yet for this experience to be one of a deeply felt involvement” (Relph 1976:52). Galliano and Loeffler (1999) expanded on this, “People who have never visited a specific place may know it by name and value it. They also may maintain an image of that place based on what they have seen or heard” (p. 2). These images may have been created by the media, by the stories and memories of acquaintances, or by shared symbolic and cultural meanings (Backlund and Williams 2004; Blake 2002; Farnum et al.

2005; Galliano and Loeffler 1999); because of these images, people may have a sense of a place even before they have visited the place. Galliano and Loeffler went on to argue that, in this situation, when people gain personal experience with the place they may experience identities, meanings and images that were unexpected. The findings of the meta-analysis on place attachment conducted by Backlund and Williams (2004), yielding little support for the hypothesis that increased experience is related to increased place attachment, offer support for these perspectives.

The Evolutionary Stages of Place Scholarship

Now that the reader has a sense of the various disciplinary approaches to place, as well as the basic concepts used in the literature, there is one more theme in the social science work on place to be addressed: the evolution of the scholarship on place. The following section describes several different strands of work that have emerged in this evolution, each responding to a different concern with the scholarship that preceded it. Each strand is discussed in terms of what was being reacted to in prior scholarship, including debates that gave rise to changes, and the themes of the work within that strand. I then summarize how these strands have brought the literature to its present state. This is followed by a discussion of the theoretical foundations for the present work.

The Phenomenological Roots of Place Scholarship

Most social science place scholars credit phenomenological geography as the area of scholarship from whence place studies emerged. Although Low and Altman (1992) referred to phenomenologists from the 1950s and 1960s, such as Bachelard and Eliade, as

being early scholars of place, nearly everyone traces the work primarily back to geographers Tuan (1974, 1975, 1977) and Relph (1976).

As noted earlier, phenomenology is a branch of philosophy. Phenomenological place scholars have typically drawn from the work of Husserl, Schutz, Heidegger, and Merleau-Ponty.¹⁰ A number of social scientists turned to phenomenological perspectives in the 1960s and 1970s as a reaction to positivistic social science approaches. The criticisms of positivistic empiricism included the emphasis on reductionism, rationality, and the separation of observers from subjects. Phenomenology offers ways to consider lived experience, a move away from absolutist positivism (where positivism is thought to be *the* scientific method), and a move towards alternative methods of theory building instead of formal hypothesis testing. Phenomenology argues that human experience should be at the center of social research, which allows investigation of the social construction of reality (Hall 2004; Seamon 1987). This focus on lived experience does not mean that phenomenological research is limited to idiosyncratic descriptions of the phenomena of interest, though. The goal is to use descriptive works to find commonalities between phenomena—or in the case at hand, commonalities between places. “...the phenomenologist pays attention to specific instances of the phenomenon with the hope that these instance, in time, will point toward more general qualities and characteristics that accurately describe the essential nature of the phenomenon as it has presence and meaning in the concrete lives and experiences of human beings” (Seamon 2000:159).

¹⁰ It should be noted that these represent at least two very different schools of phenomenology: philosophical or transcendental phenomenology associated with Husserl and Schutz, and existential phenomenology associated with Heidegger and Merleau-Ponty.

As can be surmised from this description, phenomenological research relies on qualitative methodology. Furthermore, the methodology eschews “the usual secondhand constructions of positivist science—e.g., a priori theory and concepts, hypotheses, predetermined methodological procedures, statistical measures of correlation, and the like” (Seamon 2000:163). Further, phenomenologists assert that phenomena must be understood holistically, rather than through exact operational definitions of concepts (Patterson and Williams 2005). Seamon argued that phenomenology presents a “middle way” between “the absolutism of positivism, on one hand, and the relativism of post-structuralism, on the other” (p. 173).

A phenomenological approach was of interest to social scientists investigating place because it allowed them to consider place not merely as an objective spatial construct, but rather a “social product resulting from the complex interplay of human perceptions, goals, and capacities, institutional rules and material conditions connected with human and physical material substances in space” (Hall 2004:365). Some of the features of this approach include a focus on the ‘taken-for-granted’ lifeworld, defined by “the intersubjective world of lived experiences and shared meanings” (p. 365). Some work on place (e.g. Relph 1976) has built on Heidegger’s concept of dwelling, a process by which a place becomes “a personal and social world and home” (Seamon 1987:5).

In their early works on place, Tuan (1974, 1975, 1977) and Relph (1976) were responding to geographic and environmental works that discussed place either from a highly abstract, theoretical perspective, far removed from people’s lived experience, or else as a unique artifact, where unique characters of individual places are presented as individual portraits without relating to each other (Tuan 1975). Relph raised concerns

about mechanical, abstract, simplistic models that “ignore much of the subtlety and significance of everyday experience” (1976:iii). Tuan asserted that place could best be studied through lived experience, which, he argued, allows for both an understanding of the particularities of places and a level of abstraction that considers the connections between places. He also posited that personal experience is what distinguishes between “place” and “undistinguished space” (1977).

In arguing for the usefulness of a phenomenological, lived-experience approach to place, Relph (1976) raised concerns that “by abandoning itself to science,” geography would lose contact with its “sources of meaning” (p. 5), and went on to quote Schutz, “the place in which I am living has not significance as a geographical concept but as my home” (as quoted by Relph 1976:6). As noted earlier, Relph asserted that deeply knowing places, having close, intimate involvement with places, is as essential for humans as relationships with other people are. This is part of our identity as humans, part of our sense of ourselves and our sense of a world that makes sense. Relph argued that place is complex and layered: “Place is not a simple undifferentiated phenomenon of experience that is constant in all situations, but instead has a range of subtleties and significances as great as the range of human experiences and intentions” (p. 26). Both Relph and Tuan addressed the social construction of places, discussing place-making as an ongoing process (see, e.g., Relph 1976:71).

In addition to geographers such as Tuan, Relph, and Seamon, other fields dealing with place have also leaned on phenomenology for at least philosophical and paradigmatic guidance. An example of this can be seen in the environmental psychology of Fishwick and Vining (1992). Using phenomenological methodology, they studied the

varying landscape preferences evidenced in the sense of place held by different kinds of people and used their findings to make recommendations to resource managers.

Many other place scholars have followed these phenomenologists in emphasizing a holistic approach to place scholarship, if not in using phenomenological theory or methodology. A good deal of place literature has used alternatives to positivistic, hypothesis-testing psychometric approaches.

*Place Scholarship in the Natural Resource
Social Sciences*

Another strand of place scholarship came from the natural resource social sciences. Although informed, to varying degrees, by the phenomenological work that preceded it, this literature developed along different lines, in response to other issues. As has already been noted, one of the issues spurring the development of place literature within this area was the desire to convince resource managers to include the social, human dimension in management decisions about ecosystem places. The biggest issue here was that “place,” referring to natural settings and their meanings, was not seen as being relevant to natural resource and public land management (Farnum et al. 2005; Williams and Patterson 1996). On the one hand, despite the move within public resource management agencies such as the Forest Service towards an ecosystem approach, people were typically not being considered as a real part of those ecosystems. Galliano and Loeffler (1999) charged that ecological approaches ignore social science input because it is difficult to apply in the context of “more traditional biophysical approaches to public land and resource management” (p. 7). As Williams and Stewart (1998) observed, “...there is still a tendency to treat people as autonomous individual agents outside the

ecosystem, at best a source of values to be incorporated into decisions, at worst agents of catastrophic disturbance of an otherwise smoothly running system” (p. 18).

On the other hand, when people were included in management considerations, it was primarily as consumers of resource commodities. In this context, geographic setting rather than “place” was a more appropriate characterization of the spatial considerations, since the primary concern was the distribution of these “resource commodities.” In this commodity view, the people of interest were primarily recreationists and visitors to public lands, seen as rational consumers who decide on settings based on the utility of recreation or tourism attributes, and the potential of those attributes to satisfy recreation goals—or, as Mitchell et al. (1993) characterized it, as shoppers looking for the best buys among use attributes (p. 34). This perspective emphasized the tangible properties of resources, properties that can be manipulated and are substitutable across settings—in fact, in this view settings are interchangeable and reproducible—with the management goal being to match setting types and use/user types. Places are seen as the sum of these functional attributes. This commodity perspective produced studies of the perceived utility of settings, consisting of inventories of resources and attributes, and has been criticized by many natural resource social scientists (Farnum et al. 2005; Galliano and Loeffler 1999; Mitchell et al. 1993; Williams and Patterson 1996; Williams et al. 1992).

Williams and Patterson (1996) categorized this perspective as falling within an opportunity structure/goal-directed paradigm that assumes people are rational planners who choose settings based on goals for maximizing recreation activities. In this paradigm, meanings are tangible, goal-oriented, rational, instrumental, and related to behavioral and economic goals. Williams and Patterson noted this view was well suited

to what they characterized as the “rational, instrumental, and commodity-oriented traditions of resource planning” (p. 511). Technical and analytical tools were developed to inventory resource attributes, including the Recreation Opportunity Spectrum (ROS), which allows the mapping of “specific biophysical, cultural (social), and managerial characteristics of a landscape that appear to facilitate particular recreation goals” (Williams and Patterson 1996:511). FORPLAN is a similar tool that has been used by the Forest Service; it considers “outputs” and the “optimal combination of goods and services” from a resource setting, but in the process, fails to capture social meanings of places (Mitchell et al. 1993:35-36).

This commodity perspective, with its neglect of place-specific meanings, was the primary impetus for the emergence of place scholarship within the natural resource social sciences. ROS was criticized by place scholars for its assumptions of human rationality, its reductionism (reducing meanings to utility), and its neglect of sociocultural issues such as symbolism, inequality in opportunity, etc. (e.g. Fishwick and Vining 1992; Williams and Patterson 1996). Mitchell et al. (1993) pointed out that ROS categories were not intended to fit all situations, arguing that ROS was intended to be a macro-level planning tool that can create problems when implemented at the micro level. Place scholars raised a number of concerns with the commodity perspective. Some argued resource managers were relying on technical and analytical tools for decision-making while leaving out the meanings of places, relationships between people and places, and affective experience with places (e.g. Galliano and Loeffler 1999; Schroeder 1996; Williams and Stewart 1998). Others took issue with the idea that unique places, with unique meanings, could be substitutable or replaceable just on the basis of recreation

attributes and seen as means rather than ends in themselves (e.g. Mitchell et al. 1993; Williams et al. 1992).

This view gave rise to a series of response-type essays arguing for a perspective that considers specific places, their meanings and value to the people who care about them (e.g. Galliano and Loeffler 1999; Schroeder 1996; Williams and Patterson 1996; Williams and Stewart 1998); papers that theorized about the importance and uniqueness of specific places (e.g. Williams and Carr 1993) and developed a theoretical model to map place meanings (Williams and Patterson 1999). Additionally, researchers conducted empirical studies to further develop theory (e.g. Brandenburg and Carroll 1995; Mitchell et al. 1993) as well as test the empirical validity of the commodity approach against a place construct (e.g. Williams et al. 1992). Other works were written to assist management professionals in sorting through and applying the scholarship on place (e.g. Williams 2008; Williams and Patterson 1999). In responding to the issues outlined above, this body of literature has moved away from an abstract, generalized view of places that has been characterized as reductionist in that it reduces places to their instrumental attributes measured by “technical analyses.” Instead, this scholarship uses a holistic, place-specific, meaning-rich view of place. “Considering place in resource planning moves away from a reductionist view of the landscape largely because the method in which this information is gathered focuses on allowing people to express their feelings about an entire setting rather than responding to the preconceived categories of managers, public officials, and/or scientists” (Brandenburg and Carroll 1995:396).

Although there are works within the natural resource social science place scholarship that do not fit this description, as a whole the literature that emerged as a

response to the commodity perspective has a number of shared characteristics. These include a shift from a setting-as-commodity view to a place-as-meaning view, and a corresponding move away from the quantitative analyses of ROS inventories of settings with substitutable traits towards more qualitative, idiographic, place-specific studies concerned with the role of meanings specific to unique places. Connections to earlier place literature, as well as some of the disciplinary roots within natural resource social sciences, can be seen here. The response of place scholars to perspectives using reductionist, quantitative abstractions parallels the rise of phenomenology as a response to positivistic, hypothesis-testing work, and the emergence of environmental psychology as a response to prior abstract, detached, experimental psychological methods of social psychology. Along with more qualitative methodologies, there was also a shift to more inductive theory (e.g. Brandenburg and Carroll 1995; Mitchell et al. 1993).

This shift in focus acknowledges that the landscape or place carries meanings for people, which vary across individuals and social groups. Williams and Patterson (1996) advocated paying attention to cultural history as well as natural history of places, arguing that social scientists should work towards capturing the full range of meanings a place holds, rather than just commodity-type meanings. Williams and Patterson put this shift in the context of the move from a more molecular type of resource management (e.g., stands within forests) to a more molar ecosystem approach, thus enlarging the unit of analysis.

Galliano and Loeffler (1999) argued, “today’s managers must be aware that natural resources are no longer considered simply raw materials to be cataloged and manipulated as commodities...” (p. 24). They saw place meanings as playing a key role in successful ecosystem management and planning. These authors advocated using place

assessments focusing on “locations, names, and meanings of the attachments people share for geographic areas” (p. 2), to provide ways managers can discover the importance of places to people and use these meanings to inform decision making, and open dialogue between resource managers and residents and visitors of resource places (see also Williams and Stewart 1998). Concerned with place meanings among culturally diverse populations living in urban areas that border outdoor recreation places such as national forests, Williams and Carr (1993) considered the degree to which meanings are socially defined and shared among social group members, arguing managers need to pay attention not only to what places mean, but to the full range of meanings places hold for people.

Schroeder (1996) argued for the consideration of deeper issues than just resource use and activities associated with places, issues such as affective experience, including powerful feelings like awe and magnificence, feelings of spirituality—in short, what Schroeder referred to as “the ecology of the heart.” Williams and Stewart (1998) also argued for the consideration of emotional and spiritual bonds people have with places within ecosystem management.

Empiricism from this stage of place scholarship. As noted earlier, a good deal of the research from this strand of place literature used qualitative methods. Some writers argued explicitly that typical positivistic, quantitative methods do not serve well to get at place meanings. For example, Kruger (1996) posited place should be understood as a cultural system, suggesting the use of an interpretive approach to access “a cultural system of meanings, symbols, metaphors and myths” (p. 4). She advocated using participatory research methods to access place meanings for social assessments, arguing against using an “empirical-analytic” quantitative approach on the basis that is it

“abstracts humans from nature and place and devalues the knowledge people have” (p. 2). Kruger and Shannon (2000) demonstrated how participatory action research can be used to supplement other research approaches by using “citizen researchers” in conducting a social assessment in the White Pass community in southwest Washington. The authors reported the process resulted in increased credibility with residents, and improved relationships between resource managers and the local community.

Other researchers advocated qualitative methods because of the complexity associated with place meanings and values (e.g. Brandenburg and Carroll 1995; Schroeder 2000), and to uncover voices that may be missed in deductive, quantitative approaches (Brandenburg and Carroll 1995). Methods have included open coding of answers to open-ended survey questions (Schroeder 2000, 2002), individual and group interviews conducted with recreation users (Mitchell et al. 1993), and inductive data analysis of semi-structured interviews and observations of rural residents (Brandenburg and Carroll 1995).

Although much of this research has used qualitative methods, quantitative studies have also been conducted, albeit sometimes with hesitation. For example, Kaltenborn (1998) conducted a survey to test sense of place as a predictor of concern for environmental impacts, to see if it would be useful to include in environmental impact assessments. In his discussion of the findings, the author grappled with having used “relatively simple [quantitative] empirical measures” (p. 186) to consider sense of place, a concept with a “complex and idiosyncratic nature,” a situation that “presents interpretative problems” (p. 185). He argued “sense of place should be examined as a broad emotional attachment comprising intertwined and inseparable components...sense

of place is created through the interaction of people and places, and the experience of place cannot be separated from the specific situation and the behavior occurring in the place” (p. 186). Nonetheless, he concluded that the study showed these measures can get at some of the variability in sense of place, providing information with practical implications for resource managers.

Some researchers have distinguished between studies of place, sense of place, place meanings, and place attachment, seeing place attachment as one manifestation of place, for example. In this case, although the researchers may typically prefer qualitative studies of place on philosophical or paradigmatic grounds, the distinction between concepts may make a difference concerning methodological approaches on particular areas of focus such as place attachment (Williams, personal communication 2006).

Researchers using quantitative methods have done much work on index development, particularly for place attachment.¹¹ Some of this quantitative research was in direct response to the commodity perspective outlined above. For example, using the measures developed by Williams and Roggenbuck (1989), Williams et al. (1992) tested attachment to place compared to attachment to types of places that provide particular recreation uses, calling this latter construct wilderness attachment, and conceptualizing it to operationalize the commodity perspective. Williams et al. found that these are distinct concepts which, despite some intercorrelation, perform differently. They concluded that people are involved with, attached to, and care passionately about specific places, which

¹¹ As has already been noted, research has included developing a index for measuring place attachment as an overarching construct with dimensions of place identity and place dependence (Williams and Roggenbuck 1989), testing that index (Williams et al. 1992), its refinement (Williams et al. 1995), further testing and refinement across multiple data sets (Williams and Vaske 2003) and eventually a meta-analysis across 10 data sets (Backlund and Williams 2004).

are “not just the sum of interchangeable attributes, but whole entities, valued in their entirety” (p. 44). Using these findings and others like them, Williams (2004) argued that the presence of place attachments suggests that recreation settings mean more to users than an instrumental means to the end of merely having a setting for their activity; rather these places are “symbols of identity and serve as repositories for emotions and relationships that give meaning and purpose to life” (p. 368).

Additionally, researchers have conducted quantitative studies of other areas of interest for natural resource managers. For example, in a study of place attachment as a predictor of support for natural resource management of a national park in Norway, Kaltenborn and Williams (2002) found that, for the most part, the perception that potential management objectives were important was positively related to levels of place attachment. Another study tested place attachment among users as a predictor of perceptions of the social and environmental condition of the Appalachian Trail; Kyle et al. (2004) found that place identity and place dependence acted oppositely in relation to users’ assessments of the conditions on the trail.

This has been a small sampling of natural resource social science work on place from this strand of place literature. Currently, the prevailing view among natural resource social scientists studying place is that places are made up of individualized, unique properties, and should be evaluated holistically (Farnum et al. 2005). The relationships people have with places tend to be unique and place-specific, because individual places hold deep meanings and value for people. This is true for both recreationists as well as local residents.

It should be noted that the perspectives noted here are not the only ones present in the natural resource social science scholarship on place, however this is the body that emerged as a response to the economic, commodity-oriented literature noted above. This is also the literature that gave rise to the next strand in place scholarship.

The Positivist or Psychometric Response

The next strand of place scholarship is the only one that emerged as a direct response to trends within the place literature itself. The authors in this stage were reacting to the resistance to positivistic science seen with both the phenomenologists and a good share of the natural resource social scientists that followed. These nonpositivistic works were criticized by some place scholars as “confused and vague” (Shamai 1991), using “fuzzy” definitions (Lalli 1992), and as exhibiting a “relative lack of construct clarity and an avoidance of hypothesis testing” (Stedman 2002:562). An example of the portrayal of these prior works can be found in Shamai (1991), who, in describing the development of the concept “sense of place” stated,

Some analysts appear to take the meaning of the term as used by individual subjects, and do not in anyway try to define the concept precisely; these can be labeled as holding ‘non-positivistic’ views (mainly phenomenological). Other studies have tried to be more accurate, mainly when an operational definition was required for an empirical study. These studies were based on positivistic (behavioral) approaches. (Shamai 1991:347)

Some of these critiques were raised in the early 1990s (Lalli 1992; Shamai 1991). Shamai used place theory from phenomenologists such as Relph (1976) and others to develop her sense of place scale (discussed earlier), including both logic and items; other place scholars adapted her scale (e.g. Kaltenborn 1998) or used items from it in developing

their own (e.g. Jorgensen and Stedman 2001; Vorkinn and Riese 2001). Shamaï (1991) acknowledged the usefulness of descriptive work on place, but raised concerns that it lacked systematic analysis, and because of the place-specific focus, usually could not be generalized to other places. Lalli (1992) took issue with both theory and empiricism of prior works, and argued that substantially different empirical measures would be necessitated by more adequate theory.

Then in 2001 Jorgensen and Stedman published a research paper on sense of place among lakeshore property owners in northern Wisconsin that laid down the foundation of what was to become Stedman's argument for quantitative, positivistic research (see also Stedman 1999). Jorgensen and Stedman (2001) characterized positivistic research as using researcher-defined variables, being quantitative, and conducting hypothesis testing. Stedman (2002, 2003b) argued that, while phenomenological approaches are useful with their attention to detail and intimate knowledge about specific settings for particular groups, their "particularistic view of sense of place" did not allow for generalizable principles. He also argued that traditional forest management relies on "conventional positivistic science and its hypothesis-testing approach" (2003b:824), and therefore, "the contribution of sense of place to forest management has been minimal" (p. 822).

Stedman's main point was not just that a quantitative approach was needed, but rather quantitative studies that test "hypotheses informed by theory" (2003b:825); in fact he made a plea for "introducing greater complexity and theoretical richness into quantitative measures" (p. 825, see also 2002). He specifically advocated for studying the complexity of place by considering dimensionality, the relationship between factors, the

influence of variables, causal relationships, etc., all which could be taken from place theory and stated as testable hypotheses, particularly with what he referred to as a social psychological approach—that is, informed by social psychology theories regarding attitude and identity. Stedman argued that this would be a “middle ground” approach, in that it would be less place specific than the place scholarship from phenomenology, and the environmental psychology and other natural resource social science approaches that have avoided positivistic methods. The value of this approach, according to Stedman, would be allowing useful and potentially predictable variation to be seen both within and between places, which could be understood using traditional quantitative analysis techniques. Stedman stated that he was not advocating less phenomenological thinking, but rather saw these works as the basis of theory, and saw the job of the quantitative researcher as creating and testing hypotheses from this theory, using positivistic approaches such as concept precision, understandings of process and causality as well as factors leading to variation.

In another research paper in this body of literature, Pretty et al. (2003) acknowledged that the issues outlined here were predicted by Relph’s caution against positivist treatments of place phenomena, however they maintained the importance of the understanding to be gained from considering distinct dimensions of sense of place.

The Social Construction of Place

The final theme I address is the emergence of social constructionism in place scholarship. There have been references to place being socially constructed or socially created since the 1970s (e.g. Lee 1972; Tuan 1977), although using a social

constructionism perspective has become more common in the last decade. It must also be understood that there is a wide range in what is meant by social construction, and in the centrality of its role in the works that refer to it. This is partially due to the meaning and usage of the term, social constructionism, and partially due to the variety of work that can be subsumed under the term.

Social constructionism is a phrase that, on the one hand, can be broadly used to refer to one of the foundational ideas of sociology: there are social explanations for how things work, for how society—including the individuals and groups within it—operates. Durkheim's concept of social facts is an early example of this. However, the phrase is also used within sociology to refer to people's active construction of their world through social interaction, or the creation of shared understandings of reality which come to be taken for granted. This latter idea was developed by Berger and Luckmann ([1966] 1967), whose theory of the social construction of reality was strongly informed by Schutz's phenomenology as well as Mead's symbolic interactionism. Since an interactionist perspective maintains that meaning is socially created through social interactions, and one of the central concerns within place literature is with place meanings, I include interactionist works within this body of social constructionist scholarship.

Because of these roots in phenomenology and interactionism, the use of a social constructionist perspective in the social sciences grew as a response to, and critique of, positivistic epistemology. Within the place literature, this was not, for the most part, a response to positivistic traditions within place scholarship, but rather within academic study and the social sciences more broadly. Scholars came to this strand of place

literature through perhaps three main points of entrée. Some place scholars were as committed to a constructionist perspective as they were to work on place (e.g. Stokowski 2002). For others, particularly from environmental psychology and the natural resource social sciences, a social constructionist approach appears to be just the next step in the evolution of their work—already-demonstrated commitments to a sociocultural perspective (as opposed to a more narrow psychological view, for example) appeared to lead to a commitment to nonpositivist approaches to place (e.g. Williams 2000, 2002a; Williams and Patterson 1999). Other scholars, especially some sociologists, were well versed in constructionist perspectives (including interactionism) and may have used them in other aspects of their work; their research interests brought them to “place.” These latter typically came from areas of sociological study that are more spatially oriented, such as rural sociology and/or environmental sociology, as noted previously. For these, place presented a natural topic of interest (e.g. Freudenburg, Frickel, and Gramling 1995; Petrzelka 2004).

There is a good deal of variety of work in this category. Although social constructionism is the most sociological of the perspectives on place, a social constructionist approach has also been used by other social scientists, for example, environmental psychologists (e.g. Wapner et al. 2000; Williams 2000, 2002a), geographers (e.g. Tuan 1977, 1991), and natural resource social scientists (e.g. Cheng, Kruger and Daniels 2003; Yung et al. 2003). There has also been much diversity in how a social constructionist approach is presented. Some authors argued for a constructionist approach specifically because of its resistance to positivistic philosophy (e.g. Stokowski 2002; Tuan 1991; Williams and Patterson 1999), while others presented constructionism

or interactionism as the particular perspective they chose for particular place projects, especially because of the focus on meanings within the place literature, without necessarily linking that choice to philosophical rationales (e.g. Eisenhauer et al. 2000; Freudenburg et al. 1995; Greider and Garkovich 1994). Interestingly, nearly all the scholars in this latter category are sociologists, while there are fewer sociologists among the place scholars using constructionist approaches specifically as an alternative to more positivistic approaches.

Although the various social sciences approach social constructionist thinking in very similar ways, there are a few significant, discipline-based distinctions. One is the difference just noted—for some sociologists using a social constructionism approach, constructionism appears to be seen more as a methodological issue than a philosophical one. Social constructionist considerations do not necessarily fall into the same category of radicalism in sociology that it does in some other disciplines, such as social psychology (Burr 1995). This may be due to two interrelated issues. As noted, within sociology the issue of society being made up of social constructions is a disciplinary cornerstone, hardly considered radical stuff—in fact it has been said that for this usage, “the term is more or less synonymous with sociology itself” (Abercrombie, Hill, and Turner 2000:320). On the other hand, for a discipline focused on individual motivations and internal processes such as psychology, to consider phenomena from the perspective of the social as the primary driver may seem more radical in itself, and thus, may need the motivation of anti-positivistic thinking to spur its use.

Burr (1995) described social constructionism as informed by postmodernism and “offering radical and critical alternatives in psychology and social psychology” (p. 1).

She referred to alternatives to the positivism and empiricism found in traditional psychological and social psychological assumptions, alternatives such as anti-essentialism, anti-realism, knowledge being historically and culturally relative, and a larger focus on social interaction and practices than is typical in the psychological tradition. The description of social constructionism from an environmental psychology perspective focuses on somewhat different themes: "...cognitive processes involve the person's active construction of objects of perception and thought... In line with this, human beings are regarded as striving agents capable of creating, constructing, and structuring their environments in various ways and of acting in terms of their own experience" (Wapner et al. 2000:294). The difference in foci between this description and a sociological one can be seen in the reference to cognitive processes, and in the unit of analysis, described by Wapner et al. as being the "*person-in-environment system*" (p. 296, emphasis mine).

The significance of a social constructionist approach to place is severalfold.

Williams (2000) described it:

A constructionist approach...addresses the historical, cultural, and political processes by which humans seek out, create, evaluate, and contest specific place meanings. Within the context of nature and wilderness, social construction refers to social, cultural, and political processes by which groups of people create shared meanings and understandings of a place and how these shared meanings, in turn, structure social actions in, and with respect to, those places. (Williams 2000:77-78)

Stokowski (1991) listed concerns considered by a social constructionist approach to place: how place is constructed, by whom and with what interests, how the constructions are adopted, how different conceptualizations of places affect different groups; also how places influence people, what social and political consequences result from that, and for

whom (p. 371). Examining these issues has been undertaken in a number of different ways within this body of place scholarship.

For example, some scholars have taken an interactionist position to consider how understandings of landscapes and special places are created through the social interactions of people who are connected to a place in some manner, but taken it a step farther to include the physical, geographic setting as a partner in this interaction, describing a reciprocal relationship between humans and landscape (e.g. Brandenburg and Carroll 1995; Eisenhauer et al. 2000). Others have acknowledged the objective, tangible, material reality of specific geographic settings, while asserting the importance of looking beyond the physical properties of places (Stokowski 2002), or even taken the stronger position of pointing out that even our perspectives and understanding of these physical properties are socially constructed (Freudenburg et al. 1995; Greider and Garkovich 1994). One of the basic tenets of constructionist thinking is the idea that there are typically multiple social constructions of any given phenomena, ideal or material. In place work, one of the most salient questions is that of whose constructions are accepted and validated or legitimized, that is, whose understandings become taken for granted in society. This constructionist question of power and politics of place has been examined by a number of place scholars (e.g. Cheng, Kruger, and Daniels 2003; Williams 2002b; Wulfhorst, Rimbey, and Darden 2006). A number of scholars have argued that examining discourse about places, and even the language used, could yield a good deal of understanding about how this inherently political legitimizing process occurs (e.g. Petrzalka 2004; Stokowski 2002; Tuan 1991; Yung et al. 2003).

The place literature addressed in this section includes three somewhat distinct but very interrelated areas of scholarship: the social construction of reality, including interactionism; the politics of place; and language and discourse in place-construction.

The Social Construction of Reality. The cornerstone paper for the social constructionist literature on place is a theory essay by Greider and Garkovich (1994). Their opening lines, “Every river is more than just one river. Every rock is more than just one rock,” because each is seen differently depending on identities held by the observers of that landscape, have become familiar to most place scholars ever since, no matter their perspective. Greider and Garkovich argued there are multiple constructions of any given landscape, for example, the same land is seen differently by real estate developers, farmers, and hunters, because of their varied identities and the interests they hold in the landscape, and that the “symbolic meanings and definitions are sociocultural phenomena, not physical phenomena...” (p.1). They went on to demonstrate how these multiple constructions lead to political issues, including the potential for conflict.

Greider and Garkovich (1994) based their approach and argument in Berger and Luckmann’s ([1966] 1967) theory on the social construction of reality, which is grounded in the sociology of knowledge and informed by phenomenology and symbolic interactionism. Their interpretation and application of Berger and Luckmann’s perspectives to the topic of place has become well used within the place literature. I return to Berger and Luckmann’s ([1966] 1967) social construction of reality, as well as Greider and Garkovich’s interpretation of it, later.

Place scholars using a social constructionist perspective tend to refer to Greider and Garkovich (1994) as the pioneering piece on social constructionist and interactionist

approaches to place. However, there have been references to the social construction of place all the way back to Tuan's chapter on the creation of place (1977). In fact, in a 1972 interactionist study, Lee examined the social definition of recreation places in an inductive theory-building work using interviews, observation and document analysis. A natural resource sociologist, Lee visited familiar sociological territory, such as how places are structured (e.g. neighborhoods, districts, etc.), 'rules of conduct' or norms associated with different kinds of places (e.g. museums compared to picnic grounds), and the negotiation of meanings or definitions of objects and places through social interaction. He found that people were generally more comfortable with places where they could count on others behaving in predictable ways, "where they may share a scheme of order with others similar enough to themselves to be able to take for granted many everyday normative constraints," despite being in the place for recreation (Lee 1972:82).

Others have also taken an interactionist perspective, arguing that places are constructed through individual and group interaction with other people, as well as through a reciprocal relationship with the physical place itself (Brandenburg and Carroll 1995; Eisenhauer et al. 2000). Brandenburg and Carroll (1995) used qualitative methods to explore residents' feelings about management of a local river drainage in Washington state, considering the process of place creation in both a social and cultural context. They found that direct experience with the place in question—that is, interaction with it—could lead to a different process of place creation among group members than the more abstract process that occurs when group members have no experience with the place, and that, in group situations, the culture of the primary group could serve to stifle expressiveness of

other (more marginalized) group members. Eisenhauer et al. (2000) conducted research exploring similar issues in a study of attachment to special places on public lands in southern Utah. Using an interactionist approach informed by Greider and Garkovich (1994) and the findings of Brandenburg and Carroll (1995), Eisenhauer et al. hypothesized that local community cultures influence the sense of place experienced by community residents—that is, the local culture is involved in the social creation of a sense of the place in question. This would be so because of shared environmental values rooted in the culture of individuals' social groups, based on, again, a reciprocal relationship with the natural places. The researchers conducted an inductive analysis of qualitative data, and used their findings—that the community did play a role, but was only one part of how people come to feel that places are special—to argue against management policies of substitutability mentioned earlier. They also concluded with a reminder that, because social constructions are “processive rather than static,” there should be periodic monitoring of the interactions between people and places (p. 439).

While the scholarship just described emphasized interactionism, other scholars have emphasized the social constructionism more strongly, focusing far less on the material. In these works, the point is made that what *really* matters about the material, physical place is people's construction of it. Freudenburg et al. (1995) used this strong constructionist approach in their theory essay on what they observed was often termed the “nature/society divide,” by which they meant a dichotomous, either/or view of the natural and the social. Freudenburg et al. argued that in fact the natural and the social are “conjointly constituted”—in other words, they make each other up so completely that they are fundamentally interconnected and inseparable. As they put it,

The physical characteristics do matter, but they matter in a way that depends to a large degree on the practices, perspectives, and technologies that are taken for granted in a given time and place. At the same time, the social definitions of the situation can depend—in unrecognized as well as recognized ways—on the physical environment, both in its raw form and as modified by past human activity. (Freudenburg et al. 1995:372)

While conceding that the physical may be separated from the social for the sake of analysis, Freudenburg et al. asserted the point that there is much social in what is seen as physical, and vice versa, should never be forgotten.

The place work of Williams, alone (e.g. 2000, 2002a, 2002c) and with Patterson (1999), appears to have evolved into a social constructionist perspective. As an environmental psychologist, it is not surprising that all of Williams' work on place has emphasized a sociocultural perspective. However at least as early as Williams and Patterson (1999), a theoretical piece suggesting a framework for mapping place meanings as a part of ecosystem management, the work in this series of theoretical essays began to refer explicitly to social constructionism and advocated for social constructionist approaches. Here the reference to social constructionism was twofold—arguing for the importance of seeing ecosystems as socially constructed, and also arguing for “post-positivist approaches” (p.155). Although they did not connect the two, as has been seen, many scholars used a constructionist approach at least partially because of its non-positivistic methodologies and philosophy.

In papers presented at the World Wilderness Congress (2000), and conferences on the Arctic wilderness (2002c), and natural resource management (2002a), Williams discussed the social constructions of wilderness, nature, and forests, advocating an approach informed by Greider and Garkovich (1994), posing it as an opposite approach

to more goal-directed or utilitarian perspectives. Using this constructionist framework, Williams argued that one of the jobs of resource professionals is that of negotiator of meanings of environmental features (2000); and with socially constructed and politicized senses of science (i.e. epistemology), the job is to negotiate a “shared” sense of place, as in making sense together while living—and seeing things—differently (2002a).

The Politics of Place. Not all place literature concerned with the politics of place comes from a social constructionist perspective, for example, Manzo’s (2003) addressing of the politics of place in her literature review of works on affective relationships with place took more of a critical perspective. Also, as with other literature in this constructionist category, those who used this perspective varied considerably in how central a role constructionism played in their work.

The place scholars I address in this section all use similar perspectives to those outlined above, however they were particularly interested in the politics involved in the social construction of places, and in competing definitions of place. Tuan (1977) addressed these issues in his chapter on the creation of place. He told the story of scientists using precise measurements to determine which one of many lakes and springs in an area is the original source of the Mississippi River. Once it was marked and designated, it became a place, a destination. “Scientists thus appear to have a certain power: they can create a place by pointing their official fingers at one body of water rather than another” (Tuan 1977:162). This is one of the many dynamics considered in this body of scholarship on the politics of place.

As Williams (2002b) stated, “To talk about the politics of place is to recognize a process in which place meanings and values are actively and continuously contested and

re-constructed within individual minds, shared (or not so shared) cultures, and social practices” (p. 354). In this theory piece, Williams observed that leisure makes competing claims on places. His point could be exemplified by the conflict between snowmobilers and cross country skiers in Yellowstone National Park, or any number of other issues where recreationists have competing definitions of places. Williams argued that there is a relationship between leisure places and social differences—the leisure places (and their definitions and uses) create and structure differences, which then can be used to privilege some interests with respect to those places. Because of this, resource managers, as well as place scholars, need to be sensitive to political issues when dealing with place. Williams pointed out that concepts like place attachment and sense of place “are necessarily political because (a) place meanings create and structure social difference (serve to define us/ them, locals/outsideers) and (b) claims of what belongs to a place (what kinds of meaning and practices are deemed authentic to the place) are often invoked to assert power and authority over place” (p. 354). Williams concluded that the process of resource planning itself is participating in the politics of place, and advocated moving from a top-down style driven by experts to a more bottom-up, inclusive style that is “radically participatory and democratic” (Williams 2002b:365).

The complexity of this task can be seen in Greider and Garkovich’s (1994) observations about factors that influence who has the power to create, sustain, negotiate and impose their constructed definitions on others. They included being able to define what counts as information, or to construct knowledge; control of this constructed information or knowledge; and being able to mobilize support—in other words, the varying degrees of skill groups have with using power, access to media, and impression

management (p. 17). Some groups are more skilled at exploiting participatory and democratic processes than other groups.

In response to these concerns, Cheng et al. (2003) suggested place-based collaborative processes for negotiating contested definitions of places. In their essay proposing a research agenda focused on the politics of place, they argued that these collaborative processes are more focused on problem solving, trust building and interaction between players, as opposed to the more formal political processes where positions on single issue policies are pushed by a coalition of interest groups. Cheng et al. characterized the former as the politics of place and the latter as the politics of interests, and argued that the politics of place lends itself to better collaborative processes because all who are involved value the place in question. Thus, the place becomes the central focus instead of winning or losing political battles. The authors took a social psychological position that pointed to the role of cognitive processes, but operated from the assumption that place is “constructed—and continuously reconstructed—through social and political processes that assign meaning,” and what is considered appropriate behavior towards places is also socially constructed (p. 90).

An example of the type of research done on the politics of place is a study conducted by Wulforth et al. (2006), who examined how sense of place was negotiated among different groups in an area experiencing rapid population growth in southwest Idaho. In their conceptualization they referred to Greider and Garkovich’s (1994) socially constructed landscapes, but drew more from other works on the politics of place (e.g. Cheng et al. 2003; Yung et al. 2003). Triangulating their work by using both qualitative and quantitative methods, Wulforth et al. found that when varying groups with different

definitions claim a sense of place for the same location, the structure of the community can be affected—however, that same dynamic can lead to increased and diversified social interactions within the community. They noted that “fundamental differences” in how landscapes are used for work, play and residence “can breed equally passionate rationales and definitions of the situation that may conflict rather than complement each other in their consequences” (Wulforth et al. 2006:181).

Language and discourse. One way the politics of place, particularly place making, has been explored is by examining language and discourse. Tuan described it this way:

Taking language seriously has a number of intellectual consequences or rewards. It enables us to understand the *process* of place-making better by recognizing a force previously neglected, if not wholly ignored. It enables us to understand the *quality* (the personality or character) of place better, for that quality is imparted by, along with visual appearance and other factors, the metaphorical and symbolic powers of language. (Tuan 1991:694, emphasis in original)

Yung et al. (2003) explained further, “The meanings of a particular place, or place meanings, are conveyed and created through discourse. Discourse is more than just language. Discourse is a coalition of meanings...” that includes ideas, concepts and categories that are constructed through social practices (p. 856). The writers of the place literature using a discursive perspective emphasized that language and discourse have central roles in place-making—that is, the social construction of places. For example, Tuan asserted that geographers can create place “by their eloquence” (1991:693). These scholars argued that not only can language and discourse create a place, they can change it—that is, they can change what is perceived about it, what it means, and in so doing, they can change the people connected to the place (e.g. Petrzeka 2004; Tuan 1991).

In a theory paper advocating a narrative-descriptive, phenomenological approach to studying place, Tuan (1991) eschewed causal explanations, arguing they are situational. He encouraged geographers to pay more attention to the role of language in their analyses of place creation and maintenance. Stokowski (2002) encouraged other social scientists to do likewise, with political consequences as a particular focus. Like Tuan, Stokowski advocated for nonpositivist approaches; in this theoretical piece advocating a research agenda she argued for postmodern perspectives which would push for looking beyond the physical properties of place to its symbolism and meanings. She maintained that language is key to these things, “people actively *create* meaningful places through conversation and interactions with others... The reality of places emerges and is confirmed in the common symbolic languages and discourse of people” (Stokowski 2002:372, emphasis in original).

Tuan emphasized the importance of naming in the place creation process: “Naming is power—the creative power to call something into being, to render the invisible visible, to impart a certain character to things” (p. 688). The importance of naming played a key role in research by both Petrzalka (2004) and Yung et al. (2003). Using a constructionist and discursive perspective, Petrzalka (2004) examined the role local and scientific discourses have in creating a place, creating definitions of that place, and the identity-making process that goes along with the place-making, both for the place and for the people connected to it. Using qualitative methods including document analysis, fieldwork, and semi-structured interviews of science professionals as well as residents, Petrzalka examined how a landform in western Iowa went from being “the hills,” a rural area that was ignored by those who did not live there and carried stigma for

those who did, to being the “Loess Hills,” a tourist destination named after the scientific classification of the landform. Petrzelka followed the dissemination—and eventual adoption—of scientific discourse into the local communities and beyond, and the consequences, both economic and identity-related. She reflected on her own role as a “diffuser of scientific information” by acknowledging the noteworthiness of the hills and the people connected to them in her study of them (p. 401). Petrzelka (2004) also noted that, “when an asset based approach to community development is taken, a landform that had generally been thought of as an economic disadvantage can be turned into one that is marketed to tourists” (p. 402).

Yung et al. (2003) also considered the importance of naming places, particularly when names—as representatives of place meanings—are contested. Their case study used semi-structured, in-depth interviews to explore place meanings and conceptualizations, the role of language and discourse, and the symbolism of the landscape itself along the “Rocky Mountain Front” in Montana. In this case, they reported that the adoption of the name signified winners and losers in the politics of place creation; however it was not easy to characterize these categories along typical divisions of long-term residents versus newcomers or visitors. This study showed the degree of heterogeneity that can be seen along these lines, and the consequences—ongoing conflict—for assuming shared values when codifying a particular conceptualization in a name and in management policies. Yung et al. argued that, to understand why seemingly straight-forward policy proposals can trigger public responses that appear overstated and perhaps tangential, resource managers and place scholars must understand the social context, including local symbolism. For example, words and phrases may be politically charged for groups of

people, so that the use of this language appears to represent one group or another, no matter how neutral the presentation may seem to the professionals involved.

Summary of social constructionist issues. There are some common concerns across the social constructionist scholarship. The main theme of all the work on place using a constructionist approach is the awareness that people's understandings of places, what places mean, how one should behave in and towards them, and the ways places are identified, are all socially constructed, they are all created and re-created through social interaction. This fundamental assumption has implications for how place issues are explored, presented and understood by the scholars represented here.

For instance, while the literature focused on place attachment and sense of place has tended to emphasize positive affective responses to places and collectively held shared meanings, the social constructionists have encouraged the acknowledgement and study of the multiple meanings places hold, and their contested nature, understanding place issues "as the intersection of both common ground and contested meanings" (Yung et al. 2003: 857). They have reminded readers that socially constructed phenomena like places, which are created and re-created, produced and reproduced through social interactions and processes, are inherently dynamic, contested, and have political implications; they can lead to conflict, the privileging of some groups over others, and have consequences for places and the people who are associated with them (Brandenburg and Carroll 1995; Cheng et al. 2003; Greider and Garkovich 1994; Lee 1972; Petrzelka 2004; Stokowski 2002; Tuan 1991; Williams 2002b; Williams and Patterson 1999; Wulfhorst et al. 2006; Yung et al. 2003). "So much is at stake in these diverse images and

experiences of a place, and it becomes a sociological truism to say that such symbolic constructions will be forever precarious and contested” (Gieryn 2000:473).

A directly related concern is the normative nature of place construction (e.g. Lee 1972; Stokowski 2002). Definitions of place include not only how places are to be understood, but also the types of behavior in and towards those places that are proper, expected, and acceptable (Cheng et al. 2003; Stokowski 2002; Williams 2002b). Here the concern is the power held by dominant cultural groups (Brandenburg and Carroll 1995; Eisenhauer et al. 2000; Greider and Garkovich 1994; Lee 1972; Williams 2002b; Wulfhorst et al. 2006; Yung et al. 2003) or by professionals (Petzelka 2004; Stokowski 2002; Williams and Patterson 1999) to impose their place values on social groups that lack this privileged status. Riley (1992) observed, “...the abstract, self-conscious attachment to the landscape opens the way for manipulation of symbols, and the exploitation of affection...using symbols not only to represent one’s own values but to impose them upon others” (p. 18). Greider and Garkovich (1994) defined power in the context of place as the “capacity to impose a specific definition of the physical environment, one that reflects the symbols and meanings of a particular group of people” (p. 17). This can lead to conflict and/or resignation, and can leave people confused as to how it came to be that their taken-for-granted understanding of a place is no longer how the place is seen or managed: “...when sense of place becomes contested by another’s reality or defined sense of place, individuals search for explanation and understanding about that which may seem out of their control” (Wulfhorst et al. 2006:181). These authors all advocated the examination and development of understanding of these issues by resource managers and place scholars; some advocated finding ways to give voice to

all involved people, finding bottom-up, inclusive management styles that are collaborative (Cheng et al. 2003), participatory and democratic (e.g. Williams 2002b).

As has been noted, another issue is how the physical setting is viewed by the scholar, with some emphasizing the importance of the physical aspects of place in people's relationships with—and constructions about—the place (e.g. Brandenburg and Carroll 1995; Cheng et al. 2003; Eisenhauer et al. 2000), and others arguing that the physical matters less, since meanings and the social interaction concerning the place are all socially constructed anyway (e.g. Freudenburg et al. 1995; Greider and Garkovich 1994; Stokowski 2002). This latter version in particular has been criticized by Stedman (2003a) as neglecting the important contributions the physical setting may make to people's place meanings and sense of place. Stedman argued that research on place has focused on meanings and attachment as products of social and cultural practices and processes to the exclusion of the very environment that gives rise to them.

Although a social constructionist approach can be rooted in a particular philosophical paradigm elaborated on earlier, even for those scholars who are less concerned with the paradigmatic underpinnings, most constructionist work relies on qualitative methods. Some have made arguments stating the importance of using a qualitative approach as opposed to a quantitative one (e.g. Brandenburg and Carroll 1995; Tuan 1991; Yung et al. 2003), others have simply used qualitative methods without comment. However, some researchers have used mixed methods, either triangulating work by collecting and analyzing both qualitative and quantitative data (e.g. Wulforst et al. 2006), or performing both qualitative and quantitative analyses of qualitative data (e.g. Eisenhauer et al. 2000). Cheng et al. (2003) advocated using diverse methods to “uncover

place-based connections” (p. 100), and list a number of options that includes quantitative as well as qualitative methods. Both of these approaches have yielded valuable information about the social construction of place and place meanings, as well as the constructed nature of the relationships people have with places.

Finally, another theme that comes up in some of this literature is the role we place scholars, resource professionals, and scientists play in the social construction of place (e.g. Petrzelka 2004; Williams and Patterson 1999). Williams and Patterson (1999) provided the example of language used in many place studies and management and policy documents, e.g. “user” to mean a person, implying place as what is used or not used, a throwback to the economic, utilitarian thinking many natural resource social scientists have been fighting with theory and research. Following the lead of others, the authors suggested “participant” or “inhabiter” instead of “user,” and “place,” “landscape,” or “habitat” instead of “resource” (p. 158). Petrzelka (2004) provided a model for reflexive thinking about our role as scholars, reflexive thinking that is necessary if we are to be truly aware of the dynamics of the social construction involved in the places we study and work.

Where We Have Evolved to: The Current Status of Place Scholarship

The topic of place has garnered much interest among social scientists in the last decade, an interest that has grown tremendously in just the last five years. The 2006 International Symposium on Society and Natural Resource Management (ISSRM) was an example of the abundance and diversity of ongoing work on place-related issues. The symposium had no fewer than seven place-related sessions, including two roundtable

panel discussions, and a total of 34 papers and one poster on place-related theory and research were presented. The authors of these papers came from a variety of settings, both academic and nonacademic. There were representatives of university programs in sociology and rural sociology, community resources and development, as well as diverse natural resource programs including forestry, fisheries and wildlife, recreation and leisure, tourism, ecology, environmental education, as well as various programs focused on “human dimensions” (e.g. society and conservation, environmental studies, etc.). The scholars from nonacademic settings included representatives from private, nonprofit agencies, state- and province-level resource agencies, and federal agencies from the United States including the Forest Service, the National Park Service, and U.S. Geological Survey. Because of the multidisciplinary nature of this symposium, as well as the high number of attendees (over 700 in 2006), this symposium is a good indication of the state of place scholarship, and also provides a good sampling of the kind of work that is currently being done.¹² Because so many place scholars were present at that symposium, it also facilitated a good deal of networking and led to continuing collaborative efforts, such as ongoing work on incorporating a place-based approach into natural resource management decision-making processes.¹³

Place scholars have published in a number of venues. Just within the last five years, the journal, *American Behavioral Scientist*, published a special issue on

¹² ISSRM 2007 and 2008 each also saw a number of papers and panels on issues of place, although not with the same emphasis as ISSRM 2006. The earlier year is described here as a sampling of the diversity and types of work currently being done.

¹³ For example, a series of coordinated sessions on “Fitting Place to Decision-Making” at ISSRM 2008, coordinated by William P. Stewart and Daniel R. Williams. These two researchers and others are also working on assembling an edited volume of work on this topic.

“Community Cohesion and Place Attachment” in 2006;¹⁴ a new technical report from the U.S. Forest Service titled, *Understanding Concepts of Place in Recreation Research and Management*, was published in 2008,¹⁵ in addition to literature reviews by Farnum et al. (2005) and Trentelman (2009), and numerous other Forest Service publications on place-related issues that have been released. During that same time theoretical and research articles have been published in *Human Ecology Review*, *Journal of Environmental Psychology*, *Journal of Leisure Research*, *Rural Sociology*, and *Society and Natural Resources*. This list provides further evidence that the study of place is still a multi-disciplinary endeavor.

Methodological Trends

The scholarship on place also remains diverse in terms of methodological approaches. In the last five years, a number of place scholars have conducted qualitative studies (e.g. Brenkert 2005; Cheng and Daniels 2005; Davenport and Anderson 2005; Petrzela 2004; Stedman et al. 2004). Nine of the place-related research presentations at ISSRM 2006 were reports on qualitative research, using methods such as document analysis, in-depth interviews, focus groups, and participatory action research. Several of these projects combined these more traditional methods for qualitative data collection with methods that used some degree of technology. For example, two of these projects used photo elicitation, where residents took photographs of areas that symbolized place attachment to them and then talked about the meanings of the photos in interviews

¹⁴ Volume 50, issue 2.

¹⁵ Kruger, L.E., T.E. Hall and M.C. Stiefel (eds.) 2008. *Understanding Concepts of Place in Recreation Research and Management*. (PNW-GTR-744) Portland, OR:USDA Forest Service, Pacific Northwest Research Station.

(Amsden and Stedman 2006) or focus groups (Stewart et al. 2006). One research project combined computer mapping (GIS) with “map biography,” a phenomenological interview technique that combines a narrative interview with locating places on maps for a spatial representation of place meanings (Bowes 2006). One study used participatory action methods to create an audio-visual documentary of community members and their favorite local places, the documentary was then used at public meetings as a way to facilitate discussion among community members (Cumming and Norwood 2006).

Another technology-oriented research method could be used for either qualitative or quantitative data collection. Moore et al. (2006) presented on experimental work being done in Ontario forest management planning, where three-dimensional computerized visualizations are used in interactive programs focused on specific, valued places in a forest area. The visualizations show how different forest management actions would impact the areas, which give the viewers a more meaningful way to evaluate potential impacts. This technology is currently being used to solicit public feedback in open houses and with local citizens’ committees.

A good number of quantitative studies have also been conducted in the last five years (e.g. Backlund and Williams 2004; Beckley et al. 2007; Kyle et al. 2004; Payton et al. 2005), including continued work on the development of indices for measuring place-related variables. Fourteen of the place-related research presentations at ISSRM 2006 were reports on quantitative research, including at least six that reported on continued work on index development and testing (e.g. Schroeder and Fulton 2006; also, see below). Two more paper presentations made suggestions for the development of quantitative approaches to particular research issues. Interestingly, given the resistance to

this assessment tool expressed by many place scholars (e.g. Fishwick and Vining 1992; Mitchell et al. 1993; Williams and Patterson 1996), one of these latter suggests quantitative approaches to improve the ROS¹⁶ (Yuan, McIntyre, and Moore 2006).

Qualitative and quantitative methods have been used together to triangulate a single study (e.g. Wulfhorst et al. 2006). Three of the studies presented at ISSRM 2006 used both qualitative and quantitative methods; of these, one conducted semi-structured interviews and focus groups that preceded a survey (Wyman and Stein 2006), while another used a quantitative scale followed by in-depth interviews of ten of the respondents (Cohen 2006).¹⁷

Qualitative and quantitative methods have also been used to triangulate a larger research project. Davenport's work presents an example of this. Davenport and Anderson (2005) used in-depth interviews and inductive theory to study meanings a Nebraska river and the river landscape held for local community members. Using the findings, grounded in the inductive theory that study produced as well as theory on place dependence from other sources, Davenport designed a series of questionnaire items to test as an index of place dependence (Davenport 2006). A number of these items had been used previously in various studies on place, including some typically used to examine place dependence and place identity (see Jorgensen and Stedman 2001; Williams et al. 1992), however Davenport developed a more inclusive list that examines a number of other issues.¹⁸ This

¹⁶ Recreation Opportunity Spectrum

¹⁷ The third research presentation that referred to used of both qualitative and quantitative methods was unclear (in the abstract) as to what methods were used and what the sequence was.

¹⁸ The items fall into six categories: economic stability; experience achievement, where she adapts items typically used for place dependence (Jorgensen and Stedman 2001; Williams et al. 1992); self identity, using the place identity items adapted from Jorgensen and Stedman (2001) and Williams et al. (1992); family legacy, using items adapted from Payton et al. (2003); community character; and nature and natural processes, both using items adapted from Davenport and Anderson (2005).

group of items has been used in a number of recent survey instruments, allowing it to be tested as an index; findings from a number of these studies were presented at the 2006 ISSRM, including explorations of an Illinois state park (Baker and Davenport 2006), recreation areas in Florida (Albritton and Stein 2006), a watershed in Illinois (Leahy, Davenport, and Anderson 2006), a national park in Minnesota (Thompson, Anderson, and Schertz 2006), and parks in Australia (Weber et al. 2006).

Debates within the Place Literature

The place literature is rather lively with debate, some of it calm, detached and polite, while some is rather pointed and, at times, given to sarcasm and exclamation points. Two of these debates have already been mentioned. The first is whether or not the scholarship on place is “messy”—and more to the point, whether or not any messiness is problematic. A number of place scholars have argued it is (e.g. Beckley 2003; Giuliani and Feldman 1993; Hidalgo and Hernandez 2001; Pretty et al. 2003; Shamai 1991; Stedman 2002); Patterson and Williams (2005) seem to be the only ones who have argued that it is manageable, and that there are completely understandable reasons why it is as messy as it is. Farnum et al. (2005) and Trentelman (2009) agree that it is understandable.

The second is the ongoing dialogue as to whether the social aspects of place should be emphasized more than the physical, since social meanings and interaction are what make it “place” rather than “space” (e.g., Galliano and Loeffler 1999; Low and Altman 1992; Relph 1976; Riley 1992; Tuan 1977), whether they should be treated as equally important (e.g., Brandenburg and Carroll 1995; Cheng et al. 2003; Eisenhauer et

al. 2000; Gieryn 2000; Stokols and Shumaker 1981), or whether to emphasize the physical aspects of places (e.g., Beckley 2003; Stedman 2002, 2003a). These last scholars have not argued so much that the physical should be emphasized more than the social, but rather have expressed concerns that it has not received enough focus. As noted earlier, Beckley (2003) suggested attempting to separate out attachments to sociocultural aspects of places from attachment to physical, geographic aspects in order to fully include both in the analysis of place attachment (see also Stedman 2002; see Beckley and Stedman 2007 for application of this approach). However Williams and Patterson (2007) have criticized this approach as reminiscent of the reductionism of ROS studies, arguing that place must be considered holistically.

The relatively recent entry of these and other community sociologists into place attachment work (e.g. Brehm, Eisenhauer, and Krannich 2004; Clark and Stein 2003; Stedman 1999) has come from nearly the opposite direction of some of the natural resource social scientists, concerned that technical analyses (e.g. the ROS) were putting too much emphasis on the “setting or container” (Williams and Patterson 2007) without consideration for the social meanings of the content. These natural resource-oriented community sociologists have been concerned that within the community literature, the focus is socio-cultural to the exclusion of the role of the container itself. Their goal has not been to switch the focus, but to ensure both are included (see, e.g., Beckley 2003; Beckley et al. 2007; Brehm et al. 2006; Clark and Stein 2003; Stedman 2003a). As mentioned earlier, community sociology is interested in community dynamics, of which community attachment is one aspect. Among natural resource community sociologists, the move to consider the social and the natural or physical setting as separate dimensions

of attachment (e.g. Beckley et al. 2007; Brehm et al. 2006) has been part of this larger focus on community dynamics.

In addition to these various stances, there are some who have taken a harder social constructionist position that the social is really what matters, and that the physical matters less (perhaps little) since our understanding of it is all socially constructed anyway (e.g. Freudenburg et al. 1995; Greider and Garkovich 1994; Stokowski 2002).

Concerns about Modernization Issues in Place Scholarship. The third debate is perhaps the calmest of the lot. It centers on the role modernity or modernization plays in the importance of place, and of places. Ever since Relph's attention to increasing "placelessness" (1976) and his phenomenological concerns about rising "inauthenticity" in places, as well as Giddens' observations that modernity "dis-places" and that this is related to globalization (1990), place scholars have weighed in on this debate that gets framed as whether place matters in a modern and globalizing world, where communication and transportation technologies make distance and locality matter far less, where "McDonaldization" is on the rise everywhere, and where people are increasingly mobile.

Most place scholars addressing these issues have argued that place does matter. Gieryn (2000) put it rather succinctly, "In spite of (and perhaps because of) the jet, the 'net, and the fast-food outlet, place persists as a constituent element of social life and historical change" (p. 463). Milligan (1998) argued that place will continue to matter, because the meaningfulness of social interactions is what makes the place, and what leads to place attachment. She asserted that, even if places become very similar ("placeless"), people will still become attached to them because of the social interactions they have

with others in those places. From geography, Entrikin (1989) observed that cultural geographers have been seeing that traditional aspects of culture, including place attachment and territoriality, continue to persist despite modernization. They have witnessed the continuance of cultural language and symbolism, and “the fact that human experience is always rooted in place” (p. 41).

Williams (2000, 2002b) argued that the effects of these forces of modernization, including the increase in mobility, result in increased contestation of place meanings, since more people, with differing interests, have access to places. Tourism is a good exemplar of this, with the deliberate effort to create a sense of place that can end up damaging the authenticity of the setting (Williams and VanPatten 1998). Williams (2002b) raised concerns about the resultant increase in the politics of place, and the inevitable issues of inequality that go along with it.

Williams and his colleagues have extended this argument about increased mobility to explain how vacation homes can actually become a place one is more attached to than one’s year-round residence: “In a globalized world many feel placeless, the cottage [vacation home] is a center of meaning across the life course even as the permanent residence changes. The cottage provides continuity of identity and sense of place through symbolic, territorial identification with an emotional home” (Williams and Kaltenborn 1999, see also Williams and McIntyre 2001). Kaltenborn (1997) measured place attachment to recreational homes, analyzing not only the level of attachment, but also the particular attributes of the place to which they are attached. He found that place attachment for these second home-owners was complex, involving natural, social, historical, and cultural aspects of place. In further support of this work, Stedman (2006b)

compared place attachment among seasonal home owners to that of year-round residents, and found that seasonal residents exhibited higher levels of place attachment. The attachment types differed between the two groups though; year-round residents were more attached to social networks and community meanings, while seasonal residents were more attached to environmental quality and the vacation experience (i.e. escape from everyday troubles).

The Debate over Approach

Another tension has existed within the place literature for over 15 years, since the first charges of conceptual fuzziness were raised against the phenomenological roots of this scholarship (Lalli 1992; Shamai 1991). Focused on what approach(es) should be used for scholarly work on place, this debate has become more interactive within the last decade, beginning with the criticisms of the earlier literature raised by Stedman and Jorgensen (2001; see also Pretty et al. 2003; Stedman 2002, 2003b) and the responses to these critiques (see especially Patterson and Williams 2005; Williams 2008). Although there are other scholars who have been involved in this debate, Stedman and Williams have become the most vocal representatives of the differing perspectives. Some of this debate was captured in a roundtable discussion at ISSRM 2006 (Kruger and Stewart 2006), which featured Matthew Carroll, Daniel Williams, and Richard Stedman. Carroll and Williams argued for a holistic approach to place studies, raising concerns that attitudinal studies in particular (e.g. the work by Stedman, and Jorgensen and Stedman 2001) harkens back to the approaches of the earlier wilderness studies (i.e. the ROS studies), where places were presented as being interchangeable. Stedman responded that

he is attempting to test hypotheses that have emerged from earlier, more holistic works. Williams argued that these differences are paradigmatic more than disciplinary- or methodology-based, and that place scholars need to acknowledge and respect the existence of multiple paradigms and even world views in their place-related work. One of the things that stood out to this participant and many others at the time was that the timing of one's entry into familiarity with the place scholarship appeared to be highly correlated with the perspectives about place one tended to hold, that is, where the scholarship was in its evolution (as outlined earlier) had a great deal to do with the perspectives held by that "cohort" of place scholars (Kruger and Stewart 2006).

Although characterized variously as being between qualitative and quantitative, or nonpositivistic and positivistic, approaches, there are tensions between a number of underlying themes and assumptions within this debate.

Complexity of "place." One of the underlying themes of the debate is how best to study something as complex as "place." There have been two very different empirical approaches to addressing the complexities. On the one hand, some scholars have argued that place (and its affiliated concepts like sense of place and place attachment) is too complex to consider with anything less than a holistic approach, that the human/place relationship is irreducible. These scholars have argued for a descriptive, often phenomenological, very contextualized approach to place research, and as noted previously, are resistant to a positivistic approach (e.g. Fishwick and Vining 1992; Kruger 1996), others advocated other approaches that are closer to postmodernist thinking than to positivism, such as discourse analysis (e.g. Stokowski 2002). Some have argued that qualitative methods allow for deeper understanding of complex place

meanings and issues (e.g. Brandenburg and Carroll 1995; Yung et al. 2003). The thinking here can be summed up borrowing from Burch's (1979) assessment of forest ecosystem issues: "The failure of our intellectuals is that they have been so intent on dividing the world into their chosen compartments that they have ignored the abiding natural tendency toward unity" (p. 44).

On the other hand, some scholars have called for a more explanatory, "positivistic" approach (Jorgensen and Stedman 2001; Shamai 1991; Stedman 2003b), arguing the complexity requires considerations of multi-dimensionality, the relationships between variables, and conditions that influence those relationships. These authors have advocated for causal explanations, as well as the identification of general principles that can be generalized across places (e.g. Stedman 2003b). These quantitative researchers have also addressed place complexities by using sophisticated analytical methods such as structural equation modeling to map complex relationships between variables (e.g. Jorgensen and Stedman 2001; Kyle et al. 2003, 2004; Payton et al. 2005; Stedman 2003a). Some of these researchers have talked about their own works being "empirical" in ways that strongly implied that nonpositivistic approaches were not (e.g. Shamai 1991), and that positivistic studies have tried to be "more accurate" (Shamai 1991:347). Stedman has argued for a quantitative, positivistic approach, with clear conceptualizations, hypothesis testing, and theory-driven research questions (2002, 2003b). He has argued that in prior research, there has been either useful theory without positivistic hypothesis testing, or else positivistic (quantitative) research that has "often failed to engage...important theoretical tenets" (2002:562).

Place-specific and unique, or generalizeable principles. Those arguing for positivism have tended to hold an assumption that nonpositivist approaches (whether they be phenomenological and/or social constructionist, or other approaches) do not produce generalizeable findings, that for example, “place” is seen so specifically, so uniquely, that nothing can be said more generally than how things are for those people alone, at that place alone. Entrikin (1989) observed that one of the criticisms raised against place-specific geography is that it is idiographic, and therefore assumed to be uninterested in general concepts and causal explanations. Further, it is assumed to be “unscientific” because of using a descriptive, subjective approach. Entrikin pointed out that Max Weber, among others, was aware of the importance of general concepts and causality within idiographic work. Phenomenologists have had similar charges made against their work, for example that it is not concerned with generalizeability (e.g. Stedman 2006a), yet as Seamon (2000) pointed out, the phenomenologist is looking for commonalities, general qualities and characteristics that are shared between places. Scholars from environmental psychology have argued, in response to questions about generalizability of idiographic work on specific settings, that multiple perspective research like that found in environmental psychology “offers a view into the findings that can enable translation to other sites” (Rivlin 2000:56). Tuan (1975) advocated a place-specific perspective, but argued what he is interested in is not idiographic, but rather an experiential perspective that allows one to see the connections between places. He argued that this perspective bridges the particularistic and abstract.

The argument against these approaches appears to center on either a misunderstanding or a discounting of the empiricism of nonpositivistic scholarship. This

work is portrayed as “failing” to produce testable hypotheses or clearly defined concepts, but phenomenologists choose not to use these approaches, seeing them as reductionistic and removed from people’s lives and lived experience.

On the other hand, as Stedman would argue (and Williams would not disagree, as evidenced by his various quantitative works, see also Kaltenborn 1998), there are questions that may be better answered by quantitative studies. These could include examining specific dynamics both within and across phenomena, relationships between concepts of interest, and relationships between types of people and concepts of interest.

“Their work is particularistic.” One of the central points of the argument made by Williams, in the roundtable noted above (Kruger and Stewart 2006) as well as other places (e.g. Patterson and Williams 2005), was that many of the differences noted above are paradigmatic differences rather than methodological differences. Stedman has responded that place scholars should be focused more on research questions and less on what paradigm one’s work is part of (Stedman 2006), however I believe this misses the point Williams was trying to make. Both sides have made the observation that those holding differing perspectives are “talking past each other” (Stedman 2006), which is one of the problems of not recognizing and understanding the paradigmatic differences. Patterson and Williams (2005) illustrated this point with an example of language differences between these various approaches.

In a rather ironic difference in language, scholars on both sides of the debate charge the others with being particularistic in approach. However, the differences in what is meant by “particularistic” are substantial. For example, Stedman used the word in the context of describing phenomenological approaches, which he characterized as

emphasizing “the particularistic nature of place (specific to the individual, the group, the setting)” (2002:562); approaches that “take a particularistic view of sense of place and eschew deriving generalizations from hypothesis testing” (2003b:824). He has used the word to describe the idiographic, the place-specific, the perspective that places are unique and should be considered accordingly—that is, particular places. On the other hand, one of the criticisms phenomenologists have made of positivistic approaches in general is that, in focusing on the molecular (as opposed to a bigger picture, or molar perspective) in the concern for variables and their interactions, these approaches take a particularistic view (as in focused on particles) of holistic concepts and phenomena, breaking them down into small parts of what phenomenologists see as an irreducible bigger picture, more than the sum of these molecular parts (Patterson and Williams 2005).

Differences such as these, and the need to understand them, are why Patterson and Williams (2005) have argued that the issue of difference is more paradigm than method, although the paradigmatic differences do have methodological consequences, to a degree.

What this means for place scholarship as a whole. Another core difference between the positions taken by Stedman and others (see especially Stedman 2002, 2003b) and that taken by Williams and his colleagues (see especially Patterson and Williams 2005), is the state of place scholarship as a whole. Low and Altman (1992) described an evolutionary process much social science scholarship goes through, where an initial stage of energetic enthusiasm and apparent consensus about a topic with emergent salience erodes as the topical work achieves increasing breadth and depth. A second stage brings increased rigor and precision, however, the increasing breadth brings more scattered

representations and widely varying descriptions and explanations of the phenomenon in question. The authors saw their book as an attempt to usher in the second stage. A third stage consists of “development of systematic theoretical positions and clearly delineated programs of research and application of knowledge to the solution of practical problems” (Low and Altman 1992:3).

Low and Altman’s characterization of these developmental stages of scholarship have become something of a measuring stick to assess the state of place literature. Their assessment of the literature in 1992 was that it was in the first stage. Some have argued that it is now in the second stage, and use as evidence the plethora of approaches, definitions, and operationalizations (e.g. Manzo 2003). Stedman (2002, 2003b) has argued that the current state of the literature is evidence that the field is stuck, that since Low and Altman’s essay (1992) it has not even developed and progressed to Low and Altman’s second stage (2002:824; 2003b:562). He argued, “The theoretical relationship between concepts remains poorly articulated” (2003b:824), but then gave a string of examples that range from 1974 to 1992 as evidence. He did refer to one example from 1998,¹⁹ but this hardly represented the place literature in 2003. Stedman (2002) asserted that, to move beyond this first stage, well-established measures that can work for hypothesis testing must be developed.

Some environmental psychologists have seen this focus as too narrow of an approach in that the emphasis on precisely defined concepts and hypothesis testing leave out phenomenological perspectives. These scholars have argued for an integrative,

¹⁹ The one example is Kaltenborn (1998), who notes that, perhaps because sense of place is described by both phenomenologists and by more positivist scholars, “there is no clear consensus” on the concept”, but is able to talk about commonalities among “most treatments of the concept” (p. 172). Of interest, Kaltenborn also does not cite anything more recent than Altman and Low’s (1992) book.

unified “theory of place” that would be integrative across perspectives and paradigms (e.g. Bonnes and Secchiaroli 1995), although others have responded that the differences between traditions are too substantial for integration (e.g. Franck 1987). While Manzo (2003) argued that the literature was in the second stage and still needed to “systematically examine the full range of places and experiences that factor into these relationships [between people and places],” she went on to say, “Diversified perspectives are essential” to more fully develop the “awareness of tension, difference and contradiction in relations to all places” (p. 57). Gieryn (2000) argued that, because it is ubiquitous, place is an unbounded topic of inquiry that cannot be summed up into a “neat propositional inventory of empirical findings” (p. 482). He suggested that rather than seeing place as a distinctive explanatory model, it should be seen more generally as a way of doing sociology. Patterson and Williams (2005) argued that the lack of uniformity does not mean that the literature has not already progressed into the third phase, that Low and Altman did not intend their stage three as a prescription for cookie cutter approaches (e.g. standardization that eliminates diversity in approach or perspective) and have been interpreted too narrowly by others (e.g. Stedman 2002, 2003b). They advocated a view of place as a “domain of research informed by multiple research traditions” (p. 362), rather than assuming all the research on place should make up a single research tradition, and argued for an approach to place that allows for a plurality of perspectives, paradigms, and research traditions, rather than a unified or integrated approach.

Response from other place scholars. This section has focused on a debate in which the most vocal and prolific representatives have been Stedman and his colleagues, and Williams and his colleagues. Most scholars have not commented on this tension. As

mentioned earlier, much recent work has been done on quantitative scale development. Quantitative researchers working on these scales have used items developed by scholars on both sides of the debate. For example, Vorkinn and Riese (2001) drew from both Shamai (1991) and Williams and colleagues (Williams et al. 1992; Williams and Roggenbuck 1989) in operationalizing place attachment; for her place dependence index, Davenport (2006) drew from Jorgensen and Stedman (2001), Williams et al. (1992), as well as others. Other authors have also built equally from both “camps” without distinction. For example, Wulfhorst et al. (2006) drew on thematic approaches by Kruger (1996) and Stedman (2003a) in their work on contested senses of place.

In the fairly exhaustive literature review by Farnum et al. (2005), both the theoretical and research works by both Stedman and Williams and their colleagues were referred to frequently without any reference to the tension between their work. They occasionally noted the differences between the phenomenological studies and those that were more positivistic, but again, without explicitly referring to the tension between the approaches. Farnum et al. did refer to the more methodological part of the debate, citing Cheng et al. (2003) as an example of scholars who believed qualitative research is better suited to sense of place studies and Stedman (2003b) as the counter. Farnum et al. took a “moderate view,” noting there are positives and negatives to both qualitative and quantitative approaches.

In looking at the literature I have reviewed that has been published since this debate emerged, two things of note stand out. The first is that almost none of the literature that fits under a nonpositivistic category has made any note of this debate, not

even the charge that the place literature is a messy literature (e.g. terms used in a variety of ways, different terms for similar concepts, etc.) (e.g. Cheng and Daniels 2005; Cheng et al. 2003; Petrzalka 2004; Yung et al. 2003). While Stokowski (2002) contrasted positivism with postmodernism and advocated for the latter, she also saw commonalities in all the place studies to date, whether qualitative or quantitative, and challenged place scholars to broaden their approach to include other areas that were lacking.

These authors have also tended not to cite any of the quantitative works by any of the debating scholars. An exception is the qualitative piece by Davenport and Anderson (2005), from which Davenport later built her place dependence index. Davenport and Anderson cited works by both Stedman and Williams, listing them all in the same string of citations informing this work, and even used a quote from Stedman's piece advocating a quantitative approach to justify why they conducted a qualitative study.

Those works that would fit under Stedman's category of positivistic (i.e. quantitative) studies have had a range of approaches to these issues. Although none of them have referred explicitly to the debate, nor supported the arguments raised by one side or the other, they have been more likely to mention things such as place scholarship coming from diverse disciplines and varying in how concepts have been used—however this has not necessarily been termed as problematic (e.g. Kyle et al. 2004; Moore and Scott 2003). Beckley (2003) argued there is a need for more conceptual clarity and precision, while Pretty et al. (2003) took it a step farther and referred to the prior literature as having overlapping concepts and theoretical problems, but then went on to say that the quantitative approaches have not done any better. Payton et al. (2005) noted that there has been “much debate” over definitions of concepts, particularly sense of

place and place attachment, although as mentioned earlier, Kyle et al. (2004) saw a pattern of study contexts influencing which place concepts are used.

So it appears that most place scholars have not been so concerned with this debate that they have aligned themselves on one side or the other, or even mentioned it in their work. Attendance of the roundtable on these issues at ISSRM 2006 was strong enough that it appeared scholars were at least interested in the debate. One thing everyone at the roundtable appeared to agree on was that place scholars need to be very clear about their own usage of place concepts and conceptualizations, so inaccurate assumptions are not made about what is being studied and how (Kruger and Stewart 2006).²⁰

On Worldviews

I noted that at the roundtable at ISSRM 2006, Williams took the position that the differences between approaches were not so much disciplinary or methodological (although there are implications at that level), but rather paradigmatic (Kruger and Stewart 2006). As noted earlier, Patterson and Williams (2005) argued this point as a counter to the criticisms of place scholarship in general being messy, poorly conceptualized, poorly theorized, etc. Their argument focused on three levels: (1) there are differences between research programs that tend to occur at the disciplinary and methodological level; (2) there are differences along paradigmatic lines that transcend disciplines and methodologies, but affect methodological choices—they illustrated this

²⁰ It should be noted that Stedman, in a recent collaboration with Beckley, has intentionally worked on broadening his approach (personal conversation with Stedman, June 2008; see Stedman et al. 2004 and Beckley et al. 2007), however these works were criticized by Williams and Patterson (2007) on methodological and philosophical grounds. In a rejoinder to the critique, Stedman and Beckley (2007) argued that Williams and Patterson's critique was not in the spirit they themselves advocated. Stedman and Beckley (2007) also attempted to extend the olive branch to their "rivals."

discussion by focusing on paradigmatic differences between psychometric approaches and phenomenological approaches; (3) there are differences in terms of world view, differences that run along philosophical lines. Patterson and Williams (2005) described world views as the level where one's broad, philosophical concepts of science and the nature of science reside. Having addressed the first two points, I now return to their last point before leaving this section.

The authors described five positions along a continuum from more rationalism to more relativism. These included (1) extreme rationalism, where the position is that, basically there is only one approach to real science. Here the dialogue is oppositional and dichotomous, taking the tone that this approach is accurate while others are inadequate. (2) Pluralism, where multiple, co-existing paradigms are acknowledged, with a belief that they will converge, that an integrated, united version will emerge from the plurality. Dialogue is integrative. (3) Critical pluralism. Here a number of paradigms co-exist and choices among them are made based on logic. The dialogue from this position is reflective. (4) Kuhnian model, where periods with a single paradigm are followed by a revolutionary paradigm shift. Patterson and Williams characterize this position as requiring a leap of faith towards the new paradigm. (5) Extreme relativism, where anything goes, dialogue is unnecessary (Patterson and Williams 2005:364).

The criticisms of positivistic work have often complained that it has tended to fall into the first position, practitioners tend to see other approaches as flawed, inaccurate, inadequate, and nonscientific (examples of the critics include Agnew and Duncan 1989; Burr 1995; Entrikin 1989; Stokowski 2002; Wapner et al. 2000; Williams and Patterson 2005. Examples of scholars who have appeared to hold this position include Hidalgo and

Hernández 2001; Jorgensen and Stedman 2001; Pretty et al. 2003; Shamai 1991; Stedman 2002, 2003b). It should be noted that positivistic or psychometric approaches are not the only ones that can fall into this world view. Patterson and Williams pointed out places where Relph's (1977) phenomenology takes a similar tone in terms of being the "right" way to do place work, and there are certainly antipositivistic scholars whose rhetoric has implied they see nothing useful in positivistic approaches.

Scholars in the second position have argued there is useful scholarship coming from a number of paradigms, these scholars have proposed moving forward in an integrative fashion, building a single, broad, unified theory of place (e.g. Bonnes and Secchiaroli 1995; Giuliani and Feldman 1993). As noted earlier, Patterson and Williams (2005) have shied away from a more integrative type of pluralism because of the tendency to privilege particular views and approaches over others. Also, integration inherently results in a loss of diversity in perspectives and approaches, with the consequence being the loss of valuable information and insights.

I am not familiar with any works or scholars' perspectives in the place literature that would tend to fall into either of the two more relative categories, and Patterson and Williams (2005) did not offer any examples. They were most interested in the first three categories.

Patterson and Williams (2005) argued for a critical pluralistic world view, with reflective dialogue where the benefits and limitations of different traditions could be explored for better understanding. The goal here would not be integration, but allowing different paradigms and research programs to stand on their own, offering their findings for consideration and use by the larger scholarship. However, this is not a relativist

approach where there are no rules, criteria or norms. This world view takes the position that there are criteria that set science apart from other kinds of knowledge; Patterson and Williams listed three: Science is empirical, grounded in observations, theory, and some sort of testing logic or mechanism to link the two; science subjects its empirical tests and observations to external critique; and science is systematic and rigorous, it does not allow selective use of data, it requires more than a surface level consideration of phenomena—“research is guided by a well-developed theoretical framework, a set of research principles, and a detailed and defensible research design” (2005:375). The emphasis on “critical” in critical pluralism is essential as well, there is an expectation of evaluation and critique, particularly focusing on internal consistency within paradigms, and whether or not the researcher’s assumptions fit the paradigmatic assumptions, in regards to both the phenomena under consideration and the questions being asked. Operating from these assumptions and criteria, critical pluralism takes the stance that “multiple paradigms legitimately co-exist within the broad realm of science” and that the goal is “a reflective dialogue which seeks to explore and understand the differences in approach and insights across divergent paradigms rather than exclusion or integration” (p. 376).

From this stance, Patterson and Williams (2005) argued that place scholarship “is more appropriately viewed as a domain of research informed by multiple research traditions” (p. 376), and that, “...diversity in approach and perspective is a strength. If different approaches triangulate on the same conclusion, then we have reason for greater conviction” (p. 374).

As was mentioned above, as place scholars have looked at the literature, particularly with Low and Altman's stages of scholarship in mind, some have been characterized as advocating a unified approach—Patterson and Williams would argue that this is what Stedman was essentially asking for with his focus on conceptual clarity and hypothesis testing being the only way for place scholarship to progress. Others have argued for a consolidated or integrated approach, for the building of a single, integrated theory of place that includes the different viewpoints and approaches (e.g. Bonnes and Secchiaroli 1995; Giuliani and Feldman 1993). Patterson and Williams (2005; also Williams and Patterson 1996) have advocated a plurality, rather than an integration, partially to avoid the privileging of some perspectives over others. “The historical privilege given to ‘scientific rationality’ tends to favor more objective, distant views...”, views which tend to be more abstract and less grounded in the meanings important to specific places and peoples. Williams and Patterson have argued for the need to “embrace the multiple constructions of place that occur along a subjective-objective continuum” (Williams and Patterson 1996:517-18).

The point here is that what has been criticized in the place literature as messiness and a lack of conceptual clarity really comes down to talking, not apples and oranges, but oranges, zucchini and meatloaf—and thinking there should somehow be a “unity” across them. “Place” is too diverse a literature for that, disciplinarily, in terms of research programs, paradigmatically, and with the world views of the scholars. Any attempt at either a unified or an integrated approach would create immense costs in the diversity of the literature, perspectives, and thinking. Patterson and Williams (2005) argued that the goal should not be to do things one best way, nor to work towards integration, but rather

to use a world view of critical pluralism where differences across traditions and approaches are considered sources of *more*—perspectives, information, ideas, opportunities—not a sign of deficiency.

This stance, or world view, tends to underlie my own thinking, as well as my own approach to place. I have found valuable insights in all the scholarship I have reviewed, no matter the discipline, the theoretical or methodological approach, the evolutionary stage it came from, and which “side” of the debates it fell on. My work is informed by a broad cross-section of this literature. Methodologically, I agree with Farnum et al. (2005) who state, “We applaud efforts to use a range of techniques to study sense of place... and generally believe that multiplicity in measures generates a more holistic assessment of any situation” (p. 47). I believe we place scholars need to focus on “learning how to makes sense together despite differences” (Williams 2002a:122). In general, I agree with O.H.K. Spate: “Humanist, quantifier, what you will—it is never wrong to plug your own line; it is almost always wrong to write off others” (as quoted in Tuan [1974] 1990:iii).

Theoretical Foundation for the Current Study

As the reader can see, a wealth of work has come out of various psychological perspectives and approaches, including social psychology. My interests lie along different lines, which I do not see as a “competing approach,” but rather one that can add to the wealth of study from other perspectives, as those perspectives have also informed my work, in the spirit of critical plurality encouraged by Patterson and Williams (2005). My work pursues a more sociological perspective than these psychologically-oriented approaches.

My approach is informed by the phenomenological tradition that gave rise to many of the approaches used to consider place. I draw from the phenomenological sociologist, Peter Berger, and his colleagues. My approach is also informed by Greider and Garkovich's application of social constructionism to natural resource and place-based sociology (1994); however I reclaim Berger's emphasis on the dialectic as being critical to how these processes unfold (Berger 1969; Berger and Luckmann [1966] 1967). The concept of "conjoint constitution" developed by Freudenburg et al. (1995) aids in this inclusion of the dialectic.

In the next section I first summarize the basic tenets of Berger and Luckmann's ([1966] 1967) theory that inform my work. I then outline how this theoretical approach applies to issues of place. Finally, I describe my use of Berger and Luckmann's perspective combined with place theory in the current study.

Berger and Luckmann's *Social Construction of Reality*

In their "systematic, theoretical treatise in the sociology of knowledge" ([1966] 1967:v), Berger and Luckmann bridged micro- and macro-sociology by looking to interpersonal interactions (with face to face interactions being the most influential) to explain the origins and organization of social institutions, addressing both subjective and objective reality.²¹ Berger and Luckmann argued that "the sociology of knowledge must concern itself with everything that passes for 'knowledge' in society," particularly "what people 'know' as 'reality' in their everyday...lives." "It is precisely this 'knowledge' that

²¹ While drawing heavily from Schutz's phenomenology (e.g. [1932] 1967), Berger and Luckmann build their theory of the sociology of knowledge using ideas from Marx, Weber, Durkheim, Mannheim, Mead, and others.

constitutes the fabric of meanings without which no society could exist. The sociology of knowledge, therefore, must concern itself with the social construction of reality” (Berger and Luckmann [1966] 1967:14-15). Berger and Luckmann defined reality as “a quality appertaining to phenomena that we recognize as having a being independent of our own volition (we cannot ‘wish them away’),” and knowledge as “the certainty that phenomena are real and that they possess specific characteristics” (p. 1).

Berger and Luckmann argued that the world of everyday life is taken for granted as reality by ordinary people in a society “in the subjectively meaningful conduct of their lives...a world that originates in their thoughts and actions, and is maintained as real by these” (p. 19-20). Knowledge of everyday life is comprised of two components: on the one hand “objective facticity,” or what Durkheim called “social facts,” and on the other, the subjective meaning important to Weber. The central question for Berger and Luckmann was, “How is it possible that subjective meanings become objective facticities?” (p. 18). They focused on the process of the construction of this reality.

Berger and Luckmann emphasized the dialectic process, and saw the foundational dialectic of society as consisting of three parts, or “moments,” each corresponding to a characterization of the social world (p. 61). These characterizations are italicized in the following description. (1) Externalization, where people, through human activity—that is, through habitualized and routinized human behavior—create their own social worlds, institutions that then “confront the individual as undeniable facts. The institutions are there, external to him, persistent in their reality, whether he likes it or not [sic]” (p. 60). “*Society is a human product*” (p. 61). (2) Objectivation, the “process by which the externalized products of human activity attain the character of objectivity” (p. 60), where

these externalized social facts are treated as objective social realities, that is, as objects that preceded human presence (even though they are human creations), objects that can be taken for granted. “*Society is an objective reality*” (p. 61). (3) Internalization, specifically internalization of the objectivated social world, accomplished through socialization. This is the process whereby one’s world begins to have meaning, where, through exposure to the subjective processes of another, the world becomes subjectively meaningful to that individual. “*Man [or Woman] is a social product*” (p. 61). Berger and Luckmann posited that these three “moments” are not temporally ordered, but that society (and each part of it) is simultaneously characterized by all three as they interact dialectically (p. 129).

In addressing objective reality, Berger and Luckmann explained the origin of institutions as a process of habitualization and routinization of interactive behavior that then becomes ordered and predictable (externalized), part of the common, general stock of knowledge shared by members of the society. In other words, people interact together, their interactive behavior becomes habitual and routine and a predictable, orderly pattern emerges. How one behaves in these predictable patterns becomes shared common knowledge. Here the interactive behavior—and the institutional order that has grown up around it—becomes taken for granted by members of the social group in question.

General stocks of knowledge are accessible to all members of a social group. More specialized stocks of knowledge are accessible only to those holding particular roles, and include both the cognitive knowledge one would need to perform that role, and also the knowledge of the norms, values and emotions for the role. Once one has taken on—and becomes—a role, one acts on the world from that stock of knowledge.

Berger and Luckmann used legitimation to refer to how things are explained and justified within the social world. Through legitimation, the various aspects of a social world—institutional order, different roles, etc.—can be integrated together and explained within the stocks of knowledge for that society. As the division of labor in a society becomes increasingly complex, the complexity of the legitimation systems also increases.²²

The processes of externalization and objectivation are part of objective reality. The process of internalization is part of subjective reality, with the focus being on socialization. The goal for “successful socialization” is for individuals to obtain symmetry between the (external) objective reality and (internal) subjective reality. Berger and Luckmann conceptualized socialization as having two phases for individuals. Primary socialization is where the significant others of a child pass on the common stock of knowledge from their society, allowing the child to become a member of society and acquire identity. Internalization is achieved through successful primary socialization. Secondary socialization is “any subsequent process that inducts an already socialized individual into new sectors of the objective world of his [or her] society” (p. 130). Here the person gains access to specialized stocks of role-specific knowledge, including role-specific language (e.g. “jargon”), meanings, and legitimations. Secondary socialization leads to the internalization of one’s roles: this is who I am, this is what I do—it is what

²² Berger and Luckmann describe levels of legitimation including “incipient” legitimation, which is built into the language and vocabulary of a social group, and answers the question “why?” with “This is how things are done” (p. 94); rudimentary theory that may use proverbs, morals, legends and folk tales; explicit theory developed by theorists (specialized experts); and symbolic universes, bodies of integrative theory that bring together different sectors of knowledge and meaning and institutional order in a “symbolic totality” that transcends the pragmatic in an “all-embracing frame of reference...all human experience can now be conceived as of as taking place *within* it” (p. 96, emphasis in original).

people in this role do. The role becomes objectivated and taken for granted for the person and her fellows.

None of these components of Berger and Luckmann's theory is static, taken care of once and for all. Rather, each is involved in ongoing dialectic processes, being produced and reproduced through interaction with the various other parts of the model.

Berger and Luckmann and Place

One of the several dialectics laid out by Berger and Luckmann was between the material and the social, nature and society. Here their interest was in how "man's relationship to his own body (as to nature in general) is itself a specifically human one" (p. 208). Focusing on the relationship between "each human animal and its social-historical situation," between "the individual's biological substratum [and the limits it imposes] and his socially produced identity" (p. 180), they did not comment further on the parenthetically noted "nature in general." However Greider and Garkovich (1994) expanded on this in their application of constructionist explanations to the sociology of place and natural resources. Greider and Garkovich's "sociological framework of landscapes" (p. 17) was a heuristic device that used Berger and Luckmann's ([1966] 1967) approach to the sociology of knowledge as a foundation. Greider and Garkovich focused on the importance of people's self-definitions, which, it was argued, were reflected in what landscapes mean to them. This can be seen as an application of Berger and Luckmann's usage of "roles," in that, once one is socialized to a role and has learned the role-specific stock of knowledge, everything about that role becomes part of the taken-for-granted, everyday life for that person. This would include one's relationship

with the natural world, or in Greider and Garkovich's language, with the landscapes one perceives. In other words, my internalized role and the stock of knowledge attached to that role determine not only how I (and those like me) see and experience the landscape, but also how I will be affected by any proposed changes to the landscape. Greider and Garkovich also extended this to cultural groups, stating that a landscape can serve as a "symbolic representation of a collective local history—the essence of a collective self-definition..." (1994:4)—in other words, how we (and those like us) see and experience the landscape.

The dialectic between nature and society posited by Berger and Luckmann ([1966] 1967) creates a way to address the ongoing concern and debate between theorists about the importance of the material, physical, geographic place and the human/social aspects of "place." As noted earlier, some have raised concerns that the social not be forgotten, that place is "not simply an inert container for biophysical attributes; place is constructed—and continuously reconstructed—through social and political processes that assign meaning" (Cheng et al. 2003:90). Others have been concerned that the role of nature not be left out (e.g. Beckley 2003; Stedman 2003a), for example, Gieryn's position that nature/the environment is an "agentic player" that affects social life (2000:466). Recognizing the dialectic demands the inclusion of both, as well as the ongoing interaction between them. Giddens (1984) argued that place contextualizes the sustenance and reproduction of local social structure in the recursive duality between humans and social institutions, with the dialectic process of place being made by human interaction and institutions while helping to shape the interaction and institutions. Perspectives such as a "reciprocal relationship" existing between nature and social interaction (e.g.

Eisenhauer et al. 2000:422), or place being “conjointly constituted” by the physical and social (Freudenburg et al. 1995) fit easily within the constructivist framework developed by Berger and Luckmann.

In their discussion of the reality of everyday life, Berger and Luckmann ([1966] 1967) posited the importance of social interaction, since this reality is shared and intersubjective. They argued that language is one of the most important elements in social interaction, and in the creation and maintenance, the production and reproduction, of institutional order and social worlds. Language enables objectivation as well as internalization (through socialization), particularly with its capacity to transcend the here and now. These transcendencies have spatial, temporal, and social dimensions, allowing for the accumulation of experiences and meanings across space, time and social groups, accumulations that constitute the social stock of knowledge that is shared within a social group and transmitted from generation to generation. Expanding on similar work along these lines by Berger and Kellner (1964), Stokowski argued that, “people actively *create* meaningful places through conversation and interaction with others” (2002:372, emphasis in the original), and that language and discourse are central in the process of developing a sense of place. Places, in turn, have “the ability to connect people in society, encourage development of personal and social identities, and reinforce socio-cultural meanings” (p. 373; see also Tuan 1991). As noted earlier, Stokowski advocated examining language as part of the examination of places, using approaches that consider rhetoric and discourse (e.g. Petrzalka 2004).

Part of discursive and other constructionist approaches is asking questions about the definitions of places and other “realities” that become taken for granted. “. . .it is

essential to keep pushing questions about the historically available conceptualizations of reality from the abstract ‘What?’ to the sociologically concrete ‘Says who?’” (Berger and Luckmann [1966] 1967:116). Berger and Luckmann have been criticized for failing to address the issue of privilege and power, whether some have more power to create social reality than others, and for their theory’s lack of tools necessary to analyze power relationships (e.g. Wallace and Wolf 1999). However, Berger and Luckmann ([1966] 1967) did address power differences in the ability to legitimate social order, including institutions and roles; they discussed the privilege held by experts, and the potential for conflict with and amongst experts. Their theory includes an explanation for why there is resistance to change, it addresses interests, and makes mention of revolutionaries and the tasks before them. Berger and Luckmann also addressed the issue of inequality, and how the social order is invested in people being socialized to accept their lot in life. However, their presentation likely sounds too functionalist for their critics. Although Berger and Luckmann did not necessarily point the way for their use, it could be argued that many tools which can be used for the analysis of power relationships are contained in their theory.

Although these issues are not a main focus of this theory, Berger and Luckmann did address the issue of competing meanings or definitions (constructions of reality). They asserted that “there will always be a social-structural base for competition between rival definitions of reality and that the outcome of the rivalry will be affected, if not always determined outright, by the development of this base” (p. 120). Part of this social base includes different social groups that have differing attractions to the competing theories, groups which then become “carriers” of one theory or another, and that “rival

definitions of reality are thus decided upon in the sphere of rival social interests whose rivalry is in turn ‘translated’ into theoretical terms” (p. 120).

In expanding on constructionist theory, both Stokowski (2002) and Greider and Garkovich (1994) addressed power and the politics of place explicitly. Stokowski argued that politics of place are related to competition over social meanings (not individual level meanings), and that issues of power and interest are inherent in the construction of place. This place creation is normative, with efforts to create places involving the beliefs and values of some social group being expressed in their preferred version of reality. Greider and Garkovich addressed similar issues with their definition of power as having the ability to impose a particular definition of the landscape so that it reflects the meanings of a specific social group. “The particular landscape that comes to dominate and thereby influence social actions and the allocation of social resources is the one that represents the group exercising the greatest degree of power” (1994:17). They argued that key in these power relations are impression management skills, while Stokowski pointed out that there are differences in access, skills and abilities to participate in public discourse about places and their meanings.

My study is driven by Berger and Luckmann’s ([1966] 1967) constructionist sociology of knowledge, including a dialectic approach to thinking about society and nature, expanded by the emphasis on the social from Greider and Garkovich (1994), Gieryn’s inclusion of nature as “agentic player,” and the reminder from Freudenburg et al. (1995) that the understanding of both is socially constructed. I also draw from the ways this constructionist perspective has been applied to landscapes and place by Greider and Garkovich (1994) and Stokowski (2002), including the ways in which both have

focused on power and the politics of place. In the next section I apply this foundation specifically to the issues pertinent to my study of sense of place among the closest neighbors of Great Salt Lake.

The Current Study

As mentioned earlier, my theoretical focus is sociological. Although I borrow some conceptual definitions from social and/or environmental psychology, I emphasize the social and collective much more than individual perspectives. As Stokowski put it, “[T]he significance of place emerges through interaction with others. . .,” and, “If place is socially constructed, then, the creation of sense of place can be seen as a social (not merely individual) task” (2002:372). It is this social task that interests me as a sociologist. This social focus is not limited to collectively held meanings, but also includes the consideration of how social influences are involved in shaping the understandings individuals have of places (Eisenhauer et al. 2000).

To expand on Berger and Luckmann’s ([1966] 1967) social constructivist perspective, the question becomes one of how place fits into people’s construction of reality. Senses of place could be defined as the “objective facticities” of a specific place, taken for granted and subjectively held by individuals and social groups that are a part of the reality of everyday life for them. This taken for granted knowledge could be based in one or more of the various constructions of a place—in this case, Great Salt Lake—which may be informed (dialectically) by subjective experience. For some individuals, even those who live close to GSL, the place may not be part of their reality of everyday life—the lake may not hold any significance, or as Berger and Luckmann put it, relevance, for

them. It could be said that these individuals lack a sense of place with GSL, for them the lake is an undistinguished space (Tuan 1977).

The meanings of Great Salt Lake held by those with a sense of place become a key point of interest for my work. The issues of particular interest include how important the role of internalization is to larger social constructions of the lake and how the various social constructions fit into the larger, cultural symbolic universe. Further, the social-structural conditions and consequences of the socialization process for neighbors of the lake must be considered. Language and discourse are part of all of this, since language plays an essential role both in objectification and in the creation and maintenance of intersubjective realities, which, with language, can be accumulated and passed on. The degree to which there are shared constructions—intersubjective realities—among neighbors, and whether those shared constructions are more localized or more broadly shared across various locations within the lake system are also key issues.

Similarly to the importance of social interaction in Berger and Luckmann's phenomenological constructionism, since reality is shared and intersubjective, the interactionist perspective (e.g. Blumer 1969) sees meaning as emerging from interactions between people within groups and societies, that "social influences are integral in shaping the understandings people have with the land, their perceptions of landscapes" (Eisenhauer et al. 2000:422). As I explore sense of place, and related degrees of place attachment, among the residents closest to Great Salt Lake, I will be particularly interested in shared/collective meanings that are held. A number of theorists and researchers have argued for considering sense of place within the context of local culture (e.g. Eisenhauer et al. 2000; Greider and Garkovich 1994).

Like any given place within a culture, there are commonly held, general stocks of knowledge about Great Salt Lake. This includes not only knowledge of the lake, but also how it fits into the larger picture of the culture—how big a role it plays, its relevance, what it means objectively in terms of the shared stocks of knowledge, and correspondingly, what it means subjectively to individuals. Like all stocks of knowledge, both general and specialized, knowledge about places is dynamic, continuously being produced and reproduced dialectically. As noted, within the cultural milieu there are various meanings of the lake, with the lake having varying levels of salience or relevance to the groups holding the different meanings. Relationships between individual group members and the lake will likely vary based on the roles the individuals hold.

In considering Berger and Luckmann's roles ([1966] 1967) or Greider and Garkovich's self-definitions (1994) discussed earlier, it can now be seen how one's roles and the accompanying stocks of knowledge can inform one's sense of place. Let me illustrate hypothetically from the landscape of interest for this study:

- "I am a farmer/rancher. Water means use value, water is a commodity. Water that cannot be used is wasted. Great Salt Lake is a waste of water."
- "I am a wildlife manager. Great Salt Lake provides an important ecosystem for wildlife and needs adequate water to sustain wildlife needs."
- "I am a brine shrimper. When it's within its average salinity range, Great Salt Lake is a rich resource for an important industry, with a uniquely suitable ecosystem for some of the highest quality brine shrimp in the world."
- "I am a salt extractor. Great Salt Lake is a rich resource for an important industry, and the higher the salinity levels the better."

Again, my internalized roles and the stocks of knowledge attached to those roles determine not only how I (and those like me) see and experience Great Salt Lake, but also how I will be impacted by any proposed changes to this landscape.

I believe that in any examination of social constructions of reality it is important to consider how some constructions come to carry more weight and legitimacy than others. Here I follow Berger and Luckmann in considering the social-structural base for competition between rival definitions of reality, including looking for groups that become “carriers” of a particular theory because of their own interests ([1966] 1967:120). I also borrow from arguments made by Greider and Garkovich (1994) and Stokowski (2002), that in dealing with the politics of place involved in competing definitions of the situation (which are social meanings), one needs to consider varying degrees of skills groups have with using power, access to various public media, and impression management, since these are what give social groups the ability to impose their own definition of a place. Competing constructions of place and meaning can be found in the discourse in media representations (Greider and Garkovich 1994; Petrzalka 2004; Stokowski 2002). These representations of Great Salt Lake, varying from portrayals of an avoided, unappealing place to a place of beauty and tourist interest, provide evidence that GSL has been perceived as a mixed amenity place.

It is important to note that one could hold “knowledge” about a place like GSL without any personal experience with the actual place. As noted earlier, Galliano and Loeffler (1999) argued that places may be known and valued by those who have never visited—known by what they have been told about the place, as well as from media portrayals. Galliano and Loeffler noted that the media may “construct a sense of place” different than what people actually experience with that place, experience which can lead to identities, meanings, and images that were unexpected by those whose original sense of place was based in media portrayals (pp. 2-3). Galliano and Loeffler also argued that

people can experience an attachment to places even before they have personally visited that place. I argue that there are likely many who are familiar with pictures, stories (Relph and Tuan would call them myths), and general images about Great Salt Lake, who have feelings about the lake based on these portrayals whether they have actually visited the lake itself or not. There may be local residents who have a sense of place connected to GSL who have never visited the lake.²³ The senses of place experienced by these individuals must be taken into consideration when examining the senses of place held by local residents and the communities they are a part of.

Although Relph (1976) argued that explorations of place needed to include the entire range of experiences through which we know places, it has been noted that the vast majority of research and theory on place has considered only the more positive aspects and affect of place and sense of place (e.g. Giuliani and Feldman 1993; Kyle et al. 2004; Manzo 2003). Manzo argued that work on place needs to include negative and mundane senses of place as well as the positive representations typically seen in work on place. I approach this work with the premise that there is likely a full continuum of place meanings and senses of place connected to Great Salt Lake, from the strongly positive to the strongly negative, with every gradation in between. In addition to those who feel strongly about the lake, one way or the other, it is possible some feel GSL is a rather mundane place, and that there are people who live close to the lake who have no particular feelings at all towards the lake, people for whom the lake is more undifferentiated space than a place they feel one way or another about.

²³ This is complicated by the fact that GSL is so large it can be seen for miles, particularly from the eastern mountain benches—far more people have seen it than have visited the lakeshore or any lake-related sites. Some of those who have never “been to” the lake may still have the sense that they are “experiencing” it from being able to see it as part of the landscape.

In agreement with Greider and Garkovich (1994), I feel it is critical to consider all the different meanings held—the landscapes constructed—of Great Salt Lake by the myriad of players involved. However it also important to address the role Great Salt Lake plays in the relationships people have with the lake. Both Brandenburg and Carroll (1995) and Eisenhauer et al. (2000) refer to this as the “reciprocal relationship between places in nature and social interactions (Eisenhauer et al. 2000:422). Like Gieryn (2000), I see nature/the environment—in this case, GSL—as an “agentic player” in social life, with “detectable and independent effects” on those nearby. Borrowing from Freudenburg et al. (1995), I see human culture, cultural meanings and actions, and identity as being “conjointly constituted” with the environment/nature [GSL], with both the material and socially constructed playing off each other dialectically. Further, following Berger and Luckmann ([1966] 1967), I argue it is essential to be aware of the dialectic at work in many of these processes.

Gieryn argued that to consider a place sociologically, one must consider location (including the nestedness of location), the material form of the place, and the meaning and value for social groups of interest (Gieryn 2000:464). Following Gieryn, in the case of GSL the first consideration includes the larger cultural place GSL is geographically located in. Additionally, the nestedness of location within the lake system makes it important to consider the specific area of the lake one is located in, since locations in the lake system differ greatly, and thus are experienced differently. The second point includes the natural/biologic aspects of Great Salt Lake, the built aspects (e.g. the causeways), and the dialectic between natural and built. The final point includes both cultural and experiential meanings and values, as well as the meaning that emerges from

the interaction between the two, at both the individual and the collective level. Great Salt Lake is a “constituent element of social life” in that it affects land uses and property values; more importantly, it has contributed to community, family and individual experiences, histories, economies, and identities.

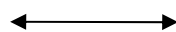
Figure 2-1 illustrates some of this dialectic interaction between, first, the natural and the human or built features of the lake, and second, between material features and meaning and between natural and human/cultural. Figure 2-2 illustrates the dialectic between GSL and humans, with each an agentic player in the relationship. As can be seen in these illustrations, the whole natural/social system is very dynamic, as ongoing natural dynamics interact with ongoing social dynamics. Additionally, and directly related to the above interaction, differing interpretations of this GSL/human relationship are constructed by different groups, resulting in competing definitions of Great Salt Lake. These include media constructs (e.g. the big, salty, buggy, stinky Great Salt Lake), political constructs, interest group constructs, as well as other cultural constructions, e.g. some that may be linked to cultural, community, or family history. Each of the different groups and interests may have their own competing definitions of the lake, and their own ways of explaining and justifying (i.e. legitimating) their particular construction.

With all of the dynamism present in this system, both from the natural, the socio-cultural, and the dialectic interaction between them, it must be noted that this study can offer only a still snapshot of a moving picture. Furthermore, because my focus is specific to those who live closest to the lake, the snapshot is a close-up rather than a panoramic view. However, this close-up snapshot will give us a starting point for considering the relationship between Great Salt Lake and some of the people related to it.

Natural/Environmental**Human/Cultural**

Material natural features:

- e.g. lake levels
- salinity
 - productivity of brine shrimp
 - climate
 - etc.

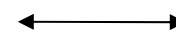


Material human/built features:

- e.g. causeways
- development
 - harvesting of water
 - manipulation of salinity
 - harvesting of brine shrimp
 - human caused climate change
 - etc.

Meaning (roles/identity) of people
(through GSL):

- birdwatchers
 - hunters
 - conservationists
 - salt extractors
 - people too close to GSL
(flooding, bugs, stink)
- [both (+) & (-) identities of
lake-related people]

Meaning of GSL
(through people):

- resource
 - recreation
 - ecosystem
 - scenic beauty
 - backdrop
 - invisible
 - dead lake
 - undistinguished space
- [both (+) & (-)
meanings of GSL]

Figure 2-1. GSL's Dialectic Process

Natural/Environmental

Human/Cultural

The lake is what it is

- Dynamic
- Ever changing

No matter how it's seen, interpreted, valued or constructed

↓
And does what it does

↘ In ways that require human adjustment

- Both materially—e.g.:
- Move, rebuild, redefine boundaries with high water years;
 - Adjust brine shrimp season with salinity & climate changes;
 - Adjust extraction activities as salinity & lake level changes
 - Etc.
- And in terms of self-identification:
- "I live 'next' to the lake"
 - Activities/possibilities change
 - Economy changes
 - Look/smell/feel/size/depth/density changes

↘ And people are who they are (culturally & identity wise)
And do what they do (materially)

↙ In ways that require GSL adjustment

- "5 different lakes"
- Lower water levels
- Changes in salinity levels
- Increases in algal growth
- Changes in brine shrimp productivity

- Direct effect on lake: e.g. causeway, mineral extraction
- Indirect (unintended) effect on lake: e.g. building houses for children's families—need water (divert rivers) & waste management (to lake)

↙ Pushed by politics, technology, demographics, scientific understanding (e.g. ecosystem, climate change), etc.

Figure 2-2. Dialectic: GSL and Humans

Conceptualization

Having laid out the background for this study from the literature on place, sense of place and related issues, as well as the theoretical foundation for this study, the key problematic for the study is to discover the dynamics of residents' senses of place with this mixed amenity place of ecological importance. Using Great Salt Lake and its residential neighbors as an exemplar, this study adds to a literature that has focused on high amenity places, and has been concerned primarily with visitors. It also adds a sociological piece to the research on the ecosystem of GSL. In this section I outline my conceptualization of the concepts used in the study.

Mixed amenity. I need to first address what I mean when I refer to GSL as a “mixed amenity” place. While prior studies have explored differences in degrees to which places have amenities, there are issues of importance to this study the prior research has not addressed. In previous studies, references to “amenities” have either been vague and lacking definition (e.g. Rudzitis 1998), or have been more narrow than is useful for this study (e.g. McGranahan 1991). Some have focused specifically on recreation and tourism amenities (e.g. Cromartie 1998; Johnson and Beale 1994), excluding consideration of attractiveness to local residents.

McGranahan (1991) provided useful assistance in the task of definition. For his study, and mine, “an amenity is an attribute that enhances a location as a place of residence” (p. 1). He argued these attributes may be different than those that would attract tourists, using as examples of the latter seasonally attractive features or traits that make places unique, which “may or may not be attractive as places to live.” However, McGranahan excluded all but physical traits, specifically leaving out any human-made

features. He focused on the county level, considering climate, topography and water area, and did not include interaction between traits.

Physical beauty arising from combinations of topography, water, flora, and fauna is a natural amenity beyond the scope of this study. We can measure the basic ingredients, not how these ingredients have been shaped by nature and man. (McGranahan 1991:1).

This approach, while simplifying things for measurement, leaves out the dialectic I have described as being so important to consider when examining GSL.

The level of analysis used in these earlier studies creates an additional problem. The amenity scales and other measures developed thus far are at a county level and utilize county-level data (e.g. Johnson and Beale 1994; McGranahan 1991), while for my study I focus on a place. While this place, Great Salt Lake, is located within five counties, it is only a part of those counties, each of which has a number of other characteristics (like mountains) that would also be considered by the measures used in prior research.

For my study, a mixed amenity place is a place people could be expected to have mixed perceptions of. This includes having varied perceptions, including positive, negative and neutral perceptions of the same place, among people as well as individually. Mixed amenity places lack the high grandeur of places typically considered high amenity places, that is, areas with strong recreation and aesthetic amenities—as noted earlier, places that could be described as easy to love, such as resort settings and national parks. Additionally, mixed amenity places may have traits some people find objectionable, irritating, or off-putting. On the other hand, perceptions of these places are not entirely negative. Mixed amenity places also have traits people find attractive. There may be conflict or tension over these various ways the place is perceived.

I have outlined a number of things that put GSL in this category. Local residents have been described as having mixed perceptions of the lake in both the media (e.g. Woolf 1999) and in state documents regarding the lake (GSLPT 2000b). As noted earlier, media depictions of the lake are very mixed, including portraying the lake on one hand as a tourist destination because of its beauty and uniqueness, and on the other, as an unattractive place with a good many irritating features. Although there are recreation opportunities available at the lake, many local residents are unaware of this (Brunson and Nicholson 1999). And due to the lake's variable size and other physical features, residences located nearest to the lake do not have the positive characteristics typical of lakefront property. Each of these things is evidence that Great Salt Lake can be characterized as a mixed amenity place.

Place concepts. As has been noted, place has been defined in a number of ways, both conceptually and operationally. Lobao defined place as “a distinct spatial unit and setting within which social relationships transpire.” (1996:77-78). In Williams' (2008) description of literature on place that focuses on relationship and meaning, he emphasized the uniqueness of each place compared to every other place in the pattern of events and meaning that come to be associated with it. Following the work of those who have emphasized meanings-based conceptualizations, such as Relph (1976), Riley (1992), Brandenburg and Carroll (1995), Eisenhauer et al. (2000), and Williams and his colleagues (e.g. Patterson and Williams 2005; Williams 2008; and Williams and Patterson 1996), I, too, focus on meaning. I define place as a distinct spatial setting with unique patterns of meanings that are associated with it, and in fact, define it.

My use of “meaning” refers to an emergent, interaction-based social construction. Meanings are negotiated and renegotiated intersubjective definitions of the situation that change over time, yet have a persistence that gives them long-term continuity. Meanings are imposed on other groups through the use of power, including the development of social bases and alliances and the use of impression management. These social influences shape understandings people have of places, “create” nature and the environment as well as place, and provide normative definitions of relationships between people and places. It should be noted that places rarely have singular, completely agreed on meanings, rather places very often have varying meanings even within a single social group or local area (Berger and Luckmann [1966] 1967; Blumer 1969; Eisenhauer et al. 2000; Greider and Garkovich 1994).

By a sense of place I mean the internalization (referring to Berger and Luckmann’s usage of the term) of some collective definition of a specific place. A person has a sense of place if he or she holds taken-for-granted knowledge about that place, and if that definition of the place—that knowledge—is part of the reality of everyday life for that individual. Those for whom the place is not part of the reality of their everyday life—i.e. those for whom Great Salt Lake has little relevance or significance—lack a sense of place related to the lake. I focus on sense of place rather than other place-related concepts because, for this study, I consider both positive and negative associations with the place. This can include positive and negative memories, stories, roles played in people’s lives and histories, as well as both the benefits and costs of living close to the lake. All of these things may be part of the meanings Great Salt Lake holds for these closest neighbors. A number of researchers have posited that people can have

relationships with places that have much in common with their relationships with other people (e.g. Hay 1998; Schroeder 1996, 2002). To extend that analogy to GSL and its neighbors, just as a human neighbor can be appreciated, tolerated, cared for, despised, loved, hated; their eccentricities celebrated or tolerated, their idiosyncrasies dealt with fondly or begrudgingly, etc. I would argue that Great Salt Lake can also evoke any combination of those feelings. There may be a variety of senses of the lake (some of which will be tied to the roles one holds and the role-specific relationships those roles engender), and one may possess a sense of place with or without direct personal experience with that place. One's "subjective reality" (that balances out the "objective reality") of the place could be based in experience with one or more of the social constructions of the place, whether or not one had actually visited the place. I am interested in the senses of place people have of the lake, individually and collectively, socially, and culturally.

In addition to this conceptualization of sense of place that does not focus on affect *per se*, I am also interested in the degree of positive sentiment those who live very close to GSL may have for the lake and its ecosystem specifically. I use place attachment to examine this. By place attachment, I am referring to the positive meanings a place holds for individuals. I am interested in the relationships individuals have with that geographic place. Place attachment is based in sentiment, not judgment, and is affective rather than evaluative. Some lake neighbors likely do not feel any attachment to the lake at all, and some may feel negative affect, as noted above. I see place attachment as evidence of sense of place, however people can have a sense of place without place attachment.

I am interested in the socially constructed definitions and meanings of Great Salt Lake held by local residents. My interest is in not only the meanings held about the lake, but what categories of people hold different meanings or definitions, and how it varies across and within categories. This raises the qualitative question of what various meanings (definitions) of GSL are held by local residents (neighbors of the lake), as well as the quantitative question of how much correlation there is between these definitions. Additional quantitative questions include what types of people, with what types of roles, hold these various definitions, and what factors of variability are involved.

Research Questions and Expectations

Research question #1: *What are the various senses of place held about Great Salt Lake by neighbors of the lake?*

1a: *What are the various meanings the lake holds?*

1b: *To what extent are these meanings shared among individuals and groups?*

1c: *Do individuals hold multiple meanings of GSL?*

Research expectation #1: *There will be a wide variety of senses of place and meanings held about GSL, with evidence of shared meanings among groups. A substantial number of people will appear to hold multiple meanings, including meanings that do not appear to be congruent with each other.*

Berger and Luckmann ([1966] 1967) might rephrase this research question to ask about the images of the lake that have become part of local residents' taken-for-granted, everyday life. They would likely posit that there may be as many different constructions of the lake as there are roles that interact with it in any way, and that the senses of the place, and the meanings the lake holds for people, would be related to their roles and the stocks of knowledge affiliated with those roles. Berger and Luckmann used "roles" to refer to typified actors who perform behaviors associated with that typification. The actions they perform, and the related identity of the actors are part of the role, and one's

role determines the types of stocks of knowledge one gains access to. Thus, the role describes the actor, the action prescribed for such an actor, and the stocks of knowledge that actor will hold (after being socialized to that knowledge). As mentioned earlier, once one is socialized to a role and has learned that specific stock of knowledge, everything about that role becomes part of the taken-for-granted, everyday life for that person. In this study, my use of “role” is along these lines.

Berger and Luckmann ([1966] 1967) would argue that lake meanings would be shared to the extent that stocks of knowledge about GSL are shared, within roles and across them.

Again, I am investigating sense of place to allow me to consider the full range of experiences and feelings, as advocated by Relph (1976) and a number of other place scholars (e.g. Giuliani and Feldman 1993; Kyle et al. 2004; Manzo 2003). This is particularly important since it is a mixed amenity resource with widely varying social constructions and differing experiences. Also, because living near the lake is a shared experience of a common landscape, it is “a source of shared meaning and emotion, whether liked or disliked, whether tasteful or ugly” (Riley 1992:27).

The possibility of having this shared experience is what I am referring to when I use the word “groups.” Sociologists refer to social groups as “collectivities of people who interact and form social relationships” (Abercrombie et al. 2000:158), and as early as introductory classes, students of sociology learn that members of social groups have a subjective awareness of themselves as “we,” and share common norms and goals (Anderson and Taylor 2007). This is in contrast to what is referred to as “categorical groups,” or people who fall into the same category on some variable (e.g. age, marital

status, etc.), but who may not interact together. For this study, I am referring to collectivities that may fall in between these two characterizations. Greider and Garkovich (1994) discussed (but did not define) “cultural groups” that share symbols, meanings, and social constructions of things or places. They stated, “the symbols and meanings that comprise landscapes reflect what people in cultural groups define to be proper and improper relationships among themselves and between themselves and the physical environment,” (p. 2), in other words cultural groups have shared norms. My use of “groups” is along these lines, or using the language of Berger and Luckmann ([1966] 1967), the groups I refer to here are collectives of people who have reason to hold similar stocks of knowledge about GSL. In some cases these could be social groups, as commonly defined by sociologists, however in other cases I refer to groups more broadly than this, for example, members of a community.

It is expected that people will hold multiple meanings of Great Salt Lake, including meanings that would seem incongruous, because of the complexities of a mixed amenity place and the complexities of GSL, including the dialectic dynamics between natural and built, between lake and social, as well as the natural dynamics of this shallow, terminal lake given to widely varying lake elevations and related size and salinity. It is expected, for example, that many of those who hold a strong sense of place and positive feelings regarding the lake will also have experience with the lake as stinky and buggy, and that many who think of the lake as being generally irritating will still think positively about the sunsets or the pelicans. This research question will likely reveal evidence of the ways that GSL is an “agentic player” (Gieryn 2000) in the relationships lake neighbors have with it.

This expectation is strengthened by the study population consisting of the closest neighbors of the lake. Since these residents are exposed to the lake at all lake elevations (depending only on length of residence, since elevation shifts can take years), during all seasons, it seems likely that no matter how positively they feel about the lake, they will also be aware of what Relph referred to as “the drudgery of place” (1976:41). This research question emphasizes the need to consider the full range of meanings and affect related to this place, as advocated by Manzo (2003), since it is likely people will hold a variety of meanings, many simultaneously.

Research question #2: *Are there differences between those for whom GSL is a place vs. those for whom it is undifferentiated space?*

2a: *What variables are related to differences in the meanings held about GSL?*

Research expectation #2: *Variables related to differences will include length of residence, level of involvement and experience with GSL, and location of residence within the lake system, including proximity and access to the lake. A number of sociodemographic variables will also be related to differences, some of which are due to differences in roles held by individuals and groups.*

This research question considers the relationship between possible variables of difference and place meanings, which differ from each other qualitatively; meanings that indicate people’s sense of place, which can also differ qualitatively. There are two related issues here. The first considers correlates between local residents who have, and those who do not have a sense of place for the lake, while the second considers correlates of difference in the meanings held by local residents about GSL. I also consider differences between those with and without place attachment. These likely fall along similar lines, in differing degrees, with one of the key issues being that of the lake having varying levels of salience or relevance for different individuals and groups, as addressed by Berger and

Luckmann ([1966] 1967).

The expectations here come from a number of factors and sources. Much of this ties back to Berger and Luckmann's ([1966] 1967) roles and Greider and Garkovich's (1994) self-definitions or identities, socialization again plays a large part. One of the differences I expect to see here could be expressed as the difference between primary and secondary socialization as described by Berger and Luckmann. Those residents who grew up in the area near the lake would have been socialized to various meanings about it as a child, and according to Berger and Luckmann, primary socialization is very good at leaving one with taken-for-granted knowledge that comes from the local culture's common stocks of knowledge. Those socialized to those stocks of knowledge secondarily, as adults, are typically not socialized so deeply, and this later socialization is much more role-specific.

Varying roles people hold connected to the lake will likely explain differences in degree of sense of place. For example, recreationists will likely be among those with the highest degree of sense of place, due to the interests those roles carry, the unique attributes of the lake that make it well suited for those activities, as well as the lived experience of people. The degree and types of interaction with the lake, whether or not the lake is used, and whether the use is recreational or instrumental/economic will likely all factor into the variability of the meanings held by people. This experience may occur at the family level or community level instead of or in addition to the individual level, which may create differences in meanings. Some of these social aspects may be affected by location-specific social group (i.e. community/ neighborhood, etc.).

In addition to these and other social aspects of the relationships between these

closest neighbors and GSL, there are issues related to the two other points of Gieryn's (2000) three-part conceptualization of place. In terms of geographic location, a number of factors could come into place for creating variability in the relationships these residents have with the lake. These include proximity and access to the lake, whether or not people can see the lake from their property, and what the physical properties of the lake are at that location (e.g., are they close to open lake, a bay, or wetlands?). The material form of the lake over the course of people's experience will also play a role. This would include things such as lake elevation, related to the visibility of the lake's waters, the degree of salinity, the degree of odor associated with the lake, and other concerns.

Gieryn's triad also illuminates how something like length of residence takes on whole new dimensions of difference. Sociologists typically consider this variable due to differences in the amount of time residents have had to develop sense of place and to become more connected with social networks who would share in the objective and subjective reality of the situation. However Gieryn's model would also have us consider other aspects of this variable, such as the physical changes the lake has gone through over the course of one's residence, how built aspects have interacted with the natural over time, and how these aspects have interacted with human relationships with the lake. Human interactions can also serve to limit or increase access, for example, and newcomers will only know the experience of the condition since they have been there, whereas long-term residents will remember what access used to be like, etc.

Additionally, a number of sociodemographic variables are expected to be related to differences in the meanings held by different people. Many of these go back to the roles people hold, as well as the meanings they were socialized with, either primarily, or

secondarily in the context of particular roles. It is expected that some of the dynamics here will relate to Berger and Luckmann's ([1966] 1967) concern with the social-structural conditions and consequences of the socialization process.

CHAPTER 3

STUDY SETTING AND APPROACH

Lake of paradoxes, in a country where water is life itself and land has little value without it, Great Salt Lake is an ironical joke of nature—water that is itself more desert than a desert.

--Dale L. Morgan ([1947] 1995:17)

It is the liquid lie of the West.

--Terry Tempest Williams (1991:5)

Having presented the theoretical and empirical background for this research, the working definitions of concepts I use and the research questions I address, this chapter focuses on the what, where, how and who of the research. The chapter begins with an expanded description of the study area and the people who live there. I then explain the research design, including descriptions of how secondary data and documents are used, the qualitative and quantitative data collection methods, and brief descriptions of those sampled in all three data sets.

Study Setting: Great Salt Lake and Environs

Great Salt Lake and its environs make up a tremendously complex ecosystem. Located in northwestern Utah, within the Great Basin that once contained the ancient Lake Bonneville, GSL is the remnant of that larger, freshwater lake. It is all that was left after a catastrophic flood led to Bonneville's draining, roughly 12,000 years ago (GSLPT 2000b). The Great Basin area is part of the Intermountain West. The Wasatch Range of the Rocky Mountains is east of GSL, and there are mountains to the north, the northwest, and the southwest as well. To the west lies the Great Salt Lake Desert. GSL is fed by

three rivers that drain the snowmelt from the eastern mountains: Bear River from the northeast, Weber River (fed by Ogden River, which joins it roughly 10 miles east of the lake) from the east and Jordan River from the south, providing roughly 92-95 percent of the lake's inflow. The remaining inflow comes from sources such as creeks and springs, seepage, and direct rainfall and snowfall (Bedford 2006; GSLPT 2000b; Millard 2000). Five northern Utah counties contain Great Salt Lake: Box Elder, Weber, Davis, Salt Lake, and Tooele. Figure 3-1 shows the lake in its larger surroundings.

As noted earlier, GSL is a shallow, terminal lake with an elevation that has varied within a 20 foot range historically, leading to a corresponding size range of 950 to 2,300 square miles (see Figure 3-2). At its average water elevation (4200 feet above sea level), GSL's roughly 1,500 square miles make it the largest lake west of the Mississippi River and the fourth largest terminal lake in the world. Its deepest point at that elevation is about 33 feet deep (GSLPT 2000b). In July 2007¹ the elevation of GSL was about 4,197 feet above sea level (USGS 2008).² This is below average, following a several-year drought—at the peak of the drought in 2004 the elevation of 4,194 was only two feet higher than the historic low lake level set in 1963.³ As was noted previously, the lake reached its highest elevation in recorded history,⁴ 4211.85, in 1986 and 1987, swelling to cover 2,300 square miles, causing serious problems with flooding around most of the lake system.

¹ This is when survey data were collected for this research.

² At this elevation, it would have covered roughly 1,300 square miles, and would have been 29 feet deep at its deepest point (Perschon 2006).

³ The mean lake elevation for 2007 was 4196.70, and the lake level has continued to decline, with the mean elevation for 2008 at 4195.14. The elevation again decreased to 4194 from September 2008 through January 2009, but with additional winter precipitation was back to 4195 as of February 15, 2009 (USGS 2009).

⁴ recorded since 1847

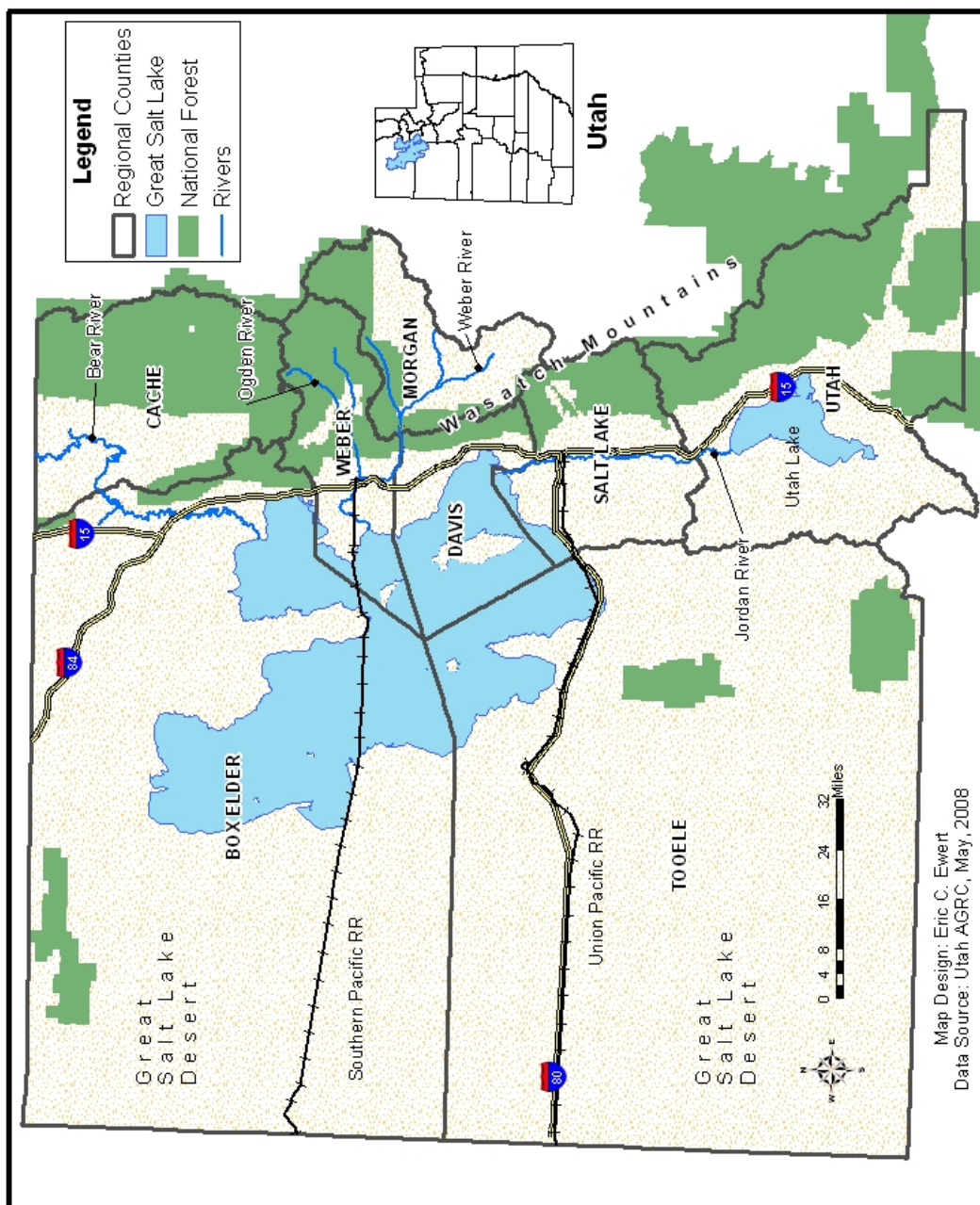


Figure 3-1: Great Salt Lake and the Surrounding Area in Northern Utah

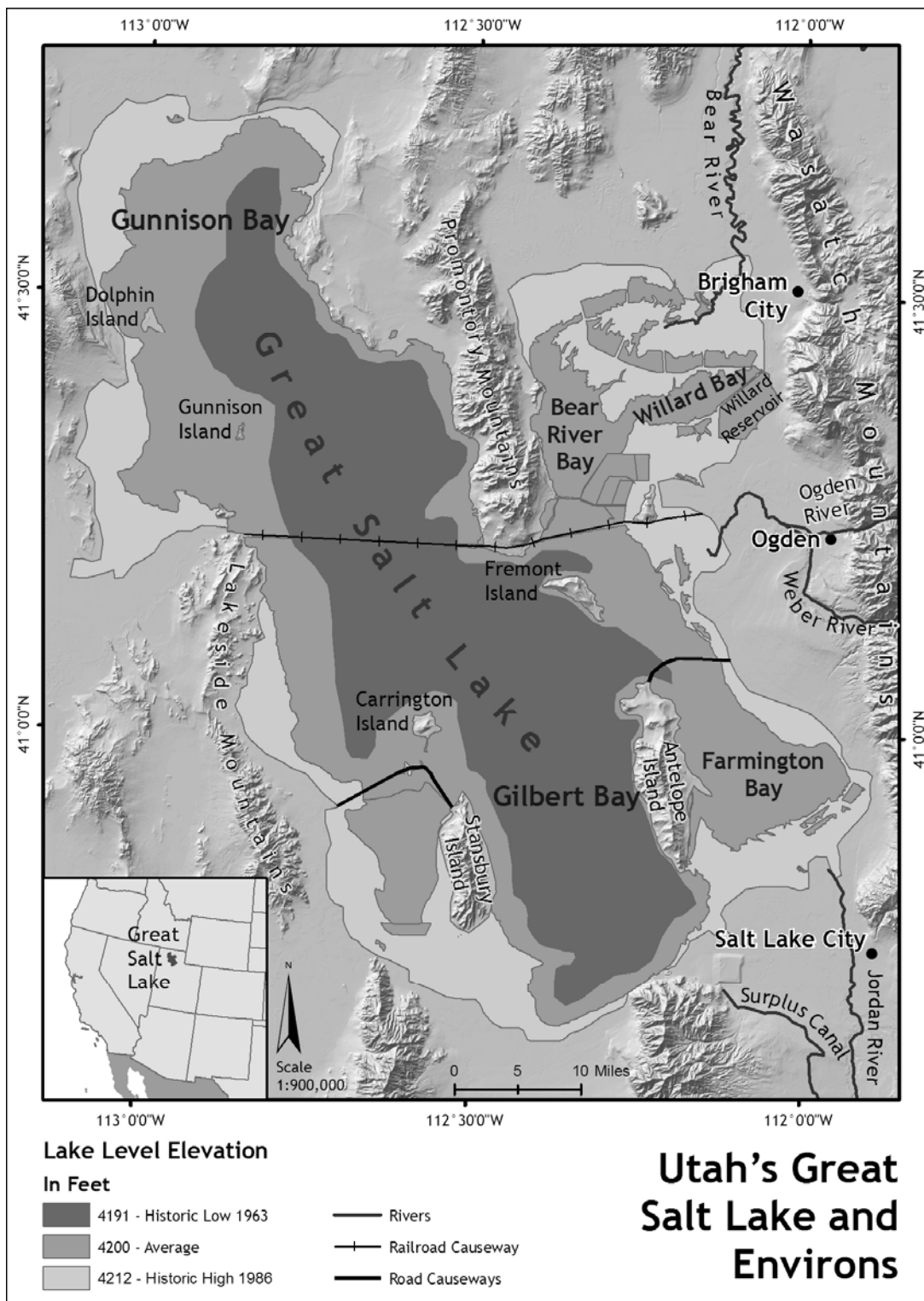


Figure 3-2: The Varying Lake Elevations of Great Salt Lake
 Cartography by Justin Morris, Geography Department, Weber State University, Ogden, UT. Source: *The Geographical Review*, the American Geographical Society (Bedford 2005); permission for reprint granted.

The lake contains eleven named islands, although varying elevations changes this, immersing some, forming others, and connecting island to land, creating peninsulas. One of the largest, Stansbury Island, is only an island during high water; even at the average elevation of 4202 it is a peninsula in the southwest portion of the lake. Antelope Island, in the southeast part of the lake, is the largest of the islands at 42 square miles, with Fremont, the third largest (2,945 acres), to the north. The rest of the islands—Carrington, Gunnison, Dolphin, Hat (or Bird), Badger, Egg, Cub, and Strong’s Knob—range from less than one acre to about 1,800 acres in size (Millard 2000; UGS 2005). Figure 3-3 shows the locations of the islands and other lake-related sites.

As a terminal lake, there are no outlets for the minerals the river water brings in. As the water evaporates the minerals become more concentrated, and GSL is hypersaline as a result. Depending on lake elevation, the average salt concentration for the lake ranges from about 8 to 26 percent (GSLPT 2000b). This is more than two to eight percent saltier than the ocean; the Dead Sea is the only body of water in the world with higher salinity levels (Millard 2000). The salinity levels in the lake make the water considerably heavier than freshwater, increasing the force of the waves and navigation challenges.

The size and salinity of GSL play a role in the local climate, affecting temperature, wind, and precipitation. The lake creates a maritime influence, moderating temperatures within a few miles of the lake, which affects wind patterns and precipitation. This can result in unpredictable and damaging lake effect snow storms (Bedford 2006; GSLPT 2000b), so infamous in the area that weathercasters often refer to “the DLE” or Dreaded Lake Effect, crediting it with six to eight winter storms a year (Alder 2002; GSLEP 2009; Bauman 1999). On the more positive side, the weather



Figure 3-3: Features of Great Salt Lake and Its Related Sites (USGS 2008).

patterns also play a significant role in the creation of the excellent skiing conditions the Wasatch Front is known for (GSLPT 2000b).

Great Salt Lake and its environs constitute a complex and diverse ecosystem of hemispheric importance. With a “unique mosaic of upland, wetland, mudflat, river delta, brackish and freshwater marshes, ephemeral ponds and other habitat types” (GSLPT 2000b:59), it supports 257 species of birds, including 83 species of waterbirds, 23 species and subspecies of fish, eight species of amphibians, and 64 species or subspecies of mammals (GSLPT 2000b).

The aquatic life within the lake itself is much more limited in diversity, although still very prolific, with salinity as the primary limiting factor. The species inhabiting the lake include many types of bacteria, including two extremely salt-tolerant species in the salt-saturated north arm of the lake with pigment that gives the north arm water a red or purple cast (GSLEP 2009). A variety of algae species live in the lake, with the number of species and their abundance dependent on salinity levels. The only other organisms living in the open waters of Great Salt Lake include brine shrimp, brine flies,⁵ and in lower salinity water, corixids—small, predatory, flying aquatic insects (GSLPT 2000b). Both brine shrimp and brine flies keep the lake clean: brine shrimp eat algae until the water is clear (as long as the salinity level can support the algae brine shrimp can consume), and brine flies consume algae, bacteria and organic refuse. Many of the bird species eat brine shrimp and brine flies, as well as other insects near the lake. One species, Eared Grebes, live solely on brine shrimp; in fact, each Eared Grebe eats 10,000 to 15,000 brine shrimp

⁵ These insects literally blanket the shores and shallow waters in some places along the lake, with their larvae at densities of 370 million per mile of shoreline during the summer months (GSLEP 2009).

a day, every day, and 1.5 to 2.5 million Eared Grebes use the lake each migration (GSLEP 2009; Perschon 2006; Warchol 1999).⁶

In 2001 the Western Hemispheric Shorebird Reserve Network (WHSRN) designated the GSL wetlands ecosystem as a Hemispheric Reserve, the highest designation within the WHSRN system (GSLPT 2000b; WHSRN 2003). GSL is one of only six such reserves in the United States (GSLEP 2009). To qualify for this designation a site must support at least 500,000 shorebirds annually, or 30 percent of the world population of a single species. The number of Wilson's Phalaropes alone meets that criterion, with 500,000 birds using the lake, the largest known concentration of the species in the world. The lake and its environs are used heavily by waterfowl, gulls, pelicans, grebes, ibis, avocets and a host of other birds (see Table 3-1). Up to 30 percent of all Bald Eagles west of the Rocky Mountains winter in the lake area, some 1,200 birds (Stettler 2008); one count found 72 at one GSL-related site on a single day (Talbot 2006). Great Salt Lake draws the birds because of its size, the dynamism in water levels that keeps the extensive wetlands system refreshed and productive, the diversity within the ecosystem (e.g. uplands, wetlands, marshes, salt playas, etc.), and its location along migration routes, where productive sites for feeding and molting are few and far between (Aldrich and Paul 2002). The lake ecosystem also provides a diversity of fairly protected places for nesting. A number of the islands, including Gunnison, Hat, Cub, and Egg Island, are regulated to protect their rookeries, resulting in extremely successful gull and pelican productivity, for example, due to isolation from predators (Millard 2000).

⁶ Eared Grebes are present at the lake from April through August, with numbers peaking in August when GSL serves as a staging site for migration (GSLEP 2009).

Table 3-1: Examples of Significant Bird Numbers in GSL Ecosystem

7.5 million birds, from 257 species, use the lake and its environs

33 species of shorebirds

Breeding waterfowl—annual production of 750,000 birds

Includes large numbers of Pintail, Gadwall, Cinnamon Teal, Mallard, Ruddy Duck, Northern Redhead, Northern Shoveler, and Canada Geese

Global numbers:

Wilson's Phalaropes: 500,000—over 50% of world's population

California Gulls: 150,000 breeding adults—world's largest number, includes largest single colony

Red-necked Phalaropes: 280,000—over 10% of world population

Snowy Plover: 10,000 nesting—world's largest concentration

In North America:

Largest staging concentrations:

American Avocets: 250,000

Black-necked Stilts: 65,000

Eared Grebes: 2.5 million, ½ of North America's population

Molt and stage in summer:

Pintails: 250,000—25% of continental population; historically up to a million birds

Green-wing Teal: 600,000

Breeding:

American Pelican: 17,000 breeding adults—breeding colony is in top three in North America

White-faced Ibis: 23,000 breeding adults—largest breeding population

In the United States:

Marbled Godwit: 30,000—only inland staging area in U.S. interior

Bald Eagles: 500—winter, one of largest concentrations in 48 contiguous United States

Tundra Swans: 60,000—75% of western population stage at GSL

Also:

Long-billed Dowitchers—over 30,000 counted on single occasion; up to 58,000 use GSL during migration

Use by large numbers of waterfowl during migration, nearly 700,000 in fall, 350,000 in spring

Includes Gadwall (100,000), Cinnamon Teal (80,000), Mallard (500,000), Ruddy

Duck (60,000), Canada Geese (50,000), Northern Redhead (150,000), Canvasback (50,000), and Northern Shovelers (100,000)

Use by 15 sensitive species including American Pelican, Long-billed Curlew

Sources: GSLEP 2008; GSLPT 2000b; WHSRN 2003.

The wetlands associated with Great Salt Lake make up nearly 75 percent of the wetlands in the state of Utah. When the lake is at its average elevation there are approximately 400,000 acres of wetlands near GSL. While the open waters and wetlands of the lake are critical to this ecosystem, the adjacent upland areas are also used heavily by wildlife, and serve as an important buffer for the wetlands, protecting them from encroachment. The riparian habitat that connects the lake to the mountains to the east also provides critical migratory and breeding habitats for wildlife (GSLPT 2000b). Besides the avian species noted, other wildlife using the GSL system include amphibians, turtles, lizards and snakes; a number of rodent species, as well as bats, rabbits, porcupines, coyotes, foxes, bobcats, mountain lions, and deer. Additionally, herds of antelope, bison, and bighorn sheep have been established on Antelope Island (GSLPT 2000b).

Human Interaction with the Lake System

While Great Salt Lake and its environs provide a rich and diverse ecosystem without any human intervention, humans have also supplemented this system. The Utah Division of Wildlife Resources (DWR) manages a number of wildlife or waterfowl management areas close enough to be part of the lake's environs, and there is one federally managed migratory bird refuge; these account for 150,000 acres of the lands adjacent to the lake. Additionally, preserves run by nongovernmental organizations such as The Nature Conservancy (TNC) and Audubon total another 10,000 acres, and over 50,000 acres more are managed by private duck clubs (GSLPT 2000b) (see Table 3-2). The Legacy Nature Preserve is currently under construction as a mitigation effort by the

Table 3-2: GSL-Associated Wildlife Refuges, Management Areas, and Preserves

Federally managed:

Bear River Migratory Bird Refuge—Box Elder County

State managed:

Locomotive Springs Waterfowl Management Area—Box Elder County

Public Shooting Grounds Waterfowl Management Area—Box Elder County

Bear River Access Waterfowl Management Area—Box Elder County

Salt Creek Waterfowl Management Area—Box Elder County

Willard Bay Upland Game Wildlife Management Area—Box Elder & Weber Counties

Harold Crane Waterfowl Management Area—Box Elder & Weber Counties

Ogden Bay Waterfowl Management Area—Weber County

Howard Slough Waterfowl Management Area—Davis County

Antelope Island State Park—Davis County

Farmington Bay Waterfowl Management Area—Davis County

Timpie Springs Waterfowl Management Area—Tooele County

Nongovernmental Organizations:

Great Salt Lake Shorelands Preserve—The Nature Conservancy—Davis County

Inland Sea Shorebird Reserve—Kennecott Utah Copper—Salt Lake County

Gillmor Wildlife Sanctuary—National Audubon Society—Salt Lake County

Salt Lake City International Airport Mitigation Site—Salt Lake County

Lee Creek Area—National Audubon Society—Salt Lake County

Great Salt Lake Duck Club Properties—Box Elder, Weber, Davis, and Salt Lake Counties

Source: GSLPT 2000b.

Utah Department of Transportation (UDOT). Figure 3-3 shows the location of these protected wetland areas as well as other lake features.

Another built feature of the lake system is a fresh-water reservoir, abutting the northeast side of the lake. Willard Bay Reservoir⁷ is separated from the lake by the Arthur V. Watkins Dam, a 36 foot high structure that forms a rough rectangle 14.5 miles long, with a 215,120 acre-foot capacity (USBR n.d.). A state park is located at the reservoir, with recreation activities administered by the Utah Division of Parks and

⁷ Recently renamed the Arthur V. Watkins Reservoir, the regional place name is still Willard Bay Reservoir, or just Willard Bay. This last can create confusion, because the portion of the lake that abuts the reservoir is a bay named Willard Bay, attached to GSL through Bear River Bay.

Recreation (DPR). The reservoir provides a fresh-water habitat for wildlife including fish, birds, and mammals, within the GSL ecosystem.

Human interactions with the lake have also led to a number of negative consequences for the ecosystem (see Bedford 2006; GSLPT 2000a, 2000b). The most intrusive interactions have been for transportation infrastructure, although the relationship between transportation venues and the lake has been a recursive one. What eventually became the most substantial human-caused interference with the lake's ecosystem began with a 12-mile wooden railroad trestle built in 1902, giving the Central Pacific Railroad a significant short-cut across the northern portion of GSL, called the Lucin Cutoff (Gwynn 2002). In 1959 the wooden trestle was replaced with a causeway constructed of sand, gravel and rock-fill, beginning an ongoing dialectic relationship between causeway and lake. When the lake rose, the causeway had to be built up to keep the tracks above water. As the causeway settled and filled in with brine, it became a dam between the lake's north arm and south arm, serving as barrier to water circulation between the fresher south arm and the more saline north arm, which substantially altered the salinity levels. This damming effect led to a four foot difference in elevation between the south arm and the north arm when the lake elevation was rising in 1984. At that point a breach was constructed in the causeway to reduce flooding by the south arm, which also served to redistribute the salt loads between the arms (GSLPT 2002b; Gwynn 2002; Quealy 2002). The problem of impaired water circulation has reoccurred since, requiring further intervention (GSLPT 2002a, 2002b).

A railroad line was constructed just south of the lake in 1909, which has been greatly affected by high water years. Eight miles of the original line was constructed on

fill and trestles, and the track was threatened nearly from the start when 1910 turned out to be a fairly high water year (Gwynn 2002). Keeping the track above rising waters during the 1980s cost the Union Pacific Railroad more than \$29 million (Gwynn 2002).

A causeway allowing access to Antelope Island by motor vehicles was completed in 1969, however this state road was flooded in 1983 and the causeway and state park on the island closed for ten years. In 1991 Davis County took over the road and repaired it, raising it two feet. They reopened the causeway in 1993 (GSLPT 2000b; Park 2007d). Like the northern railroad causeway, the Antelope Island causeway has been a barrier to water circulation, cutting off Farmington Bay from the open waters of the lake. Other interactions between lake and transportation have included the extensive rebuilding of an interstate freeway just south of the lake due to flooding during the 1980s, and the highly controversial siting of a highway through GSL wetlands, resulting in a lawsuit by environmental groups and others that stopped construction for over four years (e.g. Henetz and Warchol 2005).

Great Salt Lake has been described as consisting of several “different lakes” (Perschon 2006), partially because of the built features described above that have changed some of the natural dynamics of the lake. There is the main body of the lake, and in the middle of the eastern portion Ogden Bay, fed by the combined Ogden and Weber Rivers, opens up into this main body. In the southeast portion of the lake, Farmington Bay has been isolated from that main body by the causeway to Antelope Island along with a small dike-like ridge that goes from the south end of the island to the mainland of northern Salt Lake County. Because the Jordan River flows into Farmington Bay, the bay is mostly fresh, with salinity at only five percent. The northern railroad causeway crosses

the lake from the northern part of the Weber County shoreline to Promontory Point, separating off Bear River Bay (fed by the Bear River); it then continues westward from Promontory Point to the west side of the lake. As has been noted, this causeway secludes the north arm of the lake from the rest of GSL. With no fresh water source, the salinity level in the north arm has become saturated, maintaining a steady 26 to 28 percent salinity, concentrating the salt until it precipitates, or crystallizes, out of the water (GSLEP 2009). Finally in the southwest portion of the lake, west of Stansbury and Carrington Islands, the chemistry of a portion of Gilbert Bay has been completely changed due to commercial evaporation ponds for mineral extraction (Perschon 2006).

This “environmental-societal system” (Bedford 2006:73) has also affected the humans involved. One example is the odor. Great Salt Lake’s association with odor goes back at least as far as some of the first Europeans to encounter the lake. For example, in 1845 John C. Fremont commented on the evil-smelling scum around the lake shores (Morgan [1947] 1995). The strong smell is a common occurrence with salt water bodies due to their chemistry, but it is exacerbated at GSL partially because of the lake’s shallowness. The odor comes from decaying plant and animal matter in the shallow waters and their shorelines—the vast numbers of brine shrimp and brine flies lead to very large piles of decomposing brine fly pupae casings, brine shrimp and algae that have washed onto the shores. The odor would be much worse if the brine shrimp and brine flies were not such efficient algae and waste consumers (GSLEP 2009). When northwest winds blow across the lake, the wind action mixes the water and carries the odor inland. Human interaction has exacerbated this situation. Discharges from sewage plants into the

relatively closed system of Farmington Bay,⁸ have contributed to eutrophic conditions in the bay, adding to the odor (Bedford 2006; GSLEP 2009; GSLPT 2000b; UGS 2008). Additionally for the area closest to the Davis County Causeway, an area that receives many complaints about the smell, a sewage plant located just south of the causeway has had difficulties managing its own odors (Park 2007b; Saxton 2007a). Although some people who live in the area say they can tell the difference between the sewage smell and the lake, it may be that some of the smell attributed to the lake near the causeway (particularly by tourists and others who do not live in the immediate area) has been from the sewage plant.

Lake Elevations

The most damaging consequences for humans from the social-ecosystem interactions have been caused by flooding during high water years. While early Mormon settlers experienced high water extremes with an elevation of 4211.5 in 1873 (the historic high until 1986), the century following made it appear that this was an anomalous, one-time occurrence. In the 100 years prior to 1983 (when the recent flooding began), the average elevation was 4198 with a maximum of 4207. For the fifty years before 1983, the average was even lower at 4197, with a maximum of 4202 (GSLPT 2000b). Developing close to the lake did not appear to be a gamble. In fact, during 1963, the historic low water year, people thought the lake might dry up, and the shrinking lake size and shoreline left at least two popular lakeside resorts literally high and dry (Travous 1980).

⁸ Discharges from sewage treatment plants servicing Davis and Salt Lake Counties are released into Farmington Bay's relatively closed system, directly or by way of the Jordan River. Discharges from Weber County's sewage plant are released into the Weber River, going through Ogden Bay to the open waters of the lake.

However, after this low the lake began rising at a rate that was fairly alarming to locals. As early as 1976, a task force (the Great Salt Lake Technical Team) began discussing options such as pumping lake water into the West Desert, upstream development of river waters, and diking. In 1982, the state legislature passed a legislative mandate that the lake be maintained at an elevation below 4202 (UDWRe 2007), an impossibility in the face of the rapidly rising waters of 1982 through 1986 when the elevation rose 12 feet (in a lake with an elevation range of 20 feet). The significance of the high water years of the 1980s can be seen in the fact that the present “long-term average lake elevation is 4202 (above sea level)” (GSLPT 2000b:3), an elevation that represents “a common average lake level” (p. 15).

Beginning in 1982, an abnormally high amount of precipitation occurred throughout the GSL catchment area, resulting in an extremely heavy spring run-off from the mountains in 1983, leading to flooding and landslides. Since mountain runoff ends up in the basin at the bottom, the lake elevation began to steadily increase, continuing through the water year of 1986, with inflow double the normal average (UDWRe 2007). GSL reached a new historic high of 4211.85 in June 1986 and matched it the next year. The flooding from the lake began in 1983, with damages estimated at over \$240 million over the next four years.⁹ The impacts included:

- Industry: Ponds for mineral extraction were inundated, employees in this industry were moved from mineral production to dike-building
- Transportation: An interstate freeway, I-80, to the south of the lake, had to be raised, in some sections as much as eight feet, at a cost of \$20 million dollars; I-15, to the east, was in danger of being flooded
 - Some access roads were flooded

⁹ 1985 dollars

- Railroad causeways at both the north and south ends of the lake were affected
 - After spending \$70 million on the north causeway, the Southern Pacific Railroad said if the lake rose one more foot it would quit trying to keep up
 - A Weber County commissioner responded, “We are one foot away from losing 2,000 jobs [dependent on causeway use]” (Sanchez 1999a)
 - There were concerns that the Salt Lake City International Airport would be affected at its elevation of 4213, with runways at 4220
 - Public lands and facilities: The buildings and dike systems throughout the Bear River Migratory Bird Refuge were destroyed
 - The Great Salt Lake State Park and Marina, and beaches on the south side of GSL were inundated; state park facilities on Antelope Island were washed away, its causeway was under six feet of water
 - Facilities at Farmington Bay, Howard Slough, and Ogden Bay WMAs were destroyed; salt water damaged fresh water management areas at lake-related WMAs
 - Sewage treatment plants built walls of sandbags and were surrounded by the lake
 - Private lands and facilities: Many private duck and goose club facilities were destroyed
 - The newly rebuilt and reopened Saltair resort and amusement park were flooded
 - In Davis and Weber Counties, productive farmland was under briny water
 - Communities: In Salt Lake County, 1,000 Rose Park homes were threatened, the elevation of the community was three feet lower than the raised lake elevation—Salt Lake County pumped water around the clock to keep up with the water
 - In Tooele County, Erda had 40 septic tank failures, another 300 were endangered
 - In Davis County, large parts of West Bountiful were affected, and in North Salt Lake one street was under 18 inches of water
 - In Weber County flooding occurred as far east as Plain City
 - In Box Elder County flooding occurred as far north as West Corrinne
- (GSLPT 200b; Sanchez 1999a; UDWRe 2007)

Dealing with county and community leaders, industry leaders, farmers and other residents all demanding that something be done to stop the flooding, in 1986 Governor Norman Bangert and the Utah State Legislature made the controversial decision to build the West Desert Pumping Project at a cost of \$60 million. They also provided \$10

million in funding for building and raising dikes and breakwaters in specific locations.¹⁰ Pumping began in April 1987 and ended in June 1989 after lowering the lake level 15 inches. The elevation began to lower naturally as precipitation dropped to average levels, dropping another two feet in 1989 and four feet more over the next four years (GSLPT 2000b; Sanchez 1999a; UDWRe 2007). Although it has not been used since, the Pumping Plant is maintained for future use and is inspected monthly.¹¹

The flood plain for the lake has been defined as extending to an elevation of 4217, based on the high lake level of 4212, plus three feet for wind tide and two feet for wave action; state agencies see this as a suggested moratorium on development at this elevation or lower. However, because the Utah Department of Natural Resources (DNR) has no regulatory authority over the land in the flood plain (except that owned by DNR), local governments are responsible for the planning and zoning of these lands, under the advisement of Federal Emergency Management Authority (FEMA) and the United States Army Corps of Engineers (COE) (GSLPT 2000b). FEMA determines the necessity of flood insurance, and adherence to their flood plain mapping is required for participation in the National Flood Insurance Program. COE regulates wetlands.

The counties next to GSL each handle the issue of a moratorium a little differently. For example, Davis County does not use the word “moratorium” but rather uses the FEMA flood plain line to regulate development (B. Burton, Davis County Department of Community and Economic Development, personal communication, July

¹⁰ The pumping project included three pumps to lift water into a four-mile outlet canal, discharging the water into the West Pond, in the West Desert, to be evaporated.

¹¹ Putting it back into use would take an 8 to 12 week start-up process, and would cost \$250,000 to \$300,000 to reactivate the pumps; there would be a yearly operational budget of \$2 million to keep them running. The Pumping Plant would be reactivated for a minimum of one or more years of operation (UDWRe 2007).

2006). The FEMA line had been drawn at 4215, but in 2006 was reconfigured, ranging between 4217 and 4219. Additionally, some of the communities in Davis County had set their line at 4217 or 4218 for the land within their city. Weber County, on the other hand, has a moratorium in place that does not allow development of any land below 4215,¹² and development of land below 4218 is subject to review by the Planning Commission before a land use or building permit is issued (K. Hamilton, Weber County Planning, personal communication, May 2006). For both counties, the regulation does not necessarily restrict building on land with a lower elevation than that noted, but the land must be built up with fill to meet the elevation restrictions.¹³ Because of differences in the lay of the land, these regulations affect the counties in very different ways, a point we will return to.

Economic Benefit and Its Costs

Human interactions with the lake have also benefited the humans in question. This has included economic benefit, estimated in 1999 as being at just below one-fiftieth of Utah's gross domestic product (Swensen 1999b).¹⁴ Great Salt Lake hosts a number of industries and other economic assets, but the two largest are mineral production and the brine shrimp industry (GSLPT 2000b).

Mineral and oil extraction and production. GSL's largest direct impact on Utah's economy has been through mineral production, including the extraction of salt, sulfate-

¹² The high water elevation of 4212, plus three feet for tide and wave action.

¹³ The regulation also mandates a minimum elevation for floors, the level of building footings, wells, regulations for septic tanks, and minimum elevations for the roads to the structures.

¹⁴ I could find no record of a more current estimation, and communications with the Governors Office revealed that they were unaware of a more recent estimation (personal communication with Michael Mower, State Planning Coordinator, February 2008).

of-potash or potassium sulfate (used in fertilizers), magnesium products including metal, and chlorine gas (Isaacson et al. 2002:188). Five companies are currently involved in mineral production on GSL. The lake provides feed material for half of U.S. magnesium production and is one of two locations in the country where agricultural sulfate-of-potash is produced. The total value of GSL mineral production is approximately \$300 million annually, 17 percent of the value of all minerals produced annually in Utah (Isaacson et al. 2002). The industry employs about 1,125 workers (GSLPT 2000b).

Conservation groups, and at times state and federal agencies, have taken issue with the actions of some of these corporations. One of the most extreme cases of a mineral company attempting to pursue its own interests despite far-reaching problems occurred in 1984. As noted earlier, the northern railroad causeway acted like a dam, creating substantial differences in the water elevation between the two arms of the lake, which added to flooding from the south arm. The state legislature passed the Great Salt Lake Causeway Act, directing state agencies to work with the railroad to breach the causeway as a partial remedy for the flooding that had already begun. Despite damage that was already occurring as well as increasing threats to private lands and public infrastructure and facilities, Great Salt Lake Mineral and Chemical Company, and another smaller mineral interest that operated out of the north arm, sued the state and COE to stop the breaching, arguing that it would dilute their brine source (Quealy 2002). Federal courts ruled against them and the breach was allowed.

Great Salt Lake Minerals Corporation (their current name) is now back in the public eye with lake ecosystem issues. The company has applied for a lease of 33,000

acres—35 square miles—adjacent to their facilities on the west side of the lake, for new evaporation ponds. The lease has been approved by the Division of Forestry, Fire and State Lands (DFFSL), the state agency with management authority, and is now going through an environmental impact assessment (DeMoss 2007a; Henetz 2007; Muhlestein 2007). Fourteen mostly environmental and recreation groups have challenged the lease,¹⁵ arguing this use will endanger birds and other species that use GSL. Of particular concern is the proximity of the ponds to the protected pelican rookeries on Gunnison Island, as they may impact nesting and facilitate predation (Dougherty 2007b). This issue has generated editorials and pro and con op-ed pieces in local newspapers (De Freitas 2007; Milne 2007; SLTribune 2007); WHSRN also made a formal statement challenging the lease with scientific data (Jones 2007). Public meetings were held in November 2007, the draft environmental impact statement is expected by fall 2008 (Henetz 2007).¹⁶

One mineral company achieved a degree of infamy by being ranked for several years by the Environmental Protection Agency (EPA) as the worst in the nation for chlorine emissions, and one of the worst overall polluters in the nation (Foy 2003; Watson 2007). The US Magnesium Corporation of Salt Lake City (formerly, the Magnesium Corporation of America, also known as US Mag or MagCorp), located in Tooele County, produces magnesium metal from lake water. One of only two primary magnesium producers in the United States, in 1996 MagCorp was the fourth largest magnesium plant globally; it also produces chlorine gas and a number of commercial by-

¹⁵ The groups include the Utah Audubon Council, FRIENDS of Great Salt Lake, Utah chapter of the Sierra Club, League of Women Voters of Salt Lake, League of Women Voters of Utah, The Nature Conservancy of Utah, Utah Airboat Association, Utah Rivers Council, and Utah Waterfowl Association.

¹⁶ In December 2008 the company revealed plans to dike an additional 37,000 acres, bringing the total proposed increase to 70,000 acres. This would be in addition to the 43,000 acres of existing evaporation ponds the company holds (Trentelman 2008c).

products (GSLPT 2000b; Isaacson et al. 2002; Tripp 2002). The company currently employs about 400 (Watson 2007). MagCorp cut chlorine emissions by 60 percent in 2001 (Foy 2003), and is no longer on the list of worst chlorine polluters. However, the corporation is ranked as Utah's fifth-worse polluter (Henetz 2008). In January 2001 MagCorp was sued by the EPA for discharging toxic wastes into unlined ditches and a 400-acre pond on the western edge of GSL, and in 2003 they were sued by a bankruptcy trustee for concealing these problems from bond investors (AP 2003). MagCorp claims it is exempt from the regulation in question. In October 2007, a federal judge ruled against the EPA on most aspects of the case, however the case could be revisited (Fahys 2007; Henetz 2008). Additionally, in September 2008, the EPA proposed adding MagCorp to its Superfund National Priorities List, arguing that chemical waste at a 4,500 acre site is endangering workers, their families, waterfowl and the environment (Daily Herald 2008; Fahys 2008). While MagCorp is fighting the listing, the public comment period generated a good deal of public input, most of which have been characterized as favoring the listing (Fahys 2008), with 169 comments posted online as of the end of January 2009 (regulations.gov 2009).

In addition to mineral extraction, oil has been produced from sites in GSL's north arm, at and near Rozel Point. Wells produced around 35,500 barrels of oil between 1978 and the mid-1980s, but have been out of production since. The oil is difficult to produce and refine—thick, with a high sulfur content, it is mainly used for asphalt (Bortz [1987] 2002; GSLPT 2000b). In the mid-1990s, EPA funded and supervised an environmental clean-up including the capping of the wells (Hunt and Chidsey 2002). In 2005, DFFSL offered oil and gas leases on some of the sovereign lands under GSL. Conservation

groups¹⁷ protested the lack of public process, and raised concerns about the potential for more problems requiring EPA intervention. Negotiations between these groups, DFFSL, and the leaseholders, resulted in compromises leaving 55,000 acres still subject to leases, but twice that acreage removed from consideration. DFFSL is also reconsidering the GSL Mineral Leasing Plan (Baird 2005a, 2005b; Bauman 2006b).

In December 2007, an application to drill a new well on the land still open to leases was submitted to the state Division of Oil, Gas and Mining (DOG M). Because of the proposed well's relative proximity to a large piece of land art called the Spiral Jetty, built at Rozel Point in 1970, it is being protested by the global art community, with more than 3,000 comments being submitted from as far away as Germany (Johnson 2008; Trentelman 2008a). Editorials against the drilling have run in the *Deseret Morning News* (D News 2008a), the *Salt Lake Tribune* (SL Tribune 2008a), and the *New York Times* (NY Times 2008). DOGM states that the drilling will not affect the Jetty, four miles away; others argue that it, along with the desired expansion of evaporation ponds, is part of a trend towards commercial development that will hurt "the 'viewshed' and sense of solitude" (De Freitas, quoted in Trentelman 2008a:5A).¹⁸

The brine shrimp industry. The brine shrimp, or artemia, industry is the second most lucrative industry associated with Great Salt Lake (Isaacson et al. 2002). The lake is an important producer of the world's supply of brine shrimp eggs, or cysts, sold for feed

¹⁷ The groups included FRIENDS of Great Salt Lake, Utah Chapter of the Sierra Club, National Audubon Society and Great Salt Lake Audubon Society.

¹⁸ The drilling application was eventually returned to the company that submitted it, after they failed to respond to DOGM's requests for additional information (Trentelman 2008b).

in shrimp and fish aquaculture.¹⁹ The industry has been valued at \$10 to \$60 million, depending on harvests (GSLEP 2009). Utah raises \$790,000 annually in permit fees and additional royalties on sales. The 22 to 32 companies employ 200 to 500 workers (although seasonal brine shrimpers can number as many as 1,000). The wide range of these numbers is due to the tremendous variation in harvest and market conditions (Davidson 2004; GSLPT 2000b; Isaacson et al. 2002; Scott 2000; Trentelman 2007).

The industry is dependent on two complex systems. The first is ecosystem conditions that affect the productivity of brine shrimp, conditions such as climate, salinity, and numbers being kept in the range of sustainability (Isaacson et al. 2002; Kuehn 2002). Table 3-3 illustrates the variability in harvests. After watching this variability, by 1994 some harvesters and resource managers became concerned that the

Table 3-3: Brine Shrimp Harvests Since 1985

Harvest Year	Pounds of Biomass Harvested*	Harvest Year	Pounds of Biomass Harvested*
1985–1986	298,035	1998–1999	4,606,352
1986–1987	1,887,300	1999–2000	2,631,853
1988–1989	6,806,415	2000–2001	19,963,087
1989–1990	10,268,232	2001–2002	18,287,569
1990–1991	8,927,818	2002–2003	25,729,490
1991–1992	13,532,797	2003–2004	5,007,709
1992–1993	10,172,399	2004–2005	6,821,167
1993–1994	8,864,092	2005–2006	9,716,700
1994–1995	6,485,954	2006–2007	17,344,187
1995–1996	14,749,596	2007–2008	14,749,650
1996–1997	14,679,498	2008–2009	19,646,933
1997–1998	6,113,695		

*Total pounds of raw biomass harvested as reported by the harvest companies.²⁰

Source: GSLEP 2009

¹⁹ Dried cysts hatch after rehydrating and the hatched brine shrimp are used as feed for carnivorous shrimp or fish species in aquaculture, with limited sales in the aquarium fish market (Kuehn 2002:263; Kwartler n.d.; Miller 1997).

²⁰ Raw biomass includes cysts, empty shells, brine shrimp, algae, and other material. Yield of dry, processed cysts from the raw biomass varies annually.

resource could collapse. As a result, the brine shrimpers requested increased regulation, including limits on take and on the number of companies that could be involved in any given year. One problem was that no one knew what degree of harvest would be sustainable since little was known about GSL's ecosystem as a whole (Leonard 2004). Utah DNR responded by increasing the cost of Certificates of Registration (COR), similar to harvesting permits, and eventually limited the number of COR available to a fixed 79 per harvest.²¹ The fees from the COR were designated to fund a systematic ecosystem study, the GSL Ecosystem Project (GSLEP). This ongoing study has greatly increased understanding of the ecosystem needs for the lake and its environs to be sustainable, and has set parameters for controlling the brine shrimp harvest at sustainable levels. The harvest is limited to "excess" cysts (beyond what is needed for reproduction and feeding the avian population), and as a result, there are years when the harvest, typically open for four months, has been closed after only one to two months (GSLPT 2008; Isaacson et al. 2002; Kuehn 2002; Leonard 2004; Scott 2000).

The industry is also dependent on the global market system, key in that 80 to 85 percent of GSL brine shrimp cysts are sold globally for aquaculture, primarily in Southeast Asia and Latin America. Because of the quality of cysts,²² despite higher prices than brine shrimp from other sources, for years the limits on GSL brine shrimp were on the supply side rather than on market demand.²³ The global market had grown increasingly dependent on GSL brine shrimp, with GSL supplying up to 90 percent of the

²¹ A company may hold more than one COR.

²² based on hatchability (percentage of cysts to successfully hatch) and nutritional value of the brine shrimp

²³ For example, in 2003, India reduced the excise duty on GSL artemia from 15% to 5%, stating it would ensure better quality of shrimps and prevent shrimp farmers from using "poor alternatives" (Financial Daily 2003).

world's market until the late 1990s, when GSL's harvest was extremely limited (Isaacson et al. 2002; Kuehn 2002; Leonard 2004). These local conditions forced the global market to find other suppliers, and since that time the GSL industry has had to be more competitive. By spring 2004, the GSL industry handled only 60 percent of the global market.²⁴ Competition between the aquaculture imports and domestic shrimping companies in the US Gulf Coast states has led to the imposition of tariffs on shrimp imports from a number of countries, including those that use GSL brine shrimp, creating further problems for the industry. For example, Thailand, the largest importer of GSL artemia and the source of one quarter of U.S. shrimp imports, is now subject to tariffs (Davidson 2004; Gehrke 2005).

Other lake-related products. A number of smaller industries and businesses are also associated with the lake or lake products. Since 1993, Trestlewood has been selling salvaged wood from the original wooden trestle from the Lucin Cutoff. The wood is well seasoned from the GSL brine leaching into the wood grain, streaking it with red, yellow, purple and black hues (AP 2005). Two companies located on the north end of the lake produce mineral-based health supplements (DeMoss 2006b). Specialty bath and beauty stores carry bath salts, skin treatments, and soaps touting the lake's salt as a key ingredient, and crystallized GSL salt souvenirs can be found in local gift shops.

Tourism and recreation. Great Salt Lake-related tourism and recreation also benefit Utah's economy. GSL has a long history of successful lake-side resorts that touted the briny, mineral-rich waters as restorative (GSLEP 2009; Travous 1980). From

²⁴ The principle competition comes from China, where some brine shrimp are now being farmed; other competitors include Russia, and to a lesser degree, Argentina, Brazil, Mexico and Vietnam. Some of these countries are now using aquaculture technology for production of brine shrimp (Isaacson et al. 2002; Leonard 2004).

the 1870s through the early 1970s there were several waves of resort development; however resort after resort failed after a time, due to being either flooded by rising lake waters or left high and dry by receding waters. Only two of these resorts remain. Lake Park, which opened in 1870, survived by moving east after receding waters left it a park without a lake. Renamed “Lagoon,” it is now the top tourist attraction in Davis County. Saltair opened in 1893, and has suffered from rising and receding waters, fire, and being closed down altogether (Travous 1980). It reopened in the spring of 1983 after an attempt to restore it to its former grandeur; the rising lake soon swamped the dance floor and parking lot with four feet of water (UDWRe 2007). Saltair has since reopened as a smaller concert and special event venue (Saltair 2006). Some of these resorts were accessible by train from Salt Lake City until World War II rerouted a number of railroad routes; people’s increased mobility also led to decreased interest in these resorts as other places became accessible (Travous 1980).

Although the days of GSL being one of Utah’s dominant tourist attractions may have passed, the lake continues to draw tourists, primarily through its two state parks, Great Salt Lake State Marina, to the south of the lake, and Antelope Island. Recreation activities include natural sightseeing, bird watching, hiking, bicycling, horseback riding, camping, star gazing, and sail boating. Some kayak in the lake (Petersen 2004), others take a commercial boat tour. About 40 percent of the visitors to these parks are not local, as tourists from outside of Utah often see the lake as one of the most well-known natural features in the state (GSLPT 2000b). Visitors use beaches on the south shore and on Antelope Island for swimming and floating in the briny water. Stansbury Island offers a

nine-mile non-motorized trail. Willard Bay State Park provides fresh water boating, water skiing, fishing and camping, as well as bird watching (UDPR 2008).

The landscape, seascape, and well-known sunsets of the lake attract photographers and other artists. The most known piece of art associated with the lake is the Spiral Jetty, mentioned earlier. The internationally known Jetty, referred to as an “earthwork,” is a 1,500 foot long coil, 15 feet wide, made of black rock and earth from the site, constructed in 1970 (Dia Art Foundation 2008). Its visibility depends on lake elevation. Considered a classic modern sculpture, it has been featured in “every major art periodical” as well as popular magazines (GSLPT 2000b:126). The Spiral Jetty has been viewed by many local and international visitors, but like many of the sites at GSL, there is no way to estimate how many (GSLPT 2000b).

The protected wetlands account for 60 to 65 percent of the waterfowl hunting days in Utah, and about 80 percent of the total number of ducks harvested in the state (GSLPT 2000b). Hunting also occurs in the associated uplands, both on state managed land (e.g. Willard Bay Upland Game Wildlife Management Area), and at commercial hunting areas (Johnson 2007). Known for bird watching opportunities, GSL is one of the top areas in the western United States for the activity.²⁵ Events that capitalize on this include the annual Great Salt Lake Bird Festival in Davis County. Attendees have numbered up to 4,500 in 2005, bringing in \$25,000 in revenue, with a total economic impact of \$170,000 that year, including visitor spending in local communities (Saxton 2006b). Other annual events for bird-watchers include Bald Eagle Day and the Bear River Bird Festival at the migratory bird refuge.

²⁵ The quality of birding at Great Salt Lake and its associated wetlands has been noted in Audubon Magazine, Bird Watcher’s Digest, and Sunset Magazine (Burr and Scott 2004).

Other GSL recreational activities include sightseeing from a vehicle and some off-highway vehicle use (GSLPT 2000b). It has been argued that many of the recreation opportunities associated with Great Salt Lake are unique, and therefore, “GSL should be respected for its rich, diverse recreational and tourist resources ... these opportunities are truly a treasure for Utah’s citizens and out-of-state visitors” (GSLPT 2000b:139). Despite these opportunities, in 1999 one quarter of Davis County residents surveyed did not know what there was to do at the lake (Brunson and Nicholson 1999). On the other hand, lake-related tourism continues to be important to the state and particularly to the counties that contain the lake. For example, Antelope Island State Park provides 130 jobs and brings in six million dollars annually to Davis and Weber County economies, plus over three million more in indirect impacts. Great Salt Lake State Park provides 110 jobs and contributes nearly eight million dollars a year to Salt Lake and Tooele Counties, plus an additional four million in indirect impacts (Roundy 2008).

It should also be noted that the varying elevation affects many of these recreational and tourist activities. During low water times GSL gets too shallow to sail in, cruise boats cannot run, and visitors to Antelope Island’s beach can walk nearly 75 yards to get to the water. Waterfowl hunting conditions suffer. Tourism suffers because the lake area looks dried up and unattractive, and the odor is stronger (Petersen 2004, 2005a; Saxton 2005a). On the other hand, during the high water years of the 1980s recreation sites were flooded or inaccessible (GSLPT 2000b).

As has been demonstrated, the societal-ecosystem interaction related to Great Salt Lake has resulted in some benefits for the ecosystem, such as the protection, enhancement, and management of wetlands areas, as well as a number of benefits for

humans, such as the economic and recreation amenities already discussed. As noted, there have also been negative aspects to the relationship. For humans, the most damaging of these has been related to the ever-changing lake elevation. While this dynamism is necessary and healthy for the lake ecosystem, it has been very costly for government, industry, communities and residents, particularly with the flooding brought on by high water years. Low water years have also created problems.

Negative Consequences for the Lake Ecosystem

The interaction between humans and ecosystem has resulted in significant negative consequences for the lake and its environs as well. For example, the causeways have greatly altered distribution of salinity loads, and the pumping project reduced the salt load of the lake by 10 to 14 percent (GSLPT 2000b). The naturally occurring range of salinity is necessary for the algae required by brine shrimp, which are necessary for the shorebirds, as well as for their role in keeping the lake clean.

Pollution and toxics. A study conducted in fall 2001 found Farmington Bay “one of the most polluted water bodies in the State of Utah” (Wurtsbaugh et al. 2002:18). While a sample from the open lake had relatively good water quality, a sample from Farmington Bay contained eight times more phosphorous than is acceptable. The bay is severely eutrophic, creating conditions where high concentrations of “foul-smelling” hydrogen sulfide are produced (p. 1). Sewage treatment plants discharging into the bay are responsible for 50 percent of the damaging nutrients, which get trapped in the bay by the Antelope Island Causeway. The bay receives effluents from ten of the twelve sewage plants in the Salt Lake Valley, with wastes from more than 500,000 people (Wurtsbaugh

et al. 2002). While these odor problems affect more people than those affected by any other polluted body of water in Utah, and a scarcity of brine shrimp indicates the conditions are likely harming wildlife as well, the bay is not on the state's priority list of polluted water bodies. There has also been a general lack of research on the problem.

Farmington Bay has a history of sewage-related water pollution. In 1965 the state Department of Health issued an advisory warning that "bathing should not be approved of in any of these areas for any reason" due to evidence of sewage pollution (GSLPT 2000b:50); in 1971 a study found unacceptable levels of *E. coli* and other coliforms in the bay. Pollution problems for GSL also include nonpoint source runoff from agricultural and urban land use (GSLPT 2000b), and discharges of polluted waste water into the lake or lake-related rivers by commercial entities, resulting in charges being brought against the companies (e.g. Hummel 2006a).

As noted in Chapter One, levels of mercury recently found in Great Salt Lake have been among the highest in the nation (Henetz 2005). Advisories on the consumption of three species of ducks found around the lake have been in place since 2005 (e.g. Petersen 2005b, 2006; UDWR 2008).²⁶ Methylmercury is particularly toxic, and in 2003 methylmercury levels in the deep brine layer of GSL were among the highest the USGS has ever measured anywhere in the United States (Naftz, Waddell and Krabbenhoft 2005). Research to determine the source of the mercury is underway. Mercury has been found in GSL brine shrimp as well as the Eared Grebes that feed on them; research is also being conducted on ducks that winter at the lake. In addition to concerns for the brine

²⁶ Northern Shoveler, Goldeneye, and Cinnamon Teal

shrimp and birds, there is a question as to whether the mercury could affect the commercial prawns the brine shrimp are fed to (Bauman 2006a).

Lack of knowledge. Throughout the reports of pollution, of lake chemistry, of ecosystem functioning, etc., it is frequently observed that not enough is known. *Great Salt Lake Comprehensive Management Plan Resource Document* discusses a number of areas with deficient scientific knowledge, for example, about nutrient chemistry and its influence on the biology of the lake, the effects of contaminants on the ecosystem, and biological interrelationships in the system. A number of studies to address these gaps have been initiated, such as GSLEP, discussed earlier. In 2004, the Utah Department of Environmental Quality (DEQ) formed the GSL Water Quality Steering Committee to set a selenium standard (Fahys 2005), after years of resistance to numerical water quality standards (GSLPT 2000b; Nicholson and Marcarelli 2004). The selenium study will lead to the first of a series of such standards (UDEQ n.d.). Additionally, a Mercury Working Group for the state is developing an “ongoing systematic, logical, and defensible mercury monitoring program to assess mercury levels in fish and waterfowl tissue” (UDEQ n.d.).

Although these projects are making progress, the lack of scientific information makes management of the lake and its ecosystems difficult. The Scientific Review Committee (SRC) for the Great Salt Lake Comprehensive Management Plan from 2000 noted:

Much is known about the lake, but there is a great deal we do not know... There are ...almost no comprehensive, integrated information bases for Great Salt Lake Ecosystems. The present relative ignorance, due to lack of data, about the ecosystems of the lake makes it very difficult to make management decisions designed to protect the ecosystems based on scientific knowledge. (Great Salt Lake Scientific Review Committee 1999:1)

Management of Great Salt Lake and Its Environs

The management of the complex ecosystem of Great Salt Lake has its own multiple layers of complexities. It is a system in a continuing state of evolution.

The Bureau of Land Management (BLM) managed the lake system from 1959 until 1967, when the State of Utah challenged federal management in federal court. This led to years of litigation that was not resolved until 1976, when the court conveyed ownership of “all lands, brines, and other minerals within the waters of the lake, and the bed, and all shore lands located within the official surveyed meander line” to the state (Carter, Gwynn and Kappe 2002:515). The meander line is the “adjudicated, fixed and limiting boundary” of the lake, the boundary between the state’s sovereign land and land owned by others (GSLPT 2000a:10).²⁷ There have been numerous changes in the lake’s management since the 1976 ruling, including the authority held by various entities (GSLPT 2000b; Carter et al. 2002). The current constellation of management entities involved with GSL includes state and federal agencies, counties, incorporated cities, and private landowners including nongovernmental organizations and private duck clubs that own and operate wetland preserves and hunting areas.

The state entities include several divisions within DNR. DFFSL manages the sovereign lands of GSL, defined as all the lands within the surveyed meander line including non-surveyed islands.²⁸ DFFSL has executive authority over the lake, and is

²⁷ The surveyed meander line does not follow a given contour or constant elevation around the lake. Due to being surveyed in segments over more than 100 years (1855-1966), the fluctuation of the lake level left different segments at different elevations. It generally ranges between 4202 and 4212 feet above sea level (GSLPT 2000a:10).

²⁸ The only surveyed islands are Antelope, Fremont and Carrington; Stansbury, for the most part a peninsula, does not fall within the meander line, so it is not under the authority of DFFSL.

tasked with coordination of the activities of all DNR divisions with respect to GSL (GSLPT 2000a). DEQ has three divisions with GSL-related authority (GSLPT 2000a). Additionally, UDOT is building a mitigation wetland preserve, Legacy Nature Preserve, on the southeast shore of the lake (US EPA 2007). The authorities and responsibilities of the various divisions of DNR and DEQ are as follows:

Divisions of the Department of Natural Resources (DNR):

- Division of Forestry, Fire and State Lands (DFFSL): manages the sovereign lands of GSL
 - Tasked with coordination of GSL-related activities of all DNR divisions
- Division of Wildlife Resources (DWR): manages wildlife areas on the lake, as well as protected wildlife species
 - Regulates hunting and the commercial brine shrimp harvest
 - Administers the GSL Ecosystem Project (GSLEP)
 - Manages Wildlife and Waterfowl Management Areas
- Division of Parks and Recreation (DPR): manages Antelope Island State Park, Great Salt Lake Marina, and Willard Bay State Park
 - In charge of boating enforcement
 - Jointly manages non-motorized trail on Stansbury Island with BLM
- Division of Water Rights (DWRi): authority over approval for diversion of water and regulation of dams
 - Authority over diverting water from the rivers that feed the lake
 - Regulatory authority over diversions from the lake for mineral extraction, and any dam or dike placed in the lake
- Division of Oil, Gas and Mining (DOG M): regulates mineral exploration, development and reclamation on GSL
- Utah Geological Survey (UGS): research and information distribution relating to geology, brine and mineral resources, and geologic hazards, related to GSL
- Division of Water Resources (DWRe): Planning, conservation, development, protection and preservation of state water resources
 - Does not have direct regulatory responsibilities on GSL, but conducts studies, investigations and planning for water use
 - Responsible for maintenance and operation of the West Desert Pumping Project

Divisions of the Department of Environmental Quality (DEQ):

- Division of Environmental Response and Remediation: Involved with reporting of environmental incidents and follow-up activity
- Division of Water Quality (DWQ): Responsible for the maintenance, protection and enhancement of surface and ground water quality
 - Development of programs to prevent and abate of water pollution

- Responsible for establishing water quality standards (including on GSL)
- Enforcement of effluent standards and discharge standards
- Other responsibilities that affect GSL include treatment standards for waste water, program for non-point source control, ground water protection
- Division of Air Quality (DAQ): addresses air quality and pollution issues (GSL issues: viewshed, and particulate matter landing on lake surface, e.g. mercury levels)

(Sources: GSLPT 2000a; Millard 2000; UDEQ n.d.)

In addition to these various state entities, a number of federal agencies are also involved in lake environs management. Bear River Migratory Bird Refuge is federally owned and managed by the United States Fish and Wildlife Service (USFWS), which is also responsible for the protection of migratory birds and threatened and endangered species in the GSL environs (Carter, Gwynn, and Kappe 2002). The U.S. Bureau of Reclamation (USBR) constructed and maintains the Arthur V. Watkins Dam at Willard Bay (USBR n.d.). BLM manages public land on the lake's west side, accounting for 70 percent of the western shoreline (close to 40 percent of the total GSL shoreline) (GSLPT 2000b). The United States Air Force operates the Utah Test and Training Range North and the Little Mountain Training Annex. FEMA and COE are responsible for regulation of the flood plain. The Clean Water Act authorizes COE and EPA to regulate construction in and discharges into wetlands areas. EPA has also been involved in environmental cleanups and lawsuits against polluting industries in or on GSL, as noted earlier.

Counties and incorporated cities along the shoreline are involved in management primarily through planning and zoning. Although much of the zoning is for a minimum lot size of 5 to 20 acres, mostly for agricultural use, there are shore lands that are not

zoned at all, some areas where manufacturing is allowed, and single-family homes on one-half acre lots are allowed on the eastern shore by one city in Davis County (GSLPT 2000b). Of the five counties that contain the lake, all but Weber County have developed either Special Area Management Plans (SAMPs) or wetlands plans (EPA 2007). SAMPs are intensive tools for managing sensitive areas, such as wetlands. Specific to a geographic location, the size of which can vary, SAMPs address environmental issues, property issues, and development issues, including mitigation, and do so with the involvement of government officials, landowners and planning staff (NOAA 2007; WCPD 2008). In a 2002 planning project for West Central Weber County, the portion of Weber County containing the shorelines north of Ogden Bay, the recommendation was made for the county to begin working with governmental agencies including COE to develop a SAMP and a shoreline protection plan (WCPD 2008). No action has been taken on this yet (personal communication with J. Gentry, Weber County Planning, 3/17/2008).

Management challenges. Any management configuration this complex is bound to have difficulties. In a 2007 report on GSL wetlands management and planning, EPA noted that coordination among management organizations is “challenging” (US EPA 2007a:6), primarily due to three causes: a large number of organizations are involved, the organizations have different management goals, and no one entity is responsible for the coordination of the whole system. While EPA was reporting on the wetlands, these issues are likely even more challenging on the larger ecosystem level. EPA found needs for improved communication within and among state divisions, as well as with cities, counties, landowners and industry (US EPA 2007a).

The need for broader, more comprehensive ecosystem management has been raised in a number of places (e.g. Bedford 2006; US EPA 2007a; GSL SRC 1999). The Great Salt Lake Comprehensive Management Plan of 2000 attempts to do just that, and although the resource document includes descriptions of much of the environs, for the most part the decision document addresses only sovereign lands held by DFFSL (GSLPT 2000a). While this is because DFFSL only has authority over the sovereign lands, it contributes to the continued rather piecemeal approach to managing the larger ecosystem.

Great Salt Lake has been described as “lying at the heart of an environmental-societal system of great complexity that connects many seemingly disparate uses and users through the various physical and chemical properties of the lake” (Bedford 2006:73). The GSL Scientific Review Committee argues that it is a system of interlocking subsystems, including “physical, chemical, biological, ecological, economic, and social systems” that are “dynamic and interact to influence the behavior of each other in complex ways” (GSL SRC 1999:1), creating a “web of interacting physical, socioeconomic and ecological systems and subsystems” (GSLPT 2000b:93). These systems and the dialectic interaction between them are represented by Figure 3-4. This illustrates how factors in each system interact with the others to create both beneficial and problematic outcomes.

Competing interests and related tensions. As can be surmised from these descriptions of human-ecosystem interactions, there are a number of competing interests where lake management is concerned. For example, the mineral extraction industry is interested in the lake being as briny as possible, while the brine shrimp industry’s interests lie closer to those of conservationists and wildlife managers, since brine shrimp

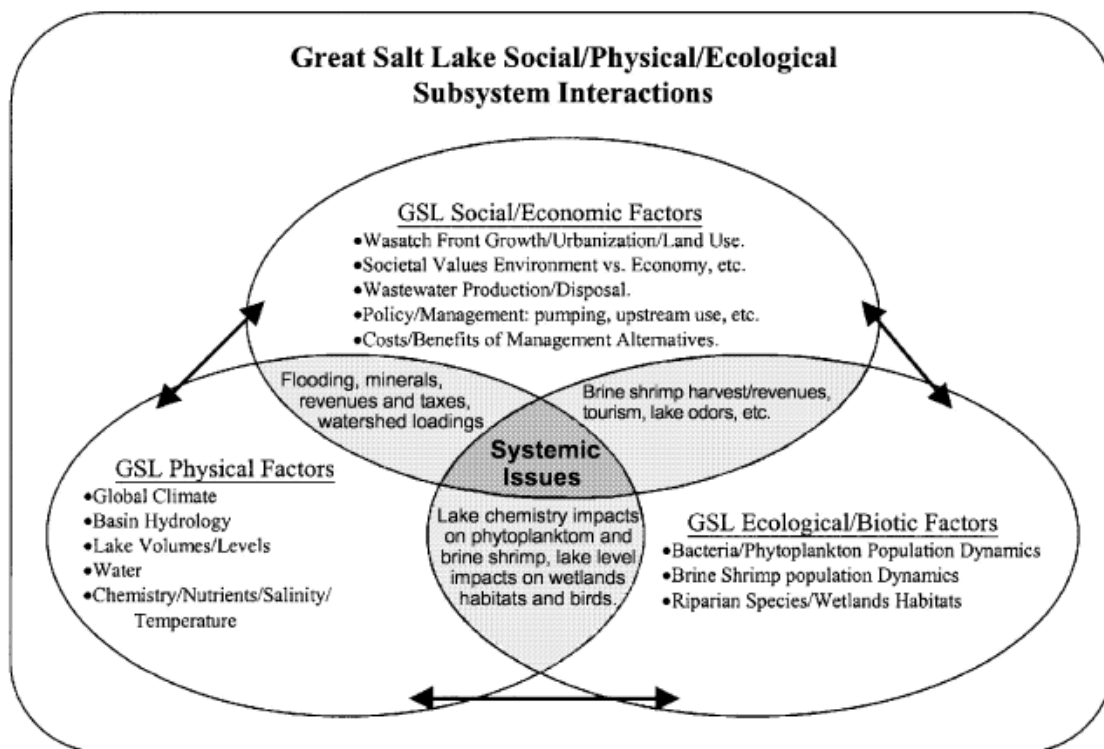


Figure 3-4: Great Salt Lake Subsystem Interactions and Management Problems (GSL SRC, in GSLPT 2000:94).

require the lake to stay within a particular range of salinity. Also, while the ecosystem needs the water level fluctuations, communities, agriculture and industry would prefer for them to somehow be managed within a very small range (GSLPT 2000b). Sometimes the interests of particular groups appear to be at odds with themselves, e.g. communities want to spend as little as possible on waste water treatment, yet they suffer the consequences of strong odor from resultant eutrophication in Farmington Bay (Wurtsbaugh et al. 2002).

Management issues often arise in the intersection of the subsystems described above, as well as in the tension between competing interests. Management actions can affect more subsystems than the one(s) being targeted. While some human-related impacts may positively affect the ecosystem (e.g. enhanced wetlands), others are

degrading. GSL management entities have been charged with weighing competing interests, with their associated costs and benefits to each of these subsystems, and making management decisions based on three key principles: the public trust, multiple use, and sustainability (GSLPT 2000a, 2000b). The public trust “establishes the right of the public to use and enjoy these trust waters, lands and resources for a wide variety of recognized public uses” (GSLPT 2000a:11). GSL and its environs are “held in trust for the benefit of the public” (p. 10).

Multiple use has been a legislatively specified policy for GSL management since 1963, with the creation of the Great Salt Lake Authority to “coordinate multiple-use of [GSL] property” for grazing, fish and game, mineral extraction, development and utilization of natural resources, industry and other uses (GSLPT 2000a:3). The policy was restated in the 1995 Comprehensive Management Plan with more emphasis on balancing use with ecosystem needs. A goal of that plan was “...to facilitate and enhance management of GSL and its environs to assure protection of the unique ecosystem of the lake while promoting balanced multiple-resource uses” (p. 6). One of the purposes of the current management plan is to “...develop a sovereign land management plan for the lake that balances multiple-use and sustainability, resolves issues and improves management of the lake and its resources...” (GSLPT 2000a:2). Public trust obligations trump multiple-use policies, however, and when there are competing public benefits, those that best serve the public trust are to be given higher priority (p. 11).

The Plan’s Resource Document defines sustainability as “a system’s ability to maintain its structure (organization) and function (vigor) over time in face of external stress (resilience)” (Costanza as quoted in GSLPT 2000b:97). It goes on to define a

“healthy” ecosystem as “one that existed before significant anthropogenic impact,” further, “an ‘unhealthy’ condition is beyond the natural range of fluctuation due to conditions resulting from some human-induced modification of the system” (GSLPT 2000b:97-98).

Salinity management provides an example of DNR’s application of this principle. While acknowledging that sustainability includes much that is “a social, economic and political matter and deals with the acceptability of varying degrees to which natural systems are impacted” (GSLPT 2000a:15), where salinity is concerned, DNR defines sustainability as “the degree to which uses protected under the Public Trust Doctrine are judged to be impaired or enhanced,” while preserving “most of GSL” as a “natural body of saline water” (p. 15), meaning that the salinity level falls within the lake’s historical range. The Planning Team continues,

In choosing among alternatives, the fundamental concern is not the particular economic impact to a specific industry, company or activity. It is not the relative advantage of companies competing with each other... The fundamental parameter is the public interest. The public interest is statewide, and in some respects the lake serves national and international interests. Protection of the lake’s ecology will serve the public interest. (GSLPT 2000a:15-16)

Furthermore, the comprehensive plan argues that sustainable development must be based on the precautionary principle—that is, a lack of “full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation” (GSLPT 2000b:101). In other words, when a course of action may be inconvenient or costly to an industry, arguing that there is no scientific proof the action is necessary is not enough reason to halt needed preventative action. Table 3-4 outlines the decision made in the case of salinity management, as well as other examples of DNR’s focus on the public

trust, multiple use, and sustainability in management. DNR characterized the Comprehensive Plan as a compromise they hoped would be acceptable to most (Woolf 1999). However, the Scientific Review Committee observed that the Comprehensive Plan “approaches GSL issues based on constituencies,” and that the resources given the most consideration are those with constituencies (GSL SRC 1999:1). SRC argues that this approach is not consistent with a systems perspective, which acknowledges that each decision impacts the total system, not just individual components. Bedford (2006) argues that without a system-wide approach, “the poorly-managed components can undo the good work of the well-managed ones” (p. 93). In describing the planning process, FoGSL indicated that, although everyone was given the opportunity to participate, it seemed the input from lake-side industries was privileged over other interests (Woolf 1999). Despite these concerns, the plan has been acknowledged as being more protective than previous plans (Westby 2002).

Current management developments. Since the Comprehensive Plan of 2000 was enacted, the management process continues to evolve. The process is informed by the GSL Technical Team, a self-governing body charged with the “interchange of information on monitoring, research, ideas and programs that affect the activities and natural systems of GSL” (GSLPT 2000a:29), consisting of representatives from governmental entities (including state management agencies), local officials, lake-related NGOs, university lake-related scientists, and others with expertise on and responsibilities related to the lake (DFFSL 2007). The research projects related to the lake are also making a difference in management. However, to date there has been little social science research, other than recreation studies on the GSL Bird Fest (e.g. Brunson 2002; Burr

Table 3-4: Examples of Decisions in the Comprehensive Management Plan and Involved Tensions

Issue	Management Decision	Tensions involved with the decision
Identify salinity management regime for GSL, due to substantial differences in salinity loads in different areas of the lake which are threatening ecosystem needs	Deepen the causeway breach by at least four feet, hold railroad responsible for keeping culverts clean, monitor these changes to determine if they are sufficient	<ul style="list-style-type: none"> • North arm mineral extraction companies will be affected, action will dilute salinity loads, railroad causeway will also be affected, although structural integrity will not be affected • South arm extraction companies, brine shrimp industry, and conservation interests will be affected positively • The public trust is served by restoring salinity levels to historic range throughout lake
Determine policy for pumping project operation (related to developing strategies for fluctuating lake level)	Start pumping when lake elevation is at 4208 (plan in 1995: start at 4205); related to decision that lake users need to adapt to lake fluctuations	<ul style="list-style-type: none"> • For lake-related industries and transportation venues close to GSL, differences in damages between 4205 & 4208 are substantial • The ecosystem needs lake level fluctuations • Selected alternative best addresses public trust issues by taking lake's natural features into account
Navigability on GSL	The limits to navigability into the north arm caused by the railroad causeway will continue to exist	<ul style="list-style-type: none"> • There are limits to recreational and commercial boating into the north arm because the railroad causeway limits vessel height • The only way to allow full navigability would be to breach the causeway and abandon railroad use of it, harming the railroad • The limited accessibility also serves to protect sensitive ecological interests by limiting boat traffic near the island habitat and nesting grounds for pelicans and other shorebirds • The public trust and multiple use are better served by allowing continued use of the railroad causeway, with the additional protection it provides to wildlife habitat, than they would be by accommodating boats to give them access to the whole lake

Source: GSLPT 2000a.

and Scott 2004); a needs assessment on the GSL wetland ecosystem (Anderson and Blahna 1996); and a study of the use of and attitudes toward GSL among a small sample of Davis County residents (Brunson and Nicholson 1999).

More recently, in August 2008 Governor Jon Huntsman appointed a Great Salt Lake Advisory Council, in an attempt to “get away from piecemeal management and create an integrated long-term vision” for the lake (Busselberg 2008). The council, consisting of twelve representatives from lake advocacy groups, government, lake-related industry and business, and academia, is tasked with creating a long-term master plan using a wider lens than the individual agency orientation that has existed to present (Park 2008b). It appears to have a broader reach than the Technical Team, and is funded through and answers to the Governor’s office rather than a particular state agency. After taking four months to consider current research on lake issues (including social science research presented by this author), the council has raised concerns about the lack of coordinated lake management, the substantial reduction in water reaching the lake due to increased competition for water by a growing population, and that this growth is encroaching on the lake ecosystem. The council is currently working on a list of recommendations regarding the management of the lake, including issues needing legislative action (Stark 2008).

In another attempt to better coordinate work on the lake, in May 2008 the Great Salt Lake Institute was formed to provide a way to coordinate, facilitate and promote GSL research, education and stewardship. Housed at Westminster College in Salt Lake City, the institute provides a way for academicians working on GSL research to

coordinate with each other, as well as serving other groups and individuals involved in lake-related issues (Leonard 2008).

Additionally, in May 2008, FoGSL's semiannual Great Salt Lake Issues Forum was held in conjunction with the Tenth International Conference on Salt Lake Research, held by the International Society for Salt Lake Research. The weeklong joint conference allowed GSL researchers to interact with international saline lake researchers, and similar concerns were heard among both groups. For example, a researcher from Spain discussed the paucity of information about Spanish inland saltscapes, stating that to most, they are "not interesting" since they lack attractive landscapes, so little systematic research has been done. She noted these brackish bodies of water face similar threats to those described by GSL researchers, including use as waste dumps and a lack of broad support or interest from locals (Hueso Kortekaas 2008).

The Counties

In addition to the complexity of the lake system, the five counties that contain the lake are very diverse places. This combination makes for great variation along GSL's shoreline (see Figure 3-1, Table 3-5).

Box Elder County. Box Elder County contains 55-60 percent of the lake, or approximately 800 square miles, as well as the longest and most diverse shoreline. Up to 20 percent of the county's total acreage was covered by Great Salt Lake in the high water years of 1986 and 1987 (SWCA 1999). Even at the lake's historic low elevation in 1963, the lake covered eight percent of the county. To the northeast and north of the lake are

Table 3-5: Demographic Information on Counties that Contain Great Salt Lake

Geographic area	Population	Housing units	Area in square miles			Density per sq. mi. of land area	
			Total area	Water area	Land area	Populatn	Housing units
Utah	2,233,169	768,594	84,898.83	2,755.18	82,143.65	27.2	9.4
County							
Box Elder	42,745	14,209	6,729.03	1,005.69	5,723.34	7.5	2.5
Davis	238,994	74,114	633.70	329.22	304.48	784.9	243.4
Salt Lake	898,387	310,988	807.78	70.40	737.38	1,218.4	421.7
Tooele	40,735	13,812	7,287.12	356.76	6,930.35	5.9	2.0
Weber	196,533	70,454	659.46	83.93	575.54	341.5	122.4

Source: U.S. Census Bureau, Census 2000 Summary File

Willard Bay Reservoir, an estuary where Bear River meets GSL in a series of bays,²⁹ and a large wetlands system that includes a number of WMAs and the Bear River Migratory Bird Refuge. Promontory Point extends into the north part of the lake with the Promontory Mountains making the Point fairly uninhabitable other than a few summer cabins, a brine shrimpers' camp on the tip, and a boat harbor on the west side. A waste management company has been trying to build a landfill on this landform for more than six years, which has been widely protested by conservationists and some lake-related industries (Flitton 2003a, 2003b; Thompson 2007b; Wright 2005). North and west of Promontory Point is Rozel Point. Box Elder's western shore holds large evaporation ponds for GSL Minerals, this is also the contested site for their expansion. The western shore also encompasses portions of the Hill Air Force Range, a bombing range over the West Desert.

²⁹ North Bay, South Bay, Bear River Bay, and Willard Bay.

The lake can be accessed by the public in Box Elder County in at least a couple of ways, although neither is very direct. A county road goes to the tip of Promontory Point, and although there are no public facilities there, it is one location to see the lake's wide expanses from the north end. There is also public access to Rozel Point, where the Spiral Jetty is located, although there is no road for the last three-fourths of a mile to the Jetty (Dia 2008).

The shoreline includes evaporation ponds and mineral production facilities, brine shrimping operations, and agricultural land, much of it zoned in large plots for environmentally sensitive lands (160 acre minimum) (G. Day, Box Elder County Department of Economic Development, personal communication, May 2006). Despite Box Elder County containing a majority share of the lake and its shorelines, very few people live near the lake. Small rural communities lie north and east of the farthest bays, however they are not close to the lake itself. From the Promontory Mountains west, there are very few remote and isolated private properties with residences. This land is not likely to be developed soon as it lacks improved roads and potential sources for water development. In the southeast part of the county, increasing development is occurring on a narrow band of land between the lake and the mountains, however the freshwater Willard Bay Reservoir separates residents from the lake and its saltwater environs.

Tooele County. Nearly five percent of Tooele County is covered by water, almost all of which is Great Salt Lake. Another roughly two-thirds of the county is covered by the Great Salt Lake Desert (commonly referred to as the West Desert).³⁰ The entire length of the western shore of GSL in Tooele County is BLM-managed land. The

³⁰ The West Desert, primarily managed by BLM is used by the military for the Dugway Proving Ground and the Utah Test and Training Range South. It is also the home of the Bonneville Speedway.

southwest shoreline holds Stansbury Island and Timpie Springs WMA. The rest of the shoreline includes commercial evaporation ponds, agricultural lands, brine shrimping operations, and an interstate highway (I-80) (GSLPT 2000b). Badger and Carrington Islands are both located within Tooele County.³¹ The shoreline has not been zoned in this county, rather land uses are considered individually as conditional uses (GSLPT 2000b). In Tooele County, the public has access to the lake on Stansbury Island.

Tooele Valley, just south of the lake, is experiencing rapid growth overflowing from Salt Lake County (SWCA 2006). This area has been characterized primarily by rural, agricultural communities until this recent transition. The northern edge of Tooele Valley contains wetlands associated with the southwestern shore of Great Salt Lake. The wetlands and uplands located there are likely the most biologically diverse area in Tooele Valley (SWCA 2006). This is the area addressed by the SAMP developed by Tooele County (SWCA 2006).

The counties along the Wasatch Front: Salt Lake County. The Wasatch Front contains the largest concentration of the state's population;³² more than half of Utah's residents live within 20 miles of the lake and its wetlands in Salt Lake, Davis and Weber Counties (GSLPT 2000b; U.S. Census 2000). Salt Lake County is the most urban county in the state, with roughly 40 percent of the state's population (U.S. Census 2000). It is the location of Salt Lake City—originally named Great Salt Lake City—which is the state capital and largest city in the state (Powell 2001). Salt Lake County contains a small part

³¹ Badger is only 6 acres, while Carrington is 1,767 acres. An unsuccessful attempt was made to inhabit Carrington, but there is a lack of water; the island has been used as a bombing range by the U.S. Air Force (Millard 2000).

³² The Wasatch Front is typically described as the area between Provo, in Utah County (south of Salt Lake County), and Brigham City, in the southeastern portion of Box Elder County.

of the lake, and nearly nine percent of the county is covered by water, nearly all GSL.

There are no residential areas near the GSL shoreline here, rather the shoreline areas are zoned for agriculture and “commercial visitors,” and for evaporation ponds (GSLPT 2000b). Salt Lake County has a number of NGO-run protected wetland areas, additionally several GSL beaches and the Great Salt Lake Marina are located here. The beaches and marina, along with Antelope Island in Davis County, are the locations that provide the easiest and most direct access to the lake.

Jordan River runs from Utah Lake (in Utah County) north to Great Salt Lake, through Salt Lake County. As noted earlier, it receives the treated wastewater from Salt Lake County waste facilities. However, there are other water quality issues with the river, some of them coming from environmental problems at Utah Lake. Additionally, it runs through an EPA Superfund site in Midvale, where a cleanup of areas affected by mine waste smelting operations is underway. The cleanup includes riparian improvement projects on the river. There is also a push to rehabilitate the river from other issues, including a history of being used as a dump, and the reputation of being a high crime area (Deseret News 2008b and 2008c; Falk 2008). Because the river feeds the lake, the nonprofit Great Salt Lakekeeper organization has cleaned up huge amounts of waste dumped in the river annually for the last ten years, noting that the river has served as “‘a conveyer belt’ of debris” (Jensen 2007).

Davis County. In terms of land area, Davis County is the smallest county in Utah, occupying only a narrow corridor between the mountains and Forest Service land to the east and Great Salt Lake to the west. Because 52 percent of the county’s land is covered by the lake, with another one percent by wetlands, the county has only 223 square miles

of usable land, with an additional 42 square miles on Antelope Island (NRCS 2005).

Although Davis County has an agricultural history, it has experienced widespread suburban development ever since World War II (Davis County 2003; Layton 1996). In the last decade this rural transformation has been moving increasingly closer to the lake, in part because that is where the remaining open land is. The city closest to GSL in Davis County, Syracuse, has recently been one of the state's fastest growing cities (Clark 2003; DeMoss 2006a; Troester 2004).

The zoning for the 26 miles of shoreline contained in Davis County is controlled by the county and two cities (GSLPT 2000b). Most of the land, including the few hundred feet that Kaysville City controls, is zoned for agricultural use, with the intent to maintain greenbelt open space. Centerville City is responsible for zoning 2.5 miles of shoreline and has zoned it for agriculture or industrial development, which can include single-family homes on half acre lots. The county has two WMAs, one preserve managed by TNC and another being built by UDOT, as well as the prize of Great Salt Lake-related sites, Antelope Island and the seven-mile causeway to it. The Utah Travel Council has identified the island as one of the state's fastest growing tourist attractions, bringing in foreign as well as out-of-state visitors (GSLPT 2000b; Jahnke 2006); the county actively promotes both the island and GSL (e.g. Jahnke 2006; Park 2008a). Davis County was the first lake county to develop a wetlands preservation plan, in 1996, which they followed up with the Davis County Shorelands Comprehensive Land Use Master Plan in 2001 (DCCOG 2001).

Weber County. Weber County is the only GSL-county without direct access to the lake. Here water covers about 12 percent of the county's land, but this includes the

Ogden and Weber Rivers and a non-GSL related reservoir, in addition to Great Salt Lake. Fifteen percent of the county's land is wetlands, but again, they are not just GSL-related wetlands (NRCS 2005). The shorelines are zoned for farming and recreation, with zoning for manufacturing around Little Mountain in the northwest. The next ring of zoning just to the east is for small agricultural plots. In addition to Ogden Bay WMA, Weber County shares both Harold Crane WMA and Willard Bay Uplands Wildlife Management Area with Box Elder County, and another WMA lies immediately to the south of the county line in Davis County (GSLPT 2000b; UDWR 2008; WCPD 2008).

The rural areas in the north and the southwest areas of Weber County are quickly being developed (Clark 2006; Saxton 2006c). However, because of the low-lying elevation, much of the land in the northwestern part of the county falls within the FEMA flood plain and/or has hydric soils—that is, soils that are wet much of the year. Consequently, this area is developing much more slowly and in clusters.

Changes in the GSL counties. One commonality among these five counties is that they are all growing steadily. Much of that growth is not encroaching on the lake environs, but as growth of the cities results in conversion of agricultural land it also results in a shift in water use, from agricultural to municipal and industrial uses. This change reduces sub-irrigation ground water and return flows to lake-adjacent lands (GSLPT 2000b). This, combined with the loss of uplands buffers to development, affects the GSL wetlands. Additionally, the growing population has brought with it increasing pressure to further develop the waters feeding GSL, specifically Bear River (Thompson 2007a). Between encroachment, the loss of uplands, and the changes in water, the steady

increase in population close to the lake leaves the lake and its environs increasingly vulnerable ecologically (GSLPT 2000b).

We now move to a fuller description of the counties that are the focal point for this study.

Study Setting

The study area was conceptualized roughly as including the inhabited areas closest to Great Salt Lake. Since there are no residents living near the shoreline in Tooele and Salt Lake Counties, they were not considered for the study.

As will be described in the next section, this study includes a qualitative portion that uses data from interviews and focus groups, as well as a quantitative portion that utilizes survey data. My initial plan had been to include Box Elder, Weber, and Davis Counties in both parts of the study. However, in further researching land use patterns in Box Elder County it became clear that very few people live near the lake, as noted earlier. I conducted several interviews in the county which were useful for the qualitative work,³³ but along with the land use patterns, the interviews confirmed that it would not be feasible nor appropriate to include Box Elder County in the survey research due to the limited human occupation of lake-adjacent areas. As will be noted later, the interviews were not intended to be representative of the larger population and include only two residential households, so I am not expanding further on dynamics or demographics for Box Elder County.

Ruling out Box Elder County for the survey research left the areas near the lake in

³³ As described later, I conducted two interviews of residents (one couple and one individual), as well as interviewing a county commissioner and three resource managers in Box Elder County.

Davis and Weber Counties for this part of the study. To familiarize myself with the areas, I spent time driving the western-most roads in both counties, noting the locations and general traits of communities, settlement density and presence of agriculture; observing housing patterns and stock, and areas of new development; noting whether residents would be able to see the lake or islands from their properties, whether they were close to a protected wetlands area, and how the housing seemed to be oriented, e.g. whether homes were oriented to have a view of the lake, of the mountains to the east, or to the neighborhoods they were a part of.³⁴ Wanting to include those who live as close to the lake as possible meant my operational definition had to take into consideration lake-related constraints on development. Because of the differences in the lay of the land, the locations of resulting population clusters, and the differences in regulatory language regarding the high water “moratorium” on development noted in the preceding section, the definition of the study area in Davis County is slightly different than that in Weber County, although they are similar in terms of the amount of developable land they both encompass.

In both Weber and Davis Counties, the study area includes all households located between the lake and the outer parameter for that county. In Weber County the outer parameter of the study area was set one mile east of the lake’s high water line used by the county for planning and development—4218 (the FEMA flood plain line in this area). Because of a very gradual rise in elevation in the area north of Ogden Bay, this definition includes a good deal of land, however much of it is under the minimum elevation allowed

³⁴ I also did this in Box Elder County, this information was part of the land-use research (along with time spent in the county offices consulting maps and development plats, as well as with county officials) that led to Box Elder County’s exclusion from the survey.

for development in the county, 4215. Although the most eastern point of the study area, Plain City, is four miles from the lake, in 1987 the flooding extended into the city (GSLPT 2000b). In Davis County, the outer parameter for the study area was set 1.5 miles east of the lake's meander line. After consulting with staff from Davis County's Department of Community and Economic Development, and taking into consideration the FEMA flood plain map,³⁵ the differences in county definitions, the lay of the land, and the buffer of conserved wetlands areas down the shoreline of most of Davis County, this appeared to be the most comparable boundary to that set in Weber County. These parameters yielded roughly equivalent-width swaths of developable land along most of the shoreline in the two counties.

A full continuum of rural to small urban area contexts exists within this two-county study area, including agricultural residences; sparsely populated, unincorporated areas where residents have neighbors to the sides with fields behind; small, rural communities which may or may not be incorporated; and new subdivisions of small-to-medium sized cities. Length of residence in the study area makes up another continuum, including areas with residents whose families have owned the land for generations and other areas with recently platted subdivisions where people have not yet moved into their brand new homes. These two continua allow the project to examine differences between areas of rapid growth and areas of substantial stability, between newcomers and long standing residents, and to a degree, between rural and non-rural residents.

³⁵ Refers to the FEMA flood plain map that was in use at the time, July 2006. The Davis County flood plain has since been redrawn.

Davis County

Although GSL limits the county's usable lands, Davis County has likely benefited from the lake more than the other lake-adjacent counties have. With rich soils nourished by mineral-laden mountain streams on their way to the lake, combined with a growing season among the longest in the state courtesy of lake-affected local climate, the county has a long history of very productive agriculture (DCCOG 2001; Layton 1996). It has also benefited from GSL-related tourism at Antelope Island, the most used GSL site (e.g. Park 2008a; UDTD 2007).

The study area covers 43 square miles, or 19 percent of the county's usable 223 square miles (see Figure 3-5). It includes, from south to north, over half of West Bountiful, most of Centerville, and about half of the land but far fewer than half of the households in Farmington. The study area also includes close to half of Kaysville, a small portion of Layton, less than half of Syracuse, and roughly half of the land in West Point. Because the study area includes less than one-fifth of the county, I have constructed an aggregate of the ten census tracts that contain the study area to consider population dynamics at a level more comparable to the study area.

Background Information on Davis County

History. Used by Native Americans long before the earliest European settlement, the Davis County area was used for agriculture by Mormon settlers beginning in 1847. A number of farms were already operating in southern areas when the county was established in 1850. By the early 1900s the county's economy was based on agriculture and related industries such as gristmills, nurseries, irrigation companies and canning

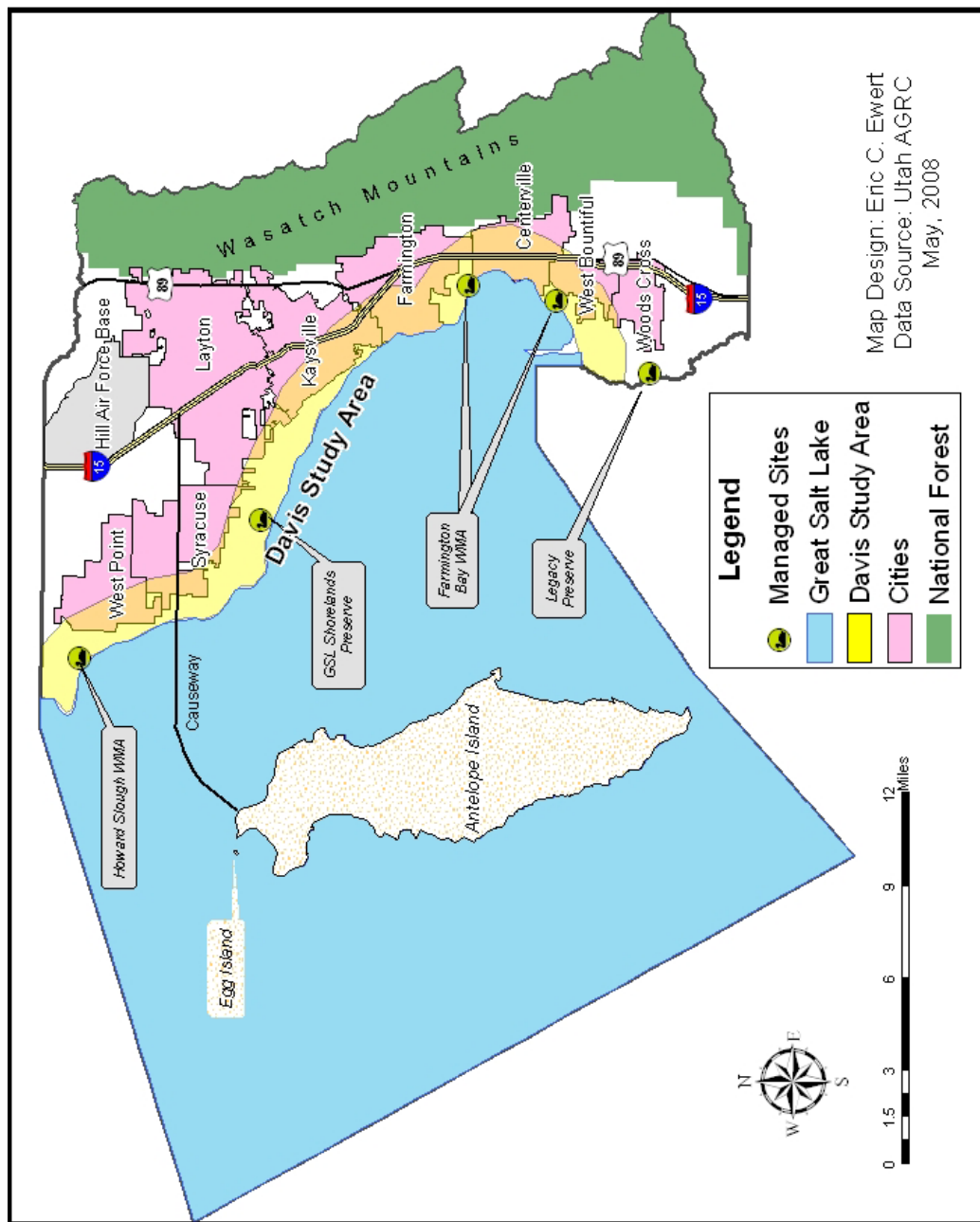


Figure 3-5: Davis County, Utah. Cities with portions in the study area, and the study area for the survey, are highlighted.

factories (Davis County 2003; Layton 1996). World War II diversified the county's economy and settlement patterns with the installation of Hill Air Force Base (HAFB) and a Naval Supply Depot in the northern end of the county. Both became large employers, creating the need for service industries and suburban housing. When the Navy depot closed in 1963 the site was developed into the Freeport Center, one of the largest commercial distribution centers in the United States and also used for manufacturing and warehousing (Davis County 2003; Layton 1996). Suburbs housing these employees also housed residents commuting to jobs in Salt Lake City. These factors led to a doubling of the county's population between 1940 and 1950, again by 1960, and again by 1975 (Davis County 2003; Layton 1996). Although Davis has the smallest land area of Utah counties, it is now the third most populous.

Growth and population. The county continues to grow at a rapid rate, particularly in the north, towards the west and the lake (Clark 2003; Troester 2004). Syracuse is the prime example here: according to the City Administrator, it grew from 9,000 to 24,000 between 2000 and 2007, and for a while it was the fastest growing city of 10,000 or more in the state (Saxton 2007b; Troester 2004; West 2006). West Point has also grown rapidly (see Table 3-6). Growth continues in other areas of the county as well, none of the county's cities have lost population since 1990. Centerville, with the slowest growth since 2000, grew 27 percent from 1990 to 2000 (U.S. Census). Home sales have now begun to slow down, partially because of rising prices. Yet despite a 16 percent decline in home sales in northwest Davis County from March to October 2007, West Point, Syracuse, and others in the area were still selling more homes than any other area in Davis or Weber Counties (Clark 2007).

Table 3-6: Population Change in Davis County Communities: 1980-2007

	1980	1990	% Change 1980-1990	2000	% Change 1990-2000
Utah	1,461,037	1,722,850	17.9%	2,233,169	29.6%
Davis County	146,540	187,941	28.2%	238,994	27.2%
West Bountiful		4,477	-----	4,484	0.2%
Centerville		11,500	-----	14,585	26.8%
Farmington		9,028	-----	12,081	33.8%
Kaysville		13,961	-----	20,351	45.8%
Layton		41,784	-----	58,474	39.9%
Syracuse		4,658	-----	9,398	101.8%
West Point		4,258	-----	6,033	41.7%

	2006	% Change 2000-2006
Utah	2,550,063	14.2%
Davis County	276,259	15.6%
West Bountiful	5,185	15.6%
Centerville	15,075	3.4%
Farmington	15,540	28.6%
Kaysville	23,563	15.8%
Layton	62,716	7.2%
Syracuse	19,534	107.8%
West Point	8,186	35.7%

Source: Source: U.S. Census Bureau 1990, 2000; 2006 from Census estimate

Despite the growth, Davis County and the study area remain relatively homogenous. The 2000 census found that 93.9 percent of residents in the study area aggregate were white non-Hispanics (Table 3-7 shows population characteristics, along with those of Davis County and the State of Utah for comparison).³⁶ This homogeneity can also be seen in the conservativeness of the county. Across the state of Utah, the rate of membership in The Church of Jesus Christ of Latter-day Saints (LDS) is declining, decreasing nearly 10 percent between 1990 and 2007. However Davis County has seen

³⁶ Although much growth in the county has occurred since 2000, a comparison of county-level census data shows little difference in the percentage of White, non-Hispanic residents between 2000 (89.8%) and 2006 (88.4%).

Table 3-7: Census 2000 Population Characteristics for Davis County Study Area, Davis County and the State of Utah^a

Category	Study Area Aggregate ^a	Davis County	Utah
Population	49,155	238,994	2,233,169
Race/Ethnicity			
Black persons, percent	0.4%	1.1%	0.8%
Asian persons, percent	0.9%	1.5%	1.7%
Persons of Hispanic or Latino origin, percent	3.3%	5.4%	9.0%
White persons not Hispanic, percent	93.9%	89.8%	85.3%
Age distribution			
Median age (range)	(18.6-29.5)	26.8	27.1
Persons under 18 years old, percent	39.1%	35.1%	32.2%
Persons 18-64, percent	56.1%	57.6%	59.3%
Persons 65 years old and over, percent	4.8%	7.3%	8.5%
Household information			
Homeownership rate, percent	90.5%	77.5%	71.5%
Number of households	13,218	71,201	701,281
Persons per household	3.7	3.4	3.2
Education			
High school graduates, % of persons age 25+	93.7%	92.2%	87.7%
Bachelor's degree or higher, % of persons age 25+	30.8%	28.8%	26.1%
Income			
Median household income—1999 dollars (range)	(\$47,438 to \$77,604)	\$53,726	\$45,726
Per capita income—1999 dollars	\$18,467	\$19,506	\$18,185
Persons below poverty, percent	3.0%	5.1%	9.4%

a: Aggregate of census data from the 10 census tracts that contain the study area residences in Davis County (U.S. Census 2000)

much less of a decline (see Tables 3-8 and 3-9): here LDS Church membership remains at nearly 70 percent of residents (Canham 2007). The county also continues to be one of the most Republican counties in the state.³⁷

The population of the study area is younger than either the county or state average, with a higher percentage of children and a lower percentage of senior adults; the number of persons per household is also higher than the county and state averages (US Census). The county school district has done a good job of getting all these children

³⁷ The last Democrat to hold a county office in Davis County was a county commissioner who was elected to a single four-year term in 1990 (Dougherty 2007c).

Table 3-8: Religious Affiliation: Number of Adherents in 1990 and 2000 for Davis and Weber Counties and the State of Utah

Religion	Davis			Weber		
	1990	2000	% of Total Davis 2000	1990	2000	% of Total Weber 2000
LDS	139,375	172,172	72.0%	102,121	115,106	58.6%
Catholic	4,248	7,270	3.0%	11,350	11,726	6.0%
Orthodox	0	0	0	0	429	0.2%
Evangelical Protestant	5,189	5,703	2.4%	4,579	6,348	3.2%
Mainline Protestant	2,126	1,638	0.7%	4,590	4,275	2.2%
Jewish (estimate)	517	0	0	436	150	0.1%
Other Theology	0	71	0	0	220	0.1%
Unclaimed	36,486	52,140	21.8%	35,044	58,279	29.6%

Religion	Utah		
	1990	2000	% of Total Utah 2000
LDS	1,236,242	1,483,858	66.4%
Catholic	66,316	97,085	4.3%
Orthodox	0	4,426	0.2%
Evangelical Protestant	38,137	42,420	1.9%
Mainline Protestant	29,734	31,308	1.4%
Jewish (estimate)	2,950	4,500	0.2%
Other Theology	718	5,254	0.2%
Unclaimed	348,753	564,318	25.3%

Source: The Association of Religion Data Archives (THEARDA 2006)

Table 3-9: Percent LDS in 1990, 2000, 2007 for Davis and Weber Counties and the State of Utah

	1990 ^a	2000 ^a	2007 ^b
Davis County	74%	72%	68.31%
Weber County	64.5%	58%	54.49%
Utah	69.7%	66%	60.65% ^c

a: Computed from ARDA numbers and census population

b: Computed by *The Salt Lake Tribune* based on numbers from the LDS Church and Utah State government (Canham 2007)

c: 1,637,160 members

through school: over 93 percent of 25 year olds have graduated from high school, and Davis County School District was recognized as having the highest graduation rate—89 percent—among the 100 largest school districts in the nation in 2006 (Buttars 2006). More residents of the study area have college degrees than the state average, as well (see Table 3-7). The relatively high concentration of youth and larger households in the study area are not reflected in the poverty rate, which is substantially lower than that of the county or the state.

Economy. Although Davis County has historically been economically strong, it is now experiencing some transitions. In 2005, manufacturing provided nearly 20 percent of the county's total annual earnings, the other largest industries based on earnings included retail trade, construction, and health care and social assistance (U.S. Census Bureau, County Business Patterns 2005). The government sector supplies about one quarter of its jobs, over half of which are federal, nearly all through HAFB. The trade, transportation and utilities sector accounts for another 20 percent of the county's jobs. In 2007, the unemployment rate was only 2.6 percent (UDWS 2008). However, despite a 60 percent job increase since 1990, with 35,000 new positions, Davis County has more workers than jobs. Nearly 45 percent of the labor force commutes out of the county to work, the second highest number of commuters in the state. Additionally, while government and manufacturing positions have declined since 1990, there have been increases in lower-paying service jobs. As a result, the average annual wage in the county is now slightly lower than the state average.³⁸ Davis County earnings have historically been higher than state earnings (Busselberg 2007c; Dougherty 2007a; Saxton 2007c).

³⁸ The average annual wage in Davis County is now \$32,556; the state average is \$32,832 (Saxton 2007c).

Agriculture in Davis County has continued to decline in the last 25 years, although it remains important. Between 1982 and 2002 the number of farms county-wide dropped from 660 to 582, and total farm acreage dropped 59 percent (UDWS 2008). Davis County contains 40 Centennial Farms and Ranches, 100-year old family farms and ranches recognized by the Utah Department of Agriculture and Food (UDAF 2008). Of these, 33 are located in study area communities, although it is unknown how many of them are within the study area parameters.

The *Davis County Shorelands* master plan (DCCOG 2001) describes a symbiotic relationship between rural farmlands and the lake shore. Because of their proximity to the lake, farmlands benefit from the soils and climate, while providing a critical buffer between wetlands and further development. Therefore, farmlands are valued, first, for both agricultural production and preservation of open space and the rural character important to Davis County; and secondly for protection provided to a vulnerable ecosystem. The lake ecosystem benefits from the farmland buffer, preservation of the uplands, and from agricultural rather than urban water use. The Shorelands Plan specifies that agricultural land is to remain a buffer between any further development and the GSL wetlands for a portion of the shoreline (DCCOG 2001). Some of these lands have already been moved into preservation status (Busselberg 2007d).

GSL tourism. Davis County also benefits from lake-related tourism, with Antelope Island the second most-visited tourist attraction in the county. In 2006, more than half of the island's visitors were "destination" visitors, coming from outside of the area specifically to see the island and GSL (Busselberg 2007b), and the 281,266 visitors in 2007 marked a 12 percent increase from 2006 (Park 2008a). Davis County helps

sponsor and promote a number of annual Great Salt Lake- and Antelope Island-related events, including the GSL Bird Festival noted earlier, the Antelope Island Balloon Stampede, and the bison roundup, as well as a number of bicycling, running, and stargazing events (Park 2007d).

During the second Balloon Stampede, held in 2007, between 8,000 and 12,000 people visited the island, about half specifically for the event. A small survey of visitors conducted at the event³⁹ revealed that 83 percent of the respondents were from Davis County, 25 percent from Weber County, and 15 percent from other places including from other states (Park 2007c, 2008a; personal communications with V. Jacobsen, Balloon Stampede Chair, 11/5/2007, and with B. Riddle, president of the Davis Area Convention and Visitors Bureau 10/10/2007). Among the Davis County residents surveyed, the majority had not visited the island before (Park 2007c), despite the county investing in promotional materials such as fliers, a video, a website, and even a mascot, Causeway the Buffalo, all touting the island as a destination (Park 2008a; Standard-Examiner 2005a). This is consistent with a study of county residents that found one quarter of survey respondents did not know what there was to do at the lake, while one third said they visit the lake “rarely or never” (Brunson and Nicholson 1999).

Legacy Highway. Animosity regarding the lake’s ecosystem (particularly the wetlands) and those who would protect it arose during a long, divisive battle over the location of the Legacy Highway in Davis County. Because of the narrow strip of usable land between mountains and lake, there has been only one major north-south roadway through the narrowest part of the county, an interstate freeway (I-15). With increasing

³⁹ N=129; respondents were randomly selected from the visitors.

population and commuting, a highway in the west part of the county had been discussed since the 1960s. In January 2001 federal approval was given for the “Legacy Parkway” after environmental studies were conducted. The first segment of a longer highway, it was named “Parkway” because of bike and horse trails alongside the road. Within eight days of its approval, a coalition of environmental and other groups and individuals filed a lawsuit on the grounds that the parkway would damage 114 acres of GSL wetlands and that the environmental impact statement (EIS) had not adequately considered other options (Deseret News 2005a; Roskelley 2003; Wakley 2001; Warburton 2004).

The coalition included Utahns for Better Transportation, a self-described “Utah-based, grassroots coalition” (Utahns for Better Transportation 2002),⁴⁰ and the Sierra Club, which did much of the speaking for the group and became the main focal point of opponents. Rocky Anderson, the Democratic mayor of Salt Lake City and a vocal environmentalist, joined the lawsuit, becoming another focal point for “Legacy supporters.” Construction began after the lawsuit was dismissed in August 2001. However, the Court of Appeals issued an injunction in November, halting construction, already about one quarter completed. A stay issued in September 2002 directed COE and the Federal Highway Department to re-examine five issues of concern (Buchta 2003; Roskelley 2003; Wakley 2001:1A).

As a result, a supplemental environmental study was conducted, which included contentious meetings for public comment (e.g. Buchta 2003). The dispute was often

⁴⁰ Utahns for Better Transportation included FRIENDS of Great Salt Lake (FoGSL), Great Salt Lake Audubon Society, Future Moves Coalition, Utah Rivers Council, HawkWatch International, and the League of Women Voters of Salt Lake (FoGSL 2002).

described, by the media as well as residents of Davis County, as being “vocal activists outside of our county” versus “the working people of Davis County” who “spend hours in traffic jams” (Roskelley 2004:1B). A poll found that 86 percent of Davis County residents and 81 percent of Weber County residents favored the highway; the Davis Chamber of Commerce, Utah Trucking Association, businesses, and elected officials including state legislators, mayors, and county commissioners all advocated for Legacy (Roskelley 2004). UDOT portrayed Legacy as a way to protect the GSL environment as a barrier to further development to the west, with a 2,098 acre nature preserve that was to be built as a mitigation project (Warburton 2004).

In December 2004, the draft EIS was released for public comment. In January, hundreds attended a long, polarized public hearing in Davis County (Williams 2006); meanwhile quiet negotiations began between UDOT, the lawsuit plaintiffs, and a small number of public officials (Deseret News 2005a; Williams 2006). In September 2005, Governor Jon Huntsman, UDOT, the Sierra Club, and Utahns for Better Transportation announced an agreement in principle to settle the lawsuit. The compromise included an agreement for no further litigation, and the roadway would be allowed to proceed as what the plaintiffs argued was a true parkway: a 55 mile per hour speed limit, no heavy trucks allowed except in emergencies, an asphalt rather than concrete surface to reduce noise, and no billboards—in a corridor that would affect less acreage of wetlands. UDOT would push for mass transit options in south Davis County, and expand the nature preserve acreage (Warburton and Loftin 2005).

The compromise was extremely controversial (Williams 2005). New activist groups such as Friends of Legacy were formed, and a plethora of editorials, op-ed pieces,

opinion columns, and many letters to the editor appeared in all the local media, many favoring the compromise, or at least the resultant ability to resume construction, and some opposed (e.g. Cardell 2005; Deseret News 2005b; Jensen 2005; Pignanelli and Webb 2005; Salt Lake Tribune 2005; Standard-Examiner 2005b). The legislature approved the compromise, although with much contention, including some legislators calling the plaintiffs terrorists and blaming them for millions in extra costs caused by the delay (Henetz and Warchol 2005). These extra costs have been estimated at over \$230 million, for a total project cost of \$685 million (Shaw 2007a; Standard-Examiner 2007b). Occasional editorials continued to appear in the local media (e.g. Cardall 2006; Standard-Examiner 2007b), and both of the candidates in the 2007 Salt Lake City mayoral race made campaign pledges to work to heal the differences with Davis County that festered during Mayor Anderson's involvement with the Legacy lawsuit (Saxton 2007d). The highway was opened September 13, 2008 (SL Tribune 2008b).

Davis County is now promoting the Legacy Parkway as the "Gateway to the Great Salt Lake" and is working towards obtaining National Scenic Byway designation. One of the effort's organizers was quoted, "The biggest obstacle we've had to overcome is the people here don't appreciate the lake as an internationally important and interesting place" (Davis County Clipper 2007a; also Williams 2007). Meanwhile, tensions are building again as UDOT works to locate a corridor for the next section of the highway, Legacy North, in Davis and Weber Counties (e.g. Howey 2007b; Radunich 2007; Warburton 2007). The biggest other transportation problem, particularly in the rapidly growing northwest part of the county, is dealing with east-west traffic; these communities have grown far more quickly in population than in infrastructure (Saxton 2007b).

The communities in Davis County. In addition to each of the communities in Davis County having unique traits, they also have substantially different relationships with Great Salt Lake. Nearly all the land in Davis County has been incorporated, with even the most rural areas falling within some city's boundaries.

Davis County's smallest city, West Bountiful, is referred to as a "quaint, rural community" on its city website. Although the city borders a portion of Farmington Bay WMA to the west, during these low water times GSL is not visible from West Bountiful. Experiencing growing pains, the city is involved in internal political battles over how the city should be run, and is experiencing financial difficulties, partially over inadequate infrastructure (e.g. Davis County Clipper 2007b; Green 2008).

Just south of West Bountiful, a small portion of Woods Cross falls within the study area. However, due to wetlands little of the incorporated city and no city residences are located within the study area.

Centerville refers to itself as the "Friendly City Beside the Great Salt Lake" (Moran 2007), and the aerial picture of the city posted on its website shows it nestled between lake and mountains. Located on the county's narrowest strip of land between the two features, and east of the freeway that goes between them, Centerville is in the unique situation of being very close to the lake (most of the city falls within the study area), yet is separated from it by the interstate highway. Although there is enough slope to the landscape that one should be able to see the lake from almost any neighborhood in the city, soundwalls provide a barrier not only to freeway noise, but also to the view to the west. Because of this, only the homes on the east bench have a view of the lake. Centerville controls zoning for 2.5 miles of the lakeshore, immediately east of

Farmington Bay WMA (GSLPT 2000b), and although the city has development plans in the west, it plans to preserve and reclaim the wetlands areas (Wardell 2007).

Like Centerville, Farmington's land area reaches from the mountain benches in the east to the GSL wetlands in the west; it abuts Farmington Bay WMA to the southwest. Although half or more of its land is west of the highway (I-15), the vast majority of the population lives on the more developed east side, with services, businesses, and residential neighborhoods. Much of the west part of Farmington is more rural, with houses interspersed with farmland. A relatively new, fairly large but isolated suburban subdivision in this western area is the exception to this. The county fairgrounds, the county Sheriff's Department and jail are also on the west side. The study area takes in nearly all of the land west of the freeway, as well as a few subdivisions and a large golf course east of I-15 in the northern part of the city. Some tensions have arisen as development meets wetlands in west Farmington. Issues have included homeowners wanting to "manicure" "unsightly areas" in the conservation easements (Howey 2007c:2B); city officials using a legal technicality to plan a city park with a soccer field on a conservation easement, with only isolated individuals protesting; and at least one developer putting basements on homes despite warnings about the high water table—when the basements flooded, homeowners demanded the wetlands be filled in (Howey 2007a, 2007c).

Kaysville is laid out similarly to Farmington, with its more densely populated neighborhoods, and most of its businesses and services, east of I-15. The west side of the city is more populated than Farmington's west side, though, with both established and new subdivisions in clusters throughout the area. In the most western part of the city

many homes have a view of GSL, and in the southwest, subdivisions are being built with sizable, expensive homes that have large picture windows looking out over the lake. Kaysville's mayor, Neka Roundy, has served as the county tourism coordinator, coordinated the Great Salt Lake Bird Festival (Saxton 2006a), and now serves on the Governor's Great Salt Lake Advisory Council (Park 2008b).

Layton, Davis County's largest city population-wise, is also large geographically, stretching from mountains to lakeside like Centerville and Kaysville to the south, but at a much broader point of the county. Layton's population base is almost entirely east of I-15, even though over a third of its land is west of the highway. Because of the lay of the land and the wetlands to the southwest, very little of Layton's incorporated area lies in the study area; the only Layton residences included are in two subdivisions. Much of the southwestern border of Layton is part of TNC's Great Salt Lake Shorelands Preserve. Interestingly, one of the amenities of living in the east part of Layton is a "beautiful view of the Great Salt Lake," (Saxton 2005b:1A), a view most Layton residents close to the lake do not have.

Syracuse, "Gateway to Antelope Island and the Great Salt Lake," has had an intimate relationship with GSL. Originally settled as a farming community, Syracuse soils and climate are some of the best agricultural benefactors of GSL; by the 1900s the area was the largest fruit producer in a county known for its orchards (Syracuse City 2008). The city was named after Syracuse, New York, because of the salt company in that northeastern city.⁴¹ A resort built on the shorelands in 1887 was so popular that the railroad from Ogden to Salt Lake included a link to it, but Syracuse Resort closed when

⁴¹ An early salt producer on GSL at Syracuse, UT, put the name "Syracuse" on his bags because he knew about the salt company in Syracuse, NY. The name was then adopted by the lakeside community in UT.

the lake receded (Travous 1980). When the causeway to Antelope Island was built in 1969 Syracuse's connection to the lake brought in a new generation of tourism, however that was interrupted for a decade due to the flooding in the 1980s.

When a new high school was recently built in Syracuse, some of the suggested names for the school, the mascot and the sports teams were GSL-connected. While school names included Antelope High, Lakeside, and Island View, names for the teams included "the Fighting Brine Shrimp" (Wardle 2007a). Suggestions included references to the storms one can watch on the lake from Syracuse, such as Syracuse Storm, or Lightning, while others referred to the wildlife, like Buffalo or Seagulls. Suggested school colors were also related to the lake, e.g. "orange, gray and black for the sunset, the lake and the soil," or "royal blue and silver as in a thunderstorm" (Standard-Examiner 2007a). Although named simply the Syracuse High Titans, the emblem includes a shield with lightning bolts, and the school colors are blue and silver (Wardle 2007b).

Syracuse's extremely rapid growth has already been noted. The mayor attributes this growth to the proximity of shopping and services of larger cities while Syracuse retains "a rural feel" (Troester 2004). As noted earlier, the northwest part of the county is where the few open spaces for development remain (DeMoss 2006a). In the past, home prices in Syracuse have been lower than in other Davis County cities (McKittrick 2007; Wardle 2007b). However, with a median income in the city of \$58,223 and 64 percent of residents reporting having professional occupations, Syracuse has worked to attract higher value properties (Clark 2003). There is now concern that many people are being priced out of the area (DeMoss 2006a). Syracuse has a long history of large farms on the west side, near the lakeshore. The new growth is coming from the east and moving

westward. The density remains uneven, with large areas in the west still feeling quite rural, while the east side and center of the city feel increasingly urban. Syracuse is experiencing growing pains in a number of ways, particularly with infrastructure.

West Point lies at the western-most point of Davis County (hence its name), “along the shore of the picturesque Great Salt Lake” according to the city website. Demonstrating an awareness of the city’s shared ecosystem with GSL, the city has printed a flier titled, “Protecting our Storm Water.” The flier explains that storm water quality is important because, “Here in Utah, and Davis County specifically, storm water flows through storm drains directly to local creeks and rivers, and the Great Salt Lake with NO TREATMENT!” (West Point City, n.d., emphasis in original). The flier lists specific suggestions to avoid problems. Although it is the second smallest city in the study area, West Point grew 36 percent between 2000 and 2006 (US Census). In 2003 the average annual household income, \$62,000, was nearly double the national average, so West Point has also focused on building more upscale homes (Clark 2003).

In addition to these communities, there is a small unincorporated area in the northwest corner of the county, north of West Point, between Weber County and Howard Slough WMA. This is the south side of Hooper, which straddles the Davis-Weber county line; in Davis County it is unincorporated. This Davis County portion is more rural, with homes more spread out, and includes only 40 residences within the study area.

Weber County

Weber County has over two times as much usable land as Davis County has, with about 506 square miles after water coverage is subtracted. It is also growing steadily, but

at a much slower pace than Davis County. Because of dramatic differences in the geography and land use of the lakeshores, where Davis County benefits with agriculture and tourism, Weber County's relationship with the lake is based primarily on industry. This is related to the county being the only GSL-county with no public access to the lake itself; the wetlands of local WMAs are as close as Weber County residents get. Until the last decade or so, there was some public access at Little Mountain, a hill on the shoreline north of Ogden Bay, but this is now restricted by the U.S. Air Force, which operates the Little Mountain Training Annex there.

There are several core differences in the structure of the study area in Weber County as compared to Davis County (see Figure 3-6). A very gradual elevation change in the northern part of Weber County leaves a large area at an elevation below the county's development moratorium (4215), and much of the land below this elevation consists of hydric soils, thus more land is included in the study area to get a comparable ribbon of residential areas. Where Davis County land is almost all incorporated, even in the more rural areas, that is not the case in Weber County. Since Davis has such a small, narrow land base that runs north to south along the lake for 26 miles, the study area includes residential areas from eight of the county's 16 cities. Weber County is configured west to east, from a narrow point in the lake that expands to include 15 miles of shoreland on its way east. The study area is roughly 72 square miles, 12.5 percent of the land in the county. It includes residences from primarily only two of 15 incorporated cities in the county; roughly one-half of the study area is unincorporated.

On the southwest side of the county, the study area includes roughly half of the usable land and residences of Hooper. The northeastern part includes about half of the

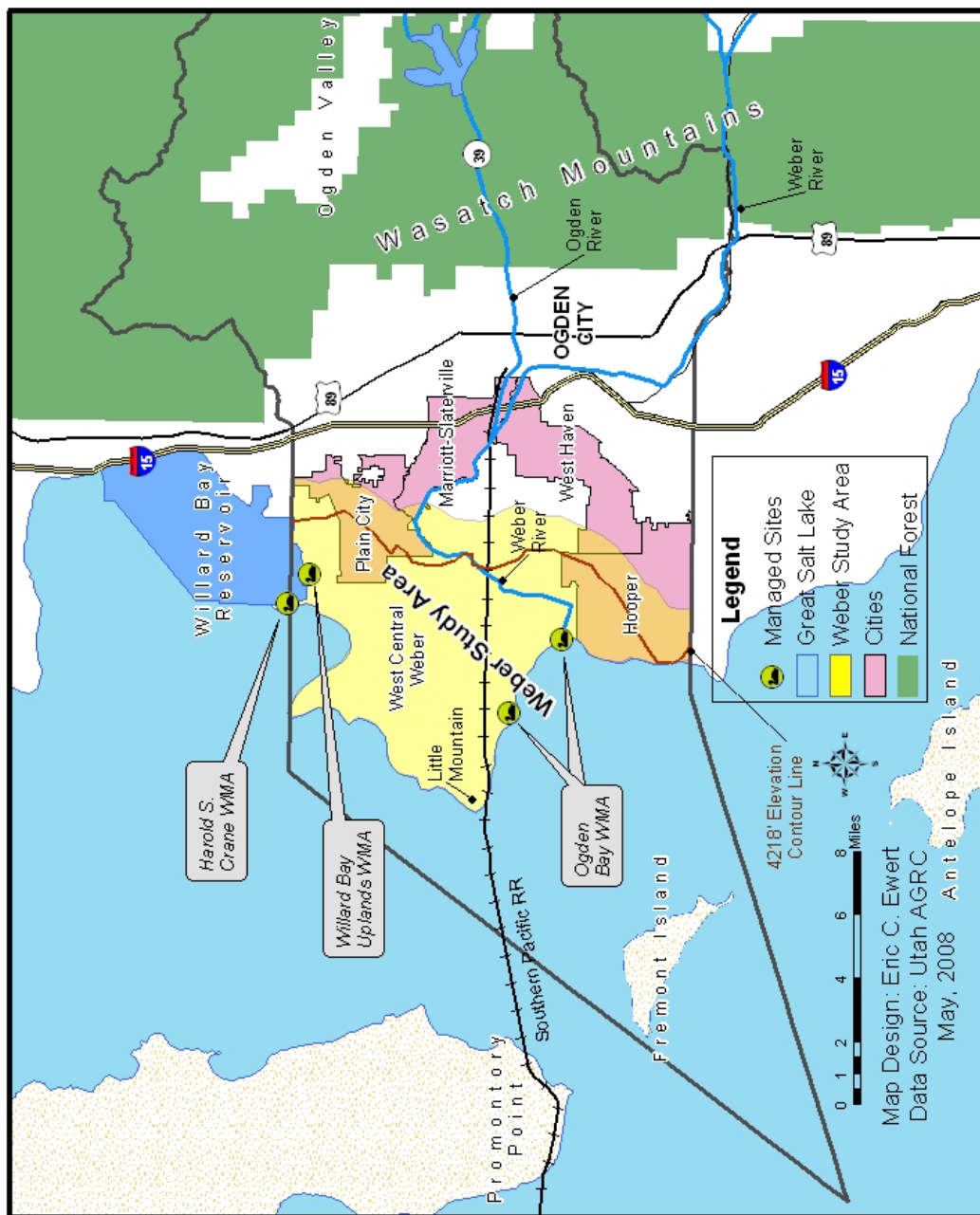


Figure 3-6: Weber County, Utah. Cities with portions in the study area, and the study area for the survey, are highlighted.

land in Plain City, with perhaps two-thirds of the residences. The study area also includes very small areas in West Haven and Marriott-Slaterville, two other incorporated cities, however neither is large enough to be considered a whole neighborhood. In between lays an unincorporated area that includes the Townships of Reese, West Weber, Warren and Weber, the neighborhood of Taylor,⁴² and other Weber County residences. These communities were grouped together for the purposes of developing the West Central Weber County General Plan in 2001 and 2002 (WCPD 2008), and although each is a distinct place in terms of organization and residents, I refer to them collectively as West Central Weber County (WC Weber) throughout this study. The secondary data on these communities aggregate them, and they share many commonalities. Because the study area is such a small percentage of the county, to consider population dynamics of residents of the Weber County study area I constructed an aggregate of census data from the cities of Hooper and Plain City, and the census tract containing WC Weber.

Background Information on Weber County

History. The first European settlement in the Weber County area occurred in 1843 when a trapper built a fort to serve as a trading post. After the fort was sold to Mormon pioneers in 1847, the city of Ogden was founded in 1850, with the surrounding area designated as Weber County. Historically the county had an urban center surrounded by agriculture, particularly to the west, the north, and through the mountains to the east. Ogden was the state's second largest city for nearly a century (Moler 1996).⁴³ After the Transcontinental Railroad was completed, Ogden became a major railroad junction. The

⁴² Taylor is not an organized township like the others, rather it is a recognized, named area. It is identified as "the neighborhood of Taylor" in the West Central Weber County General Plan (WCPD 2008).

⁴³ Ogden is currently the sixth largest city in Utah (Ogden City n.d.).

coming of the railroad brought industry and services, including woolen mills, canneries, livestock yards, breweries, iron works, banks, hotels and utility companies. Ogden also became internationally known as the home of Browning Arms, a firearms company. World War II brought Defense Depot Ogden, as well as the military bases located just over the border in Davis County, and the railroads carried up to 150 trains a day through Ogden (Moler 1996). The population of the county nearly doubled between 1940 (56,714) and 1960 (110,744), primarily due to war industries (Sadler and Roberts 2000).

Growth and population. The county has continued to grow steadily, albeit at a much slower pace than either Davis County or the state (see Table 3-10). Rural areas remain in the eastern mountain valley and to the northwest, near the lake, but other historically rural areas have seen much development in the last two decades. Hooper and

Table 3-10: Population Change in Weber County Communities: 1980-2007

	1980	1990	% Change 1980-1990	2000	% Change 1990-2000
Utah	1,461,037	1,722,850	17.9%	2,233,169	29.6%
Weber County	144,616	158,330	9.5%	196,533	24.1%
Hooper		3,468	-----	3,926	13.2%
Plain City		2,722	-----	3,489	28.2%
West Central Weber ^a		-----	-----	8,064	-----

	2006	% Change 2000-2006
Utah	2,550,063	14.2%
Weber County	213,247	8.5%
Hooper	4,649	18.4%
Plain City	4,352	24.7%
West Central Weber ^a	-----	-----

a: Population for Census Tract 1204.01, no data available prior to 2000, no data or estimates available for 2006.

Source: U.S. Census Bureau 1990, 2000; 2006 from Census estimate

especially Plain City have had strong growth since 1990. Brand new elementary schools in both cities demonstrate that increased development west towards the lake is occurring in Weber County as well as Davis County (Wardle and Stewart 2007).

The prominence of the railroads and the military depots brought more racial and ethnic diversity to Weber County than is seen in much of Utah; this continues to the present. However, outside Ogden the county is more homogenous, 96 percent of the population in the study area aggregate are White non-Hispanics (see Table 3-11 for these data, along with those of Weber County and the State of Utah for comparison). The county's heterogeneity can also be seen in the broader distribution of religious affiliations, including the substantially lower preponderance of LDS Church members and the higher percentage of Catholics (see Tables 3-8 and 3-9), although again, there is likely less diversity within the study area.

Weber County's population is somewhat older than that of Davis County and the state (see Table 3-11), with the largest discrepancy being in the number of residents 65 years old and older. While the study areas in Weber County and Davis County have similar percentages of adults aged 18 to 64 (56.9% and 56.3%, respectively), the Weber County study area has 4 percent fewer minors and more seniors. Educationally, while a higher percentage of the Weber County study area residents are high school graduates than seen in the county or the state, the reverse is true for college graduates. Home ownership, as well as the number of persons per household, is higher in the study area than in Weber County or the state. Per capita income for the study area is very similar to both the county and the state incomes, but the percentage of people below poverty in the study area aggregate is substantially lower than either (US Census 2000).

Table 3-11: Census 2000 Population Characteristics for Weber County Study Area, Weber County and the State of Utah

Category	Study Area Aggregate ^a	Weber County	Utah
Population	15,479	196,533	2,233,169
Race/Ethnicity			
Black persons, percent	0.1%	1.4%	0.8%
Asian persons, percent	0.5%	1.3%	1.7%
Persons of Hispanic or Latino origin, %	2.1%	12.6%	9.0%
White persons not Hispanic, percent	96.5%	82.8%	85.3%
Age distribution			
Median age (range)	(27.1 to 31.6)	29.3	27.1
Persons under 18 years old, percent	34.0%	31.0%	32.2%
Persons 18-64, percent	56.9%	58.7%	59.3%
Persons 65 years old and over, percent	9.0%	10.3%	8.5%
Household information			
Homeownership rate, percent	92.4%	74.9%	71.5%
Number of households	4602	65,698	701,281
Persons per household	3.4	3.0	3.2
Education			
High school graduates, % of persons age 25+	90.9%	85.0%	87.7%
Bachelor's degree or higher, % of persons age 25+	15.6%	19.9%	26.1%
Income			
Median household income—1999 dollars (range)	(\$36,033 to \$57,900)	\$44,014	\$45,726
Per capita income—1999 dollars	18,286	\$18,246	\$18,185
Persons below poverty, percent	2.4%	9.3%	9.4%

a: Aggregate of census data from Hooper, Plain City, and the census tract that contains most of West Central Weber (Census Tract 2104.01) (U.S. Census 2000).

Economy. Weber County does less well economically than Davis County, e.g. the average monthly wage is lower in Weber County.⁴⁴ The county depends a good deal on manufacturing and service industries. In 2005, manufacturing provided 23 percent of the county's total earnings, and the other largest industries based on earnings were health care and social assistance, retail trade, and professional, scientific, and technical services (U.S. Census Bureau, County Business Patterns 2005). The labor market in Weber

⁴⁴ In 2006, the average monthly wage in Weber County was \$2,614; in Davis County it was \$2,849, and in the state of Utah it was \$2,883 (UDWS 2008).

County has grown faster than the population; from 2006 through the first half of 2007, new jobs grew 2.9 to 3.9 percent, with a 14 percent increase in construction jobs, and education and healthcare also growing steadily. The unemployment rate was only 3.1 percent in 2007. Federal, state and local governments account for 22 percent of jobs, with over one-third of this, federal; the largest employer in the county is the Internal Revenue Service's processing center (UDWS 2008).

Agriculture in Weber County has gone through some transitions in the last 15 years. From 1992 to 2002 the number of farms increased seven percent, going from 945 farms to 1,012. However, the average farm size decreased from 271 acres to 86 acres and the total acreage in farming shrunk to one-third what it had been (UDWS 2008).

Although much of the land in the study area is agricultural, Weber County has far more agricultural land, that is far more productive, in other areas. The Weber County farmland closest to GSL lacks the rich soils near the lake that Davis County benefits from. In the West Central Weber area, much of the land closest to the lake has either a high clay content or hydric soils (WCPD 2008), making crops and orchards less productive. Hooper, located on the south side of Ogden Bay and right next to Davis County farmland, does not have the same problem.

Tourism and recreation. Unlike Davis County, there is virtually no GSL-related tourism emphasis within Weber County. This is likely related to the lack of public access to the lake. A search of the website for the Ogden/Weber Convention and Visitors Bureau (Ogden/Weber CVB 2006) shows very little mention of Great Salt Lake and its related sites. A link for birding talks specifically about the lake, but other than that, only Antelope Island in Davis County, and the Bear River Migratory Bird Refuge and Willard

Bay in Box Elder County are mentioned, with little emphasis. There was no mention of Ogden Bay WMA or the other WMAs in Weber County, and no GSL-related events are listed on the events lists (Ogden/Weber CVB 2006). Instead, the county emphasizes attractions in Ogden City, and in the mountains and mountain valley to the east.

Little Mountain. The history of access to GSL at Little Mountain was noted earlier. For a while, 1,123 acres, which had been part of the Little Mountain Training Annex, were under the authority of the state Division of Parks and Recreation. The Training Annex, an active testing facility for HAFB, has been in operation since 1958, and in 1973 found that acreage to be in excess of what the base required, and the land was passed on to the state. The land was later passed to Weber County (and a private entity) (US COE n.d.), and was accessible until within the last decade, when the Air Force again restricted access, likely due to security concerns. The Air Force facility at Little Mountain has been named an EPA Superfund site (along with the Base) and is currently undergoing investigation activities(US EPA 2007b).⁴⁵ The concerns at the Training Annex are that ground water may have been contaminated by toxic solvents, which may have resulted in ecological exposure. This would likely affect Ogden Bay WMA, just south of the Training Annex, although officials believe ecological exposure is unlikely. It should be noted it is not widely known that there is a Superfund site here as it has not received media coverage, and even in the communities closest to the site it is unlikely that many are aware of its existence.

Transportation issues. Transportation issues are also of concern in the Weber

⁴⁵ The EPA placed the Air Force Base on the Superfund National Priorities List on July 22, 1987 (US EPA 2007). The projected dates for the Superfund effort are for the completion of the feasibility study in 2009, a decision recorded in 2010, and implementation of the clean-up operations to begin in 2011 (DFFSL 2007).

County portion of the study area. Here some have argued that more and/or better east-west routes are needed rather than another north-south highway like Legacy North (WCPD 2008). UDOT is working on addressing the east-west routes and also plans to widen a connector road between western Davis and Weber Counties. While widening the road is frustrating some affected homeowners, others are far more accepting since the project has been needed for some time (Meade 2007; Shaw 2007b, 2008).

Weber County has been much less involved in the Legacy Parkway controversy than Davis County. Like much of northern Utah, Weber County commuters want a way to get through the worst of the bottle neck of commuter traffic in Davis County, and have been frustrated at the delays with the Parkway (Roskelley 2004). However most in Weber County are far less concerned about “Legacy North”—that is, except for those whose land and communities may be affected by the corridor UDOT is working on delineating in preparation for the eventual building of the highway (Cooper 2007).⁴⁶ Most people in West Central Weber do not want the highway to be extended (WCPD 2008), apparently feeling there is not the same degree of need in Weber County as there is in Davis County.

In discussions regarding the location of the highway corridor, some have argued that, in addition to damaging agricultural and open space areas, the preferred alignment will also be closer to GSL wetlands, making the alignment more vulnerable to lawsuits similar to those seen with the original section of Legacy (DeMoss 2007b; Schull 2007). Some even argue that savings from avoiding potential “environmental lawsuits” would cover some extra expense of the more eastern route (Schull 2007). This argument appears to be largely posturing, as the preferred alignment is not far enough west to affect the

⁴⁶ Construction of Legacy North in Weber County is not planned until 2030 (Cooper 2007).

wetlands even with the very gradual slope of West Central Weber; there are residential parcels west of the proposed corridor. The argument about agricultural lands has more support, in fact the point has been made that the alignment would go through some of the area's Centennial Farms (McFarland 2007).

The communities in Weber County. While exhibiting a number of commonalities, Hooper, West Central Weber, and Plain City also have some striking differences.

Although Hooper's growth rate is not comparable, the community has similar traits to Syracuse. Hooper is a well-established, agriculture-oriented, small rural place, trying to come to terms with a growth rate that is threatening to residents' image of their hometown, evidenced by letters to the editor decrying the changes (e.g. Stoddard 2007). Although only incorporated in 2000, Hooper has a long history as a farming and ranching community, with eleven Centennial Farms and Ranches (UDAF 2008). The mayor has joked about not knowing whether there are more people or horses residing in the city (Clark 2006). The "old" city park includes the usual swings and slides and picnic bowery, but also has an arena for horse shows and training. The settlement patterns of Hooper resemble those in Syracuse, with larger farms and ranches in the western-most area, and the majority of the growth moving westward from the east, with an uneven distribution of development in between. Also similar to Syracuse, a ridge at GSL's meander line raises the land elevation above the high water line for most of the shoreline bordering Hooper.

However Hooper does not have a similar geographical relationship with the lake. There is no access to the lake, and at least during this current low-elevation time, one can barely see the water in the lake even from the most western point of the city's mainland. The city has a "mainland" because, in order to meet the land area requirements for

incorporation, Hooper included Fremont Island in the city's boundaries and gave the island its own undefined zone (Petersen 2007). However, to further illustrate the differences between Hooper and Syracuse, the island is uninhabited and privately held, accessible only by boat or airplane; it is leased for cattle grazing and private hunting. Rather than being oriented to the lake, Hooper, which lies between two WMAs, is oriented to the wetlands and the bird refuges.

Hooper is far behind the communities in Davis County in terms of the existence of residential, commercial, or infrastructure development. At this point its only businesses include an auto mechanic's shop, a hair stylist's shop, a day care, a dance studio, and during the summer months, a Sno-Cone shack. It has recently installed a sewer system, a controversial move because of requiring residents to buy in even if their septic systems were usable. It was protested by attempts to sabotage the vacuum system by drilling small holes in 53 sections of pipe, resulting in the city offering a \$5,000 reward for information about the saboteur(s) (Wood 2006).

West Central Weber (WC Weber) is a rural area with farms, dairies, and ranches, large agricultural fields, pasture land, and less productive undeveloped land (WCPD 2008). It lies between Ogden Bay WMA to the south and Harold Crane and Willard Bay Uplands managed areas to the north; the Weber River and its flood plain lie in the eastern portion. To the west is Great Salt Lake. The West Central Weber County General Plan describes the area, "The beauty and character of the West Central Weber County area is derived from the landscape, its location adjacent to Great Salt Lake, and magnificent views in all directions" (WCPD 2008:35).

WC Weber had an estimated population of 4,307 in 2002 (WCPD 2008).⁴⁷

Agriculture has been the primary land use in the area since its settlement, the earliest of which occurred in 1851 (Sadler and Roberts 2000).⁴⁸ There are two Centennial Farms located in West Weber (UDAF 2008). Residents appreciate the rural atmosphere—the open space, the ability to have animals on their property and other agricultural uses in the area, as well as their quiet, rural roads (WCPD 2008). Residents have said they do not want curb and gutter improvements. The desire to preserve the rural way of life has also made the question of extending a sewer system into the area controversial. Part of the Vision Statement for the general plan states that WC Weber “is a place that values and protects its rural character, lifestyle, and atmosphere” and “manages growth to strike a balance between preservation and development” (WCPD 2008:8).

There is little industry in the area, primarily clustered around Little Mountain with the Air Force Training Annex, Great Salt Lake Minerals Corporation, and Western Zirconium, which fabricates zirconium metal and other products for nuclear power and chemical processing industries (Sadler and Roberts 2000). The only commercial sites in the area are a convenience store and a butcher shop. Public lands occupy 45 percent of the land, and include the Training Annex and the WMAs. Some of the platted land is actually covered by the lake, although a portion of this is used by GSL Mineral for evaporation ponds. Much of the land in the northwestern part of WC Weber falls in the FEMA flood plain (below 4218) and/or has hydric soils (WCPD 2008).

⁴⁷ This population estimation was derived using a land use inventory and housing supply to estimate the number of households, along with the average household size from census tracts in the area from Census 2000 (WCPD 2008).

⁴⁸ West Weber was settled in 1851, Taylor and West Warren (which became Reese Township in 1996) followed within the next couple of years, and Warren was settled in 1872 (Sadler and Roberts 2000).

Historically, homes and land in this area have been valued at less than the areas farther east, and recently, less than those to the south as well. A long-term, local real estate agent explained that this has been primarily for three reasons: the land and communities are further out, more isolated from shopping and other services; there are high water issues; and people just do not want to live out there, because of “the stinky, buggy place it can be... It would’ve been totally different if [the lake] was freshwater” (personal communication, R. Southwick, realtor, 2/16/2008). The realtor explained that in years past he did not try to do much business in WC Weber. Properties were hard to turn over because people were not attracted to the area. “It was just on the edge of the civilized world.” Those who were drawn to the area were drawn by the lower prices, the larger lots, and the seclusion (personal communication, Southwick, 2/16/2008).

Plain City, named for the flat sagebrush plain it is located on, was originally settled in 1859 (Sadler and Roberts 2000). Unlike Hooper, which was more of a rural area that grew into a community and was incorporated much later, Plain City was settled as a town, planned by Mormon pioneers using the approach typical to Mormon settlements. The land for the town was divided into a grid system, with five acre blocks each divided into four residential lots, and a block in the center of town serving as the public square with the church, the school, and other public buildings. A large field outside of town was divided among city residents for farming. Plain City was an agricultural area, known for grains, squash, potatoes, fruit, tomatoes, and particularly its asparagus and strawberries (Sadler and Roberts 2000).

Located four miles east of Great Salt Lake, Plain City is also within two miles of Harold Crane WMA to the northwest, Willard Bay Uplands WMA, and Willard Bay

Reservoir to the north. The city feels quite removed from all of these lake-related sites. Yet in 1987, the flooding from GSL extended into the city because of the low, gradual slope in the area (GSLPT 2000b). The most western part of Plain City is within the FEMA flood plain, under 4218 in elevation; roughly two-thirds of the city's population lives within one mile of this high water line.

Plain City has been growing at a rate close to some of the cities in Davis County, with a 60 percent increase between 1990 and 2006 (c.f. see Table 3-6, Table 3-10) (US Census). Like most communities growing this rapidly, the city has been experiencing growing pains, needing upgrades to its waste management facility as well as other infrastructure needs (Stephenson 2007a; Stewart 2007). Parents want sidewalks so their children can walk safely to the new school, and unlike WC Weber, no one in Plain City is protesting these requests. Rather, it is a question of when the city can afford the cost. The city council struggles with finding balance in keeping a rural feel in the community while allowing continued development (Stephenson 2007b). They have worked with organizations such as Envision Utah and Weber Pathways in efforts to proactively plan for growth (Bell 2003; Stephenson 2007b).

Having described the study area, I now move on to the research project.

Research Design and Approach

As noted earlier, there are traditions of both qualitative (e.g. Brandenburg and Carroll 1995; Cheng and Daniels 2003; Kruger and Shannon 2000; Yung et al. 2003) and quantitative (e.g. Hay 1998; Jorgensen and Stedman 2001; Shamai 1991; Williams and Vaske 2003) research within the work on place dynamics. The current study uses a mixed

methods approach, with data from secondary data and documents, semi-structured interviews, focus groups, and a survey. These multiple methods provide triangulation, and strengthen both validity and reliability of the study (Babbie 2005).

There has been much debate regarding both qualitative and quantitative research within the place literature. Some place scholars question themselves philosophically on the issue of methodology. In discussing his own research findings, Kaltenborn (1998) grapples with having used “relatively simple [quantitative] empirical measures” (p. 186) to consider sense of place, a concept with a “complex and idiosyncratic nature,” a situation presenting “interpretative problems” (p. 185). Nonetheless, he concludes, the study shows these measures demonstrate the variability in sense of place, information with practical implications for resource managers. Some criticize qualitative studies as being overly idiographic and not open to generalizability (e.g. Shamai 1991; Stedman 2003b), while others defend the use of idiographic methods (Entrikin 1989), or argue that within place studies there are other concerns at hand:

Meanings assigned to a place are unique to that place and do not readily transfer to other places, even if the biophysical attributes are identical. This means that people-place connections are properties that cannot be readily discerned independently of the places from which they emerge. (Cheng et al. 2003:100)

In an essay outlining a suggested research approach to place attachment, Beckley (2003) rather humorously suggests that such a project might involve three teams, one of qualitatively oriented ethnographers, one of quantitatively oriented social psychologists, and one consisting of both “(and perhaps a referee).” He speculates on arguments between the two segregated teams about validity versus replicability and generalizability—and suggests results from the third team might prove to be the most

interesting if they were able to come up with a survey instrument that worked with the “complicating factors” raised by the ethnographers (pp. 107-108).

This project attempts to bring that third approach to reality, not with social psychologists and ethnographers, but by a sociologist interested in the dialectic of triangulation. This research will use that triangulated approach not only by using both qualitative interviews and focus groups as well as a quantitative survey, but also by weaving a number of qualitative items into the survey. It is important, with issues of meaning, for the people who hold the meanings to choose their own words and descriptions (Eisenhaur et al. 2000; Schoeder 2000, 2002; Williams in press), and the use of open-ended survey questions can facilitate this.

Others have advocated using multiple method approaches to place studies. Cheng et al. (2003) advocate using diverse methods to “uncover” place-based dynamics. While advocating for qualitative methods, they include survey instruments on a list of methods that could be used in combination with others, such as in-depth interviews, participant observation, content analysis of documents, and oral histories. Wulfhorst et al. (2006) provide an example of using “complementary qualitative and quantitative research methods” (p. 171) in their study of how sense of place is negotiated among different groups in an area experiencing rapid population growth. Farnum et al. (2005) advocate studies that “explicitly compare multiple methods in a single study,” and encourage researchers to attempt this in future research (p. 48).

The use of quantitative methods in a study grounded in social constructionism may seem curious. Berger and Kellner (1981) address this concern, stating that in their discussions of empirical work on socially constructed realities they are not “*implying a*

preference for qualitative over quantitative methods of empirical research,” and continue, “There is nothing wrong whatever with quantitative methods—*as long as* they are used to clarify the meanings operative in the situation being studied” (p. 46, italics in original). Greider and Garkovich (1994) argue that quantitative measures need not be ruled out automatically in studies of socially constructed meanings. “Nothing we have said about landscapes should be interpreted as favoring qualitative over quantitative methods,” going on to quote Berger and Kellner themselves. Greider and Garkovich continue, “Indeed, the use of both qualitative and quantitative methods in the study of landscapes would contribute to understanding the web of social interactions that are the basis for negotiations over environmental meanings and definitions” (1994:14).

Again, although I use a quantitative survey for much of the data for this study, I am committed to triangulating this methodology. As useful as it is, quantitative empiricism can be a fairly reductionistic tool. While this tool helps with some of the pieces, because place relationships are complex, it is unlikely to give me the ability to assemble the full puzzle, especially with particularly complex places like Great Salt Lake. Qualitative methods also provide only some of the pieces, but using these different perspectives together can aid in assembling more of the full puzzle.

Research Methods

Secondary Data and Documents

The secondary data and documents used in this study include census data, local media reports, historical documents, websites and other materials from organizations affiliated with GSL, and some limited public documents such as summary notes from

transportation open houses on issues related to GSL. I have also observed lake-related events, such as an open house on the Legacy Parkway, a field trip to the Legacy Preserve property; a public hearing on a landfill proposed for Promontory Point, presentations at the biannual FRIENDS of Great Salt Lake Issues Forums and workshops at the annual Great Salt Lake Bird Fest, etc. These observations, data and documents have provided a context for understanding current issues related to the lake and its immediate neighbors.

I have used local newspaper and magazine stories, websites, and materials from organizations affiliated with GSL, to follow current events and issues related to the lake as well as to see the general trends in how the lake is portrayed. Source materials include newspaper stories, special sections or magazines collected from the *Standard-Examiner*, the local newspaper covering Box Elder, Weber and Davis counties; *Davis County Clipper*, a small newspaper covering Davis County; *Deseret News*, *Salt Lake Tribune*, *City Weekly*, KCPW and KUER radio, and KSL television editorials, all covering Salt Lake City and the larger Wasatch Front; and *High Country News*, a regional newspaper focusing on land and environmental issues in the West. I began collecting stories in autumn 2001 when I started working on issues related to the lake in graduate school course papers. I have also used materials from GSL-related groups such as FRIENDS of Great Salt Lake (FoGSL), Friends of Antelope Island, Friends of the Bear River Migratory Bird Refuge, Audubon, The Nature Conservancy, and Utah Rivers Council.

Methods for Qualitative Work

A descriptive, qualitative study was conducted using 18 semi-structured interviews and two focus groups to collect data on place dynamics. This work is not

intended to be representative of neighbors of GSL, but rather to examine a variety of perspectives in more depth.

The interviews. The interview respondents were purposively selected, and included public officials, ecosystem management professionals, and residents in three counties that border the lake (see Table 3-12). One county commissioner was interviewed from each of Box Elder, Weber, and Davis counties; as were a total of six state park rangers or refuge/preserve managers. Residents from nine households were interviewed;

Table 3-12. Interview Respondents

Box Elder County: 6 interviews, 7 respondents

County commissioner

3 resource managers or rangers:

Willard Bay State Park (2)

Bear River Migratory Bird Refuge

2 residential households:

Individual, West Corrinne

Couple, Promontory Point

Weber County: 5 interviews, 7 respondents

County commissioner

1 resource manager or ranger:

Ogden Bay Waterfowl Management Area

3 residential households:

Couple, West Hooper

Couple, West Warren (unincorporated)

Individual, West Warren (unincorporated)

Davis County: 7 interviews, 8 respondents

County commissioner

2 resource managers or rangers:

Antelope Island State Park

The Nature Center Shoreland Preserve

4 residential households:

Individual, off Farmington Bay

Individual, West Syracuse

Couple, Foxboro subdivision, North Salt Lake

Individual, former resident

TOTAL: 18 interviews, 22 respondents

four of these interviews were of couples, the remaining five were of individuals.

These residents were referred to me by other contacts, e.g. by commissioners, managers, other professionals affiliated with the lake, or focus group members, and were selected to obtain a variety of perspectives. For example, I interviewed at least one shorter-term resident and one longer-term resident in both Weber and Davis counties, I also interviewed residents from different locations within the study area in each county. One interview participant no longer lives near the lake, she moved in 2002 after living within the study area for seven years, and living relatively close to the lake (but outside of the study area) for the 14 years before that. I interviewed her to hear about her experience of living near the lake in retrospect. Additionally, three live-in resource managers or rangers, one from each county, provided slightly different residential perspectives. The semi-structured, in-depth interviews ranged from 45 minutes to four hours, with 60 to 90 minutes being the most typical length.

Several of these interviews were conducted in Box Elder County, partially to determine if it would be appropriate to include the county in the survey research; the interviews led to the county's exclusion, as noted earlier. These interviews included two with residents, one with a county commissioner, and three with resource managers. They are included in the qualitative portion of the study.

In interviews with commissioners and resource managers, I asked about their interactions with residents who live near Great Salt Lake, and their sense of what living near the lake was like for these residents. Commissioners were asked about property values close to the lake. They were also asked whether their county had a shoreline protection plan, and how they handle development in low elevations in light of the

recommendation of development moratoriums (see Appendix A). Resource managers were asked about visitation and interaction at their site from those who live closest to their site (see Appendix B). Commissioners and many of the resource managers were asked for referrals to residents in the study area to include in the focus groups or interviews.

Resident interviews centered on the meanings GSL holds for the participants, and their sense of place with, and attachment to, the lake. Topics included participants' experience with living near the lake, how they decided to live there, what they see as the positive and negative aspects of living close to GSL, how connected they feel to the lake and to the surrounding area more generally. If appropriate, interview participants were asked about their children's and grandchildren's interaction with the lake (e.g. recreation, education, informal exploration, etc.) (see Appendix C). Resource managers who lived on-site were asked both the questions for resource managers and those for residents (see Appendix D).

For all the interviews, the questions described above were included in an interview guide (see Appendices A through D) and served as the core of the interview to provide comparability. However, the semi-structured format allowed for coverage of other topics and issues as they surfaced, as well as serving to capture the distinctive nuances of individual participants' experiences and perspectives.

Interview respondents. Interview respondents were not asked to provide any personal or demographic information, however all mentioned their marital status, and some made mention of things like age, how long they had been out of high school, or other information that gave me rough estimations for their ages. They were asked how

long they had lived in their homes, and where appropriate, whether the land had been in their family for more than one generation. In addition to the four couples, I interviewed three male and two female residents. Residents ranged from a young, married couple still in college to a 78 year old widower, however other than this man and one divorced woman, all were married. The young couple in their 20s and the man in his 70s were the outliers in terms of age, the rest of those interviewed were between age 40 and 60. The residents had lived in their homes from 1 to 75 years; two were living on land that had been in their families for three and four generations. Three of the participants had lived in their homes for less than 10 years, three more had lived in their homes between 10 to 20 years. Three of the participants had grown up living near the lake; one of these had left for a number of years but moved back over 10 years ago.

Only two of the professionals were women, due to the preponderance of men in both local county commission seats and resource management positions. Two of the commissioners had been in office for about a year, however one of these had worked in the county for decades and knew the county well. The third commissioner had been in office for seven years. The resource managers had worked at GSL-related sites for a range of 3 to 34 years; three had worked on the lake for 10 years or longer. Two of the managers grew up close to GSL. Those who lived onsite had lived at a GSL-related site for 4 to 28 years.

The focus groups. In April and June 2006, I conducted two focus groups. Similar to the focus of the interviews with residents, the focal point for the groups was the meanings GSL holds for the participants, and their sense of place with, and attachment to, the lake. Topics included experiences participants have had with living close to the lake,

how participants feel about living close to GSL and why they chose to live there (including whether the lake played a role in the decision), and what they see as the positive and negative aspects of living close to GSL, as well as how they feel about the place they live in general (e.g. the community, the geographic place, etc.). The groups were asked to share about the experiences their children have had with the lake, as well as their own experiences as children if they had grown up in the area. Focus group members were also asked about their vision of how things should be in the future for the setting (see Appendix E). Each focus group lasted about two hours. One week following each focus group I made a follow-up call to each of the focus group members, thanking them again for their participation and input into the focus group, and asking if they had thought of anything else to add in the last week, or if there was anything they didn't get a chance to say at the focus group meeting (see Appendix E).

All 10 participants of the first focus group were residents of Syracuse, in Davis County. Although from one of the fastest growing cities in Utah, because of settlement and development patterns in the area closest to the lake, the neighborhood (which was just annexed into the city within the last five years) is still very rural in composition and land use. Participants for this focus group were recruited by a leader of the local congregation ("ward") of the LDS church; unsuccessful attempts were made to include non-LDS Church members as well.

A second focus group was conducted in the rural, northern part of the study area in Weber County. The six participants in this focus group all lived in West Warren, in WC Weber. I received referrals to two couples in this area, neighbors living on the same

street; the two couples agreed to recruit among neighbors and friends in the area for this focus group.

Focus group participants. At the end of each focus group, participants were asked to fill out an anonymous, brief demographic questionnaire (see Appendix F). The focus group participants represented both sexes and a range of education levels and employment situations (see Table 3-13). Ages ranged from 40 to 78. Participants had lived in their current homes from 3 to 74 years, however in the Weber County group the newest person to the area had already lived there 12 years. Two to three people in each group were the third or even fourth generation to live in their location. Only three of the participants commute more than 30 minutes to work, all from Davis County. Household

Table 3-13: Demographics of Focus Group Members

	Davis Co.	Weber Co.
Total participants	10	6
Gender		
Male	5	4
Female	5	2
Age		
Range	40-78	46-67
Median	47	56
Length of time in current home		
Range	3-74	12-64
Median	12	18
Education levels		
Did not finish high school	1	0
High school diploma/GED	0	2
Some college, no bachelor's	6	2
Bachelor's degree	3	2
Employment situations		
Employed by a company	3	1
Self-employed	4	3
Retired	2	1
Homemaker	5	1
Commuting more than 30 minutes to work	3	0

incomes ranged from responses of “\$20,000 to \$39,999” to “\$100,000 to \$149,999” for both focus groups; the median income categories were “\$60,000 to \$79,999” in Davis County and “\$40,000 to \$59,999” in the Weber County group. None of the participants in either group reported belonging to any GSL-related organizations.⁴⁹

Qualitative data analysis methods. The interviews and focus group sessions were each taped and transcribed, for the most part verbatim (e.g., in a few cases long stories not related to the subject at hand were omitted). The data were organized and analyzed by themes and patterns, using an iterative process. Following suggestions made by Rubin and Rubin (2005), I utilized a hybrid process that falls between open-coding and using fully developed concepts from the start. Rather than using well defined concepts, I used what Patton (2002) refers to as “sensitizing concepts,” or “...loosely operationalized notions...that can provide some initial direction to a study” (p. 278), particularly those concepts from the place literature and my theory such as positive and negative affect, experiences and stories, etc. However, I allowed the themes and patterns, descriptions and meanings, to emerge from the data through open-coding techniques. The data were reorganized several times and systematically evaluated and reevaluated to allow for the most valid interpretation of themes and concepts as possible (Huberman and Miles 1998; Morgan 1997; Patton 2002; Rubin and Rubin 2005).

Methods for Quantitative Work

This section outlines the methods used for the quantitative portion of the study, including the data collection and sampling methods. The survey, measurement of

⁴⁹ Examples they were given included groups for recreation or conservation, groups that support lake-related places (e.g., Friends of Antelope Island, Friends of Bear River Refuge), as well as education-oriented groups and political advocacy groups.

variables, and analytical methods are described in Chapter Five, along with the findings from this quantitative work.

Data Collection. A self-completion survey questionnaire (Appendix B) was developed using prior research on place dynamics (e.g. Davenport 2006; Stedman 2003b; Williams and Vaske 2003), information from secondary data and documents, and data gathered in the qualitative portion of the study. The questionnaire contains sections on living near Great Salt Lake, involvement with the lake, issues related to GSL, attachment to the lake, and background characteristics. Following earlier pretests, the final questionnaire was pretested by the research team through administration to a small number (18) of residents of the study area who were not selected for the survey sample (Converse and Presser 1986; Dillman 2000). The survey was administered using a drop-off/pick-up method that has been found to yield relatively high response rates compared to other survey methods (Riley and Kiger 2002; Steele et al. 2001).

Sampling. Professionals in Weber and Davis County Information Technology Offices worked with their respective Tax Assessors' Offices to construct a list of all residences within the study area, which served as the sampling frame. Geographic Information System (GIS) data identified the parameters of the study area; tax assessor data identified the land parcels with residential structures within those parameters. Parcel numbers are unique identifiers, eight- to nine-digit numbers assigned to land parcels when they are developed. The first four to five digits are assigned by geographic location, the remaining four digits are assigned chronologically by the date the parcel was configured. This geographic and chronological arrangement of the numbers creates an implicit stratification of the list, which can make a systematic sampling of these parcels

(i.e., selecting every n th element) provide a more accurate representative sample than simple random sampling (Babbie 2005:213). This technique was particularly appropriate for sampling across this study area, where it is difficult to delineate “town” from “country” based on city boundaries because of settlement and incorporation patterns.

Using parcel numbers of the properties with residential structures within the study area, the sampling frame for each county was arranged in ascending numerical order. Data were double checked for periodicity, to make certain the systematic sample would have no regularities that would create problems for the representativeness of the sample derived from this technique (Babbie 2005). Arranging parcel numbers in this fashion also allowed duplicate listings to be deleted easily. Households were identified by parcel numbers and the corresponding addresses, and no names or other identifiers were used. Using systematic probability sampling procedures, a sample of households was drawn from each county, oversampling to avoid need for replacement sampling. In Weber County there were 2,827 parcels with residential structures within one mile of the high water line (4,218); every 11th parcel was selected after a random selection of a starting point, which yielded a sample of 259 residences. In Davis County, 8,068 parcels with residential structures fell within 1.5 miles of Great Salt Lake’s meander line;⁵⁰ every 31st parcel was selected, for a total sample of 252⁵¹. To randomize selection within households, the specific respondent was identified as the adult (age 18 or over) permanent resident of that home who had the most recent birthday.

⁵⁰ The surveyed meander line of the lake is generally located between the elevations of 4202 and 4212 feet above sea level, it is not based on topography or elevation *per se* (GSLPT 2000b:105).

⁵¹ The original total sample obtained was 261, however this had to be corrected as the original data provided by the county offices included an area outside of the 1.5 mile parameter.

Survey administration. I conducted the survey with the help of six bachelor's degree-level research assistants, over six weeks' time in summer 2007. Using the drop-off/pick-up technique, questionnaires were dropped off in person. At least three attempts were made to contact residents at each household in the sample, at different times of the day and on different days of the week. When contact was made, the research worker gave the selected respondent a face-to-face explanation of the survey and returned to collect the completed questionnaire 24 to 72 hours later (by arrangement). We obtained 381 completed questionnaires.

The combined response rate for the survey was 83.7 percent; 86.5 percent in Weber County and 80.9 percent in Davis County (see Table 3-14). The response rate is the proportion of completed surveys out of eligible households. In addition to 41 bad addresses, 15 households were ineligible.⁵² These 56 addresses account for the difference between the number of sampled residences and the eligible sample. Due to the oversampling when drawing the sample, the goal of at least 225 eligible households in each county was met without replacing cases.

Other measures of the success of the drop-off/pick-up method have also been considered in prior studies (Steele et al. 2001). Our contact rate, the ratio of the households contacted to the total eligible households, was 95.6 percent; we were able to make contact with residents of 435 out of the 455 eligible households in the sample. Of those contacted households, the 381 completed surveys we obtained gave us a cooperation rate of 87.6 percent. The designated respondent agreed to complete the

⁵² In this survey those ineligible included respondents who were unable to participate (e.g. language problems, ill/incapacitated, on vacation, etc.) and ineligible for other reasons (e.g. in the process of moving out, moved in from outside of the area less than one month prior).

Table 3-14: Summary of Sample Size and Response Rates (N = 381)

County	Total Sampled	Eligible Sample*	Total Refused	Completed Surveys	Response Rate
Weber	259	230	23	199	86.5%
Davis	252	225	29	182	80.9%
Total	511	455	52	381	83.7%

Table 3-15: Other Rates for Measuring the Success of Drop-off/Pick-up Surveys

County	Noncontact Nonresponse	Total Contacted	Contact Rate	Cooperation Rate	Completion Rate
Weber	7	223	97.0%	89.2%	94.3%
Davis	13	212	94.2%	85.8%	98.9%
Total	20	435	95.6%	87.6%	96.4%

survey at 395 households, 96.4 percent of them actually completed the survey. Table 3-15 provides a summary of these other measures.

Our respondents were very compliant, as we were able to pick up all but five delivered questionnaires when we had completed our time in the field. A postage-paid envelope was left at each of these five households with a request to mail the completed questionnaire as soon as possible, and three of these questionnaires were mailed in.

The survey respondents. The survey respondents represent a broad cross-section of population characteristics (see Table 3-16). They range from 18 to 93 years of age, with a median age of 47 years old. Over three-quarters of respondents are married, and close to 60 percent have children living at home. Over 90 percent own their homes. Three-quarters of survey respondents report they are LDS Church members, while 10 percent report they have no religious affiliation. Nearly all the respondents graduated from high school, and almost a third of them have at least a bachelor's degree. Sixty percent of them work for a company or agency, while 12 percent are self-employed.

Table 3-16: Overall Sample Characteristics: Percentage Distribution (N = 381)

Variable	n	Combined Sample	Davis County	Weber County
Sex	(373)			
Male		46.1%	42.8%	49.2%
Female		53.9%	57.2%	50.8%
Age	(366)			
18-39 years		33.3%	44.0%	23.6%
40-59 years		46.7%	40.6%	52.4%
60 years and over		19.9%	15.4%	24.1%
Marital status	(374)			
Married		77.8%	80.6%	75.3%
Unmarried, with a partner		1.3%	.6%	2.1%
Widowed		4.5%	1.7%	7.2%
Divorced or separated		7.0%	7.3%	6.7%
Never married		9.4%	10.0%	8.8%
Children living at home	(373)	57.9%	63.3%	52.8%
Own home/land	(365)	92.9%	93.6%	92.2%
Religious affiliation	(370)			
Catholic		5.9%	2.2%	9.4%
Protestant		5.4%	4.5%	6.3%
LDS		75.7%	82.6%	69.3%
Other		3.0%	3.4%	2.6%
None		10.0%	7.3%	12.5%
Education	(372)			
Did not finish high school		2.2%	1.7%	2.6%
Completed high school/GED		18.3%	10.6%	25.4%
Some college (no degree)		31.7%	27.9%	35.2%
Vocational or associates degree		15.3%	16.8%	14.0%
College bachelor's degree		18.0%	23.5%	13.0%
Some graduate work		5.4%	6.1%	4.7%
Completed graduate degree		9.1%	13.4%	9.0%
Current employment	(373)			
Employed by a company or agency		60.6%	57.2%	63.7%
Self-employed		12.3%	15.0%	9.8%
Unemployed, looking for work		1.1%	1.7%	0.5%
Unemployed, not looking for work		0.0%	0.0%	0.0%
Retired		14.7%	9.4%	19.7%
Homemaker		11.0%	16.1%	6.2%
Other		0.3%	0.6%	0.0%
Household income	(343)			
Less than \$15,000		5.8%	5.6%	6.1%
\$15,000 to \$24,999		6.4%	5.6%	7.2%
\$25,000 to \$34,999		7.3%	5.6%	8.8%
\$35,000 to \$49,999		13.4%	13.6%	13.3%
\$50,000 to \$74,999		25.1%	24.7%	25.4%
\$75,000 to \$99,999		23.3%	25.3%	21.5%
\$100,000 to \$149,999		12.5%	13.0%	12.2%
\$150,000 or more		6.1%	6.8%	5.5%

Fifteen percent are retired, and another 11 percent report that they are homemakers.

The median income response category was \$50,000 to \$74,999.

These population characteristics of the sample surveyed resemble those of the study area aggregate quite closely in terms of home-ownership and income. Age is also similar. Although the respondents are somewhat more likely to have high school diplomas, they are far more likely to have college bachelor's degrees than are residents of the study area aggregate more generally. Of note with all of these categories, though, is that the differences between respondents from Davis County as compared to those from Weber County very closely parallel the differences between residents of the two study area aggregates (c.f., refer to Tables 3-7, 3-8, 3-9, and 3-11).

On a Personal Note

For a study of this nature, particularly one that focuses on socially constructed images and meanings of a particular place, it is important to give the reader a sense of this researcher's background. I have lived roughly 12 miles east of Great Salt Lake, in Ogden (Weber County) for over 30 years. Yet other than knowing the lake was there and occasionally noticing it when driving on the local highways, I was fairly unaware of GSL until the mid-1990s. I had never visited any lake sites and did not pay much attention to news or current events related to the lake, other than being somewhat aware of the flooding and the subsequent building of the pumps in the 1980s.

In the mid-1990s, reading *Refuge* by Terry Tempest Williams (1991) led to my becoming intrigued by Great Salt Lake, its ecosystem, and the relationships people have with GSL and with each other regarding the lake. In fact, this intrigue led to my interest

in environmental and natural resource sociology. I also became an amateur and occasional birder, which took me to a number of GSL-related sites and events. I began to follow any GSL-related issues covered by the news media, keeping track of social issues as well as ecosystem issues related to the lake, and became aware of the environmental concerns expressed by lake scientists and organizations such as FRIENDS of Great Salt Lake (FoGSL). These issues became a concern for me, and led to my becoming a member of FoGSL.⁵³ I am also a member of Friends of the Bear River Bird Refuge, The Nature Conservancy, and the Audubon Society, all of which are involved with the lake.

I am aware that my perspective of GSL being ecologically fragile and important, a perspective based in the physical and biological research that has been conducted on the lake, is somewhat privileged in my presentation of the lake. This perspective is part of my taken-for-granted about GSL. This perspective also includes an understanding of the ways in which the lake presents a number of different challenges to the area, and these challenges have been included in my description of the dynamics between GSL and the local society that interacts with it and is affected by it.

Having described the study area and methods for the study, the next two chapters present the findings from first, the qualitative portion of the study, and then the quantitative portion. The final chapter presents a discussion, as well as conclusions, of the findings.

⁵³ Additionally, as noted in the acknowledgments, FoGSL provided funding for the two focus groups I conducted for this study. There were no stipulations on the funding.

CHAPTER 4

ANALYSIS OF INTERVIEW AND FOCUS GROUP DATA

“...You know, you just look out there and it’s like, ‘My Lake’.”

“Stinky, smelly, mosquito infested...”

“You know, I don’t even think of the lake being out there, personally.”

Introduction to the Qualitative Work

The qualitative study is meant to give research participants the opportunity to describe their sense of Great Salt Lake—or lack thereof—in their own words. In this chapter I present findings from the analysis of interview and focus group data that address the research questions of this study. I begin by exploring participants’ various senses of place related to Great Salt Lake, and what the lake means to them. I then examine the variables related to the differences between participants in how they view and experience the lake.

The Meanings and Senses of Great Salt Lake

Research question #1: *What are the various senses of place held about Great Salt Lake by neighbors of the lake?*

1a: *What are the various meanings the lake holds?*

1b: *To what extent are these meanings shared among individuals and groups?*

1c: *Do individuals hold multiple meanings of GSL?*

I used interview and focus group participants’ responses to a number of questions to develop an understanding of the senses of place the neighbors of Great Salt Lake hold about the lake. The questions addressed why these residents live where they live, what they see as the positive and negative aspects of living near the lake, things that make

them feel connected or not connected to GSL, and how connected or attached to the lake these participants identified themselves as being.

A number of themes emerged from the data. Research participants' senses of Great Salt Lake varied considerably. Some of the themes were somewhat indirectly related to the lake. While participants talked a good deal about the lake itself, as well as the surrounding environs, they also talked about the broader area they live in, including their neighborhoods and communities. It would be a difficult task to attempt to separate their impressions and feelings about the lake from these broader considerations, and likely a rather artificial one, both in terms of social meaning and of biologic interactions between lake and surroundings. The lake affects the surrounding area, and the society of the surrounding area affects the lake. Because of this, some of the categories of meanings related to GSL may appear, on their face, to be rather tangential. However, the lake is woven through and connected to them, and in some cases is the reason these meanings can persist. An example of this is the importance of the rural aspects of the area to those who live close to the lake.

The themes include the importance of family roots in the area near GSL; the rural traits of the lake area; it being a good place for children to grow up; GSL-related recreation; and an appreciation of the environmental aspects of the lake and/or lake-related sites, including the birds and wildlife. Other themes include GSL's ever-changing elevation and size; the uniqueness of the lake; the lake as a resource; as a place to be protected and preserved; and a place of community connections. It is a place some participants felt attached to, while others indicated they take it for granted. While a number of these meanings have their negative aspects, there were lake neighbors whose

whole sense of the lake was negative. And finally, there were those who appeared not to have any real sense of the lake, neither positive nor negative.

This research question also considers the extent to which these various meanings are shared among people, as well as whether the lake holds multiple, and seemingly conflicting, meanings for these lake neighbors. The various meanings and senses of Great Salt Lake held by the research participants follow, with these neighbors of the lake speaking for themselves.

Family Roots

Several research participants described people living in the area because they had inherited property, much of which had been in the family for generations. When I asked a resource manager her impressions of why people choose to live near the lake, she said I may need to ask why “families came here and settled 100 to 150 years ago...” A number of people talked about living there because their families settled here long ago, in some cases homesteading the area. Two men who live on or near property that has been in their families for three generations spoke to this in one of the focus groups, responding to why they chose to live where they do.

First focus group member: You need to talk to the ones that have moved in! [Three of us] didn't have a choice [chuckling].

Second member: Ancestors.

First member: Yeah [still chuckling].

The “ancestors” of these focus group members, as well as of an interview respondent, were among the original homesteaders of the area. Another pair of participants, an elderly father and his middle-aged son, both lived on long-term family property. The older man's father and grandfather purchased the land together in 1915 and built two homes on it. The

elderly man still lived in his father's house, and his son and a daughter each had homes on the property as well.

Some of the ancestors were attracted to lake-related aspects of the area. One middle-aged man's great-grandfather settled there in 1898.

He settled there because of the sandy clay loam and the climate moderated by the Great Salt Lake, but then the salt came up [through ground water] and he instigated a tile drainage system that went through the whole area.

Others may not have been attracted by anything related to the lake, but used lake resources to at least supplement their incomes. Three older men talked about these family connections to GSL: "We could really tell you some stories if you want to get into our ancestors, about the lake."

My father built this house... Both he and my grandfather have a history here... My grandfather came over from England, and...settled in Hooper—he ran...the steam pumps for the salt works down here. Both of them worked on the island, too.

...my grandfather acquired a boat, and he hauled cedar posts from Promontory to sell down here at the lakeshore, it was big enough he could take wagons and teams over to Antelope Island and put up hay for the ranch down there.

The ducks—the sky would just be black with ducks—and [Grandfather] could go out on his boat and come back—a cousin of mine who was 20 years older than me said, "We used to pick ducks all night long." He'd take them to Ogden the next day, in a wagon—a whole wagon load of ducks—and he'd sell them, 25 cents a piece for 'em. That was good money in those days.

All of the participants with these family roots talked about feeling very connected to the area, to their "family ground." One older man talked about having lived there, where his ancestors had homesteaded, since he was three years old.

...my father was originally from here...and all the relatives, my ancestors, lived in what was considered Reese at that time. ...we lived in Idaho...we came down here as a family in the old homestead that my grandfather owned... And we just stayed and [my father] eventually bought the old homestead and then I bought it from him. And...before I got married, I made my wife sign a contract that that's where we was going to live. She'd like to break that contract sometimes, but I'd said if you marry me, we're going to live out there next to the lake. That's where I was born and raised, rode my horses bareback for years, and so that's why I'm there. And...I've already bought a burial plot in the local cemetery, that's where my remains will probably go as well.

In talking with a man in his late 70s with these family connections, I asked for the first word that came to his mind when he thought about living near GSL.

“Home.” That’s first thing that I thought of. I’ve lived there all my life... I still sleep in the same bedroom I was born in... I still wouldn’t move anywhere else. I just enjoy it.

Some of the people with these familial connections left for some time, for various reasons, but eventually came back to the area they considered “home.” When a focus group member commented on one woman in the group having come back after living away, she responded, “...it’s in your blood, it really is, I don’t know how else to describe it.” When asked what drew her back, she said,

...I couldn’t nail it down to just one thing, you know, the people, the community, the land, the wildlife, I mean, it’s just the whole picture. I mean, it really, it was a little heaven on earth. It really is, that’s the only place I wanted to live.

...[I] moved away for eight years [that] it took me to convince my husband to take me back home. ...Back on family ground, yes. I couldn’t stay away, I just wanted, that’s where I wanted...to be... [For the family connection] and just the environment.

Others had similar experiences.

Well, I was kind of—I was born there! ...I left for many years, and then...it was kind of coming home when I came back. And I enjoy it there now.

Some residents described important family occasions and events being tied to the area and to the lake specifically. For some participants, the area near the lake is important because it is where they raised their families.

...how I'm connected, I think, is because I have lived here in the bulk of raising my five children as they're growing up, their childhood and all those good years of raisin' those kids and just enjoyin' that and the times that they've had there [at lake sites] and all of that nature...

I think my kids all feel a connection. You know, I wasn't raised here—we've been here about 10 years. ...but, this has been their growing-up years and they love it. I've heard my kids say they'd love to have a spot along the lakeshore.

One of the resource managers talked about stories he heard from nearby residents about family traditions that center around the refuge¹ he worked at.

Stories like...the annual tradition that occurred on a certain weekend every year when Dad and the uncle and the boys went out on the marshes and did whatever and came back, and that wove into family history that way. I've heard stories of people who would have relatives come out for Thanksgiving and Aunt Nedra and Uncle Bud would come out and they'd always go to the refuge every particular holiday and have a picnic or bird watch or something like that...

One of the focus group members told his family's version of that kind of story.

...Growin' up we used to—even before I was living by the lake we'd take trips out there...and experience that south end of the lake. And it's some of the things that our kids really enjoyed growing up is that we would go out there and spend a whole weekend out there or three or four days. Even now, every year we go out in the spring and ride where the wild horse herds are out there... I don't have to bring it up anymore, my grown kids that are married say, 'hey, when we going to go out and ride the wild horse herds?' And that's a different area of the lake but yet it's still part of the whole lake atmosphere.

One respondent associated lake-related images with the birth of her son.

¹ The participants who live near the lake refer to the preserves, wildlife management areas and migratory bird refuges all as “refuges” or “bird refuges” without distinguishing between them. In keeping with their usage, I use the word “refuge” generically throughout this chapter.

...the sense of smell is your most important, well, the one that brings up the most memories, right? ...the night my son was born [the lake smell] was so strong when we walked out of the house in Kaysville. And that was a good experience, giving birth to him, so I think whenever I smelled it again it brought that back, the comfort of that night.

Another family lost a loved one to the lake.

...as far as the connection, there's always the connection that that's how my dad died, and he loved it out there. That's how he would have wanted to go.

Synopsis: Great Salt Lake as a Place of Family Connections and Roots

We have begun to see how interwoven the lake, the area, and social aspects are in how these closest neighbors talk about things. One example is the descriptions of being drawn back to the area by, “the people, the community, the land, the wildlife,” by family connections and “the environment.” The man describing the contract he had his wife sign provided another: he spoke of the social aspects of the area, but referred to the area as “out there next to the lake.” This interweaving of social and environmental is an important part of participants’ sense of the lake being connected to family roots.

The Rural Nature of the Lake Area

For a majority of the research participants, one of the more attractive things about the area closest to Great Salt Lake was that it has been a rural place. The area has been used for farming and grazing, and residential development has been slow to take off for a number of reasons. In addition to being seen as too remote, the area also has a high water table. Many who live near GSL live there primarily because it is a rural area and do not want to see that change.

Many of the older families have farmed the land, while other residents wanted land for their animals, particularly horse property. Others liked the seclusion, quiet, and open space—while appreciating that the area still has urban amenities not too far away. While these traits may seem to have little to do with the lake, many were aware that GSL and its protected wetlands areas limits the development that can occur in the area. As a county commissioner observed, “nobody can build out in the middle of the lake.”

Some lived in the area because of the rural atmosphere in general, and all the things that encompasses. A couple in Weber County greatly valued those rural traits.

Wife: That’s why we moved out here in the first place, was to get away from the big city. To get out to a rural—where we could raise our animals, raise our horses, chickens, cows, whatever we want. And so our kids would know what it was like-

Husband: where a pork chop came from... Not a grocery store.

Wife: Yeah. Grow your own garden.

Land for Farming and Animals

The quality of the land and soil varies tremendously across the different areas near the lake. While the soil near GSL in West Central Weber County (WC Weber) has a high clay content that traps salt deposits, the soil near the lake in both Davis County and parts of Box Elder County has benefited from the silt deposited at the lake’s edge. A farmer in Box Elder County talked about the family farm, established in the 1930s because of the “sandy loam,” that is still operating. An elderly farmer in Davis County said, “In my case it’s the good farmland that I still own that keeps me here,” farmland that also consists of “nice sandy loam.” Many people in both Weber and Davis Counties chose to live in the area near the lake because of the availability of horse property. A

number of these people moved there because of the farmland or horse property and then fell in love with the area for many other reasons.

...we were looking for property for our horses and really just fell in love with the place when we saw it. Had money down on another piece and got it back and bought this one. ...I really enjoyed the neighbors and the area down there. ...I loved it when we first moved out there, you'd go out to irrigate at night and it was so dark you couldn't see your hand in front of your face on a moonless night. It was...really enjoyable and quiet.

Increasing development along the Wasatch Front has made it more difficult for people to find places where they can have horses or other animals. Participants in one of the focus groups said that being able to have “an animal or two” was one of the things creating an influx of young families into the area.

Seclusion and Quiet

The seclusion and quiet of the area were the attraction for a number of focus group and interview participants. They mentioned the privacy, not hearing other people's music, even the benefits of living on a dead end street.

...that's something that we liked too, is the dark and the quiet. Felt like we were a little bit removed from the city. ...Yeah, [my husband] walks the dog out or rides his bike out on the causeway or out on—the sewer swamp (giggles) is what we call it—and he sees red fox and...all kinds of things.

I was raised in Ogden so my neighbor was 10 feet away, it was hard to fit a car in the driveway. So I love it out here.

For some, part of the attraction of a rural place was the closeness to nature—living in a natural environment others have to make a point of visiting, through activities like hunting for example.

Yeah, as a boy I did my share of hunting and that sort of thing, but...I take it for granted, I guess. You say, well, why don't you hunt? I say, I don't need to... The Great Salt Lake and the marsh, they provide that backdrop [for me], but you can get that in any rural setting.

Even though many are happy to be fairly removed from city life, several stated they were glad to have the amenities of a city environment nearby, including everything from shopping to "Swan Lake" being performed in a nearby city. A ranger who lived on Antelope Island talked about things many participants mentioned.

The city lights, off to the east at night are...gorgeous... The connection of being this close to a large metropolitan area, yet being woken up by chukars and coyotes howling, that connection with nature and being totally away from the city, yet being that close is a definite positive experience for us.

Availability and Cost of Housing and Land

The area closest to the lake has retained its rural flavor, including zoning, longer than other local places. Some of the research participants moved to the area because, at least at the time they were looking for property, there was available land that cost less than it did in other areas. In many cases, the lots were larger as well.

We bought out there because it was a low priced piece of land and it was big one-acre lots...it was the best we could afford and now I love it out there. Well, I've loved it out there ever since I moved out.

This situation has recently changed in Davis County, where the price of land and housing has increased tremendously, particularly on the west side of the county including the area close to GSL. This is partially because so little land is left in Davis County. One focus group member expressed hope that this would slow the growth and that people would not be able to afford to move into the area, but his neighbors doubted that anything would slow the development.

However, land is still available at lower costs in Weber County. A Weber County Commissioner speculated,

I think that the closer you get to the lake, the lower the price...I'm kind of just guessing, but I'm thinking that property values go down the further west you go.

The commissioner speculated further that this is likely related to lake-related conditions such as the salinity in the soils.

...I think that has a lot to do with it. You can graze your cows out there and that kind of thing, but you can't grow alfalfa to feed them and so—I think that it has a major impact on property value.

A man who built his home not long before his interview talked about the cost of the land.

...I think initially there was just the fact that there was land available here and at the time it was purchased it was going for a lot less than anything else, which could be a factor pulled by the lake. By far, they were less than lots were selling a little bit further east and north...

Additionally, focus group members reported that lower building lot costs were one of the things drawing younger families to western Weber County.

The Relationship Between the Lake and Rural Aspects of the Area

For some, the attraction to the area had nothing to do with GSL, rather it was because of these rural traits of the area.

We moved out here not because of the lake, we moved out here because of the seclusion. And when that goes, lake or no lake, we'll be gone.

I don't really feel connected because of the lake, I don't think. But I love it out there, I don't mind the bugs. I just love having the wide-open spaces.

A resource manager in the area believed people do not really think about GSL, or about its influence on local landscape and land use patterns when they move to the area.

...when people move out here, I don't really think they think of the lake itself. ...for example the house on the horizon here—I think he looks at his backyard and he sees...what he might call pasture land behind his house—I don't think they really look beyond that and see the lake. Even though this pasture land and the water that comes through it goes to the lake, and the birds that use the lake use this pasture land and vice versa, there's an interchange between the lake...and this area here, they're tied together, I don't think generally people around here look beyond what's in their backyard. ...as far as saying 'I'm moving out to west Kaysville because of the Great Salt Lake,' I think they say, 'I'm moving out because of all the open land, because of all the open farmland behind me....'

He went on to say,

[M]ost people would just tie ruralness with, you know, 'it's rural out here,' and wouldn't even think it has anything to do with the lake, even though it does. ...I don't think they realize, a lot of them, that this is here because of the lake.

However, there seems to be a good degree of awareness that the lake and its wetlands—particularly the protected wetlands of the wildlife preserves and managed areas—offer protection from development. One resource manager made some observations about people moving into the area adjacent to the refuge he manages.

There's a new subdivision that's just south of here, along our border, and I had a lot of people call me up before they were buying houses there and asked me, 'Is this land behind my house always going to stay the way it is?' I said, 'yeah, it's not going to be sold, we're never going to develop it...what you see is what you get.' 'O.K., well that makes me feel better...'

I think a lot of people in a lot of these areas now have bought their houses just because there's nothing behind them...there isn't going to be another subdivision behind them. I think for some people that's important...

This came out in the focus groups and interviews. In a conversation about all the development going on in their rural community, some focus group members in Davis County noted with relief that at least they did not have to worry about the area west of them, since it is marshland near the lakeshore. One commented,

Yeah, I'm excited because I'll always have that view. There's not going to be anything to block my view. ...we're close enough [to the lake] that's not going to happen.

A farmer in Box Elder County described the lake as providing a shelter from development.

[A]nd so you watch all that [city life and development], in the distance, knowing that the Great Salt Lake and its niche provides, I guess a shelter, if you want to call it that—some people see it as a barrier, I actually see it as a shelter, from too many neighbors.

[I]t's a rural lifestyle, but at the same time you're close to everything...you're able to have...the best of both worlds because of the marsh and the Great Salt Lake. It puts a limit on some people, but to other people, it's not a barrier, it's a protection. It's a lifestyle...it's a rural thing, and I think the marsh and the Great Salt Lake, they provide that because they're not going to let in a lot...

The lake and related sites also add to the rural atmosphere residents enjoy, for example with its wildlife habitat.

[A]s much as I can, I like to take a walk out on the causeway and my experience is just, it's like the favorite part of my day because I go out there and there's wild geese out there... I grew up in a small town in Wyoming and it makes me feel like I'm still in the country. ...I just love going out there, and there's always wildlife, and you'll, you know, scare up the birds... I love it.

The Box Elder County farmer argued that this is unlikely to change, too, that the lake will continue to mandate how things go, at least to a point. He commented on the lake.

I have a neighbor that's not going to change.

It's not going to change—you can do whatever you want in some places, but some of that won't [change]. In some places because of inventions, or better roads or better this, better that, yeah, it will—but

in some it won't be that way. Did you notice, when you came down the road, see all those curves in the road? Know why they're there? The marsh—it was cheaper to stay on the high ground and follow the contour of the marsh coming down here, that's why those things are that way, because the section line goes right through a big cattail patch. It's not directly related to the Great Salt Lake, but yeah it is.

Concern About Change

Despite this last perspective, many interview and focus group participants expressed a great deal of concern over how much these rural traits are changing as the area becomes increasingly subdivided and developed in Weber and Davis Counties. In fact when some Davis County group members expressed relief that “we're not going to have houses out in the marsh between us and the lake,” others were not reassuring.

Long-term lake neighbor: They're buildin' houses where I never thought they'd be able to.

Second group member: Yeah, and every farmer...I talked to... said, 'I don't know how they can build a house down there when we used to drive our tractors and just sink away.'

It is a topic of much discussion among local residents.

About the only thing I can think of that [neighbors] talk about living out here is that they want to keep it like this. They want to keep it rural. They don't want the subdivisions coming in...

Concerns were raised about the area getting crowded and miserable, that communities should get proactive about open space preservation sooner rather than later, and that in general, development needs to be limited. At the same time, participants acknowledged that this is difficult given the economic realities of maintaining farmland, when farmers can make much more money selling their land. None-the-less, some wished things could be reversed.

[With a chuckle] [M]y vision would be to get rid of all that stuff and go back to how it was when I was a little girl.

A number of concerns about the lake were raised during these discussions, including how the growing population would affect the habitat, whether it would negatively affect the lake's water quality, whether GSL is being polluted by increasing industry in the area, and what would happen if increasing population results in further diversion of the fresh water that feeds the lake.

Concerns about increased traffic, roads, and highways were also raised. Part of the problem here is that, "the roads *haven't* changed, and the amount of people *has* changed..." Some of the concerns relate to congestion on what were designed to be county roads, some are linked to the siting of a major new highway: "We're all going to be miserable with that highway." Although the highway has been planned for some time, some cities have not preserved the highway corridor, and are instead allowing development there. Some speculated that this is to push the highway closer to the lake. One focus group participant worried that this will force the highway west of them, into wetlands areas and close enough to the flood plain (from the high water years) that they would need to build dikes to protect the highway.

[Syracuse doesn't] care because the state hasn't said, 'We got to start buying up property.' They're putting [a park] where they want, the parking lot, the housing. So what's going to happen, is someone going to be able to come in and change this and say, 'We're going to put a freeway out there and we're gonna dike it, and we're going to do whatever we have to, but it's gonna be pushed down there.'

Another focus group member suggested that the solution to the highway problems lies even further to the west.

The best use they could have for [Antelope Island] is to put the freeway, put another highway from Tremonton right to Nephi, down Promontory Point and cross the islands. That would do away with this Legacy Highway, 'cause all that truck traffic is clear from Canada to Mexico.

Another concern research participants expressed about the changes was the loss of meaningfulness of the area, that it will “just be property” instead of a place rich in meaning, “just a place”—or what Tuan (1977) would call “space.”

We're there because of our ancestors and the heritage that we have there...so there's a lot of nostalgia with us that still remember those things. But, that's going to fade and it'll just be property, I think, in a few years, then it won't be anything other than just the fact that they want to come out where they can build. I met a lady in my office yesterday, and they're building right down next to the bird refuge. And they're there because they can get land, and they want to have horses and a few things. Otherwise...they're not drawn by anything other than the fact that it's a place you can still get open land...and build.

A resource manager speculated that this is the draw for many moving into the area.

But the people who are coming in, building their homes, I think it's just a place. You know, the freeway is here. You can quickly get on the freeway to drive to Salt Lake to work, it may be cheaper than housing closer to Salt Lake, I don't know. And...you get to build your own home.

Synopsis: Great Salt Lake as a Rural Place

There is a complicated relationship between GSL and the rural aspects of the area. This relationship can be witnessed in listening to these closest neighbors of GSL, who often talked about the ruralness and the lake almost interchangeably. When asked about their experience with the lake, they often talked about the rural, when asked if the ruralness is the attraction to the area, rather than the lake, many said they like both.

The lake has played—and continues to play—a role in the degree of ruralness of the area. Yet as development increasingly encroaches on the rural aspects of the area that

are so important to the research participants, it is also encroaching on GSL and its environs. Many look to the lake for security and shelter from the development, however there is concern that not even the lake can slow down these changes.

Great Salt Lake and Children

A Good Place to Raise the Kids

Many living near Great Salt Lake saw the area as an excellent place for their children to grow up. Participants who were parents felt the rural aspects of the area provided safety, and were comfortable letting their children wander and explore—and for many of the children, the lake and its environs supplied the place to explore. Some research participants said they moved to the area close to GSL at least partially because it was a good place to raise a family. Some referred to the control they felt they could have over their children in a rural setting.

I was raised out in North Ogden when North Ogden was still country. But, I could still get in trouble, that was easy for me. It was populated enough. And I wanted to raise my kids someplace where I had more control... Keep them out of trouble—and with no public transportation and the closest store four miles away, it was a perfect spot. ...the lake was a second blessing on this, but I moved out...[because it] was an ideal spot to bring your family.

It was a great place to raise teenage kids—I mean what trouble can they get into out here?

Several mentioned that they felt they did not have to worry about their children out there, they felt it was a safe place for their children to roam and wander.

[I]t's uncrowded. And that's something that, that we enjoy, is the lack of, of a, populous. Some of the stories and related to that is my children have grown up being able to roam and explore the areas there in a safe environment where I wasn't worried about what was going to happen to them by whom.

Some parents felt positive about the experiences their children were having with the lake and its marshes. A number talked about their children growing up near managed wildlife areas.

Mom: It's nice to have your kids out here...

Dad: Yeah. In fact the kids go down [to the marshes] all the time and play in it, you don't worry about 'em. You're not worried about someone stealing them.

Mom: And they know about lakes and animals and living on a farm type stuff.

Dad: Snakes.

Mom: Snakes—we have all kinds of rodents out here, skunks, fox,

Dad: Deer.

Mom: Deer, we have a herd of deer out here once in a while. All kinds of animals they get to see that normally they wouldn't be able to see... Yeah, come home all muddy and stinky, but they have fun...

One of my sons, in the autumn time—well, my sons were out exploring the drainage ditches and ponds and various things around the lake and...they came across a goose that had been shot and wounded and couldn't fly. And my one son was very proud when he brought this live goose home that he'd caught—wrapped up in his winter coat—and the goose had shredded the coat. ...he was excited ...and he wanted to fix "his" bird, you know, here its wing was basically shot off, totally... But we doctored it and it was able to live somewhat of a normal life even though it couldn't fly. And those are experiences that I don't think they would have had if they would have been away from the lake...

One mom told about often asking her sons where they would be, and they "would just tell me 'oh, over in the lake,'" and that was all she needed to know. "...it was a good place for boys to grow up. Very good."

A Place from My Childhood

A number of people in the interviews and focus groups had all kinds of memories of the lake from their own childhood. Several shared their earliest memories of Great Salt

Lake. For those who did not grow up living near the lake, these memories were of their first visit to the lake, either at Saltair or Antelope Island.

When I was little...we used to go on family vacations and we came out west... We had stopped at the Great Salt Lake when I was a little kid, and I got salty. It was down at Saltair I think—being the dumb kid I was, I was like, ‘I want to get under water,’ and I jumped under water and got salt—and just came out, ‘AHH, get it off, get it off!’—screaming, embarrassing my folks, ‘calm down, calm down;’ this guy hosing me off, ‘oh, it happens all the time.’ That was my first experience at Great Salt Lake and I learned from it, I never went under the water again.

The first time... I remember they didn’t have the showers then, they had a hose. They had a spigot with a hose. And that’s how you cleaned off the salt off your body. And because I was raised around bodies of water so much—because we had boats...I just thought water was water. And I didn’t realize at age 4 or 5...that the reason you couldn’t sink in it, the reason we were going down to float in it, was because it was so full of salt. So my first experience with the lake was actually painful. Because that water hurts, especially...little girls who bite their nails...[and] carry cats around all over... I just remember twirling around in circles while my grandpa was trying to hose me down to—my grandpa of course was laughing. And that was my very first experience with that lake.

One elderly man who lived near the lake his whole life shared his earliest memory of GSL.

I remember it receding from-the bank down here by the guardhouse, you’d have to go out about 4- to 500 feet, maybe further than that. It was hot mud, it’d go up to your ankles, I was just little—that mud was so hot the neighbor gal had to carry me back in. That’s the earliest recollection I have of that lake—she had to carry me back.

For research participants who grew up near GSL, the lake area provided a place to play, to wander and explore. It was likely a mere backdrop for many activities, but it was the place where the activities occurred, and the image these lake neighbors carry is of the lake as a positive and fun place, a place of many happy memories.

I grew up there and, you know, I just loved it. I really don't understand what other kids did for a childhood because...we just played out in the fields and rode horses and every day we was on our horses bareback and we was down in the swimming hole, swimming, you know, and then hunting. ...it just was the childhood that we had, and it was fun.

The father: [O]ne day [my son] and his friend—there was carp in that hard slough over there—they come home with one on the back of the saddle that was four foot long. I says, 'what are you going to do with that?' He says, 'Feed it to the cats.'

The middle-aged son: We caught—this is a bad story to tell—we caught like 200 of 'em one day. We wanted to bring them home to show somebody 'cause there's nobody would've believed us. So we had this rope and we hooked it, hooked it through all the mouths of all the fish and we tied it to the two saddlehorns, and we took off and the horses come right together, like that (claps). They couldn't even drag those fish. ...we thought, well we'll just take half of them home...we ended up takin' one each.

The father (with a chuckle): I hadn't heard that.

Probably the thing that I remember most about the lake was when I was a young teenager, we used to take old cars and pickups and drive out on the flats²—that's when the lake was way out. And we, uh, drove out one time and we didn't realize there's soft spots out there and we dropped out of sight, clear out there—we'd drive as far as we could and then we'd walk out and go swimming. And we spent all day trying to get that, it was a big ol'...Buick that we went in out there, and we finally had to go and get a tractor and come out and pull us out...

The interview and focus group participants also told stories about experiences that were specific to the lake and its related sites, such as the islands. An elderly man went to Antelope Island and frequently to Saltair as a youth.

Just once when I was in high school, we went [to Antelope Island]... The lake was down so low you could get within a mile of it, in a channel—we got to there and we waded across...to the island. That was the first time I'd ever been on it. ...That was the only time I was on it until they put the road.

We'd go out [to Saltair] probably every week in the summer and ride the roller coaster. It made the one at Lagoon look like a toy.

² These references to the "salt flats" are referring to exposed lake bed, exposed during periods of low lake elevation.

The lake and lake-related sites were places others experienced and explored as well.

I had a canoe, I used to go to Fremont Island and over to Antelope quite often, and in the summer we'd just spend days over there. ...one time we was out on our horses and rode over to Fremont... That's an interesting place, that island there. ...Just followed the sandbar... We went over there and they had Shetland ponies and sheep...we chased everything all day long.

Participants also talked about floating in the lake—"You could lay on your back and couldn't put your feet down," riding their horses on the salt flats and being able to "ride forever," or packing a lunch "and just walk and walk and walk out there."

For some, their childhood activities may have been their introduction to the lake and marshland ecosystems, and to the wildlife there.

Yeah, when I was growing up...we always had sailboats, so we'd go out boating sometimes in the Salt Lake... [We used the marina at] Saltair. And it was a lot of fun, too, because ...people who live in inland states, where they don't live on a coast, there's not many times or opportunities where you go out on a boat and look off the side and you don't see anything but water, it's kind of amazing. ...Yeah, just the size, it's just kind of overwhelming, I thought it was cool.

[W]hen I was younger I used to ride my bike out there and hang out out there...I used to go out to the bird refuge a lot. Just to go look at the birds, they would have different things to do...

In at least one case, these childhood explorations led to career possibilities. A resource manager tells his story.

I still remember the day...that I decided this is what I wanted to do. I was down along the edge of the lake and I watched an airboat go by, with some Fish and Game guys on it. And I was 12 or 13 years old, and I watched this boat go by and I thought, 'wow, that looks fun, that looks neat,' and 'I wish I was on that boat, going with them to see what they're going to see or do.' And that's the day when I decided 'I want to do that.' And that's what I did. And from that point on, on the day I started college...I knew that's what I wanted to do. And fortunately I was able to be out here and do it. ...for me, that was the day that did it. And I liked the area and I loved the lake, but then you know, I saw

people out here doing something that worked on the lake and said, 'Oh, you can work out here!'

However, not all children, or grandchildren, are entranced by their elders' stories about growing up on the lake. A woman who returned to the area near the lake after having reared her children elsewhere illustrated this.

[S]peaking of kids, you know, my kids grew up away from here, so they, you know, ... 'yeah, the lake' [*as though kids saying it in bored, sort of 'yeah, we know' tone*] but they've heard stories. You know, when they'd get me going on my childhood, and I spent 50% of my time on the lakeshore. And their dad hunted...every square inch of that lakeshore. And so now, my grandkids come back and that's the first place they want to go, 'Take us to the lake.' They want to see the lake...that they've heard Grandma and Grandpa talk about it so much. They go out there, and they look at it and go 'Oh, yeah, hmmm.' [*mumbling as if to say 'this is what all the fuss is about???'*]

Synopsis: Childhood-related Sense of GSL

Although parents mentioned children who were far less interested in the lake and the marshes than the children mentioned earlier in this section, there were many stories about children finding the lake and lake areas intriguing and fun places to play and explore. And no matter how the parents themselves felt about the lake, without exception they were pleased that their children had a place to wander, explore, and be kids, a place the parents felt was safe.

Participants who grew up near the lake all had fond memories and stories about the lake and lake sites from their childhood, again, without exception. Of note, many of these participants were among those with the strongest feelings about the lake as adults.

Recreation on Great Salt Lake

Both resource managers and residents who were research participants discussed recreation related to Great Salt Lake, although clearly from different perspectives. For resource managers, recreation was a management concern, while for residents it was about entertainment for their families and themselves. The recreational activities discussed include some directly connected to the lake, such as boating, swimming and floating in the lake, photography, bird-watching and hunting. People fished at Willard Bay and Ogden Bay. Other activities mentioned were not directly related to the lake, but the lake area (including managed sites such as Antelope Island, the WMAs and other preserves) provided a place for people to do the activities. These included horseback riding, bicycling, jogging and walking, going for drives and riding four-wheelers.

Several resource managers talked about their sites having become popular places to do these activities that are not related to the lake or marshes *per se*.

Most of my people see Ogden Bay as a place to jog, a place to ride your bike, a place to walk your dog, but they're not [doing anything lake or marsh-related]—it's paid for by hunters, so it's a courtesy for those folks.

A ranger on Antelope Island said, "Our big local users are bicycle riders and the horse riders."

And I would guess that there are some people, in fact I know of two, who actually moved to the area so they could keep a horse and have a close place to come to ride it. ...so that's a big part of their recreation or their leisure time... I don't know necessarily of the tie to Great Salt Lake, but certainly a tie because of the island and the ability to be able to do those things.

One of the managers pointed out that if people are doing those activities in the refuge, at least they are there experiencing it.

...I think [the refuge has] become a great place to go jogging. But...if they're out there jogging on the boardwalk, maybe it's helping educate them a little.

Resident participants indicated they greatly enjoyed their time bicycling, horseback riding and walking in places like Ogden Bay, Antelope Island and on the causeway. They talked specifically about enjoying the wildlife, the view, and the access to nature.

We spent a lot of time out riding our horses out on Antelope Island all through the fall into the winter and into the spring. ...the trails are pretty accessible and you can see a mixture of animals most people don't get to see—bighorn sheep, the buffalo, the deer, the coyotes—and the coyotes will walk along 'side you like they're your dogs 'cause they're not afraid. So that's the memories we have is spending a lot of time out there.

...I go straight down the causeway [to walk]...I love walking out there, too. ...I feel like I've just taken a walk through nature...

However, members of both focus groups raised concerns about the numbers of bicyclists that use the area. Because of the long, flat roads they can ride on, both areas are frequented by cyclists, and local residents worried about their safety.

Another negative thing is it's really flat and long and these cyclists come out there in hordes and it's a two lane road, no sidewalk, no place for them to go, so they ride right in the middle of the road and you just have to wait to go around them. And that's the only reason they come out there, because it's flat.

Focus group member one: And there's always bike races that are on Antelope that are out here—it's quieter than in town and it's the perfect ride, they always have a big [organized] ride and with more traffic and more people it's just getting scarier and scarier 'cause there's big ditches on the sides of the road so you can't move over.

Member two: I think we like the riding, I like the riding.

Member one: It's fun.

Member three: Just wish they'd make a path for them--

Member four: It's fun to have them there, but you're afraid someone's going to get run over, too.

In addition to these activities where the lake and lake sites are more of a backdrop, a place to do activities people would be participating in anywhere they could, some of the recreation activities the residents talked about were definitely lake-related.

You know the place to go and have fun and access [the lake]...is over on I-80. Saltair. And we used to go in and swim, sit in inner-tubes.

Most of the boating participants talked about was sail boating, canoeing, or the occasional rafting story involving children, although at least one couple had taken a cruise on the lake with a commercial dinner cruise company. One focus group member told about her family being more adventuresome than that.

...[W]e had only lived there just a short time and my husband and my brother decided they were going to take the boat out on the lake and let the kids and them water ski—on the Great Salt Lake—so they did! They went out there and we had two boys that water-skied... I kept saying ‘this is really stupid you’re going to ruin the prop, you’re going to ruin the motor, you’re going to--’ ...but they just had it in their heads they were going to go out there and take that boat out, and they did. I have pictures.

Other residents had also done lake-related recreation activities with their children.

And we swam [at the lake], I think probably everybody, as kids...we all swam, we all floated. I took my kids out there probably just last year... You know you walk through leg-deep sand and you walk through the bugs and they thought that was pretty cool... They did basically what we did as kids, although they really couldn’t float as well and I don’t think they had showers in those days, but now you can clean yourself off. ...it was kind of, to me, letting kids know this was where we kind of hung out as kids.

Parents talked about GSL-related recreation their children had been involved with.

...[M]y daughter loved it, she’s a really outdoorsy-type. She loves to go hiking and she and the dog would take off and we wouldn’t see them all day. And she loves to shoot guns and she loves to fish, so she loved it out here.

[My kids] actually, maybe they shouldn't, but they take their paintball guns and they love to go out in the marsh and there's some ravines and all that tall grass...

In addition to this wandering and exploring, the children rode horses and bikes at various lake sites. They had also been directly involved with the lake.

Well, my boys had those blow-up rafts, you know, and so they'd just walk over there, drag their rafts, then blow them up, and get their little [oars]...and they thought it was great. Loved it.

I think my kids, most of their experience with the Great Salt Lake would have been from Antelope Island where they was actually able to go out and bob like a cork in the water...we're not that far away from Antelope Island. And that's where our kids, because the lake has receded so far out where we live, they can't really go out and swim in the lake.

...[O]ne of [our son's] classes took a bike ride across the causeway, and I think they even rode their bicycles back. He thought it was pretty cool out there. ...He thought it was neat to go out to the lake and see all that.

Hunting. One recreation activity that was talked about a great deal was hunting, primarily ducks and pheasants. Many participants talked about hunting as children and then carrying it into their adult years.

As a kid, these are the areas I used to run around in and play around in when I was young. I would go duck hunting when I turned 12, out on the lake...

We just had all kinds of fun...and hunting, we had a lot of fun hunting...

I like the lake and 'course, being a hunter, the lake furnished us a lot of opportunities to hunt waterfowl. And I can remember many stories that my father and my grandfather used to tell about hunting on the entrance to the lake where the water, the rivers empty into it.

This heritage of hunting the last participant spoke of is common among the waterfowl hunters who use the marshes of Great Salt Lake, according to a refuge manager.

I hear a lot from people who, during the 30s and 40s, spent time on the refuge, and a lot of it comes from hunters, people who have a history of hunting in the family. I think with this area in particular it's important to understand that the hunter/conservationist of the 1930s and 40s played a huge role in conserving the resources. And they also played hard.

These hunters—or hunter/conservationists as the refuge manager refers to them—have spent a good deal of time and money working to improve the waterfowl habitat over the years.

...[I]f you want to call it recreation—I don't think that word encompasses the impact of the human involvement that way. Yeah, sure, it's recreation in the fact that it's not a professional kind of endeavor, it's recreation in that it's a lot of fun, they do it for play, they pay a lot, but that doesn't really speak—it's much more than the recreation you would get in its other forms. Like for example if you wanted to go to an amusement park, that's recreation. But that's different than the kind of recreation we're talking about that's getting people to come back to the lake. It runs much deeper than that. It's changed their core values, even though it's occurred on a voluntary or recreational basis. But anyway, my point being that the amount of clubs around that manage and maintain those wetland areas, and the amount of hours actually spent around the lake by those people, is considerable.

One of the research participants had a grown son who was making that kind of investment after growing up in the marshes of Great Salt Lake.

Both resource managers and residents who hunted agreed that things are changing. One focus group participant felt that access has been reduced due to increased numbers of protected management areas along the shores of GSL.

I think the State Department of Wildlife has acquired a lot of the lands that aren't necessarily wetlands but that still are connected to the lake out our direction, and in so doing, they're somewhat preserving a barrier between the lake and the marshes and the wetlands and providing an opportunity for those elements of wildlife to exist in a non-disturbed factor. The only thing that—and there again, it's got to be controlled because it's government—in also doing that they're controlling the

access to it. So, even though they're protecting the land, they're handcuffing us to not being able to enjoy it as much.

Another group member disagreed with this.

From the time I was a young boy, there's probably, oh, fifty times more open land now that we can hunt waterfowl on than we ever could when I was a boy. It was all tied up in private land and hunting clubs—and if a person really wants to hunt now, waterfowl on the shores of the Great Salt Lake, there's more available land now to hunt than we ever dreamed of. ...there's actually more access open now than we've ever had to hunt waterfowl and to enjoy the marshes.

Residents and resource managers discussed concerns about some other changes they see. Two resource managers made observations of current trends.

...[W]e're losing a generation of young people...who are using public lands—not just the refuge or the lake but using public lands in general—less than the previous generation, and that's the first time that's been true. And duck hunting is a good example of that. It requires some experience, some guidance, a fair amount of equipment. And if you're not willing to make that sacrifice, and have somebody who's willing to show you that, it's difficult to go out there and be successful—the competition is more, and duck stamps are going to be going up considerably in the next few years, so unless you're willing to put a whole lot of effort into it, it's not going to happen for you.

I'm guessing the people from 30 to 45 who grew up out here, it was still very much—all of 'em hunted ducks and pigeons out here on the river every night and they all loved living out here, they all tell me that. The generation following that, for example my son's generation, a very small percentage of them—you know that was after all the computers and the games—they're not into the outdoor stuff, they don't like it very much. From the 40 year olds and some of the 30s, that generation is very, very fond of Ogden Bay—if they're a sportsman or if they're just the common folks. The new kids, all they do is come out and swim, a few of them go fishing. I don't think they're nearly as excited about it.

And a resident talked about the effects the changing recreation landscape may have on people's sense of connection to the place.

There are so many things that have changed...over the years. For instance, an annual thing was the rabbit hunt on New Years Day. We

would make a half-circle and shoot rabbits clear to the river and there would be hundreds of rabbits that would be cornered that we would shoot before we got to the river. You don't see a rabbit anymore. They're gone, they're extinct! We'd have to go out to Promontory and bring 'em in. ...and so a lot of the new people will never experience some of the things that has drawn us close to that area. The pheasant hunting...we all had good pheasant dogs—now I go to Nebraska to hunt with my son so my youngest son can know what live pheasants are. There's been a lot of changes...in the area, that a lot of people won't ever have a chance really to associate with and feel a closeness to the land and the atmosphere that we had an opportunity to receive.

Not enough recreation. A number of research participants felt there are not enough lake-related recreation options available. During discussions about recreation in the Davis County focus group, one woman said that for her, the most important thing the group had discussed was that, “We need more recreation... More recreational opportunities.” Group members talked about the need for biking trails and walking trails, and a couple thought off-road use of motorcycles and all terrain vehicles should be allowed on Antelope Island.

Synopsis: Recreation as What GSL Means for Some

In a follow-up conversation with one of the Weber County focus group members, he indicated that, since the group, he found himself thinking about the lake and recreation. He feels Great Salt Lake offers more recreation than people are aware of. In particular, he had thought about the community tradition of GSL recreation his community had in the past, a tradition that has recently changed due to the reduced access his community now has to the lake.

A resource manager posited that recreation—or rather, the use of discretionary time—is what really matters in terms of people's attachment to places like GSL. He

argued this use of discretionary time is a far better indicator of attachment than just living near a place.

...[T]he folks that are attached most to the lake are the ones that actually go out there and spend their discretionary time doing something associated with the lake. And that could be anything—whether it's bird-watching, or picnicking or driving or hunting or fishing or photography, or writing, using it as a place of solitude, we've even got artists who go out. So those kinds of activities, but they all amount to discretionary time... And I think that whether you're a farmer living close by or a resident in one our local communities here, or whatever... living close to the lake doesn't necessarily mean that you're attached at all to it...

He went on to say that one's use of discretionary time would continue over one's life-cycle, even though the specific things one did with that time would likely change.

...[T]he activity that you choose to do during your discretionary time at the lake, whether you read poetry, take your shoes off, or canoe or whatever, that doesn't make any difference, you're buying into the value of it by how it's turning your crank—and it changes with the season of life. I won't always be able to hunt. If I live long enough I'll be incapacitated, we all will. ...we may be in a wheelchair or a vehicle, or we just sit there with a blanket on our waist, as the kids say that's a bird, 'I can't see that far, but I can still smell it and I love it out here.' So our activities will change, but our attachment won't, and our discretionary time, either on the lake or dreaming about the lake, is going to be there.

The Great Salt Lake Ecosystem: The Power of Nature

[N]ature absolutely amazes me. And out there—maybe it's just that it was so—there weren't many houses out there and so...you felt more like you were in the middle of it. You know, when snow storms would come over, the lake effect, loved that! ...I remember as you drive...and you come out of the fog—well, I liked *in* the fog. I liked being down in that fog, in the bowl of that...area. The power of nature, Mother Nature, just amazes me.

Although only one respondent talked explicitly about the lake and its environs being the primary motivator for moving to the area, a number of research participants

talked about how much they valued the natural environment of the lake and its related sites. Most participants were at least interested in phenomena like GSL-related birds and other wildlife, sunsets and night skies, and storms. Many talked about these things as important benefits to living near the lake.

*The Birds and Other Wildlife of
Great Salt Lake*

Many participants enjoy the nearness of “nature,” including the birds and other wildlife, provided by the GSL-related refuges. A man who has lived near the lake for about a year lives across the road from refuge property.

This piece of ground across the road from us here...is all...state protected wildlife area, so we do on occasion see deer out here, which is nice because you always enjoy the wildlife and nature, with your children and grandchildren... You see some things you normally wouldn't see without going clear into the mountains or something like that. ...there are some foxes out here, we haven't seen anything up close, but you can hear 'em. And all the waterfowl that fly over. So you get a chance to see and recognize and point out to your children or grandchildren what the different birds are that fly around, and not only that but you get the opportunity to see hawks and owls, in their natural hunting procedures and stuff...just life in general, nature in general...

He was not alone in appreciating the wildlife associated with the lake. A long-time resident with a good deal of experience with the lake felt similarly.

And my real love is animals. I have a degree of zoology and I've learned a lot about birds and I love to go out there and look at all the birds on the lake.

On the other hand, there are aspects of living with the birds and other wildlife that can be more difficult. During a focus group discussion about how much people enjoyed seeing Great Blue Herons in their area, one woman mentioned that one had been killed. After assuring the group her husband was not responsible, she mentioned it had likely

been killed because “they get into the ponds, and...kill your fish...” Another concern was wildlife-related crop damage.

...[W]e get problems with controlling too much wildlife, you know, crop damage and that sort of thing, but there’s ways of dealing with it. I’d rather have to deal with snow geese than I would elk, let’s put it that way.

The birds. For some people who live near Great Salt Lake, one of the things they most associated with the lake was the presence of lake-related birds. For example, the birds were the main attraction for a couple who moved to their home because it was near a lake site—they live next door to one of the refuges. The wife told me the story of how they bought their home.

Well, we’re birdwatchers. And we were living in Salt Lake, but we found this [refuge]—[it] was pretty small, and at the time the manager left it open all the time...we could come out here, it was a 6 mile round. And so my husband would come up here and run the circle. ...he started noticing that they were building this house—and we were saying, ‘wow, neat!’ And he came home one day, and said, “Ahh!! That house, that house is for sale!!” And we bought it within one week. ...I didn’t want to live in the city, I wanted to live out here... So we bought the place... On the day we moved in, there were eagles... here and in the back yard...

The birds associated with the lake also appeared to be the primary attraction for a man in Weber County who expressed strong feelings of attachment to the lake environs.

I think probably the neatest thing about living this close to the lake is the variety of birds that are out here.

I enjoy, in my spare time...I’ll sit outside and watch—I don’t know what I’m looking at because I’m not an avid birdwatcher, but I’ll watch birds all day. They’re very, very interesting and some of the things they do, and the species.

Some, including a number of resource managers, indicated that when they think about the lake, they think about the birds. For example, one manager said that when he thinks about the lake, “I think of that Sandhill Crane flying by.”

And of course the birds were amazing, too, just the migration of the different birds. [On Antelope Island] I could see them, I could see the thousands of birds out there and learn to pick out the difference between seagulls and the terns, and actually learned a little about their habits and how important the Great Salt Lake was to the birds. And to the rest of the place, for migration. I love to watch the pelicans...to watch them come over the lake is really quite fascinating.

A woman who used to live near the lake found herself thinking about the birds when she thought about her experience with the lake.

...[P]robably the birds. Watching the birds, the seasons—we don’t get Canada Geese in my yard here, I did there. The big—what are they, the big, huge cranes? ...they don’t fly up to South Ogden [where she lives now], they’re down there.

Current neighbors of the lake had much to say about the GSL birds as well.

The other really cool thing is Blue Herons...we’ve always got Blue Herons sittin’ on the roof of [a neighbor’s] shed...

[W]e are so lucky...to be able to sit in your backyard and watch the geese and the ducks and hear them geese and hear the ducks and all the other birds and I mean we live right out...in a waterfowl area. It’s wonderful, to me. I was watching the cranes today, you know, and it’s just so much fun...but I’ve always loved birds, so ...I really appreciate it when I can go out on my balcony and watch them birds.

Owls...it’s awesome to watch at night. They’ll come over and sit on the fence...

A number of the research participants had clearly observed the birds a good deal and knew the patterns of avian life connected with the lake.

To see the geese, and this year, especially this year, the swans—aww! That long-necked white bird out there with that wing span—just totally

sends shivers up my spine. Plus the bald eagles we see out here—winter, early spring... The bald eagles have made a return that is just—and I'm an eagle freak, a bald eagle freak.

The birds out here—we used to get a lot more, like curlews, they just don't come anymore, there's just too many people. I think, but maybe their numbers are down, too, it's possible.

...I mean we used to have Sandhill Cranes out here and Bobolinks and Eastern Kingbirds—during the high water, they loved it. And I would go out there and just love it. And there was a time when the geese would come—hundreds of them!—would just fill up those fields.

Several participants were aware of seasonal differences in bird activity.

I feel connected to [the lake] when I hear—like we can hear Sandhill Cranes. And especially in March, I love March because they'll be circling overhead, but they also, they're nesting and calling. ...Anytime there are birds—pelicans or geese—that just reminds me of the whole thing.

[T]his time of year I can hear the different migratory birds coming in, in the morning, so in the mornings I like to just lay in bed listening to the different calls, so that's kind of neat.

On a real positive note, something that we really enjoy and it's directly related because of the lake and the habitat that we have there, is in the winter time, the amount of bald eagles that frequent the area. This last year, we—on Sunday afternoon, we'll take our grandkids for a walk out on the bird refuge and this one day we counted about 75 bald eagles. You know, right within about 10 trees. And that's something that you just don't see, and that's directly because of the lake and the environment on it there during the winter.

Participants said they enjoyed sharing their experiences with the birds with others.

I do like to share. One of the more fun things is to bring people out here to watch the eagles, like on Eagle Day.

[W]e've seen pelicans close to the house and that's been awesome because my oldest daughter likes birds so we're always out, seeing what birds we can find.

Had a canoeing activity just recently with Scouts, and went out... They went out and rode around Egg Island and saw the nesting going on out there and they thought that was just something.

When one of the focus groups was asked to talk about the most important things that had been discussed during the meeting, one middle-aged man responded,

I would like to see them just really be able to preserve the wildlife. To me that's really important. ...you know, we're in a flyway right through the Great Salt Lake. It's amazing, most people don't understand all the shore birds that live in the Great Salt Lake that, ...if it wasn't for the Great Salt Lake, they would not be able to migrate to where they go, so it's not just the waterfowl that we like to shoot, it's all the other fauna that's out there along the shore.

Other Wildlife. In addition to the birds, research participants also spoke appreciatively about other wildlife along the lake and its related sites. Some participants made a point of walking, horseback riding or bicycling in areas where they could see wildlife. Others referred to how the wildlife in the area adapted to changes in the lake.

When the lake rose in '83, it moved all the foxes, skunks, and raccoons up into this area. And the pheasant population really dropped off. I've seen more pheasants the past two years... We've had skunks and raccoons right on our doorsteps, and on our front porch. So we've had to deal with those, I've had to shoot our share, but that'd be the downside to it. But the upside to it is the variety of wildlife that you do see along the river bottoms, anywhere from the waterfowl to the deer, that live on the river bottoms down by the bay.

Synopsis: GSL Means Birds and Other Wildlife

As noted, a number of research participants think of the birds and other wildlife when they think of the lake and its related sites. Many of them think in terms of seasons and cycles, migration and nesting, ecosystem and habitat. For some, their attachment to the lake is secondary to their attachment to the birds.

One of the things of note here is that many of these participants thought about the larger ecosystem. Although they typically referred to a particular lake site—Antelope

Island or Ogden Bay or the shoreline near the causeway, for example, they spoke inclusively about lake, marshlands and uplands when they described the birds and wildlife they associated with the lake.

The Water, the View, Sunsets and Night Skies

Although the thought of GSL conjures up images of bugs and odors for many who live in northern Utah, for many others, thoughts of the lake are far more positive. Among research participants with a more favorable opinion of GSL were those who appreciated the water itself, as well as the view, including sunsets and night skies.

Considering it is a lake, though, relatively few participants talked about the water itself. One man enjoyed working on the water, especially if there were mountains nearby.

For me, I like my mountains, but I like being out on the water, too.... If I had my choice I'd be out on the ocean on a boat somewhere... Well, [here] I can get mountains, and I can get water. The only other place I can do that is Alaska....

For others, the attraction was simply being around the water, whether it was to watch it, to listen to it, or just because it was familiar.

The water—watching it, looking at it. Being able to look at it and tell as those whitecaps would come around that a storm was coming.

I like the sound of water—we really can't hear it here [at our house] but I used to go out there [to Ogden Bay] and listen to it....

I've always lived on the water, my entire life. My dad, even when we lived in the city, we'd always spend the summer on the water, whether it was on a lake or a river or whatever.... That's just me, my genetics, gotta have water around.

The water glimmering in the sun...it's beautiful. Several participants said what they associated with GSL was beautiful lake views. Many saw the view of the lake as a

very positive aspect of living in the area. Those who could see GSL from their property greatly appreciated it.

The positive is that it's a nice place to live, you mostly got an unobstructed view of the lake.

However, only half of the participants in the Davis County focus group and none of those in the Weber County focus group could see the lake from their property. Only two of the interviewed residents had a good view, two others could only see the lake far off in the distance at its current elevation. This last was the situation even for one of the resource managers who lives onsite. None-the-less, many people with no view from their property talked about the beauty of the lake.

The view some associated with the lake is a very different one than, for example, a stereotypical Minnesota scene with a lake tucked into a wooded area. One woman found beauty in the more stark landscape of this great lake in high desert country.

I'm drawn to the landscape—the barrenness of it... I'm very, very drawn to the tufts of grass—because the grass just can't grow everywhere out there... And then the wind would blow...the tufts, and you'd look out and there'd be the island, Antelope Island, and the grey clouds would come over. It's very barren and very beautiful.

Other participants enjoyed having beautiful views of both lake and mountains.

Focus group member: You know, that's another thing, there are beautiful mountains out there...

Member two: Both side's got quite the view...

Member three: Yeah, we're in the—I think we've got the perfect spot: Lake on this side and the mountains there.

Some appreciated the whole landscape.

[W]e have a piece in West Point we thought about going to, and we're not going to have the view. ...I think I'm going to miss the lake. ...I think it's just, just the beauty—just, you look across this farm ground that [my neighbor's] never going to sell—which is good...I probably

couldn't move in a heart beat, it's just too, I mean the farm is just too pretty, they've done some nice improvement down next to the lake, the water's pretty, the mountains are pretty....

For one man, the view of the lake was the main thing he enjoyed about the lake.

Yeah, I mean, ...I'm connected to the view. I'm not connected to anything happening on the lake. I don't go out there...so I, I don't feel connected to the Great Salt Lake activity, just the view.

However, as noted, even those without access to the view from their property found pleasure in the beauty of the lake. One middle-aged man with a great deal of experience with the lake spoke about being out on the lake and its islands.

You know, it's a beautiful place—you can go out there a lot of times and the lake will just be so clear you can see six or eight feet deep and see the bottom, just like Bear Lake, it's beautiful. And the sunsets are just phenomenal out there on [the] island 'cause there's no civilization if you look west as the sunsets, and they're just gorgeous.

Many of the research participants delighted in the skies above Great Salt Lake.

Two women shared their enjoyment of this, each in the context of discussing things that made them feel connected to the lake and its environs.

...Plus the sunsets and the sunrises and the moon—anything that draws my attention to the bigger environment is part of it. I used to walk a lot more than I do now...and so I would see the stars—it'd be early in the morning, anytime, and I'd see the stars, and that would be incredible. And I'd see shooting stars in August and I even, this one time, saw something entering the earth's atmosphere and exploding and that was incredible. And then the sunrises—just so beautiful, with the clouds, and the island gets illuminated first—it's just all part of the whole experience of it.

And just being out there and seeing the sunsets and sunrises and full moons, and you don't see that living in Salt Lake [City] because of all the light. And seeing how the full moon or a crescent moon, when it's setting, reflects off the lake—you don't see that if you're in an apartment and you just happen to look out. Whereas out there it's right in front of you.

Sunsets over the lake are known across northern Utah for their grandeur, and were appreciated and celebrated by those who live near GSL. In fact, when focus group members were asked to write the first word that came to mind when they thought about living near GSL, four of sixteen responded “sunsets” or “beautiful sunsets.” Asked how he felt about living near the lake, a resident for over 70 years responded, “...I really enjoy it—especially the sunsets.” Participants described the sunsets as, “almost prettier than anywhere else in the world,” “to die for,” and “really, *really* cool from down there [near the lake].”

Even my brother who lives in CA and has seen many sunsets on the ocean said, ‘There is nothing like a Utah sunset on the lake.’ ...And it is just breathtakingly beautiful...sunrises are spectacular and the sunsets are even better. I love to watch ‘em both.

Some participants had clearly spent a good deal of time watching these sunsets, and had a number of observations about them.

There’s two times a year the sun sets on the water, and...when it comes off the tail of that Fremont Island and...when the sun hits that water, the sun hits and the light just shoots across the water—it’s pretty neat. I like seeing that. It only lasts for a few days, maybe a week or so.

Some participants who had very little to say about the lake, and appeared not to have much of a sense of the lake, changed when the subject of sunsets came up. One couple talked about their impressions of the sunsets; for much of the interview the wife had been apologetic for having so little to talk about.

Husband: There’s no sunset like a Utah sunset over that lake. It is just unbelievably beautiful.

Wife: And they don’t stay very long, the colors change and they move so fast. But ohh—they’re very spectacular I think. You can’t really describe it, you just have to experience it.

Those who live very close to the lake were also aware of an aspect of GSL unknown to many others: the view of night skies over the lake.

The sunsets are wonderful out here. The moon is really pretty too. ...it's so dark, sometimes we get the pretty effect of the moon—kind of glows off the lake. I mean sometimes it seems like it's not even dark out here.

And there's spectacular views of the stars—you just don't get that in town, too many lights around.

...[W]e see comets occasionally when they come through.

For some participants, being able to enjoy the dark of the night without encroachment from city lights was noteworthy.

There's nothing more amazing to me than being able to go out, outside at night time and because we don't have all the light pollution, you can look up and see constellations and stars that people in town don't even know exist. ...you know, we talked about sound pollution, and environmental pollution...the light pollution is another factor that comes with population growth. Everybody's got to have a streetlight.

One man who had spent much time on the lake enjoyed experiencing night on the lake.

...[P]robably one of the most beautiful times, the most enjoyable times for me being on this lake is out there about two o'clock in the morning, in the winter, crystal clear. Coming across the lake—you can see detail on the shoreline from way out there, and...the air is so clear and there's absolutely nothing out there. And you end up anchoring off out there...and shutting [the motor] down, it's absolute silence except for the water, you know, lapping along, beautiful...

Whether it was the view of the water, the sunsets or night skies; whether they could see it from their homes or need to go to another vantage point, for many participants, their sense of Great Salt Lake was the view they associated with the lake.

Weather and Storms

Another thing people associate with the lake is its effects on local weather. Research participants talked a good deal about lake-related weather. Not only did they experience the results of weather patterns, but being able to watch the weather on the lake was particularly interesting.

I get an enjoyment out of watching the news and seeing what the prediction is, then watching the fronts move in on the lake. Whether they come from the south, which can really hammer us...or from the west, we get a direct lake-effect. If it comes from the northwest, I think that's my favorite. I'm able to watch how...the lake effect can work...

Some participants made observations about the lake's effect on the weather for the regional area, addressing the interaction between the lake elevation and weather patterns.

It's really funny, with all the drought talk and everything that's going on—I don't think most people really realize what kind of a weather machine the lake is. The first time I ever heard that term is when I was doing a job up at Marquette, Michigan. Right there on Lake Superior, they are used to it all the time in the Upper Peninsula, and that's where they get all their weather up there. Well, when I really started looking at it down here, people really cuss the lake effect. You know the lake is what makes or breaks your drought. I'm amazed more people here don't really pick that up. And they really get upset over that lake effect—but go easy on that lake effect.

[P]eople think that the lower lake level is so great, on one hand, but then the rest of us are saying, OK, but look at how much lake effect snow you get during the winter, look at how few rainstorms you get during the summer, when the lake's low versus when the lake's up a little bit. We've got four feet to go to get to normal weather.

Now I don't know if the lake has a lot to do with it, but when I was a small boy, our winters were a lot more severe than they are now, and I don't know if that had an effect because of the changes in the lake and the dams that stopped the feeding of that water into the lake, because we had severe weather. I mean, I seen it to where you could walk over

fence tops because the drifts were over the top of them. And we haven't had that.

These people living near the lake were also very aware of the effects the lake had on their local weather conditions, particularly during the winter. A long-time resident living just north of the lake talked about how the lake moderates weather there, with fewer freezes and less snow than other places in Box Elder County, or places to the south end of the lake. They would typically get a good deal of fog, although they had not had much for the last several years, and he wondered if this was due to the lake's current low elevation. A couple living on Promontory Point talked about similar moderate conditions, reporting that springtime comes there two to three weeks ahead of the closest community to them, just east of the lake. Research participants from the Ogden Bay area also talked about the moderating effect the lake had on their weather.

...[Y]ou don't have snow here...it's very nice place to live in the winter.

One of the positives that I enjoy is...the weather. It's really nice that you don't have to get your snow shovel out more than a couple of times a year. And yet if you want the snow it's only a few miles away. And that's a real nice factor not only for shoveling the snow, but for the openness for the fields and such that you can, you don't have to fight the snow usually to take care of your animals.

This is a marked contrast to Davis County and further south, where the lake's influence on the weather is "lake effect" snow storms that bring more snow to the areas closest to GSL than anywhere else in the region. Participants in all three counties talked about fog.

Participants observed that GSL affects local weather in the summer, as well, describing the lake having a moderating affect on temperatures, but being responsible for windy conditions.

Yeah, I don't know if the lake has any effect, but the air seems to be cleaner out here. It's cooler down here, too...I believe because of the lake. At night it cools down really quick down here...

It's windy. A lot. The Great Salt Lake creates its own thermals. Daily. The huge variation in the ground temperature... All these little—they're not microbursts—localized thermal winds—they're sort of important for the birds that come in. That's how pelicans can fly 38 miles one way to eat lunch. We had hurricane force winds out here all the time. Every once in a while it'd show up in Salt Lake, but out here we get over 80 miles an hour. This year has been particularly bad.

Storms are another weather phenomenon research participants associated with Great Salt Lake. A number of them talked about watching and experiencing storms on the lake, powerful storms that were, as one focus group member put it, “scary cool.”

First focus group member: A big storm comes up, and you can see those waves just comin', the water...pretty cool...

Second group member: Yeah, and with that tornado out there, the water spout... That was cool.

A third member: Yeah, we were coming home that day, with that tornado warning and the whole atmosphere was yellow and we pulled in and...some neighbors came out, “tornado warning”—well my kids were, you know, I had to practically slap each one of them to calm them down...it was just amazing, the whole atmosphere was yellow.

Fourth member: It was, it was kind of scary cool.

Second member: It's not cool to be in one...I'm just glad it left.

...I remember one night, in the evening...a storm was coming. ...I'm standing in the driveway and...the wind coming in and blowing my hair, and I remember looking over that direction and the redness of the sunset...with the grey...those clouds will come in over, and they're really low and have tufts of lighter grey and they're really, really black on top, and I thought, ‘This is a very, very cool thing that I'm experiencing right now.’ ...It was summer, the end of the summer...when those thunder storms would come over.

The visibility across the lake allowed one couple on Promontory Point to watch a tornado that hit Salt Lake City, all the way to the south of the lake.

However, being on the lake in one of those storms can be extremely dangerous. The salt content makes the water not only denser and heavier than that in fresh water lakes, but even more so than ocean water. A couple with years of experience on the lake, raised these concerns.

Wife: ...people have to respect it, it's a large body of water, with a lot more weight than other bodies of water, and you have to keep that in mind when you're working on it or playing on it.

Husband: And it can go from absolutely pristine, calm, like it is right now, to six foot waves literally in five minutes. And you just gotta learn to read the weather a little bit, I even still get surprised. You got an idea when something's coming, but you can get caught on a wind so easy out there. And one of the biggest things we struggle with, especially with the brine shrimpers, is you get all these Alaskan fishermen, 'I've been up on the Bearing Sea, 100 foot waves—these little 10 foot waves ain't nothing'—yeah, but that little 10 foot wave weighs twice what the ocean does and there's only 10 feet between them. It gets really ugly.

Synopsis: Sense of the lake as a weather machine. These people living very close to Great Salt Lake were very aware of the relationship between the lake and local weather, and were affected by the lake's influence on weather more than those who live farther from the lake. They also had the opportunity to actually watch the weather move across the lake, and in some cases, to experience some of the more consequential effects of the lake on local weather. Therefore, it is not surprising that one of the things research participants associated with GSL is the lake's effect on local weather, and the drama of the storms over the lake.

The dark side of living with the lake. Storms on the lake are not the only cause for concern in terms of the need to treat GSL with respect. Some participants had experienced how dangerous the lake can be due to the combination of water density and the high salt content making boats ride higher in the water.

I've also found out that the lake, the Great Salt Lake is one of the most dangerous bodies of water in the world—that and the Dead Sea—because of the density. And we've experienced that in our boats, you know you have to be so careful with the density, the white caps and also the fog out there....

[My dad] died in the lake, his boat capsized and he drowned—four years ago.

A resource manager raised concerns based on her experience.

[P]art of my job has to do with boating, and we had high sailboat usage out there, and how dangerous that lake is—I mean you respect it, maybe be in awe of it, but you knew that if it was between you and the lake, you're not going to win. ...you could get sucked under from some of those huge, huge waves, it was amazing how tall some of those waves got. So maybe in a way, that sense of force kind of made me not feel connected [to the lake], because you know that there's a possibility, if something happens, you could lose your life. But then on the other hand, maybe that makes you respect it and learn what your limitations are.

The natural, physical traits of the lake can present difficulties for those who live—and farm—nearby. Whether due to the high water table near the lake, damage from salt, lake-related weather, or lake-related wildlife, as one middle-aged man with a deep sense of attachment to the lake put it, “We've had to deal with some bad.”

One farmer emphasized that people just have to manage for these sorts of things if they are going to live near the lake.

The Great Salt Lake is a dead end, so all the salts accumulate. ...you have all that and the water traverses, and you have a high water table, which is going to be salty to a certain degree, all the water that is used in irrigation is always imported. So you have to manage for it. That's why you have the tile grades and there's certain things you can and cannot do to manage the salt.

Um—salt. Soil quality—it's marginal. ...you have to be really careful about what you do out here with the ground. You know, managing it. You have salt in the soil, you have salt in the water, and so you're limited. My wife complains about what she can and cannot grow in the soil. Everything that has any type of a flower, or cultural refinement that

goes into the garden or the yard, you have to use imported soil. The soil's built up, it's not local soil around here. It's just—the array of trees out here, there's a few cottonwoods, in vegetation you're limited, you're very limited. The high water table, any deeply rooted trees—hardwood trees or pine trees—you're very limited as to what you can grow up here... The soil's not very well drained, so we have problems.

Living and farming near GSL can present challenges, but several participants felt that one needs to learn how to live with the lake and its environs—or else move.

It all depends on your perspective, and my personal perspective, I don't see it as a negative. I see something that—my grandfather always said you have to get along with Mother Nature—identify what you can change, change it, and what you cannot change, live with. You don't like the river, you don't like the Great Salt Lake, the wetlands, you better move.

*Synopsis: The Natural Ecosystem as
What the Lake Means*

For many of the research participants, the sense they had of Great Salt Lake was of the natural aspects of the lake. When they thought of the lake and what it meant to them, they thought of birds, of the view and sunsets, and of watching the effect the lake has on the weather. The tone of voice was often passionate, or in awe, as has been demonstrated by the superlatives included in participants' own words. Some participants talked about the challenges of living and working with the physical traits of the lake, but these participants spoke about the lake with respect, they saw these traits as things people need to adapt to, rather than trying to change the lake and its environs to suit their needs. There was a recognition and acceptance that trying to change something as immense and powerful as GSL would be a losing battle anyway, but beyond that, there was an appreciation and in some cases, perhaps a reverence, for what the lake is.

A Lake of Varying Size

From “the lake was in our yard,” to “it’s so far out there,” the problem with having a sense of the lake in terms of elevation—in effect, where the lake is—is that it is a moving target. This variability of lake elevation and corresponding differences in the size of GSL is one aspect of the natural lake system that can keep people anxious no matter where the lake is. And although it may seem less troubling during low water times, some were still anxious about it, according to one resource manager.

The lake was a major topic or a hot issue during the flooding, right now it’s so far out there it’s like out of sight out of mind.

Locals just don’t talk much about the lake. Some of them wonder if it’s going to dry up, it’s either one way or the other, there’s no happy medium.

While the high water years of the 1980s were characterized by one research participant as a “once in a century impact” of living near the lake, it was an impact that created considerable problems. Lake neighbors also experienced problems related to the lake being at low elevations, and with the variability itself.

High Elevation and Flooding

Several of the research participants lived near GSL during the historic high water years in the 1980s. Davis County residents described their experiences.

...I mean the lake was in our yard. That’s how high it was. It seems to me that it was in the mid-80s, like ’84 or ’85. It washed out all the dikes, it was right at the edge of the yard. The neighbors came and helped us build a sand barrier, but it took out all the plants that we had. And it was here for a long time, I mean that was the thing, I think it was here like two years and it was very stressful. And the insurance company didn’t care, because insurance policies are written for the typical flood, where it comes in, makes a mess and then goes away. But we were sitting here—we didn’t have any damage, but we were just kind of waiting for it to get

in the house. ...I just remember it being tremendously stressful, kind of worrying.... And my husband...knows the elevations. He's up there talking about the lake level, and 'the front door's here,' and it's like we're inches away. ...the high water [line] was a combination of the south wind and high water, so the tide. But we never did get that level.

...I could tell by the roots—[the high water] took out at least 50 ft. of bank and washed it out into the lake along the west, I had $\frac{3}{4}$ of a mile of lake frontage and you could just hear it roaring down there. ...[The water came on to this property] when the wind would blow. It blew it over onto a pasture I irrigated. Of course the water level was just a foot or two below the top of the land, but as long as the salt water was off of it I irrigated it and it grew grass, but...finally [the water] got so high that it blew it into there, and put a coat of sand down.

I remember before they opened [the causeway after the flooding], we would go down, and ...you couldn't drive very far...just a little bit...and you would just go over here and just sit there and watch the water go over the causeway.

The high water affected West Warren, in Weber County, as well.

When that lake came up, that was quite a shock to our community—we never realized we lived that close and was that vulnerable. Uh, it forced carp right up into our lawns and our yards. They came up the drainages to try and get away from the salt water. ...we could set or stand out on our decks and see the lake, right there, and it inundated some farm land and...we found out that the lake can be a treacherous thing as well as a beautiful thing to see. And it was quite a shock to us when that happened.

...[W]here the water came up, you can see where it washed some good soil away.

[T]hat's when the lake stink was the worst 'cause it came up and killed all that marsh. It killed 21,000 acres of marsh out there in Ogden Bay, killed every bit of it. And the salt came clear back the river, clear to the river bridge, to where [the] bridge is and it killed all the vegetation along the edge of the river. You know, so we got that rotten vegetation smell really bad in those years when it was killing all that vegetation. That had a real effect when the lake was coming up and down.

And in Box Elder County, a participant with a farm just north of the Bear River

Migratory Bird Refuge said his land was under water for two to three years.

Several participants talked about this as part of the natural cycle of the lake, one people just have to adapt to. Some could see positive outcomes of the high water as well as the negative.

But I think having Farmington Bay here was really helpful in understanding the regeneration process. I remember going to a presentation...[that] talked about how essential that is to clean out areas in getting rid of certain kinds of plants, and the lake needs that. ...And Farmington Bay put up all these signs that said, this place looks dismal now, but you know, this is what's going to happen and over time, it's a natural part. It just made it easier to think of our yard as part of this, that it would come back, and that it would be part of the regeneration.

Some talked about how the wildlife adapted to the changes. Weber County participants talked about how coyotes, skunks, raccoons and foxes moved up as the water moved up, putting these predator species in their area. While they did not see that as positive, they also noted other changes they enjoyed.

When the lake came up, though, if you remember also, it was the best pheasant hunting we ever had... It drove 'em off the bird refuge and I mean we never had pheasant hunting like that, for four or five years there it was just phenomenal. But that changes, you know, the fox came and they're wiping them out again. But all that changes with the rise and the fall of the lake.

A Davis County resident was paying attention to the wildlife changes the higher water brought, as well. She noticed higher numbers of Sandhill Cranes, Bobolinks and Eastern Kingbirds in the area during the high water.

A resource manager said there was also an increase in the interest local residents had about the lake during the flooding years, "I had people coming in all the time, 'We've been reading all about the Great Salt Lake, we want to see it.'" He reported that when the water went back down, so did people's interest.

Recovery. Recovery was the most difficult for the farmers whose land had been affected by high water, with the sand, salt, and invasive, salt tolerant species it brought with it.

[After the lake water blew onto his field, putting a coat of sand down] I have a friend in Hooper who had a big front end loader—I used that to shove the sand off, then I replanted. It only took a year or two to irrigate it and wash the salt off.

I asked the Box Elder participant whose farmland had flooded how long it had taken to recover after the water receded, he responded that his land was still not fully recovered. Salt water had moved up into the Bear River, and tamarisk, or “salt cedar,” had spread all over the area as a consequence, inundating the riparian areas until they were choked. It had taken his ground a couple of years to recover, he had to run fresh water over it to rinse it off. His biggest task was replacing miles of fence that had been destroyed.

The sandy loam near the lake in Box Elder County and central Davis County took less time and effort than the clay soil in WC Weber. A man who moved to that area after the high water years was still working with the damage to his land.

...[J]ust a short visit from the lake onto the land, like it did in '83, how it can destroy the land and take so many years to perc and push back down into the soil. We bought this property and it was a lot alkali, which is a drawback from the lake. ...it's been 16 years [since we moved here] of spreading manure and anything else we hear of to try, to get our ground where it'll grow some decent grass for the horses. The lawn was probably—it's the hardest thing to keep going because the alkali likes to resurface. And you just have to keep pushing it back down. We have areas out back, and you can not till it or turn the ground, if you do you just bring it right back to the surface and everything it's taken you 15-16 years to do has just gone to whatnot.

Concerns about flooding. After the high water years, the idea of building in the most western parts of Davis and Weber Counties was met with a variety of responses. One long-timer had given his grown children parcels of land from the family farm in west Davis County.

When my daughter wanted to build a house, the bank told her the lake would come up and take it, they wouldn't loan any money down there. I had to get the money from another source, they were a little bit spooky about it...back in the [late] 80s—it had just receded. I give 'em that lot and then it sat there empty....

Another Davis County participant who had lived in that same neighborhood for 12 years had been nervous about building there.

...[M]y husband has lived in Davis County his whole life and we wanted to build a house, and I mean, he knows the county very, very well and so he drove around and that's where he wanted to live. And I was worried about living by the lake. I said, "I do not want to live by the lake—don't you remember in the 80's when it rose?" He said, "[I]f it gets high enough to get our house it's going to get more than that." He said it's never going to come that high, don't worry about it. So that's where we've moved, and we've stayed.

In Weber County, participants in the most western area of Hooper had no concerns about being flooded. A man who had recently moved into West Warren near Ogden Bay WMA said they were not particularly concerned either—although it was something he thought about.

We feel a little assured of being able to build out here. Of course when we did come in, we only went down a little ways below ground level to set our footings and foundations for the house, and then filled in around it. So we're setting up a little higher than the road out there, another foot or so anyhow. We could be a little safer than some of the other people around. But yeah, that does have a concern, something that's always there in the back of your mind that you might be thinking about, if we were to get a heavy moisture year like we did that year...you never know....

The manager of Ogden Bay WMA talked about the damage the high waters had done to the WMA, including property across the road from this resident.

My gate, Great Salt Lake—the fence line going west of my gate—took it out. The field immediately east of my gate—I had a scabber... who took 270 cords of firewood out of there—driftwood. That's how high it got up to.

Dealing with the FEMA flood plain and the moratorium on new development.

After the lake receded, those residents who already lived at elevations below the high water line found themselves in a FEMA flood plain.

So we are in the flood plain. We are not at all of interest to [the local city], because they don't want people in the flood plain. So they're incorporating like crazy all around us. ...I'm getting kind of tired of not having regular water and sewer.

Those wanting to develop in lower elevation areas were forced to adhere to specifications set in the moratorium, if they were able to develop at all. A man who built within the flood plain area in Weber County talked about criteria the original property owner had to meet before the land could be sold.

...[H]e had to fix the road down here and then raise the elevation of the ground. And I believe the road level out here is 4215, which was the height that the water came up to when it flooded out here in '83. So I guess you could say we're kind of sitting in a flood plain....

...[I]n order to get it up to the elevation that they needed...to pass for residential construction, he came in and scraped the dirt off the back portion of the land and then reapplied it to the front portion. So as far as depth of construction and of the roadside, it only comes in about 130 feet and after that it drops again.

A man who has lived in the area for decades expressed concerns with how the moratorium has been handled in Weber County.

During the flood years, they put in this moratorium on building at 4217. However, almost immediately—the lake hadn't been down 3 years before they lowered it to 4215. The houses that flooded this spring

[2006], in '83-84 I saw pelicans chasing carp where that guy's house is, in two feet of water. And the same on [another street]—that's all flood plain. There was so much complaining, that land is so valuable now, that they lowered the elevation [in the moratorium] to allow them to build.

A resource manager saw evidence of that sort of complaining in Davis County as well. He believed people with land that falls in the flood plain have tried to pressure county officials into changing the flood plain line because it negatively affects the price of their property.

...[W]hat we pay for land is dependent on where the elevation is. If it's above that certain line, we pay a heck of a lot more than we do for anything below that.

He said that land in the flood plain was selling for 10 times less than land above that elevation.

Low Lake Elevation

The lake level being too low can also cause problems for those who live closest to GSL. One big problem was lake dust from the exposed lake bed being blown around by the lake winds.

[W]ith the lake being down the last several years, there's been a lot of exposed lake bed. A lot of that is to our east and south, and so when the wind blows, especially when you get a big, heavy south wind, the area on the mainland has been picking up a lot of lake dust, which has been a bit of a problem.

In this shallow lake, with low elevations people have to walk much farther to reach the water, whether on the beaches of Antelope Island or in the other areas one can gain access to the lake water. Weber County focus group members who used to have access to the lake from Little Mountain, said that if their kids wanted to swim or float in

the lake during dry years, they needed to take them to Antelope Island because it was too far out to the water where they lived. “[I]n a dry year you have to walk four or five miles out to the salt flats.”

One long-time resource manager who lived onsite talked about low elevations affecting how much he even thought about the lake.

[A]s far as the lake itself, I don’t think about it like I did when it was high.

Right now I don’t feel that close to it, it’s so far out there. Unless I take an airboat out there I can’t even see it. . . .it’s different than when it was lapping up against the dike right by my house. I used to have to turn on a pump to keep it down. . . .

He saw this among local residents as well.

Most seem pretty positive as long as it stays out of their yard. When the lake’s up, then the river backs up and floods. . . . But since the lake went down I never hear them talk about the lake at all.

Fluctuating Levels

The fluctuation of the water level over time causes problems as well. In one of the focus groups, when a relative newcomer to the area asked why Saltair had so many difficulties, group members who were long-term residents explained the difficulties resorts on the lake had over time, with being flooded at times and being left high and dry at other times. One member, who grazed cattle on Fremont Island, has dealt with difficulties the fluctuation creates there.

That’s the problem that we have with. . . Fremont Island. There’s been several ranchers that tried to make it work, and I don’t know if we’re going to be able make it work, because the Great Salt Lake fluctuates so much. . . .the one year we had to leave our calves out there, we couldn’t get them in to sell ‘em because the lake was so low we couldn’t get a barge in to load them and so the next year we had to

bring in calves and yearlings and, I mean, it was a job. ...and I know several other big sheep outfits that used to put sheep out there, and they couldn't, you know, because of the fluctuation—'course they didn't have water craft as good as they do nowadays. But they just have such a hard time makin' it work because of the elevation, the fluctuation.

Synopsis: Senses of the Lake Tied to Elevation

As seen here, at least part of the sense of the lake some participants had was tied to their experience with lake elevation. Those who went through the high water years, or who dealt with the consequences of that time, for example in damage to the soil and changes in vegetation, have a substantially different feel for the lake than those who have not had those experiences. No one I talked to defined the lake entirely by those issues, perhaps because that time was 20 years ago, however the memories and feelings were close at hand for residents with those experiences.

On the other hand, the issue of the distance of the lake water being related to corresponding distance in people's minds has been raised, with a resource manager who was both committed and attached to the lake admitting that this was how it was for him.

Finally, some struggled with the variability itself, with the fluctuation causing difficulties for lake-related sites. This problem has plagued lake-related industry, resorts, and recreation, as well as farmers and ranchers using lands close to the lake or on the islands.

The issue of variability in lake elevation and size illustrates the challenges that exist between the natural, physical properties of this shallow, terminal lake and the social world that interacts with it.

Great Salt Lake as a Unique Place

For a number of the lake's neighbors, living near Great Salt Lake was living near a unique place, and that made it an important place. Some research participants talked more about the unique natural features of the lake, while others focused on unique social aspects.

Unique Natural Features

One interview participant described the lake as having a general feel of uniqueness, from its ambiance to its natural history.

[Y]ou just stand out there [on the island], ...the heat and hot wind comes off there, and you just stand there and look at it as the wind blows you, but you don't get cool 'cause it's too hot. And the water just wraps around itself as the storms come in. ...[I]t's gorgeous. And there's not another one like that on the planet. So then I start thinking...about Lake Bonneville, and the enormity of that. And I...look up at the mountains to the east and think, wow, all this was covered, including where I'm standing, I'm at the bottom of a very huge body of water, and this is all that's left of it. ...I'm thinking about the thousands and thousands of years, that's very cool to me.

A number of the research participants were intrigued, and at times even amused, at some of the more unique natural features of the lake—and the consequences of those features. For example, two men with lake-related livelihoods each told stories about encounters with the hypersaline conditions of the lake.

...I remember when I was a little boy going out with my parents and relatives and they would build little houses out of wire and they'd put them in the lake and then they'd bring in these little crystal houses. In fact, I dropped one of my cowboy hats in the lake about a month ago and I hurried and fished it out and by the time we got back to Promontory, my hat was just white. So I'm just going to take an old hat out there and make me a crystal hat—the lake crystallizes everything, makes a really beautiful thing.

I had a pair of pants that broke one time. I tell you what, you go swimming in this lake and spend the rest of the day, and you can't think of nothing but getting rid of those clothes. We lost the tug...out there in a storm one night and it washed up on the causeway. I had my dive gear on, but it was during the summer so it was hot, so I wasn't wearing a wetsuit, I just went in my blue jeans to keep from getting scraped up on the rocks. When we got done I dumped a water bucket over me, fresh water, and took my pants off and I laid them on the deck of the boat. I had a change of clothes with me, so I changed and worked through the day. I didn't think about those pants that were drying on the back of the boat. Well I went to get off the boat and get in the pick-up to go home, I tried to fold them up and put them behind the seat of the truck, and I busted a pant leg off.

Some were taken with the uniqueness of the natural features of the lake and area related to the lake, including, in these examples, Antelope Island and the Salt Flats in the West Desert.

[I]t's just barren, there's nothing. Except tufts [of grass], and you walk a little ways, you step in a bunch of brine shrimp eggs or whatever. And if you wait for a while they do have mountain lions out there, that you can see sometimes. And I'm just very drawn—to that.

...[E]ven the Salt Flats—isn't that just from where the lake used to be? We came back from Tahoe and drove the, just miles and miles of salt flats, and if you haven't seen something like that, you know, that's amazing to see that for as far as you can see.

It appeared to be important to some participants for the lake to be one of a kind—in some cases whether that is factually the case or not.

I think one of the biggest positives...I could be wrong with this statement, but I don't think so—it's the only landlocked salt lake in the United States.³

Focus group member one: ...it's neat, I mean the sand, if you look at the sand...

Member two: It's round

Member one: It's all round...

Member two: ...the kids love the round sand.

³ There are other land-locked salt lakes in the United States, e.g. the Salton Sea and Mono Lake, both in California.

Member three: The only place in the world, isn't it?

Member two: I don't know, but it's round.

Member four: Tapioca.

Member two: Yeah.

Member four: It's the only place on earth that's got round sand like that.⁴

Member five: It isn't. ...Is it? It's the only place?

Member one: That's what I heard. We could sell that, if they'd let us.

Some participants found the unique natural aspects of the lake intriguing in ways that stirred their scientific curiosity. A Davis County Commissioner found the lake fascinating.

There's so much to learn and explore about it out there that we haven't even touched the surface on. ...How do these marshlands—why do they support wildlife, even with the salty—you get the brine that comes up, and they still support the wildlife. And you have the history of, like back in '83 when we had the floods, and they said it would just wipe it out and you're not going to see another bird in there for some 30-plus years—well...what was it, two years afterwards it started to recover already. How nature has the tendency to recover itself without our help—you know those are the types of things that help us learn how to cohabit with other things, too....

Unique Social Traits

Local residents also value the lake's unique traits in the social realm. A number talked about the lake being “famous,” and being able to find it on the map was significant to them.

That's our claim to fame. If someone says, ‘where do you live?’ and I say, ‘Have you heard of the Great Salt Lake?’ They know where you're at.

It's really easy to find the lake on a map, even on a globe: ‘see that little point there—that's where we are.’ Not many people can say that.

But it's just a famous lake, I mean it's on the map, it's the only lake in Utah that's really on the map. ...It's just something important.

⁴ Although unusual, the sand, called oolitic sand, is not unique to Great Salt Lake.

History. Several participants talked about the history related to Great Salt Lake, seeing that history as unique to the lake and the lake area.

There is so much, there is so much more regular history, I mean for the last 150 years out here. There is probably 10 times more volume of history down here than anybody in town, outside of the academic circles, realizes out here.

They mentioned natural history, the Native Americans who used the lake before the European settlers came, and the history of local communities and the LDS Church related to the lake.

I think another thing that I like, and I read a lot about is, it's got a lot of history down there. ...there's so much history that it's where Syracuse started, it's great, it's just interesting. ...the old swimhouse—swim-thing they had out there, they used to hold church down [near the shoreline]—just a lot of good history.

Participants had stories about early explorers, criminals, the early use of the islands, and the coming of the railroad leading to the building of the original railroad trestle. One third-generation resident had family connections to that history.

[T]here's some really great pioneer history for some of us, so, you know, that really adds to your connection, I think.

[A]nd there were still Indians there when my grandparents were, were homesteading out there. You know, they can remember the Indians...

For some, a feeling of connection and attraction to the lake may come from the very fact that the lake is different, unique—or in the words of one woman, odd. She reflected on her feeling of connectedness to the lake.

Maybe the connection is the oddness. ...The fact that it's different. And I'm probably different. ...I used to tend bar, in Ogden. And people there thought that what I did in my off time, by going down there [to the lake], was odd. 'Cause they wouldn't be thinking of going down there. So maybe it was the uniqueness – that's a better word – the uniqueness of

the body of water itself. Because it is barren. You know, if you don't look at it, if you just look at the surface...you say, "there's nothing out there." But if you *really* look at it, there's a whole lot going on... It's our uniqueness, that's it. ...there's my connection to it, is we're both different. We're both different than, especially than other things in Utah.

Synopsis: A Unique Place

Many research participants talked about the lake as a unique place. One of the interesting dynamics about this meaning was how widely it was referred to, and by people with greatly differing opinions about the lake. For some, this uniqueness enhances their attachment to the lake. For others, it appears to be the only thing they value about GSL. For example, one participant who had very little positive to say about the lake and had a difficult time understanding how anyone might feel attached to the lake, and another, who is a third generation resident and a waterfowl hunter who has always enjoyed the lake and its marshlands, used almost identical language to talk about the lake being famous and being on all the maps.

Great Salt Lake as an Economic Resource

GSL is also thought of as an economic resource. Research participants valued the lake for having given people a way to make a living historically, as well as providing the raw materials for industry.

A lot of the oldtimers spent a lot of time out here [trapping and such], that whole generation lived off the lake, but now it's just GSL and Zirconium, folks like that who make their living off the lake. That's all lake water, if it wasn't for the lake they wouldn't be here. A lot have lived off the natural resources. Like the brine shrimpers.

One participant was impressed with people's ingenuity in being able to see these possibilities.

...Anything from GSL [Mineral], the harvest of the salt, and how the people came up with that idea, the technology and what they get out of it, the by-products of the brine water—it's fantastic—it's a fantastic resource to this state.

While some of these uses of the lake are relatively recent, others have been around for a long time, such as harvesting salts from the briny waters.

Historical Uses of the Lake

The lake has provided people with ways to make a living, or to supplement their living, since before the European settlement of the area. While harvesting salt continues to be a lucrative industry, although one that has changed tremendously over the years, other ways people made a living from the lake in those early days are not pursued anymore.

The lake helped a number of people get through financially lean times, including a few of the research participants and their predecessors. One participant told about his family harvesting salt to get through the lean years of the Depression.

During the Depression we fixed up a wagon with large tires and we'd go out there [to the dry lake bed after the water had receded in the fall] with horses and load up a ton [of salt] every day. ...The wagon was really light...and we could put about a ton of salt on it, every afternoon we'd go out and get a load of salt—that was pretty good money for depression years. Truckers from Montana and Wyoming would come down and buy it, to sell to the ranchers I guess.

He reported that he was about eight or ten years old at the time, and that he and his two older brothers would help his father with this endeavor. His job was washing off the horses when they got back, since salt water would splash on them. He continued the story.

...[T]hey was getting about 12 dollars a ton. Or if we bagged it, it was 25. That was pretty good when you never had any other income. 1934 was the year that white blight hit the sugar beets and they all died, it was a pretty lean year. If it hadn't been for the cows and the salt, we would've ended up on welfare.

Other people made money from hunting and trapping. Two Weber County focus group members had experience with this.

First focus group member: You know when you start thinking about the past, I can remember, my grandfather...made his living shooting ducks out on the lake and I've seen pictures of his wagons full of ducks and he'd take 'em in to 25th Street and sell 'em on the market there. And my dad, the first two winters that him and my mother were married, he made his living, and made enough in the winter to take care of 'em, trapping muskrat. And he trapped all them drains leading out to the Great Salt Lake and you know that's how he made his living 'cause he couldn't find a job anywhere. Times were tough.

Second member: I courted my wife trapping muskrats. I was out of high school, I couldn't get a job. So I trapped muskrats. I would travel three or four miles a day, set trap lines out—all my buddies, they were penniless but I always had a few dollars.

First member: Well, we all taught our kids to do that. My boys trapped muskrat for a few extra bucks for Christmas, you know, and we taught 'em all how to trap 'rats 'cause they could get some pretty good money out of them, you know, and, so, it was interesting, and it all comes back to the lake and the drainages going out to it....

A number of the farmers in the area used to graze their cattle on the exposed lake bed during the years the lake elevation was low. One of the research participants told about grazing between 90 and 100 head of cattle there.

When I got so many stock cows I'd run them out on the lake flats, there'd be grass out there so far, a ways north where Howard's Slough emptied out it irrigated it, and McDonald's Slough did. The cows would get out there so far that I'd go out and drive them back a ways, you couldn't even see my place I'd be so far out. Musta been close to a couple miles out towards Fremont Island. I ran those cattle out there until '74 when I sold them all.

Some fairly bitter court battles ensued when all lands within the meander line were declared state sovereign lands. That same participant was involved in some of those battles.

...I bought the pasture from the salt company, and the deed went back to the railroad—I had a quit claim from the railroad that said ‘the sovereign lands of the Great Salt Lake’—so I’ve been to court with the state over it. They tried to kick me off it, Fish and Game did—said they didn’t care what I had, it was state land. Went down to court and the judge said, ‘This is going to be good. That damned lake’s been nothing but a mud puddle.’ He couldn’t wait to get into it. The state got him to dismiss it, he didn’t have the authority. The state issued a trespass charge against me since I was still running my cattle out there, it ended up in court. I showed [the judge] my deed and told him that they’d been cutting my fences and running my cattle, and oh, it made him mad. He asked the state attorney, ‘What do you got to prove you own it?’ ‘Well, nothing now, but we can.’ He said, ‘Well I’m giving you thirty days to prove that, otherwise I’m issuing an injunction against you to leave the man’s cattle alone and leave the fences alone.’ Then I didn’t hear anything more about it. I sold the pasture to a man and he wanted the history of it, so I went down to the courthouse and they had it on tape. The state had decided not to contest my claim, and I didn’t know that for years. But the lake had come right up right after that so I couldn’t run the cattle out there anyway. ... The politicians went to the hearing on it...[one] from Idaho and [the] Governor, [a man] from the U of U, and a senator from Nevada all testifying it should be the state’s, it’s being artificially dried up by man, so [I] shouldn’t be entitled to all that land out there. And then the lake came up and did away with that theory. I ran into [the] Governor down in St. George later and he laughed about it.

A resource manager talked about how the history of the state being granted sovereignty over these lands has affected his relationships with long-term landowners in the area.

[H]istorically you have to realize that everything we’re sitting on, everything Ogden Bay is built on was community pasture—so there’s a lot of animosity about it... They’re very upset about it, because as far as they were concerned, for example on this road down here you’ll see a whole bunch of fences heading west and every one of them is a landowner, and at some point in history they owned from that heading

west, all the way to the Great Salt Lake.⁵ Then DWR came along and said no, it's state land. There's a Supreme Court ruling that says it's state land, but as far as they're concerned, it's their land. There's animosity now where they blame us for everything from mosquitoes to flooding.

Contemporary Resource Use

Only one Davis County research participant talked about the lake as an economic resource, an elderly, long-time resident who had both a family and personal history of having used the lake as a source of income. On the other hand, the participants in Weber County, and one couple in Box Elder County, were very familiar with the ways GSL is an economic resource, for the area and for workers. Of these, three residents have worked on the lake. The participants from the WC Weber area, where I conducted two interviews and a focus group, were keenly aware of lake-side industries as significant employers of area residents. Members of the focus group were also cognizant of some of the downsides of living so close to these industries.

Participants talked about the commercial brine shrimp industry and Trestlewood.⁶ They discussed the three industrial-type entities clustered together at Little Mountain,⁷ at the end of the road several focus group members live on: G.S.L. Mineral, Western Zirconium, and the Air Force's Little Mountain Training Annex. Participants also talked about the railroad, with tracks that go through WC Weber to the railroad causeway (located there specifically because of the lake). In contrast, the primary industry mentioned by Davis County participants was tourism. These differences are logical. The

⁵ Meaning the water. The court ruling declared everything within the surveyed meander line as state sovereign land, independent of actual water elevation.

⁶ Trestlewood is a business that harvested the sunken timbers from the original railroad trestle, and mills and sells the recovered timber.

⁷ Little Mountain is a hill that is the most western point of land in Weber County, sticking out into the lake area. The main road that comes west into West Central Weber from Ogden ends at Little Mountain.

industries mentioned by Weber and Box Elder County participants are either located close to where they live, or are industries participants had worked with or had other associations with. On the other hand, with the Antelope Island causeway being one of two main access points to the lake, Davis County has emphasized tourism.

One participant had worked on the lake year-round, in a wide variety of capacities. He worked with brine shrimpers and with Trestlewood, conducted recoveries on and below the lake, and said he has spent more time on the lake than “probably anybody in the state.” He described some of the experience he had with the lake.

I’ve been shipwrecked, I had the boat sink out from underneath me, literally. I’ve rescued other folks, picked up airplanes.... Done a couple body recoveries, including [my wife’s] dad. And had a lot of fun out there, too. I’ve worked with the brine shrimpers almost every year since we’ve been down here.... I know we don’t care to repeat a lot of those experiences...but it’s been good out here.

When his daughter was a teenager, she worked for him as a deck hand for a season, with the brine shrimpers. His son was working in the harbor, processing harvested brine shrimp.

A long-time resident talked about his impressions of the brine shrimp industry during the Weber County focus group.

It’s quite an industry.... You know, I lived out there for years and years and years and never dreamed what was going on in our backyard, but it’s a multi-million dollar industry. It’s a cutthroat industry, but it’s fun to see how them guys, they handle brine shrimp the same way they do fish in the ocean and it’s really interesting...living out here we...should’ve knew a little more about it.

Trestlewood was also of interest to Weber County focus group members.

First focus group member: The other really interesting thing that I never knew... was the sawmill and the lumberyard out there [on Promontory Point]. They will be harvesting this beautiful lumber for another 20

years. ...From the trestle. They been on it for, oh, 10 or 12 years and a family bought all of the wood that was in the old trestle for one dollar and he will make millions, but they pulled up all them old pilings and timbers and they got 'em out there and they got 'em stacked. And that's what they're building all these beautiful ski lodges, like Snowbasin, all that, those new lodges were built out of this trestle wood out here in our backyard. And it's just beautiful, that wood out there stacked up, you just wouldn't believe it. I'd love to have a home built out of it.

Second member: There's a huge barn built down there at...Cove Fort, and it's all out of that wood out of the Great Salt Lake—the LDS Church purchased that and had it all cut and it's a beautiful barn. I wish it was on my place.

First member: Boy, I tell you that wood is so beautiful. It's been in the lake for, I don't know, what was it? Fifty, 80 years or somethin' ...and so it was cured on the outside with all that salt brine, and it just cured those logs to where they're just beautiful and then they pull them up and they cut those white edges off and it's just amazing....

GSL-related industry at Little Mountain. In WC Weber, the lake has created some difficulties for industrial development. In addition to the moratorium on development, the water table has been a barrier. One of the focus group members explained.

[O]ut by Little Mountain, we would see tremendous industry out there, in fact now we would have had part of the state jail, and we would have had...a huge garbage dump-disposal site but they...found out the water table came up too high and the state wouldn't let them. So...there's not only the flooding but there's also the ground water level that gets really high out there.

Despite these problems, Little Mountain is home to three industrial-type entities. The research participants from the area saw this as a complicated situation.

I would say one of the negatives—it's a positive and a negative—is industry that's come in. The positive is it's afforded a lot of people in our community occupations and jobs and income. The negative...is the traffic is unreal. ...about three days ago I just about met my end when a fellow going way over the speed limit almost hit me and a load of hay trying to pull onto the road. And animals, you can't have animals, dogs at all anymore. If you do, they have to stay in a kennel—they have to be confined...if they're out for five minutes they're dead. The traffic is

terrible on that road.... Even fifty miles an hour is way too fast at times. And our children, you know our kids walk up and down the roads. It's a very hazardous place to live, as far as the traffic is concerned. But, on the other hand, the industry has afforded us to take out a tax base to where we have a nice park that has enough money to support it. Where we never had that before.

Other participants were also concerned about the traffic problems.

12th Street that comes out here, if you were to...monitor that single road all day long, it would have more, in Weber County...more semi traffic on it than any other road other than the interstate. Because they are constantly, all day long, up and down, 10 wheelers with pups, dualies—big trucks with double trailers...just a lot of traffic. And that's the only downside to the whole process out there...

...And it's also, I think, very, very sad that you live so close to the park and the arena that the kids, I'm sure when you grew up that you could ride your horse to the arena, you know you could just saddle it up and take it. ...But now, with these trucks, with the employees that have to drive 10 to 15, 20 miles over the speed limit, the parents now have to trailer the horses to the arena, and they might only live two to three blocks away. But the industry has made it necessary to do that.

One participant was frustrated with dealing with the railroad tracks near his home.

Before we totally leave the industry negativisms, I think it needs to be mentioned the problem with the railroad.....we have to put up with a lot of railroad traffic. ...last Christmas...the trains were stopped and the bells were ringing, the lights flashing for like 25 hours straight.

However, for long-term residents in the focus group, the hardest consequence of the industry at Little Mountain—in this case, the Hill AFB Annex—has been the relatively recent end to the lake access the community had enjoyed.

...[B]ut the government, ...they came in and took over...the Base part⁸.... That was the fun part of the whole Little Mountain and faced the lake and the shores and that's how we had access to go out on the flats....

⁸ Referring to the Hill AFB Annex.

...[A]t the time that we were young you could go all over that area, now you'll be in handcuffs if you try to do what we did.⁹

Newest resident in focus group: See...I didn't even realize that the Army¹⁰ was there 'cause my parents came out to visit and remembered Little Mountain so we went out to go for a ride and got stopped... I had no idea there was...

Group member two: Got escorted off real fast, didn't you?

Newcomer: Yes, very fast. So that kind of kept me from going any further, I just figured you can't get, you know, any closer.

Member three: And you can't.

One participant referred to these changes as “progress,” but observed, “[W]e don't enjoy the lake like we used to because we're shut off from most of what we enjoyed as young men.”

Don't think of it as a resource. In addition to the concerns raised by these neighbors of the lake and the industry related to it, other participants raised general concerns about treating the lake as a resource.

I'm not terribly attached to it as a resource—a place to harvest minerals. That's not part of my attachment...I just don't even like the idea of thinking about this as a resource because it just seems like such an endless, worthless... Once you let people start to use this as an economic opportunity, you cannot turn it off.... You have people who have become totally financially dependent on—doing whatever it is they do.... And then it becomes their right, not a privilege anymore.

Synopsis: The Lake as an Economic Resource

Great Salt Lake has been seen as an economic resource since before the area was settled. Some participants had family ties to early uses dating at least back to the turn of the 20th century, several had used the lake as a source of some income, and three still did at the time they spoke with me. However, participants from the WC Weber area were

⁹ Because of military security at the HAFB Annex.

¹⁰ This participant is actually referring to the Air Force, rather than the Army.

also aware of community costs from lake-related industry, whether from traffic, nuisance, or lost access to the community connection to the lake. Still other participants preferred not to think of the lake as a “resource” and expressed concern that the economics blind people to the natural.

The Lake Needs to be Protected

In addition to the concerns about industry and commercial development noted above, a number of research participants saw the lake and its related sites as a place to be protected and preserved. These concerns focused on several aspects of the lake ecosystem, and were raised in each focus group in addition to a number of interviews, and expressed by a variety of residents and resource managers with differing perspectives.

Leave it alone. Some raised concerns about further development of the lake and islands for recreation and tourism, as well as more general concerns for the protection of the lake.

I like all the native wildlife. ... To me, we shouldn't be out there harvesting brineshrimp... because it undermines the migrating waterfowl. The whole idea of taking this bay out here and turning it into freshwater lake for boats and such.... What are these people thinking? About themselves. ... [T]he more we develop, the more pressure there will be on these areas to use them as recreational settings. And I worry about that a lot.

I don't want it developed. I understand why some do—economically I understand that. ... I don't want it messed up. I don't want that balloon thing they have every year out there.¹¹ It would be nice if it could've stayed the way it was in the... early 80s, when I was going... down to the island. ... I want them to still take the salt out of it, I understand that, they've been doing that for a whole long time, that's OK. The brine shrimp and all that, that's OK, they've been doing that for a long time,

¹¹ The annual hot air “Balloon Stampede” held at Antelope Island.

too. I don't want them to pump fresh water into it, I don't want them to pump anything out of it.... It would be really nice if we could just leave stuff alone, but I understand we can't. But that one I'd like to see left all alone. Just leave it be.

Personally I'd like to see the islands stay the way they are. I heard talk of like a nature preserve out on Antelope Island, that sounds great to me, but I'd sure hate to see a lot of commercial development happen on the island—or anywhere else around the lakeshore proper.

When focus group members were asked about the most important thing that had been talked about during the meeting, one Davis County participant advocated keeping the lake and islands the way they are without further development.

Having it stay the same. The lake, not to change the lake and the islands. Can't do much about people trying to build...around us, where we can build, but the lake and the islands ought to stay--

Protection of wildlife. Other research participants were concerned for the protection of the wildlife and habitat associated with the lake.

I would like to see them just really be able to preserve the wildlife. To me that's really important. ...[W]e're in a flyway right through the Great Salt Lake. It's amazing, most people don't understand all the shore birds that live in the Great Salt Lake that—I mean, if it wasn't for the Great Salt Lake, they would not be able to migrate to where they go, so it's not just the waterfowl that we like to shoot, it's all the other fauna that's out there along the shore.

Some distinguished between the native wildlife and invasive or non-native species, whether animal or vegetative.

...I don't like non-native species, and so I let the managers trap the raccoons [on our property]. ...[B]ecause they're not a native species, and...they're so destructive to our native species, I'm not tolerant of them. I'll lay my body down in front of anything to protect native species, but I don't like these nonnative species.

They're spraying out here, and I hate the chemicals, but the idea is to get rid of the invasive, non-native species, and I'm like, O.K.

Pollution. A few participants were concerned about pollution affecting the lake, related sites, and the wildlife that use the ecosystem.

You know what I wonder? Is what is the effect on the lake of all the people moving in, 'cause the water gets treated and dumped into the lake. What happens to the lake when all these people move here?

Just leave it be. Stop pumping the sewage in, too, I would like to see that.

The issue came up in the Weber County focus group, where participants raised concerns about pollution from industry and further development.

...I think that can be quite... a damaging thing to your wildlife and so forth.... And they could pollute the Great Salt Lake, I mean, you know, they've polluted rivers—the Hudson River and so forth, what's stopping them from starting to dump into the Great Salt Lake?

In the context of this comment, group members raised concerns about Western Zirconium in their area, and MagCorp to the south of the lake. Another participant raised concerns about light pollution, noting that it is another form of pollution “that comes with population growth.”

Concerns about pollution were also raised by a resource manager, talking about the environmental problems he is dealing with at the refuge he manages.

I've got all kinds of environmental problems. We have horrendous mercury levels, iron levels, selenium levels, PCP—we still have DDT. Yeah, people think it's so pristine and beautiful, but the lower Weber is one of the most polluted rivers in the United States. Heavy metals in the head waters from the mining tradition, going through the industrial sites in Ogden—what a lot of crap. That's a negative, I guess, about living out here. Knowing that not far from the house the soil could all be full of toxins.

This manager spoke about water pollution, chemicals and toxics including high mercury levels. He talked about Little Mountain being discussed as a possible Superfund site because of the toxins from Western Zirconium and from the military at the Training

Annex.¹² This is a significant development given the nearness of the population in WC Weber, and their history of recreation at Little Mountain, however I got no indication that any of the research participants there were aware of these problems.¹³

The Legacy Highway battle. One resident had been very active in fighting the siting of the Legacy Highway in GSL-related wetlands areas. She expressed her frustration about the response to the issue from local residents.

...[T]hat just made me so angry, how little Utahns cared about something as precious as this. As their environment. ...I was so angry...that those people could be so short-sighted.

She described her observations, saying people started out feeling strongly against siting plans.

I went to all these hearings about the Legacy Highway. ...when they were first proposing it, they had a meeting at Bountiful Jr. High and at that meeting there was just overwhelming opposition, and it was nice to hear. And it was because ...Route C was going to bring it right through the marshy areas. And I thought it was great, the people said, ‘absolutely not, we’re not going to do that.’ And it was people who had grown up around here and had traveled up here, had come out to see the eagles, and had hunted out here when they were kids—and that was what they were drawing from.... It was an attachment to place. It was an attachment to the setting and to the activity they had done out here.

She became frustrated with these residents later, when they became willing to accept a compromise that still impaired some wetlands areas, a position she thought was wrong.

But the second meeting we had...the Army Corps had said, ‘no, you can’t do that route anyhow, that’s pushing it.’ And that’s when there were people who said, ‘we need to protect the nesting environment—and we’ve done that. If we put the road in here, they guarantee that they’re not going to bother anything to the west, this is a way of protecting the space. And I want to have that nature hike preserve thing along the road so I can take my kids there. I have done my part to protect the

¹² As noted earlier, a portion of the Training Annex has been named a Superfund site.

¹³ I did not find out about the Superfund designation until I had completed the qualitative research in that area, so could not ask participants if they were aware of it.

environment by doing that initial opposition, but now we have a right to do it in this more moderate way.’ And so for those people...it’s like the whole idea of the frogs in hot water. You warm it up, warm it up, warm it up, you don’t realize when it boils you’re going to die. That’s how I characterize those people—they thought they were doing the right thing, they thought they were doing the balance between their needs and nature’s needs, but they were wrong—I thought.

The need for regulation. Some participants felt regulation, particularly of industries using the lake or located near the lake, was critical for the health of the lake system.

[P]robably one of the greatest things that we have all taken for granted was the brine shrimp population. You just have no idea the animals that live on those brine shrimp. And, so that’s why they’re watching the industry very closely so that they don’t let them harvest too many brine shrimp, or we won’t have the shore birds or all those other animals that live on those brine shrimp, and it’s very important. ...There’s so much money that these people that harvest brine shrimp would clean that lake in one year if they turned them loose, so they regulate them very closely....

When a focus group member mentioned that industry is needed, another responded, “It has to be highly regulated or industry gets out of hand because there’s so much money in it...” These comments about regulation were all made within the context of appreciating the jobs these industries provide, and their contribution to the local economy, including the tax base.

The issue of diverting water. Both residents and resource managers raised concerns about water being diverted from the rivers that feed Great Salt Lake. A local resident wondered what would become of the lake.

[W]hat’s gonna become of it? Because there’s gonna be some changes with the Great Salt Lake. We know there’s dams being formed, or being ready, and it’s going to recede... we’re gonna lose a lot of what goes into the Great Salt Lake.

Resource managers raised concerns about this issue, including some that affect GSL's nearest neighbors.

What really worries me is, as the Wasatch Front grows and grows and grows and grows, and we start putting more strain on the resources...if we keep pulling all this water out of all these creeks and streams and aquifers, what's going to happen when there's not enough water getting out to the lake?

I've heard that the state doesn't actually own any water rights for the Great Salt Lake.... [The state] wanted some information on the impacts of what would happen if the water remained low. ...it really would scare me, to think that probably one of the most major fly-ways could literally dry up and the impact that would have on the birds—which would have an impact on everything else. It would really be pretty serious... It is [scary] to me, because I see all of this growth and all of this need for capturing the water before it comes here. And if that water goes away, they think the dust is bad now? Holy cow! And it's not just that, dust would be the least of our problems. I mean the environmental impact would be huge. Plus you've got a brine shrimp industry that's a multi-million dollar industry that would be gone.... If we don't have any water rights and they want to do all this development and keep water from coming in, what's this going to look like? Not a pretty picture. And I'm not sure anybody is taking it into consideration at all.

One resource manager mentioned the perception some have that the water feeding Great Salt Lake is wasted.

[S]ome of what I hear is that water that goes into the Great Salt Lake is wasted. And I've heard that a lot, there's still a lot of folks out there that don't understand that there's a value to the lake. So let's dam up the Bear completely and pump every single gallon into a big city.

In Box Elder County, where the Bear River is used by a number of farmers on its way to GSL, a public official told me,

[W]here [Great Salt Lake is] not a fresh body of water, it's not really something that's useful in the agriculture world. ...nope, it's not useful to agriculture. I think that it's just kind of an accepted thing that it's there, and that's just matter of fact.

A Box Elder County farmer argued it would be useful to dam the Bear River.

The Bear River is the only undeveloped river in the state. There are environmental concerns, there are economic concerns. ...[The high water in May is] all going to waste, the Bear River has no use for it, we could sure use that about next August, as far as storage goes. It's not a clean issue, given the environmental concerns, a reservoir is kind of like a prison, "not in my backyard." There are all these different sides.... Sooner or later there is going to be a storage facility. And it's going to benefit—sure, wherever the reservoir is it's going to have a negative impact, because some people are going to be flooded, but outside of that I don't know of anyone who'd be opposed to it. Because the wildlife and environmental concerns—it would be nice if [the Migratory Bird Refuge] could freshen up things, and control botulism and all those things, and we could control how much water we have, as far as irrigation and that sort of things. There are a lot of pluses—and sooner or later Salt Lake City is going to want some more water to drink. There are a lot of issues. Once the Bear River crosses there in Corrinne, the bridge right there, it's gone....

This is the sentiment the resource manager was describing, that water going into Great Salt Lake is seen as wasted—once it crosses the bridge, "it's gone."

*Synopsis: The Lake as a Place that Needs
Protection and Preservation*

A number of research participants expressed a sense of the lake as a place that needs preservation and protection. Some focused on preservation of the lake, its ecosystem, and the wildlife that use it. Others focused on protection—from pollution, light pollution, and encroachment by development, industry and freeways. The need for regulation, particularly of industry, was raised. And several raised concerns about the diversion of waters that feed the lake.

The most recent move-in among the members of the Weber County focus group expressed having learned a good deal from the members who had lived near the lake for a long time. When I spoke with her in a follow-up call after the group, she talked about how much her appreciation of the lake had grown as a result of the group.

My worry now is that it's not going to be taken care of...that people will be like me and not realize what's out there.

Community Connections to the Lake

The long-time residents who participated in the Weber County focus group, all residents of West Warren (in WC Weber), talked about the lakeshore on Little Mountain having been an important place for their community. The annual Easter celebration that occurred there was a traditional community-building celebration.

[W]hen Easter came it was like Christmas. We went down there as young men and camped.... And the annual Easter egg hunt was a big thing. The Sunday School sponsored it and we would go down there and they would hide eggs and we would find eggs all over the mountain and explore....

Since losing access to Little Mountain, the community had continued the Easter festivities, but long-timer group members were quite adamant that it had lost some of the magic. Little Mountain was also the point of access for people to spend leisure time on the shores, for teenagers messing around on the salt flats, and for children to explore the shoreline.

Little Mountain was not the only place the community had lake-related events, though. The group member who moved to the community most recently talked about a community outing at Antelope Island.

[W]hen we first moved out there the first thing that the community did...was an overnighter out at Antelope Island where we all went out. And we were in tents and that and they had breakfast and we met a lot of the people...

When I spoke with one of these participants in a follow-up conversation after the focus group, he mentioned that something he had thought about a good deal since the

group was how the community had a tradition of lake-related recreation, including community events like the Easter celebration. He had also thought about just how much employment the lake “gives our community,” referring mainly to Great Salt Lake Mineral.

The relationship participants described between the community of West Warren and the lake stood alone in the interviews and focus groups conducted for this research. While the members of the Davis County focus group described some degree of shared relationship with the lake and lake sites at the neighborhood level (which I will return to later), West Warren was the only place I heard of a whole community having this sort of shared relationship with GSL.

Attachment to the Lake

For a good number of research participants, GSL was a place they felt a connection with, an attachment to.¹⁴ This was expressed in a wide variety of ways, in varying degrees.

Level of Connection or Attachment

For some, the connection with the lake was stated rather mildly.

I’m connected, I like the lake, I’m just probably not as connected as, as [another group member] is....

I kind of like it. It’s always there....

¹⁴ In speaking with research participants I used the words attachment and connection interchangeably, because during the first few interviews participants appeared more comfortable with the word “connection.” After noticing this, I used “connected” more frequently than “attached,” although I did make a point of using both words. This is why so many references to “connections” appear in the quotes from participants.

This more mild expression included some fairly generic terms, like a focus group member who stated, “I think we all have a connection, you know, in a sense.”

A few participants felt a need to qualify their expressions of attachment, such as this woman responding to the question of how connected she felt to Great Salt Lake.

Well, like on a scale of 1-10, or what? To the lake itself, I mean it’s interesting...it’s really easy to not think about being connected to the lake. But it sort of depends on how you define the lake, I guess, if it is not just the salty water—the dirty, salty water with effluent in it—but really, the wildlife, the importance of it as a flyway, I’d give it a 100.

Another participant found it important to specify that what he was connected to was the view, not anything else.

Some research participants indicated that they do not visit the lake or its sites very often, but still feel connected to it.

I don’t go out there a whole lot, but yeah, I enjoy living by it, I do.

I can’t imagine being without it. I don’t directly deal with it.

A number of participants expressed a solid appreciation and attachment to the lake and different lake sites.

You know I love it. I go for a walk every day, I just go out and enjoy the view. I walk up the hill and it’s gorgeous. Go for a walk and you find salt crystals just laying around. You can’t do that anywhere else.

For me it’s more of a—I don’t know, an identity.

I think, for myself, I’m connected because it is my whole life. I mean, I’ve been there my whole life. It’s always been a part of—it was a part of me growing up, and it’s a part of me being an adult now. You know, it’s just there. So, I’m connected.

Oh, I’m definitely connected with the lake and the island. It’s one of those unique places that I don’t think it would be hard for most people to fall in love with. Or at least have a connection that is—whether love

is the right word I don't know—but something about it draws people to it.

One woman said she had not moved to the area because of the lake, but that it became quite important to her.

And I don't know that at that time I specifically wanted to be there because of the lake, but over time it became one of the reasons I liked being there. It was comforting. So—when it flooded, we couldn't go to the island. And I would drive out there and look at it, just sit and look at it, watch the waves go over the causeway and just wait. Just wait. So I didn't [move there] for that reason, but...it grew to be important.

I wouldn't have known that I was drawn to it, probably, had I not moved out there, and then had such an affinity for it....

Some research participants expressed their feelings about the lake and its related sites and environs with exuberance.

I loved the marshes and wetlands and waterfowl and birds and all those kinds of things... I always liked the lake, and I always loved being around it, and the wetlands and things associated with it.... I liked the area and I loved the lake....

I don't think you could not help but feel a connection to the lake...the wildlife, the by-products of the lake, there's just something about it. ...[J]ust the life, the wildlife and so forth that just, that draws you to it. ...I don't know how you can't draw a love for something that is like that.

[I]t was closer to my heart when I lived [on the island]. It was something to be appreciated. And whether I was out walking my dogs or riding my horse, or swimming on a moonlight night, floating in the lake itself, it was a pretty good experience. And of course the birds were amazing, too, just the migration of the different birds. ...I could see them, I could see the thousands of birds out there and learn to pick out the difference between seagulls and the terns, and actually learned a little about their habits and how important the Great Salt Lake was to the birds. And to the rest of the place, for migration.

Additionally, when asked about the positive and negative aspects of living near the lake, some research participants did not name any negative aspects.

You know, I don't have a lot of negatives. At all. ...it was wonderful.... So I don't see negatives, I just see positives.

I haven't gotten any negatives, I'm trying to think of some negatives.

I'd miss it. Some focus group members talked about how much they would miss the lake if they were gone.

[A]t one time, when I had to leave to go to the Navy, the mountains were my thing. I missed those mountains terribly. I was homesick for the mountains. If I had to leave now, I'd be homesick for *that*, because I've come to really enjoy the lake out there.

If I moved, I'd miss it.

[W]e have a piece in West Point we thought about going to, and we're not going to have the view... but I think I'm going to miss the lake.

One focus group member commented that it would be interesting for someone in the group to move away so everyone could see how that person liked living away, and whether they missed the lake and the area. Another member quickly responded, “[It’s] not going to be me.”

One woman who spent a good deal of time at the lake did move away, and found that she missed it. “I liked it out there—a lot. I miss it. I miss it.” She continues,

[I]t was important, but it wasn't obviously important. Does that make sense? It's almost like you think your grandma's going to be around forever, and they're important, but they're not that obviously important, it's kind of like that. A security.

I asked if she meant it was something she took for granted, something she did not really realize the significance it had.

Until you take it away, and then you go, ‘wow, I am missing something.’ That's it exactly, that's it.

Because I think that that sense of community people—you know, population community—you can find that anywhere if you try. But you can't drag that, you can't drag a body of water and an island and a

causeway around with you, and you just don't get to find that. It was so close.

Other research participants could not picture themselves leaving the lake area. For example, one long-term resident said, "You know...I couldn't imagine moving away and not having the lake there. That's, that's just part of, part of life, I think."

Bury me there. Several research participants said they wanted to be buried at, near, or overlooking the lake. Some had already made arrangements for this.

Wife: He wants his ashes scattered up the hill here, so I guess—
Husband: Just dump me out over the hill, over the lake....

I told my husband I want to be buried in West Point, right there on the top where you can look down on the lake, not that you can look down--...there's a big enough connection that I want to end up there. ... Yeah, that's pretty connected, isn't it? If you're gonna put your bones there. [My husband's] puttin' his in Wyoming though so...it's a race to see who goes first.

I've already bought a burial plot in the local cemetery [near the lake], that's where my remains will probably go as well.

Talking about Their Attachment

Research participants talked about their connections and attachment in a variety of ways. These included family connections due to family roots, memories of their children growing up here, and connections they had because of seeing how important the lake and lake sites were to their children. Some participants talked about connectedness through their own experiences with the lake. These discussions with participants have all been addressed in more detail earlier. However, there were also other ways interview and focus group participants talked about their attachment to the lake.

Here by choice. Some participants made a point of saying they chose to live near GSL.

[W]e've lived here this long by choice. I've had the opportunity—a few opportunities in the last year—to go elsewhere.

Some moved back by choice, like the woman mentioned earlier who said it took her eight years to convince her husband to move her back home.

Differing relationships with the lake. One middle-aged woman from Davis

County talked about her attachment in terms of a protective duty to the lake environs.

I just think we need to protect it for the [species]...that's my goal. And so for me, to sell this place to someone who wouldn't care about it would be unthinkable....

Another woman talked about the lake and lake sites having been a safe place for her, a refuge she could turn to when she needed solitude.

There's a feeling of—at least for me...a real safety for me. Not just—let me see if I can put this into words. There was a safety for me because I knew there was always some place I could go that I could be OK by myself, and it was driving down that causeway down to the island. ...I don't have a place up here. I did down there. And whether it was with...my dogs—or you know, by myself, or take the children down there or whatever, it was just always at that place.

...If I wanted to wear my slippers, I could just get in my car and go. I could just go down there. Mom's in a bad mood—'she's down at the lake!'

The language of attachment. Some research participants referred to the lake using first person possessive language: “my lake.”

I think the sunset makes you feel connected to it. You know, you just look out there and it's like, “My Lake.”

I'm always excited when I see a tour bus or a school bus going out there. I think they're going to see my lake and my islands.

Others refer to the lake and lake area as home. One elderly man referred to the lake as home several times during his interview, for example, “It's just my home.” The theme of home and homecoming surfaced a number of times during the Davis County

focus group, with one man saying that was the first word that came to mind when he thought about living near GSL. Another man talked about returning home after traveling outside of the area, and a woman talked about moving back after living away for many years.

[After traveling] But soon as I came back to this valley, I saw the mountains here, mountain there, lake out there: Good to go. I live there.

Well I was kind of—I was born there! I mean, and then...I left for many years, and...it was kind of coming home when I came back. And I enjoy it there now.

GSL as amazing (and other adjectives). Research participants also used a number of other positive phrases to describe the lake and its environs, such as “It’s an amazing place....”

[I]t was always a mysterious place to go. It was like going to the ocean. It was a fun place to go. I like the lake....

It’s got some interesting properties out here, I’ve noticed, though. It’s very interesting to me.

...I think it’s wonderful. I like it. I just imagine what it was like to be the first man to walk into this valley with that big lake, not knowing what it was.

A resource manager who had lived onsite at two different lake-related sites described the feeling she had for the lake.

If I had to say, I would say [the feeling is] one of wonder, because it’s so big, and what it was millions of years ago...it was this unbelievable lake that we can’t even imagine...and then to what it has become now, and the importance it has worldwide, not just to the state. I mean my whole background, I’m definitely an outdoors person, I appreciate wildlife, and when I start thinking that what happens to the lake affects the birds not only here, but potentially as they go to their winter home or their summer home, how it’s going to affect them during their migration and when they actually get there. Whether it be the quality of the lake, the human activities on the lake, I think it all has potential impact on our wildlife.

And then, just the diverse—I mean, yeah, it’s really salty, it’s saltier than the ocean and the Dead Sea...and yet we have this unique resource, and there’s nothing like it in the world. I mean it’s pretty amazing. So I would say just one of wonder and appreciation I think. Sometimes being out around the Great Salt Lake and listening to the birds and walking the marshlands...it allows you to think...it helps you clear your mind and realize what’s important. And I guess in a way it kind of makes you feel small in the scheme of things, you know, hopefully that lake is going to be there after you’re gone and still play the role it does. I just hope that more people come to appreciate it and preserve it.

Sense of varying places. Because the GSL system is so large, it is not surprising that some participants expressed place attachment or a sense of place to different places nested within that system. A man who lived just north of the bays in the northeast portion of the lake system talked about his sense of place with the lake.

So as far as the actual lake itself—this niche, yeah, I live with it every day, because this is part of it. And I don’t think people see it that way. I think people see the Great Salt Lake as a lake that has its salt value and mineral value, and the Salt Flats and Jetty and that funny looking tree and all that kind of stuff out in the West Desert. But this end of the Great Salt Lake—we’re the delta. So we’re the last drop-off before you actually see the lake. So it’s an independent environmental niche.

People expressed connections specific to other lake-related areas as well, for example, “I’m connected, very connected to Ogden Bay.”

A County Commissioner’s story. Here is an example of how the dynamics of place attachment can work. One of the county commissioners said he had not really thought about it before, but that he was more attached to the lake than he had realized.

[Q]uite honestly, I had never really thought about what’s my connection to the lake. I’ve been living by it all my life. Having had it as a part of my life while growing up and now as an adult, with the involvement that I have. So it’s an interesting thought process you’ve triggered.

During the interview, he made a number of comments that indicated an interest in and understanding of many of the dynamics related to the lake.

It's not just a body of salt water anymore, is it? There's more to it than what meets the eye, that's for sure.

And also it's kind of like you're in a different world when you're that close to the lake, too. Because it is kind of a different world out there, with what it offers to see, for learning.

Based on comments like these, a good knowledge and understanding of the lake ecosystem, and his general tone throughout the interview, I made the observation that he talks about the lake like somebody who feels attached to it. He responded,

You know, I didn't really realize that I am, but I think I really am. I mean I do enjoy it, I do like everything about it, just—just living by it, Antelope Island, the bird festival, and everything in between, and that kind of stuff. It wasn't my major area of focus in my studies and stuff, it still interests me.... We just take it for granted, we don't realize what we have right here.

Synopsis: A Very Positive Sense of the Lake

There was clearly a good deal of place attachment among the focus group and interview participants for this research. It was expressed in very different degrees, from mild sentiment to passionate exuberance, and in a number of different ways, including talking about how much the lake would be missed if participants moved, and some referring to GSL as “my lake.” It is apparent that a good number of these research participants had a positive sense of place with the lake, in some cases, a very positive sense.

Taking the Lake for Granted

Like the commissioner above, several participants talked about taking Great Salt Lake for granted. This phrase had a number of different connotations, though. Some, like the commissioner, expressed positive feelings about the lake, and their taking it for granted was along the lines of assuming it would just always be there. For others, the lake was just a taken-for-granted part of the landscape, an unimportant backdrop to things that really mattered to them.

...but I enjoy it. Some people who knew and enjoyed the lake said they did not really think about it, they just assumed they could count on it to be there. One example of this was the woman who compared how she thought about GSL to how she thought about her grandmother—she just assumed both would always be there, along with the security they both represented to her. Other participants with positive feelings about the lake expressed similar sentiments.

First focus group member: [I]t's just ...all the people passing us and going up and down and around in this area that affect us. I don't think the lake—the lake's there, not going anywhere. That's the way I see it.

Second member: It'll be our only constant, I think.

[Y]ou know I just guess I take it for granted, I just have always lived there... just enjoying it...and I think I take it for granted but I like living by the lake...

Towards the end of one of the focus groups, a long-time resident said that for him, the most important thing of the evening had been realizing how much he takes the lake for granted.

I would say that the one thing that I learned tonight is that I really take the Great Salt Lake for granted. I never realized that it's one of the special things in my life that probably I've overlooked, and didn't

realize it, how it has affected our community as well as my personal life... You live around it. You was a part of it, it was a part of your life and all of a sudden you're saying, "wow, yeah, it really was," and it's still there and what's gonna become of it?

Not a big deal. For those who take the lake for granted as a rather unimportant backdrop to their lives, the language is substantially different from the examples just presented. A public official from Box Elder County exemplified this well.

... I guess I'm just pretty naïve about the Great Salt Lake. It's just there, and that's what I think you would find most people in my county saying. It's just a body of water that's just there.

I can see the Great Salt Lake so I have the image, but that's it. [I asked, "It's more of a backdrop?"] Yes, and that's how it is for everyone out there.

Some parents talked about their children seeing the lake in similar terms.

I don't know that any of the three of them have any real feeling for the lake or the island. Maybe my daughter, I really don't think my boys do. That wasn't—maybe 'cause they were raised there, it wasn't a big deal, it was just part of where it was—'Yeah, that's the lake.'

[My children] didn't ever talk about it, it was just home.

Synopsis: Taking GSL for Granted

These two ways to take the lake for granted appear to be split between, on the one hand people with not only a sense of place, but place attachment, and on the other, people who likely lacked a sense of place. The first group expressed enjoyment and other positive affect for the lake, yet said they took it for granted. This is likely because the lake was so embedded in their day to day lives that they did not think about its presence or what it would be like if it was not there—they just took it being there for granted. The second group, those for whom the lake was just a backdrop—"just there"—did not typically describe themselves as taking the lake for granted, but their language implied

that they did. In looking at the participants involved, it appears this second group had little if any sense of place with GSL, and that “taking it for granted” in this sense was just one more manifestation of that.

That Stinky, Smelly, Mosquito-infested Lake: The Negative Aspects of GSL

Great Salt Lake has a number of negative aspects, everything from odor and bugs to lake dust, the salt, problems with water, and the perception that “there’s nothing out there.” For some research participants, all the lake meant was a collection of these negative traits. Others acknowledged these were challenging, but to them, the negative aspects were just a part of what the lake meant. At the top of the list of most commonly heard complaints: GSL is stinky and buggy.

Smell and Bugs

One theme that surfaced in interviewing both the resource managers and county commissioners was nearly all of them said something about bugs and odor being associated with Great Salt Lake. Their own perspectives varied. For example, the comments made by two of the commissioners were in sharp contrast to each other.

I’ve had just comments here and there with some people—about how big the mosquitoes are, and the smell the lake gives off every now and then when the wind blows the right way.

It’s more than just the stink of the algae blooms, it’s more than just the brine flies when they hatch. I mean once you get through those two items, if you go out to the island and stuff like that, there are so many things to see out there, you just don’t realize that, right in your own back yard.

The resource managers talked about what they heard from area residents, sometimes with frustration that this image had become such a stereotype.

...[N]egatives that I hear from [the local residents] would be things like the bugs. And there's a lot of times when, in the summer, when they'll leave their porch lights off because they draw so many bugs. Other thing they'll complain about is the smell....

Though with the regular citizen there's still a lot of them that have never been out here. And then there's still a lot of them, that because they've never been out here, still have those things like, 'well, it's buggy and it's smelly'—and today it's not. So there are still some of those misconceptions by locals as well.

A long-time resident addressed the same issue in a focus group.

...I don't think...there's very many people that could sit in this group that...hadn't lived out here and could express those same [positive] feelings. You get visitors out there, there's nothing—they'd don't like anything about it. It's a dead lake to them, it's a, you know, it stinks, there's bugs.

In fact, of 16 participants in the two focus groups, when asked to write down the first phrase that came to mind when they thought about living near GSL, five said “smell” or “it stinks,” and another said that would have been the second thing on his list. Three said “bugs” or “mosquitoes.”

The lake smell. Not surprisingly, given the above, many research participants talked about the smell from the lake. In fact, they talked about it a great deal, addressing a variety of aspects of the smell, and from differing perspectives. It is important to note that although a good many complained about the smell, there were others who did not consider it problematic, and some even enjoyed it. I include examples of each to give the reader an understanding of the lack of unanimity of perspective even on something mentioned so frequently.

Participants attributed the lake smell primarily to organic processes, and several indicated that the lake elevation has an effect. Davis County focus group members described it.

Focus group member one: And far as smell goes...it's just the organic matter.

Member two: Yeah, the brine shrimp...

Member one: Oh yeah, that and the water uh, the plants.

Member three: Depends on the level of the water...

Member one: Yeah, it does. When the water was high, you're right, it didn't smell at all, ever.

A variety of smell-related topics were discussed.

The other thing that causes a lot of the lake smell is the brine shrimp, when they decompose and get along the edge of the lake. I've seen them, they'll be...thick, the bodies of the brine shrimp that've died, and they'll decompose and that'll cause some of the lake smell too.

I don't think it's changed that much. In the years that the lake was up real high and never receded and left open flats, well I doubt if there was any smell then, I can't remember for sure.

...I don't notice the smell. And I think it's because, especially recently, the lake has been so low. ...And it could be that the winds just aren't right. It's not noticeable to me.

As could be expected, several participants commented negatively about the smell.

[Commenting on the area near the Antelope Island causeway] ...[T]hey got that long sweeping stinking, slimy, brine shrimp-infested, rotten—oh, that's where it stinks, that's where the lake stinks! That lake has a distinct smell...

...[I]t stinks. And it seems like when there's a breeze, when it comes from the west or a wind that you smell it more than other times. And it's just a smell that you know is from there, I don't know how we know that with all the smells that we have out there.

Several of the participants who did not have much else to say about the lake complained about the smell, in both Davis and Weber Counties.

Stinky, smelly, mosquito infested...I like living in North Salt Lake...it's so close to the freeway. But...I lived from Salt Lake to Midvale, in the past eight years, and I don't think it ever stunk as bad as out here, or not near as many mosquitoes.

However, a number of participants, primarily Weber County residents, indicated the smell does not bother them. They made comments such as, "It smells once in a while, but we're used to that," and "I don't even think the smell is bothersome, only once in a great while." Some noted that it bothers others, though.

And then of course, the lake does stink, and I observe it but it doesn't bother me either, like it does outsiders...you just get used to it.

Location matters a great deal with the lake smell. Box Elder County participants reported that there were no problems there with GSL-related odors. A county commissioner started to say that the only negative comments heard about the lake were "associated more with the stink," but when asked if that was much of a problem in the area responded,

No, I was just thinking, I probably hear more of that on the news, on the radio. Yeah, I really haven't heard a lot of it up here.

Weber County participants described it as being troublesome "maybe a couple of times a year", and say, "it doesn't stay around very long." Although one resident described the smell as "kind of a rotten egg smell," several Weber County participants compared it to an ocean smell.

And when that smell comes up it reminds me of when I been in California and smelled the ocean. It smells a lot like the ocean does, and people probably don't ever get that smell unless they live close.

To me it resembles...when I was in the Navy of course you're by the ocean constantly, and it reminds me of the smell of the ocean.

The lake smell in Weber County depends on the conditions.

It does have a definite odor by itself. ...certain times of the year, like the hot summer, we get the winds, it raises that level up a lot. Of course you have the decay, the brine flies on the shore, whatever else is there.

[Y]ou can always tell when there's a storm coming across because you get the odor of the lake. It gets kicked up or stirred up on the shallows, from the shallow shorelines and stuff....

Also within Davis County, the intensity of complaints about lake odor depended on the location. Despite some public perception, participants reported that Antelope Island did not have much of an odor problem at all. This was observed by rangers who have lived on the island as well as a resident who has spent a good deal of time on the island.

Farmington Bay will generate some pretty pungent odors, from the decaying material, both when the water is coming up and covering and moistening bacteria and organic matter, and it does the same when it evaporates off of it. So both of those occasions you get that smell, and the prevailing wind goes east, it's very rare that we get it here on the island. It can happen, but maybe 2 or 3 times a year, not often at all.

[P]eople complain about the stink, they just think the lake itself stinks, I think a lot of residents of Utah go, 'Great Salt Lake—I don't want to go out there, it stinks.' ...I think in general the attitude of your urban folks is that they associate it with 'it stinks, why do you want to go out there?' and you tell them, 'I want to go out there because you can see buffalo, and antelope, and coyote, and the birds—and just hold your nose when you go over the causeway.'

On the mainland side of the causeway, though, the situation is very different. This area is just off Farmington Bay, where eutrophication issues are problematic. Here instead of the two to three times a year mentioned above, participants reported they dealt with odor from the lake for two or three months a year, in the late summer when the lake level was receding. Several indicated it was worst during storms and when the weather was hot.

There is a confounding issue here, though. A sewage treatment plant located just a couple blocks south of the causeway has had a number of problems with odor. A long-time resident who lived very near the causeway explained the problem.

Yes, when the lake recedes, probably I can take that smell, but with the sewer plant, when you get a south wind it's worse. Now they've got that under control. I think that's probably the worst part of [living here], the smell....

We never notice it unless there's a wind [from the south]. ...they pile the sludge up from the sewer plant—they stir it or something, and that would create a smell. The people to the east and the south, they'd just have to stay in the house with the door shut, it was so bad—but just once in a while we'd notice it, if we had a northwest breeze coming through. ...it was the sludge that was doing the smelling. They had that out in the open areas and they'd turn it...and that would really smell. ...[I]t had a toxic smell to it.

I asked if everyone knew the odor was from the treatment plant and the interview respondent replied, “Oh yes.”

However, the sharpest exchange during the Davis County focus group occurred when one of the participants talked about the lake smell evoking positive memories for him. He encountered a number of group members who did not distinguish between the smell from the lake and the smell from the sewage treatment plant, only a short distance from where the focus group members live. The entire exchange eventually involved all but one group member.

Focus group member one: Several people have commented on the smell and how...I don't know whether you don't like the smell or you like the smell...

Member two: You like it? (Said sarcastically, followed by laughter)

Member three: It's only been bad a couple times...

Member two: O.K., I'm going to start counting, I'm going to keep track.

Member four: It's bad...

Member one: I'm talking about the smell of the lake. We don't get the smell of the lake that much, but when we do, it brings back a lot of

- good memories for me—I used to go hunting, along the lake with my dad... The smell that I don't like comes out of the sewer--
- Member five (cynically): Yeah huh.
- Member one: And we get that one once in a while, too--
- Member five: And there is a difference, huh?!
- Member one: There's a big difference—I can smell the sewer (makes a sour face)—smell the lake (smiles)
- Member six: Oh, I do too—there's more about that lake than you guys are giving credit to--
- Member two: Everybody that comes to my house will say, “How can you stand it out here?”

Several group members then talked about an incident where the odor had been particularly offensive, during an outdoor social event in the backyard of another neighbor.

- Member four: Do you remember that...tea party that we had in [a neighbor's] backyard?
- Member seven: Oh yes, oh yes.
- Member four: ...And the smell, out of nowhere, worse than ever...
- Member seven: And it, and it hadn't been that way for years...
- Member four: Ever...and it hasn't been since. And we're all just sitting there with our little tea sandwiches, the smell was so bad. I remember thinking, oh, the lake, it's come.
- Member seven: That was bad.
- Member two: (to member one) So that's good you have those good memories...
- Member one: Well, when it's bad, you can tell it's the sewer. The lake...
- Member two: Well, I don't care for either one of them
- Member eight: Just hold your finger up and see which way the wind is blowin'
- Member four: South is sewer...
- Member nine: Depends on the direction of the wind...we have to have a south wind to get the sewer.

This exchange provides an example of the diversity of feelings about the lake smell noted at the beginning of this section. As noted, the smell brings up pleasant memories for some. Memories of time at the ocean and the birth of a child have already been mentioned. One pattern that emerged is that research participants who grew up near

the lake or spent time at the lake when they were children were more likely to have these positive feelings and memories evoked by the lake smell. For example, one woman who spent a lot of time at the lake as a child said the smell was one of the positive things about the lake. Another said, “It smells once in a while, but we’re used to that. I actually like it...it’s kind of a salty...it’s nice.” A resource manager who grew up near the lake described his experience with the lake smell.

It’s funny, a lot of people always complain about the lake smell, and they always talk about it on the news ...maybe it’s just because I work out here and I grew up here, but when I smell the lake on a summer day and I smell that stinky, rotten egg smell that comes across the lake, for me...it’s just kind of like (I’m trying to think of how to put this without sounding too cheesy or dumb)...I smell it and it’s almost like life to me, it’s like that’s the lake, that’s the smell of this giant ecosystem out there that’s producing millions of shorebirds and waterfowl and brine shrimp and raptors and it’s creating a home for all these different species and wildlife, and to me that smell, it’s almost like home in a way.

A couple of residents also referred to the lake smell as evoking feelings of home. So despite the lake smell being perceived by many as a negative trait of the lake, and as evidence of how disagreeable a place GSL is, these negative feelings about the smell are not shared by everyone.

The bugs. Research participants brought up insects—generally referred to as “bugs”—nearly as often as the smell, although quite a number found the bugs near the lake no worse than at other places. Unlike the diverse experiences with the smell, only one participant mentioned anything positive about the insects, saying, “No bugs, no birds.” Most people complained about the bugs, though. Several simply said, “We don’t like the bugs,” and many felt the bugs were worse because of living near the lake.

Wife: The negatives [about the lake] are the mosquitoes. The gnats.
What else?

Husband: There's just a lot of bugs.

Wife: There are a lot of bugs out here. The gnats are horrible this year.

At times the bugs interfered with people's willingness to recreate on the lake. One young man's family started sail-boating on fresh water reservoirs instead of GSL.

[T]he reason that we went up to other reservoirs wasn't only so we could jump off and play, but Dad got ticked off by the bugs, too. 'Cause every day, like if we went Friday and came back and docked it and we'd come back Saturday and we'd still have to grab the hose and spray off all the bugs and junk.

The insects were limiting in other ways as well.

I don't know if some of the bugs we have out here are from the lake or just from irrigation and farm country, but we have a lot of bugs. I don't get outside a lot because they love me, the mosquitoes love me. So I'm not outside a lot.

Insects are prolific at Antelope Island, including mosquitoes and gnats, which bite, and midges, which can create visibility problems for cars. Brine flies can also be problematic.

And there is a certain time of the year when bugs are pretty prevalent on the causeway, and it's possible to drive across the causeway and get to the other side and not be able to see out of your windshield at all. It doesn't happen all year long, but it does happen in the summer....

The bugs—the brine flies were bad. And not only because they'd get in your face or anything, but they'd affect your truck, they'd get plastered over everything, they'd get in your radiator. But of course you realize they're an important part of the whole out there, that's why the birds were there was to eat those brine flies.

Some of the research participants talked about the prevalence of all the bugs while acknowledging that they were unsure if the bugs were really related to the lake.

I can tell you—people from the city—I've seen them move out here and live here for a very short time and then they've left. The mosquitoes have just driven them out of their mind. And they are terrible—the insects out here—West Warren raises the best crop of

mosquitoes I've ever been associated with... That, if anything, is the only thing that people talk about living out here, whether it's because of the lake or the farming. Or just the land.

And then it seems like there's an influx of bugs...it may not have anything to do with the lake but when we have bugs, we have a lot of them....

Others were quick to say that the bugs were not "the lake's fault," or that they were not any worse than in other areas.

Wife: The mosquitoes are horrible, but that's about it. The mosquitoes are awful.

Husband: That's not the lake's fault, that's just the area.

Of course the mosquitoes aren't solely the product of the lake, we've got the irrigation ditch out here, the drainage ditch on the east side of the property, and we have a drainage pond that fills up during the winter months and stuff and the early spring, but by this time of the year there's no water out there at all. But that is the biggest drawback.

[The bugs are] not unique to Antelope Island. They may be unique to the city dwellers, but they're not unique to rural areas in Utah at all. Wherever you have a desert, you know, dry climate, you're going to get those kinds of nuisances.

Several participants said the bugs were tolerable, or were, at most, "just a small inconvenience."

[Y]ou know the bugs don't really bother me but I hear a lot of outside people talking about the bugs. But we kind of get used to 'em, or I have, growing up out there—I, they don't bother me like they do when our friends from town come out, then they all talk about the bugs.

In fact a couple talked about living with the mosquitoes and other bugs being a price they were willing to pay for the opportunity to live in a more rural area.

People would ask my mother... 'How can you stand living out there?' She'd say, 'Well look at it this way, if a mosquito was bothering me I can slap it, but you can't slap your neighbors.'

Several participants talked positively about the county mosquito abatement efforts. A couple mentioned how important this was with the threat of West Nile Virus from mosquitoes.

I didn't even mind the mosquitoes. ...at 4 to 4:30 in the morning, you'd see the mosquito abatement trucks that spray all over to try and get rid of them, there was a mosquito problem....

We'd ride a horse down there to get the cattle, it'd be covered with horse flies—and mosquitoes. I'd work out in the beet patch and you'd spend half your time swatting flies. It's different now, it's better. They've pretty well kept the mosquitoes down, they spray the east pastures and that pretty regular, you can set out nights and hardly ever get a bite.... It probably has ill effects on us, the spray, but you gotta die sometime I guess.

A resource manager was concerned locals might fear GSL because of West Nile Virus.

Another issue with the lake that may affect it negatively, or bring negative views of it, is mosquitoes and West Nile Virus. Yeah, we grow one hell of a lot of mosquitoes out here. And West Nile Virus is now out here. So are people going to start thinking 'we gotta get rid of all those wetlands or we're going to get West Nile Virus'? Or we always talk about how wonderful this lake is and how many shorebirds and waterfowl...it supports and how great an ecosystem it is for all the birds—avian bird flu. Are people going to freak out because we have 500,000 Wilson's phalaropes out here that could possibly have avian bird flu... at one time or another in the year? But I could see those things at some point people thinking, 'All that lake breeds is stink, bird flu and West Nile Virus.'

Synopsis: Great Salt Lake as a stinky, buggy place. The smell and bugs associated with GSL definitely generate a good deal of discussion. And although many participants see these things as negative aspects of the lake, most also see things they consider positive. Some feel these traits are tolerable, and a few, even positive, particularly the lake smell. On the other hand, some participants had little else to say about the lake other than how buggy and smelly it is.

Salt, Water Problems, and Other Irritations

There are a number of other difficulties with living close to GSL, including dealing with damage from the physical traits of the lake. For some participants, living near GSL primarily meant dealing with these aspects of the lake.

The salt. One of the problematic aspects of living close to the lake is living with the salt. Damage from the salt in the air and from it blowing off the lake was an irritant mentioned by a number of participants.

...[T]he salt etching from the stormy breezes that come...like [on] my grill on my patio that is stainless steel...

[The salt] was a pain on the paint and the siding. It was. But I don't have a problem with a little scruffy look on the house, like other people might. It did rot the paint off my car, though...it didn't help that any.

The soil grows the garden really good, the thing that's bad is if it's a drought year and the lake's down and there's a big wind and it blows the salt onto your plants...you better wash it off! 'Cause they'll croak—they don't like it.

High water and bad water. Participants also dealt with a number of water-related problems. Issues related to the fluctuation of lake levels and the flooding that occurred during the 1980s have already been discussed. A farmer in Box Elder County described those high water years as a “once in a century impact,” and contrasted that with a “normal impact,” which for him meant spring runoff and getting flooded by the Bear River. He argued that normal impacts are “just normal,” people need to expect them and work with them. A Davis County woman described two normal impacts for living close to Great Salt Lake as “bad water and high water.” Research participants from WC Weber to central Davis County had experience with bad water.

We don't drink the water here...I buy water at Albertsons. ...[W]e have a well.... They approved the water, but it's qualified approval—it has a high salt content, so if you have a heart condition, don't drink it.... But that is sort of the price of living out here...you have to be willing to treat the water to use the water. And another price is that we don't do any of the laundry at home. We have the equipment, but we don't use it, because the water was making the clothes dirty.... [I]n fact the commissioners are aware of this, a phenomenon among people who live out here—we don't have laundry facilities.

The locals out here complain about the water. Prior to the culinary system, the water quality was horrible, everyone had kidney stones.

And water availability out here is very, very limited. ...[O]ur neighbor two houses down has a well back there, but the alkali content in it is so high.... And being as close to the lake as we are, yeah, you're going to have alkali and salt content.

The high water table caused problems for development, as well as for those who were already in the area. One resident reported that the high water “wipes out our septic system.” For others the problem was ground water flooding basements.

Problems for development. The lake-related difficulties for new development are primarily due to the moratorium on building below the high water elevation (or in Davis County, related to the FEMA flood plain), and to the high water table. The elevation issues have already been discussed. A Box Elder County farmer talked about the high water table this way:

If you enjoy wetland habitat, it's out here.... But at the same time there are no subdivisions out here...so if you're a developer and you think you're going to come out here, it's not going to happen.

A resource manager raised additional points about the issue.

The problem you have out here, in a lot of these low-lying areas now, is the sewer service. There's such a high water table out here that you can't put the sewer lines in the ground to service the subdivisions. It's just physically, you can't—just engineering-wise and everything, it just doesn't work.

If it was freshwater... Two of the county commissioners contrasted the problems associated with Great Salt Lake to how things would be if it was a freshwater lake. A Box Elder County Commissioner observed,

Well, you know the majority of the Great Salt Lake is in Box Elder County. We have most of the lake. And around the land that we have, it's undevelopable.... It's marshland—a lot of it is just alkali and marshland.

The commissioner continued,

We're not lake-dwelling people in our county—and yet we have the lake. Like you said, if this were a fresh-water, man alive, we would be of a different nature.

Where this commissioner addressed how the people would be different, a Davis County Commissioner spoke about how the landscape would be different.

Now if the Great Salt Lake was a body of fresh water I think we know what that would be, the prices would be skyrocketing. There probably would be, long before you and I ever came out, some places right to the shoreline, and Antelope Island unfortunately would be developed too. So I'm kind of glad that it is salt, just from that aspect.

For some people, these problems with the salt, the water, and with development, all become part of a larger, more generalized feeling that GSL was an irritating place with mostly negative traits.

Blame the preserves and refuges. Sometimes residents will complain to local resource managers about nearly any of the conditions just discussed. Resource managers said they have been blamed for everything from spring flooding to bugs and weeds.

What kills me is they blame me—Easter weekend, a guy called my director to tell him I had flooded him out.... They honestly believe that, the floodgates and my dike can cause the flooding...they blame us for everything from mosquitoes to flooding.

The rangers at Antelope Island have heard rather interesting demands, including one to manage the lake dust from the exposed lake bed.

We've heard a lot of complaints—actually had people call us and tell us we needed to water [the lake bed] down so it wouldn't do that anymore.

A manager of one of the sites gets annoyed that people move into the area and then expect him to change the natural conditions of the area, whether it is the native grasses or the mosquitoes.

[T]here's a grass out here, and in the fall, the tops will break off and blow around, and it blows in their yard and they'll call me up and complain, 'Oh, I've got this in my yard, what are you gonna do about it?' Well, that grass has been here for ever since who knows, man's existence probably—what do you want me to do about it? You moved out here.

I didn't cause you trouble with mosquitoes, you chose to live out here where mosquitoes tend to breed. ...[Y]ou wanted...to live out in the country, if you don't like a few weeds, if you don't like the mosquitoes blowing in your yard, go back up into the city where you won't have to deal with it.

There's Nothing Out There

Some research participants indicated there was little to draw them to the lake or lake-related sites. While one person talked about being drawn to the barrenness of the landscape, a number felt it was problematic. Many said there should be more activities, events, and more to do related to the lake. One said, “[I]t amazes me we don't have more things going on with the lake, as unusual as it is.” Even some who expressed enjoyment of various aspects of the lake felt there was not much to draw them back repeatedly. Members of the Davis County focus group discussed this regarding Antelope Island specifically.

Focus group member one: See, and I've actually wished that they would do something there, because when you go out there, to me there's just nothing, it's just sagebrush. ...[W]e've even thought of going camping and it's like, you know? So I kind of wish that they would like make a part that's maybe fresh water—something that makes it more appealing to go out. But then you'd have more people, more tourists, more traffic, more everything.

Member two: Are you talking about freshwater on part of the lake?

Member one: Yeah, yeah.

Member three: Oh I'd like that.

Member one: They had talked about doing that, you know...

Member three: That'd be fun.

Member one: But something that there, it's a draw to go [to Antelope Island and the lake]. ...Because, to me, there's nothing really to go out there for.

Member four: Repeatedly, yeah, it's like you go and see it, and then you're done.

Member one: Yeah, you've seen it and...

Member two: It's not like you can go fishing out there.

Member one: Yeah, you can't really do much.

Member two: At least you won't catch anything (chuckles).

One group member continued on, noting the absence of things for children to do.

I think the kids would love it if they could ride their four-wheelers and their motorcycles out there....

This feeling about Antelope Island can also be seen in some participants' feelings about paying to access the causeway. I heard, "And I refuse to pay eight dollars to drive in there," and "Cause it's eight bucks to go out to nothin'."

After a fellow focus group member talked about the need to preserve the lake, the islands, and other lake-related sites, one member said that to him, the most important thing the group had covered that evening was different than this focus on preserving Antelope Island as it is.

...I'm a little different on this island-stay-the-same. I'd like to see the emphasis go off of the buffalo and go on to the people and I'd like to see them open that road [on the south end of the island] back up to Salt Lake [City] and have people all along the Wasatch Front be able to use

that island. Have facilities for them to use it. I'd like to see them put some trees out there, with campgrounds, and more roads out there and more recreation for the kids. I'd like to see them, rather than people drive fifty miles to recreate I think they can just get off of Exit 111 in Salt Lake [City] and just go right on to the island, and we can go out this way [on the causeway], and the whole Wasatch Front can enjoy that island. And they should have bought that Fremont Island and utilized that, too.

When I made a follow-up call to this group member afterwards, he said, "I was really interested to hear that some people wanted nothing to change at all. That really surprised me." He thought everyone would want to have things more developed, with better access and amenities.

While most of this discussion has focused on Antelope Island, a similar feeling was expressed by some about the lake itself. One resource manager observed this in local residents.

[T]he thing I find is a lot of people just don't have a clue that there's anything out here. I think there's a real mindset of people around the lake, that live in Utah in particular, that they just think it's the Great Salt Lake, there's nothing else to it...you almost have to have some kind of a tie with the lake...or its just an after thought in your mind. There's a lake out there, but you don't think twice about it. You know, you can't drive down and go boating, you can't go fishing on it, it's just there.

Synopsis: Great Salt Lake as an Irritating Place

With all of these negative aspects serving as potential irritants, some participants saw the lake, on the whole, as a pretty irritating place with few, if any, redeeming qualities. Between the bugs and smell, the difficulties with salt and bad water, the high water table and the difficulties in developing the land, some of the people who lived closest to the lake did not think of the lake as an amenity to their property at all.

Additionally, they had little interest in going to the lake since they could not see what there was to do there.

Some lake neighbors had a sense of the lake, but it was this negative sense that the lake was a foul and irritating place, and had nothing to do with why they lived there. Others did not have even this sense of the lake—I will return to them shortly. And as noted previously, still others acknowledged these aspects of the lake as negative, but had other perspectives and understandings of the lake as well. There were also those, mentioned earlier, who did not see any negative aspects at all when they thought about the lake or living near the lake.

The Effects of What Other People Think

With all the potential for negativity about the lake just discussed, it was not surprising that research participants experienced some negativity from others about living near the lake. A number of the focus group participants reported other people having negative associations that were directly related to living near the lake.

It was just a good piece of land... And everybody in our ward was making fun of us, 'oh no, not the sewer, down by that lake.'

...[A]nd some people said, 'Oh, well, what about the smell? What about the mosquitoes?'

The Bottoms. Focus group members in Davis County talked about others having had this negative attitude towards the area closest to the lake for a long time. A man in his late 70s talked about how it was when he was a boy in school.

[W]e was kind of treated like second-class citizens because we were from 'the bottoms' and the elite were up here [in Syracuse]. ...[O]ne lady that lived down there all her life, and she says, 'I wanna get outta there and get up where the people are real people.' ...[T]here was some pretty

wealthy families moved in up here ...[T]heir kids didn't have to work and everybody down there had to work. ...[T]hey'd have problems at school, maybe, a lot of fistfights, and the ones older—I never had any problems with the ones my age—but the ol' principal we had said, 'well it's always those kids from the bottoms causing troubles, you know.'

These residents experienced some degree of stigma by living near the lake. At one point during the focus group, members were talking about the history of the area. One participant stated that the area closest to the lake was “where Syracuse started.” Another replied,

That's why the one's up here [in Syracuse] don't like us down there, 'cause they know the history, they know how it really is. They stole the name.

The first went on to say, “I hear, ‘you poor people that have to live in the most miserable place in Syracuse’.” The smell is one of the things these residents hear about from others.

Everybody that comes to my house will say, ‘How can you stand it out here?’

What my husband has said for years living down there, when people come and they complain about the smell, this is his favorite quote... ‘It smells a whole lot better than those people up there in east Layton.’ We're all okay down here—rather have the smell here than be up there.

Along with this feeling of carrying social stigma, participants also described situations where it felt to them like local authorities were treating them unfairly. An elderly resident described trying to get culinary water in the area before it was annexed into Syracuse.

Well, we tried to get water down there.... [Syracuse] didn't want to put water down there, I says ‘why don't you just incorporate that—there's fifty families down there,’ and [an official] says, ‘we don't want it to grow, this is to grow up here, that's to stay farm down there.’

Although local residents were likely relieved to hear there were no plans for the area to be developed, it came at the cost of not being able to get culinary water for quite some time, and then from another community all together. Other services such as garbage pick-

up were also slow to come to the area. At the focus group there was some feeling that the stigma continued.

Got to let the city know that we're not just a bunch of people down here next to the lake, next to the sewer plant, and we've got to have some open space.

Probably no one really wanted to be out by the lake. Participants in Weber County also experienced some of this negativity about living close to the lake. For example, a local official assumed people likely only lived there because of land being more affordable.

I'd imagine the property value out there when they bought was pretty low, and probably no one really wanted to be out by the lake.

The official acknowledged that the lake "has some neat things to it," but stated that, "living by the lake is not something that I'd probably want to do."

Some of the Weber County focus group members felt they got "dumped on" because of their location in the siting of a local industrial plant. The most recent resident asked why the plant was located there, since it is not directly related to the lake.

Group member one: It was a political deal. They wouldn't let 'em go anywhere else. They got shoved out there and probably shouldn't have been 'cause it's not 100% safe...

Group member two: Very volatile situation.

Group member one: ...but it was a political hot potato and we got dumped on.

Group member three: And that smells worse than the Great Salt Lake.

Group member one: Oh yeah.

However, one woman who has lived near the lake for about 12 years is happy to let people think negatively about the lake if it keeps them from wanting to move to the area.

I love [the area], and I love everything about it. And I think a lot of the things that make it some place that I like, that maybe people wouldn't like that come out there, could be because of the lake.

This issue of stigma about living near the lake meant that local residents not only had to deal more directly with some of the negative aspects of GSL, but also with being treated negatively because of where they lived. One positive thing I observed about this situation is that it appeared to strengthen the feeling of community among those who live close to the lake. Wilson (1989) reported a similar dynamic in an essay on “haphazard landscapes,” in which residents felt persecuted because of where they lived—in this case, in the community that had been ranked at the bottom of the list in a guide to the best and worst places to live in America. This sense of being persecuted created group cohesion among residents.

Little to No Sense of Place

Some of the interview respondents and a small number of focus group members appeared to not have a sense of the lake. It did not seem to matter in their lives. There are a number of ways this can be heard in what participants say.

You know, I don't even think of the lake being out there, personally. I love my neighborhood, but I don't even think about the lake.

[T]he only time I ever think about the lake is if we had an earthquake we'd be sunk in it. That's it.

The lake's irrelevant, it's the people. The lake's just there...

One of the resource managers talked about the people who complained to him the most about lake-related things like the smell and the dust.

...[A]nd the reason being, I think, is they just don't realize what's out here. And when I do find new people that come out here and see this, they're just kind of 'Wow, I never knew this was out here, I just had no idea.' And some of these are people who lived within a mile of the lake

their entire lives, 30, 40 years. And they just don't have a clue, they just never think about it.

Some of this lack of a real sense of place with the lake came out when I asked participants if there was anything that made them feel connected or not connected to GSL.

No, not really, I mean nothing...

I'm not connected or NOT connected, I just ignore it all together.

I don't know how you could become connected with the lake...

One of the resource managers stated, "I'm not really into GSL or anything like that."

Some residents had a difficult time answering a question about what they saw as positive about living near the lake.

Husband: I don't know, I can't think of any positives.

Wife: Well, I'm trying to think...I don't know. You know the lake really doesn't—I don't think it affects us [except] that we have the smell, and the standing water and more mosquitoes—but the lake itself...I don't know. I mean, we can't see it. It's not like it's something we can enjoy...scenic-wise.

The one positive thing the wife mentioned about living there was the freeway access.

Another type of evidence of not having a sense of place was a lack of knowledge about the most basic things about the lake and its environs. A resource manager in Davis County lamented this lack of information.

I mean I've talked to people out here who don't even know that that's an island out there, they're just like, 'What are those mountains?' Antelope Island. 'Oh, there's an island out there?'

Conducting the focus groups and interviews with couples gave me the opportunity to watch interactions between people as they talked about the lake. Some of these interactions were between people who sounded as though they had little to no sense of

the lake and people who clearly were attached to the lake. I observed two patterns in these interactions. The first was that the person without a sense of place often sounded either incredulous or amused that the other person seemed fond of the place.

First focus group member: ...I used to go hunting along the lake with my dad--

Second member: Along *this* lake? [with disbelief]

Wife: When I was younger I used to ride my bike out there and hang out out there.

[Husband looks at her questioningly]

Wife: Yeah!

Husband: I didn't know that.

Occasionally the attached person would perhaps minimize the level of attachment. For example, early in one interview a couple had this exchange.

Husband [to wife]: Do you feel connected to the lake?

Wife: I kind of like it. It's always there, it's there. I don't know....

Later in the interview, this wife talked very positively about the lake and her feelings towards it. At times, the person who appeared attached to the lake would sound somewhat defensive in these interactions. One wife told me she kind of liked the salty lake smell. After a disbelieving look from her husband she said to him, "I know, but it's nice—I'd rather smell that than smog! Wouldn't you rather smell the lake?"

In the second pattern, the person without a sense of place seemed to wonder if something was wrong with him- or herself.

Husband: I don't really feel connected to the lake, I don't know why.

Wife: [sighs]

Husband: I love it out here.

Wife: Maybe I should get to know it better and I might like it.

This last wife apologized for not having much to say, but said, “I don’t even think of the lake being out there, personally.” In her interactions with her husband, she appeared to find his fascination with the lake curious, but just one of those things spouses are patiently tolerant of.

*Synopsis: Having Little to No Sense of Place
with Great Salt Lake*

In the qualitative research, although few participants sounded like they had little to no sense of place with GSL, there were some. They were people who, for the most part, did not really have any opinions or thoughts about the lake. They found few (if any) aspects of the lake or living near the lake positive or negative. Some had ideas of a few negative things, one man somewhat grudgingly had one thing he considered positive about the lake, but these feelings were not particularly important to the participants—overall, there was the feeling (often expressed directly) that the lake just did not matter one way or the other to them. Some of these participants had lived in the area for one to three years, but others had lived there for as long as 12 years. One of the county commissioners appeared to be in this category, and perhaps most surprisingly, so did one of the resource managers. If things like length of residence and even working in a lake-related job do not necessarily distinguish between those with a sense of place and those without, then what does? I return to that issue with the second research question.

**Summary: The Various Senses of Place
and Meanings of Great Salt Lake**

As has been seen, Great Salt Lake has quite a variety of meanings to different research participants. Some of those held most broadly, just in terms of the frequency

which they are referred to, include the lake as a rural place and as a buggy and stinky place. On the other hand, those that are held most deeply, most intensely, include the lake being a place rich in family connections, a place from one's childhood, a natural place, and a place people are attached to.

As noted, research participants have many different senses of the lake, including many that are positive and some that are negative. Just as some participants have a very positive sense of the lake overall, evidenced by place attachment, others have a rather negative sense of the lake. There are some who do not appear to have any sense of the lake, for whom Great Salt Lake is more of an undistinguished space than a place with any personally held meaning (Tuan 1977).

We next explore the degree to which these meanings are shared.

Shared Meanings

***Research question #1b:** To what extent are these meanings shared among individuals and groups?*

The expectation for this research question is that I would find evidence of shared meanings among groups, since they share the experience of a common landscape. Following Relph (1992), I expected to find shared meanings and affect, whether positive, negative or mixed. Again, the possibility of having this shared experience is what I am referring to when I use the word “groups”—collectivities that fall in between what sociologists typically refer to as “social groups” and what is meant by “categorical groups.” My use of “groups” refers to collectives of people who have reason to hold similar stocks of knowledge about GSL.

Nearly all of the lake meanings presented above are held by a number of research participants. However, many indicated they never really talked about the lake with others, and that the people in their area, in their social groups, church congregations and other organizations they belong to, did not talk about GSL either. Most had little knowledge of anyone else's thoughts or feelings about the lake.

So while many of the participants held *similar* perspectives, they did not necessarily *share* their perspectives with others, in that sense of the word, and so have no idea as to whether others have similar experiences, thoughts, or feelings about GSL. An example of this can be seen in an exchange between spouses who had lived near the lake for 13 years.

Wife: It's so dark, sometimes we get the pretty effect of the moon kind of glows off the lake. I mean sometimes it seems like it's not even dark out here.

Husband: I didn't even know you noticed the moon on the lake.

Wife: Of course I do!

This exchange shows three things: the wife enjoyed the moon's reflection on the lake, the husband was at least aware of the moon on the lake, and they had never talked about it. There were many exchanges similar to this between married couples and between focus group members who were all neighbors, exchanges where participants talked about lake-related feelings and experiences that the others in the interaction had no previous knowledge of. However there were also some indications that, for at least some lake-related topics, some GSL-neighbors did talk with each other about the lake, and thus, had the opportunity to influence each others' perspectives about GSL. In this section I address senses of the lake and meanings that are shared, in other words, those held jointly by groups of people who appear to interact with each other about the lake.

Nature sightings. The meaning of the lake that seemed to give rise to the most discussion of shared activity and appreciation was the lake as a natural place, with its birds and wildlife, its celebrated sunsets and storms. Members of both focus groups referred to neighbors talking with each other about these aspects of the lake.

Group members from West Warren talked about phone calls to each other and other neighbors, telling the neighbor to look out a window to see the deer in the backyard, or the eagle in the nearby tree. As participants talked about wildlife they had seen at particular spots, for example the swans using a specific pond, it was clear from the interactions that a number of other group members had likely talked about it as well. Group members also kept each other apprised of wildlife conditions, for example, the number of bucks counted at Little Mountain the week of the focus group (“65...and there’s some really nice bucks”). Group members from west Syracuse had talked with one another and other neighbors about the Great Blue Herons in the area—for example, pointing out one on a neighbor’s roof, or on top of the shed at a nearby house—and enjoyed watching the owls that lived in a local barn.

Davis County group members had also shared sunset sightings in their neighborhood.

Focus group member one: How many times do you come home and someone will say, “Did you see the sunset tonight?” And what do you do, you haul your lawn chair to some certain spot and you look at the sunset.

[General agreement from all]

Member two: Sit at the bowery

Member three: And they’re year-round, that’s the thing. It’s a year-round deal.

Member four: Do you ever see us run out on our front lawn? That’s a sunset sighting. When you start seeing everybody run...this one.

When a group member mentioned rare times a year when the sun sets on the lake water (as opposed to behind the mountains or an island), others immediately asked when this occurs, and wanted him to call them so they could watch it. Group members also referred to a tornado or water spout they watched on the lake, with neighbors passing on tornado warnings to each other.

Some participants talked about sharing nature-oriented GSL events and phenomena with others, for example, the woman who enjoyed taking friends to Bald Eagle Day at Farmington Bay WMA and the grandfather who took his grandchildren out and counted the eagles in the trees. Participants also referred to shared nature-oriented activities, particularly for children, with groups such as Boy Scouts and school field trips.

Lake-related recreation. The wide-spread use of the Antelope Island causeway by neighbors in the west Syracuse focus group was an example of recreation meanings being shared within a neighborhood. A number of them walked on the causeway, both for the exercise and because, as one woman put it, “it makes me feel like I’m still in the country. . . .and there’s always wildlife...” Other group members expressed similar sentiments. However, because there is a fee to cross the causeway, until it was discovered that they could walk two miles out and back without paying, one of the neighbors in the focus group was proposing to “buy a . . .pass and just hang it on the stop sign,” making it a “neighborhood pass.”

The lake and children. A good number of participants talked about their children and the lake, as discussed earlier. This is an area where much was shared. Neighbors knew each other’s children and did activities with them through Scouts, church groups, and school, each of which occasionally did lake-related activities with local children. The

children of two focus group members used to explore the marshes together, the two group members agreed on the importance of children spending a lot of time outdoors and exploring in natural areas. There was widespread agreement among participants who were parents that living near the lake was a positive thing for their children, and there was evidence that participants talked with others about this. They all had memories of their children and the lake, and some of these memories were shared by other participants and other local residents who were present for the memory-making times.

There was evidence that those who grew up near the lake shared stories with each other about growing up, and reminisced together about similar memories. I saw this primarily in the Weber County focus group. Because of differences in age, none of the group members grew up near GSL together, but they did similar things. Their interactions made it clear they talked with each other about these memories, for example, comparing notes on driving around on the salt flats off Little Mountain when they were teens.

Family connections. Many shared perspectives and meanings could be heard when discussing family roots and connections to GSL. Having those roots was a shared experience, as evidenced by focus group members who jointly suggested I ask “the ones that have moved in” why participants live near the lake, since three of them “didn’t have a choice” because of “ancestors” (with speakers alternating back and forth, finishing each others’ sentences).

Beyond this, though, as middle-aged and older men talked about their fathers and grandfathers and the perspectives and experiences they had with the lake, there were clear commonalities between these men and their forbearers. The Davis County focus group presented an opportunity to watch this since an elderly man and his middle-aged son were

both group members. Both had grown up next to the lake, with some similar experiences during their growing up years. Additionally, they told stories about experiences they went through together, each telling his side or perspective of the experience. Since the son and his sister both lived on subdivided parcels of the original family farm, the three households were all part of the neighborhood, watching sunsets together and teasing neighbors about herons on the roof. As focus group participants, father and son expressed similar feelings about the lake and ideas about how it should be managed. Their relationship illustrated how layered shared meanings can be.

Community connections. The community connections between the lake and West Warren, in Weber County, have already been discussed. The relationship between that community and GSL provides an example of meanings and a sense of the lake being shared throughout a community. These shared meanings included the lake as a place for recreation and relaxation; and as an economic resource, both for the households where industry jobs were held, and for the community through taxes paid by those lake-related industries. Another shared meaning was GSL as a place important to the community for community building events and celebration.

Some of this occurred on a smaller scale in the informal gatherings and sharing at the neighborhood level in west Syracuse. Shared meanings at that level have already been discussed, such as the “sunset sightings” and the idea of a “neighborhood pass” for the causeway.

Been through high water together. Experiencing out-of-the-ordinary natural phenomena together is something that often leads to shared perspectives and meanings. The waters of Great Salt Lake rising so high in the 1980s qualify for that categorization,

but few participants who lived near the lake talked about any sort of shared experience with it. One woman mentioned that her neighbors helped her and her husband build sandbag dikes around the yard to protect the house, but that was all she said about it. A resource manager indicated people were more likely to talk with each other and with him about the lake during those times. However the only comment I heard that addressed this as a shared experience was from a man in West Warren, who talked about what a shock it was for the community, as mentioned earlier. "...we never realized we lived that close and was that vulnerable." The community discovered that, "the lake can be a treacherous thing as well as a beautiful thing to see."

Sharing the negatives. Although many aspects of how people felt about the lake did not appear to be talked about, or shared in that sense, the negative meanings of the lake were talked about and shared. The topic that received the most attention here was GSL as a smelly, buggy place. An obvious example is the collective skepticism voiced in the Davis County focus group about the difference between the smell from the lake and the smell from the sewage treatment plant. However, in some of the interviews and focus group interactions, it appeared that the negation of this sense is also shared—that these aspects of the lake were either not negative, or at least tolerable. As exemplified by the Davis County focus group, there also appeared to be a shared sense that there was little to do at the lake or related to the lake, and that this should be improved by further developing Antelope and Fremont Islands, as well as the lake itself.

The lake as a resource. One meaning that interestingly did not come up frequently in the interviews or focus groups is the lake as an economic resource, although there was some evidence of some interaction along these lines. In the Weber County focus group,

much of the shared sense of lake-related industry was focused on the drawbacks of this industry being so close to people's homes. There was a sense among most group members that the industry was useful, needed and positive for the community, but this was moderated by the assertion that it needed to be strongly regulated, and it was clear that these neighbors had had these conversations before. The only current industry mentioned during the Davis County focus group was tourism, in a comment made by one individual—the lake as a resource did not appear to be a topic of conversation or shared perspectives here. Each focus group had a shared sense of historical lake-related resource use, though, often within the context of family history, clearly shared, as evidenced by neighbors knowing each other's family stories.

In the interviews, the strongest indication of the lake as a resource being a shared GSL meaning came from the couple who have worked on the lake. Their interview contained numerous references to working with others who share this orientation, whether they are brine shrimpers or people working for Trestlewood. One man's interview was indicative of this being a shared meaning through the generations of his family. Two individuals specifically said they do not have this resource-oriented sense of the lake, however in these cases, neither of them talked about this being a perspective they shared with anyone else.

A place to protect. With two exceptional differences, most participants who talked about GSL as a place needing preservation and protection gave no indication that this was a perspective or sense of the lake they held in common with anyone. Individuals raised these protective issues in interviews. In the Davis County focus group, two lone voices described this sense of the lake, however these two did not engage in any sort of

dialogue, and both perspectives were discounted by the responses of other group members. One participant who held this sense of the lake with others was the woman who was involved in the Legacy Highway issue, e.g. attending public meetings. That participant was part of a coalition of several groups that were fighting the siting of the highway in the lake-related wetlands area.

The second exception presented itself during the Weber County focus group. There were a number of times during the focus group when preservation or protective sentiments were stated, but it was not a focused theme of the group or of any of the individual members. The last question I asked the group was, “if you had to pick one thing that was the most important of those we talked about tonight, what would that one thing be for you?” All of the responses clustered together, nearly all of them addressing this sense of GSL—that the lake and its environs should be protected and preserved. The first response was from the newest resident in the group, who wanted to learn more about the lake and share it with her children and grandchildren. The next response raised concerns about diverting more water from the rivers that feed the lake, with the newest resident following the concern with a call to advocacy, “We have to fight for that so that doesn’t happen.” Then came a call for preserving the wildlife; a concern about pollution and the possible dumping of toxins into the lake and the waters that feed the lake; a statement of the need for industry regulation to protect the ecosystem; and a concern about light pollution marring the night skies over the lake. Other than the first response, all of the group members had responded with a concern that fell in this protective meaning of the lake (each was mentioned in more detail earlier). After the last person had

shared the thing most important to him, another group member observed, “They’re all kind of inter-connected, you know, because one relates to the other.”

I have no indication as to how much of this interaction was based in an already-established, shared protective sense of the lake and its environs, and to what degree it came from the dynamic of the interactions within the focus group. It is likely nearly all of the individuals held the feelings expressed prior to the focus group,¹⁵ given their interactions during the rest of the meeting, but I do not know if they realized this was a commonly-held sense of the lake.

Summary: The Extent These Are Shared Meanings

As has been demonstrated, a good number of these GSL meanings are shared, that is, held jointly by groups of people who interact together, at least to some degree. There are others that logically would not be shared, such as taking the lake for granted.

It should be noted that the findings outlined here do not include the interview data from resource managers or county commissioners. In general, the responses of nearly all the resource managers fell easily into the GSL ecosystem and the protective senses of the lake, and would qualify as shared meanings of the lake for the people I interviewed since they frequently interact with others in the same work. However, there was no evidence that the commissioners held shared meanings about the lake.

¹⁵ I say “nearly all” because the newest resident started out expressing little to no sense of place or interest, but as she listened to her fellow group members throughout the evening she became increasingly interested in the lake and in the relationship between the local community and the lake.

Holding Multiple Meanings of the Lake

Research question #1c: Do individuals hold multiple meanings of GSL?

The primary goal of this question is to consider whether individual residents held multiple meanings that appeared to be incongruent with one another. Clearly, a number of the meanings and senses of the lake described by research participants did not present any issues of incongruence when combined with some others, rather, some meanings fairly implied the presence of other, closely related meanings. For example, it was no surprise that, for those whose sense of the lake was connected to family roots in the lake area, one of the things GSL meant was a place from their childhood. It makes sense intuitively that there were connections between meanings such as family roots, rural aspects of the place, and the lake area being a good place to rear children. Although not all residents for whom the lake meant a natural place would necessarily also hold a protective sense of the lake, it is difficult to imagine holding a protective sense without the lake holding some meaning based in its natural features. Indeed, research participants did hold these meanings of the lake in the clusters just described. One example was a third generation lake area resident, who talked about the importance of his good farmland, told stories of raising his family next to the lake, and shared memories of growing up there himself.

There are other meanings and senses of the lake that do not go together intuitively, where one meaning would seem to preclude some others. Examples of these pairings could include having place attachment while also holding some negative meanings of the lake; holding a protective sense of the lake while also holding the sense

that there is nothing out there, or perhaps being pro-development for lake-related areas; or having little to no sense of place with the lake while holding any other meaning. However, GSL being a mixed amenity place¹⁶ appears to add unexpected nuances to relationships between meanings.

For the research participants who expressed the strongest affect towards Great Salt Lake and its environs, whether place attachment or a negative sense of place, there was little incongruence. The participant with the most negative sense of place could not think of anything positive about the lake or living near the lake, and had no other sense of the lake at all. Participants with strong place attachment were more likely to see any negative aspects of the lake as “the price of living out here,” the cost of the “privilege.” What others considered irritants, these participants discounted as not even mattering. A number acknowledged that one aspect or another of the lake was difficult or challenging, but made it clear that despite these things they did not see GSL in a negative light. These challenges included having dealt with nearly being flooded in the high water years, farming with salt in the soil and water, salt damage to homes and cars, and water that is unusable for drinking or even washing laundry. Place-attached participants saw these difficulties as challenges that can be managed, and managed for.

Few participants with more than mild place attachment seemed to also hold negative senses of the lake. One who did was a focus group participant who referred to GSL as “my lake” and indicated she wanted to be buried in a place overlooking the lake, but was skeptical that objectionable odors could be attributed to anything other than the

¹⁶ By “mixed amenity place” I mean a place for which people could be expected to have mixed perceptions. This includes having mixed perceptions among people, and it also includes individuals having varied perceptions, that is, positive, negative and neutral perceptions of the same place.

lake. She was also among those saying there is nothing to do at the lake and that GSL would be improved by having a part that was fresh water instead of the briny lake water. She was the only group member involved in these kinds of discussions who also indicated a real attachment to the lake.

Another participant demonstrated that place attachment is not necessarily related to protectiveness or an aversion to further development of the lake area. The participant described a clear place attachment to the lake, saying, “it’s part of my life,” “I ... wouldn’t move anywhere else. I just enjoy it,” and similar comments. He also held the sense that the lake area should be further developed. He argued that the best way to solve the problems related to the Legacy Highway siting was to run the freeway right through the lake, on a series of causeways from Promontory Point, to Fremont and Antelope Islands, to Salt Lake City.

A number of research participants, including some who expressed mild or qualified attachment to GSL, appeared to hold both positive and negative senses of the lake. For example, one man mentioned his appreciation of the view of the lake and its sunsets a number of times and said he would miss the lake if he moved, yet he was among those who said there was nothing to do at the lake. A man who expressed a protective sense of place with the lake also felt there was not enough to do there. A woman holding a protective sense of place also expressed being bothered by the lake smell.

One woman presented a mixture of lake-oriented meanings. She talked about connections to the lake through doing things with her children and appreciated what the lake has to offer them; she had a sense of the beautiful sunsets, dark night skies, and

storms on the lake, and also enjoyed the birds; and she described the lake and Antelope Island as “my lake and my island.” She had a sense of the lake as a unique place. She also held a sense that there is not enough to do related to the lake and felt more recreation opportunities are needed, particularly for children, e.g. she would like kids to be able to ride four-wheelers and motorcycles on lake sites. Additionally, she held the sense that the lake is a smelly place.

As we can see from the above, some meanings did not appear to be related to other meanings in any consistent way for these participants. This lack of consistency in holding multiple meanings can be seen in the natural place meaning of beautiful views and/or sunsets. While there were participants who expressed strong sense of place and attachment to GSL who held these meanings, there were also participants with little to no sense of the lake who conceded that the lake had nice sunsets or provided a nice view. In some cases, these participants talked about, for example the sunset, with rather glowing descriptions. One woman stated, “You know, I don’t even think of the lake being out there, personally,” and carried this tone throughout her interview, yet described GSL sunsets as “very spectacular.” This pattern occurred with several participants who talked about either the sunsets, or more generally, the view.

Those who saw GSL as a unique place provided another case of this. Participants with much different affect for the lake used very similar language to talk about this meaning. For example, one participant had little positive to say about GSL throughout the interview, saying repeatedly things like, “It’s just a lake, you know.” He did describe one thing he saw as positive.

[I]t's a famous lake, it's the biggest lake west of the Mississippi. It's the only salt lake in the nation. ...[I]f you say, 'I live by the Great Salt Lake' someone knows where you're at. ...it's just a famous lake, I mean it's on the map, it's the only lake in Utah that's really on the map.

This closely resembles the comments made by two men with strong place attachment to the lake.

That's our claim to fame. If someone says, 'where do you live?' and I say, 'Have you heard of the Great Salt Lake,' I don't care if I'm in Nebraska, or where I'm at, 'Have you ever heard of the Great Salt Lake?' 'Yes.' 'I live about three miles from the Great Salt Lake.' They know where you're at.

And it's easy to find on a map, you know? You can always see the Great Salt Lake on the maps.

On the other hand some meanings did appear to be strongly related, where the presence of one sense of place clearly precluded another. Among the research participants in this work, no one who had ancestral family connections or who was reared in the lake area had a negative sense of place for the lake overall, and all had at least solid senses of place for the lake.

Summary: Holding Multiple Meanings of Great Salt Lake

Again, the focus of this question is on holding seemingly contrasting meanings simultaneously. As noted, GSL held the most consistent and congruent meanings for those with apparently strong senses of the lake, either negative or positive. But for those who expressed mild sense of place, the lake often held a variety of meanings, both positive and negative, in combinations that were not at all consistent across the participants. These combinations included some that, at least on the surface, appear fairly incongruent.

Having described the various senses of place participants held about GSL, explored the extent to which these meanings and senses of place were shared among these lake neighbors, and considered the patterns of how those meanings were held in combination with one another, we now consider the variables that contribute to the differences seen between the participants.

Summary of Research Question #1: The Meanings and Senses of Great Salt Lake

Great Salt Lake held a variety of different meanings for the qualitative research participants, everything from family connections to the rural area the lake is part of, from lake-related recreation to the power of nature demonstrated by GSL, from a place that needs to be protected to a place that has many negative traits. Taking my cues from Berger and Luckmann ([1966] 1967), I suggested earlier that there could be as many different constructions of the lake—that is, lake meanings—as there are roles that interact with it, and that what the lake means to people would be related to their roles, and the stocks of knowledge affiliated with those roles.¹⁷ This is what Greider and Garkovich (1994) referred to in their discussion about the landscape that one perceives: one’s internalized roles, and what one knows because of those roles, determines how one sees and experiences the landscape. The variety in meanings GSL holds for people supports this argument. Further, a good number of these lake meanings were shared, or held jointly by what Greider and Garkovich referred to as “cultural groups” (1994:2). This supports my application of Berger and Luckmann ([1966] 1967), that lake meanings

¹⁷ Again, I am using “role” following Berger and Luckmann’s ([1966] 1967) usage, which refers to typifications of actors and their associated behaviors. The role describes the actor, the action prescribed for such an actor, and the stocks of knowledge that actor will hold (after being socialized to that knowledge).

would be shared to the extent that stocks of knowledge about GSL are shared, within roles and across them.

A number of the lake meanings that have emerged from the data are directly related to physical or material aspects of the lake, for example, its effects on weather, its variable size, and some of the traits of interest for those whose image of the lake is as a unique place. These meanings are excellent examples of Gieryn's (2000) argument that the material form of the place matters in what it means to people, just as the location and the social aspects matter. The importance of each leg of this triad has been evidenced throughout these meanings.

Just as some participants had a very positive sense of the lake overall, evidenced by place attachment, others had a rather negative sense of the lake. For many participants, GSL held multiple meanings, including both positive and negative images. This supports the arguments made by a number of place scholars advocating the investigation of a full range of affect towards places, rather than only considering positive feelings (e.g. Giuliani and Feldman 1993; Kyle et al. 2004; Manzo 2003; Relph 1976). It is clear much would have been missed if I had only been concerned with feelings of attachment and positive images of GSL. Additionally, as noted, some participants did not appear to have any sense of the lake, for these, the lake was more of an undistinguished space than a place that held any personal meaning (Tuan 1977).

The Variables of Difference

Research question #2: *Are there differences between those for whom GSL is a place vs. those for whom it is undifferentiated space?*

2a: *What variables are related to the differences in meanings held about GSL?*

Some of the variables that appear to differentiate between those with various senses of place related to Great Salt Lake began to emerge in the descriptive work in the last section. In this section I explore the question of what variables appear to have a relationship with whether or not one has any sense of place with GSL, as well as the various meanings GSL holds. I begin by revisiting the relationships noted above—specifically, the relationship between having ancestral family connections and/or having been reared in the lake area, and having not only a sense of place for the lake, but in most cases, place attachment as well.

Early Experience with GSL

Eight research participants grew up near the lake, six of which were the third or fourth generation to live on or very near “family ground” close to the lake. Each of these eight had at least a solid sense of place for the lake, and six expressed strong place attachment.¹⁸ A number of other participants also had experience with the lake or lake sites that began during childhood, and nearly all of them expressed place attachment. Two variables appear to be involved here, primary socialization and experience with the lake system.

¹⁸ In categorizing those with a solid sense of place as compared to place attachment, I judged place attachment more conservatively. If someone had not explicitly expressed a connection or attachment to the lake or any lake sites, they were not included in the place attachment category. It is possible that some who were not included among those with place attachment actually are attached to GSL but did not express it.

Most of the third or fourth generation participants referred to stories they heard from—and about—grandparents and other relatives in reference to the lake. One man who hunted the marshlands of GSL since he was a boy heard stories about duck hunting in those same wetlands from his father and grandfather. Some heard about how family members made their living or supplemented their income on the lake, whether by hunting ducks, trapping muskrats, or working in salt extraction. One elderly man was involved in helping his family earn income off the lake since he was a boy of perhaps 10 years old, when his father would take him and his brother out on the lake bed to load salt they would sell in town. His grandfather also worked on the lake.

Some participants did not live near the lake as children but spent time there with family members. For example, one man had fond memories about hunting in the marshes with his father, and a woman was introduced to the lake by her grandparents. She and her grandmother collected rocks together, and her grandfather would reassure her when she was unsure about things like walking through crunchy brine shrimp eggs.

Not all of the socialization about the lake from family members was positive. As a boy, one young man noticed that when his family went to Antelope Island his parents never got in the water. He later decided this was because the water was “pretty nasty.” Although they sailed on the lake as a family when he was younger, later his father got tired of dealing with all the bugs and they sailed on freshwater reservoirs instead.

Although much of the socialization these participants received appears to have come from family members, some of it came from others. Two of the men in West Warren talked about community events on Little Mountain, a lake-related place that was important for the whole community. One woman who grew up near Ogden Bay talked

about going to the WMA to “hang out,” noting they always had a lot of activities going on. She sounds as though some of her socialization about the lake environs came from the staff there. A resource manager received some socialization just by watching an airboat go past him when he was 12 or 13—the uniformed men on board were his first indication that people could work on the lake. One man remembers being shocked by a poster a fellow high school student had at an Earth Day fair.

I remember on Earth Day my senior year in high school...we had posters throughout the school, and I remember one student who was in some of the biology type of things, and he had a poster that said, ‘Great Salt Lake, Utah’s largest cesspool.’ I said, ‘What do you mean by that?’ He said, ‘Haven’t you seen the studies? There’s waste from so many places that’s going into there.’ ...I didn’t even realize it at the time.

Many of these participants talked about having been exposed to the lake and its related sites through recreation as children. A number hunted and continued that into their adult years. Some rode their bikes or walked along the salt flats and in the WMAs. Most who grew up close to the lake talked about spending hours and hours just wandering and exploring—the marshes, the islands, the salt flats and other lake sites.

I heard numerous examples of ways these participants’ children are being socialized about the lake. These included references to family recreation, such as taking children to the lake to float in it. Parents talked about teaching their children GSL-related things, including lake-related history, and how to trap (e.g. muskrats) to make pocket money. Children took school field trips to Antelope Island and other lake sites, as well as to lake-related industrial sites such as GSL Mineral, and were involved in activities on the lake through Scouts and other youth groups. Many talked about their children

wandering and exploring in lake areas. Two onsite resource managers talked about their children sharing their knowledge of lake sites with others.

[My daughter's] friends come out here, which is really cool, because she takes them and shows them the island. Which is really cool, too, because most of them haven't been out here before. So for her to bring them out, she feels in heaven, being able to show them around and knowing all this stuff.

By the time my son was eight he was leading Audubon tours. They'd stop by and get him, I'd tell them 'My kid's taking you, he'll know every bird out there, I guarantee it. Tell you all about it.'

This early socialization about the lake and lake-related areas has resulted in two of these children who grew up next to the lake becoming resource managers. Another spent a season working as a brine shrimper as a teenager, and her brother also worked in the brine shrimp industry. One participant's son who grew up next to the lake became an avid duck hunter who worked on restoration of GSL wetlands.

Role-related Relationships with GSL

A number of roles had ties to Great Salt Lake for research participants. Those that appeared to matter most included being parents, having a lake-related occupation, being farmers and ranchers for reasons that will be expanded here, and being involved in lake-related recreation. The level of involvement and experience with the lake definitely played a part.

Parents

To continue the discussion above about children, the role of parent can also be related to the lake. Parental involvement in socialization of children has already been mentioned. Many participants did lake-related activities and recreation with their

children, some of which had become family traditions. Several felt part of their connection to GSL came from child rearing experiences they had with the lake. However this is not a variable that provides any distinction between participants with more or less sense of the lake, as there were parents and non-parents all along the continuum from strong place attachment to lacking a sense of place with GSL. For some participants, it appeared time with their children was the only time they spent on the lake. In terms of meanings the lake held, again the role of parent did not provide any distinctions between participants, as each of the different lake meanings, other than those that are child-oriented, were held by both parents and non-parents.

One woman who appeared to have a mild sense of place with the lake has had a number of different kinds of interactions with the lake, however a majority of the positive ones were related to things she did as a parent, including helping with Scouting activities and with school field trips. Many of the most positive things she said about the lake were in reference to “the kids,” e.g., that when they took canoes to Egg Island on a Scouting activity, “[the kids] thought that was just something,” and in describing star-gazing parties held on Antelope Island, “the kids love them.” Her concerns were related to her children as well, for example that there should be more recreation opportunities available on the lake and Antelope Island, particularly for children.

Another woman, a focus group member, appeared to have little to no sense of place. Despite the lake holding many negative meanings for her, and sounding both incredulous and skeptical when fellow group members spoke positively about the lake, she did state she had some connection to the lake through her children’s enjoyment of it. Another woman with no sense of the lake was not aware her children ever went down to

the nearby WMA, and was questioning and rather doubtful when her husband said they had.

On the other hand, some parents appeared to delight in their children's developing relationships with the lake. One woman with fairly strong attachment to the lake sounded pleased when she told the focus group her kids say they would "love to have a spot along the lakeshore" when they grow up. Sharing with children and grandchildren about the wildlife, birds, and the lake in general has already been discussed. Again, though, for the most part these parenting-related themes yield no distinctions between those with a sense of place and those without.

Lake-related Occupations

Having a lake-related occupation obviously provides a high level of involvement and experience with the lake. A majority of research participants with lake-related occupations were resource managers, for whom the focus was not only lake-related, but included preservation-related and ecosystem-related meanings. It was not surprising that these participants talked about their attachment to the birds and other wildlife connected to the lake system, in fact several mentioned those interests were why they chose their careers. However, for nearly all these participants, their attachment to Great Salt Lake was more than just an expression of their attraction to natural places in general. In addition to their enjoyment of both flora and fauna of the lake system, they also expressed attachment to the lake specifically. One manager stated she felt her background in resource management allowed her to appreciate the lake that much more, because she had a deeper understanding for what she was seeing and experiencing. The only

exception to this was the resource manager who had worked on the lake for the shortest time, three years, and worked at Willard Bay Reservoir, where the connection to the lake system can feel rather minimal. One other resource manager, who had worked on the lake for four years, sounded as though his connections to the lake were rather work-related and less GSL-specific, although he definitely appreciated the birds and wildlife and the dynamism of the lake system.

The three participants who worked with the lake or lake sites in other fields all expressed strong place attachment with the lake. One of these was also particularly ecosystem oriented, which is not surprising given that he has a degree in zoology and had worked as a wildlife specialist on the lake in the past. One of the others had worked in a number of capacities on the lake, and said that his attachment to the lake was more of an identity.

It is evident that, for these research participants, there was a relationship between place attachment and working with or on the lake, which may have been moderated in some cases by length of time on the job and how directly the setting was related to the lake. It is also likely, however, that the relationship appears so strong here because of the type of jobs and backgrounds the participants had. Related to these issues, the meanings the lake held for most of those who worked in lake-related occupations were fairly clustered. The lake held meanings of a natural place and place to be protected for each of these participants. Nearly all talked about GSL's importance for birds. Many had experience with fluctuating lake elevation and size. As a group, these participants were some of the least likely to hold any negative sense of the lake. The resource managers were less likely to have a sense of the lake as an economic resource. The managers were,

of course, aware of the ways in which this is true, however most of them were less likely to think of or relate to those aspects of the lake, whereas those in lake-related jobs other than resource management had this sense of the lake. Not many of the participants in lake-related occupations talked about recreation, except for hunting. Four of the nine participants identified themselves as hunters, and although most of the others did not indicate whether they were or not, one resource manager had a difficult time even dealing with hunters. Related to the lake holding bird-related meanings for the majority of these participants, although six of the nine talked about how much they enjoyed the birds, it was unclear as to whether any did bird watching as a recreational pastime.

Farmers and Ranchers

As was noted earlier, in the Great Salt Lake system the work farmers and ranchers do is affected by the lake. This includes issues with soil types, the salinity level, and the water table, as well as the lake's affect on weather. Of the six participants who discussed farming or ranching at least to a degree, all expressed at least a solid sense of place and most expressed attachment. Of note though, four of the six were the third generation on that farmland, another had been there for 28 years, and the newcomer of the bunch had been there 16 years (and was the least involved in farming). Length of residence aside, there appeared to be substantial differences between these participants and others, particularly in terms of their familiarity with the outdoors, with the environment, and with how lake-related phenomena affect other things and are affected by other things.

These participants appeared to have more knowledge and understanding of lake-related dynamics than many other participants, including those who owned horses and

horse property but did not farm or ranch. GSL seemed more woven into the lives and livelihoods of the farmers and ranchers—not as a place one “goes to,” but rather was just there, always in the background.

The Great Salt Lake itself... it's out there—like a shadow or a big brother... Something that I don't have a daily contact [with]. That's where the splash is, but I deal in the ripples every day, as far as the impact, since we live in a salt water marsh area.

It makes sense that these residents would be well aware of the lake and its effects on the surrounding area. They were outside, on the ground, where they could observe it as part of their surroundings, watching the storms, the migrating birds, the predator animals, the effects of the rising and receding water. They smelled it; they dealt with the bugs, the salt and the high water. They had to manage around the effects of the lake as part of the “normal impacts” of farming where they do. Given the challenges, it is interesting that as a whole these participants felt so attached to the lake. This dynamic is likely at least partially due to other variables.

In terms of the various meanings the lake held, obviously all these participants had a sense of the lake's rural connections. As mentioned, four had intergenerational family roots, the other two had no family connections other than raising their own families there. Five talked about how they have been affected by the fluctuating elevations and lake size. For a majority of them, the lake held meaning as an economic resource, but this was more tied in some cases to family history, and in others to the community they were a part of (WC Weber).

For these participants, there was not a relationship between this role and lake-related recreation—some of them hunted and/or watched birds, others did not, or did not

talk about it. The lake did not hold meaning as a natural place for all of them (although it did for a majority). Not all held a protective sense of the lake, in fact one wanted to see the lake and lake sites become more developed in terms of commercial enterprises and infrastructure. There was a substantial difference of thinking between the farmer in Box Elder County, who argued for a dam on the Bear River to provide more consistency in water availability, and at least two of the farmers in Weber County, who were concerned about diverting any more water from the lake.

Recreation and Restoration

There appears to be some degree of relationship between lake-related recreation and the meanings the lake held for participants. Those with little to no sense of place, for the most part, did little to no lake-related recreation. One woman who expressed a little sense of place, although mostly negative, walked on the causeway. One woman with no sense of place for the lake visited the lake proper one time, at Antelope Island, but it was decades ago before many amenities had been developed on the island. She and her husband came away feeling like there was nothing there and they had never returned. Most who expressed only mild sense of place for the lake tended to do little lake-oriented recreation as well, although one woman walked regularly and did things with her children. On the other hand, those participants who hunted, watched birds, rode horses on the island or other lake sites, and several who walked at lake sites including the causeway, all had at least a solid sense of place.¹⁹

A number of participants with place attachment, or at least a solid sense of place with the lake, did not talk about participating in any lake-related recreation, however

¹⁹ I did not ask participants about the frequency with which they did any of these recreational activities.

most of those participants did spend time at the lake or lake sites doing other things (e.g. work). Of note, there were no hunters or bird watchers with less than a solid sense of the lake. One woman with strong place attachment did not talk about any recreation activities *per se* (although she was very interested in the birds), but did talk about using the lake and Antelope Island for refuge, and visited frequently. In terms of relationships with lake meanings, the hunters and bird watchers, as well as the refuge-oriented participant, tended to cluster together. For all of these, the lake held natural, ecosystem-type meanings, including, not surprisingly, its importance to birds. It was also a place to protect for each of these participants, and none saw the lake as a negative place—in fact, few of these had any complaints about GSL at all. Participation in other forms of recreation did not provide any distinctions between or clusters among GSL-meanings.

Synopsis: The Roles that Matter

In summary, there are relationships between lake-related roles held by research participants and whether or not participants had a sense of place with GSL. There are also relationships between some of these roles and the meanings the lake held for participants. In general, although the role of parent was important in terms of experiences with the lake, it was not a role that distinguished between those who have a sense of place or not, nor did it provide any distinctions between meanings held by participants, other than those that were directly child-oriented. On the other hand, lake-related occupations provided clear distinctions in both sense of place and the meanings the lake held, however with this sample the types of occupations were limited. There were also relationships between farming or ranching near the lake and sense of place as well as the

meanings the lake held, with the farmers and ranchers in this sample each having at least a solid sense of place. Recreational roles varied, with hunting and bird watching in particular being related to at least a solid sense of place, and related to meanings such as ecosystem interests (particularly the lake's importance to birds) and protectiveness. Using the lake for refuge showed similar relationships. While some other types of recreation were related to strength of sense of place, the relationships were less consistent, and there were no consistent relationships between other types of recreation and lake meanings.

As noted earlier, a resource manager argued it is recreation—or the use of discretionary time—that makes the difference in whether people get attached to a place or not, particularly a place like GSL. He posited that it is far more important for developing attachment than length of residence. We now see if that holds true for these participants.

Length of Residence

There does appear to be some relationship between length of residence and the degree of sense of place expressed by research participants, but the relationship is considerably less consistent than might be expected. For example, participants who had lived near the lake their entire lives all had at least a solid sense of place, and all but two expressed fairly strong place attachment. On the other hand, one man who lived in the general area his whole life, growing up within five miles of the lake and living as close to the lake as one can for 13 years, appeared to have only a mild sense of place, with very mixed lake-meanings.

While all the participants who had lived near the lake for 20 years or more had at least a solid sense of place, there were no consistent relationships with sense of place for

those who have lived near the lake less than 20 years. This was also true with place attachment, with those with fairly strong place attachment living near the lake for as few as seven years.

The fact that within several married couples, spouses had very differing relationships with the lake is a good indicator that there are clearly factors besides length of residence involved. For example, one couple had lived near the lake for 16 years and no previous experience with GSL, and while the husband had strong place attachment, his wife had no sense of place with the lake.

In terms of GSL meanings, there were no distinguishing relationships between length of residence and any of the lake meanings other than those already discussed related to growing up near the lake and being the third or fourth generation to live on family ground. Of note, there was no relationship between length of residence and the GSL-meaning of protectiveness.

However, there was definitely a perception that length of residence makes a difference, although participants did not agree on what that difference might be. Some resource managers described a sort of three-way split, with the most interest in the lake seen in those with long-term connections to the lake and lake sites, and those who have just moved from other places who are curious about the lake. One resource manager described the long-time residents.

The people I talk to the most that seem to have the fondest memories...about their experience around the lake tend to be the people that grew up their whole lives around here, farmed, ranched, had their cows grazing on some of this land out here. Those are the kind of people who talk about it the most, the people who have spent a good chunk of their lives out here and have some sort of connection with the land and the lake...

... [G]enerally the people who have been here the longest are the ones who have the best ties and the most positive things to say about the area and the lake itself.

Two managers described what they saw from newcomers to the area.

People, when they first move out, are very curious about the Great Salt Lake—“where is it, can I see it?”

The people...I would say appreciate this the most are people that moved out here from somewhere else. I find that a lot, people that came from...other states, usually are the people that come out here and seem to have more of an appreciation...seem to understand things a little better, or actually take an interest in why is this here, why is it important. And maybe it's just because... they didn't have the opportunity to grow up around something like this.

Resource managers contrasted these groups with locals who have lived in the area for years or even decades, who have no interest in GSL, some of whom have never visited GSL.

Resident participants did not see this newcomer curiosity. Long-time residents expressed concern that newcomers do not have the same interest with or concern for the lake or the area, and that the land holds no meaning for newcomers, it is “just property.”

I think that once our generation is gone, I don't think the kinship to that area is going to be as strong...

The long-timers had some understanding of this. One focus group member commented, “It's a dead lake to them...it stinks, there's bugs. So maybe you have to learn...by living there and experiencing some of those things, to appreciate it.” Later he added,

...I think a lot of it is... an age differential. You talk to the oldtimers...they all have connections, really deep roots. But the new move-in people, I don't think they have any connection with the lake or the environment too much yet... They probably will as they appreciate things and learn to...get past the bugs and the smell.

The newest resident in the group agreed, adding “I sure didn't know so much about it.”

I think the new people have no idea of the history...I didn't and I've been here 12 years. I had no idea of the things that you could even still do out there.

Some of these longer-term residents observed that things have changed in ways that made it difficult for newcomers to be able to develop the same place connection.

There's been a lot of changes...in the area, that a lot of people won't ever have a chance really to associate with and feel a closeness to the land and the atmosphere that we had an opportunity to receive. That's probably...why a lot of us are as close as we are, is because of the memories and the nostalgia that comes with the land and being close to the lake, enjoying the benefits that the lake actually offered us.

These changes were partially due to development encroaching on habitat, limiting the presence of wildlife for viewing and hunting; to dwindling numbers of people who were aware of the history of the place and the connections to the lake; and in WC Weber, to the loss of access to the lake at Little Mountain. Some long-time residents feared these things made it more difficult for newcomers to ever be able to develop a deeper level of attachment to the lake.

The Experience Difference

Whether focusing on the roles held in relation to the lake or length of residence, one of the variables that appeared to matter in terms of sense of place and the meanings the lake held for participants was the level of experience they had with the lake or lake sites. This was the commonality among things like lake-related occupations, lake-related recreation, and what seemed to matter about farming and ranching—to the extent that these things increased participants' experience and involvement with the lake, they appeared to increase sense of place. Some of these were correlated with meanings the lake holds for participants, although there were no uniform relationships across meanings

as experience and involvement increased. However, differences in experience and involvement with GSL and its sites appear to be why there was little consistency in relationships with variables like being a parent, and even length of residence.

As noted earlier, there were participants who expressed at least some degree of sense of place with the lake despite not having spent much time there. On closer examination, though, most of these participants expressed only mild sense of place, while others spent more time than it appeared initially. Two who said they did not spend time “at the lake” did spend time on close to a daily basis interacting with either the lake system or things related to the lake system (e.g. the GSL-related birds). One of these two participants expressed strong place attachment for the lake, while the other had at least a solid sense of place.

There seemed to be a level of sense of place that came from deep experience with and knowledge about the lake. It left participants with a sense of respect, perhaps even awe, at what the lake was capable of. Examples of this include the way participants talked about the danger of storms on the lake discussed earlier, and the language used by the farmer in Box Elder County to express how he saw the lake after the high water years.

...[I]t's this big ominous shadow that's out there, that's not going away, it doesn't say a whole lot, but certain times of the year, certain decades, it raises it's head and says, 'I'm here.' The rest of the time it's asleep and quiet. ...Like a sleeping giant that raises its head every other decade...

For these participants, this level of understanding of GSL went along with a feeling that one just had to work with it, adapt to it, and manage for it. Although this level of experience appeared to be related to difficult aspects of the lake, I do not see evidence of

it being related to a negative sense of place. In fact, nearly all of those who showed indications of this level of experience with the lake expressed strong place attachment.

The Effect of Location in the Lake System on Sense of Place and Meanings

Does where the participant lives, in terms of having a view of the lake, proximity, having access to the lake, and things of that nature, make a difference in sense of place and in the meanings GSL holds for the participant? Some of these things appeared to matter, while others did not.

A View of the Lake

For the most part, there did not seem to be a consistent relationship between having a view of the lake from one's property and a sense of place with the lake. While one participant with no sense of the lake said not having a view was part of this, another one lacking a sense of the lake talked about having a view, but said it was more of a backdrop than a thing that really mattered. At least one other person with little sense of place also had a view of the lake, while many of those with strong place attachment did not have a view.

Research participants from both Weber and Davis Counties tended to refer to the view of the lake rather generically, talking about their view of the islands, or the view of the sunset they know is over the lake, all as their view of the lake. When I asked the Davis focus group about who could actually see the lake, several participants had to think for a moment before responding with comments such as, "I don't think I can," "Actual water, no," and "I can see sunsets, but I don't see the water." I then asked, "When you

see [Antelope Island] or when you see the sunset, even though you don't see the water, does it still feel like you're looking at the lake?" The response was affirmative. This more generic feel for "seeing the lake" may partially explain why not being able to see the "actual water" was not related to participants' sense of place.

Proximity and Access

Very few participants talked about their proximity to the lake, even though it was potentially salient because of the positive and negative aspects of living closer to the lake—more birds, more bugs, more salt in the air, etc. The lack of proximity was an issue for the Box Elder County Commissioner, who observed,

I don't think we think in terms of the Great Salt Lake in our county, we think of the marshes that are involved with the [Bear River Migratory] Bird Refuge and we think of Willard Bay. And I think we think of them as separate entities than the Great Salt Lake.

Access to the lake—and proximity of that access—was important to many more participants. A related matter was whether people lived near lake-affiliated wetlands, a bay, or open waters. This did matter to a degree, mainly in terms of what participants tended to identify with, for example, people would say, "we don't live close to the lake, we live close to Ogden Bay," or Farmington Bay, or the marshes. However, these distinctions did not make a difference in terms of the expressions of sense of place with the lake. Some spoke about the lake without distinguishing between lake and bay or lake and marshland, others spoke in inclusive terms, and in some cases exclusive terms—however there was no relationship between where participants lived and the level of sense of place they expressed. Again, access mattered far more.

There were a number of different concerns related to access. For many, the lack of access was a barrier to developing a sense of place or place attachment. Participants made a number of comments about this, such as, “Well, it’s hard to get there,” “...access to the lake from this point is really quite limited,” and “I can’t see where anyone could be connected to it that didn’t have actual access to it.”

[W]e don’t have the access to it, that makes a big difference. ... There are only two places the public can get to this lake, that’s down at Saltair and at Antelope Island. Everything up here is bird refuge...

If we lived right where we had a piece of property we could walk down and walk in it, that would be different, but we don’t have that kind of access. So I don’t think we have—I mean I’ve got more connections with West Yellowstone than with the lake.

A number of the participants with little to no sense of place commented on this lack of access to the lake, and only one participant with little to no sense of place lived in the community with the most access. On the other hand, though, a number of participants with at least a solid sense of place had no better access to the lake than these others.

Other participants talked about the limits to access due to DWR creating refuges to manage waterfowl and other wildlife, refuges that have limited some access.

[T]he lake is surrounded by nonpublic areas, really. Even [the Ogden Bay manager] keeps his gates locked so you can’t go out there.

The issue here appeared to be more about people having access whenever they wanted to rather than having no access. A hunter reported this reduction in privately held lands around the lake (by creating managed areas) had actually increased access for hunters.

The issue of access whenever people wanted it also got raised in the Davis County focus group, ironically by those who lived closest to the open waters of GSL of any in the lake system.

Focus group member one: I think the gate, when I see the gate closed that makes me feel somewhat disconnected...

Member two: I feel like they caged it up, too. Just that gate.

The participants from West Warren had a different access issue. For them, the issue was one of having had access that was important to the community, only to lose it. As long-time residents in the focus group discussed this loss, it sounded like the access may have been taken for granted by the community until it was lost. Then community members realized how much it meant to the community and how much they missed it. The lack of access had not created any reduction in sense of place or place attachment for these members, although it likely affected those who moved in since the loss.

The relationships between lack of access and sense of place were fairly inconsistent, and there did not seem to be any direct relationships between this issue and GSL-meanings. However, if a lack of access deters involvement with the lake, it could affect meanings such as recreation, and perhaps protectiveness if people are not able to develop enough of a relationship with the lake to feel protective of it. These indirect effects may lead to higher incidences of negative sense of place or lack of sense of place.

Summary: Distinguishing between Those with Varying Levels of Sense of Place

So why did some people have a solid sense of place with the lake while others did not? These findings indicate that for these participants the answer was often a layered one. For example, one might assume that because a married couple live the same distance from the lake, with the same access, and the same view of the lake or related sites, that their sense of place would at least be similar. Yet, of the four couples interviewed, both husband and wife had similar levels of sense of place in only one couple.

In another couple, who had lived near the lake for two years, the wife had no real sense of place, and what she did associate with the lake was completely negative. The husband had a mild sense of the lake with some positive associations. While she never lived anywhere around the lake until the last two years, he grew up in Davis County, had played in the water and on the beach at Antelope Island when he was a child, and had sailed on the lake with his family numerous times. Even though his socialization from his parents was to as many negative aspects of the lake as positive ones, he has recollections of being amazed at seeing nothing but lake on the horizon when he was sailing. In another couple, who had lived near the lake for 13 years, the husband had little to no sense of the lake, while his wife had some place attachment.

Husband: I don't really feel connected to the lake, I don't know why.

Wife: [sighs] Maybe because you weren't raised here? And I was.

The fourth couple was reversed; the wife had no sense of the lake, while the husband had strong place attachment. In this case, neither was raised there, but they had lived near the lake for 16 years. They spent no time at GSL, having visited the lake at Antelope Island one time, decades ago. But the husband was home much of the time during the day and spent hours watching the birds and lake-related weather; he dealt with the salt in their soil and worked on other lake water-affected land in the area. These things were all part of his day to day life, while his wife worked in town and was not a part of any of those lake-related activities.

A theme running through this is that differences in exposure to and experience with the lake are likely related to differences in the level of connection the participant felt with the lake. Those differences may be in whether one grew up close to the lake, or at

least had memories of visiting and interacting with the lake, or not; or they may be in the amount of time spent interacting with the lake system as adults. Differences in sense of place and attachment being related to experience with the lake supports prior theory and research on place attachment that has seen attachment resulting from a long process of interaction and experience with a place (e.g. Hay 1998; Tuan 1977; Williams and Vaske 2003).

One resource manager made the observation that one needs to have something that makes them think about the lake. Without some sort of tie, whether it is bird watching, hunting, or an agricultural connection, one just does not think about it, “it’s just an after thought in your mind...there’s no connection with it, there’s a lot of disconnect...” This illustrates my argument that for some individuals, even those who live close to GSL, the lake may not be part of their reality of everyday life—GSL may not hold any significance, or as Berger and Luckmann ([1966] 1967) put it, relevance, for them. As noted earlier, it could be said that these individuals lack a sense of place with GSL, for them the lake is what Tuan (19787) would call an undistinguished space.

This can be further exemplified by considering the three county commissioners I interviewed. The commissioner from Box Elder County expressed no sense of place about GSL.

... I guess I’m just pretty naïve about the Great Salt Lake. It’s just there, and that’s what I think you would find most people in my county saying. It’s just a body of water that’s just there.

This is understandable because, as the commissioner put it, “We’re not lake-dwelling people in our county—and yet we have the lake.” Additionally, most of the land close to the lake is marshland that cannot be developed, so few live near the lake.

The commissioner from Weber County appeared to have a negative sense of place with GSL. In the interview, most of the focus was on negative aspects of the lake—the commissioner made comments about the mosquitoes, smell, and the poor soil, and said, “probably no one really wanted to be out by the lake.” At the end of the interview I asked for any last thoughts.

Other than I'd probably never live out by the lake because of the mosquitoes and the smell (laughs), and the crummy dirt and everything else?

Again, the commissioner likely has had little to do with the lake. Anything GSL-related in Weber County would be much less of a concern than say, Davis County, because of the geographic differences between the counties.

On the other hand, the commissioner from Davis County appeared to have not only a solid sense of place with the lake, but also at least some degree of place attachment as noted earlier. He had family connections to the area and grew up relatively close to the lake. He had memories of exploring and riding his bike on the shores when he was a child. He had lived about five miles away from the causeway for some time. The commissioner had a good deal of knowledge about the lake, including the ecosystem in general, the birds, and Antelope Island and its education programs. It appeared that a good deal of this was from personal interest, but for him it was also job-related. Between the miles of shoreline in Davis County, the presence of Antelope Island and its tourism opportunities, issues with zoning and other lake-related regulation, the county commissioners in Davis County are much more involved in lake-related issues than in either Weber or Box Elder Counties.

The commissioner provided an example of how layered these different variables were. This was also seen in the make-up of the Weber County focus group, where nearly the entire group raised protective concerns during their discussion of the most important topics raised in their meeting. As I mentioned, it was likely the group members held the feelings they expressed prior to the focus group, particularly given the make up of the group—half of the six members were third generation residents, at least half were hunters who had expressed strong attraction to the birds and wildlife of the lake-related area, and at least two talked about bird watching. For the participants in this study, all these variables were related to at least a solid sense of place with the lake, and several of them were related to the GSL-meaning of protectiveness.

Understanding the layered nature of these variables can help make sense of the lack of protectiveness seen in a participant with clear place attachment mentioned earlier. This man indicated that not only should the lake area be more developed, but that building more causeways could solve the problems with siting a new freeway. When we consider the layers involved for him, this makes sense. This man was socialized from the time he was a child that the lake is a source of resources, to be used for whatever people can use it for. Part of the family income came from utilizing the lake's resources, a practice he continued as an adult. For this man, part of his attachment to GSL is related to the use of the lake's resources.

The examples provided by the commissioners and by this last gentleman illustrate two things from the literature. First, they give us a good example of how an individual's roles, and the socialization and stocks of knowledge affiliated with those roles, can have a bearing on the meaning, and the degree of meaning, the lake holds for that individual, as I

have argued following Berger and Luckmann ([1966] 1967) and Greider and Garkovich (1994). Each of the commissioners has a different role-based association with the lake, it is not surprising that the lake would mean very different things to each of them. Similarly, the lake-related role of the last gentleman was very related to his perspective of the lake.

Additionally, these examples support Tuan's (1977) argument that the more ties one has with a place, the more connected one will be. Having a layered relationship with instrumental ties, affective ties, family and community ties all to the same natural place strengthens the relationship, "because more than one tie yoke them to it" (p. 158). The differences in the number of ties to the lake and in the level of connection to GSL seen among the three commissioners illustrate Tuan's point.

Of course it cannot be assumed that all of the participants' relationships with the lake will make sense or be predictable within the correlations outlined here. For example, I have talked about increased involvement and experience with GSL, as well as knowledge and understanding of the lake, being related to at least a solid sense of place. Not having a sense of the lake, not feeling it is something that matters in one's life may, on the one hand, be related to a lack of knowledge of and experience with the lake, that relationship has already been discussed. However there are some people who have some understanding of and experience with the lake, who appear to be aware of both positive and negative aspects of the lake, but for whom the lake simply does not matter—it is not a part of their everyday life. An example of this is the man who commented that the lake was not responsible for all the bugs in the area, he was aware that the shoreline west of their home was a place his children enjoyed and he spent time with them there. He also

commented on some of the unique aspects of the lake. But the lake did not matter in his life, and he was somewhat perplexed that others—including his wife—found it meaningful. This again exemplifies the issue of relevance mentioned earlier.

This qualitative work allows us to see some of the features that distinguish those with a sense of the lake from those without. It also gives some indications of the variables related to the meanings the lake held for different participants.

A Qualitative Look at Sense of Place with a Mixed Amenity Setting

In this chapter we have seen how interview and focus group participants discussed their relationships with Great Salt Lake. They described their sense of this mixed amenity place, or in some cases, the lack of a sense of place. They shared the meanings the lake held for them, from strongly positive meanings to some that are quite negative. For some of the lake's neighbors, the lake held no real meaning at all. I explored the variables related to these differences in meanings and senses of place.

Meanings and sense of place are qualitative issues, requiring qualitative examinations. On the other hand, while questions about correlations and differentiations can be explored qualitatively, the answers can be strengthened by adding quantitative considerations to the examination. The qualitative work on these research questions gives us a number of useful indications about these relationships. It also provides a number of useful indicators that can now be used in the quantitative analysis that follows.

CHAPTER 5

ANALYSIS OF SURVEY DATA

Survey question: What does the Great Salt Lake mean to you?

“It's unique, one of a kind, it attracts birds of all kinds, no other place like it.”

“An important wildlife/bird refuge/flyway.”

“beautiful, surreal, comforting.”

Introduction to the Quantitative Work

The quantitative portion of this study is primarily intended to triangulate the findings in the qualitative work detailed in the last chapter, lending a higher degree of reliability than can be achieved solely with qualitative work. To review, the quantitative data were collected with a drop-off/pick-up survey conducted in the area closest to Great Salt Lake in Davis and Weber Counties. The survey attained a combined response rate of 83.7 percent (86.5 percent in Weber County and 80.9 percent in Davis County), and as noted in Chapter 3, the resultant 381 completed survey questionnaires are indicative that the sample represents the local population.

The survey instrument (Appendix G) consists of five sections. These include a section asking respondents for their views and attitudes about living near the lake; a section on involvement with the lake, asking respondents about their activities involving the lake; one on issues related to GSL, asking about current issues and concerns related to the lake; and a section on connections to GSL, asking respondents about their feelings towards the lake. The last section focuses on respondents' background characteristics, asking general sociodemographic questions. The questionnaires were distributed to

randomly selected respondents from households selected by stratified, systematic sampling by county, with the only difference between the Weber County questionnaire and the one for Davis County being a sentence in the cover letter describing the demarcation of the study area for that county.

The completed questionnaires provide evidence that many respondents find issues related to Great Salt Lake salient and important. Not only did most respondents respond thoroughly to a 14 page survey, but 54 respondents (14 percent) wrote additional comments. While several wrote in the margins of the questionnaire, often expanding on responses to questions, many comments were written at the end of the survey, where it was suggested that respondents write “any additional information you would like to share about living near the Great Salt Lake...” These comments, some of them paragraphs-long and filling much of the blank page at the end of the questionnaire, ranged widely in topic. Some respondents said people do not appreciate the lake enough while others wrote that the lake needs more attractions developed; several made additional comments about roads, and specifically Legacy Highway. Others expressed appreciation for the wildlife or concern for the current low water level, made references to the lake as an important landmark, or stated that respondents do not think about GSL much, or that they think about it negatively. However, there were also questionnaires that were not filled out completely, as well as some in which respondents simply circled the same response with one continuous loop for an entire matrix question, typically circling “not applicable” or the neutral response, or in some cases, the strongest negative response.

This chapter details the analyses of these survey data. The chapter primarily focuses on the meanings GSL holds for respondents, and dynamics related to those

meanings. Since meaning is a large part of what distinguishes between place and space, I use meanings as evidence of people having a sense of place. As a reminder of my usage outlined in Chapter Two, by sense of place I refer to an individual's internalization of some collective definition of a specific place. A person has a sense of place if he or she holds taken-for-granted knowledge about that place, and if that definition of the place is part of the reality of everyday life for that person. One's sense of a place may be positive, relatively neutral, or negative. In some of the analyses that follow I also consider place attachment to a degree. My use of "place attachment" refers to the positive meanings a place holds for people; it is based in sentiment, not judgment, and is affective rather than evaluative. One can have a sense of a place without being attached to that place.

The first research question deals specifically with meanings the lake holds for respondents, gathered from responses to open-ended questions. The analyses first describe and categorize the qualitative responses. Because the various meanings are nominal level data, the remaining research questions all rely on categorical analytical techniques. In sub-parts of the first research question, contingency tables are used to examine whether these lake-related meanings are shared within social groups, and whether individuals hold more than one meaning of the lake. The second research question distinguishes between people who hold a sense of place with the lake and those who do not, as well as between those who hold different meanings of GSL. I also consider differences between people with place attachment and those without attachment. Contingency tables are used for these bivariate analyses.

Specific measurement and analytic procedures for each research question precede the analyses for that question. Statistics were calculated using SPSS 15.0 for Windows.

The Meanings and Senses of Great Salt Lake

Research question #1: *What are the various senses of place held about Great Salt Lake by neighbors of the lake?*

1a: *What are the various meanings the lake holds?*

1b: *To what extent are these meanings shared among individuals and groups?*

1c: *Do individuals hold multiple meanings of GSL?*

Research expectation #1: *There will be a wide variety of senses of place and meanings held about GSL, with evidence of shared meanings among groups. A substantial number of people will appear to hold multiple meanings, including meanings that do not appear to be congruent with each other.*

This research question was conceptualized to be addressed descriptively. To address the parts examining the various senses of place and meanings the lake holds (#1 and #1a), I describe qualitative survey data and sort them into categories. These meanings are then used to consider the issues of shared meanings and whether respondents hold multiple meanings of the lake (#1b and #1c), utilizing categorical analytical techniques.

Research question #1: *What are the various senses of place held about Great Salt Lake by neighbors of the lake?*

#1a: *What are the various meanings the lake holds?*

Measurement and Analytic Methods for Research Question #1

As noted earlier, it has been argued that more open-ended, qualitative approaches, where respondents can speak in their own words, are essential for capturing a better sense of what places mean to respondents (see, e.g., Williams 2008). Accordingly, the questionnaire includes a number of open-ended questions to afford respondents the opportunity to express their own thoughts and feelings. In the section on living near GSL, early in the survey to avoid response bias, respondents are asked, first, whether the lake

and related areas hold any particular meaning for them, with a yes or no response (Appendix G, p. 2).¹ Those who respond affirmatively are then asked the open-ended question, “What does the Great Salt Lake mean to you?”² A pair of open-ended questions follows shortly after, asking “What do you like MOST about living near the Great Salt Lake?” and “What do you like LEAST about living near the Great Salt Lake?” (Appendix G, p. 2). I measure the senses of place and meanings of the lake using the direct responses to these questions qualitatively, and after sorting them into response categories, conduct a univariate analysis to describe frequency distributions.

Findings

In this section I include examples of the responses to the open-ended questions as well as the frequency distributions of the response categories that emerged from these data. After 127 respondents (33.3 percent) answered “yes” to the question asking whether GSL and its related areas hold any meaning for the respondent, 125 answered the open-ended question, “What does the Great Salt Lake mean to you?” The responses fell into seven categories (see Table 5-1).

Thirty percent of the answers had to do with wildlife, birds, their habitat, and open space free from human intervention. Examples include, “I love the wildlife/birds that use the area,” “An important wildlife/bird refuge/flyway,” “The area provides critical

¹ Question 3: “Does the Great Salt Lake, its islands, bays or shorelands (including refuges and preserves), hold any particular meaning for you?”

² I should note that this dissertation is written using the convention of most of the academic and scientific writing about the lake, referring to “Great Salt Lake,” a convention also followed by some literary works, most notably, *Refuge* by Terry Tempest Williams (1991). FRIENDS of Great Salt Lake is rather insistent on this usage, and is quick to point out that the word “the” is not part of the name of the lake. However when I was developing the survey instrument it became clear that this usage is not familiar to the ears of many residents of northern Utah, as I received feedback from a number of people that I had made a typographical error, or that “it just didn’t sound right.” Due to this, the survey questionnaire consistently refers to “the Great Salt Lake.”

Table 5-1. Frequencies: What Great Salt Lake Means to Respondents

	Frequency	Percent	Valid Percent
Birds and wildlife/habitat	37	9.7	29.6
Recreation, hunting	27	7.1	21.6
Unique aspects	19	5.0	15.2
Memories	15	3.9	12.0
Historical/heritage	8	2.1	6.4
Beauty, views & sunsets	11	2.9	8.8
Misc.	8	2.1	6.4
No response	256	67.2	

habitat for many species of wildlife,” and “There is still land that is only marginally affected by human intervention. It seems like it’s the ‘last frontier’ in a way.” The second largest group focused on recreation activities, such as, “Fishing, camping, going to scenic areas. Antelope Island, Willard Bay,” “In years past it's been great for sailing, the birds that migrate thru the area, horseback riding,” and “I enjoy the island, and the bird hunting the lake helps to provide.” Of the 27 respondents who talked about recreation, 13 mentioned hunting.

Another group talked about the unique aspects of the lake, for example, “It's unique, one of a kind, it attracts birds of all kinds, no other place like it,” “It's a land mark from any map of where we live,” and “Living in Utah with the GSL is a unique experience. It is well known world wide.” For 12 percent of those who answered, GSL means memories: “Great childhood memories of picnics, swimming and fun at the Great Salt Lake (and ongoing memories throughout the years),” “I used to play in the swamp land and marshes with my friends. We loved to canoe and hunt duck and explore in the swamps of the Great Salt Lake.” One respondent remembered a major life event when she thought about the lake: “I got engaged on Antelope Island.”

Some respondents commented on historical aspects of the lake, or their own

heritage. Nine percent of responses were along these lines, such as, “It is part of the history of the area. It is cool to live near it and I like living near something historical and with meaning,” and “Legacy of my ancestors who settled this area as early pioneers.” For others, the lake means beautiful views and sunsets. Three percent of the answers focused on these aspects of GSL, for example, “the views and sunsets over the island are awesome,” and “beautiful, surreal, comforting.”

A number of responses did not fall under any group category, although they express strong sentiments about the lake. These widely varying eight responses (six percent of responses) make up a miscellaneous category. One refers to lake traits, “It reminds me of the ocean,” while two comment on lake-related weather, “The Great Salt Lake's effect on the local weather as well as the beauty of Antelope Island and its sights are very important to me,” and “The water cycle here provides excellent snow in the mountains to ski on (lake effect).” A couple of responses refer to making one’s living on the lake, e.g., “Trapped—hunted, worked in salt mine, bird refuges all around the lake.” Three more refer to GSL as home, e.g. “It's always been home to us,” and finally, “Big, smelly, salty lake that I call home.”

While these responses are good indications of what GSL meant to one third of respondents, the question does not allow me to consider other senses of place, particularly any negatives senses of place or a lack of sense of place. It also begs the question as to how other respondents felt about the lake, due to the low item response. Due to these concerns, I also examined the paired, open-ended questions asking respondents what they like most and least about living near GSL. Substantially more people responded to each of these questions than to the question on what GSL means; 83

percent responded to “like least” (n = 317) and 76 percent to “like most” (n = 291).

With both of these questions, responses that covered multiple categories were coded by the first part of the answer listed. For example, a response to what the respondent likes most, “Values of people living here. Recreation,” was categorized as social, community aspects rather than recreation; “open area, bird refuge, great sunsets,” was coded as rural due to the “open area” rather than birds and wildlife-related or views and sunsets.

Despite the strong response to “like least” there was little variability, with 85 percent of responses related to smell (42 percent), bugs (13 percent), or a combination of the two (16 percent) (see Table 5-2). Other responses fell into six sparse categories: weather effects, increased development/traffic problems, high water table, other, “don’t think about it,” and nothing or none—that is, there was nothing the respondent liked least about living near the lake. Despite the relative lack of variation in types of responses, there was much diversity in their wording, particularly in the response category of smell and odor (see Table 5-3 for examples).

The responses to what respondents liked most about living near the lake were distributed much more broadly (see Table 5-4). There was a strong modal response

Table 5-2. Frequencies: Like Least about Living near GSL

	Frequency	Percent	Valid Percent
Smell/odor	159	41.7	50.2
Bugs, mosquitoes, etc.	50	13.1	15.8
Smell and bugs	60	15.7	18.9
Weather effects	4	1.0	1.3
Increased development/traffic problems	6	1.6	1.9
High water table	4	1.0	1.3
Other	6	1.6	1.9
Don't think about it	11	2.9	3.5
Nothing/none/NA	17	4.5	5.4
No response	64	16.8	

Table 5-3. Examples of Responses to Like Least about Living near GSL

Response Category	Sample Responses	
Smell/odor	It is very smelly sometimes lake stink! at times the odor is very bad The smell--it's tolerable but can get overpowering sometimes The occasional aroma--but you get used to it.	Stench at times the smell when the brine flies hatch Smell on a hot windy day the smell, but it's only a problem occasionally The somewhat sulfurous smell that comes from the lake during certain types of weather
Bugs, mosquitoes, etc.	The mosquito population that thrives in the area. The mosquitoes and gnats The bugs!!!	bugs, gnats, mayflies, mosquitoes The many bugs Insects, "mosquitoes"
Smell and bugs	the smell, bugs & mosquitoes are unbearable in the prime season Mosquitoes, stinky smell, mosquitoes, mosquitoes	Lake stink, brine flies, insects The bugs & the smell when the wind blows
Weather effects	the micro climate and salt storms	The salty rain storms
Increased development/ traffic problems	the encroachment of housing, or urban sprawl All of the homes being built	More difficult to drive, creates bottlenecks or makes driving west to other states longer Road restriction in case of emergency, traffic jams
High water table	I don't like a high water table	too high a water table without drainage for homes
Other	That we have to pay to go see it. I worry about flooding and occasionally lake stink You can't boat on the lake. I also dislike the mosquitoes.	It's disappear[ing] The distance to travel when driving westward The condition of the soil we inherited by being on a lake bottom so...I'll blame the lake.
I don't think about it	The lake has nothing to do about how I feel about living here. Never thought about it lake does not bother me--not an issue	It's not a problem, we don't live that close. don't really pay any attention to it It doesn't matter either way
Nothing/none/NA	have no negative problem	nothing in particular

category with responses related to lake-related views and sunsets, e.g. “the beauty of Antelope Island and the lake itself,” “Picturesque feeling you get when looking at lake especially at sunset,” “the beautiful sunsets and the glow on the water,” and “The natural beauty.” Over 20 percent of all responses fell into this category. Far fewer said recreation

Table 5-4. Frequencies: Like Most about Living near GSL

	Frequency	Percent	Valid Percent
Views and sunsets	79	20.7	27.1
Recreation activities	25	6.6	8.6
Birds and other wildlife related	43	11.3	14.8
Rural, undeveloped	55	14.4	18.9
Social, community aspects	21	5.5	7.2
GSL & uniqueness	24	6.3	8.2
Negatives or "nothing"	18	4.7	6.2
Lack of sense of place	26	6.8	8.9
No response	90	23.6	

activities were the thing they liked most, only nine percent responded with comments like, “My husband & sons can go waterfowl hunting and we like to watch all the birds that live nearby because of the atmosphere,” “Great place to ride horses,” and “fresh water swamps for fishing.”³ Fifteen percent of respondents liked the birds and other wildlife-related aspects of the lake most, with responses such as “I like watching the big birds coming and going during the seasons,” “The marshlands attract birds & wildlife we can observe,” and “The wide variety of birds that are commonly seen.” Eight percent referred to a number of unique aspects of the lake. In addition to responses saying simply, “Uniqueness,” this group also referred to things like the varied nature of the area, e.g. “diversity of desert and then a lake;” the unique effects GSL has on local weather, “It helps regulate the weather and cooling the atmosphere;” that it is a well-known landmark, “the Great Salt Lake is known around the world;” and that it gives people something to talk about, e.g. “the conversation piece.”

While the above responses all focused on the lake and its environs, other responses were related to the rural area and to social and community aspects of living near the lake. With 19 percent of responses, the second largest response category was rural and

³ This is likely referring to one of the estuary areas where river meets GSL.

undeveloped aspects of the lake. This category included comments such as “no development (housing) will happen west of our home,” “There's a wide, open space to the west and no housing developments will go there,” and “there is no one living in it—a western barrier.” Seven percent of responses focused on social and community aspects, including, “The community and industry along the Eastern and South lake shore,” “the community, friendship, family,” “Other LDS people live near here” and “I'm 83 yrs old and had a good life and raised my family here. My kids live here and love Hooper.”

Some wrote negative responses to the question of what they liked most about living near the lake, answering with comments such as, “nothing – it smells,” “nothing in particular,” or simply, “nothing.” Some of these respondents put “N/A” or “nothing” for both the “like most” and “like least” questions; identical answers along these lines for both questions were coded “no response.” However, six percent of responses to the “like most” question were negative and differed substantially from the “like least” response. Another nine percent gave answers that seem to indicate they did not have any particular sense of the lake, such as, “don't really pay any attention to it,” “It doesn't matter, I don't see it,” and “Have never thought about it.” With these last two categories, the “like most” variable gives evidence of negative sense of place as well as a lack of sense of place among a relative handful of the 76 percent of survey respondents who answered this open-ended question.

Summary

Williams (2008) argued that allowing research participants to speak in their own words is essential for developing an understanding of what a place means to them. These

three open-ended questions gave survey respondents the opportunity to express themselves regarding GSL. The responses to these questions are an indication of the variety of senses of place respondents had about Great Salt Lake, as well as the meanings the lake held for them. Again, following Berger and Luckmann ([1966] 1967), I suggested there could be as many different constructions of the lake or lake meanings as there are roles that interact with GSL, and that what the lake means to people would be related to their roles, and the stocks of knowledge affiliated with those roles.⁴ While the qualitative data show the depth of feeling and, in many cases, the warmth respondents felt towards the lake, the fact that the responses to the meaning and “likes most” questions fall rather neatly into only seven and eight categories respectively demonstrates that there are strong and coherent themes in the meanings GSL held for its neighbors. The data indicate that while many held senses of place with the lake, there were those who did not have a sense of place, for whom the lake was not a part of their everyday life despite living so close to it. For those with a sense of place with the lake, GSL held a variety of meanings. These include the lake’s beauty, views and sunsets; recreation activities; birds, other wildlife, and the habitat that attracts and sustains them; the lake’s association with undeveloped rural areas; social and community aspects of the lake, including memories, history and heritage; and the uniqueness of varying aspects of GSL, including the lake’s affect on the weather. In addition to these positive meanings, for some, the meaning GSL held was negative. Similarly to what was seen in the qualitative work, these meanings support Gieryn’s (2000) argument that there are three things about places that matter in

⁴ Again, I am using “role” following Berger and Luckmann’s ([1966] 1967) usage, which refers to typifications of actors and their associated behaviors. The role describes the actor, the action prescribed for such an actor, and the stocks of knowledge that actor will hold (after being socialized to that knowledge).

the meanings those places hold for people: the physical or material form, the location and the social aspects of the place.

Research question #1b: *To what extent are these meanings shared among individuals and groups?*

Measurement and Analytic Methods for Research Question #1b

This part of the research question considers whether any lake meanings are shared among members of groups,⁵ that is, whether people who may interact with each other as members of groups and are likely to have shared stocks of knowledge about the lake (following Berger and Luckmann [1966] 1967) hold meanings in common.

The Meanings Variables

To address this portion of research question #1, I use the “like most” variable—what respondents like most about living near Great Salt Lake—to measure the meanings the lake holds for respondents. Although responses to the “what GSL means” question described above provide a more direct representation of these meanings, the “like most” variable is more useful analytically for a number of reasons. Even though one-third of the survey respondents gave answers to “what GSL means,” which is not bad for an open-ended follow-up to a contingency question, using this item would leave two-thirds of survey respondents out of further analyses. Also, 125 responses spread out over seven response categories is rather limiting in terms of the analyses that can be done. Even more problematic for this study, using only responses to a question asking what the lake

⁵ Again, I use “groups” to mean collectivities that fall in between social groups and categorical groups. My use of “groups” refers to collectives of people who have reason to hold similar stocks of knowledge about, and the possibility of having shared experience with, GSL.

means would also be limiting in terms of capturing the full range of affect respondents may have regarding the lake, since it is unlikely respondents would indicate the lake held meaning for them if they had no sense of place with the lake, or if they had a negative sense of the lake. Indeed, none of the responses to “what GSL means” were indicative of either of these positions.

The “like most” variable, with responses from 76 percent of respondents, captures similar categories of meaning as “what GSL means,” with many of the categories of the two being nearly identical (i.e. views and sunsets, recreational activities, birds and wildlife-oriented, and uniqueness). The remaining two categories from “what GSL means,” historical/heritage, and memories, are captured by the social, community aspects category of the “like most” variable. This variable also has a category that captures rural aspects of living near GSL, which emerged as an important meaning of the lake in the qualitative work described in Chapter Four. Additionally, the responses to this item provide a way to consider those who hold a negative sense of the lake, since about five percent of the responses either raised negative aspects or indicated that the respondent did not think there was anything positive about living near GSL, as mentioned earlier. Similarly, about seven percent of the responses were indicative of the respondent lacking a sense of place with the lake.⁶

These meanings categories are the key elements of interest in all the analyses for this study. To analyze these nominal level data, they are crosstabulated, with chi-square tests and Cramer’s V used to test for relationships and their strength. In addition to the

⁶ The “like least” variable—what respondents like least about living near GSL—is not used for these analyses due to the small degree of variability in responses described above (i.e., 85 percent of responses indicating some combination of bugs and odor).

need for measures to be true to the meanings given by survey respondents, the requirements of these analytical techniques become another issue of consideration in the operationalization of variables.

For this analysis, the “like most” item was recoded into seven separate dichotomous variables, for example, those for whom the lake meant views and sunsets compared to those who did not hold that meaning. This allows easier comparisons between the meanings and improves the ability to use crosstabulations with fewer cells being too small for chi-square testing. The use of dichotomous variables in crosstabulations also allows for corrections when expected cell counts are too small for confidence in chi-square tests. Two such corrections are the Yates correction, which uses a variation on the chi-square formula that reduces the possibility for a single cell to have an exaggerated effect on the chi-square value. This correction is typically quite conservative. Fisher’s exact test is a test of independence that uses exact probability calculations. It is primarily used for small sample tests where chi-square is not accurate (Agresti and Franklin 2009; Kendrick 2000). Because SPSS performs these tests only on contingency tables with four cells (2 x 2 tables),⁷ they can only be used when the other variables in the crosstabulations are also dichotomous.

In summary, for this analysis the meaning GSL held for respondents is measured using the six meaning-specific variables (e.g. views and sunsets, recreation, birds and wildlife) and the negative sense of place variable, all derived from the “like most” variable. Each is set up dichotomously to distinguish between those who held that meaning and those who did not. I refer to this group as the meaning variables, and they

⁷ SPSS automatically runs these two operations along with chi-square on 2x2 tables. The outcome of the Yates correction is listed as the “continuity correction,” and Fisher’s exact test is listed by name.

are the dependent variables in the analyses for research question #1b.

Social Groupings

In order to consider whether people who likely interact together as members of social groups shared lake meanings, I consider three types of social groupings. The first is membership in groups or organizations related to the lake. Respondents were asked if they were members of any of the following groups or organizations: a private duck club, Ducks Unlimited, Audubon Society, The Nature Conservancy of Utah, FRIENDS of Great Salt Lake, or any other lake-related group (with a request to specify the group) (Appendix G, p. 7). These listed groups include foci on hunting, bird-watching, and conservation, and while the list may appear rather narrow, these are the primary membership groups related to the lake. There are smaller fund-raising/service groups such as Friends of Antelope Island and Friends of the Bear River Refuge, but the only group with a considerably different tone than those already mentioned is a political activist group, Friends of Legacy, that formed to advocate for the construction of Legacy Highway. Their lake-related focus was that preservation of GSL wetlands was not as important as the highway (Williams 2005); however this was not a membership group *per se* and appears to have died off after the Legacy compromise (noted earlier) was agreed on. Only three respondents indicated they were members of other GSL-related groups, however none of them stated what group or groups they belonged to.

Because of the strong influence on local culture, the second type of group I examine is religion, or more specifically, whether respondents were members of the local majority religion, the LDS Church. My sample does not include members of other

religions in sufficient numbers to consider other religions as groups. Religion was determined by asking respondents what, if any, is their religious affiliation, with response categories of Catholic, Protestant, LDS, other (with request to specify), and none (Appendix G, p. 13). The responses were collapsed into a dichotomous variable of those who were LDS and those who were not.

The third type of social grouping I consider is the community of residence. In the focus groups and some of the interviews, it appeared that some lake meanings were held in common at the neighborhood level. I examine whether this apparent relationship exists at the community level in the broader population. Galliano and Loeffler (1999) argue that “members of a community...frequently share a communal interpretation of place” (p. 6). I was interested in seeing whether meanings the lake holds were shared among respondents living in the same community. The community of residence was determined by an open-ended question asking respondents to give the name of the community they lived in (no matter whether incorporated or unincorporated) (Appendix G, p. 11). Residents from Weber County responded with nine named communities, including the Plain City area, Hooper, and seven named areas within the West Central Weber County (WC Weber) area, with these last ranging from two respondents in Blossom to 23 in Taylor (see Table 5-5). Additionally two residents identified themselves as living in unincorporated Weber County, which, in the study area, would also fall in WC Weber. These categories within Weber County were collapsed into three communities: the Plain City area, Hooper, and WC Weber.⁸ Other than the five respondents who said they

⁸ Although it could be argued that Taylor could serve as a stand-alone community in terms of the number of respondents who reside there, it is located in the midst of several other named places, so it would become difficult to argue that it is a different “location” than the named places that ring it.

Table 5-5. Frequencies: Community of Residence

	Frequency	Percent	Valid Percent
Weber County Communities			
Plain City area	37	9.7	10.6
Hooper	86	22.6	24.6
West Warren	5	1.3	1.4
West Haven area	9	2.4	2.6
Taylor	23	6.0	6.6
West Weber	11	2.9	3.1
Reese	3	.8	.9
Warren	12	3.1	3.4
Blossom	2	.5	.6
Unincorporated Weber Co.	2	.5	.6
Davis County Communities			
West Point	7	1.8	2.0
Syracuse	18	4.7	5.1
Layton	4	1.0	1.1
Kaysville	33	8.7	9.4
Farmington	25	6.6	7.1
Centerville	49	12.9	14.0
West Bountiful/Bountiful	19	5.0	5.4
Davis County	5	1.3	1.4
Missing	31	8.1	

lived in “Davis County” the communities named in Davis County are incorporated cities.

For the analyses, the community variable was recoded into eight dichotomous variables. They include, in Weber County, the Plain City area, Hooper, and WC Weber; and in Davis County, the Syracuse area, the Kaysville area, Farmington, Centerville and West Bountiful. Because of having only a few respondents in two of the Davis County communities, West Point was combined with its neighbor to the south, Syracuse, with which it has a good number of similarities and combined community resources (e.g. the high school, shopping areas, etc.) ; and the four respondents from Layton were combined with the respondents from Kaysville. The portion of Layton contained in the study area is located closer to the western part of Kaysville than it is to the eastern part of Layton, and

it is also far more like this area of Kaysville than like the rest of Layton in terms of land use, having a much more rural flavor, and being directly east of protected, GSL-affiliated wetlands areas.

As mentioned, both the LDS membership category and each of the community variables were coded as dichotomous variables, as well as each of the meaning variables. All dichotomous variables in these analyses are coded 0 and 1 with the 1 representing the positive response, e.g. LDS Church members are coded 1, those who are not are coded 0; those who hold a particular lake meaning are coded 1, those who do not are coded 0.

Findings

Univariate Analysis

The frequencies for all the meaning variables were presented in the last section (see Table 5-4).⁹ A note of reminder, the no response category is at 23.6 percent due to these variables coming from responses to an open-ended question.

Apparently the nearest neighbors of Great Salt Lake do not tend to be members of lake-related groups or organizations (see Table 5-6). The number of members in the individual types of groups—the level at which interaction allows the sharing of meanings—is too small to be able to use this type of social groups for further analysis.¹⁰

The frequency distributions for the other independent variables outlined above

⁹ Although Table 5-4 does not show the frequencies for each of the dichotomous variables, but rather for the single “likes most” variable, the numbers and percentages for each category are the same, e.g., the frequency of the “views and sunsets” category of that dichotomous variable is 79 (20.7%), while the frequency of “not views and sunsets” is the remaining 212 (55.7%) of the total; the number of missing responses remains at 90 (23.6%) for each of the dichotomous variables.

¹⁰ While it could be argued that by combining these membership groups into one composite group the number of respondents would be as large as some of my communities, this would not meet my criterion of people who likely interact together as members of social groups. It is in this interaction that the sharing of lake meanings would occur.

Table 5-6. Number of Respondents Who Are Members of GSL-related Groups

Group	Number
Private duck clubs	9
Ducks Unlimited	11
Audubon Society	3
The Nature Conservancy	4
FRIENDS of Great Salt Lake	0
Other GSL-related groups	3

Table 5-7. Frequencies: Selected Characteristics of Survey Respondents

Independent Variables	Frequency	Percent	Valid Percent
Religious affiliation			
L.D.S.	280	73.5	75.7
Other religious affiliation	90	13.9	24.3
Missing	11	2.9	
Dichotomous Community Variables			
Missing for each: 31 (8.1%)			
Plain City area	37	9.7	10.6
Hooper	86	22.6	24.6
West Central Weber County	67	17.6	19.1
Syracuse area	25	6.6	7.1
Kaysville area	37	9.7	10.6
Farmington	25	6.6	7.1
Centerville	49	12.9	14.0
West Bountiful	19	5.0	5.4

appear on Table 5-7. Seventy-four percent of respondents were LDS Church members.

The community variables range, in Weber County from 37 respondents in the Plain City area to 86 in Hooper, and in Davis County, from 19 in West Bountiful to 49 in Centerville.

Bivariate Analysis

As mentioned above, crosstabulations were used to examine relationships between each of the dichotomous meaning variables and the two types of independent variables. I examined whether any of these GSL meanings were shared among LDS Church members

as compared to non-LDS respondents; and whether residents of localized community areas held shared GSL meanings. Although the findings for all of the crosstabulations can be found on the accompanying tables, I discuss only those relationships that achieve statistical significance ($p \leq .05$) or approach statistical significance ($p \leq .10$).

Religious affiliation. There is a statistically significant relationship, albeit a weak one, between religious affiliation and the “social and community” meaning variable, with LDS Church members naming this lake meaning in substantially higher numbers than the non-LDS respondents (see Table 5-8). Indeed, only one non-LDS respondent identified this meaning. Religious affiliation (being LDS or not) was not related to any other lake meaning variables.

Table 5-8. Crosstabulations: Religious Affiliation by Meanings Variables (Percentages in Parentheses)

Meaning Variables	LDS	Non-LDS	Sig.	Cramer's V
Views and sunsets	63 (29.7)	15 (21.1)	.161	
Not views and sunsets	149 (70.3)	56 (78.9)		
Recreation activities	18 (8.5)	7 (9.9)	.725	
Not recreation activities	194 (91.5)	64 (90.1)		
Birds and other wildlife	31 (14.6)	12 (16.9)	.643	
Not birds and other wildlife	181 (85.4)	59 (83.1)		
Rural	35 (16.5)	16 (22.5)	.253	
Not rural	177 (83.5)	55 (77.5)		
Social/community aspects	20 (9.4)	1 (1.4)	<u>.026</u>	.133
Not social/community aspects	192 (90.6)	70 (98.6)		
Uniqueness	19 (9.0)	5 (7.0)	.615	
Not uniqueness	193 (91.0)	66 (93.0)		
Negatives sense of place	13 (6.1)	4 (5.6)	.878 [†]	
Not negative sense of place	199 (93.9)	67 (94.4)		
Total for each meaning pair:	212 (100.0)	71 (100.0)		

[†] 1 cell has expected count less than 5; Continuity Correction shows sig. of 1.000, Fisher's Exact Test sig. of .570

Table 5-9. Crosstabulations: Centerville by Meanings Variables (Percentages in Parentheses)

Meaning Variables	Centerville	Not Centerville	Sig.	Cramer's V
Views and sunsets	22 (48.9)	49 (22.0)	<u>≤.001</u>	.228
Not views and sunsets	23 (51.1)	174 (78.0)		
Recreation activities	0 (0.0)	24 (10.8)	<u>.021</u> [†]	.141
Not recreation activities	45 (100.0)	199 (89.2)		
Birds and other wildlife	5 (11.1)	35 (15.7)	.431	
Not birds and other wildlife	40 (88.9)	188 (84.3)		
Rural	5 (11.1)	46 (20.6)	.138	
Not rural	40 (88.9)	177 (79.4)		
Social/community aspects	4 (8.9)	17 (7.6)	.773 ^{††}	
Not social/community aspects	41 (91.1)	206 (92.4)		
Uniqueness	2 (9.0)	20 (9.0)	.313 ^{†††}	
Not uniqueness	43 (95.6)	203 (91.0)		
Negatives sense of place	3 (6.7)	14 (6.3)	.922 [‡]	
Not negative sense of place	42 (93.3)	209 (93.7)		
Total for each meaning pair:	45 (100.0)	223 (100.0)		

[†] 1 cell has expected count less than 5; Continuity Correction shows sig. .043, Fisher's Exact Test sig. .010

^{††} 1 cell has expected count less than 5; Continuity Correction shows sig. of 1.000, Fisher's Exact Test sig. of .554

^{†††} 1 cell has expected count less than 5; Continuity Correction shows sig. of .477, Fisher's Exact Test sig. of .248

[‡] 1 cell has expected count less than 5; Continuity Correction shows sig. of 1.000, Fisher's Exact Test sig. of .568

Communities of residence. In looking at the communities of residence, four communities show evidence of residents sharing GSL meanings, although nearly all of the relationships are fairly weak ones. Each of these four community variables is related to the “views and sunsets” variable, but in very different ways. Three of the community variables either have a statistically significant relationship, or approach such a relationship with the “recreation activities” meaning variable, as well.

GSL held similar meanings for residents of the neighboring communities of Centerville and the Kaysville area (see Tables 5-9 and 5-10). The strongest relationship

Table 5-10. Crosstabulations: Kaysville Area by Meanings Variables (Percentages in Parentheses)

Meaning Variables	Kaysville Area	Not Kaysville Area	Sig.	Cramer's V
Views and sunsets	15 (46.9)	56 (23.7)	<u>.005</u>	.170
Not views and sunsets	17 (53.1)	180 (76.3)		
Recreation activities	0 (0.0)	24 (10.2)	.059 [†]	.115
Not recreation activities	32 (100.0)	212 (89.8)		
Birds and other wildlife	4 (12.5)	36 (15.3)	.682 ^{††}	
Not birds and other wildlife	28 (87.5)	200 (84.7)		
Rural	4 (12.5)	47 (19.9)	.316	
Not rural	28 (87.5)	189 (80.1)		
Social/community aspects	4 (12.5)	17 (7.2)	.295 ^{†††}	
Not social/community aspects	28 (87.5)	219 (92.8)		
Uniqueness	2 (6.3)	20 (8.5)	.667 [‡]	
Not uniqueness	30 (93.8)	216 (91.5)		
Negatives sense of place	2 (6.3)	15 (6.4)	.982 ^{‡‡}	
Not negative sense of place	30 (93.8)	221 (93.6)		
Total for each meaning pair:	32 (100.0)	236 (100.0)		

[†] 1 cell has expected count less than 5; Continuity Correction shows sig. .119, Fisher's Exact Test sig. .041

^{††} 1 cell has expected count less than 5; Continuity Correction shows sig. .884, Fisher's Exact Test sig. .461

^{†††} 1 cell has expected count less than 5; Continuity Correction shows sig. of .487, Fisher's Exact Test sig. of .231

[‡] 1 cell has expected count less than 5; Continuity Correction shows sig. .931, Fisher's Exact Test sig. .496

^{‡‡} 1 cell has expected count less than 5; Continuity Correction shows sig. of 1.000, Fisher's Exact Test sig. of 669

of all these analyses (albeit only moderate at best) is between the “views and sunset” meaning variable and respondents from Centerville as compared to the rest of the respondents, with 49 percent of those from Centerville sharing the “views and sunsets” meaning, while only 22 percent of those from outside Centerville held that meaning. Conversely, although the relationship between variables is weaker, no Centerville respondents held the “recreation activities” meaning, while 11 percent of those outside Centerville held it. Residents from Kaysville responded similarly to those from

Table 5-11. Crosstabulations: Hooper by Meanings Variables (Percentages in Parentheses)

Meaning Variables	Hooper	Not Hooper	Sig.	Cramer's V
Views and sunsets	10 (15.4)	61 (30.0)	<u>.020</u>	.142
Not views and sunsets	55 (84.6)	142 (70.0)		
Recreation activities	10 (15.4)	14 (6.9)	<u>.037</u>	.127
Not recreation activities	55 (84.6)	189 (93.1)		
Birds and other wildlife	14 (21.5)	26 (12.8)	.086	.105
Not birds and other wildlife	51 (78.5)	177 (87.2)		
Rural	13 (20.0)	38 (18.7)	.819	
Not rural	52 (80.0)	165 (81.3)		
Social/community aspects	3 (4.6)	18 (8.9)	.267	
Not social/community aspects	62 (95.4)	185 (91.1)		
Uniqueness	7 (10.8)	15 (7.4)	.388	
Not uniqueness	58 (89.2)	188 (92.6)		
Negatives sense of place	5 (7.7)	12 (5.9)	.608 [†]	
Not negative sense of place	60 (92.3)	191 (94.1)		
Total for each meaning pair:	65 (100.0)	203 (100.0)		

[†] 1 cell has expected count less than 5; Continuity Correction shows sig. .826, Fisher's Exact Test sig. .397

Centerville with both of these meaning variables, although the relationship between respondents from Kaysville as compared to other respondents and the “views and sunsets” variable is somewhat weaker, and the weak relationship with the “recreation activities” variable only approaches statistical significance.

For residents of Hooper and WC Weber, the lake appears to hold different meanings (see Tables 5-11 and 5-12). Here the weak relationships between the “views and sunsets” variable and those residing in Hooper as compared to other respondents, and those in WC Weber compared to the rest, show roughly half as many residents from each of these communities identifying this meaning as those from outside each of these communities. Instead, residents of Hooper identified the “recreation activities” meaning more than twice as frequently as those outside Hooper, although the relationship with this

Table 5-12. Crosstabulations: West Central Weber by Meanings Variables (Percentages in Parentheses)

Meaning Variables	West Central Weber	Not WC Weber	Sig.	Cramer's V
Views and sunsets	7 (14.3)	64 (29.2)	<u>.032</u>	.131
Not views and sunsets	42 (85.7)	155 (70.8)		
Recreation activities	6 (12.2)	18 (8.2)	.372 [†]	
Not recreation activities	43 (87.8)	201 (91.8)		
Birds and other wildlife	4 (8.2)	36 (16.4)	.142	
Not birds and other wildlife	45 (91.8)	183 (83.6)		
Rural	15 (30.6)	36 (16.4)	<u>.022</u>	.140
Not rural	34 (69.4)	183 (83.6)		
Social/community aspects	6 (12.2)	15 (6.8)	.204 ^{††}	
Not social/community aspects	43 (87.8)	204 (93.2)		
Uniqueness	3 (6.1)	19 (8.7)	.556 ^{†††}	
Not uniqueness	46 (93.9)	200 (91.3)		
Negatives sense of place	1 (2.0)	16 (7.3)	.172 [‡]	
Not negative sense of place	48 (98.0)	203 (92.7)		
Total for each meaning pair:	49 (100.0)	219 (100.0)		

[†] 1 cell has expected count less than 5; Continuity Correction shows sig. .538, Fisher's Exact Test sig. .259

^{††} 1 cell has expected count less than 5; Continuity Correction shows sig. .329, Fisher's Exact Test sig. .163

^{†††} 1 cell has expected count less than 5; Continuity Correction shows sig. .764, Fisher's Exact Test sig. .401

[‡] 1 cell has expected count less than 5; Continuity Correction shows sig. .297, Fisher's Exact Test sig. .146

variable is a weak one. There is an even weaker relationship that only approaches statistical significance between the “birds and other wildlife” variable and respondents from Hooper compared to other respondents, with those from Hooper identifying this meaning nearly ten percent more frequently than respondents outside of Hooper. The residents of WC Weber identified the “rural” meaning as one they shared, although the relationship between this variable and those from WC Weber as compared to other respondents is again a weak one. WC Weber residents responded with this meaning nearly twice as frequently as residents of the other communities.

Table 5-13. Crosstabulations: Plain City Area by Meanings Variables (Percentages in Parentheses)

Meaning Variables	Plain City Area	Not Plain City Area	Sig.	Cramer's V
Views and sunsets	20 (87.0)	68 (27.8)	.126	
Not views and sunsets	3 (13.0)	177 (72.2)		
Recreation activities	3 (13.0)	21 (8.6)	.473 [†]	
Not recreation activities	20 (87.0)	224 (91.4)		
Birds and other wildlife	6 (26.1)	34 (13.9)	.116 ^{††}	
Not birds and other wildlife	17 (73.9)	211 (86.1)		
Rural	3 (13.0)	48 (19.6)	.444 ^{†††}	
Not rural	20 (87.0)	197 (80.4)		
Social/community aspects	1 (4.3)	20 (8.2)	.515 [‡]	
Not social/community aspects	22 (95.7)	225 (91.8)		
Uniqueness	2 (8.7)	20 (8.2)	.929 ^{‡‡}	
Not uniqueness	21 (91.3)	225 (91.8)		
Negatives sense of place	2 (8.7)	15 (6.1)	.628 ^{‡‡‡}	
Not negative sense of place	21 (91.3)	230 (93.9)		
Total for each meaning pair:	23 (100.0)	245 (100.0)		

[†] 1 cell has expected count less than 5; Continuity Correction shows sig. .737, Fisher's Exact Test sig. .340

^{††} 1 cell has expected count less than 5; Continuity Correction shows sig. .206, Fisher's Exact Test sig. .107

^{†††} 1 cell has expected count less than 5; Continuity Correction shows sig. .626, Fisher's Exact Test sig. .328

[‡] 1 cell has expected count less than 5; Continuity Correction shows sig. .806, Fisher's Exact Test sig. .442

^{‡‡} 1 cell has expected count less than 5; Continuity Correction shows sig. 1.000, Fisher's Exact Test sig. .585

^{‡‡‡} 1 cell has expected count less than 5; Continuity Correction shows sig. .971, Fisher's Exact Test sig. .440

None of the meanings were shared at the community level among respondents from the other four communities (see Tables 5-13 through 5-16). There were no statistically significant differences between those who live in the Plain City area, the Syracuse area, Farmington, or West Bountiful and those who did not reside in each of those communities, in terms of the seven meaning variables.

Table 5-14. Crosstabulations: Syracuse Area by Meanings Variables (Percentages in Parentheses)

Meaning Variables	Syracuse Area	Not Syracuse Area	Sig.	Cramer's V
Views and sunsets	6 (27.3)	65 (26.4)	.931	
Not views and sunsets	16 (72.7)	181 (73.6)		
Recreation activities	3 (13.6)	21 (8.5)	.422 [†]	
Not recreation activities	19 (86.4)	225 (91.5)		
Birds and other wildlife	3 (13.6)	37 (15.0)	.859 ^{††}	
Not birds and other wildlife	19 (86.4)	209 (85.0)		
Rural	5 (22.7)	46 (18.7)	.645 ^{†††}	
Not rural	17 (77.3)	200 (81.3)		
Social/community aspects	1 (4.5)	20 (8.1)	.549 [‡]	
Not social/community aspects	21 (95.5)	226 (91.9)		
Uniqueness	3 (13.6)	19 (7.7)	.333 ^{‡‡}	
Not uniqueness	19 (86.4)	227 (92.3)		
Negatives sense of place	1 (4.5)	16 (6.5)	.718 ^{‡‡‡}	
Not negative sense of place	21 (95.5)	230 (93.5)		
Total for each meaning pair:	22 (100.0)	246 (100.0)		

[†] 1 cell has expected count less than 5; Continuity Correction shows sig. .680, Fisher's Exact Test sig. .313

^{††} 1 cell has expected count less than 5; Continuity Correction shows sig. 1.000, Fisher's Exact Test sig. .578

^{†††} 1 cell has expected count less than 5; Continuity Correction shows sig. .859, Fisher's Exact Test sig. .411

[‡] 1 cell has expected count less than 5; Continuity Correction shows sig. .863, Fisher's Exact Test sig. .468

^{‡‡} 1 cell has expected count less than 5; Continuity Correction shows sig. .574, Fisher's Exact Test sig. .265

^{‡‡‡} 1 cell has expected count less than 5; Continuity Correction shows sig. 1.000, Fisher's Exact Test sig. .584

Summary

In summary, some meanings do appear to be shared within particular groups.

Some members of the LDS Church shared the perception that the lake signifies social and community meanings, which makes sense given the long cultural history of the church settling the lake area, with family ancestors building the communities near the lake.

Further, church wards (congregations) located near the lake hold social functions at lake sites, whether ward picnics on Antelope Island, or church-sponsored Boy Scout troop

Table 5-15. Crosstabulations: Farmington by Meanings Variables (Percentages in Parentheses)

Meaning Variables	Farmington	Not Farmington	Sig.	Cramer's V
Views and sunsets	4 (22.2)	67 (26.8)	.671 [†]	
Not views and sunsets	14 (77.8)	183 (73.2)		
Recreation activities	0 (0.0)	24 (9.6)	.168 ^{††}	
Not recreation activities	18 (100.0)	226 (90.4)		
Birds and other wildlife	3 (16.7)	37 (14.8)	.830 ^{†††}	
Not birds and other wildlife	15 (83.3)	213 (85.2)		
Rural	5 (27.8)	46 (18.4)	.328 ^{††††}	
Not rural	13 (72.2)	204 (81.6)		
Social/community aspects	1 (5.6)	20 (8.0)	.709 [‡]	
Not social/community aspects	17 (94.4)	230 (92.0)		
Uniqueness	2 (11.1)	20 (8.0)	.642 ^{‡‡}	
Not uniqueness	16 (88.9)	230 (92.0)		
Negatives sense of place	2 (11.1)	15 (6.0)	.390 ^{‡‡‡}	
Not negative sense of place	16 (88.9)	235 (94.0)		
Total for each meaning pair:	18 (100.0)	250 (100.0)		

[†] 1 cell has expected count less than 5; Continuity Correction shows sig. .882, Fisher's Exact Test sig. .456

^{††} 1 cell has expected count less than 5; Continuity Correction shows sig. .342, Fisher's Exact Test sig. .174

^{†††} 1 cell has expected count less than 5; Continuity Correction shows sig. 1.000, Fisher's Exact Test sig.

.522

^{††††} 1 cell has expected count less than 5; Continuity Correction shows sig. .504, Fisher's Exact Test sig.

.242

[‡] 1 cell has expected count less than 5; Continuity Correction shows sig. .504, Fisher's Exact Test sig. .242

^{‡‡} 1 cell has expected count less than 5; Continuity Correction shows sig. .984, Fisher's Exact Test sig. .446

^{‡‡‡} 1 cell has expected count less than 5; Continuity Correction shows sig. .720, Fisher's Exact Test sig.

.319

field trips to wildlife preserves. Indeed, members of the church were nearly the only ones who thought of social and community aspects of the lake.

Many residents of Centerville and the Kaysville area shared the sense that views and sunsets were what the lake meant. This echoes Gieryn's (2000) point that location and the physical or material aspects of the place matters, since the lay of the land gives members of these communities a better view of the lake than most lake neighbors, even

Table 5-16. Crosstabulations: West Bountiful by Meanings Variables (Percentages in Parentheses)

Meaning Variables	West Bountiful	Not West Bountiful	Sig.
Views and sunsets	3 (27.3)	68 (26.5)	.952 [†]
Not views and sunsets	8 (72.7)	189 (73.5)	
Recreation activities	2 (18.2)	22 (8.6)	.274 ^{††}
Not recreation activities	9 (81.8)	235 (91.4)	
Birds and other wildlife	1 (9.1)	39 (15.2)	.571 ^{†††}
Not birds and other wildlife	10 (90.9)	218 (84.8)	
Rural	0 (0.0)	51 (19.8)	.101 ^{††††}
Not rural	11 (100.0)	206 (80.2)	
Social/community aspects	1 (9.1)	20 (7.8)	.874 [‡]
Not social/community aspects	10 (90.9)	237 (92.2)	
Uniqueness	1 (9.1)	21 (8.2)	.913 ^{‡‡}
Not uniqueness	10 (90.9)	236 (91.8)	
Negatives sense of place	0 (0.0)	17 (6.6)	.378 ^{‡‡‡}
Not negative sense of place	11 (100.0)	240 (93.4)	
Total for each meaning pair:	11 (100.0)	257 (100.0)	

[†] 1 cell has expected count less than 5; Continuity Correction shows sig. 1.000, Fisher's Exact Test sig. .594

^{††} 1 cell has expected count less than 5; Continuity Correction shows sig. .579, Fisher's Exact Test sig. .257

^{†††} 1 cell has expected count less than 5; Continuity Correction shows sig. .902, Fisher's Exact Test sig. .491

^{††††} 1 cell has expected count less than 5; Continuity Correction shows sig. .211, Fisher's Exact Test sig. .093

[‡] 1 cell has expected count less than 5; Continuity Correction shows sig. 1.000, Fisher's Exact Test sig. .600

^{‡‡} 1 cell has expected count less than 5; Continuity Correction shows sig. 1.000, Fisher's Exact Test sig. .618

^{‡‡‡} 1 cell has expected count less than 5; Continuity Correction shows sig. .803, Fisher's Exact Test sig. .479

those with closer access. Centerville in particular is located at an elevation where nearly the entire city looks down on the lake. Although the sound wall along I-15 now impedes the view of the lake many in this city previously had from their homes, the sound wall is a fairly recent barrier, and when one drives along the main north-south roads through town one can still look out over the lake. On the other hand, it is much more difficult to see the lake from Hooper and WC Weber, particularly with the elevation as low as it has been in recent years. It is not surprising that members of these communities would

identify the views and sunsets meaning less frequently than others in the study.

Instead, many residents of Hooper, with relatively close access to the open lake at the Antelope Island causeway and very close access to lake-affiliated protected wetlands (with Ogden Bay WMA at the northwest end of the city and Howard's Slough WMA at the southwest end), shared the perspective that GSL meant recreation activities and birds and wildlife. Many residents of WC Weber, the most rural community in the study area, shared the perspective that GSL is a rural area.

These shared meanings among community members support arguments and findings seen in prior literature on place, for example, Galliano and Loeffler's assertion that community members "frequently share a communal interpretation of place" (1999:6). Eisenhauer et al. (2000) argued that local community cultures influence the sense of place community members experience, due to shared values based on a reciprocal relationship between the place and local residents. Their study found that the community did play a role in the sense of place community members held. The findings presented above give further support for their thesis.

Research question #1c: Do individuals hold multiple meanings of GSL?

Measurement and Analytic Methods for Research Question #1c

The complexities of Great Salt Lake, or for that matter mixed amenity places¹¹ more generally, likely result in people holding multiple meanings of the place. Because

¹¹ Again, I define a mixed amenity place as a place for which people could be expected to have mixed perceptions. This includes having mixed perceptions among people, and it also includes individuals having varied perceptions, that is, positive, negative and neutral perceptions of the same place.

GSL is such a nuanced and varying place, it is likely that it holds a number of different meanings even for the same individuals, including some meanings that may appear to be incongruous. This is even more likely for those who live closest to the lake. These people may be familiar both with things they consider positive as well as “the drudgery of place” (Relph 1976:41) that may come from the daily familiarity of living close enough to be familiar with all the faces and phases of the lake. These dynamics lead me to expect that for many of the neighbors of the lake, the lake will hold more than one meaning. Additionally, for some of those with even the most positive feelings about the lake, it likely also holds meanings connected to its more irritating traits, while some people who are most irritated with the lake may also have positive feelings toward it.

For this part of research question #1, I am determining whether people who held one meaning of Great Salt Lake also held other meanings. Therefore, using only the responses to the single open-ended question I use for lake meanings¹² will not work, since respondents gave only one answer. Accordingly, while using the meanings variables for test variables, I also use a selection from a series of attitude items (asking the degree to which people agree or disagree with each, see Appendix G, p. 8) as proxies for some of those meanings. Some of these items serve as fairly direct proxies for specific meanings, e.g. for views and sunsets, the item “The Great Salt Lake is an important part of a beautiful landscape.” Others are less directly representative, e.g. “The Great Salt Lake is a dead lake,” and “The Great Salt Lake is too smelly to spend much time there” to represent negative feelings about the lake. For the purposes of this research question, I am not analyzing the degree of correlation between these items and the meanings they

¹² “What do you like most about living near the Great Salt Lake?”

correspond with, but rather am looking for indications of whether respondents held more than one lake meaning at the same time.

In order to examine whether individuals held more than one meaning of the lake, I use dichotomous variables for the two most-selected response categories of GSL meanings, “views and sunsets” and “birds and other wildlife.” I also use the “negative sense of place” meaning variable to capture one extreme sense of the lake.

To provide a parallel to this negative extreme, I also use a single place attachment variable to capture respondents’ stronger positive affect towards the lake. Although this variable does not represent a lake meaning *per se*, it can help demonstrate whether people held different perspectives of the lake simultaneously. The variable comes from an item in the questionnaire section focused on respondents’ connections to GSL, “I am very attached to the Great Salt Lake,” with a seven point response range from “strongly disagree” to “strongly agree” (Appendix G, p. 9) The item was adapted from one developed for use in indexes to measure place attachment (Williams and Roggenbuck 1989; see also Williams and Vaske 2003), and has also been used in indexes measuring place dependence (e.g. Davenport 2006; Payton et al. 2003). In keeping with the categorical response categories for the meaning variables, place attachment has been recoded into a dichotomous variable of those who indicated place attachment (including the three “agree” response categories) and those who did not (responses ranging from “strongly disagree” through “neither agree nor disagree”). While this variable overlaps with the meanings variables, its use allows me to examine more clearly the full range of affect people hold towards the lake, a need identified by a number of place scholars (see especially Manzo 2003).

It is not my intention for #1c to consider an exhaustive list of possible combinations of meanings individuals may hold simultaneously, but rather to consider a sampling of these possibilities. Although I am particularly interested in seeing whether respondents hold contrasting meanings that may appear to be incongruent, I also examine whether they hold other kinds of multiple meanings, including some that are more intuitively congruent.

For most of the meaning variables, I selected three meaning-oriented attitude items, to allow for a variety of possible combinations in meanings people may have held simultaneously. For example, the attitude items I use to provide comparisons with the “views and sunsets” meaning variable are, “The Great Salt Lake is a dead lake,” and “The Great Salt Lake is too smelly to spend much time there,” as well as “The Great Salt Lake adds to this area’s economic health.” I use the “too smelly” item again for comparisons with “birds and wildlife,” as well as two negatively worded items on wetlands, “People make too much fuss over the wetlands of the Great Salt Lake” and “Conserving wetlands is less important than developing needed roads.” I use four attitude items for comparisons with the “negative sense of place” meaning variable, to allow the exploration of very different aspects of the lake. They include, “The Great Salt Lake is a valuable resource,” “The Great Salt Lake is an important part of a beautiful landscape,” and “More should be done to protect the lake and wetlands,” as well as the “dead lake” item. Finally, the attitude items I use to provide comparisons with place attachment are the “beautiful landscape” item as well as the “dead lake” and “too smelly” items. I selected the latter two as representing fairly general, negative sentiments.

This research question asks whether respondents held more than one qualitative meaning of the lake, so the data are again analyzed at the nominal level. The attitude items each have a seven-point range from strongly disagree to strongly agree. This range is not necessary since I use these items as proxies for nominal variables, so the responses for each item were collapsed into three categories: disagree, neutral, and agree.¹³ Because the question is concerned with whether people held multiple meanings simultaneously, it is not useful to think in terms of dependent and independent variables, so the analyses are symmetrical. I again use crosstabulations to discover the relationships between the meaning variables and the contrasting attitude variables, using chi-square tests for statistical significance and Cramer's V to consider the strength of relationships.¹⁴

Findings

Univariate Analysis

The frequencies for all the meaning variables were presented earlier. The frequency distributions for the meaning-oriented attitude variables just described appear on Table 5-17. Respondents indicated attitudes favorable to the lake for most of these variables. Of the eight attitude variables, the two with the strongest positive modal responses by far are, "GSL is a valuable resource" and "GSL is an important part of a beautiful landscape," with 69 and 68 percent agreeing and only 6 and 8 percent disagreeing, respectively. Fifty-six percent agreed with, "More should be done to

¹³ For crosstabulations that result in cells too small to allow confidence in chi-square tests, I use dichotomous variables that combine the neutral position with the disagree responses, so I can use the Yates correction and Fisher's Exact Test to confirm the presence or lack of statistically significant relationships.

¹⁴ Although the use of a proportionate reduction in error (PRE) measure such as Lambda would yield more useful information, the frequency distributions for a number of the involved variables are quite skewed, necessitating the use of Cramer's V.

Table 5-17. Frequencies: Meaning-oriented Attitude and Place Attachment Variables

Meaning-oriented Attitude Variables:	Frequency	Percent	Valid Percent
GSL is a dead lake:			
Disagree	169	44.4	46.4
Neutral	98	25.7	26.9
Agree	97	25.5	26.6
No response	17	4.5	
GSL is too smelly to spend much time there:			
Disagree	113	29.7	30.5
Neutral	96	25.2	25.9
Agree	161	42.3	43.5
No response	11	2.9	
GSL adds to this area's economic health:			
Disagree	61	16.0	16.9
Neutral	151	39.6	41.8
Agree	149	39.1	41.3
No response	20	5.2	
Too much fuss made over GSL wetlands:			
Disagree	151	39.6	41.4
Neutral	112	29.4	30.7
Agree	102	26.8	27.9
No response	16	4.2	
Conserving wetlands is less important than developing roads:			
Disagree	163	42.8	44.2
Neutral	75	19.7	20.3
Agree	131	34.4	35.5
No response	12	3.1	
GSL is a valuable resource:			
Disagree	21	5.5	5.8
Neutral	79	20.7	21.7
Agree	264	69.3	72.5
No response	17	4.5	
GSL is an important part of a beautiful landscape:			
Disagree	29	7.6	7.8
Neutral	80	21.0	21.6
Agree	261	68.5	70.5
No response	11	2.9	
More should be done to protect GSL:			
Disagree	62	16.3	16.9
Neutral	92	24.1	25.1
Agree	213	55.9	58.0
No response	14	3.7	
Place attachment			
No place attachment	62	16.3	16.4
Missing	315	82.7	83.6
	4	1.0	

protect GSL,” however 24 percent were neutral on this item. Forty-four percent disagreed with, “GSL is a dead lake,” with one quarter of respondents agreeing and another quarter taking a neutral stance. There were more nuanced feelings about protection of the lake system when it came to wetlands, which is likely related to the Legacy Highway controversy discussed earlier. While 43 percent disagreed with the statement, “Conserving wetlands is less important than developing needed roads,” 35 percent agreed. Forty percent disagreed with “Too much fuss is made over GSL wetlands,” with 29 percent neutral and 27 percent agreeing. The mode for “GSL adds to this area’s economic health” was the neutral response with 40 percent, but 39 percent agreed and only 16 percent disagreed. The most negative response was 42 percent agreeing that, “GSL is too smelly to spend much time there,” although 30 percent disagreed and 25 percent remained neutral. Missing responses range from three percent to five percent for these variables.

The frequency distribution for the place attachment variable also appears on Table 5-17. A vast majority of respondents, 83 percent, do not indicate place attachment.¹⁵

Bivariate Analysis

Crosstabulations were used to examine relationships between three of the dichotomous meaning variables as well as the place attachment variable, and a number of meaning-oriented attitude variables to determine whether individual respondents held multiple meanings of GSL simultaneously. The findings are organized by the meaning and attachment variables.

¹⁵ The mean for the place attachment variable with the seven-point response range from “strongly disagree” to “strongly agree” is 2.93.

GSL means views and sunsets. I first considered those for whom the lake meant the view or sunsets, a very broadly held meaning. To explore whether those holding this meaning of GSL also held other meanings, I ran crosstabulations between the “views and sunsets” variable and “GSL adds to this area’s economic health,” “GSL is a dead lake” and “GSL is too smelly to spend much time there” (see Table 5-18). While the last is included as a generally negative sentiment about the lake, it should be noted that, due to spatial issues, one could appreciate views of the lake and sunsets over the lake while still feeling the lake is too smelly to spend time at the lake, since views and sunsets can be appreciated from a far enough distance to avoid the smell. Thus, holding these two meanings simultaneously would not necessarily be incongruent. However, there were no

Table 5-18. Crosstabulations: Meaning-oriented Attitudes by Views and Sunsets (Percentages in Parentheses)

	Views and Sunsets	Not views & sunsets	Sig.	Cramer’s V
GSL adds to this area’s economic health:			.685	
Disagree	14 (19.2)	30 (14.9)		
Neutral	28 (38.4)	83 (41.1)		
Agree	31 (42.5)	89 (44.1)		
Total:	73 (100.0)	202 (100.0)		
GSL is too smelly to spend much time there:			.670	
Disagree	22 (28.9)	71 (34.3)		
Neutral	19 (25.0)	45 (21.7)		
Agree	35 (46.1)	91 (44.0)		
Total:	76 (100.0)	207 (100.0)		
GSL is a dead lake:			.365	
Disagree	42 (56.8)	97 (47.3)		
Neutral	13 (17.6)	47 (22.9)		
Agree	19 (25.7)	61 (29.8)		
Total:	74 (100.0)	205 (100.0)		

Table 5-19. Crosstabulations: Meaning-oriented Attitudes by Birds and Wildlife (Percentages in Parentheses)

	Birds & wildlife	Not birds & wildlife	Sig.	Cramer's V
GSL is a valuable resource:			.421	
Do not see GSL as valuable resource	8 (19.0)	59 (24.8)		
See GSL as valuable resource	34 (81.0)	179 (75.2)		
Total:	42 (100.0)	238 (100.0)		
Too much fuss made over GSL wetlands:			.001	.218
Disagree	29 (70.7)	97 (40.9)		
Neutral	8 (19.5)	71 (30.0)		
Agree	4 (9.8)	69 (29.1)		
Total:	41 (100.0)	237 (100.0)		
Conserving wetlands is less important than developing roads:			.054	.144
Disagree	24 (57.1)	102 (42.5)		
Neutral	10 (23.8)	46 (19.2)		
Agree	8 (19.0)	92 (38.3)		
Total:	42 (100.0)	240 (100.0)		

statistically significant relationships between the “views and sunsets” variable and any of these meaning-oriented attitude variables.

GSL means birds and other wildlife. Those who expressed the birds and wildlife meaning appear to have felt fairly strongly about the lake, in positive and protective ways (see Table 5-19). There is a statistically significant relationship approaching moderate strength between this meaning variable and the fuss over wetlands variable, few (10%) respondents who held this meaning felt that too much fuss is made over GSL wetlands. However, nearly 20 percent agreed (while 57% disagree) that conserving wetlands is less important than developing roads, in a weak relationship between this attitude variable and the “birds and wildlife” variable that approaches statistical significance. That nearly 20 percent of those who say GSL means “birds and wildlife” agreed with this sentiment

appears incongruous, but it reflects the complex nuances of the roads issue, and demonstrates the complexities of some lake-related issues for these neighbors of GSL.

Negative sense of place. To examine whether those with a negative sense of place also held other meanings of GSL, I considered the meaning-oriented attitude variables, “GSL is a valuable resource,” “GSL is an important part of a beautiful landscape,” and “more should be done to protect GSL;” as well as “GSL is a dead lake” (see Table 5-20). Because of the few people exhibiting a negative sense of place ($n = 17$), crosstabulations were run using dichotomous attitude variables, allowing the use of the Yates correction

Table 5-20. Crosstabulations: Dichotomous Meaning-oriented Attitudes by Negative Sense of Place (Percentages in Parentheses)

	Negative Sense of Place	Not negative	Sig.	Cramer's V
GSL is a dead lake:			<u>.002</u> [†]	.184
Do not see GSL as a dead lake	6 (37.5)	193 (73.4)		
See GSL as a dead lake	10 (62.5)	70 (26.6)		
Total:	16 (100.0)	263 (100.0)		
GSL is a valuable resource:			<u><.001</u> ^{††}	.259
Do not see GSL as a resource	11 (68.8)	56 (21.2)		
See GSL as a resource	5 (31.3)	208 (78.8)		
Total:	16 (100.0)	264 (100.0)		
GSL is an important part of a beautiful landscape:			<u>.001</u> ^{†††}	.205
Do not see GSL beauty	11 (64.7)	69 (25.9)		
See GSL beauty	6 (35.3)	197 (74.1)		
Total:	17 (100.0)	266 (100.0)		
More should be done to protect GSL:			<u>.010</u>	.154
Do not think should protect GSL more	12 (70.6)	103 (38.9)		
Think should protect GSL more	5 (29.4)	162 (61.1)		
Total:	17 (100.0)	265 (100.0)		

[†] 1 cell has expected count less than 5; Continuity Correction (Yate's Correction) shows sig. of .005, Fisher's Exact Test also show sig. of .004

^{††} 1 cell has expected count less than 5; Continuity Correction (Yate's Correction) and Fisher's Exact Test also show sig. of <.001

^{†††} 1 cell has expected count less than 5; Continuity Correction shows sig. of .002, Fisher's Exact Test shows sig. of .001

and Fisher's Exact Test where warranted by small cell counts in contingency tables.

While there is a statistically significant relationship between the “negative sense of place” measure and the “GSL is a dead lake” attitude variable, it is fairly weak. While 62 percent of those with a negative sense of place saw GSL as a dead lake, 38 percent did not, indicative that one does not have to consider the lake “dead” to think negatively about it.

There is a moderate, statistically significant relationship between this meaning measure and the meaning-oriented attitude variable, “GSL is a valuable resource.” While 69 percent of those with a negative sense of place did not see GSL as a valuable resource, 31 percent of these respondents did see it as a valuable resource. There is a weaker statistically significant relationship between this meaning variable and whether or not respondents saw the lake as an important part of a beautiful landscape, with 35 percent of respondents who saw the lake negatively seeing the beauty of the lake. Finally, nearly 30 percent of those with a negative sense of place thought more should be done to protect the lake, although the statistically significant relationship between the meaning variable and this attitude variable is considerably weaker than the others. These last three relationships indicate that even some of those who thought of the lake negatively also saw positive aspects to it, such as its value as a resource or as part of a beautiful landscape, and some with a negative sense of the lake still felt it should be protected. These relationships provide evidence that some GSL neighbors held multiple—and contrasting—perspectives of the lake simultaneously.

Place attachment. To determine whether respondents with place attachment to GSL held some lake meanings that appear consistent as well as others that appear

inconsistent with place attachment, crosstabulations were run between the place attachment variable and a dichotomous “beautiful landscape” variable, along with the “too smelly” and “dead lake” variables. The crosstabulations (see Table 5-21) reveal statistically significant relationships between the attachment variable and all three of the attitude variables, with varying strengths. Although there was a good deal of agreement that GSL is important to a beautiful landscape from both those with place attachment and those without, respondents with place attachment agreed in much higher proportions, although Cramer’s V reveals only a weak relationship between these variables. Eighty-eight percent of respondents attached to GSL felt the lake was an important part of a beautiful landscape.

Table 5-21. Crosstabulations: Meaning-oriented Attitudes by Place Attachment (Percentages in Parentheses)

	Place Attachment	No place attachment	Sig.	Cramer’s V
GSL is an important part of a beautiful landscape:			<u>.001</u>	.167
Do not see GSL beauty	7 (11.9)	101 (32.6)		
See GSL as part of beautiful landscape	52 (88.1)	209 (67.4)		
Total:	59 (100.0)	310 (100.0)		
GSL is too smelly to spend much time there:			<u><.001</u>	.256
Disagree	34 (57.6)	79 (25.5)		
Neutral	9 (15.3)	86 (27.7)		
Agree	16 (27.1)	145 (46.8)		
Total:	59 (100.0)	310 (100.0)		
GSL is a dead lake:			<u>.001</u>	.203
Disagree	40 (67.8)	128 (42.1)		
Neutral	6 (10.2)	92 (30.3)		
Agree	13 (22.0)	84 (27.6)		
Total:	59 (100.0)	304 (100.0)		

As might be expected, a much higher proportion of those without place attachment felt the lake was too smelly (to spend much time there) than those with place attachment. Although the statistically significant, moderately strong relationship between these variables is as might be expected, it does reveal that over one quarter of respondents with place attachment also felt that the lake is too smelly to spend much time there. The crosstabulations between the attachment variable and the “GSL as a dead lake” variable show parallel frequencies, with those with place attachment agreeing less and disagreeing more, proportionately, than those without place attachment. But again, we see that 22 percent of those who felt attached to Great Salt Lake also saw the lake as a dead lake, thus holding what appears to be an inconsistent meaning given their attachment. The statistically significant relationship between these two variables only approaches moderate strength. These findings all reveal that those with place attachment for GSL held a variety of perspectives about the lake, including, not surprisingly, that it was a place of beauty. More surprisingly, over one-fourth of them saw it as being too smelly to spend time there, and over one-fifth of them saw GSL as a dead lake.

Summary

Nearly all these analyses have provided at least some evidence that respondents held multiple meanings of Great Salt Lake, with statistically significant relationships between the meaning variables and some meaning-oriented attitude variables for all but the “views and sunsets” measure, most likely because this last was so broadly held. While several of these relationships are not surprising and make intuitive sense (e.g., that some with place attachment would hold the meaning of “views and sunsets”), others involve

contrasting meanings that do not appear to be congruent with each other. Examples include that 29 to 38 percent of those holding a negative sense of the lake also held contrasting positive meanings, and of those with place attachment, over 25 percent found the lake too smelly to spend much time there and over 20 percent saw GSL as a dead lake. However, this apparent lack of congruity does make sense if we consider the familiarity that comes with day-to-day life, where one is aware of the drab times, the everyday tediousness and restrictions common to many places, traits Relph referred to as “the drudgery of place” (1976:41). This is why it is important to consider the full range of affect people hold towards places, as Manzo (2003) and others have advocated. These complexities seen in the relationships between Great Salt Lake and its closest neighbors could be an indication of dynamics that might be found in the relationships between people and mixed amenity places more generally.

Summary of Research Question #1

As noted earlier, this research question as a whole was conceptualized to be addressed descriptively. Some of the survey respondents, all neighbors of Great Salt Lake, described rich and meaningful relationships with the lake, while others gave the impression that they did not have much of a sense of place with the lake at all. For those with a sense of place, the lake held a variety of meanings, including views and sunsets, recreation activities, birds and other wildlife, a rural place, social and community aspects, and uniqueness. Additionally, the lake held a negative meaning for some GSL neighbors.

Some of these meanings were shared among members of particular groups, while other meanings appeared to be held more broadly across groups. There is considerable

evidence that many individuals held multiple meanings of the lake, including some that appear fairly incongruous.

I now examine the differences between respondents holding the various lake meanings. I also consider the differences between those who expressed a sense of place with Great Salt Lake and those who did not, as well as between those who indicated attachment to the lake and those who did not.

Distinctions Between People Who See GSL Differently

Research question #2: *Are there differences between those for whom GSL is a place vs. those for whom it is undifferentiated space?*

2a: *What variables are related to the differences in meanings held about GSL?*

Research expectation #2: *Variables related to differences will include length of residence, level of involvement and experience with GSL, and location of residence within the lake system, including proximity and access to the lake. A number of sociodemographic variables will also be related to differences, some of which are due to differences in roles held by individuals and groups.*

This research question focuses on differences between lake neighbors with a sense of place with Great Salt Lake and those who appeared to lack a sense of place, as well as on differences between residents who held varying meanings of the lake. What differences exist between, say, those for whom the lake meant views and sunsets compared to those who thought of birds and wildlife when they thought of the lake? How do those who focused on the rural aspects or the social and community aspects of the lake's environs differ from those who focused more on the lake itself? And what distinguishes those with place attachment from those who did not feel attached to GSL?

A good number of these analyses will focus on the degree of involvement and experience respondents had with the lake itself and the lake area. There is much evidence

that experience and involvement with places are primary predictors of sense of place and place attachment (e.g. Bricker and Kerstetter 2000; Kyle et al. 2003; Williams et al. 1992; Williams and Vaske 2003). The strength of these empirical connections in prior works suggests that these factors will differentiate those with a sense of place with GSL from those lacking a sense of place. But what distinctions are there between people with a sense of place for whom the lake held different meanings? I use a number of measures of involvement and experience with GSL, location within the lake system, and lake-related roles, as well as sociodemographic measures, to see what nuanced differences existed between lake neighbors.

The work on this research question will be presented focusing first on people with a sense of place as compared to those who seemed to lack it. I then address distinctions between people with different meanings of GSL, and differences between those with place attachment compared to those who did not report attachment to the lake.

Measurement and Analytic Methods for Research Question #2

For this research question, the meanings variables are dependent variables. I use the six meaning-specific variables (e.g. views and sunsets, recreation activities, birds and wildlife), and the negative sense of place variable, all described earlier. I also use the dichotomous place attachment variable described earlier, as well as a dichotomous sense of place/lack of sense of place variable. As previously mentioned, the responses to the “like most” survey question I use as meaning variables include roughly seven percent that are indicative of the respondent lacking a sense of place with the lake. By contrasting these with those who identified a lake meaning, which is evidence of having a sense of

place with the lake, I can see the differences between respondents who lacked a sense of the lake and those who had one.¹⁶

The independent variables are grouped in four categories: length and degree of exposure to GSL, location of residence within the lake system, GSL-related roles, and sociodemographic variables.

Length and Degree of Exposure and Experience

Residential history. The first consideration here is variability in terms of length of residence and other aspects of respondents' history of residence near the lake. Length of residence is measured with an open-ended question asking "For approximately how many years of your life have you lived within a mile or two of the Great Salt Lake?" (Appendix G, p. 4). The responses range from zero to 88 years, with a median of 16 years. These responses were recoded into three groups: less than 10 years, 10 to 19 years, and 20 years or more. I also consider whether respondents lived on multigenerational familial property. To capture these respondents, a question asked if the property respondents live on, or other property very near by, had been in the family for more than one generation, with a yes or no response (Appendix G, p. 12).¹⁷

In the qualitative work, some lake-related professionals observed that many people who appreciated the lake the most were people who moved here from other places, or who had moved away for some time and then moved back to the area. The

¹⁶ To make this point more explicitly, being able to identify a meaning a place holds is evidence one has a sense of place. Therefore, all those who named a lake meaning can be said to have a sense of place with GSL.

¹⁷ A yes response led to contingency questions about the number of generations and length of time the family had been on the property, as well as one asking why the family settled on the property. However, these contingency questions were not used in the analysis of this research question.

professionals thought these residents were less likely to take the lake for granted than those who had always lived near the lake. To test this observation, I consider whether respondents had grown up near the lake as well as whether respondents had ever lived outside of Utah as adults. Growing up near the lake was measured by a question asking if respondents grew up living “this close to the Great Salt Lake (within a mile or two of the lake).” Responses included “No, I did not live close to the Great Salt Lake until I was an adult,” “I lived close to the lake during some of my growing up years, but for less than 2 years between age 7 and age 17,” and “I lived close to the lake for at least 2 years between age 7 and age 17” (Appendix G, p. 4). The question specified these ages because participants in the qualitative study who had grown up near the lake talked about a number of lake-related activities they participated in during those years (e.g. riding horses or bikes, hunting, exploring, etc.), and having been able to have that type of involvement with the lake as a youth appeared to make a difference in how they felt about GSL as adults. The two year minimum was used to make sure youths would have had time to develop some knowledge and feel for the lake. For the analysis, these responses were collapsed into a dichotomous variable: living near the lake for at least two years was coded 1, “grew up near GSL” and the other two responses were coded 0, “did not grow up near GSL.”

Living outside Utah was measured by a question asking whether the respondent had ever lived outside of Utah for longer than two years as an adult, with yes and no responses (Appendix G, p. 11). The qualifier “longer than two years” was included to rule out shorter term, temporary relocations, such as LDS missions or military reserve

duty deployments where the respondent would have likely still considered the GSL area home.

Involvement with the lake. In addition to these residential-oriented variables, I also use three measures to consider respondents' involvement with the lake. These include whether the respondent had ever visited GSL or its related sites, and if so, the frequency of visits to GSL and of lake-related recreation. All three of these measures come from a series of related questions on the survey questionnaire, from the section on respondents' involvement with the lake. The first asks, "Have you ever visited the Great Salt Lake, its islands, bays or shore lands (including refuges and preserves)?" with a yes or no response (Appendix G, p. 5); responses to this question provide the first measure mentioned above. This question was followed by a visitation question and a recreation question which respondents were asked to skip if they had never visited the lake.

The visitation question measures frequency of visits to GSL. The stem for this question asked respondents, "Have you ever visited the following sites on or around the Great Salt Lake?" and lists 11 sites such as Bear River Migratory Bird Refuge, Willard Bay State Park, Ogden Bay Waterfowl Management Area, Antelope Island State Park, etc., along with an "other" category asking for specification (Appendix G, p. 5).

Respondents were asked to circle yes or no for each site; with yes responses leading to a follow-up question asking how often they visited that site in the last three years. Here responses include "no visits in the last 3 years", "1-3 times during the past 3 years", "4-9 times during the past 3 years", or "10 or more times during the past 3 years".

Respondents who indicated they had never visited the lake in the question above and then skipped this question were included in the "no visits" category during coding. The three

year time period was suggested by prior research findings indicating that more visits over a longer period of time are more predictive of attachment (Williams et al. 1992). Considering a longer period of time than, for example, one year prior to the survey, also makes intuitive sense, since life events and natural events (e.g. inclement weather or other conditions for the activity in question) may alter one's typical use patterns for any given year, but would be less likely to alter one's use over three years' time. Although requesting respondents to report frequencies of activities over periods of time can be problematic (see, e.g., Converse and Presser 1986), these responses were structured to help with that since respondents could think about roughly how many times a year they may have visited (i.e., 1-3 times over 3 years is once a year or less, 4-9 times is more than once a year but not more than three times a year, etc.).

After the initial coding which included each of these response categories, the responses for each of the 11 sites were recoded to the following: 0=No visits reported; 1=visited, but not in past 3 years; 2=visited 1-3 times in past 3 years; 3=visited 4-9 times in past 3 years; 4=visited 10 or more times in past 3 years. I then created a composite variable that includes the additive composite score all of the sites visited by each respondent, ranging from zero to 44 on an ordinal scale (the observed range is 0-39, or more accurately, 0-26 with one outlier at 39). While the size of the score is cumulative, as can be seen from the coding described above, the scores do not represent a number of visits but rather give an indication of degree of frequency. For example, a score of four could mean the respondent visited one site ten times or more in the past three years, or visited four sites one time each more than three years ago. Because of this, the measure is only useful as a relative indicator of the amount of involvement. The variable was then

recoded into an ordinal variable, frequency of GSL site visits, which divides the distribution as evenly as possible into three categories: fewest GSL visits (scores of 0 to 3, 30.8% of the responses), more frequent GSL visits (4 to 8, 34.6%), and most frequent GSL visits (9 to 44, 34.6%) (see frequency distribution, Table 5-20). This is the variable used in analyses for this research question.

The frequency of GSL recreation variable comes from a recreation question set up similarly to the visitation question just described. The stem for the recreation question asks respondents who have visited the lake if they have ever used GSL and its related areas (islands, bays, shorelands, refuges and preserves) for any of ten recreation activities, such as sailing, bicycling, horseback riding, hunting, bird watching, etc. (with an “other” category asking for specification) (Appendix G, p. 6). Respondents were asked to circle yes or no for each activity; with yes responses leading to a follow-up question asking how often they did that activity in the last three years, with the same response options as the visitation question (“not in the last 3 years”, “1-3 times during the past 3 years”, “4-9 times during the past 3 years”, or “10 or more times during the past 3 years”). Responses were coded in the same manner as described for the visitation responses.

A composite variable was created in the same way as the composite visitation variable outlined above. The composite recreation variable ranges from zero to 40 since there are ten recreation activities included (the observed range is 0-32), again these scores are not representative of the number of times respondents participated in recreation activities, but rather give a relative frequency of participation. As with the frequency of visitation variable described above, the distribution of the composite recreation variable

was then divided as evenly as possible into three categories: least frequent GSL recreation (scores of 0 to 2, 37.8% of the responses), more frequent GSL recreation (3 to 8, 33.2%), and most frequent GLS recreation (9 to 40, 29.0%) (see frequency distribution, Table 5-20).

Location of Residence in the Lake System

In keeping with Gieryn's (2000) assertion that location matters, I use four variables to consider respondents' location within the lake system area. These include the county and the part of the county respondents reside in, proximity of access to GSL, and whether or not respondents can see the lake from their property. First, I explore respondents' location at two levels of scale, county and county groupings. While the former simply considers which county respondents lived in, the latter locates them in either the north or south area of each county (four categories). These are included to see whether location within the study area makes any difference as to what meaning the lake held for respondents. County of residence was determined by the questionnaire, as respondents were given a county-specific questionnaire depending on their address. The area within the county was determined by an open-ended question asking respondents to give the name of the community they lived in (no matter whether incorporated or unincorporated) (Appendix G, p. 11). I then divided these communities into four groupings, North and South Weber County, and North and South Davis County.¹⁸

¹⁸ North Weber County includes Plain City and WC Weber (27.3% of the sample), while south Weber County includes only Hooper (22.6%). North Davis County includes unincorporated Davis County, West Point, Syracuse, Layton and Kaysville (17.6%), while south Davis County includes Farmington, Centerville and West Bountiful (24.4% of the sample). This leaves 8.1% missing, due to respondents not indicating what community they live in.

Proximity of access to the lake. The county groupings by access variable (measured by proximity to the Antelope Island causeway) is used to determine whether access to the lake makes a difference in how the lake is experienced. I recoded the county groupings variable into county groupings by access, creating a dichotomous variable that combines north Weber County and south Davis County as those with farthest access to the lake via the causeway, and south Weber County and north Davis County as those with nearest access.

A view of the lake. Whether respondents could see the lake is included to determine whether actually seeing the lake from one's property makes any difference in how respondents felt about the lake and what it meant to them. It was included after some interview participants talked about not thinking about the lake since they could not see it from their property. The participants making this comment appeared to lack a sense of place with GSL. This variable is measured by a question asking, "Can you see the lake from your property? (For example, from outside your house, or from any windows in your home.)" The responses include "I can usually see the lake from my property," "I have seen the lake from my property sometimes, but the lake level has been too low to see it lately," "I only saw the lake from my property during the high water years in the late 1980s," "I could see the lake from my property before, but now the view is blocked," and "I have never seen the lake from my property" (Appendix G, p. 1). These responses were recoded into a dichotomous variable, "can see the lake from property," consisting of only the first response category, and "cannot see the lake," which includes all other responses.

GSL-related Roles

Thinking in terms of Berger and Luckmann's ([1966] 1967) approach, I am particularly interested in the roles people held related to the lake. The roles included here are respondents with lake-related income, respondents with agricultural income, and parents with children at home. While it is somewhat obvious that the first variable would be included here, all three are included because of observations made during the qualitative work. Including them in these analyses will lend reliability to the findings from that work.

It makes intuitive sense, and was also seen in the qualitative work, that those who work in lake-related jobs may have different connections to the lake than others would. This was measured by a question asking whether any portion of the respondent's household income had ever come from a GSL-related activity or industry, with a yes or no response (Appendix G, p. 14).¹⁹ Farming was included because of the more involved relationships with the lake the farmers in the qualitative study appeared to have. Additionally, in a study of stakeholders' attitudes towards wetlands in the GSL watershed, Nicholson (2000) found differences in attitudes towards wetlands conservation between agricultural leaders and residents of single-family homes. This may suggest differences between farmers and other residents in attitudes towards the Great Salt Lake ecosystem. Here farming is measured by asking if any of the respondent's family income comes from farming/agriculture, with a yes or no response (Appendix G, p. 14). The parent role is included since a number of participants in the qualitative research talked about their relationship with the lake being related to their children's

¹⁹ A yes response led to contingency questions about the type and duration of the GSL income, however this information is not used in this analysis.

activities. This was measured by asking respondents if they have any children living at home with them, with a yes or no response (Appendix G, p. 13).

Sociodemographic Variables

In addition to the above, I also consider five sociodemographic variables as possible variables of difference. Williams and Vaske (2003) note that little work on place has examined relationships between place variables like attachment and sociodemographic measures such as age and sex, and suggests future research includes variables such as these. My study considers household income, education, age, sex, and religious affiliation. This last was described in research question 1b.

Household income was measured with a question asking “Which one of the following best describes your pre-tax annual household income for 2006” (the year prior to the survey), and offers 8 income categories (Appendix G, p. 14).²⁰ These were then recoded into three categories, splitting the distribution as evenly as possible. A lower income range variable (from less than \$15,000 to \$49,999) was created by combining the four lowest categories. Due to the distribution, the middle income variable consists of just one category (\$50,000 to \$74,999). The higher income range includes the three highest income categories (\$75,000 to \$150,000 or more).

Education was measured by asking respondents the highest level of education completed, with seven response categories ranging from, “Did not finish high school” to

²⁰ Less than \$15,000; \$15,000 to \$24,999; \$25,000 to \$34,999; \$35,000 to \$49,999; \$50,000 to \$74,999; \$75,000 to \$99,999; \$100,000 to \$149,999; \$150,000 or more.

“Completed graduate degree (Masters or Ph.D.)” (Appendix G, p. 13).²¹ In order to better use the responses in crosstabulations with minimal small cells, they were recoded into three categories: No college (high school diploma/GED or less); college or vocational (some or degree); and graduate work (some or degree).

Asking respondents, “What is your age?” (Appendix G, p. 12) yielded responses ranging from 18 to 93 years, with a median of 47. These responses were recoded into three age groups, 18 to 39 years, 40 to 59 years, and 60 years and over. Finally, sex was measured with a question asking, “Are you?” with responses of female and male (Appendix G, p. 12).

Frequency distributions for each of these measures can be seen in the next section (on Table 5-25), the frequency distributions of the original variables can be seen on Table 3-16. The full distributions of these variables are discussed at the end of Chapter Three.

Univariate Findings

Dependent Variables

The frequency distributions for all the meaning variables, as well as the dichotomous sense of place/lack of sense of place variable, were presented earlier (see Table 5-4), as was the distribution for the place attachment variable (see Table 5-17).

Independent Variables

Exposure and experience variables. The frequency distributions for the variables measuring length and degree of exposure and experience appear in Table 5-22. These

²¹ “Did not finish high school;” “Completed high school or GED;” “Some college but no degree;” “Vocational or associates degree;” “College bachelor’s degree;” “Some graduate work;” “Completed graduate degree (Master’s or Ph.D.).”

Table 5-22. Frequencies: Length and Type of Exposure to GSL Variables

	Frequency	Percent	Valid Percent
Years lived near GSL			
Less than 10 years	133	34.9	36.8
10 to 19 years	70	18.4	19.4
20 years or more	158	41.5	43.8
Missing	20	5.2	
Multigenerational familial property			
Single generation residence	74	19.4	19.8
Missing	299	78.5	80.2
Lived near GSL while growing up			
Did not grow up near GSL	8	2.1	
Missing	101	26.5	27.7
Did not grow up near GSL	263	69.0	72.3
Missing	17	4.5	
Lived outside of UT as an adult			
No	237	62.2	65.1
Yes	127	33.3	34.9
Missing	17	4.5	
Ever visited GSL or related sites			
No	34	8.9	9.2
Yes	337	88.5	90.8
Missing	10	2.6	
Frequency of GSL site visits			
Fewest GSL visits	104	27.3	30.8
More frequent GSL visits	117	30.7	34.6
Most frequent GSL visits	117	30.7	34.6
Missing	43	11.3	
Frequency of GSL recreation			
Least frequent GSL recreation	128	33.6	37.8
More frequent GSL recreation	114	29.9	33.6
Most frequent GSL recreation	97	25.5	28.6
Missing	42	11.0	

include length of residence near the lake, multigenerational property holders, respondents who grew up near the lake, whether respondents have lived outside Utah, whether they ever visited GSL, and the frequency of both GSL visitation and GSL recreation. Thirty-five percent of respondents had lived within a mile or two of the lake for less than ten years of their lives, 18 percent had lived there for 10 to 19 years, while the modal

response is 20 years or more, with 42 percent. Nearly one-fifth of respondents lived on multigenerational familial property, and over one quarter grew up near the lake. One-third of the respondents had lived outside of Utah as adults. A somewhat surprising nine percent of respondents—people who live within a couple of miles of GSL—had never visited the lake or its related sites. Because both the visitation and recreation variables were set up to split the response distributions fairly evenly, the frequency distributions of these ordinal variables are clustered together, with frequency of GSL site visits ranging from 27.3 to 30.7 percent, and frequency of GSL recreation from 25.5 to 33.6 percent. For all but the frequency of involvement items, two to five percent of the responses were missing. Frequency of visitation and of recreation are each missing 11 percent, likely because they are composite variables.

Location in the lake system. The frequency distributions for variables measuring location of residence in the lake system appear in Table 5-23, including county of residence, county groupings, county grouping by access and view of GSL from one's property. Slightly more Weber County residents (52%) participated in the survey than Davis County residents (48%). The largest county grouping was from northern Weber County (27%), while the smallest was in northern Davis County (18%); the groupings for the southern areas of the two counties were similar-sized at 23 and 24 percent. Fifty-two percent of respondents lived farther from access to Antelope Island, in the north part of Weber County and the south part of Davis County, and 40 percent had closer access. Three quarters of the respondents could not see GSL from their property, while only seventeen percent could see the lake. Other than the county of residence variable, which

Table 5-23. Frequencies: Location Variables

	Frequency	Percent	Valid Percent
County			
Weber County	199	52.2	52.2
Davis County	182	47.8	47.8
Missing	0	0.0	
County groupings			
North Weber County	104	27.3	29.7
South Weber County	86	22.6	24.6
North Davis County	67	17.6	19.1
South Davis County	93	24.4	26.6
Missing	31	8.1	
County groupings by access			
Farthest from Antelope Island access	197	51.7	56.3
Nearest to Antelope Island access	153	40.2	43.7
Missing	31	8.1	
View of GSL from property			
Cannot see lake	290	76.1	81.9
Can see lake from property	64	16.8	18.1
Missing	27	7.1	

has no missing data since it was coded based on which questionnaire was filled out, the missing responses from these variables range from seven to eight percent.

GSL-related roles. The frequency distributions for each of the GSL-related roles are listed in Table 5-24, including lake-related income, agriculture-related income, and parents. Only five percent of respondents ever had income from a lake-related activity or industry, and 13 percent had some family income from agriculture. Fifty-seven percent of respondents were parents with children at home.

Sociodemographic variables. Of the sociodemographic variables, the frequency distribution for religious affiliation was presented earlier (see Table 5-7). The distributions for household income, education, age and sex all appear in Table 5-25 (see also, Table 3-16 and the end of Chapter Three). Household income, which is grouped into

Table 5-24. Frequencies: GSL-related Roles Variables

	Frequency	Percent	Valid Percent
Some family income comes from GSL-related activity or industry	18	4.7	4.8
No income from GSL	354	92.9	95.2
Missing	9	2.4	
Some family income comes from agriculture	48	12.6	13.3
No income from agriculture	314	82.4	86.7
Missing	19	5.0	
Parents with children at home	216	56.7	57.9
No children at home	157	42.2	42.1
Missing	8	2.1	

Table 5-25. Frequencies: Sociodemographic Variables

	Frequency	Percent	Valid Percent
Household income groupings			
Lower income range (less than \$15,000 to \$49,999)	113	29.7	32.9
Middle income range (\$50,000 to \$74,999)	86	22.6	25.1
Higher income range (\$75,000 to \$150,000 or more)	144	37.8	42.0
Missing	38	10.0	
Education categories			
No college (high school diploma/GED or less)	76	19.9	20.4
College or vocational (some or degree)	242	63.5	65.1
Graduate work (some or degree)	54	14.2	14.5
Missing	9	2.4	
Age groups			
18-39 years	122	32.0	33.3
40-59 years	171	44.9	46.7
60 years and over	73	19.2	19.9
Missing	15	3.9	
Sex			
Men	172	45.1	46.1
Women	201	52.8	53.9
Missing	8	2.1	

as close to even categories as possible, shows 30 percent of respondents fell into the lower income range (\$49,999 and below), 23 percent in the middle range (\$50,000 to \$74,999) and 38 percent in the higher range (\$75,000 and above). The distribution among education categories reveals that 20 percent of respondents had no college, 64 percent had at least some college or vocational education (including those with a degree), and 14 percent had done at least some graduate work (including those with a degree). In terms of age, 32 percent were 18 to 39 years old, 45 percent were in their middle adult years, 40 to 59 years old, and 19 percent were 60 years and over. Forty-five percent of respondents were male, and 53 percent, female. Missing responses for these variables range from 2 percent to 10 percent, with the higher percentage being for household income, a question many survey respondents hesitate to answer.

Bivariate Findings

Due to the large number of independent variables involved in the bivariate analyses, I present only those where statistically significant relationships ($p \leq .05$) and relationships that approached significance ($p \leq .10$) were found. I organize the findings according to the dependent variables, beginning with a comparison of those with a sense of place with GSL and those who lacked a sense of place. I then consider those with a sense of place further, looking at differences between people holding the various lake meanings. I end with an examination of the differences between those with place attachment and those who were not attached to GSL.

Sense of Place/Lack of Sense of Place

A number of the independent variables are statistically related with sense of place or a lack thereof (see Table 5-26). As seen in crosstabulations with county groupings and confirmed by the dichotomous county groupings by access to GSL, the vast majority of all respondents were more likely to have a sense of place with GSL than to lack one. This said, though, those living farther from access to the lake²² were substantially more likely to lack such a sense than those living closer to access were. However, each of these location variables has a moderately weak relationship with the sense of place variable.²³

The only sociodemographic measure to have a statistically significant relationship with the sense of place variable is religious affiliation, although it is even weaker than the two location variables above. Non-LDS respondents were ten percent more likely to indicate a lack of sense of place with the lake than LDS respondents were.

In terms of experience with and exposure to the lake, there are a number of significant relationships between these variables and sense of place as compared to a lack of sense of place. While only ten percent of single-generation property holders indicated a lack of sense of place, this lack was almost nonexistent for the multigenerational property holders (2%). The statistically significant relationship between these variables is weak. There is a weak relationship approaching statistical significance between sense of place/lack of sense of place and whether or not respondents had ever visited the lake.

Those who had never visited the lake were more than twice as likely to indicate a lack of

²² at the Antelope Island causeway

²³ County groupings has a Cramer's V of .173, however this four-category has one cell with an expected count less than 5. The differences are clearly between areas within the two counties with the closest access to the Antelope Island Causeway and those with the farthest access. This relationship is confirmed by the dichotomous county groupings by access variable, although with a slightly lower Cramer's V.

Table 5-26. Crosstabulations: Independent Variables by Sense of Place/Lack of Sense of Place (Lack of Sense of Place mean = .09) (Percentages in Parentheses)

Independent Variable	Has Sense of Place	Lack of Sense of Place	Total	Sig.	Cramer's V
County Groupings				<u>.046</u> [†]	.173
North Weber County	62 (86.1)	10 (13.9)	72 (100.0)		
South Weber County	62 (95.4)	3 (4.6)	65 (100.0)		
North Davis County	56 (98.2)	1 (1.8)	57 (100.0)		
South Davis County	66 (89.2)	8 (10.8)	74 (100.0)		
County Groupings by access				<u>.007</u>	.164
Nearest access (to A.I.)	118 (96.7)	4 (3.3)	122 (100.0)		
Farthest access (from A.I.)	128 (87.7)	18 (12.3)	146 (100.0)		
Religious Affiliation				<u>.014</u>	.146
L.D.S.	199 (93.9)	13 (6.1)	212 (100.0)		
Non-LDS	60 (84.5)	11 (15.5)	71 (100.0)		
Property in the family for more than one generation	54 (98.2)	1 (1.8)	55 (100.0)	<u>.042</u> ^{††}	.120
This generation only	206 (89.6)	24 (10.4)	230 (100.0)		
Have visited GSL or related sites	242 (91.7)	22 (8.3)	264 (100.0)	<u>.064</u> ^{†††}	.110
Have never visited GSL or sites	15 (78.9)	4 (21.1)	19 (100.0)		
Frequency of GSL site visits				<u>.010</u>	.189
Fewest GSL visits	52 (81.3)	12 (18.8)	64 (100.0)		
More frequent visits	91 (92.9)	7 (7.1)	98 (100.0)		
Most frequent visits	91 (94.8)	5 (5.2)	96 (100.0)		
Frequency of GSL-related recreation				<u>.015</u>	.181
Least frequent recreation	75 (85.2)	13 (14.8)	88 (100.0)		
More frequent recreation	81 (92.0)	7 (8.0)	88 (100.0)		
Most frequent recreation	81 (97.6)	2 (2.4)	83 (100.0)		

[†] 1 cell has expected count less than 5, however the minimum expected count is 4.68; no sig. listed for Continuity Correction or Fisher's Exact Test since it is not a 2x2 table

^{††} 1 cell has expected count less than 5; Continuity Correction shows sig. of .078, Fisher's Exact Test sig. of .028

^{†††} 1 cell has expected count less than 5; Continuity Correction shows sig. of .149, Fisher's Exact Test sig. of .083

sense of place than those who had visited. The two strongest relationships with this meaning variable are with the frequency of involvement variables, although each of these relationships is still relatively weak. With the "frequency of GSL visits" variable, those whose responses fell into the "fewest GSL visits" category were much more likely to lack

sense of place than those in the other two categories. In fact, of those in the “most frequent visits” category, only five percent indicated a lack of sense of place. The “frequency of GSL-related recreation” variable behaved similarly to the visitation variable, although here those in the “most frequent” category who indicated a lack of sense of place were practically nonexistent.

So respondents who lived closer to access to the lake, were LDS, had their property in the family for more than one generation, and/or visited and recreated at the lake frequently were most likely to exhibit a sense of place. Those who fell in categories opposite these were somewhat more likely to lack a sense of place with the lake, although among all these categories, the highest proportion of those lacking sense of place is only 21 percent.

Meanings Variables

Having addressed the differences between those with sense of place and those who lacked it, in this section I take those with a sense of place a step farther. Here I explore differences between respondents with varying senses of Great Salt Lake, in other words, those for whom the lake held different meanings.

Views and sunsets meaning. Location matters in identifying “views and sunsets” as the meaning GSL held (see Table 5-27), which makes sense since views of the lake are location-dependent. Those who had a view of the lake from their property were nearly twice as likely to name “views and sunsets” as their lake meaning than those who could not see the lake, although the relationship between this meaning variable and those who could see the lake as compared to those who could not is relatively weak. There is a

Table 5-27. Crosstabulations: Independent Variables by Views and Sunsets Meaning (Views and Sunset mean = .27) (Percentages in Parentheses)

Independent Variable	Views & Sunsets	Not Views & Sunsets	Total	Sig.	Cramer's V
Have view of GSL from property	26 (43.3)	34 (56.7)	60 (100.0)	<u>.001</u>	.202
Cannot see lake from property	47 (21.8)	169 (78.2)	216 (100.0)		
County				<u><.001</u>	.263
Weber County	21 (15.0)	119 (85.0)	140 (100.0)		
Davis County	58 (38.4)	93 (61.6)	151 (100.0)		
County Groupings				<u><.001</u>	.276
North Weber County	10 (13.9)	62 (86.1)	72 (100.0)		
South Weber County	10 (15.4)	55 (84.6)	65 (100.0)		
North Davis County	22 (38.6)	35 (61.4)	57 (100.0)		
South Davis County	29 (39.2)	45 (60.8)	74 (100.0)		
Frequency of GSL site visits				<u>.013</u>	.184
Fewest GSL visits	11 (17.2)	53 (82.8)	64 (100.0)		
More frequent visits	36 (36.7)	62 (63.3)	98 (100.0)		
Most frequent visits	22 (22.9)	74 (77.1)	96 (100.0)		
Some family income from GSL	1 (6.7)	14 (93.3)	15 (100.0)	.066 [†]	.109
No income from GSL	76 (28.4)	192 (71.6)	268 (100.0)		
Sex				.076	.105
Men	30 (22.4)	104 (77.6)	134 (100.0)		
Women	48 (31.8)	103 (68.2)	151 (100.0)		

[†] 1 cell has expected count less than 5; Continuity Correction shows sig. of .124, Fisher's Exact Test sig. of .052

moderate strength relationship between county of residence and the “views and sunsets” variable, with those living in Davis County more than 20 percent more likely to identify this meaning than those from Weber County. The relationship between county groupings and the “views and sunsets” variable is similar, and of a similar strength.

Other than these location variables, there are few variables with statistically significant relationships with the “views and sunsets” variable. A relatively weak one exists between this meaning variable and “frequency of GSL site visits,” although it is rather curious. Those with the fewest visits and the most frequent visits were both less likely to express this as their meaning variable than those in the middle category. Those

with “more” visits identified this meaning fourteen percent more than those who visited most, and twenty percent more than those who visited least.

With a Fisher’s Exact Test significance of .052, an inverse relationship approaching statistical significance exists between the “views and sunsets” variable and those with family income from the lake as compared to those without. In fact, only one respondent with GSL income indicated this meaning, however the relationship between variables is very weak. Finally, there is another weak relationship that approaches statistical significance between this meaning variable and sex, with women more likely to have expressed this meaning than men.

In sum, the location variables made the most difference with the “views and sunsets” meaning. Those who identified this meaning were more likely to live in Davis County, especially in the southern part of the study area, and to have a view of the lake from their property. They tended to visit lake sites with some frequency, but not as often as some respondents. It is unlikely that any of their family income came from the lake, and they were more likely to be women than men.

Recreation activities meaning. Two types of independent variables have relationships with this meaning variable (see Table 5-28). The first is location-oriented, with Weber County respondents indicating that the lake meant “recreation activities” three times more frequently than Davis County respondents. This was echoed with the corresponding county groupings categories. However, the statistically significant relationships between the “recreation activities” variable and these location-oriented variables are fairly weak. Additionally, a relationship that approaches statistical significance exists between the “recreation activities” variable and respondents who

Table 5-28. Crosstabulations: Independent Variables by Recreation Activities Meaning (Recreation Activities mean = .09) (Percentages in Parentheses)

Independent Variable	Recreation Activities	Not Rec Activities	Total	Sig.	Cramer's V
County				<u>.004</u>	.171
Weber County	19 (13.6)	121 (86.4)	140 (100.0)		
Davis County	6 (4.0)	145 (96.0)	151 (100.0)		
County Groupings				<u>.031</u>	.182
North Weber County	9 (12.5)	63 (87.5)	72 (100.0)		
South Weber County	10 (15.4)	55 (84.6)	65 (100.0)		
North Davis County	3 (5.3)	54 (94.7)	57 (100.0)		
South Davis County	2 (2.7)	72 (97.3)	74 (100.0)		
Have view of GSL from property	2 (3.3)	58 (96.7)	60 (100.0)	.081	.105
Cannot see lake from property	23 (10.6)	193 (89.4)	216 (100.0)		
Frequency of GSL site visits				<u>.002</u>	.218
Fewest GSL visits	1 (1.6)	63 (98.4)	64 (100.0)		
More frequent visits	6 (6.1)	92 (93.9)	98 (100.0)		
Most frequent visits	16 (16.7)	80 (83.3)	96 (100.0)		
Frequency of GSL-related recreation				<u><.001</u>	.250
Least frequent recreation	1 (1.1)	87 (98.9)	88 (100.0)		
More frequent recreation	8 (9.1)	80 (90.9)	88 (100.0)		
Most frequent recreation	16 (19.3)	67 (80.7)	83 (100.0)		
Lived outside Utah as an adult	4 (4.3)	89 (95.7)	93 (100.0)	.088	.102
Has lived only in Utah	19 (10.3)	166 (89.7)	165 (100.0)		
County Groupings by access				.373	
Nearest access (to A.I.)	13 (10.7)	109 (89.3)	122 (100.0)		
Farthest access (from A.I.)	11 (7.5)	135 (92.5)	146 (100.0)		

could see GSL from their property as compared to those who could not, however it is a weak relationship. Respondents who could not see the lake from their property were much more likely to identify the “recreation activities” meaning than those who could.

Relationships between this meaning variable and two involvement-related variables are somewhat stronger than those above. Not surprisingly, among those who visited GSL least frequently, only one respondent named the “recreation activities” meaning, while those making “most frequent visits” were much more likely to identify

this meaning. The proportions seen between the “recreation activities” variable and frequency of GSL-related recreation are similar to those with frequency of GSL site visits, and the relationship is of moderate strength. A weak relationship approaching statistical significance also exists between this meaning variable and those who had lived outside of Utah as compared to those who only lived in the state. Those who had lived outside of Utah were half as likely to identify this meaning as those who had lived in Utah their entire lives.

Of interest, proximity of access to the lake is not related to the “recreation activities” variable. Apparently those with recreation interests linked to the lake were willing to drive to the lake even if their access was more distant.

To summarize, location in the lake system and level of involvement with GSL were the things distinguishing between respondents who were more or less likely to identify this meaning. Respondents identifying the “recreation activities” meaning tended to live in Weber County, particularly in the southern part. Most could not see the lake from their property. They likely lived in Utah their entire lives. The more often they visited and recreated at the lake, the more likely they were to indicate this meaning.

GSL means birds and other wildlife. Only two of the independent variables had statistically significant relationships with the “birds and other wildlife” meaning variable, with a third approaching statistical significance (see Table 5-29). With those variables that measure experience with and exposure to the lake, there is a relatively weak relationship between frequency of recreation and the “birds and wildlife” variable, with those involved in “most frequent recreation” three times as likely to say GSL meant “birds and other wildlife,” than those with “least frequent recreation,” and twice as likely

Table 5-29. Crosstabulations: Independent Variables by Birds and Other Wildlife Meaning (Birds and Other Wildlife mean = .15) (Percentages in Parentheses)

Independent Variable	Birds & Wildlife	Not Birds & Wildlife	Total	Sig.	Cramer's V
Frequency of GSL-related recreation				<u>.009</u>	.190
Least frequent recreation	7 (8.0)	81 (92.0)	88 (100.0)		
More frequent recreation	11 (12.5)	77 (87.5)	88 (100.0)		
Most frequent recreation	20 (24.1)	63 (75.9)	83 (100.0)		
Property in the family for more than one generation	4 (7.3)	51 (92.7)	55 (100.0)	.082	.103
This generation only	38 (16.5)	192 (83.5)	230 (100.0)		
Household income groupings				<u>.017</u>	.176
Lower income range	7 (8.4)	76 (91.6)	83 (100.0)		
Middle income range	16 (25.8)	46 (74.2)	62 (100.0)		
Higher income range	18 (15.4)	99 (84.6)	117 (100.0)		

as those with “more frequent recreation.” The generational measure has a weak relationship that approaches statistical significance. Single-generation property holders were more likely to identify the “birds and wildlife” meaning than multigenerational property holders.

The only other statistically significant relationship is with a sociodemographic variable. Household income has a relatively weak relationship with the “birds and wildlife” variable, with those in the middle income range the most likely to identify the “birds and wildlife” meaning. Those in this middle income category were ten percent more likely to identify this meaning than those in the higher income range.

In brief, degree of exposure and one sociodemographic measure were the only things related to this meaning. Respondents who indicated the “birds and wildlife” meaning tended to participate in GSL recreation most frequently as compared to other respondents. They typically had their property for the current generation only, and their household income was most likely in the middle range.

Table 5-30. Crosstabulations: Independent Variables by Rural Meaning (Rural mean = .19) (Percentages in Parentheses)

Independent Variable	Rural	Not Rural	Total	Sig.	Cramer's V
County				.097	.097
Weber County	32 (22.9)	108 (77.1)	140 (100.0)		
Davis County	23 (15.2)	128 (84.8)	151 (100.0)		

The rural meaning. None of the independent variables has statistically significant relationships with the “rural” meaning variable, although county of residence has a very weak relationship that approaches statistical significance (see Table 5-30). Weber County respondents were more likely to express this “rural” GSL meaning than Davis County respondents. This is likely due to those in Weber County being the farthest from the lake shore and from access to the lake proper, while many were also in a more rural area.

In other words, the only thing that can be said about those respondents more likely to select the “rural” meaning is that it was somewhat likely they lived in Weber County, where the most rural portion of the study area is located.

Uniqueness. The only statistically significant relationship between an independent variable and the “uniqueness” meaning variable is that between household income and “uniqueness,” although it is a fairly weak relationship (see Table 5-31). Those in the lower income range were much more likely to identify the “uniqueness” meaning: they were close to five times more likely than middle income respondents and nearly twice as likely as higher income respondents to express this meaning.

The “generational” experience and exposure variable is the only other independent variable that even approaches a statistically significant relationship with the “uniqueness” variable, in this case a weak one. Here, twice as many multigenerational

Table 5-31. Crosstabulations: Independent Variables by Uniqueness Meaning (Uniqueness mean .08) (Percentages in Parentheses)

Independent Variable	Not		Total	Sig.	Cramer's V
	Uniqueness	Uniqueness			
Household income groupings				<u>.020</u>	.173
Lower income range	13 (15.7)	70 (84.3)	83 (100.0)		
Middle income range	2 (3.2)	60 (96.8)	62 (100.0)		
Higher income range	8 (6.8)	109 (93.2)	117 (100.0)		
Property in the family for more than one generation	8 (14.5)	47 (85.5)	55 (100.0)	.069 [†]	.108
This generation only	16 (7.0)	214 (93.0)	230 (100.0)		

[†] 1 cell has expected count less than 5; Continuity Correction shows sig. .121, Fisher's Exact Test sig. .066

property holder respondents identified the “uniqueness” meaning as single-generation respondents did.

In sum, respondents who were more likely to indicate the “uniqueness” meaning tended to have a household income in the lower range, with some likelihood their property had been in the family for more than one generation. These are the only variables distinguishing those holding this meaning from those who did not.

The social and community meaning. In research question #1b we saw evidence that many LDS members shared the “social and community” GSL meaning. We now see they were essentially the only ones who held it. The only variable with a statistically significant relationship with this meaning variable is religious affiliation. Only one non-LDS respondent expressed holding the “social and community” meaning while nine percent of LDS respondents did (see Table 5-32).

Negative sense of place. A number of independent variables have statistically significant relationships with the “negative sense of place” meaning variable (see Table

Table 5-32. Crosstabulations: Independent Variables by Social and Community Meaning (Social and Community mean = .07) (Percentages in Parentheses)

Independent Variable	Social & Community	Not Social & Community	Total	Sig.	Cramer's V
Religious Affiliation				<u>.026</u>	.133
L.D.S.	20 (9.4)	192 (90.6)	212 (100.0)		
Non-LDS	1 (1.4)	70 (98.6)	71 (100.0)		

Table 5-33. Crosstabulations: Independent Variables by Negative Sense of Place (Negative Sense of Place mean = .06) (Percentages in Parentheses)

Independent Variable	Negative Sense of Place	Not a Negative Sense of Place	Total	Sig.	Cramer's V
Have visited GSL or related sites	14 (5.3)	250 (94.7)	264 (100.0)	<u>.007</u> [†]	.162
Never visited GSL or sites	4 (21.1)	15 (78.9)	19 (100.0)		
Frequency of GSL site visits				<u>.036</u> ^{††}	.161
Fewest GSL visits	9 (14.1)	55 (85.9)	64 (100.0)		
More frequent visits	5 (5.1)	93 (94.9)	98 (100.0)		
Most frequent visits	4 (4.2)	92 (95.8)	96 (100.0)		
Frequency of GSL-related recreation				<u>.001</u>	.235
Least frequent recreation	12 (13.6)	76 (86.4)	88 (100.0)		
More frequent recreation	4 (4.5)	84 (95.5)	88 (100.0)		
Most frequent recreation	0 (0.0)	83 (100.0)	83 (100.0)		
Education levels				<u>.033</u> ^{†††}	.155
No college	7 (14.3)	42 (85.7)	49 (100.0)		
Some college or degree	10 (5.2)	181 (94.8)	191 (100.0)		
Some graduate work or degree	1 (2.3)	43 (97.7)	44 (100.0)		
Age groupings				<u>.002</u> ^{††††}	.212
18 to 39 years	13 (13.7)	82 (86.3)	95 (100.0)		
40 to 59 years	4 (3.0)	131 (97.0)	135 (100.0)		
60 years and over	1 (2.0)	48 (98.0)	49 (100.0)		

[†] 1 cell has expected count less than 5; Continuity Correction shows sig. .026, Fisher's Exact Test sig. .024

^{††} 1 cell has expected count less than 5, minimum expected count is 4.47; no sig. listed for Continuity Correction or Fisher's Exact Test since it is not a 2x2 table

^{†††} 2 cells has expected counts less than 5, the minimum expected count is 2.79; no sig. listed for Continuity Correction or Fisher's Exact Test since it is not a 2x2 table

^{††††} 1 cell has expected count less than 5, minimum expected count is 3.16; no sig. listed for Continuity Correction or Fisher's Exact Test since it is not a 2x2 table

5-33).²⁴ Three of these are exposure and experience variables. There is a fairly weak relationship between this meaning variable and those who had visited GSL as compared to those who had not. Those who had never visited the lake were four times more likely to hold a negative sense of place than those who had visited. There is also a fairly weak relationship between this negative meaning measure and frequency of GSL site visits. Respondents with “fewest visits” were approximately three times more likely to exhibit a negative sense of the lake than those with “more frequent” or “most frequent” visits. Frequency of GSL recreation has a moderate, inverse relationship with the “negative sense of place” variable, with respondents with “least frequent recreation” three times more likely to exhibit a “negative sense of place” than those with “more frequent recreation.” No respondents with “most frequent recreation” exhibited a negative sense of place.

Two sociodemographic variables exhibit statistically significant relationships with this meaning variable. There is a moderate strength relationship between age groupings and the “negative sense of place” measure. A much higher proportion of younger adults indicated a negative sense of place than either of the older two age groupings; in fact this meaning was nearly nonexistent for those age 60 and over. A similar but weaker relationship exists between education levels and “negative sense of place,” with those without any college education more than ten percent more likely to have a negative sense of place than those with at least some college. Respondents with at least some graduate

²⁴ The crosstabulations for each of these three need to be interpreted cautiously since each has cells with expected counts less than 5. However, the significance is such that, particularly with GSL-recreation and age, it is likely a corrected significance would show a significant relationship. The strength of these two relationships indicated by Cramer’s V provides further evidence.

school holding a negative sense of place are almost nonexistent. Of note, this is the only meaning variable for which differences in age and education matter.

To summarize, those for whom Great Salt Lake held a negative connotation were more likely to have never visited the lake or related sites; those who had visited tended to visit and recreate at the lake least frequently compared to other respondents. They were far more likely to be younger adults. They tended to have had no education beyond the high school level, and those with some college had likely not gone on to graduate school.

Place Attachment

As has frequently been the case in studies of place attachment, nearly all of the statistically significant relationships between the independent variables and the attachment variable are related to experience and involvement with the place of interest—in this case, GSL (see Table 5-34). There is a fairly weak statistically significant relationship between length of residence near GSL and those exhibiting place attachment as compared to those do not. While there is a slightly higher percentage of place attachment among respondents who had lived near GSL 10 to 19 years as compared to those who had lived there less than 10 years, those who had lived near the lake for 20 years or longer were more than twice as likely to indicate place attachment than respondents in either of these other categories. Other weak relationships can be seen between the place attachment variable and the generational property holder variable, and between the attachment variable and those who grew up near the lake as compared with those who did not. Multigenerational property holders were ten percent more likely to be attached to GSL than single-generation property holders. Those who grew up near the

**Table 5-34. Crosstabulations: Independent Variables by Place Attachment
(Place Attachment mean = .16) (Percentages in Parentheses)**

Independent Variable	Place Attachment	No Place Attachment	Total	Sig.	Cramer's V
Length of residence near GSL				<u>.004</u>	.175
Less than 10 years	13 (9.8)	120 (90.2)	133 (100.0)		
10 to 19 years	8 (11.4)	62 (88.6)	70 (100.0)		
20 years or more	36 (23.2)	119 (76.8)	155 (100.0)		
Property in the family for more than one generation	18 (24.7)	55 (75.3)	73 (100.0)	<u>.042</u>	.105
This generation only	44 (14.8)	254 (85.2)	298 (100.0)		
Lived near GSL while growing up	23 (23.0)	77 (77.0)	100 (100.0)	<u>.033</u>	.112
Did not live near GSL	36 (13.7)	226 (86.3)	262 (100.0)		
Have visited GSL/related sites	58 (17.3)	277 (82.7)	335 (100.0)	<u>.033</u>	.111
Never visited GSL or sites	1 (3.0)	32 (97.0)	33 (100.0)		
Frequency of GSL site visits				<u><.001</u>	.225
Fewest GSL visits	5 (4.9)	98 (95.1)	103 (100.0)		
More frequent visits	18 (15.5)	98 (84.5)	116 (100.0)		
Most frequent visits	29 (25.0)	87 (75.0)	116 (100.0)		
Frequency of GSL-related recreation				<u><.001</u>	.280
Least frequent recreation	9 (7.1)	118 (92.9)	127 (100.0)		
More frequent recreation	16 (14.2)	97 (85.8)	113 (100.0)		
Most frequent recreation	31 (32.6)	64 (67.4)	95 (100.0)		
Sex				<u>.010</u>	.133
Men	19 (11.1)	152 (88.9)	171 (100.0)		
Women	42 (21.0)	158 (79.0)	200 (100.0)		

lake were also ten percent more likely to be attached to the lake than those who did not grow up near GSL.

In terms of involvement with GSL, there is a weak statistically significant relationship between the place attachment variable and those who had visited GSL or its related sites as compared to those who had never visited any lake sites. While 17 percent of those who had visited the lake reported place attachment, only one respondent (2%) who had never visited GSL indicated place attachment. There is a moderate strength relationship between the attachment variable and frequency of GSL visits, with ten

percent increases in the proportion of place attachment between those with “fewest GSL visits” and those in the “more frequent visits” (middle) category, and between respondents in this middle category and those with “most frequent visits.” Twenty-five percent of those who visited GSL most frequently indicated place attachment.

The strongest relationship with the attachment variable is with frequency of GSL-related recreation. This moderate strength relationship is as could be expected, with those in the “least frequent recreation” category much less likely to be attached to the lake. Those in the “more frequent” category were twice as likely to be attached as those in the “least,” and those in the “most frequent” recreation category were nearly 20 percent more likely to indicate place attachment than that middle category, continuing the expected relationship.

There is only one relationship between a sociodemographic variable and the place attachment measure. In a weak statistically significant relationship between sex and the attachment variable, women were nearly twice as likely to exhibit place attachment with GSL as men.

To summarize, respondents who exhibited place attachment tended to have had a good deal of exposure to and experience with the lake. It is very unlikely they had never visited the lake, rather they tended to visit and recreate at GSL most frequently as compared to other respondents. They were more likely to have lived near the lake for at least two decades, often on property that had been in the family for more than one generation, and related to that, they likely grew up living near the lake. These attached respondents were also more likely to be female.

Summary of Research Question #2

In looking at the differences between respondents for whom Great Salt Lake held different meanings, a number of patterns have emerged. As found in other sense of place and place attachment work, exposure to and experience with the lake mattered a good deal in people's relationships with GSL. One's location within the lake system mattered for some meanings, but not for others. A number of sociodemographic variables are related to differing meanings. GSL-related roles appear to matter the least of all the independent variables considered.

Exposure and Experience Variables

The cluster of variables measuring respondents' exposure to and experience with the lake are significantly related to the relationships people had with GSL more than any of the other variable types I considered, in fact the only meaning variables that lack relationships with any of these independent variables are the two that do not focus on the lake itself: "rural" and "social and community." Each of the other meaning variables, and especially the sense of place and place attachment variables, has relationships with at least one of the exposure and experience variables. While some of this is related to there being more of these variables (seven) than in the other categories, the exposure and experience variables also account for some of the most consistent and strongest relationships found throughout the analyses.

These variables make up the most substantial differences between those with a sense of place with the lake and those without, and even more so between those who had place attachment to GSL and those who did not. With each of these, the involvement

variables measuring frequency of GSL site visits and of GSL recreation have the strongest relationships of any of the independent variables considered. Whether respondents had ever visited any lake-related sites or not, and the generational variable, are also related although in much weaker relationships. It is not surprising to see similarities between place attachment and sense of place, given their conceptual relatedness and the fact that place attachment has often been used as an indicator of sense of place.

While sense of place is also related to other types of independent variables, the difference between respondents with place attachment and those without is primarily related to one's exposure to and experience with the lake. The only variable of the exposure and experience cluster that does not have a significant relationship with the attachment variable is whether the respondent lived outside of Utah as an adult or not. Noteworthy differences within this cluster between those with place attachment and those without are statistically significant relationships with length of residence, a common and predictable finding for attachment measures (although this relationship is a weak one in this study), and whether or not the respondent lived near the lake while growing up. These two variables are not related to any of the GSL meaning variables, or to the sense of place variable. Besides the exposure and experience variables, the only other variable related to the attachment variable is sex (in a weak relationship).

These relationships between experience with the lake and sense of place and place attachment with the lake support a good deal of prior research where experience and involvement with places have been primary predictors of sense of place and place attachment (e.g. Bricker and Kerstetter 2000; Kyle et al. 2003; Williams et al. 1992;

Williams and Vaske 2003). Further, the relationships between place attachment and length of residence, multi-generational land holdings, and growing up near the lake support the perspectives of scholars who have argued that place attachment results from a long process of interaction and experience with a place (e.g. Galliano and Loeffler 1999; Tuan 1977), as well as prior research findings validating these perspectives (e.g. Williams and Vaske 2003).

The exposure and experience variables play varying roles with the lake meaning variables. The “recreation activities” meaning variable is related to both location and involvement variables, but the involvement measures, frequency of GSL visits and recreation, have the strongest relationships. Frequency of recreation is also important to the “birds and wildlife” meaning variable, along with household income. In each of these relationships, the more involvement, the more likely the respondent was to indicate that meaning. Frequency of GSL visits is also related to the “views and sunsets” variable, however here the middle category—“more frequent visits”—is the one with increased likelihood the respondent would indicate that meaning. Additionally, for this meaning, there are a number of relationships with other types of variables, particularly location variables.

Frequency of visitation and of recreation are also related to the “negative sense of place” meaning variable, but here, the less involvement respondents had with GSL the more likely they were to indicate this negative meaning. This finding further supports the work of researchers who have found positive relationships between involvement with places and place attachment (e.g. Bricker and Kerstetter 2000; Kyle et al. 2003; Williams

et al. 1992; Williams and Vaske 2003), since holding a negative sense of a place is the opposite of being attached to it.

There are also meanings for which the cluster of exposure and experience variables matter little. The generational variable is the only one from this cluster that even approaches a relationship with the “uniqueness” meaning variable, with those with multigenerational property having been more likely to indicate this meaning than single generation property holders; however household income is more important. And as mentioned, neither the “rural” meaning nor the “social and communities” meaning is related to any of the exposure and experience measures.

It should also be noted that while all the other exposure and experience variables performed, for the most part, as expected, that was not true of the variable considering whether respondents had ever lived outside of Utah as adults. This was included because of observations by lake-affiliated professionals that those who moved here from other states, or had moved away from Utah for some time and then returned, appeared to take the lake less for granted than residents who had lived in the area all their lives. The only meaning variable this measure has a statistically significant relationship with is the “recreation activities” variable, and here those who had lived outside of the state were less likely to indicate this meaning than those who have only lived in Utah.

Location Variables

Where a respondent lived within the lake system also mattered for a number of the meaning variables, although fewer than the exposure and experience variables. Statistically significant relationships exist between these measures and the “views and

sunsets,” “recreation activities,” and “rural” meaning variables, and the “sense of place” variable. It matters most with “views and sunsets,” where some of the strongest relationships for the whole analysis are between this meaning variable and county of residence, as well as the smaller-scale “county groupings” variable. Having a view of the lake, as compared to not, is also related to the “views and sunsets” meaning variable. These three location variables are also related to the “recreation activities” meaning variable, however each is reversed here as compared to the “views and sunsets” variable. While those most likely to indicate the “views and sunsets” meaning tended to live in Davis County, particularly the southern part of the county, and were more likely to have a view of the lake from their property, those most likely to identify the “recreation activities” meaning tended to live in Weber County (although in the southern part of the county), and were more likely to lack a view of the lake (although this is likely incidental to the area they live in). As noted earlier, a very weak relationship approaching statistical significance between county of residence and the “rural” meaning variable is the only relationship between this meaning variable and any of the independent variables. Those indicating this meaning were more likely to live in Weber County.

Location also matters to the “sense of place” variable. Here, those with farther access to the lake were more likely to lack a sense of place than those with nearer access. Related to this, where one lived within the counties also mattered to one’s sense of place. These relationships between respondents’ residential location and the meanings GSL held for them supports Gieryn’s (2000) assertion that location matters to the relationships between people and places.

None of the location variables are related to the “birds and other wildlife,” “uniqueness,” or “social and community” meaning variables, to the “negative sense of place” variable, or to the “place attachment” variable.

Of note, while having a view of the lake mattered a good deal for those indicating the “views and sunsets” meaning, it did not matter at all in distinctions between sense of place and a lack of sense of place, nor between those exhibiting place attachment and those not attached to GSL. This is a different outcome than was expected after hearing the comment in the qualitative interviews that some participants did not really think about the lake, since they could not see it.

GSL-related Roles Variables

As noted above, GSL-related roles matter the least of any of the clusters of independent variables. There were no statistically significant relationships between any of the meaning variables and parents as compared to non-parents. This is not particularly surprising since, although several qualitative research participants talked about links they have to the lake through their children, there were no consistencies in relationships between parenting and the meanings identified in the qualitative work. This is likely related to how broad a category this is. Despite an earlier wetlands study (Nicholson 2000) and the observations in the qualitative portion of this study, having agricultural income did not matter to any of the GSL-meanings, not even the rural meaning. Those with GSL income as compared to those without approached an inverse, statistically significant relationship with the “views and sunsets” meaning variable, but the relationship is quite weak. This is the only relationship even approaching statistical

significance between any of the roles variables and any of the meaning variables or the “sense of place” or “place attachment” variables.

Sociodemographic Variables

In their study of place attachment measures, Williams and Vaske (2003) noted the need for future work on place attachment to examine relationships between place attachment and sociodemographic traits. There has been a paucity of research on these relationships.

The various sociodemographic and personal traits of respondents had greatly differing relationships with lake meaning variables, although most of the relationships are weak, and for the most part, the relationships with sociodemographic variables appear less important than other relationships. One obvious exception to this trend is the relationship between religious affiliation and the “social and community” meaning variable, where being LDS or non-LDS was the only thing that did matter. There is also a statistically significant difference in sense of place/lack of sense of place between LDS and non-LDS respondents, with non-LDS respondents more likely to exhibit a lack of sense of place than LDS respondents. Unlike the “social and community” variable, though, the relationship between religious affiliation and the “sense of place” variable is one of a number of significant relationships, and here both location variables and exposure and experience variables have stronger relationships.

Household income is related to the “uniqueness” meaning variable, where those indicating the “uniqueness” measure were more likely to be in the lower income range; this relationship is the strongest of two between independent variables and this meaning

variable. It is also related to the “birds and wildlife” meaning variable, where those in the middle income range were more likely to exhibit this meaning variable than those in either of the other income categories. For this meaning variable, the relationship with household income is one of two significant relationships that are similar in strength.

Sex has weak relationships with two of the dependent variables, in both cases it is one of a number of relationships and is among the weaker ones. This is particularly true in the relationship between sex and the “views and sunsets” measure, which only approaches statistical significance. Women were more likely to indicate this meaning than men. As noted earlier, the relationship between sex and the place attachment variable is the only relationship the attachment variable has with an independent variable other than those in the exposure and experience cluster. Here, too, women were more likely to indicate attachment than men.

Finally, two sociodemographic variables have significant relationships with the “negative sense of place” meaning variable, amidst the involvement variables. Respondents 18 to 39 years old were considerably more likely to have a negative sense of place with GSL than those in the two older age groupings. This is one of the two strongest relationships with this meaning variable. Additionally, those with no college education were more likely to exhibit this negative meaning than those with any college. Those with any graduate school experience were least likely to exhibit this negative meaning.

The Differences

So are there differences between those for whom GSL is a place and those for whom it is undifferentiated space? In other words, between those with a sense of place and those without? The distinctions between these respondents have been noted; it is a combination of degree of involvement, location, and personal traits that creates the strongest differences between those with a sense of place and those without. Differences between those who identified positive lake meanings and those for whom GSL held a negative meaning have also been noted.

A Quantitative Consideration of Sense of Place with a Mixed Amenity Setting

These analyses of the survey data have provided additional understanding of the relationships the residents who live closest to Great Salt Lake have with the lake. The survey respondents identified very similar lake meanings as those identified in the qualitative work. The data provided evidence that respondents hold shared meanings within communities similarly to the shared meanings within neighborhoods seen in the qualitative work, which supports arguments and findings by Eisenhauer et al. (2000) and Galliano and Loeffler (1999). There was also considerable evidence that, with this mixed amenity place, people often hold more than one meaning of the lake, and frequently some of the meanings held simultaneously appear incongruous with each other.

Examining differences among a number of independent variables provided distinctions between people with a sense of GSL and those who appeared to lack such a sense, between people for whom the lake meant substantially different things, and

between those who indicated they felt attached to GSL and those who did not. As in many other studies (e.g. Bricker and Kerstetter 2000; Kyle et al. 2003; Williams et al. 1992; Williams and Vaske 2003), exposure and experience with the place in question accounted for much of the difference between those with and without a sense of place, and those who were attached to GSL and those who were not. Residential location was also an important distinction between those with and without a sense of place, which supports the arguments of Gieryn (2000). Distinctions between people holding different meanings of the lake involved various aspects of location, different kinds of involvement with the lake, and to a degree, sociodemographic traits such as religious affiliation, age and household income, among others.

Most of these findings support those in the qualitative study, thus providing reliability to the qualitative work, as that work provides additional validity to these quantitative analyses. Thus the combined study appears to have reaped some benefits from triangulating the methods.

CHAPTER 6

DISCUSSION AND CONCLUSIONS

There are many misperceptions about Great Salt Lake—words misspoken long ago, then echoed down the canyons of time, bounced so often from generation to generation that the echoes are now considered truth.

--Ella Sorensen (1997:9)

The key problematic for this study is to discover the dynamics of residents' senses of place with Great Salt Lake, a mixed amenity place of ecological importance. While there has recently been an increase in research on the GSL ecosystem, thus far these studies have not examined the social components of that ecosystem. How people feel about particular places has been found to be a positive predictor of environmental concern (Vorkinn and Riese 2001), environmentally responsible behavior (Vaske and Kobrin 2001), and increased support for resource management objectives and practices (Kaltenborn and Williams 2002). Discovering the degree to which the nearest residential neighbors of GSL have a sense of place with the lake, what their senses of the lake are, and the degree of connection and attachment to GSL, could provide indicators of how protective these neighbors may feel about and behave toward the lake. This information can help resource managers gauge the amount of concern and support for the lake from these nearby residents, while also providing better understanding of the perspectives of these people who are among those most affected by the lake. Additionally, the study can inform the literature on relationships between people and places, since this literature has

focused on dynamics seen in high amenity places and has not, for the most part, considered the dynamics with mixed amenity places such as Great Salt Lake.¹

This chapter highlights the key findings from the study, discussing how these findings add to what we understand about the dynamics between people and places, as well as how they can be used to inform management of this ecologically important and fragile resource. It addresses the limitations in the study, and suggests a number of directions for further research.

Summary of Key Findings

The study considered three primary research questions. First, what various senses of place those living nearest to Great Salt Lake had about the lake, that is, the meanings the lake held for these residents. This consideration of lake meanings also examined the extent to which these various meanings were shared within groups of residents, and whether GSL held multiple meanings for individuals. Secondly, I examined the distinctions between people who saw the lake differently, and between those for whom the lake held meaning and those who appeared to lack any real sense of place with GSL.

The Meanings Great Salt Lake Holds for Its Nearest Neighbors

The expectation here was that I would find a wide variety of understandings of GSL, with the lake holding a diversity of meanings for these nearest neighbors. I wanted to discover the images of GSL that were part of taken-for-granted, everyday life for these

¹ Again, I define a mixed amenity place as a place people could be expected to have mixed perceptions of. This includes having mixed perceptions among people, and it also includes individuals having varied perceptions, that is, positive, negative and neutral perceptions of the same place.

residents, and following Berger and Luckmann (1966), see how these images were related to people's social roles and the stocks of knowledge affiliated with those roles.

Using qualitative data from interviews, focus groups, and open-ended survey questions, a set of themes emerged. Some lake neighbors gave rich descriptions of strongly held, very positive senses of the lake. Most of these meanings focused on traits of the lake itself, meanings that included, for example, the lake's beauty, views and sunsets; recreation activities; birds, other wildlife, and the lake-related habitat that attracts them. Some meanings were more related to the area the lake is a part of, for example, the lake's association with less developed rural areas; and social and community aspects of the lake area, including memories, history and heritage associated with the lake and broader lake area.

Some research participants indicated the lake held negative meanings for them. These people focused on things like the lake smell and bugs, damage from salt, water problems, and feeling like "there's nothing out there." These negative lake meanings verify the need to consider the full range of experiences and feelings people may have with places as has been advocated by a number of place scholars (e.g. Giuliani and Feldman 1993; Kyle et al. 2004, Manzo 2003; Relph 1976), a need that, as these images indicate, is exacerbated in this mixed amenity place. Another small group of research participants appeared to lack any feelings regarding GSL, it was "just a lake" that was "irrelevant." For these who appeared to have little to no sense of place with the lake, GSL was not part of their taken-for-granted, everyday lives, but rather an undistinguished space, unimportant as part of the landscape, as Tuan (1977) described.

The constellation of meanings Great Salt Lake held for those living nearby is indicative of the complexity of this locale. With the foci varying from traits of the lake itself to more social and structural aspects of the lake area, it is clear that people's relationships with GSL are diverse. As Hummon (1992) observed, "...the emotional bonds of people and places arise from locales that are at once ecological, built, social and symbolic environments" (Hummon 1992:253).

Shared Meanings

I expected to find that people who interacted with each other as members of groups² shared some lake meanings due to having shared stocks of knowledge about the lake. I found evidence of shared meanings among groups such as LDS Church members, who shared the perception that GSL signified social and community meanings. Other findings supported Gieryn's (2000) argument that location plays a role in people's relationships with places. Many residents of communities with a better view of the lake shared the sense that views and sunsets were what the lake meant, while residents of a community relatively close to the Antelope Island causeway and to lake-affiliated WMAs shared the perspective that GSL means recreation activities, and birds and wildlife. Additionally, many residents of the most rural community in the study area shared a focus on the importance of the rural traits of the GSL area.

Galliano and Loeffler (1999) observed that while individuals within a community may have different interpretations of a place, there may also be "broad experiential patterns expressed in a collective sense by the members of a community. Thus, people

² Again, for this study, by "groups" I mean collectivities that may fall in between how sociologists typically think of "social groups" and "categorical groups." My use is similar to "cultural groups" as used by Greider and Garkovich (1994).

frequently share a communal interpretation of place” (p. 6). The fact that some lake meanings are shared at the community level, and others are shared by the “community” of LDS church members, is an example of this communal dynamic. Particularly for these LDS lake neighbors, Great Salt Lake appears to be what Greider and Garkovich (1994) refer to as a “symbolic representation of a collective local history,” part of “the essence of a collective self-definition” (p. 4).

Multiple Meanings

Here I expected to find that a substantial number of individuals held multiple meanings of the lake, including meanings that did not appear to be congruent with each other. This was expected since these nearby neighbors of the lake were exposed to GSL under all conditions, across the seasons as well as variable lake conditions (e.g. elevation). No matter how positively they felt about the lake, they would also be aware of what Relph refers to as “the drudgery of place”³ (1976:41); and conversely, even some of those with the most negative views towards the lake would see it as also having some positive aspects. As expected, individual research participants often held a variety of lake meanings, both positive and negative. While several of these combinations were not surprising and made intuitive sense (e.g., those who felt positive about GSL held a number of positive lake meanings), these combinations included some that, at least on the surface, appeared fairly incongruent. Many holding a negative sense of the lake also saw the lake as holding contrasting positive meanings, while substantial numbers of those expressing strong positive feelings about the lake (i.e. place attachment) also found the lake too smelly to spend much time there and/or saw it as a dead lake, both negative. This

³ The tediousness, hardships, restrictions and miseries that are part of day to day life in a place.

is evidence of the complexities of this mixed amenity place, and of its relationships with its closest neighbors. While some place theorists have suggested this is likely the case with most places (e.g. Relph 1976), few empirical works have found, looked for or commented on these dynamics in place studies thus far (e.g., Kyle et al. 2004 found evidence of more nuanced relationships than typically gets reported).

Contested Meanings

Some of the findings pointed to situations where some lake meanings have been contested, where the politics of place involved competing definitions of the situation (Greider and Garkovich 1994; Stokowski 2002). This has happened in a number of ways. For example, there was the disbelieving teasing and even cajoling between some who lacked a sense of place with GSL and some with not only a sense of place, but place attachment. The sharpest of these exchanges occurred between members of a focus group who were neighbors, over whether GSL was really the cause of the area's worst odors. There was the surprise that "some people wanted nothing to change at all," expressed by a member of a focus group who thought everyone felt the same way he did about the need for more lake-related recreation amenities, part of a pattern of real differences between people who saw a need for more development and those who opposed this. There were the impassioned feelings expressed by the interview participant who had been involved in fighting Legacy Highway's encroachment on GSL-related wetlands. This was also a strongly contested topic in the comments added to survey questionnaires.

Contested meanings emerged about the issue of water that feeds the lake and the management of Bear River. While a farmer from Box Elder County felt strongly that the

river should be dammed so spring runoff could be used more effectively, without “going to waste,” several farmers in one of the focus groups were concerned about lake levels, and the impact damming Bear River would have on the lake’s ecosystem. The farmer favoring the dam did not think anyone would be opposed to it other than the landowners whose holdings would be flooded by a new reservoir. This is also an example of a given role, in this case people in agriculture, not having a shared sense of the lake.

In the context of place, power has been defined as the “capacity to impose a specific definition of the physical environment, one that reflects the symbols and meanings of a particular group of people” (Greider and Garkovich 1994:17). For the residents of WC Weber, the shores of GSL at Little Mountain carried substantial community meaning and symbolism. When the Air Force was able to impose a very different definition of this place by closing off access, it left these residents confused and saddened that their understanding of that place was no longer how it was being managed. This dynamic has been described in prior research (Wulforth et al. 2006).

Differences in People and What the Lake Means

The expectation here was that variables such as length of residence, the level of involvement and experience with the lake, and residential location within the lake system, as well as a number of sociodemographic variables, would all be related to differences in how people saw and felt about GSL. I examined the differences between research participants with a sense of place with the lake and those who appeared to lack one, and then went on to consider what differentiated between those for whom the lake held

different meanings. I included place attachment as a balance to the negative sense of the lake.

GSL- related Roles

Extending Berger and Luckmann (1966), I expected GSL-related roles to be related to differences in sense of place with GSL, and in those holding various lake meanings. There were some discrepancies between the qualitative and quantitative findings, with the quantitative analysis showing that, of the factors tested, these roles mattered the least in these distinctions. The qualitative analysis found lake-related occupations provided distinctions in both sense of place and the meanings the lake held, although the types of occupations within the sample were limited. Nearly all the participants in lake-related occupations exhibited a sense of place and place attachment, and they were more likely to see the lake as meaning a natural place, a place to be protected, and/or birds and wildlife. The lake held meaning as an economic resource for those in lake-related occupations other than resource managers. The discrepancy between qualitative and quantitative analyses is likely due to the small number of survey respondents who held lake-related occupations.

Among interview and focus group participants there was a substantial link between farming or ranching near the lake and a sense of place, as well as with the meanings the lake held. The multiple meanings held by many of these participants included the lake as a rural place, a place of family roots, a lake of variable size, and an economic resource (although this last was tied to family or community connections). GSL also held the meaning of a natural place for a majority, although they were divided

on having a protective sense of the lake. However, there were differences between these qualitative participants and survey respondents, probably partially due to the small number of survey respondents involved in farming and ranching. Additionally, those in the qualitative sample may have been somewhat anomalous in their relationships with the lake compared to farmers and ranchers within the study area more broadly.

Experience and Involvement

These variables considered the degree of exposure respondents had to GSL over the course of their lives, including history of residence, frequency of visitation and of recreation. Following Berger and Luckmann (1966), I expected socialization to play a large part, particularly primary socialization as a child as compared to the secondary socialization that occurs later in life. Living near the lake as a child did make a difference in place attachment, however there were no significant relationships between this variable and the sense of place or any lake meaning variables. This was also the case for length of residence, with those who had lived near the lake for two decades or more significantly more likely to indicate place attachment than not, while length of residence was not a distinguishing factor for sense of place or any of the lake meanings research participants identified. There was no consistency in place attachment for participants who had lived near the lake less than 20 years.

I expected experience and involvement with the lake to help differentiate between the meanings the lake held for its nearest neighbors. In the quantitative analysis, the exposure and experience variables accounted for some of the most consistent and strongest relationships with lake meaning variables (e.g. recreation activities, or birds and

wildlife, as compared to other meanings), and they had a strong inverse relationship with negative sense of place. In fact, the only meaning variables that lacked any relationships with the exposure and experience variables were the two that do not focus on the lake itself: “rural” and “social and community.”

These variables were also factors for sense of place, and even more so for place attachment to GSL. Some qualitative research participants appeared to have a deeper sense of place that came from much experience with and knowledge about the lake, which went along with a sense of respect and awe, and an understanding that one had to adapt to the lake and manage for its affects. Nearly all qualitative participants with this type of experience with GSL expressed strong place attachment. The similarities that emerged between place attachment and sense of place are not surprising, given their conceptual relatedness and the fact that place attachment has been used as an indicator of sense of place (e.g. Jorgensen and Stedman 2001; Pretty et al. 2003; Stedman 2003b).

These findings support the arguments put forward by place scholars who saw place attachment as resulting from a long process of interaction and experience with a place (e.g. Galliano and Loeffler 1999; Tuan 1977). The findings also support prior research findings validating these perspectives (e.g. Williams and Vaske 2003). On the other hand, some have suggested one could develop place attachment from hearing stories and memories others have of places (Backlund and Williams 2004). That was not seen in this study.

Location of Residence

I expected location-related variables, including proximity and access to the lake and having a view of the lake, to distinguish between those holding different GSL meanings. Following Gieryn (2000), it also seemed likely that the physical properties of the lake in one's residential location could affect one's feelings about the lake and what the lake meant, for example, whether one lived close to the open lake, a bay or wetlands.

In the qualitative work, there was not a consistent relationship between lack of access and sense of place. Similarly, there was not a consistent relationship between having a view of the lake from one's property and a sense of place or place attachment with the lake. Whether people lived near lake-affiliated wetlands, a bay or open waters mattered in terms of what participants identified with—e.g., feeling they did not live close to the lake, but rather to a bay or the marshes. However it did not appear to make a difference in terms of sense of place with the lake, nor in terms of place attachment. There also did not appear to be any relationship between any of these location variables and the lake meanings.

The quantitative work found that, while location variables were not related to as many meanings as experience and exposure variables were, these location issues did matter. Those with nearer access to the lake were more likely to have a sense of place with GSL, while those with farther access were more likely to lack one. Those who were able to see the lake were more likely to say GSL meant views and sunsets, while those with close access to wetlands and relatively close access to open waters were more likely to say the lake meant recreation activities. Not surprisingly, respondents living in the

most rural community in the study area were more likely to indicate that the lake held rural meanings for them.

After hearing comments from some qualitative participants, I expected having a view of the lake to matter in survey respondents' relationships with the lake. While it mattered a good deal in distinguishing between those who said the lake meant views and sunsets and those who did not, it was not a distinguishing factor for either sense of place or place attachment.

Sociodemographic Traits

The relationships between sociodemographic traits of respondents and lake meaning variables varied a good deal, although most of the relationships seen in the quantitative analyses were weak and appeared less important than other factors. The most noteworthy exception to this was the relationship between religious affiliation and the "social and community" meaning variable, where being LDS or non-LDS was the only factor that mattered. LDS Church membership was also positively related to sense of place. Household income was a distinguishing factor for two lake meanings: those who see the lake as unique were more likely to be in the lower income range, while those for whom the lake means birds and wildlife were more likely to be in the middle income range.

Interestingly, two potentially linked sociodemographic traits were related to having a negative sense of place: age and education. The youngest age group (18 to 39 years) and the least educated group (those without any college experience) were both more likely to exhibit a negative sense of place than not. This raises the question as to

whether this is an age effect that might change as people grow older (perhaps they grow to appreciate it more as they age), a period effect related to this particular period in time (e.g., if sedentary lifestyles due to the internet and cable television are keeping people from activities that could expose them to the lake more), or a cohort effect that would continue with this group of residents throughout their lives whether other groups behaved similarly or not (e.g. if the flooding of the 1980s somehow made a difference in how this group sees the lake, either because of their own experience as children growing up at the time or, for the youngest of this group, their parents' experience that got talked about during their growing up years). It may also be related to the longer length of residence needed for developing place attachment seen in this study.

A Mixed-Amenity Place and the Place Literature

While there is a large and broad literature on the relationships between people and places, focusing particularly on place meanings, sense of place and place attachment, these theoretical and empirical works have focused almost exclusively on people's relationships with high amenity places, places known for their recreation opportunities and aesthetic value. Although there have been consistent calls for measures that capture the full range of experiences and feelings related to place (e.g. Giuliani and Feldman 1993; Kyle et al. 2004; Manzo 2003; Relph 1976), studies of these higher amenity places have seemingly had little negative to report on. Examining place dynamics in a mixed amenity setting such as GSL can provide additional understanding of how these processes work. There are a number of differences as well as some similarities in this study of this mixed amenity place, as compared to studies of higher amenity places.

As noted earlier, for this study “amenity” refers to traits that make a location more attractive as a place to live. By mixed amenity places, I mean places people could be expected to have mixed perceptions of—that is, different people may hold different perspectives, and individual people may also hold mixed perceptions. While mixed amenity places have qualities people find attractive, they also have traits some may find objectionable or irritating. These places do not have the obvious grandeur of those typically considered high amenity places (e.g. resort settings, national parks, etc.).

Feelings about a Mixed Amenity Place

As a mixed amenity place, feelings towards GSL are more nuanced than the kinds of affect typically expressed towards resort lakes, for example. I found at least four differences. First, while there are clearly people who demonstrate place attachment to GSL, the incidence is far less widespread than that seen in studies of high amenity places. For example, in studying sense of place related to lakes in Vilas County, Wisconsin, Jorgensen and Stedman (2001) found that overall, strong, positive feelings prevailed, as evidenced by relatively high means for each of their place attachment measures.⁴ While Warzecha et al. (2000) found somewhat lower means in their study of national parks sites, a majority of respondents agreed with the attachment items.⁵ By contrast, only 16 percent of survey respondents in my study agreed with the place attachment item.⁶ As

⁴ The means in Jorgensen and Stedman’s (2001) study ranged from 3.99 to 4.64 on four individual attachment measures. Each had a five point Likert-like response range, with the disagreement responses at the low end.

⁵ Warzecha et al. (2000) used six measures for “emotional/symbolic place attachment” (including the measure in my study), each with five point Likert-like response ranges with disagreement responses at the low end. The grand means (also using a five point range) for this cluster ranged from 3.54 to 3.98 in the three locations they studied.

⁶ The mean for the full seven point range for my measure was 2.93—so the mean for my seven point measure was substantially lower than the means of five point measures found in either of the other studies.

Taylor et al. (1985) observe, there are “some places to which people can become attached more easily” (p. 525).

Second, in the current study there is a small but not inconsequential segment of research participants for whom the lake holds negative meanings, some stating they could think of nothing positive about the place. While this corresponds to the call to consider the full range of feelings related to places, some scholars advocating this approach were thinking more along the lines of people having negative associations with places because of unpleasant human history that occurred there (Auschwitz would be an example of this), or because of feeling trapped by oppressive places (e.g. Hay 1998; Relph 1976). These dynamics are not the issues of concern with Great Salt Lake; here physical traits of the lake itself are the main concern people are reacting to, for example, the barrenness, odor, bugs, and the fact that the salinity does not allow for many recreation activities people associate with fresh water lakes. While these concerns have also been discussed by researchers studying other saline lakes and inland saltscapes (e.g. Bucher 2008; Hueso Kortekaas 2008), this dynamic is not seen in work focusing on high amenity places.⁷

Third, for a substantial number of research participants, the lake held multiple meanings, including many combinations that appeared incongruous in their mixing of positive and negative images of the lake. As mentioned earlier, residents are exposed to all aspects of living near the lake, including the more dreary ones. It does not seem surprising that GSL would hold some negative meanings even for people who felt the

⁷ Williams and Roggenbuck (1989) found evidence of an “indifference dimension” to place attachment that emerged in a factor analysis for a study they conducted to investigate the inter-item correlation structure of the dimensions of place attachment. The items in this factor or dimension were all negative assessments of the settings being explored, however survey respondents were referring to places of their own choosing rather than one particular place. No information is provided as to the places being referred to, so I cannot ascertain whether they are high amenity places.

most positive about it, and that some who saw the lake negatively might also be aware of some positive aspects, no matter how begrudgingly they might admit them (as was the case with some of the qualitative research participants). However I am not aware of any studies of high amenity places where these mixed meanings have been discussed.

Fourth, even among residents who lived as close to this immense lake as one can live, there was a small but substantial group of research participants who appeared to have no sense of the lake, for whom the lake simply did not matter. It is of note that length of residence did not make a significant difference regarding this dynamic.

Despite these dynamics many residents, even many who found some aspects of GSL quite disagreeable, had very positive feelings about the lake. Some looked past these seemingly negative traits in their assessments of the lake, while others even felt positively about traits many found objectionable. An example of this is those who grew up hunting or playing in the lake's marshlands who later found the lake smell comforting. For some, GSL evoked delighted and lyrical descriptions of a variety of aspects of the lake seen as positive. This mix of responses, including the wide diversity in how strong or weak the feelings appear to be, is the essence of why I use the phrase "mixed amenity place."

Stigma

One phenomenon occurring in this mixed amenity place was social stigma related to living close to the lake. This topic emerged in both focus groups without being introduced by the researcher, and was also suggested by some of the interview participants. Participants talked about experiencing teasing and derision from people in their church congregations, friends, other residents from their communities, and in the

case of a man in his seventies, from school teachers and officials when he was in school. This last was related to social class—poorer families lived in the area near the lake, an area referred to then as “the bottoms,” while wealthier families preferred to live farther away from the lake. More currently, the comments lake neighbors heard referred to the smell, the bugs, and other negative conditions people associate with GSL. In one area they had difficulty obtaining services like culinary water. In another area people felt they had been “dumped on” when approval was given for an industrial plant to be built in the area, a plant that deals with volatile chemicals, emits strong odors, and that residents say is “not 100% safe.” A county official assumed people must live in the area because of low property costs, since “probably no one really wanted to be out by the lake.”

These are conditions one does not see mentioned in research on high amenity places, not surprisingly. I did observe that this perception of stigma by these residents living close to GSL appeared to strengthen the feeling of community among them. This is a similar dynamic to that reported by Wilson (1989) in an essay on “haphazard landscapes,” in which residents felt persecuted because of where they lived. This sense of being persecuted created group cohesion among residents.

Some of the dynamics noted in this section may well exist in higher amenity places, but the empirical work has not addressed the issues outlined here. Part of the value of examining mixed amenity places is that, since they have not received much scholarly attention as of yet, they take us out of the realm of what we academics have been taking for granted when we look at place. For example, when scholars focus only on positive affect towards places, they may be missing not only negative affect, but far more nuanced and mixed responses to places. As Relph asserted, “. . .our relationships with

places are just as necessary, varied, and sometimes perhaps just as unpleasant, as our relationships with other people” (1976:141). It may appear that some of the nuances described here are likely true of all places, however that has not been examined empirically.

Dynamics of Note Regarding Correlates

Despite repeated findings to the contrary, in their meta-analysis of place attachment studies,⁸ Backlund and Williams (2004) found only weak to moderate relationships between past experience and visitation, and the dimensions of place attachment (see also Kaltenborn and Williams 2002). They and others have suggested that some attachment to place may come from hearing stories and memories from others, from media depictions, or other sources, about the place in question, rather than from direct experience only (e.g. see Blake 2002; Farnum et al. 2005; Galliano and Loeffler 1999; Relph 1976). Having heard from a variety of sources about the numbers of local residents who have never visited the lake, I anticipated this would be the case with some of them. However the research did not bear this out. Survey respondents who had never visited the lake and those with the least experience with the lake who indicated place attachment were all but nonexistent, and the qualitative outcomes were generally consistent with these findings as well.

It is not surprising that of those who had never visited the lake, only one survey respondent exhibited place attachment. Of interest, though, are those who had never visited the lake and yet had a negative sense of the lake. These respondents, although few in number, do support the notion that one could hold socially constructed “knowledge”—

⁸ using place attachment as an overarching, multi-dimensional concept

or what Relph (1976) and Tuan (1977) referred to as myths—and have feelings based in that “knowledge” about a place like Great Salt Lake, whether they had actually visited the lake or not.

The relationship between connections to places and the level of exposure to and experience with those places seen in prior studies (e.g. Kyle et al. 2003; Williams et al. 1992; Williams and Vaske 2003) was reinforced in this study. These variables were important to both sense of place and place attachment, and also helped distinguish between people holding different meanings of the lake. Those with primarily negative feelings about the lake tended to be those with the least experience with GSL. So while the dynamics of relationships people have with mixed amenity places differ from those with higher amenity places in many ways, for both kinds of places involvement and experience with the place appear to be key to the development of positive relationships.

Correlations with Sociodemographic Variables

There is not much information in the place literature about relationships between people’s sociodemographic traits and their connections to and feelings about places, whether sense of place, place attachment, or other place-oriented variables. In Williams and Vaske’s (2003) study of place attachment measures, they suggested future studies investigate relationships with social and demographic variables as well as others.⁹ The current study investigated income, education, age, and sex for relationships with place attachment, sense of place, and negative sense of place, as well as exploring whether any of these variables helped distinguish between place meanings. While GSL- specific

⁹ Such as political participation, and in studies of public places, willingness to pay.

meanings may be of less interest to other place researchers, the findings on sense of place, place attachment and negative sense of place may be of use to future place work.

Interestingly, there were few statistically significant relationships between these sociodemographic variables and sense of place or place attachment. The only measure related to sense of place was religious affiliation, or more specifically, LDS Church membership, no doubt a very localized relationship. There was a weak statistically significant relationship between the place attachment variable and sex, with women substantially more likely to exhibit place attachment than not, while men were less likely to be attached than not. The statistically significant relationships between the negative sense of place variable and age (with younger adults being more likely to exhibit a negative sense of place) and education (with those lacking any college experience being more likely to exhibit this negative sense) were noted earlier. This may be attributable to GSL being a mixed amenity place, as this seems an unlikely outcome for a place known, say, for recreation opportunities, although I return to this discussion later.

Social and Environmental Aspects as Separate Dimensions of Place

While some have advocated studying social and environmental aspects of places as distinct dimensions of place attachment (e.g. Beckley 2003; Brehm et al. 2006; Stedman 2002), the dynamics that emerged in the present study provide support for Gieryn's (2000) argument that location, material form, and meaningfulness (i.e. the social dynamics) of place are irreducible components, an "unwindable spiral of material form and interpretative understandings or experiences" (p. 471). This study provides considerable evidence of the dialectic between nature and society posited by Berger and

Luckmann (1967) and Greider and Garkovich (1994). For example, a substantial number of research participants indicated that Great Salt Lake holds meaning for them as a rural place. On the surface this appears to be a social artifact that is not particularly related to the lake, but the lake area is a rural place because of the reciprocal relationship between the social realm and nature referred to by Brandenburg and Carroll (1995). Development of the land closest to the lake is limited, on the one hand by moratorium and FEMA flood plain demarcation, and on the other by a high water table, hydric soils, and occasional flooding.

Another example of this dialectic interaction: Many respondents talked about being particularly attached to Antelope Island, due to both native and transplanted wildlife, because of its barrenness as well as its built amenities, and because it is where they have access to the open waters of the lake as well as to the pioneer museum about the island's early settlement. The island is accessed by driving across a built causeway, which is popular for walking or biking on because "I feel like I've just taken a walk through nature." The causeway has disrupted the natural flow of water and salt into Farmington Bay, causing conditions which, along with the nutrient load in the bay from treated wastewater from local urban areas, cause eutrophication resulting in what is known locally as "lake stink," which leads to many people avoiding the lake.

While the neat categories of lake meanings that emerged in the quantitative work may seem to imply that one could sort them according to whether they were more socially oriented (e.g. the social and community meaning) or more nature/natural environment oriented (e.g. the birds and other wildlife, and views and sunsets meanings), a more nuanced picture emerged in the qualitative work, with descriptions of lake

meanings weaving social aspects and aspects related to the natural environment together into the irreducible “unwindable spirals” Gieryn (2000) refers to. Examples of this include the mother who was drawn to watching birds because it was something she could share with her daughter, and the neighborhood where people grabbed lawn chairs to watch sunsets together. There were countless examples of people speaking of both aspects as one: describing “the people” in the area while talking about “the lake,” talking about GSL sites as a natural place family, neighbors and friends enjoyed together, responding to a question about the lake with an answer about the community, etc. There were also many cases of people feeling attached to the lake itself because it symbolized their Mormon pioneer forbearers, which in itself included familial ancestors and their sacrifices, religious roots and mission, and place—salt and ducks and sunsets and islands—all bound up together.

And so this study of GSL has yielded findings that can inform further understanding of the relationships between people and places in a number of ways. It has demonstrated several differences between this mixed amenity place and places that are perhaps easier to love. It has highlighted some similarities that can aid in better understanding the processes involved in these relationships. And by using a more dialectic, sociological perspective, the findings support the arguments that these relationships are nuanced and reciprocal, and likely irreducible.

Implications for Application

While some have speculated how people in northern Utah feel about Great Salt Lake (e.g. Woolf 1999), prior to this work no systematic attempts to find out have been

made. Perhaps because of some of the more negative images of the lake, it has been easy for many, including some in resource management and advocacy positions, to assume most local residents do not think much about, nor much of, the lake. One of the goals of this sociological research has been to begin to look at that question empirically rather than assumptively, particularly since prior research on place has shown connections between having a sense of a place, or better yet, attachment to a place, and feeling concerned and committed to the environment of that place (e.g. Kaltenborn and Williams 2002; Vaske and Kobrin 2001; Vorkinn and Riese 2001).

Indeed, the findings from this empirical work show that, while there were certainly negative feelings about GSL, and while the lake was not a part of everyday reality for some who live nearby, there was also considerable positive sentiment about the lake. As has been noted, among the nearest neighbors of Great Salt Lake, a substantial majority of research participants showed evidence of having a sense of the lake, in other words, GSL held some meaning for them. Most of these people felt positively about the lake, including feeling protective towards it. Many noted the lake's uniqueness, including that it marks "home" on maps not only of the region, but also of the nation, and as some pointed out proudly, the lake can even be seen on world globes. Many of these local residents enjoyed the view of and sunsets over the lake, the birds and wildlife, and lake-related recreation opportunities. The ruralness related to the lake was important to a substantial number, and the lake area was valued as a good place for children to grow up. Further, research participants who grew up near the lake were more likely to be attached to the lake, and those who spent the most time visiting and recreating at lake sites were more likely to have a positive sense of place as well as place attachment. Additionally,

some participants reported the importance of shared communal events related to the lake and lake-related feelings of community.

The qualitative work indicated that those who live closest to the lake can experience lake-related problems others do not, including in some areas, more potent and more pervasive odors, damage from salt and lake dust, and even stigma from living near the lake. Yet they also identified positive things others do not have the opportunity to experience, whether herons in the neighborhood, the dark night skies and reflection of the moon on the lake; lake-related weather and shelter from the weather; or a diversity of wildlife in their “own backyards.”

Much Is Not Known or Understood

There were many things local residents did not appear to know about the lake, including the effects of the built on the natural. While it is well-known and documented within GSL scientific and management circles that both causeways have seriously disrupted water flows, salinity, lake levels, and all the related aspects of the lake’s ecosystem (e.g. GSLPT 2000a, 2000b), these negative effects of built features on the lake system were not known or understood by many lake neighbors. This was evidenced by, for example, the suggestions from research participants to build more causeways to connect Promontory Point, Fremont Island and Antelope Island, and to create some sort of freshwater feature off of Antelope Island. These suggestions were made by people who appeared to have a good deal of connection to the lake.

The issue of lake smell is so connected to GSL that research participants uniformly felt a need to comment on it, even if to say they were never bothered by odors.

However, in another example of lack of information or understanding of lake-related dynamics, roughly half of the Syracuse focus group was not aware that the nearby sewage plant was responsible for some of the area's objectionable odors, even though stories about this had run in local newspapers.

Many research participants did not think of parts of the lake system, e.g. bays, protected wetlands, as being part of the lake. This was evidenced by comments such as "I don't live near the lake, I live near Ogden Bay." This more localized focus is not surprising given the size of the lake system, and the nested nature of areas within it; it has also been seen in other studies of nested places (Cheng and Daniels 2003). However, if these residents could see the connections between their local bay, WMA, etc., and the larger lake system, it might increase feelings of connection and perhaps attachment to the lake, rather than GSL seeming like something that is "out there" somewhere.

While a number of things can be done to increase knowledge and understanding of the lake system, the community of West Point used one tactic that could be explored for broader use. Their flier titled, "Protecting our Storm Water" explained that their storm water flows directly into GSL without treatment, and gave residents tips on how to keep residential pollutants out of the storm drains (West Point City, n.d.). Using brochures or fliers such as this throughout Davis, Weber and even Salt Lake and Tooele Counties, to educate about where storm water and treated wastewater goes, and also linking the need for water conservation to GSL, could be one tactic of many to help increase awareness of the interconnection between people, their communities and the lake. The state has been using a media campaign with messages on the radio, television, and in local newspapers about the need to conserve water. Integrating the effect of water over-consumption on

GSL into that campaign may increase understanding of human impacts on the lake.

As noted, survey respondents reported a good deal of support for protecting the lake and lake-related habitats, however the general tone heard from many survey respondents as well as qualitative research participants pointed to a lack of understanding of how their suggestions could, and current practices in everyday life do, affect the lake and its environs.

The economy related to GSL appears to be another area respondents do not have much knowledge about. Of the items measuring survey respondents' agreement or disagreement with meaning-oriented attitude variables, the fact that the neutral response category was the mode on lake-related economic items stands out. While 39 percent of respondents agreed that GSL adds to the area's economic health, 40 percent responded neutrally. These neutral responses appear to be evidence of a lack of knowledge and understanding about GSL's role in the economy. However, this apparent lack of knowledge about GSL-related economics more broadly is not too surprising. The most recent analysis I could find of this question was from 1999 (Swensen 1999b). The governor's office was not aware of anything more recent, in fact appeared to be unaware of the 1999 analysis. Given the contested nature of several GSL-related issues, conducting a current analysis of the lake's role in the local and state economy should be a priority, as should publicizing the findings of such an analysis.

Changes over Time

Following Gieryn (2000), I was also interested in examining differences in meaning that may be connected to the varying material form of GSL over the course of

people's experience with it, including things such as lake elevation, degree of salinity and odor associated with the lake. These nuances are all related somewhat to length of residence, in that the longer one has lived near the lake, the more variation in these conditions one will have experienced, while more recent lake neighbors will have only experienced the conditions present since moving near GSL. Indeed, in the interviews and focus groups, longtime residents referred to changes that have occurred over time, including how shocking and anxiety-producing being a lake neighbor was during the high water years of the 1980s. It was observed that when the lake elevation was higher, and the lake nearer, GSL was on people's minds much more than it tended to be more recently, having been at very low elevations, and therefore much more distant, for several years. The interaction between lake and social structure was also an issue of concern, particularly for those in WC Weber, who had a close community connection to the lake until their access was restricted in recent years. Some of these research participants expressed not only concern for their loss, but also that this impedes newcomers from being able to develop the same sort of meaningful relationships with the lake that long-timers had enjoyed for so long.

Although I did not attempt to measure these more nuanced issues with the survey, in responses to open-ended questions as well as in additional comments made on questionnaires a number of survey respondents observed that the lake seemed far less important to people in northern Utah currently than it had been in the past, which concerned these respondents. There were also a number of comments from more recent residents wondering why there was not more emphasis on GSL and why so few people seem to know much or care much about the lake.

Additionally, the survey data revealed a statistically significant relationship between residential access to the lake and having or lacking a sense of place with GSL. Those living closer to access to GSL were more likely to exhibit a sense of place, while those living farther from access were proportionately more likely to lack a sense of place than those who lived nearer. Also of interest here is the finding that the youngest and least educated of the survey respondents were more likely to exhibit a negative sense of place than their counterparts. The education factor may be due to age. While it is possible that this is related to the longer length of residence associated with place attachment found in this study, among qualitative research participants who grew up in the area it sounded as though they were already well connected to the lake by the time they were young adults. The concerns raised by both residents and resource managers suggest that this is a period effect rather than being related to length of residence, age, or cohort. If so, some of it is likely related to the same dynamics involved in downward trends in visitation to refuges across the nation reported by one of the resource managers. However some of it may also be related to the loss of access to the open lake in Weber County (through WC Weber). Of note, the highest proportion of survey respondents exhibiting a lack of sense of place was in northern Weber County, the area most affected by this lost access.

It appears the restoration of access at Little Mountain in Weber County might improve some of this dynamic of reduced sense of place. If it led to increased visitation and recreation at GSL sites, it may also decrease some of the negative sense of place, although this was not tied to residential location. It would give the community of WC Weber (particularly West Warren) the opportunity to restore the communal connection to

the lake they enjoyed for so long. If this loss of access was due to the Superfund site at the HAFB Training Annex, the involved entities should consider restoring access as quickly as the clean up allows.

Limitations of This Research and Further Needed Work

There is much that is both exciting and frustrating about conducting research on a setting where so little social science work has been done. While it is exciting that there are so many directions one could take the work, it is frustrating in that any work can only scratch the surface, particularly in studying something as large and complex as social aspects of the Great Salt Lake ecosystem. As a result, the findings outlined above are limited, and there are a number of intriguing “next steps” to be pursued.

First, the focus of this study considers only the relationships between the lake and those who live closest to it (the only substantial exception to this was the inclusion of interviews of GSL resource managers). It would be useful to conduct a similar study either of Weber and Davis County residents more broadly, or perhaps of those living on the mountain benches east of the lake who have better access to an unimpeded view of the lake without the consequences, both negative and positive, of living near the lake. This would be beneficial for two reasons. First, such a study could be contrasted with this research on those who live closest, which would allow a better understanding of both the burden and blessings of living so near the lake. Second, when considered along with this work, this type of study would also allow a broader understanding of how northern Utahns feel about GSL.

The qualitative work is far from an exhaustive study of the perceptions of residents, particularly since the 18 interviews included county commissioners and resource managers in addition to residents. This gave me limited numbers of residential perspectives. The focus groups broadened this considerably, however they were quite location specific.

In the quantitative analyses, because this study focused on categorical measures, the different meanings GSL holds for research participants, I used only bivariate analyses to assess correlations between a number of independent variables and the different lake meanings, sense of place, and place attachment. These analyses revealed a good deal, including differences between the people who hold various lake meanings, that required use of analyses appropriate for nominal levels of measurement. However, while I was able to discover a number of things about place attachment to this mixed amenity place, for example, these findings must be interpreted cautiously, since they are based on a single indicator of attachment rather than the indices typically used to measure this variable. Additionally, because of my use of crosstabulations, I was forced to use dichotomous methods to analyze concepts that are far from dichotomous, such as sense of place and place attachment. This dichotomous approach left me unable to address gradations and continua in these concepts that can have much nuance in how they are experienced.

It is likely that a more extensive quantitative analysis would better reveal the nuances in some of the relationships I was attempting to examine. In future work this would be particularly useful for contrasting those with more of a sense of place with those with less of one, those whose sense of place is more negative with those with a

more positive sense of the lake, and those who exhibit more place attachment to GSL with those who exhibit less. Constructing composite indices that could be used in multivariate analyses of these variables would provide additional information about how place dynamics work in this mixed amenity setting.

The qualitative analysis provided a glimpse of a small number of lake-related occupations, which provided evidence of distinctions in both sense of place and the meanings the lake held. These distinctions were not seen in the quantitative portion of the study, likely because of the small number of survey respondents in lake-related occupations. This made it difficult to determine what relationships may exist between the lake and those working in these occupations more broadly. Similarly, some particularly intriguing relationships with the lake were seen among qualitative research participants who farm or ranch. There was evidence of more sense of place, as well as more and stronger attachment to the lake, than I had expected to see given the oft-touted issue of competition for water. However in the quantitative work, there were no statistically significant differences between residents with and without income from agriculture. Studying these populations more specifically would likely yield interesting, useful information.

Additionally, the community relationship between the lake and the residents of WC Weber revealed in the qualitative portion of this study was unanticipated. More work is needed to understand the dynamics of this community's attachment to the lake and the community effect of its recent loss of access to the shoreline. Exploring this issue would provide useful information on the dynamics related to access, and could provide valuable understanding to resource managers invested in people feeling connected to GSL.

Finally, the GSL ecosystem is an incredibly dynamic system, and as the related social system interacts with the lake dialectically, the social system is also very dynamic. As I noted early on, this study offers only a still snapshot of a moving picture. Focusing on those who live closest to GSL makes it a close-up snapshot at that. I believe this snapshot gives a starting point for considering the relationship between Great Salt Lake and the people living in its vast ecosystem. However, because of the complexities, it is a subject where a good many snapshots will be needed to build a mosaic of understanding about these relationships.

One last issue is the role we academics, resource professionals, and scientists play in the social construction of place (e.g. Petrzalka 2004; Williams and Patterson 1999), as mentioned earlier. Petrzalka (2004) provided a model for reflexive thinking about this role. As noted in Chapter 3, I am aware that my perspective of the lake being ecologically fragile and important, a perspective based in the physical and biological research that has been conducted on the lake, is somewhat privileged in my presentation of GSL. This perspective is part of my taken-for-granted about the lake. As such, it is not something I am capable of removing, but I have worked to be fair. For example, in addition to presenting information on human impacts on GSL, I have outlined the challenges the lake presents to the area, including the humans who live there. I have also worked hard to keep my biases out of the data collection and analysis processes for this study, and to present perspectives in ways that are true to their origins and context, whether that be from media, scientists, organizations and other sources, as presented in the third chapter, or from research participants, as presented in chapters four through six. For example, the smell related to the lake is something that gets commented on a good deal by all of these

sources. A vast majority of the time it is portrayed by these various sources as something irritating that keeps some people away from the lake. However, there are people who do not find it irritating or negative, and some people have positive associations with the smell. I point this out in my presentation of research findings, and have been careful to use language that reflects what is present in the data I am describing.

A related concern to acknowledge is that the very act of conducting this research pushed people to think about GSL in ways they may not have otherwise. Some research participants mentioned this specifically—that, for example, answering my interview questions made them think about things they had taken for granted, as well as how to express those things. As a person who cares about Great Salt Lake, I confess a silent cheer went up whenever I heard this. However, as a researcher, I have to acknowledge that the very act of asking people to discuss and describe that which they have often taken for granted can in fact change the very relationships I am attempting to examine.

In Conclusion

This study set out to discover the dynamics of the relationships between Great Salt Lake and its nearest neighbors, including the senses of place held about this mixed amenity place of ecological importance. Following Berger and Luckmann's (1967) social constructivist perspective, I wanted to see how this place—GSL—fits into people's construction of reality. I defined sense of place as part of residents' taken for granted reality of everyday life, measured by the meanings the lake held for them. We have seen how the relationship between the lake and its neighbors is a reciprocal one, with GSL an “agentic player” in social life, affecting nearby residents with its ever-changing

elevations, the weather it creates, the salt it accumulates, its smell, its beauty, and the habitat it provides for huge, diverse populations of birds and other wildlife, among other effects. The social life, not only of the lake's neighbors but of the entire Wasatch Front, in turn affects the lake and its ecosystem in enormously substantial ways. It is essential both to be aware of the dialectic at work between them.

In any examination of social constructions of reality, it is important to consider the difference in weight and legitimacy carried by differing constructions and the people invested in them. When considering the politics of place involved in competing definitions of the situation (i.e. meanings), it is important to consider the various groups involved in advocating for different definitions, and the power they have to impose their own definitions on the place (Berger and Luckmann 1967; Greider and Garkovich 1994; Stokowski 2002). There have been a number of groups with many interests that have attempted to impose their definitions of GSL on others, who have tried to make their definitions the ones that carry legitimacy and the power to direct the treatment and use of the lake. Because of a number of factors, including the size of the ecosystem and the paucity of scientific understanding of that ecosystem as a whole, the needs of the lake and its ecosystem have not always been served well by these competing groups with differing interests. The collective needs and concerns of the neighbors of the lake have never been known, and seemingly never considered. It is my hope that the dissemination of this study will begin to change that dynamic. It is important for these residents since issues related to the lake directly affect their quality of life. And they are important to the lake—and to those concerned about the lake—because, as Kaltenborn noted, “Those with a strong sense of place seem... more rooted, less indifferent and more committed to solving

problems,” (1998:185) a much needed resource for this wonderfully complex, mixed amenity place.

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APPENDICES

Appendix A: Interview Protocol for County Commissioners

For commissioners:

What I'm Doing:

- Working on my doctoral dissertation in sociology, through USU
- I'm interested in how people feel about living very close to Great Salt Lake—within a mile or a mile and ½
- Information can benefit communities and counties, GSL resource managers, and will add to what we know about the lake
- My research includes 3 parts: interviews w/ individuals, focus groups, & a survey of about 150 people who live close to the lake in each of 3 counties: Davis, Weber, and Box Elder

Confidentiality:

- I won't do a direct attribution with your name—if I need to use a quote on a specific point and needed to attribute it, the attribution would simply be “County Commissioner,” or if necessary, “Davis Co. Commissioner”
- Obviously a small category, would try to use it sparingly
- If there's some specific thing that is particularly sensitive that you *really* don't want me to attribute in that way, I need you to tell me
- Could I get you to read this informed consent form?
 - (When done) Do you have any questions? Are you willing to sign your consent?

Interview:

- General background: How long have you been a commissioner?
 - How long have you lived in the area?
- Have you had any interactions where residents who live near GSL shared their experiences about living where they live? What it is like for them?
- What have you heard from, or about, those residents in terms of the positives and negatives about living that close to the lake?
- Do you have a sense for why people choose to live close to the lake?
- Do you have a general idea of how property values for property nearest to the lake compare to those farther away?
- Do you have any ideas for recruiting individuals from the study area for a focus group in this area?
 - Do you have any suggestions for where the focus group might meet?
- Do you have any other thoughts about anything we've talked about that you would like to share?
- Do you think it would be useful to talk to someone from your board that's over land use? If so, who?

Appendix B: Interview Protocol for GSL Natural Resource Managers

For resource managers/state park rangers working on the lake [or for GSL-affiliated, conservation NGO representatives]:

What I'm Doing:

- Working on my doctoral dissertation in sociology, through USU
- I'm interested in how people feel about living very close to Great Salt Lake—within a mile or a mile and ½
- Information can benefit communities and counties, GSL resource managers, and will add to what we know about the lake
- My research includes 3 parts: interviews w/ individuals, focus groups, & a survey of about 150 people who live close to the lake in each of 3 counties: Davis, Weber, and Box Elder

Confidentiality:

- I won't do a direct attribution with your name—if I need to use a quote on a specific point and needed to attribute it, the attribution would simply be “state employee in GSL-related job” [“GSL-affiliated, conservation NGO representative”]
- If there's some specific thing that is particularly sensitive that you *really* don't want me to attribute in that way, I need you to tell me
- Could I get you to read this informed consent form?
 - (When done) Do you have any questions? Are you willing to sign your consent?

Interview:

- General background: How long have you been with your organization?
 - How long have you lived in the area?
- Have you had any interactions where residents who live near Great Salt Lake shared their experiences about living where they live? What it is like for them?
- What have you heard from, or about, those residents in terms of the positives and negatives about living that close to the lake?
- Do you have a sense for why people choose to live close to the lake?
- Do you have a general sense of how much visitation/interaction you have from people who live very close to the lake?
- Do you have any other thoughts about anything we've talked about that you would like to share?

Appendix C: Interview Protocol for Residents

For residents living within the study area:

What I'm Doing:

- Working on my doctoral dissertation in sociology, through USU
- I'm interested in how people feel about living very close to Great Salt Lake—within a mile or a mile and ½
- Information can benefit communities and counties, GSL resource managers, and will add to what we know about the lake
- My research includes 3 parts: interviews w/ individuals, focus groups, & a survey of about 150 people who live close to the lake in each of 3 counties: Davis, Weber, and Box Elder

Confidentiality:

- I won't do a direct attribution with your name—if I need to use a quote on a specific point and needed to attribute it, the attribution would simply be “resident living within the study area”
- If there's some specific thing that is particularly sensitive that you *really* don't want me to attribute in that way, I need you to tell me
- Could I get you to read this informed consent form?
 - (When done) Do you have any questions? Are you willing to sign your consent?

Interview:

- How long have you lived near the Great Salt Lake?
- What is your experience with living where you live, close to the lake? What has it been like for you?
- How did you decide to live there?
- What would you say are the positives and negatives about living this close to the lake?
- Are there things about GSL that make you feel connected or not connected to the lake?
- How connected would you say you feel to the Great Salt Lake, and why?
- How connected would you say you feel to the place you live in general—for example, the community, the geographic place, etc.—and why?
- If you have children, what is their interaction with the lake?
 - For example, recreational, educational, informal exploration, etc.
 - (If resident grew up close to the lake, what was their interaction growing up)
- Do you have any other thoughts about anything we've talked about that you would like to share?

Appendix D: Interview Protocol for Resource Managers Who Live On-site

For state employees (rangers) working and living on the lake:

What I'm Doing:

- Working on my doctoral dissertation in sociology, through USU
- I'm interested in how people feel about living very close to Great Salt Lake—within a mile or a mile and ½
- Information can benefit communities and counties, GSL resource managers, and will add to what we know about the lake
- My research includes 3 parts: interviews w/ individuals, focus groups, & a survey of about 150 people who live close to the lake in each of 3 counties: Davis, Weber, and Box Elder

Confidentiality:

- I won't do a direct attribution with your name—if I need to use a quote on a specific point and needed to attribute it, the attribution would simply be “state employee in GSL-related job”
- If there's some specific thing that is particularly sensitive that you *really* don't want me to attribute in that way, I need you to tell me
- Could I get you to read this informed consent form?
 - (When done) Do you have any questions? Are you willing to sign your consent?

Interview:

- General background: How long have you been with your organization?
 - (Do you live here?) How long have you lived here on the lake?
- What is your experience with living here? What has it been like for you?
- What would you say are the positives & negatives about living this close to the lake?
- Are there things about GSL that make you feel connected or not connected to the lake?
- How connected would you say you feel to Great Salt Lake, and why?
- How connected would you say you feel to the place you live in general—for example, the community, the geographic place, etc.—and why?
- If you have children, what is their interaction with the lake?
 - For example, recreational, educational, informal exploration, etc.
- **Have you had any interactions where residents who live near Great Salt Lake shared their experiences about living where they live?**
- What have you heard from, or about, those residents in terms of the positives and negatives about living that close to the lake?
- Do you have a sense for why people choose to live close to the lake?

- Do you have a general sense of how much visitation/interaction you have from people who live very close to the lake?
- Do you have any other thoughts about anything we've talked about that you would like to share?

Appendix E: Focus Group Protocol

Protocol for Focus Groups

Use the following after explaining what I'm doing, walking group members through the informed consent, and getting signatures.

What I'm Doing:

- Working on my doctoral dissertation in sociology, through USU
- I'm interested in how people feel about living very close to Great Salt Lake—within a mile or a mile and ½
- Information can benefit communities and counties, GSL resource managers, and will add to what we know about the lake
- My research includes 3 parts: interviews w/ individuals, focus groups, & a survey of about 150 people who live close to the lake in each of 3 counties: Davis, Weber, and Box Elder

Intro: Thank you all for coming. The topic tonight is pretty general: what is it like living close to the Great Salt Lake? We're here to learn from the experts—you folks, who live right next to the lake—so our goal tonight is to let you all do as much of the talking as possible. We do have a few ground rules and suggestions to guide us all:

- Only one person should speak at a time
- Please don't get into side conversations with the folks next to you
- We would like to see everyone participating, so it's important for no one person to dominate the conversation
- Part of our goal is to hear as many different perspectives as possible. If your experience is a little different than what others are saying, that's exactly what we want to hear from you. Sometimes when someone brings up a different perspective we find out that there are others who have experienced, felt or thought very similar things
- If anyone notices the conversation getting off track, or folks who aren't getting a chance to say much, please speak up—feel free to help the group get back to the goals

Exercise:

I'd like to start by asking each of you to take the paper in front of you and write down the first word or phrase that comes to your mind when you think about living near the GSL.

- Next, on that same paper, would you take a couple of minutes and jot down some notes about some experience you've had that is related to living close to the GSL?

Thanks! Now you get to share with each other. Let's go around the circle--

- Would each person tell us your name—first names are fine, just a little bit about yourself, including how long you've lived near GSL?
- And then share your word with us, and briefly tell us the experience you wrote about. (Go all the way around.)

Living near the lake:

One thing that interests me is how you all decided to live where you live, close to the lake.

What would you say are the positives and negatives about living this close to the lake?

Are there things about GSL that make you feel connected or not connected to the lake?

How connected would you say you feel to Great Salt Lake, and why?

How connected would you say you feel to the place you live in general—for example, the community, the geographic place, etc.—and why?

How do you think others in your neighborhood feel about living this close to the lake?

Do you think attitudes and feelings have changed over the years? In what ways?

Experiences of children:

Can you tell us about your children's interaction with the lake (e.g. recreational, educational, informal exploration, etc.)?

- Some of you grew up here, close to the lake—what was your interaction with the lake growing up?

The Future:

What do you think is important in terms of the future for this setting?

- What's your vision of how things should be?

Summary prioritizing:

There's one other thing I'd like to have you do as a group before we wrap things up.

- With all the ground we've covered this evening, would you each tell us what would be the one thing that's most important to you personally about how you're connected to this place?
- We're going to make a list of those things on the flip charts.

Thank you so much, the information you all shared will be very useful to our research. We really appreciate your time and participation.

Questionnaires & Honorarium:

We do need you each to take two more minutes to fill out the little bit of information we need, so we know what types of voices were represented today. **(hand out q-aires)**

- These short questionnaires are anonymous and confidential
- They will only be used so we can talk about the general characteristics of the members of this focus group—
- E.g., I might say the group ranged in age from ___ to ___, that the education level ranged from ___ to ___, that the income ranged from ___ to ___, and that ___% drive more than 30 minutes to work.

When you finish your questionnaire, please put it in this manila envelope

- Then I'll have you sign for the \$20 honorarium. Thanks again!

Protocol for Focus Group follow-up calls

One week after each focus group—call each focus group member and cover the following:

- Thank them again for their participation and input into the focus group
- Ask if they had thought of anything else to add in the last week
- Ask if there was anything they didn't get a chance to say at the focus group meeting

Appendix F: Focus Group Participant Information

Thank you for your help with our research project. To help us have some understanding of the perspectives we've heard at this focus group meeting, would you please fill out the questions below? Please check or fill in the blanks provided.

1. What is your sex?

Male
 Female

2. What is your age? _____

3. How long have you lived in your current home?

_____ years or _____ months (if less than one year)

4. Do you belong to any organizations that are related to the Great Salt Lake? These could include, for example:

- Recreation groups or organizations (that focus on activities like bird watching, boating, waterfowl hunting, etc.)
- Groups dealing with conservation (such as Audubon Society or Nature Conservancy)
- Education-oriented groups (such as Friends of Great Salt Lake)
- Political advocacy groups (such as Utahns for the Legacy Parkway, Utahns for Better Transportation, etc.)
- Organizations that support lake-related places, such as Friends of the Bear River Refuge or Friends of Antelope Island

No, I do not belong to any of these kinds of groups
 Yes, I belong to one or more of them (please the organizations):

5. What is the highest level of education you have completed?

Did not finish high school
 Completed high school or GED
 Some college but no degree
 Associates degree or Vocational degree
 College bachelor's degree
 Some college graduate work

Completed graduate degree (Masters or Ph.D.)

6. Which of the following BEST describes your current employment situation?

Employed for pay by a company/business

Self-employed

Unemployed, but looking for work

Unemployed, not looking for work

Retired

Homemaker

Student

Other (please specify): _____

7. Do you drive more than 30 minutes to your work?

Yes

No

8. Which of the following best describes your total household income before taxes in 2005?

Under \$20,000

\$20,000 to 39,999

\$40,000 to 59,999

\$60,000 to 79,999

\$80,000 to 99,999

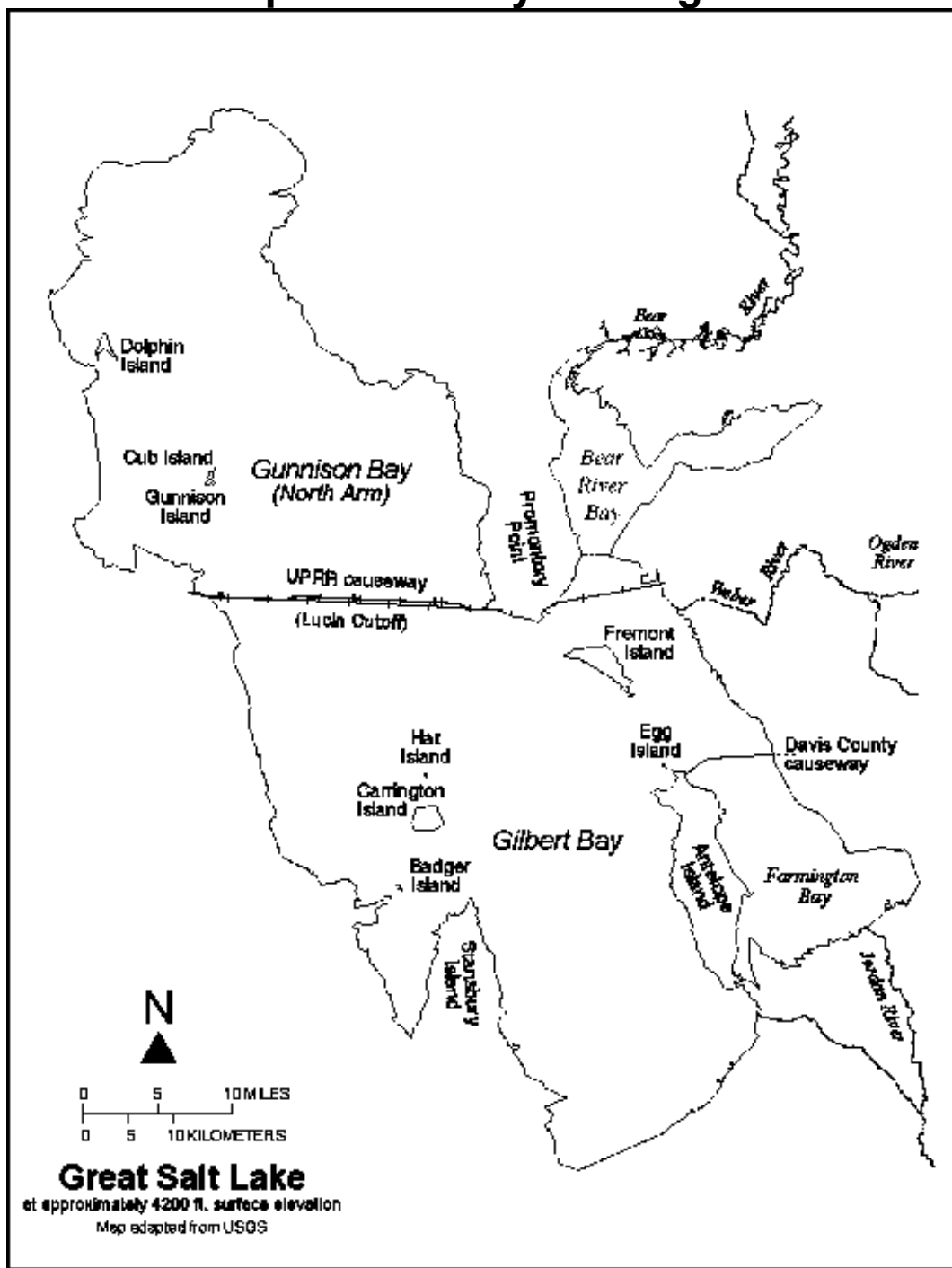
\$100,000 to 149,999

\$150,000 or higher

Thanks for your help! We appreciate your cooperation.

Appendix G: The Survey Questionnaire

The Great Salt Lake As Experienced By Its Neighbors



Map ©FRIENDS of Great Salt Lake 2001

Institute for Social Science Research on Natural Resources

UtahState
UNIVERSITY



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Date Created: July 1, 2007
USU IRB Original Approval: 09/24/2005
Addendum #1 Approved July 1, 2007
Approval to remain: 09/25/2008
Protocol Number: 1342
IRB Password Protected per IRB Administrator

Done on behalf of IRB

Dear Davis County Resident,

The Institute for Social Science Research on Natural Resources at Utah State University is conducting a study on how the Great Salt Lake affects the people who live closest to it. We are interested in how people feel about being neighbors of the Great Salt Lake, and whether they are involved in issues and activities related to the lake. Other people who live near the Great Salt Lake have told us about the sunsets and the wildlife, about the bugs and the smell, and about family and community history. We have heard from some people who feel very connected to the lake, and from others who don't think about it at all. We would like to know what you think and how you feel about living close to the lake. This project will help your community leaders, and researchers studying the lake, understand the perspectives of people who are among those most affected by lake-related issues.

Your household has been selected for the survey because it is within 1 ½ miles of the lake's edge (the boundary that appears on maps of the lake). A scientific sample of residences has been selected from those within that area in Davis County and a similar area in Weber County. Every household within that area had an equal chance to be included in the sample. While your participation is voluntary, if our results are to accurately reflect the views of people who live in your area, we need as many people as possible to respond. To make sure that we hear from an even mix of men and women, and from older as well as younger residents, we ask that this survey be completed by the adult (18 or older) living in your household who has had the most recent birthday. The questionnaire may take about 20-25 minutes to complete.

Please answer each question in the manner specified. If you wish to make additional comments, feel free to use any blank space or include a note along with the completed questionnaire. All of your responses will remain completely confidential. So that the information you provide cannot be identified with you in any manner, please do not put your name on the questionnaire. The Utah State University Institutional Review Board has approved this study, and certifies that it presents minimal risk to any participant.

When you have finished answering all of the questions, please seal the questionnaire in the envelope provided. A member of our research team will return within 48 hours to pick up the survey, you may leave the completed questionnaire on your outside door knob in the plastic bag provided. If you have any questions, please feel free to call Carla Koons Trentelman at 801-458-2152, or Professor Richard Krannich at (435)-797-1241. You may email Ms. Trentelman at (Carlakt@cc.usu.edu). Thank you in advance for your help!

Respectfully,

Dr. Richard S. Krannich
Professor of Sociology

Carla Koons Trentelman
Graduate Research Assistant



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Date Created: July 1, 2007
USU IEB Original Approval: 10/24/2005
Addendum #1 Approved: July 1, 2007
Approval Expires: 09/01/2008
Protocol Number: 1342
IEB Password Protected per IEB Administrator

Done on label - btrng

Dear Weber County Resident,

The Institute for Social Science Research on Natural Resources at Utah State University is conducting a study on how the Great Salt Lake affects the people who live closest to it. We are interested in how people feel about being neighbors of the Great Salt Lake, and whether they are involved in issues and activities related to the lake. Other people who live near the Great Salt Lake have told us about the sunsets and the wildlife, about the bugs and the smell, and about family and community history. We have heard from some people who feel very connected to the lake, and from others who don't think about it at all. We would like to know what you think and how you feel about living close to the lake. This project will help your community leaders, and researchers studying the lake, understand the perspectives of people who are among those most affected by lake-related issues.

Your household has been selected for the survey because it is located within 1 mile of the lake's high-water line (the highest elevation the lake has reached). A scientific sample of residences has been selected from those within that area in Weber County and a similar area in Davis County. Every household within that area had an equal chance to be included in the sample. While your participation is voluntary, if our results are to accurately reflect the views of people who live in your area, we need as many people as possible to respond. To make sure that we hear from an even mix of men and women, and from older as well as younger residents, we ask that this survey be completed by the adult (18 or older) living in your household who has had the most recent birthday. The questionnaire may take about 20-25 minutes to complete.

Please answer each question in the manner specified. If you wish to make additional comments, feel free to use any blank space or include a note along with the completed questionnaire. All of your responses will remain completely confidential. So that the information you provide cannot be identified with you in any manner, please do not put your name on the questionnaire. The Utah State University Institutional Review Board has approved this study, and certifies that it presents minimal risk to any participant.

When you have finished answering all of the questions, please seal the questionnaire in the envelope provided. A member of our research team will return within 48 hours to pick up the survey, you may leave the completed questionnaire on your outside door knob in the plastic bag provided. If you have any questions, please feel free to call Carla Koons Trentelman at 801-458-2152, or Professor Richard Krannich at (435)-797-1241. You may email Ms. Trentelman at (Carlakt@cc.usu.edu).

Thank you in advance for your help!

Respectfully,

Dr. Richard S. Krannich
Professor of Sociology

Carla Koons Trentelman
Graduate Research Assistant

LIVING NEAR THE GREAT SALT LAKE

The questions in this section deal with your views about living near the Great Salt Lake.

1) Can you see the lake from your property? (For example, from outside your house, or from any windows in your home.) *Please check the one best answer.*

- I can usually see the lake from my property
- I have seen the lake from my property sometimes, but the lake level has been too low to see it lately
- I only saw the lake from my property during the high water years in the late 1980s
- I could see the lake from my property before, but now the view is blocked
- I have never seen the lake from my property

2) Below is a list of reasons people who live close to the Great Salt Lake have given for living where they do. How important are these reasons to you? *Please circle the number that best indicates how important EACH of these reasons is for you, on a scale from 1 (Extremely Unimportant) to 7 (Extremely Important). Circle NA if the reason does not apply to you.*

Reasons for Living Where You Do:	Extremely Unimportant		Neither Important nor Unimportant			Extremely Important		NA
	1	2	3	4	5	6	7	
a. Family or friendship ties	1	2	3	4	5	6	7	NA
b. Affordability of the property	1	2	3	4	5	6	7	NA
c. Personal recreation interests	1	2	3	4	5	6	7	NA
d. Natural beauty of the area	1	2	3	4	5	6	7	NA
e. I want/need agricultural land	1	2	3	4	5	6	7	NA
f. Rural atmosphere of the area	1	2	3	4	5	6	7	NA
g. The slow pace of life in the area	1	2	3	4	5	6	7	NA
h. It's a good place for children to grow up	1	2	3	4	5	6	7	NA
i. It's close to my place of employment	1	2	3	4	5	6	7	NA
j. Easy access to roads/highways for commuting	1	2	3	4	5	6	7	NA
k. Easy access to shopping, entertainment or other services	1	2	3	4	5	6	7	NA
j. Availability of housing	1	2	3	4	5	6	7	NA
k. The climate conditions in this area	1	2	3	4	5	6	7	NA
l. I want to live close to the Great Salt Lake or its marshes, bays or wildlife refuges	1	2	3	4	5	6	7	NA
m. Other (Please explain):	1	2	3	4	5	6	7	NA

3) Does the Great Salt Lake, its islands, bays or shore lands (including refuges and preserves), hold any particular meaning for you?

No

Yes---What does the Great Salt Lake mean to you? _____

4) How did the Great Salt Lake influence your decision to live here? Please check the one response that best describes your feelings and thoughts.

I would have preferred not to live near the lake.

The lake was not an attraction or a problem.

The lake was one attraction among others.

Living this close to the lake was a main attraction.

5) Which of the following statements best describes how you feel about living close to the Great Salt Lake? Please check the one response that best describes your feelings and thoughts.

I don't like living this close to the lake and would like to relocate because of it.

I don't particularly like living near the lake, but I can tolerate it.

I don't feel strongly about it, the lake doesn't affect my staying or leaving.

I enjoy living near the lake, but it's not very important to me.

Living near the lake is important to me.

6) What do you like MOST about living near the Great Salt Lake? _____

7) What do you like LEAST about living near the Great Salt Lake? _____

People who live near the lake talk about a number of positive and negative aspects of living so close to the Great Salt Lake. We would like to get your impression of these different aspects.

8) How much do these potentially POSITIVE aspects matter to you? Please circle the number that best indicates how important EACH of these aspects is for you, on a scale from 1 (Extremely Unimportant) to 7 (Extremely Important).

Possible Positives Aspects of Living Near the Great Salt Lake:	Neither							Extremely Important	NA
	Extremely Unimportant			Unimportant nor Important					
a. The view of the lake	1	2	3	4	5	6	7	NA	
b. Sunsets	1	2	3	4	5	6	7	NA	
c. The birds associated with the lake	1	2	3	4	5	6	7	NA	
d. Presence of other wildlife	1	2	3	4	5	6	7	NA	
e. The lake at night: stars, the moon, the darkness	1	2	3	4	5	6	7	NA	
f. The uniqueness of the Great Salt Lake	1	2	3	4	5	6	7	NA	
g. It's an "important lake" that's on all the maps, making it easy to tell people where you live	1	2	3	4	5	6	7	NA	
h. Activities around the lake	1	2	3	4	5	6	7	NA	
i. Positive family memories	1	2	3	4	5	6	7	NA	
j. Positive community memories	1	2	3	4	5	6	7	NA	
k. The rich history connected to the lake	1	2	3	4	5	6	7	NA	
l. The weather patterns related to the lake	1	2	3	4	5	6	7	NA	
m. Good soil for farming	1	2	3	4	5	6	7	NA	
n. Other positive aspects (Please explain):	1	2	3	4	5	6	7	NA	

9) How much do these potentially NEGATIVE aspects matter to you? Please circle the number that best indicates how important EACH of these aspects is for you, on a scale from 1 (Extremely Unimportant) to 7 (Extremely Important).

Possible Negative Aspects of Living Near the Great Salt Lake:	Extremely Unimportant			Neither Unimportant nor Important			Extremely Important	NA
a. Bugs like mosquitoes, gnats, brine flies	1	2	3	4	5	6	7	NA
b. The smell	1	2	3	4	5	6	7	NA
c. Dust off the lake bed	1	2	3	4	5	6	7	NA
d. Damage from salt and wind	1	2	3	4	5	6	7	NA
e. Remoteness: distance from services and amenities	1	2	3	4	5	6	7	NA
f. Lack of access to the lake itself	1	2	3	4	5	6	7	NA
g. Not enough to do related to the lake	1	2	3	4	5	6	7	NA
h. Limitations due to it being a salt lake (no waterskiing, fishing, etc.)	1	2	3	4	5	6	7	NA
i. The widely varying elevation of the lake waters	1	2	3	4	5	6	7	NA
j. Salt in the soil	1	2	3	4	5	6	7	NA
k. Lake-related issues affecting the ability to develop land	1	2	3	4	5	6	7	NA
l. It is not really lakefront property	1	2	3	4	5	6	7	NA
m. Other negative aspects (Please explain):	1	2	3	4	5	6	7	NA

10) For approximately how many years of your life have you lived within a mile or two of the Great Salt Lake?

_____ years

11) Did you grow up living this close to the Great Salt Lake (within a mile or two of the lake)?

Please check the one best response.

- No, I did not live close to the Great Salt Lake until I was an adult
- I lived close to the lake during some of my growing up years, but for less than 2 years between age 7 and age 17
- I lived close to the lake for at least 2 years between age 7 and age 17

INVOLVEMENT WITH THE GREAT SALT LAKE

The questions in this section ask about your activities and uses involving the Great Salt Lake.

12) Have you ever visited the Great Salt Lake, its islands, bays or shore lands (including refuges and preserves)?

- Yes
- No-----*(Please skip to question 16 on page 6)*

13) Have you ever visited the following sites on or around the Great Salt Lake?

Please circle No or Yes for each.

For each site you have visited, please also check the box indicating how often you have visited in the last 3 years (Not within the last 3 years; 1-3 times; 4-9 times; or 10 or more times).

Place:	Have You <u>EVER</u> Visited this Site?		No Visits in Last 3 Years	During the Past 3 Years:		
	No	Yes →		1-3 Times	4-9 Times	10 or More Times
a. Bear River Migratory Bird Refuge	No	Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Willard Bay State Park	No	Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Ogden Bay Waterfowl Management Area	No	Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Antelope State Park	No	Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Great Salt Lake Shorelands Preserve	No	Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Farmington Bay Waterfowl Management Area	No	Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Saltair/Saltair Beach	No	Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l. Great Salt Lake State Park	No	Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m. Great Salt Lake Marina	No	Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n. Stansbury Island	No	Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
o. Spiral Jetty	No	Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
p. Other (please specify):	No	Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Examples of other places on or around the Great Salt Lake:

Gilmore Wildlife Sanctuary; Hog-up Cave; Willard Bay Upland Game Management Area; or other Waterfowl Management Areas such as Harold S. Crane, Howard Slough, Locomotive Springs, Public Shooting Grounds, or Timpie Springs

14) Approximately when was your *first* visit to the Great Salt Lake, its islands, bays or shore lands (including refuges and preserves)? Please check the one best response.

- I have never visited the Great Salt Lake, its islands, bays or shore lands
(Please skip to question 16)
- I have visited, but I don't recall when the first time was
- My first visit was within the last 12 months
- My first visit was more than a year ago-----it was about _____ years ago

15) Have you ever used the Great Salt Lake and its related areas (islands, bays, shore lands, refuges and preserves) for the following recreation activities?

Please circle No or Yes for each.

For each recreation activity you *have* participated in, please *also* check the box indicating how often you have done that activity at the Great Salt Lake in the last 3 years.

Recreation Activity:	Have You EVER Done This Activity at the Great Salt Lake?		Not in last 3 yrs	During the Past 3 Years:		
	No	Yes →		1-3 Times	4-9 Times	10 or More Times
a. Hunting	No	Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Bird watching	No	Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Wildlife viewing	No	Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Photography	No	Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Hiking	No	Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Bicyding	No	Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Horseback riding	No	Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Car rides for leisure	No	Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Off-Road Vehicle use	No	Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Sailing	No	Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Other (please specify):	No	Yes →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16) Have you ever attended any of the following events? Please check Yes or No for each.

a. A festival or event that focused on the Great Salt Lake or related issues?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
b. Any kind of fieldtrip to the lake or related areas?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
c. A workshop about the Great Salt Lake or related areas?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
d. Public meetings or open houses concerning the lake or its environs?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
e. Have you ever volunteered for any Great Salt Lake-related event/activity?	<input type="checkbox"/> Yes	<input type="checkbox"/> No

17) Are you a member of any of the following groups or organizations?*Please check Yes or No for each.*

a. A private duck club	<input type="checkbox"/> Yes	<input type="checkbox"/> No
b. Ducks Unlimited	<input type="checkbox"/> Yes	<input type="checkbox"/> No
c. Audubon Society	<input type="checkbox"/> Yes	<input type="checkbox"/> No
d. The Nature Conservancy of Utah	<input type="checkbox"/> Yes	<input type="checkbox"/> No
e. Friends of Great Salt Lake	<input type="checkbox"/> Yes	<input type="checkbox"/> No
f. Other lake-related group (please specify):	<input type="checkbox"/> Yes	<input type="checkbox"/> No

ISSUES RELATED TO THE GREAT SALT LAKE*The questions in this section are about current issues related to the Great Salt Lake.***18) What do you consider to be the single MOST IMPORTANT CURRENT ISSUE related to the Great Salt Lake?** _____ I don't know of any important current issues related to the Great Salt Lake.**19) Which of the following have affected your impressions about the Great Salt Lake?***Please check Yes (a lot, or a little) or No for each.*

	Yes, a Lot	Yes, a Little	No
a. My own experience with the lake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. My family's experience with the lake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Group experiences with the lake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. What family/friends say about the lake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. What I see on T.V. or read about the lake in newspapers, magazines, and books	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. What I've learned about the lake in school classes and field trips	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. What I've learned about the lake in educational workshops and lectures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Public government or agency meetings where lake-related issues have been discussed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Other (please specify):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

20) The following statements have all been said by different people in northern Utah about the Great Salt Lake. Using a scale from 1 (Strongly Disagree) to 7 (Strongly Agree), please circle the number that best indicates how you would rate your level of disagreement or agreement with each of the statements below.

Also please tell us whether you have heard each of these things about the Great Salt Lake by circling Yes or No at the right side of the page.

	Strongly Disagree		Neither Agree nor Disagree					Strongly Agree		I Have Heard This	
The Great Salt Lake is a valuable resource.	1	2	3	4	5	6	7			Yes	No
Too much land around the lake is used for conservation.	1	2	3	4	5	6	7			Yes	No
More should be done to protect the lake and wetlands.	1	2	3	4	5	6	7			Yes	No
More should be done to control flooding of the lake in high water years.	1	2	3	4	5	6	7			Yes	No
The Great Salt Lake is a dead lake.	1	2	3	4	5	6	7			Yes	No
The lake is an important attraction for tourism.	1	2	3	4	5	6	7			Yes	No
Bird watching around the lake is important to the economy in this area.	1	2	3	4	5	6	7			Yes	No
The Great Salt Lake is too smelly to spend much time there.	1	2	3	4	5	6	7			Yes	No
People make too much fuss over the wetlands of the Great Salt Lake.	1	2	3	4	5	6	7			Yes	No
The Great Salt Lake is an important part of a beautiful landscape.	1	2	3	4	5	6	7			Yes	No
You cannot think about the Great Salt Lake without thinking about the bugs.	1	2	3	4	5	6	7			Yes	No
More land close to the lake should be opened up to development.	1	2	3	4	5	6	7			Yes	No
Conserving wetlands is less important than developing needed roads.	1	2	3	4	5	6	7			Yes	No
The Great Salt Lake adds to this area's economic health.	1	2	3	4	5	6	7			Yes	No
Water that feeds the Great Salt Lake should be diverted for more productive use.	1	2	3	4	5	6	7			Yes	No

CONNECTIONS TO THE GREAT SALT LAKE

The next set of questions asks about your feelings about the Great Salt Lake.

21) The Great Salt Lake and its related areas (islands, bays, shore lands, refuges and preserves) may lead to different feelings for different people. Using a scale of 1 (Strongly Disagree) to 7 (Strongly Agree), please circle the number that best indicates how you would rate your level of disagreement or agreement with each of the statements below. "The Great Salt Lake" refers to its related areas as well.

Feelings about the Great Salt Lake:	Strongly Disagree			Neither Agree nor Disagree			Strongly Agree
Few people know the Great Salt Lake like I do	1	2	3	4	5	6	7
The Great Salt Lake is important to me, whether or not I use it	1	2	3	4	5	6	7
I feel I can really be myself at the lake	1	2	3	4	5	6	7
I have spent more time at the Great Salt Lake than most people	1	2	3	4	5	6	7
I feel like the Great Salt Lake is a part of me	1	2	3	4	5	6	7
I would prefer to spend more time at the Great Salt Lake if I could	1	2	3	4	5	6	7
The Great Salt Lake is the best place to do things I enjoy	1	2	3	4	5	6	7
The lake is important in protecting the surrounding landscape from development	1	2	3	4	5	6	7
The lake is like home to me	1	2	3	4	5	6	7
The Great Salt Lake must be taken care of, so that we can pass it along to future generations for their enjoyment	1	2	3	4	5	6	7
When I am at the lake others see me the way I want them to see me	1	2	3	4	5	6	7
The Great Salt Lake is important in providing habitat for wildlife	1	2	3	4	5	6	7
I really miss the Great Salt Lake when I am away from it too long	1	2	3	4	5	6	7
I am very attached to the Great Salt Lake	1	2	3	4	5	6	7

22) The Great Salt Lake and its related areas (islands, bays, shore lands, refuges and preserves) may play many different roles for people's families and communities, including economic ties for some. Using a scale of 1 (Strongly Disagree) to 7 (Strongly Agree), please circle the number that best indicates how you would rate your level of disagreement or agreement with each of the statements below. "The Great Salt Lake" refers to its related areas as well.

Family, Community, and Economic Ties to the Great Salt Lake:	Strongly Disagree		Neither Agree nor Disagree			Strongly Agree	
My income or livelihood depends on the Great Salt Lake	1	2	3	4	5	6	7
Many important family memories are tied to the lake	1	2	3	4	5	6	7
My family's income or livelihood depends on the lake	1	2	3	4	5	6	7
The Great Salt Lake is a special place for my family	1	2	3	4	5	6	7
The Great Salt Lake ties the generations of my family together	1	2	3	4	5	6	7
I feel a sense of pride in my heritage related to the lake	1	2	3	4	5	6	7
My community's history is strongly tied to the Great Salt Lake	1	2	3	4	5	6	7
The lake represents a way of life in my community	1	2	3	4	5	6	7
This lake has helped put my community on the map	1	2	3	4	5	6	7
My community's economy depends on the Great Salt Lake	1	2	3	4	5	6	7
This lake contributes to the character of my community	1	2	3	4	5	6	7
Northern Utah's economy depends on the Great Salt Lake	1	2	3	4	5	6	7

23) Special Great Salt Lake Places: *People often develop strong feelings about certain places that have special meaning and importance to them. Sometimes these are areas where a person has spent time doing enjoyable activities. For others, such places have special meaning because of the scenery, historical or cultural importance, economic importance, or other personal reasons.*

When you think about the Great Salt Lake, its islands, bays or shore lands (including refuges and preserves), are there any special places that have personal meaning and importance to you?

No—(Please skip to question 24 on page 11)

Yes—Below, please tell us about a Great Salt Lake place that is special for you.

SPECIAL PLACE:

Name and location: _____

Things you do there: _____

Reasons this area has special meaning: _____

BACKGROUND CHARACTERISTICS

Finally, we need to ask a few questions about you and your background. These questions allow us to compare the views of people who have similar and different characteristics. As with all other responses, your answers to these questions will remain strictly confidential and will be used for group analysis only.

24) Please give us the name of the community you live in—no matter if it is incorporated or unincorporated.

_____ (community)

25) For roughly how many years of your life have you lived in the Wasatch Front area, the area between Provo and Brigham City?

_____ years

26) As an adult, have you ever lived outside of Utah for longer than two years?

Yes No

27) Which of the following best describes the ownership of your home/land? Please check the one best response.

Own home/land (mortgage, contract or own outright)

Renting or leasing

Other (please specify): _____

28) Which of the following best describes the size of the parcel of land your house is located on? Please check the one best response.

I live in a multi-family dwelling or other type of home with no land

An acre or less

More than 1 acre but not more than 5 acres

Between 5 and 10 acres

Between 10 and 20 acres

More than 20 acres

29) Which of the following livestock do people have on their property in your immediate area (within a 5 minute walk from your house)? Please check Yes or No for each.

a. Horses Yes No

b. Cows Yes No

c. Sheep or goats Yes No

d. Chickens Yes No

30) Do any of the following land uses occur in your immediate area (within a 5 minute walk from your house)? Please check Yes or No for each.

- | | | |
|---|------------------------------|-----------------------------|
| a. Crop fields | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| b. Grazing land or pasture | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| c. Wildlife refuges or waterfowl management areas | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| d. Other open or undeveloped land (not used for agriculture, wildlife refuges or parks) | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

31) Has the property you live on, or other property very near by, been in your family for more than one generation?

No-----*(Please skip to question 32)*

Yes-----a. **Do you know how many generations?**

No

Yes-----**How many generations?** _____ generations

b. **Since roughly what year?** *Please check the one best response.*

Since before 1900

Between 1900 and 1939

Between 1940 and 1980

More than one generation, but within the last 25 years

I'm not sure of the time frame

c. **Why did your family settle on this property?** _____

32) What is your age? _____ years old

33) Are you? Female Male

34) What is your current marital status? *Please check the one that best describes your current situation.*

Married

Unmarried, living with a partner

Widowed

Separated

Divorced

Never married

35) Do you have any children living at home with you?

- Yes No

36) Do you have any children living outside your home but in your community?

- Yes No

37) What is the highest level of education you have completed? Please check the one best response.

- Did not finish high school
 Completed high school or GED
 Some college but no degree
 Vocational or associates degree
 College bachelor's degree
 Some graduate work
 Completed graduate degree (Masters or Ph.D.)

38) What, if any, is your religious affiliation? Please check the one best response.

- Catholic
 Protestant
 LDS
 Other (please specify): _____
 None

39) On average, about how many hours do you ordinarily spend per month attending religious services or taking part in other religion-related activities? Please check the one best response.

- More than 10 hours per month
 5-10 hours per month
 1-4 hours per month
 Less than one hour per month
 Not applicable

40) Which one of the following BEST describes your current employment situation? Please check the one best response.

- Employed for pay by a company, business, agency, or the government
 Self-employed
 Homemaker
 Unemployed, but looking for work
 Unemployed, not looking for work
 Retired
 Other (please specify): _____

41) Do you drive more than 30 minutes to your place of employment?

- Yes No Not applicable

42) Has any portion of your household income ever come from a Great Salt Lake-related activity or industry?

No—(Please skip to question 43)

Yes—-a. What activity or industry? _____

b. Is a portion of your income currently coming from this activity/industry?

- Yes No

c. For about how many years have you, or did you in the past, earn income from this activity/industry?

_____ (years)

43) Does any of your family income come from farming/agriculture?

- Yes No

44) Which one of the following best describes your pre-tax annual household income for 2006?

Please check the one best response.

- Less than \$15,000
 \$15,000 to \$24,999
 \$25,000 to \$34,999
 \$35,000 to \$49,999
 \$50,000 to \$74,999
 \$75,000 to \$99,999
 \$100,000 to \$149,999
 \$150,000 or more

Thank you for your help! It is greatly appreciated!

Please feel free to use the blank page following, as well as any additional space in this questionnaire, or a separate letter to tell us any additional information you would like to share about living near the Great Salt Lake or anything else related to questions on the questionnaire. Your confidential input is very valuable to this study.

Appendix H: Permission Letter



Carla Trentelman <carla.k.t@aggiemail.usu.edu>

RE: use of a map in a dissertation

2 messages

Peter Lewis <pglewis@amergeog.org>

Fri, Jan 18, 2008 at 8:20 AM

Reply-To: pglewis@amergeog.org

To: carla.k.t@aggiemail.usu.edu

Dear Carla Koons Trentelman, Yes, you have the permission of the AGS to use the map detailed below. Please give credit to both the Geographical review and the American Geographical Society where appropriate. Best of luck with your dissertation, Peter Lewis, Permissions Editor, AGS

From: Carla Trentelman [mailto:carla.k.t@aggiemail.usu.edu]**Sent:** Wednesday, January 16, 2008 11:35 AM**To:** ags@amergeog.org**Subject:** use of a map in a dissertation

AGS folks--

I am writing to request permission to use a map that ran in one of your articles in my doctoral dissertation in sociology.

My name: Carla Koons Trentelman

My email address: Carla.K.T@aggiemail.usu.edu

My phone: 801-458-2152

Address: 3556 Fowler Ave., Ogden, UT 84403-1123

The map is fig. 1, "Utah's Great Salt and Environs," p. 74, in Bedford, D. 2005. "Utah's Great Salt Lake: A Complex Environmental-Societal System," Vol. 95, issue 1, pp. 73-96.

Please let me know if there is any other information you need. Thank you for your assistance.

--Carla Koons Trentelman

Carla Koons Trentelman
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Utah State University
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0730 Old Main Hill
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VITA

CARLA KOONS TRENTELMAN
 Department of Sociology and Anthropology
 Weber State University
 Ogden, Utah 84408-1208
 Office: 801-626-6575 Cell: 801-458-2152
carlatrentelman@weber.edu

EDUCATION

- 2009 Ph.D. Sociology, Utah State University.
 Dissertation Title: *“Big, smelly, salty lake that I call home”*: Sense of place with a mixed amenity setting.
 Committee: Richard S. Krannich (Chair), Mark Brunson, Douglas Jackson-Smith, Sandy Marquart-Pyatt, Peggy Petrzela
- 2004 M.S. in Sociology, Utah State University.
 Thesis: *Voice in communities: The importance of feeling heard.*
- 1982 B.G.S. in Sociology, Social Work and Political Science, Weber State College.
Summa cum laude.

TEACHING AND RESEARCH AREAS

My interests and foci have included environmental and natural resource sociology, community sociology, rural sociology, research methods, sociological theory, and introductory courses. I have a number of other sociological interests and look forward to broadening my experience base.

TEACHING EXPERIENCE

- Fulltime Instructor, contract, 2008 to present; Adjunct Professor, 2005-2008
 Department of Sociology and Anthropology, Weber State University, Ogden, UT
- SOC 1010: Introduction to Sociology
 - SOC 1020: Social Problems
 - SOC 3030: Sociological Theory – Classical
 - SOC 3110: Sociology of Family
 - SOC 3130: Sociology of Gender
 - SOC 3260: Juvenile Delinquency
 - SOC 3660: Sociological Research
- Graduate Instructor, 2004-2006
 Department of Sociology, Social Work & Anthropology, Utah State University, Logan, UT
- SOC 1010: Introduction to Sociology
 - SOC 1020: Social Problems
 - SOC 3110: Methods of Social Research
 - SOC 4620: Sociology of the Environment and Natural Resources
 - SOC 5100: Interpreting Research

TEACHING EXPERIENCE (continued)

Social Work Instructor, 1998-2002

Alcohol and Drug Abuse Treatment Training Program, Graduate School of Social Work,
University of Utah, Salt Lake City, UT

SW 5702, SW 6802: Alcohol and Drug Abuse: Professional Development

PEER REVIEWED PUBLICATIONS

- 2009 Carla Koons Trentelman. "Place Attachment and Community Attachment: A Primer Grounded in the Lived Experience of a Community Sociologist." *Society and Natural Resources*. 22(3):191-210.
- 2005 Peggy Petrzela, Richard S. Krannich, Joan M. Brehm and Carla Koons Trentelman. "Community Well-Being, Rural Tourism and Gendered Nuances." *Annals of Tourism Research*, 32(4):1121-1137.
- 2004 A.E. Luloff, Richard S. Krannich, Gene L. Theodori, Carla Koons Trentelman, and Tracy Williams. "The Use of Community in Natural Resource Management." Pp. 249-59 in *ISSRM Past and Future: A Summary of Knowledge*, edited by M. Manfredo, J.J. Vaske, D. Field, P. Brown and B.L. Bruyere. Jefferson, MO: Modern Litho.

Papers in Progress

Carla Koons Trentelman. "Field Theory in the Social Sciences: Bourdieu and Wilkinson as Distant Cousins."

Carla Koons Trentelman. "Voices in Communities: The Relationship between Perception of Voice and Community Action."

Reports to Research Sponsors (non-peer reviewed)

- 2009 Carla Koons Trentelman. "'Big, Smelly, Salty Lake that I Call Home': Sense of Place with a Mixed Amenity Setting." Endowment Report, *The Rural Sociologist*, 29(1):30-31.
- 2007 Carla Koons Trentelman. "Place Attachment Among Neighbors of Great Salt Lake and Its Environs: Report on Research Funded by the Doyle Stephens Memorial Scholarship for 2005." Friends of Great Salt Lake, Living with Great Salt Lake webpage. (<http://www.fogsl.org/images/stories/living-carlakoonstrentelman.pdf>).
- 2006 Carla Koons Trentelman. "Place Attachment among Neighbors of Great Salt Lake and Its Environs." *Friends of Great Salt Lake*, 13(1-Fall):10-11.

RESEARCH PRESENTATIONS AT PROFESSIONAL MEETINGS

- 2009 Carla Koons Trentelman. "What do the Neighbors Think? Views and Concerns of Residents Living Near Great Salt Lake." Annual Conference, Utah Academy of Sciences, Arts & Letters, April 10, Provo, Utah.

RESEARCH PRESENTATIONS (continued)

- 2008 Carla Koons Trentelman. "Birds and Beauty or Bugs and Stink—What Do the Neighbors Think?: Sense of a Mixed Amenity Place." International Symposium on Society and Resource Management, June 13, Burlington, Vermont.
- 2008 Carla Koons Trentelman. "Residents' Relationships with a Saline Lake: The Effects of Physical Traits." International Conference on Salt Lake Research & 2008 FRIENDS of Great Salt Lake Issues Forum, May 16, Salt Lake City, Utah.
- 2007 Carla Koons Trentelman. "Powerful Illustrations: 'Libby, Montana.'" Teaching about Society, Natural Resources, and Environment: A Participatory Workshop, International Symposium on Society and Resource Management, Park City, Utah.
- 2006 Carla Koons Trentelman. "Disentangling Multi-stranded Place Attachment to a Complex Landscape." Rural Sociological Society, Louisville, Kentucky.
- 2006 Carla Koons Trentelman. "The Big, Salty, Buggy, Stinky Great Salt Lake: Attachment to a Mixed Amenity Place." International Symposium on Society and Resource Management, Vancouver, British Columbia.
- 2005 Carla Koons Trentelman, Peggy Petrzela, Richard S. Krannich, and Joan M. Brehm. "Voices in Communities: The Relationship between Perception of Voice and Community Action." Rural Sociological Society, Tampa, Florida.
- 2003 Carla Koons Trentelman. "Voice and Community Well-being: Crying in the Wilderness or a Force to be Reckoned With?" Rural Sociological Society, Montreal, Quebec.
- 2003 Carla Koons Trentelman. "The Inherent Contradiction: Treatment for Women Substance Abusers as a 'Special Population.'" Western Social Sciences Association, Las Vegas, Nevada.
- 2002 Petrzela, Peggy, Richard S. Krannich, Joan Brehm and Carla Koons Trentelman. "Rural Tourism--Community Characteristics of Opponents and Proponents." Presented by P. Petrzela, Rural Sociological Society, Chicago, Illinois.

Invited Presentations

- 2008 Carla Koons Trentelman. "Views and Concerns of Residents Living near Great Salt Lake." Great Salt Lake Advisory Council, Salt Lake City, Utah. November 20.
- 2007 Carla Koons Trentelman. "Sense of Place among Neighbors of Great Salt Lake." Volunteer Naturalist Training on Human Interactions with Great Salt Lake, Farmington Bay Waterfowl Management Area, Utah.

RESEARCH PRESENTATIONS (continued)**Campus Lectures and Presentations**

- 2008 Carla Koons Trentelman. "Birds and Beauty or Bugs and Stink—What Do the Neighbors Think?: Sense of a Mixed Amenity Place—Updated and Expanded." One of Utah's Seven Wonders, The Great Salt Lake, Honors 3900, Weber State University. November.
- 2007 Carla Koons Trentelman. "(Very) Preliminary Finding on Sense of Place Among Neighbors of Great Salt Lake." Teaching and Learning Forum, Weber State University. October.
- 2007 Carla Koons Trentelman. "The Big, Salty, Buggy, Stinky Great Salt Lake: Sense of Place and Attachment to a Mixed Amenity Place." Teaching and Learning Forum, Weber State University. March.

Panel Organizer/Co-Chair

- 2007 "Voices from the Future: Constructing a New Rural Sociological Society for the 21st Century." Rural Sociological Society, Santa Clara, California. August 5.

PROFESSIONAL PRESENTATIONS

- 2003 Carla Koons Trentelman. "Domestic Violence and Substance Abuse." Annual Utah Domestic Violence Shelter Conference, Moab, Utah.
- 2002 Carla Koons Trentelman. "Women's Issues in Residential Treatment." University of Utah School on Alcoholism and Other Drug Dependencies, Salt Lake City, Utah
- 2002 Carla Koons Trentelman. "The Evolution of Women's Treatment...It's a New Era." University of Utah School on Alcoholism and Other Drug Dependencies, Salt Lake City, Utah.
- 2001 Carla Koons Trentelman. "All I Really Need to Know I Learned From Addictions Counseling." State Substance Abuse Fall Conference, Sandy, Utah.
- 1999 Carla Koons Trentelman. "I Know Where I Begin and End, But How Do I Keep 'Em Out?: Professional Boundaries." Division of Youth Corrections Detention Conference, Park City, UT.
- 1999 Carla Koons Trentelman. "Help Mr. Wizard, I Don't Want to be a Supervisor: Personal Burn-out." State Substance Abuse Fall Conference, Ogden, Utah.
- 1999 Carla Koons Trentelman. "Reinventing Empowerment: Healing in the Gray." University of Utah School on Alcoholism and Other Drug Dependencies, Salt Lake City, Utah.
- 1999 Carla Koons Trentelman. "Women in Treatment: What We've Learned." Weber State University/Dayspring Annual Conference on Addictions, Ogden, Utah.

PROFESSIONAL PRESENTATIONS (continued)

- 1996 Carla Koons Trentelman. "What Do I Do If They're Using Drugs? An Overview for Working with Substance Abusers and Treatment." Annual Utah Child Welfare Institute, Park City, Utah.
- 1995 Carla Koons Trentelman and Karen St. Peter. "Working with Lesbian and Bisexual Women in Treatment." State Substance Abuse Fall Conference, Park City, Utah.
- 1995 Carla Koons Trentelman. "Use, Abuse, and Chemical Dependency." State Learning Disabilities Conference, Park City, Utah.

RESEARCH/RESEARCH ASSISTANT EXPERIENCE

- 2007-2008 Dissertation Research, quantitative survey on Sense of Place among Neighbors of Great Salt Lake and Its Environs; Utah State University
- 2005-2008 Dissertation Research, qualitative study of Dimensions of Place Attachment among Neighbors of Great Salt Lake and Its Environs; Utah State University
- 2005 Co-Primary Investigator, survey research for Ogden City, exploring resident attitudes and concerns regarding strengths and weaknesses of inner city study area for Weed and Seed Program; Weber State University
- 2002-2003 Research Assistant, Agricultural Experiment Station, Utah State University
- 2002 Research Assistant, Field work for study on Family, Work and Community in Utah, Sociology Department, Utah State University

PROFESSIONAL EXPERIENCE

- 2002-2005 Assistant Editor, *Society and Natural Resources*, Utah State University
- 2000-2001 Program Coordinator, Adult Substance Abuse Residential Treatment Programs, Davis Behavioral Health, Layton, Utah
- 1990-2001 Program Supervisor, Women's Recovery Center; Lead Counselor for Women's Services; Davis Behavioral Health, Clearfield, Utah
- 1986-1990 Adolescent Counselor, McKay-Dee Hospital Dayspring, Ogden, Utah
- 1983-1986 Associate Counselor, St. Benedicts ADAPT Center, Roy, Utah
- 1979-1980 Volunteer Coordinator; Counseling, YWCA/Women's Crisis Center, Ogden, Utah

AWARDS AND HONORS

- 2006-2007 Dissertation Research Award, Rural Sociological Society
- 2006 School of Graduate Studies Dissertation Fellowship, Utah State University
- 2006 Departmental nominee for Sociology, Social Work and Anthropology, Graduate Instructor of the Year for the College of Humanities, Arts and Social Sciences, Utah State University
- 2005 Community Interest Group Graduate Student Paper Award, Rural Sociological Society. "Voices in Communities: The Relationship between Perception of Voice and Community Action."
- 2005 Edward Moe Scholarship, Department of Sociology, Social Work and Anthropology, Utah State University
- 2005 Doyle Stephens Memorial Scholarship, Friends of Great Salt Lake, Salt Lake City, Utah
- 2004 Departmental nominee for Sociology, Social Work and Anthropology, Research Assistant of the Year for the College of Humanities, Arts and Social Sciences, Utah State University
- 2003 Honorable Mention, National Science Foundation Graduate Research Fellowship Program
- 2002 Seely-Hinckley Scholarship, Utah State University
- 2001 Research Vice President's Fellowship, Utah State University
- 2001 Utah State Fall Conference on Substance Abuse Award
- 1996 Outstanding Special Program Employee, Davis Behavioral Health

ACADEMIC AND OTHER PROFESSIONAL SERVICE ACTIVITIES**Departmental Service**

- 2008-2009 Co-advisor, Sociology Club and AKD, Department of Sociology and Anthropology, Weber State University
- 2008-2009 Faculty & staff development committee and social events committee, Department of Sociology and Anthropology, Weber State University
- 2006-2008 Adjunct faculty member, Faculty and Staff Development Committee, Department of Sociology and Anthropology, Weber State University

Other Academic and Professional Service

- 2009 Reviewer, *Society and Natural Resources*.
- 2008 Local Organizing Committee for the 10th International Conference of Salt Lake Research, International Society of Salt Lake Research.
- 2004-2005 Alternate Representative for College of Humanities, Arts and Social Sciences, Graduate Student Senate, Utah State University

SERVICE ACTIVITIES (continued)**Other Academic and Professional Service (continued)**

2002-2004 Alternate Representative for Sociology, Graduate Student Senate, Utah State University

1995-2000 Community Liaison, Executive Council for Women's Studies, Weber State University, Utah

Substance Abuse Treatment Profession

2001-2004 Member, Advisory Council for Women's Issues Section, University of Utah School on Alcoholism and Other Drug Dependencies

1991-2001 Member, Planning Committee for annual Utah State Substance Abuse Fall Conference; Chair or Co-chair of Treatment Track for five years

1991-1998 Member, officer, Utah Association of Alcohol and Drug Program Providers Women's Services Committee

1990-1992 Chairperson, Oral Examination Evaluators, Utah Association of Alcoholism & Drug Abuse Counselors

1989-1993 Member, Credentialing Committee, Utah Association of Alcoholism & Drug Abuse Counselors

1988-1990 Oral Examination Evaluator, Utah Association of Alcoholism & Drug Abuse Counselors

1985-2001 Trainer, educator, inservice presenter, guest speaker on substance abuse issues for university social work, sociology, and rehabilitation classes, elementary and secondary schools, public agencies, church groups, etc.

PROFESSIONAL ASSOCIATIONS

International Association for Society and Natural Resources

- Member, Graduate Forum Planning Committee for 2007 Symposium, International Symposium on Society and Resource Management; 2006-2007
- Member, Symposium Planning Committee for 2007 Symposium, International Symposium on Society and Resource Management; 2005-2007
- Member, Publications Committee; 2004-2006

Rural Sociological Society

- Graduate Student Representative, 75th Anniversary Committee; 2006-2009 (appointed). Will serve another 3 year term as a professional member beginning August 2009.
- Graduate Student Representative, Endowment Committee; 2006-2007 (appointed)
- Graduate Student Representative, Nominations Committee; 2005-2006 (elected)

Great Salt Lake Interest Group, Weber State University