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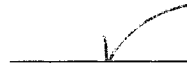
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**Social Dimensions of Exotic Weed Management
In National Forests and Adjacent Communities**

By

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B.S. Photojournalism

University of Florida, 1992

Presented in partial fulfillment of the requirements for the degree of

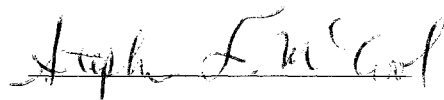
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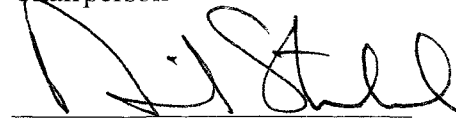
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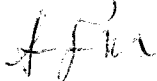
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Social Dimensions of Exotic Weed Management in National Forests and Adjacent Communities

Chair: Dr. Stephen F. McCool 

The establishment and spread of exotic weeds is one of the most significant resource management concerns currently facing western national forests. In the United States, invasive exotic weeds currently occupy over 100 million acres of land and the area affected is expanding at a rate of 8 to 20 percent annually (USDI 1997). Significant economic and ecological impacts have been noted. For example, these concerns include dramatic changes in ecosystem structure and processes; homogenization and impoverishment of the world's biota; loss of genetic diversity through hybridization, and lethal parasitization (Soule 1990, Wright 1992); threats to wildlife forage; and threatening the functional integrity of the wilderness ecosystems.

Another momentous resource management concern is the tendency for people to view exotic weed management, or other environmental concerns, solely as a biological problem when this issue is fundamentally a social problem. Historically, concerns about weeds in the context of land management primarily have been based on utilitarian needs and were the result of agricultural and range interests. The transition from utilitarian to symbolic and biodiversity definitions brings new challenges and issues to exotic plant management, as well as other resource management, on forested lands.

Understanding the beliefs and values surrounding exotic weeds and other forest management concerns can help managers make the connection between attitudes and changing social conditions to anticipate social needs. Weed awareness within the public and government support for it is lacking. The disconnect between land managers and the public on a variety of topics is undeniable. This is a barrier for cooperative efforts on weed management, and other resource management concerns.

By conducting in-depth interviews with 24 people from two different communities, I considered the cultural norms of the communities and what motivated the members. These interviews uncovered topics concerning relationships with land management agencies, and social perceptions of weed management as well as other resource concerns such as logging, wildlife, fire, ranching, etc. These relationship conversations led to the subjects of public participation, cooperation, role of information, communication and differences in worldviews. Themes within these interviews were uncovered such as weed awareness, identity, relationships, knowledge valued, outsider influence, and wilderness. The following thesis will only deal with the relationship and weed themes.

Barriers to this communication, and as a result to cooperative efforts, can be the diverse meanings or values associated with specific landscapes, different beliefs about the role of humans in nature, differences in goals or interests for an area, perceived inequality in management plans, and disputes over eradication methods. This project will help define the social dimensions that influence how members of the public and land managers interpret and communicate about the issue of exotic weeds in relation to forest land management, and develop an approach to assessing these dimensions.

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Chapter 1 - Shared Role in Managing Exotic Weeds

“Weeds spread early and seize bare ground. Direct sun, wind and rain do not discourage them. They thrive in gravel beside railroad tracks, and in niches between slabs of concrete. They grow fast, seed early, and retaliate to injury with awesome power. They will even take root in the cracks of an old shoe: not much hope there, but perhaps the shoe will be thrown into the midden out back, and then they can burgeon and swallow the whole yard” (Crosby in *Invasive Plants*, FICMNEW 1998).

Exotic plant invasions are moving across the nation into croplands and rangelands, pastures and forests, wetlands and waterways, deserts, wilderness areas, parks and refuges. These invaders are causing millions of dollars worth of damage to our natural, managed, and agricultural ecosystems (Schaefer in *Invasive Plants*, FICMNEW 1998). For example, these concerns include dramatic changes in ecosystem structure and processes; homogenization and impoverishment of the world’s biota; loss of genetic diversity through hybridization, and lethal parasitization (Soule 1990, Wright 1992); threats to wildlife forage; and threats to the functional integrity of the wilderness ecosystems. These exotic plants also out compete crops, limit choices of crop rotation sequences, reduce crop quality, act as vectors of other pests, interfere with harvesting operations, increase transportation costs, and reduce land values (FICMNEW 1998).

According to a recent survey by the U.S. Department of the Interior, exotic weeds have invaded over 17 million acres of public lands in the West, more than quadrupling their range in the period 1985-1995 (FICMNEW 1998). Western wildlands are being lost at a rate of 4,600 acres per day (USDA 1998), and this is a conservative estimate because

many regions have not completed assessments.

Roughly one-third of the nation's land area is forested. While disturbance is a normal aspect of a functioning forest ecosystem, disturbances outside the natural range of variation including invasion by exotic plants can result in forest health problems. (FICMNEW1998). Exotic plants reduce habitat for native and endangered species, degrade riparian areas, create fire hazards, and interfere with recreational pursuits (FICMNEW 1998). Exotics are also a major problem in wetlands and waterways. They can inhibit water flow in irrigation ditches, canals and even major rivers, such as the St. John's River in Florida.

Upon Euro-American settlement, the natural environment of the North American continent held a great diversity of plants and animals. Many of the natural and federally designated wilderness areas that remain are surrounded by developed land, and are vital to the preservation of the native plants and serve as "cauldrons of evolution" or refuges to prevent extinction (FICMNEW 1998). In some of these areas, stands of exotic plants have replaced diverse natural ecosystems, changing the natural disturbance regime, and hybridizing with the native species in such a way that could eliminate indigenous genotypes (FICMNEW 1998).

Management Concerns

One hundred and ninety-four units of national parks and refuges have identified exotic plants as a management problem (FICMNEW 1998). Exotic plants interfere with the use of campgrounds, hiking trails, and with activities such as bird watching, photography, and hunting (FICMNEW 1998). Aquatic weeds interfere with fishing, swimming and other water-based recreational activities (FICMNEW 1998). Randall

(1993) surveyed 97 Nature Conservancy land managers in 46 states to determine the extent of their exotic weed problems. The respondents reported 197 exotic plants present on more than 1 million acres (Marler 1998).

The spread of exotic weeds has also become a significant resource management concern in every aspect of management in national forests. Increased travel by humans and landscape manipulation has dramatically accelerated the rate of deliberate and unintentional introductions of these exotic species. Disturbed ground from roads, trails, fire, or timber harvests create the necessary soil surface and exposure for many exotics to grow and spread. In the United States, invasive weeds currently occupy over 100 million acres of land and the area affected is expanding at a rate of 8 to 20 percent annually (USDI 1997).

Policy

These problems are particularly challenging on public lands where there are not only a variety of institutional mandates, constraints, and organizations dealing with exotics, but there is also a confusing, complex and often conflicting array of expectations and administrative policies. Within the last few years, agencies have been trying to strengthen weed awareness, eradication and prevention programs. There has been a general push for weed surveys and weed management plans for public lands by forest agencies, recreational clubs and non-profit organizations. The Federal Noxious Weed Act (1975) declares that each federal agency should have a person “adequately trained” in the management of undesirable plant species, and to develop and coordinate a management plan. This plan should also be implemented cooperatively with states on federal land and “adequately” funded. Unfortunately, funding for invasion prevention and control, and

employee training is not always at hand.

In April of 1999, President Clinton signed the Invasive Species Executive Order, which directs all the land agencies to monitor, research, and act on exotic plant issues. Within the same year at the Science in Wildland Weed Management symposium in Denver, Bruce Babbitt, Secretary of the Interior commented, “The invasion of noxious alien species wreaks a level of havoc on America's environment and economy that is matched only by damage caused by floods, earthquakes, mudslides, hurricanes, and wildfire. These aliens are quiet opportunists, spreading in a slow motion explosion.”

Assuming the government allows for more weed management funding and employee training, the social acceptance of these management plans is another problem altogether. The issue of exotics is particularly pernicious in designated wilderness and national park backcountry, where there is a general mandate to protect natural processes to ensure that such areas remain “untrammeled.” Nonnative invasive plants occupy wilderness and other natural areas throughout North America, and invasive organisms as a group are now considered the second worst threat to biodiversity, behind only habitat loss and fragmentation (White et al. 2000).

Wilderness

The Wilderness Act of 1964 mandates that Wilderness areas be managed to maintain their primeval character, so that the imprint of human activity is substantially unnoticed. The term “trammeling” within the Wilderness Act refers to the manipulation or alteration of the landscape (Barry 1998 in McCool and Freimund 2001) and often serves as an indicator of what makes wilderness unique from other land-use designations (McCool and Freimund 2001). This presents a problem with exotic weed management when

considering control or eradication methods in wilderness. All methods contribute to some form of ground disturbance, which could be considered trammeling, although, it is human activities (importation of exotics, ground disturbance) that have caused a weed problem to occur. This preservation of wilderness involves two paradoxes: First, we seek to preserve ecosystems that must change and, second, we must often apply human management to ecosystems where we ultimately want a minimal human influence (White and Bratton 1980 in White et al. 2000). Managing nature so that it can continue to change represents a difficult challenge, so we must use both monitoring and adaptive management.

Particularly troubling for managers will be the forces that act across large distances, that have influenced even large and remote wilderness areas, that may introduce novel conditions, and that reset the basic properties and geographies of ecosystems. Exotic species are such a force (White et al. 2000). Therefore, many argue that the prioritization of pest plant control on a level with other human impacts is necessary for maintaining the natural character of Wilderness areas (Marler 1998). To what extent physically and financially, and what method of control is compatible or necessary for these protected areas?

Consequences of Invasions

The Salmo-Priest wilderness is a good example of the possible consequences from exotic weed invasions on public land. This Wilderness in northeast Washington had very few yellow hawkweed (*Hieracium caespitosum*) invasions around 1992. By 1998, the invasion had reached almost every road leading to the wilderness boundary because of ground disturbing fire activities mainly in 1994, the opening of old logging roads for fire

suppression, increased visitation, and the neglect of weeds. At the time, a lack of public awareness, need for federal funding and an overall congressional apathy towards the issue has allowed this epidemic to grow unchecked. The infestation could have been easily controlled early on. Currently, the Salmo-Priest's invasion of yellow hawkweed may only be eradicated or at least controlled by applying large quantities of herbicides or successful bio-control due to the growing size of the infestation.

The environmental analysis for the Colville National Forest excludes the Wilderness, as does the final environmental impact statement for Managing Competing and Unwanted Vegetation, which will indirectly exclude any plant specific or less persistent herbicides available on the market. The proposed wilderness weed management plan will most likely contain outdated herbicide prescriptions, and will be challenged by various groups. This in turn will promote inaction on the agencies' part to draft a plan. This prolonged process will only allow the weeds more time to spread. This example demonstrates the fact that listening to the public's views on this issue and encouraging their participation in management decisions may remove some of this lag time when it comes to future planning.

Are communities discouraged with the public input process, unaware and not participating, are agencies not listening, or are those just symptoms of a larger issue? To be effective, invasive weed management requires clear and effective communication, a shared definition of the problem, cooperation, and coordination between national forests, other federal and state agencies, local governments, and adjacent landowners. Control efforts within a public area will be futile without cooperation from neighbors as they are sources of propagules for re-invasion at the forest boundaries (Hiebert 1990). Weeds can

and will travel easily from managed land to unmanaged land.

Cultural Landscape

Issues associated with the management of exotic weeds are especially significant at the interface of communities and national forests in the west. The cultural landscape of invasive weeds has been rapidly changing. Weed management was mostly created as a result of agricultural interests and was suited to communities comprised of large farms and ranches. Today, developers for new subdivisions have purchased many of these ranches and farms, and distances of natural areas to towns have shortened. Subdivisions have caused significant changes in land ownership patterns, increases in roads and driveways, and changes in both values and ideas about weed control (Merriam 1999). Not only is there a rapid change in the cultural landscape, but these communities also have varied weed management practices and beliefs. For example, if a town consists mainly of farmers and ranchers there will most likely be a more unified perspective compared with a community with a diverse and evolving population. This is where establishing an effective public discourse gets complicated and why cooperation is so important. Exploring the underlying belief systems that serve as the basis for how individuals frame, interpret, communicate about, and respond to issues of exotic plant management will help with this effort. The lack of support and/or opposition by people may arise from a variety of different sources beyond lack of awareness.

Barriers

There is a mixture of possible barriers to the public acceptance of exotic weed management such as communication about weeds, previous relationships with land agencies, beliefs, goals and identities. But, the degree of awareness is still a critical

component of weed-spread prevention. Many members of the public may not be aware of the weed problems associated with agriculture, natural resources or native species. Others are not familiar with eradication or control methods and the terminology in general, and may have difficulties even understanding a weed management plan in which they were not participants.

There are many ways of looking at the problem, many paths worth exploring, and rarely is there one “right” solution (Bardwell 1991). Knowing how people perceive and use information is central to understanding how they solve problems (Bardwell 1991). Science is least developed and least reliable in the very area in which it might best inform humans regarding their options and limitations in social choices and governance – at the interface of the natural and social sciences (Caldwell 1990). As a consequence, science and technology have been put to the service of purposes and policies for which science provides no adequate criteria for evaluation (Caldwell 1990). The different perceptions of a particular environmental problem lead to different conclusions for solving the problem. Caldwell (1990) maps out three levels of cognition and interpretation of environmental impairments as incidental (accidents), operational (mismanagement) and systemic (inherent in design), which will be explained in more depth within chapter 2.

Statement of the Problem

Mutual planning between land management agencies, communities and individuals with similar goals for weed management can help keep destructive weeds out of all the numerous and complicated jurisdictional boundaries. We should recognize that people often measure their interactions with forest agencies by the extent to which their values and concerns are given consideration in decisions (Shindler 1997 in Shindler & Cramer

1999). Communities need to trust local agency workers. Barriers to this communication, and as a result possibly to cooperation, can be the diverse meanings or values associated with specific landscapes, different beliefs about the role of humans in nature, differences in goals or interests for an area, perceived inequality in management plans, and disputes over eradication methods. After all, it is people who identify the management actions and implement them, and they are subject to a variety of factors and forces that influence their abilities to attack a problem (McCool 2000). The longer we delay ample participation processes and success of these management plans, the more time exotic weeds have to multiply and spread.

Thus, the weed issue has become a major focus of national forest administration, yet the social dimensions of this problem have not been fully explored. Social dimensions are discovered by identifying the diversity of fundamental beliefs and values held by local residents about exotic weeds, and also other forms of natural resource management due to their interconnectedness. For instance, range management and travel management must involve exotic weeds. Understanding the social landscape for exotic plant management within a community is critically important in developing communication and successful control programs.

Therefore, the problem this thesis seeks to understand may be stated as:

What social dimensions influence how members of the public and land managers interpret and communicate about the issue of exotic weeds in relation to forest land management?

Study Objectives

The objective of this study is to understand and identify the diverse views of different

communities and their members concerning the human role in managing exotic weeds, and how can this information help with weed management and planning? An approach will be developed for assessing the social dimensions of exotic weed management on forest lands in a manner that is consistent with an ecosystem-based management paradigm in general and mandated, collaborative methods (USDA 2000) emerging in Forest Service planning in particular. Reaching more durable decisions requires comprehensive methods and a much different relationship among managers, researchers, and citizens (Shindler & Cramer 1999). Concentrating on the individual level will help to explore how members of the public interpret and communicate about the weed issue in relation to forestland management and the possible barriers to collaborative management.

More specifically, this study had the following objectives:

- Reveal **relationships** between forest agencies and communities looking at levels of trust.
- Determine **belief systems** and **values** related to weed or other resource management concerns.
- Examine these same views with regards to designated wilderness.
- Show the **difference in goals** or problem definitions between agencies and community members.
- Explore the knowledge base on the various **methods of control** for weeds such as manual, herbicidal, or biological, what methods are acceptable.
- Identify the **terminology** community members' use when communicating about these issues. For instance, do they know the difference in terms between invasive, non-indigenous, exotic, noxious, or alien species?

The thesis seeks to:

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- Identify the **terminology** community members' use when communicating about these issues. For instance, do they know the difference in terms between native, nonnative, invasive, and exotic species?

Chapter 2-Literature Review

This review of the literature will provide the conceptual foundation and framework for examining factors affecting weed management on public lands in the west. Weed management may be viewed as the intersection of three major aspects of knowledge and human activity: biology, institutional mandates and social factors. This chapter is organized into three sections: (1) the biological section deals with weed invasiveness including plant characteristics and site conditions, (2) the institutional section describes and contrasts management paradigms, cross boundary management issues, the role of protected areas, and forest agency barriers to cohesive weed management, and (3) the social section contains many community based aspects and conflicts surrounding weed management.

In this chapter, I briefly review the first two of these factors to set the stage for understanding the social dynamics surrounding weed management and other natural resource management issues in the third section. In this section I discuss the importance of problem-framing and problem-solving, weed management in Wilderness, and the function of information access and trust, individual identity, and meanings of management. The social section also discusses the notion of public acceptability using the Chicago area restoration project controversy as an example.

Biological Aspects

Biological invasion is one of many “global changes” caused directly by humans that are changing the earth now (Vitousek 1994). Human activity moves species from place to place both accidentally and deliberately, and it does so at rates that are without precedent

in the last tens of millions of years (D'Antonio and Vitousek 1992). Invasions by nonnative species have been recognized as an important topic in natural history and ecology for nearly 150 years with Charles Darwin (1859) commenting on the phenomenon of nonnative plants (Randall 1999). Invasive species impacts were brought into the mainstream of ecology in the late 1950's with the publication of Charles Elton's book, *The Ecology of Invasions by Animals and Plants* (1958), and concern and interest has grown rapidly since the mid-1980's (Randall 1999). In this section, I explore specific characteristics of exotics that hamper the ability of humans to control weed spread and occupation.

It is difficult to define exotic species, because it is difficult to define the concept of native species. This is because of the naturally dynamic nature of species distributions and the relatively brief time frame in which we have been documenting those distributions (Webb 1985, Lodge 1993, Tausch 1993, Carlton 1996, Schwartz 1997). Although we may not be able to identify every exotic species, we can determine when a certain plant has become a problem. According to Loope (1993), a plant becomes a problem when the exotic species (1) results in a significant decline in populations of one or more native species, (2) interferes with agricultural pursuits, (3) causes aesthetic damage perceived to be unacceptable, or (4) significantly alters ecosystem processes.

There are four main attributes involved with invasive exotic weeds and their requirements that enable them to invade vulnerable areas to establish a niche in a natural community: their invasive qualities, seed dispersal abilities (which is an invasive quality, but will be discussed separately), the invasibility of the sites they occupy, and their environment altering impacts.

Weed Invasiveness

What enables a weed to become invasive? According to Randall (1999) no single answer presents itself, but he mentions these 6 possible factors:

1. Whether the species is invasive somewhere else. For example, if a species native to Spain is invasive in Australia, it is likely to be invasive in California and South Africa as well.
2. Plants with animal-dispersed seeds, like bush honeysuckles or privets, are much more likely to be invasive in forested areas.
3. Individual species that are self-compatible, those that can fertilize themselves so one plant can start an invasion (Baker 1965).
4. Plants that are dependent on one or a few other species for pollination that were introduced at the same time. For example, the edible fig's pollinator (wasp) was introduced intentionally to promote fruit production, and now the species is invasive in parts of California.
5. Species with relatively low DNA contents can usually divide and multiply more quickly, and consequently these plants grow more rapidly than species with a higher cellular DNA content.
6. The plasticity of a species, which is the ability of any given individual of some species to cope with a variety of conditions.

Reichard (1997) mentions the importance of the seed crop production, variability, germination and longevity as important characteristics of exotic colonizers. Large seed crops ensure that at least some of the progeny will establish each year. An ideal weed would have germination requirements that could be fulfilled in many environments. Plants banking their seeds within the surrounding soil also effectively increases crop size by allowing seeds to accumulate in the soil or canopy until conditions are hospitable.

Exotic weed seeds may also have greater longevity than native plant seeds, allowing them to remain in the soil longer.

Seed Dispersal

Lodge (1993) noted that invasive organisms typically exhibit high rates of dispersal, enabling them to spread readily throughout newly colonized regions. Although wind and water sometimes disperse seeds of nonindigenous plants into the surrounding landscape (Sauer 1988), many of the most important and widespread nonindigenous plants produce fruits and seeds with adaptations for dispersal by animals (nearly always birds or mammals) (Schiffman 1997).

We are compelled to link seed dispersal and weed spread in North America to European settlers because of land-use changes. We tend to use pre-European vegetation as the benchmark for natural plant community composition and the definition of an exotic weed (Schwartz 1997). Although this may not be a perfect strategy, it can be useful. This may provide a false picture regarding the determination of the native or exotic status of any given species because of the broad scale movement of species by Native Americans for food, dye, medicine, or fiber (Bender 1975, Schwartz 1997).

Most modern introductions of ecologically problematic exotics have resulted from the movements and activities of people, and because both people and animals transport exotic plants and their seed, problems arise from the use of political boundaries as substitutes for biological boundaries. Designing separate weed management programs in various institutions around these biologically artificial boundaries becomes unrealistic in terms of planning and community involvement.

Site Invasibility

It is recognized that areas where vegetation and soil have been disturbed by humans or their domestic animals are more susceptible to invasion by exotic weeds (Randall 1999). Changes in stream flows, the frequency of wildfires, or other environmental factors caused by dam building, firefighting, road construction, and other human activities may also hinder survival of native plants and promote invasion by nonnatives (Randall 1999). It is often hard to separate the impacts of a human disturbance from those of an associated plant invader (Ramakrishnan and Vitousek 1989 in Campbell 1997). Since these two are so closely linked, they should be considered together in view of ecosystem impacts.

Some sites are more prone to invasions because of natural disturbances that range from gopher mounds to hurricane damage (Randall 1999). Other vulnerable sites include remote islands in temperate and tropical areas, areas with low numbers of native species compared to species-rich areas, (Stohlgren et al. 1998,1999 , Randall 1999), and historically busy sites like seaports or railroad terminals that are exposed to more introductions because immigrants bring plants and animals from their own countries (Randall 1999). Some of the earliest civilizations collected plants from distant locales to trade or carry for various uses such as food, technology, and medicine (Fritz 1994, Reichard 1997). Early modes of invasive species entry into these invulnerable lands include agricultural practices via weed-contaminated crop seed, seeds within domestic animal fur, ship ballasts from Europe, intentional introductions like landscape or medicine purposes, soil erosion solutions, or even unknowing plant enthusiasts. The horticulture industry is an important example, with gross sales of \$5.3 billion in 1992 (USDCES 1994, Reichard

1997).

Environmental Change Resulting from Exotic Invasions

Exotic plant invasions alter ecosystem processes by displacing native species and causing extinctions, supporting nonnative animals, fungi or microbes, and hybridizing with native species altering gene pools, just to name a few effects (Randall 1999). Biologically invaded areas cause functional as well as compositional change, defined here as whole-system fluxes of energy, the amount and pathway of inputs, outputs, and cycling of materials, and the ways that these vary in time (D'Antonio and Vitousek 1992). Invasions that alter ecosystem processes over large areas could feedback later to other components of global change such as climate, atmospheric composition, and land use (D'Antonio and Vitousek 1992). This is unfortunate for rare native species, or protected areas such as wilderness and other natural preserves that were set-aside for their unique natural communities. Since these protected areas generally have more limited access, more natural conditions, and fewer impacts of human activity, they are an appropriate focal point for prevention and control of exotic plants (Marler 1998).

Two well-documented examples of process altering effects include an invasive tree in the Hawaiian Islands, and invasive grasses all over the arid and semi-arid west. The Fayatree (*Myrica faya*) was introduced to the Hawaiian Islands in the late 1800s by Portuguese settlers, then planted widely in Hawaii in the 1920s and 1930s to control erosion in pastures (Lutzow-Felling et al. 1995; Vitousek and Walker 1989, Walker and Smith 1997). At low elevations on the island of Hawaii it now occurs in several dense, monospecific stands as mature forest with no regeneration of indigenous or nonindigenous species in the understory (Whiteaker and Gardner 1985, Walker and

Smith 1997). Vitousek and Walker (1989) calculated that one stand of 21 fruiting trees would produce 152 new fruiting trees within 6 years. These trees have completely altered the soil and aboveground environments where they have invaded. They dominate nitrogen-limited primary successional sites and increase both nitrogen inputs and the biological availability of nitrogen, which alters system-level rates of resource supply (D'Antonio and Vitousek 1992).

Grass invasions include European annual grasses and perennial bunchgrasses of African, Eurasian, and South American origin brought to the western United States largely unplanned with the introduction of sheep and cattle. These grasses can have effects at multiple levels of ecological organization from population to the ecosystem (D'Antonio and Vitousek 1992). Competition over resources such as light, water or nutrients, and the efficient use of these resources because of their dense shallow root systems can have an effect at the ecosystem scale. Exotic grasses can alter systems through a number of pathways that are not obviously related to resource use. Among these are: (1) geomorphological effects, (2) microclimate effects, and (3) disturbance effects, in particular, fire frequency and intensity (D'Antonio and Vitousek 1992). For example, European Beachgrass (*Ammophila arenaria*) alters dune formation patterns, Japanese brome (*Bromus japonicus*) builds up litter that decreases evaporation from the soil surface which favors its' germination and establishment, and Bluestems (*Schizachyrium*) in Hawaii cover 80% of certain areas that have never burned before, but do so now (D'Antonio and Vitousek 1992).

After looking at these invasive characteristics, it becomes apparent that managers and members of the public dealing with exotic weeds would highly benefit from a knowledge

base concerning the four attributes of weed invasions discussed above before formulating any type of weed management plan.

It has also been illustrated that biological invasions can impact many parts of a natural system. If, for example, lands neighboring a relatively weed-free area are not managed the same way, the weed-free land is eventually doomed to invasion. Viewing this issue at an ecosystem level instead of a problem on separate parcels of land within separate agency direction or private ownership requires that we consider the institutional arrangements for management of exotic weeds.

Institutional aspects

So what is it about natural resource institutions that may affect for management of exotics? Paehlke and Torgerson (1990) discuss how an institution's way of seeing the environment or the type of management they choose promotes a distinctive mode of defining and grappling with environmental problems. They explain that these institutions are not restricted to dealing with environmental problems directly, and offer an orientation which can deal with a range of economic processes such as: manufacturing, services, agriculture, resource extraction, transportation – in a manner which anticipates environmental problems in both planning and implementation.

Caplan and Kessler (1991) contrast the institutional paradigms of multiple-use management and ecosystem-based management exploring some fundamental questions about the nature of lands, natural resources, and relationships to people. The philosophical foundations of these two perspectives can lead to strikingly different conclusions about what constitutes wise and appropriate uses of land (Caplan and Kessler 1991).

In the multiple-use view, land is seen primarily in terms of the commodities that can be produced for human utilization and enjoyment, and that is why this type of management is based largely on concepts and models of agricultural production (Caplan and Kessler 1991). The ecosystem-based view recognizes plants, animals, soils, topography, water, climate, and ecological processes as complex systems having diverse linkages to human societies (Caplan and Kessler 1991).

These concepts often generalize and classify groups into either resource extraction interests or environmental interests. The natural resource prescriptions or alternatives for management of these lands are usually regarded as “competing uses” causing decision appeals and lawsuits. In reality, there is quite a spectrum of perspectives and needs to which people subscribe thus establishing the potential for conflict over weed management. In 1995, environmental historian William Cronon published *Uncommon Ground: Toward Reinventing Nature*; a commentary on nature in the modern world. He noted:

“The work of literary scholars, anthropologists, cultural historians, and critical theorists over the past several decades has yielded abundant evidence that *nature* is not nearly so natural as it seems. Instead, it is a profoundly human construction. This is not to say that a nonhuman world is somehow unreal or a mere figment of our imaginations – far from it. But the way we describe and understand that world is so entangled with our own values and assumptions that the two can never be fully separated. What we mean when we use the word *nature* says as much about ourselves as about the things we label with that word” (p 25).

These differences in seeing nature are an important distinction when considering the lives and opinions of local people depending on natural resources for their livelihoods.

This distinction also helps to develop a context to examine different values that may be the source of conflict between land management agencies and the surrounding communities.

Opposite from what Paehlke and Torgerson (1990) suggest are necessary characteristics of an environmental administration, I suggest the current characteristics of some natural resource management institutions that inhibit effective management are: (1) compartmentalized, (2) closed, (3) technocratic, (4) centralized, and (5) rigid.

Agency Characteristics

Compartmentalization and Bounded

Some institutions are compartmentalized functionally and across boundaries. By this I mean that they have definite functional boundaries, even though they recognize the complexity of problems, yet they confine environmental concerns to a single, often marginal, sub-division of government (Paehlke and Torgerson 1990). In contrast, ecosystems and their process, such as invasions, traverse political and jurisdictional boundaries; it is rare to find an ecosystem wholly contained on land belonging to a single owner (Cortner 1996).

One of the factors that make the exotic weed issue difficult to address is that, while humans recognize political and administrative boundaries, exotic plants do not. Unlike some forest management issues that can be addressed within fixed political and administrative boundaries, exotic plant management is a cross boundary issue involving numerous jurisdictions at a variety of scales. The disconnection among management plans, agency priorities, and local community values can cause inefficiency and conflict

dealing with a variety of natural resource issues. The problem of managing invasive exotic weeds involves the relationship between agencies and the adjacent communities to develop plans together.

Land management agencies are organized around boundaries that separate them from other federal or state agencies or private lands. Administrative boundaries are ubiquitous, relatively sharp (or become so through time), relatively recent (White et al. 2000), and yet permeable to exotics. Even public lands managed by a single agency may have internal zones for different purposes (such as, natural area protection, historic scenery management, and recreation) and with different management plans (White et al. 2000).

Closed Decisions and Cultures

While the hallmark of the conventional administration, or multiple-use based management, is in a confined decision-making process, the hallmark of ecosystem-based management is openness (Paehlke and Torgerson 1990). Closed atmospheres privilege technical expertise, do not recognize the legitimacy of emotional and experiential forms of knowledge, and provide few opportunities for public involvement beyond that minimally required by law. The relatively unbounded character of natural resource concerns creates perplexities for any effort to neatly mark the boundary lines of the administrative process and to definitively circumscribe the range of legitimate participants (Paehlke and Torgerson 1990).

Separate land management agencies can also discredit the validity of each other's contributions, and their relationships are frequently strained because of ideological and political differences leading to competition and conflicting policies. For example, the politics between the Forest Service and Park Service could hardly be termed cooperative

in many areas, which translates to ineffective management.

As mentioned in Chapter One, if neighboring land managers or owners are not working together, exotic weeds will either spread, cross boundaries or return if the control efforts stop. One would think that agencies could cooperate in management on an accepted problem such as exotic weeds and try to eliminate conflicting priorities, but unfortunately that is not always the case. These agencies often have overlapping jurisdictions and differing mandates, which cause them to work at cross-purposes (Keiter 1994 in Cortner 1996). Resource managers need to acknowledge mutual responsibility for ecosystem components and processes that transcend conventional boundaries (Keiter 1994 in Cortner 1996), especially when the area of discussion is within a designated Wilderness area.

Technocratic - Father Knows Best

Multiple-use based management relies heavily on scientifically founded, expert-driven approaches to decision making. This exposes commitment to a vision that anticipates a smoothly functioning social system, guided by experts in the administrative sphere (Paehlke and Torgerson 1990). Technocracy is still potent in projecting a mystique suggesting it holds a monopoly on relevant knowledge (Paehlke and Torgerson 1990).

Thomas and Burchfield (1999) suggest this is antithetical to democracy, and it should be abandoned anywhere in the field of forestry (or elsewhere in society) it should be abandoned. They also acknowledge that forestry (or natural resources management in general) is, and will be guided by science. Yet to blame “scientific management” (i.e., a rigid adherence by a technocratic elite to the dictates of science in decision making) for the issues confronting the forestry profession is to disregard the other decisive forces that

drive public and private natural resource policies (Thomas and Burchfield 1999). They propose that what has guided agencies such as the Forest Service has not been science, but a politically inspired hybrid of 19th century ideas that Christopher Klyza (1996) calls “technocratic utilitarianism” or “the greatest good for the greatest number for the longest time” appropriated by Gifford Pinchot. (Thomas and Burchfield 1999). Although the public may have distrust in the government they still seek and believe scientific specialists, but science is not, and should not be, the sole determinant of the outcome of natural resources decisions and civil discourse is the method for resolving the inevitable conflicts over resource use (Thomas and Burchfield 1999).

Forestry professionals having traditionally relied on their “father knows best” attitude that as professionals, their training and experience is all that is needed to bring the diverse interests of these various groups together, and that if everyone trusted them, then everything would work out (Luloff 1995). Today, it is obvious that land management employees gathering more timely data on the public’s attitudes and opinions, as well as biological weed data, is helpful with planning. This type of information is often not collected and used because foresters usually do not have training in social science methodologies and theories (Luloff 1995). Many times they emerge from school or training having little understanding of why management activities are important to people.

Today’s problems require new educational responses, not those developed years ago in terms of a different set of mandates and concerns (Luloff 1995). Luloff takes the perspective that people and natural resources are equally important, and that gearing our professional efforts toward protecting our natural resources while improving the quality

of life for everyone is valuable. He stresses that accomplishing this goal requires an approach to natural resource management that considers not only the resources themselves, but the blending of people and natural resources. This approach is relatively uncommon. The insufficiency of specialized expertise means that the administrative process needs to remain open to a range of influences and experiences that are typically excluded in conventional practice (Paehlke and Torgerson 1990).

Centralized

Centralized agency administration ensures consistent policies, but their legislative mandates may be difficult to adapt to local environmental and social conditions. Some central administration is necessary to prevent havens for pollution in areas where authorities are inclined to trade environmental quality for economic opportunities, but it must also deal with the local and the particular, with geographical and cultural contexts (Paehlke and Torgerson 1990).

This centralized characteristic is reflected in The National Strategy for Invasive Plant Management (1997). Although it encourages both public education efforts and the establishment of collaborative management efforts among federal and state land managers, interest groups, and citizens, the National Strategy reflects the assumption that barriers to public support result simply from a lack of public awareness.

But gaining public acceptance of management requires more than distributing information brochures. To assume that public opinion is invariably improved by inundating people with information grossly distorts the role of information (Yankelovich 1991). A society operating on this assumption misconstrues the nature and purpose of public opinion in a democracy (Yankelovich 1991). Information is an important factor in

determining what people see and what they understand, but it may be erroneous, incomplete and, if contrary to strongly held beliefs or hopes, may be rejected (Caldwell 1990). As mentioned above, having a dissimilar perspective on natural resource management may yield different opinions on an issue even when they are considered by well-informed people.

The National Strategy does not identify or address other forms of barriers such as the question of how to negotiate a resolution among aware and informed stakeholders who are in conflict, nor does it offer much insight into how to engage people that have difficulty in seeing how weed management relates to personal or community goals or values. Shifting the concern from merely a focus on public education to the nature and processes of public discourse within communities is consistent with broad themes underlying the Forest Service's new planning regulations promulgated November 2000. The Collaborative Planning for Sustainability regulations represent a move from a "culture of technical" or centralized control to one that emphasizes dialog and deliberation, calling for a shift from agency driven processes to collaboration with the public and an emphasis on local rather than regional decision making (USDA 1999).

Rigidity and Agency Barriers

A compartmentalized, closed, technocratic, and centralized institution will remain rigid in its orientation to problems and will resist change. Conventional problem solving focuses on a form of analysis which proceeds from a fairly fixed conceptual framework, seeking impatiently to reduce ambiguity and diversity in the subject-matter to something manageable and familiar (Paehlke and Torgerson 1990). A rigid agency provides a limited range of problem solving options in both process and content, and their rigid

regulatory systems are about control rather than coordination and information sharing (Cortner et al. 1996). An ecosystem-based approach suggests that institutions should be complex and adaptive rather than hierarchical and rigid (Cortner 1996).

Even though land management agencies are responsible for weed issues in many forests, parks and preserves, there are still wide management gaps in action, priority, and awareness. For instance, Marler (2000) compiled a weed survey in 1997 on exotic plant species to identify research needs, generate awareness, and facilitate information exchange. The level of importance placed on exotic weeds varied greatly among geographical regions and among agencies. Only 31% of these areas reported some kind of monitoring or documentation of exotics (42% confirmed that they did not monitor, and 27% did not respond to the question), and fewer than 10% of these respondents have written weed management plans. Overall, about 15% of respondents ranked exotic plants among their top 10 concerns, 17% reported it as one of many small problems, and 42% said that exotic plants were not much of a problem (Marler 2000).

The lack of awareness or interest reflected in Marler's (2000) study is more complex than it appears. While there are agency employees that are not as aware of invasive weeds as they should be, others practically beg for weed eradication or control funding every year. Federal budgetary processes have been criticized for not giving local decision makers flexibility to tailor their resource allocation and land use decisions to site-specific and landscape conditions, and these budgets are also contingent on commodity outputs (Sample 1994 in Cortner 1996).

On many forests, the weed-coordinating job is only one aspect of an employee's overall duties. Many employees have absorbed two to three different jobs within a

district due to budget cuts and related layoffs, and find it difficult to remain on top of their responsibilities. This, in turn, creates a lack of morale and voluntary transfers only to have a new employee learn and understand the infested area all over again. All of these situations may accompany a lack of weed management funding, weed project attention due to time constraints, and a lack of qualified or informed agency employees as well as informed communities.

Wilderness and Exotics

Special Land Uses

Among the primary benefits of the National Wilderness Preservation System are the recreational opportunities it provides--to pursue enjoyable activities, study natural systems, contemplate nature and solitude, grow spiritually (Cole 1999), pursue physical and mental challenges and stimulations, primitive recreation, and so on. In the natural environment, people can find a connection with something that is both larger and more timeless than themselves; nature can provide spiritual sustenance for their souls, physical relief for their bodies, and psychological restoration for their minds (Ryan 2000). Also, if not more importantly, wilderness can preserve a great diversity of plant and animal life. It is also a living laboratory where scientists can observe the world in its natural state, although human activities threaten that quality with fire suppression and exotic invasions. Today, pristine wilderness completely devoid of any evidence of people exists in very few, if any, places. However, the ideal wilderness conditions need to be agreed upon and understood to make appropriate management decisions.

Trammeling by Exotics?

Exotic weed management is a perfect example of the institutional complications related specifically to wilderness. As disturbance of wilderness intensifies, managers must increasingly face the paradox between the goals of restoring pristine conditions and avoiding conscious manipulation of ecosystems. We know that invasive vectors of exotic weeds follow biological boundaries and do not correspond with administrative boundaries (White et al. 2000), such as those designating wilderness. Some wilderness advocates see these compartmentalized boundaries and the idea of avoiding ecosystem manipulation as a constraint to exotic weed management.

For example, the issue of herbicide application within wilderness to control exotic weeds provides a real dilemma. First, spraying weeds with herbicide within wilderness may be viewed as introducing a man-made chemical to a natural area it never before contained. This chemical could have far-reaching negative effects on plants, animals, water quality, etc. that are not predictable and could be considered an impact, violating Section 2(a) of the Wilderness Act, stating: "...these shall be administered...in such a manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character....", and Section 2(c): "...an area where earth and its community of life are untrammelled by man..." On the other hand, spraying weeds with herbicide could cause fewer physical disturbances to the ground and would be cost efficient compared to manual labor. In addition, it would be effective in controlling the invasion. For many species, pulling weeds disturbs the ground enough to encourage more seedlings and

growth. When infestations are small, spraying them for quick elimination can prevent the infestations from spreading and causing an impact. In this view, the use of herbicides causes much less impact to wilderness and preserving the wilderness character, thereby upholding the aforementioned sections of the Act.

Poor Institutional Design

The five institutional characteristics previously mentioned obviously relate to public lands in general, but are focused sharply in wilderness. Here I suggest only a few examples of each. First, compartmentalization is more apparent in wilderness due to the complications on many levels from efficiency versus no use of motorized equipment arguments to philosophical weed management decisions. Second, within the same agency lie separate cultures and ideals related to designated wilderness and its management. There is a closed wilderness community within a closed agency community. For example, wilderness management employees often lack equity within structural and financial support compared to the other disciplines on a forest or district. Third, the centralized nature of wilderness legislation may be even more apparent in struggling, rural communities dependent upon resource extraction activities that can no longer harvest most of their goods from public lands than in non-resource dependent communities. Fourth, the “father knows best” attitude and technocracy can further polarize each end of the spectrum regarding the management of wilderness or even proposed wilderness. Fifth, all of these characteristics compound the rigidity within these institutions, and are exaggerated when discussing minimum tool use with wilderness issues such as fire, range or recreation management because there is less if not zero room

for compromise.

In summary, Wilderness presents difficult challenges in exotic weed management. Its relatively rigid institutional design, coupled with the dilemmas of managing both for wilderness and pristineness, provides no clear direction for how exotics should be managed.

Social Aspects

Many restoration decisions, including weed management, are undertaken in situations with varying levels of the support and cooperation of local residents, interest groups, and government agencies (Vining et al. 2000). Some efforts are met with public resistance, and conflicts between various individuals and groups are resulting in controversies about whether and how restoration should be carried out on public lands (Vining et al. 2000). Social values and institutions are closely linked. Values of the past created the institutions of the present, and changing social values will stimulate the institutions of the future (Cortner et al. 1996). I will discuss some of the principal factors affecting public perceptions on managing exotic weeds and restoration on public lands including wilderness.

Levels of Cognition

Bardwell (1991) and Caldwell (1990) discuss the importance of differing interpretations or perceptions of information on environmental problems, and how they can lead to conflicting conclusions or solutions. Caldwell (1990) in particular describes three levels of cognition and interpretation that can be generally applied to many environmental problems including exotic weeds. At level I, incidental perceptions interpret environmental impairments as largely isolated phenomena, and these disruptions

are seen as accidents, miscalculations or human irresponsibility. Policy implications include admonition, education, and a few legal sanctions, and are basically cosmetic. Level II, operational perceptions, see environmental problems as largely unintentional, but caused by poor organization and management of economic and public affairs with regards to technology. Governmental intervention and regulation such as standard-setting for effluent discharges into the environment and automobile emissions controls identify this level, and this is where most governmental and intergovernmental environmental policy is developed and administered. Finally, level III, systemic perceptions, marks the major division within the environmental movement between people who believe that action sufficient to achieve sustainable environmental conditions is possible within the present socio-economic technological order, and those who identify that order as itself the cause of deteriorating environmental conditions. This implies an effort to uncover the roots of the degradation and remedy the basic causes, and to accept that these roots are inherent in the design of our systems. Remedies include redesigning institutions and the development of alternative methods, materials and sources of energy.

Much of the exotic weed management occurs at either the incidental or operational levels. There may be operational corrective laws, but these regulations are only correcting behavior without understanding why people behave the way they do, or by altering economic or institutional arrangements. We need to go beyond the incidental or operational levels by discovering how people perceive weed management on public land, along with other natural resource management concerns, and address the systemic level issues.

Problem-framing and Problem-solving

Bardwell (1991) discusses how environmental issues can be complex, plagued with uncertainty, and extremely political, and how this can frustrate and discourage public involvement. Looking at how people use information, define and solve problems is referred to as problem-framing. Environmental choices reflect politics, social values, assumptions and expectations as much as scientific facts (Ehrlich 1980, Schnaiberg 1980, Sampson and Hair 1990 in Bardwell 1991), and the difficulty of incorporating a diversity of views. The definition of the problem also reflects these values and assumptions. An underlying element of the consensus concept is the notion of agreement not only on a resolution to the problem, but also on the definition of the problem itself (McCool et al. 2000).

Consider the following terms: healthy forests, multiple-use management, forest stewardship, and ecosystem management. If we were to gather a sample of opinions from people who should be knowledgeable about these terms (for example, practicing foresters, forest land owners, or ranchers) we would readily see a lack of consensus on their definitions (Luloff 1995). Conflict is inherent on this level, and knowing how people perceive situations of this nature is vital to knowing how they prefer to solve problems. Ninety percent of problem solving is spent: solving the wrong problem, stating the problem so it cannot be solved, solving a solution, stating problems too generally, and trying to get agreement on the solution before there is agreement on the problem (Interaction Associates 1986 in Bardwell 1991).

A novice to any given problem may have trouble seeing all the angles of the problem and may not look to the long-term or the big picture. On the other hand, the experts may

see the problem as something they have been through before overlooking important details or seeing it with a fresh perspective. Bardwell (1991) suggests that problem definition is at the crux of problem-framing. The problem definition: 1. implicitly embodies preconceptions and assumptions that underpin how one approaches the problem, 2. guides the strategies and actions taken to address the problem, and 3. explores the aspects of the problem that influences the quality of solutions (Bardwell 1991). We need a public that has the skills and understanding to approach these problems as challenges, with creativity, and competence.

Landscape Meanings

Differences in meanings and associated interests with regard to weeds and weed management create an obstacle for communication, development of cooperation and solutions necessary to effectively control exotic weeds. Part of the problem may simply reflect a lack of awareness, knowledge or most likely a lack of a specified meaning on the part of the public. However, lack of public interest or outright opposition often is the result of issues that run deeper than simply lack of knowledge or awareness. People spend their lives moving from social world to social world, donning and shedding meanings and identities as they go (Brunson 1995), and how a person assigns meanings to an issue and a place not only often reflects their worldviews, but the acceptability of management actions as well.

For example, in Missoula, those expressing resistance to certain aspects of a proposed weed control program for Mount Jumbo include, among others, a state legislator; a city council member; and a program director for an environmental group, all of whom were somewhat familiar with the issue and the scientific reports used to argue for various

forms of weed control (Woodall et al. 2000). People usually agree that an exotic weed problem exists and that something should be done about them, but disagreements arise on how to approach the problem. All of the weed management concepts are addressed in federal program mandates, all relate to the assignments of forestry professionals, and all can have different meanings to practitioners than they do to the public (Luloff 1995).

Commodity production in natural resource management has been the guiding metaphor causing knowledge gaps on human-environment relations (Williams and Patterson 1999). Intangible meanings such as cultural/symbolic, expressive and spiritual have become increasingly legitimized within the emerging ecosystem-based management paradigm, but human-dimensions research could include socially or symbolically constructed interpretations of places or landscapes (Williams and Patterson 1999). These meanings may help us recognize the inherent assumptions underlying human identities and relations that guide environmental research and management. Williams and Patterson (1999) also suggest replacing the word “resource” with terms like “place”, “landscape”, and “habitat” which better reflect both the social and biological aspects of an interconnected system.

Identity

Many community members that are involved in weed management or any environmental conflict have chosen to withhold their voices from the political arena because they believe that the broader culture no longer accommodates their interests. Without hope that discursive participation in mainstream politics offers them an authentic hearing, private landowners such as the ranchers join other citizens who perceive that the public sphere is, at best, irrelevant to their lives (Peterson and Horton 1995). Many

western, resource extraction-based communities identify with a utilitarian view of nature due to their dependency on the land for generations, and some consider land management agencies and people back east as environmentalists or even extremists without proper knowledge of the local area and its needs.

Recent research efforts have identified and explored the environmental values held by various members of the public as a means of understanding the basis for their specific environmental concerns and conflicts, improving management decisions for public lands, and finding new areas where competing users may have common values (Kellert 1996, Kempton et al. 1995, Vining and Tayler 1999 in Vining et al. 2000).

Peterson and Horton (1995) discuss the 1990 listing of the golden-cheeked warbler (*Dendrocia chrysoparia*) as an endangered species fueling an already acrimonious debate among conservation agencies, environmental groups, and private landowners (mostly ranchers) in Texas. Private property owners have interpreted this formal listing, as well as attempts to preserve habitat, as a direct threat to their property rights. These ranchers believe that their perspective has been ignored or ridiculed by environmental policy makers (Peterson and Horton 1995).

The rancher can be used as an example of beliefs and identities affecting attitudes towards nature. Because their common sense, independence, and the human-land connection are interwoven with each other to create the perception of a good steward, ranchers are threatened by the USFWS discourse that they feel ignores their experience, replaces personal choice with coercion, and trivializes their sense of connectedness with the land (Peterson and Horton 1995).

Trust

Disputes over management of dwindling natural resources, particularly habitats for endangered species like the warbler mentioned above, provoke formidable hostilities throughout the US (Peterson and Horton 1995). Top-down decisions reached without the participation of those most directly impacted exacerbate these conflicts, whereas communication built on a foundation of mutual respect could encourage trust, public participation and development of sound management policies (Peterson and Horton 1995).

Multi-party negotiations run on the engines of interpersonal and interorganizational relationships, and when these relationships are characterized by a complete lack of trust, it makes the negotiations all the more difficult and time-consuming (Yaffee 1994). Implementation always requires exercising discretion, and if you do not trust the key actors to act appropriately, your options for settlement are constrained significantly (Yaffee 1994). These differing levels of involvement have important implications for environmental policy. By restricting opportunities to participate in the public sphere, the USFWS has assumed an adversarial position relative to an audience whose cooperation they desire (Peterson and Horton 1995).

Weed management is one of the few topics where ranchers and agencies can come to an agreement. But, if the ranchers' or communities' trust in the agency is unstable, even a probable collaborative situation may not be successful because of a failed relationship.

The negative consequences of closed-door decision making have been played out enough times over the past thirty years that significant public involvement not only helps to prevent (or at least lessen) controversies and distrust, but also can improve the

decision-making process (Creighton 1981, 1983, Gericke et al. 1992 in Vining et al. 2000). There is almost always tension between the interests of local residents and members of the broader public, and good public involvement techniques are instrumental in identifying and resolving these value conflicts (Vining et al. 2000).

The relationship between leadership elites and the general public is a weak link in our democratic system and the source of endless misunderstandings (Yankelovich 1991). Because each side approaches issues from a different point of departure, it is difficult for them to communicate with each other, especially when those in leadership do not know what the public's point of departure is and how it differs from their own (Yankelovich 1991). There is not only a difference in knowledge, but also in values, frameworks, and modes of expression.

Social Acceptability

The concept of acceptability in a political/social sense is illustrated in McCool and Freimund (2001):

“Public lands exist because of a social commitment to protection and management to meet broad conservation and economic development goals. Public land management occurs within the context of extensive, continuing debate about goals of management and management techniques. Since the public in the broad sense provides the funding for management, its perceptions and concepts of acceptable actions are critical components of restoration planning. Processes that encourage broad discussions, emphasize multiple perspectives and meanings, and invite deliberation may have a higher potential for success”.

The “public” is in fact a constantly shifting set of interpersonal affiliations, each of which can be characterized in terms of positive or negative responses to governmental actions

commonly expressed by its members (Brunson 1995).

Brunson (1995) discusses the lack of rigorous definitions for concepts associated with ecosystem-based management, such as “acceptability”, and the social aspects and implications surrounding these definitions. He states that a tentative definition of acceptability could be crafted on this: Social acceptability in forest management results from a judgmental process by which individuals (1) compare the perceived reality with its known alternatives and (2) decide whether the “real” condition is superior, or sufficiently similar, to the most favorable alternative condition, but if a person does not think the condition is sufficient they could shift conditions toward a more favorable alternative. Acceptability is seen as a function of the perceived existence, feasibility, and suitability of reality and its alternatives, as moderated by social, geographical, and risk/uncertainty considerations (Brunson 1995). For example, the middle ground occupied by the Forest Service is not necessarily the same middle ground occupied by the public (Vining and Ebreo 1991, Brunson 1995).

In other words, acceptability is characterized here as a product of individual judgments that are the result of a comparison process, the acceptability being reflected in behaviors as well as attitudes, and is not generally observable, but must be inferred from the absence of overt behavior. However, a definition does not solve any of the problems associated with the social acceptability of natural resource management but one can hope that it provides a useful framework for beginning the problem-solving task (Brunson 1995).

Emotion

Vining (1992a, 1992b) argues that emotionality is a necessary and commonplace

characteristic of public involvement in issues of environmental values, for a number of reasons: (1) emotion is not easily separated from cognitive processes and is stored along with other information in memory and helps us interpret, summarize, and organize information; (2) emotion is also an effective motivator, often spurring individuals to speak out on issues of concern communicating through facial expression, body posture, and voice tone – means that are in many ways more expressive than verbal communication; and (3) emotion helps to reveal value conflict. Within the resource management context, the potential for long, drawn-out planning processes, that focus on the wrong questions and end in elevated levels of frustration and conflict, is very high (McCool and Freimund 2001).

Although there is a research gap of understanding public opinion and acceptability regarding exotic plant species management, there is a good body of literature dealing with restoration controversies, exemplified by recent research in restoration in the Chicago area. Vining and others (2000) discuss public values, opinions and emotions over the multifaceted Chicago Restoration project. Management of public forest preserve lands in the Chicago region have evolved into a highly contentious debate, pitting public land managers and ecological restoration volunteers against restoration critics (Vining et al. 2000).

Historically, public land managers have tended to discount the importance of value-laden and emotional responses of the public to land management plans and projects (Vining and Taylor 1999 in Vining et al. 2000), but they now see the necessity of listening. Vining et al. (2000) examine the values and perceptions that give rise to controversial ecosystem restoration activities in Chicago as well as the emotions that

result from such controversies. They used a survey-based approach that uses a scenario of hypothetical restoration activities to understand how average metropolitan residents feel about conflicts concerning the restoration and management of urban natural areas (Vining et al. 2000).

Even though 80 percent of the respondents said they were unaware of the controversy surrounding ecosystem restoration in the Chicago area before participating in the study, the other 20 percent of the population interested were not heard. As differing opinions were illustrated in forming the Missoula weed management plan mentioned above, the control of exotics must not only be biologically effective but socially acceptable as well.

Another emotional element of this Chicago restoration project contends with the concept of what point in time to which systems are restored. Ecological research has tended to focus on ecological factors influencing selected species over brief time horizons (years) and small sites while ignoring the ecological factors influencing less interesting species, longer time horizons (decades), and large, politically fragmented landscapes (Norton 1998, Pimm 1991 in Hull and Robertson 2000). But, studies conducted at larger spatial scales and longer time frames are often too general or lack sufficient detail for management (Hull and Robertson 2000).

Are these constructed conservation goals striving for biodiversity, or a strict definition of a native species or geological time frame? This question can only be considered by looking at how such losses and impacts are a result of the people that perceive them. The impacts and losses caused by weeds are perceived, and measured within human beliefs and attitudes, and these are socially constructed. Defined problems and their impacts are a function of experience, knowledge, standards or environmental values often shown

through emotions.

Language and Information

Many managers view the public as victims of misinformation or the lack of it, and assume that if correct information about resource management could be effectively communicated, then public protest would be greatly diminished (Schroeder 1991 in McCool and Freimund 2001). Language is essential to any negotiation, and if participants are to influence the goals and outcomes of management, they will need to communicate effectively with other participants (Hull and Robertson 2000). Effective communication demands a solid understanding of what values, norms, terminologies, and methods are acceptable or unacceptable to oneself and to others (Hull and Robertson 2000). Poorly constructed terms are a problem because agreement is superficial and confusion results if people using the same term have different meanings. (Hull and Robertson 2000).

A review of the literature uncovers the necessity and responsibility of land management agencies to take the time and effort to first inform themselves on exotic weed ecology and issues before “educating” the public. Additionally, utilizing public participation is vital for successful public land management as well as weed management, as exotics are interwoven with all resource issues. The multiple-use management approach, which appears to be married to compartmentalized, closed, technocratic, centralized and rigid institutional characteristics, no longer works in a society with a growing dissatisfaction and distrust towards land management agencies, most notably the Forest Service.

The lack of trust and presence of poor community relationships is an overwhelming barrier confronting any agency’s attempts to secure cooperation and participation in weed

management. This is particularly significant because weed management is something that crosses boundaries. Even though boundaries mean different management objectives, the boundary-crossing character of weeds suggest that people have to work together. How well agencies and people work together is determined by the importance and presence of trust and credibility. The amount of understanding attached to different landscapes and their meanings is also significant in pursuing an exotic weed management strategy. If there is not agreement on how landscapes are defined or if there is a lack of understanding of what wilderness area are, it will be difficult to organize scarce resources to deal with weed problems. Also complicating matters is the idea of emotion. If one does not understand what emotion communicates during a one-on-one meeting one cannot get a sense of priorities or personal identities that are tied up in landscapes. If anything, the literature review suggests that exotic weed management cannot occur outside an understanding of the considerable institutional and social factors that come to bear on agency decision-making. Recognizing that public participation is mandated and exercised, but that conflicts still persist, I hope this type of information can improve the communication and understanding on exotic weed invasions and other natural resource issues on public land.

Examining the social perspectives is important in determining acceptable proposed natural resource management like exotic weed management in or outside wilderness. This study attempts to deeply examine the social aspects such as how and why people: (1) perceive exotic weed and environmental problems, (2) conceive of environmental issues in and outside wilderness, (3) identify and place meaning with an issue in an area, and (4) trust that land management agencies will accept their participation.

Chapter 3 - Methods

Description and Selection of Study Areas

The research questions and goals underlying this study required a research protocol capable of providing an empirically based, in-depth understanding of the collection of beliefs, values, meanings, traditions, and culture that characterize two communities' perspectives on exotic weeds as well as other resource management issues.

The site selection process for this study begins with the concept of individual and community level factors. I explored the underlying beliefs that serve as the basis for how individuals frame, interpret, communicate about, and respond to weed management and other issues. Understanding the social landscape for natural resource management issues within a community is critically important to developing successful programs. The existing community goals and differences in community culture, or social landscape, are related to this success in resolving conflicts and coordinating exotic weed control efforts. Ultimately, weed management is about people and communities. An effective resource management regime will accurately identify social values, translate them into social goals and management objectives, and then implement programs that will achieve those objectives (Duane 1997).

The selection criteria listed below allowed me to choose two small areas located in Montana and Washington where 24 respondents were selected and interviewed.

Selection Criteria

The chief criteria used in selecting the two study areas was that these areas:

- 1) Consisted of approximately no more than 500 people.
- 2) Currently faced exotic weed issues on private and adjacent public lands.

- 3) Offered the opportunity to explore exotic weed and other resource issues with respect to different administrative contexts such as wilderness or research areas.
- 4) Differed from each other on the characteristics of mostly resource dependent versus more service dependent economic structures.
- 5) Were familiar to the researcher and easy to access.

The first criterion was suggested for two reasons. First, the emphasis in this research is small, rural communities located in or adjacent to federally administered public lands. Second, the social setting of a smaller community will allow more efficient exploration of the phenomena. Smaller communities fit this physical “community” concept better than a larger one such as Missoula.

The second criterion was suggested because exotic weed management requires communication and cooperation between federal land management agencies, local agencies and adjacent landowners. This is an important point because weeds cross-land ownership boundaries. If landowners and managers do not manage a weed problem together, all efforts of one party could be obsolete after the neighboring lands’ weeds creep back over the boundaries. The communities were currently facing real weed issues rather than hypothetical circumstances so the interview questions involved a real place. Issues associated with the management of exotic weeds are especially significant at the interface of communities and national forests in the west. New roads, homes and other developments create soil disturbances exploited by exotics.

Because exotic weeds do not recognize political and administrative boundaries, the third criterion was proposed. Exotic weed management is a cross boundary issue involving numerous jurisdictions. The number and complexity of property boundaries

reflecting differing management objectives and interests is greatest in these areas. People may respond differently to weed issues in various administrative contexts such as designated wilderness, road-less areas or general forestland.

The fourth criterion suggested possible comparisons between two communities that have different economic and cultural linkages. The resource dependent communities may differ on belief systems regarding management and relationships with weeds compared with more service dependent communities. The increasing number of residents and tourists in service dependent towns with an urban background, little experience with forest or land management, varying expectations of the appropriateness of different management actions, or retiree status make understanding the public interest and generating public support increasingly difficult in these areas. In comparison, some resource dependent towns with predominantly agricultural interests may have a more unified perspective and their opinions may not be as fractured on ecological issues.

The fifth criterion, based on the familiarity and proximity of the communities to the researcher, was about interview style and practicality. First, a familiarity with the town or townspeople is beneficial for developing a good rapport with the interviewees. The interviewer must establish an atmosphere in which the interviewee feels safe enough to talk freely about perceptions. If the interviewer is familiar with the area and townspeople, it may be easier to know who to speak with, and what the social climate is already like. Second, the proximity of the study areas to the researcher is important when considering the amount of funding for travel and work time spent. The closer the study site, the more efficient and effective the research might be.

Study Sites

I considered thirteen communities for selection all located within Montana except for one in Washington. There were two towns during the selection process that most closely fit the criteria mentioned above: Wisdom and Jackson in Montana, and Metaline/Metaline Falls and Ione/Tiger in Washington. Wisdom and Jackson represent a resource dependent type area and Metaline/Metaline Falls and Ione/Tiger more of a service dependent type area. I have Metaline and Metaline Falls together because these two towns are small and I consider them a “community”. This also holds true with the towns of Ione and Tiger.

Metaline, Metaline Falls, Ione and Tiger meet all five of the criterion listed above.

- 1) They are quite small with approximately 459 people in the total area.
- 2) The communities face weed issues on private and public lands. Some residents have “no spray” signs in their yards and others participate in area weed programs.
- 3) The Forest Service is still designing a weed management plan for the Salmo-Priest Wilderness on the Colville National Forest, which surrounds the communities.
- 4) These areas are in a transition phase trying to move from a logging and mining past to a future of tourism.
- 5) I have seven years worth of familiarity with the communities’ structures, the National Forest, and the people in the area, having worked as a seasonal wilderness ranger.

Metaline, Metaline Falls, Ione and Tiger are surrounded by the Colville National Forest and are about 90 miles north of Spokane with Canada bordering on the north, the Idaho Panhandle National Forest to the east, and the Okanogan National Forest on the west. Located in Pend Oreille County, the Selkirk mountain range and on the Pend Oreille River. There is a resource dependent past of logging, cement manufacturing and zinc production. These resource extraction type jobs are no longer viable, other than a

few and a possible future mine opening, but the town is slowly trying to move into an economic base of tourism. They have a main street of art shops, cafes, a bakery, historic hotel, interior designer shop, and a prosperous community theater with visitors from Canada, Idaho and Spokane.

The relationship between the Forest Service and community is tenuous due to major timber extraction cut backs causing all mills to close, road closures due to grizzly bear habitat protection, difficulties with past and present Forest Service district rangers, abandoned trails, and costly caribou reintroductions to name a few. The Salmo-Priest Wilderness had sizable parcels that were previously marked for harvest before its designation in 1984, and local loggers were disappointed in the lost revenue. Within the community and forest lie many exotic weeds such as *Centaurea diffusa*, *C. jacea x nigra*, and *C. maculosa* (diffuse, meadow and spotted knapweed), *Hieracium aurantiacum* and *H. caespitosum* (orange and yellow hawkweeds), *Cirsium arvense* and *C. vulgare* (Canada and bull thistle), *Hypericum perforatum* (St. John's Wort), *Linaria dalmatica* (dalmatian toadflax), *Lythrum salicaria* (purple loosestrife), and others.

Wisdom and Jackson also meet the above criteria.

- 1) The population is around 290 including the outlying cattle ranches.
- 2) The community is attentive and responsive to weed issues due to a heavy cattle ranching background compared to Metaline Falls or Ione.
- 3) The Anaconda-Pintler wilderness stands inside the Beaverhead-Deerlodge National Forest, and has a management plan addressing exotic weeds. Some of the agencies have very active weed management programs with active participation by key community members.
- 4) Wisdom still relies on ranching and timber as top industries with a contribution from tourism.
- 5) I lived in Wisdom for the summer as a Forest Service Cooperative student, so

both proximity and familiarity were beneficial.

Wisdom and Jackson are about 75 miles south west of Butte with Idaho near to the west, and the Bitterroot National Forest to the north, and considerably smaller than Metaline, Metaline Falls, Ione and Tiger. It is located on the Big Hole River, near the Continental Divide, and in Beaverhead County. They are still resource dependent with mostly ranching and some logging as mentioned above. Tourism also contributes to the economy with the Big Hole National Battlefield, Continental Divide trail, Anaconda-Pintler Wilderness, parts of the Lewis and Clark journey. Also contributing are hunting, fishing, and snowmobiling as the dominant winter sport. The town limits themselves are very small with a few businesses in each. These communities appear to have more communication with the Forest Service on exotic weed issues than in the Washington areas. Their most significant weed invasions include Canada thistle (*Cirsium arvense*), spotted knapweed (*Centaurea maculosa*) and leafy spurge (*Euphorbia esula*), with new exotics creeping in every year despite the diligent efforts of a few agency employees and community members.

Sampling

The sampling goal of this study is to capture the broad spectrum or range of viewpoints within the population. Identifying the opinions of people in the communities was accomplished by selecting as diverse a sample as possible or by purposive sampling. With this approach, populations are represented by capturing the range of diversity in representative types comprising the population. This permits the use of a smaller sample size allowing a more in-depth analysis of the individuals that are selected. I am more

interested in the respondents' value systems and meanings attached to weed management, and relationships with the land management agencies, which require thorough and in-depth interviews.

The phrase “representative types” is meant to imply two concepts. First, it refers to the idea that the characterization of beliefs and experiences represents a detailed understanding of actual individuals rather than an aggregate characterization of some nonexistent average individual (Patterson and Williams 2001). Second, it is used to emphasize the idea that the data “represent” types of belief systems, which comprises the underlying population.

Determining the sample size for a study of this nature requires three factors (Patterson and Williams 2001). First, the sample needs to be large enough to capture the range of diversity within the population. Second, the sample needs to be large enough to provide insight into commonalities within the population, to provide insights into differences within the population, and to offer the possibility of seeing patterns that might be associated with the differences in perceptions. The third factor deals more with the maximum rather than minimum suitable sample size and its explanation requires a brief overview of the nature of the database in the study discussed below.

Analysis of the interviews entailed a process in which I repeatedly read and coded interviews. With this approach to analysis, at some point the amount of data becomes so cognitively overwhelming that it exceeds the researcher's ability to identify and grasp new patterns within and across interviews (Patterson and Williams 2001). Therefore, the sample size should not exceed the researcher's cognitive capacity in this regard. Based on similar studies and the type of questions being asked, a sample size of 24 was large

enough to provide significant insight into the research questions being asked, but would still fall within my capacity to conduct, analyze and present a detailed analysis.

I selected ranchers, loggers, land management employees, business owners, retirees from inside and outside the areas, a college student, an outfitter, schoolteachers, a health care worker, and an electrician. I identified this diverse group of people because of their possible opposing viewpoints on exotic weeds, but I also recognized that this does not cover all viewpoints or groups within the communities. This study will help in obtaining a foundation of understanding and perspectives from community members on weed management in their areas.

Interviews were arranged with specific individuals selected on the basis of these sampling criteria. However, I must mention that one selected individual was not willing to be interviewed. She said she knew nothing about weeds, they did not concern her, and mentioned others more knowledgeable on the subject in her opinion. Another selection had to cancel due to a family emergency.

The Interview

Interviewer role

The interview is conceived as a “directed conversation” (Charmaz 1991 in Patterson and Williams 2001). Under this model, the interview structure is variable to accommodate the way a respondent understands, structures, and communicates about the phenomena. The role of the researcher is to lead the respondents to discuss certain themes without directing them to express certain meanings (Kvale 1983 in Patterson and Williams 2001) allowing for adaptability to the way the respondent thinks and communicates while at the same time remaining systematic and focused long enough to

cover relevant and comparable (across interviews) information (Patterson and Williams 2001).

In practice, interviewers seek to achieve this end by developing an interview guide that consists of a list of the research themes to be explored as well as multiple lead-in questions that could serve to initiate a discussion about those themes (see Appendix A). Themes are pursued when relevant during the emergent course of the interview. The list of questions is seen as a guide due to the necessary use of follow-up probes that emerge in response to the on-going conversation. Therefore, there are two parts to this process: the interview guide and probing.

Probes

Probes (specifying questions) are designed in an open-ended fashion beginning with words such as what, how, when, where, or who. This causes the respondent to answer with an explanation, requires discourse, and cannot be answered with a simple yes or no (Cormier 1985). I also used closed-ended probes (direct questions) to get particular bits of information. These questions or probes begin with words such as are, do, can, did, and require a very short response. Follow-up questions were necessary to extend answers, and also to provide the chance to reframe the answers to insure complete understanding of the informant. The ideal interview is to a large extent interpreted throughout the interview (Kvale 1996). This insures that certain topics are covered and that the respondent feels confident that the interview is going in the right direction.

Following the interview guide approach, each interview has a unique structure. However, because the interview guide ensures that equivalent or comparable information is explored across interviews and because individual-level analysis serves as the

foundation for all subsequent across individual analyses, this variation across interviews is acceptable and accommodated in the approach to analysis described below (Patterson and Williams 2001).

While conducting the Montana interviews I was also a Forest Service employee at the Wisdom Ranger Station, and was instructed by the district ranger to compose a letter for him to sign and send to respondents in mid-June explaining my project before the interviews took place (see Appendix B). This did not happen in Washington, as I was not working for the district there during the interviews. In both sites, I chose interview settings most comfortable and convenient to the informant for an in-depth discussion of the issues. Most often this was their home, but occasionally an interview took place at an office or restaurant.

Interviews occurred between 7-11-2000 and 1-12-2001, and were tape-recorded and transcribed lasting from 40 minutes to 2 hours in length with the average being an hour and a half. Ethical guidelines included informed consent and confidentiality. I obtained voluntary participation and explained that the respondent could withdraw from the interview at any time. Informed consent involves explaining the study, and the possible risks and benefits of participating to the respondent.

Data Analysis

The data analysis process is based on a rigorous and prolonged exploration of parts of a given interview in relation to the whole interview (and set of interviews). Under this approach, individual words, specific phrasing, and sometimes even a tone of voice may become highly significant. Both the transcriptions and original tapes serve as the empirical basis for data analysis.

Data analysis centers on the development of an organizing system to identify predominant themes through which interviews can be meaningfully organized, interpreted and presented (Tesch 1990 in Patterson and Williams 2001). This system is basically organized along the way while analyzing the interviews as they are transcribed, and showing the inter-relationships among the various themes. The process of developing an organizing system is the “analysis” while the final organizing system is the product of the analysis (Patterson et al. 1998). Looking at the relationships, contradictions, and commonalities among the themes promotes a holistic analysis as opposed to a reductionistic/multivariate view as in a “content analysis” project developing a system of categories into which data are coded.

To develop my organizing system I used qualitative analysis software to efficiently facilitate the analysis in indexing, coding, and retrieving textual units described here:

- Approximately fifty-two hours of taped interviews were professionally transcribed and then proofed.
- I imported all 24 transcribed interviews into the QSR NUD*IST 4 program to reference specific units of text.
- I read each interview in its entirety one or more times depending on my familiarity with the interview. This reading provides an initial understanding of the interview content necessary to begin coding.
- I began identifying and coding meaning units within the transcripts. Meaning units are segments of the interview that are comprehensible on their own.
- After getting a feeling for the nature of the meaning units, I began to develop thematic labels under which the individual meaning units could be grouped. Meaning units were often coded into more than one thematic label.
- Then a subsequent phase of a nomothetic analysis (across individual interviews) was conducted. This allowed for a rigorous analysis process that entailed continual re-reading of the interviews during the course of analysis.
- A thematic framework or chart was then developed to link all interviews and their

themes. Developing a visual aid that helps organize the themes and their inter-relationships in the early stages was useful as a part of the process of analysis, rather than an attempt to communicate the product of analysis.

- Lastly, I developed a written discussion of the interpretation that incorporates the empirical evidence (interview quotes) that serves as the justification for the interpretation illustrated in the results chapter.

Chapter 4 - Results

Overview of Results

The goal of this study is to determine the social dimensions that influence how members of the public and land managers interpret and communicate about the issue of exotic weeds in relation to forest and land management. Because of the length and the richness of the interviews, this information and a good deal more was revealed in the data. The freedom of the interviewing technique allowed respondents to not only discuss weed issues and concerns, but also a variety of natural resource management topics such as water quality and quantity, range allotments, timber harvesting, mining, motorized access, road-less areas, wilderness, and wildlife, just to name a few.

I identified these seven major themes revealed through the analysis:

- **Relationships**
- Identity
- **Weeds**
- Outsider Influence
- Land Agency Role
- Knowledge Valued
- Wilderness

All of these themes have many sub-themes organizing the specifics and subtleties of the data from the in-depth interviews (see Appendix C). This thesis focuses only on the relationship and weeds themes. The decision to present only two of the themes was based on two reasons: (1) Opinions on weed issues or other natural resource concerns were often associated with the relationships between the communities and agencies. These relationships are closely linked to the personal identities of the respondents, which can determine their involvement and communication on weed and other types of management. Discussions about relations with the Forest Service evoked the most emotion and sometimes angst among respondents, and (2) I decided to deeply explore these two themes, rather than explore all the themes mentioned above less comprehensively.

Interview Respondents

The 24 respondent units were chosen for diversity and were assured of confidentiality. For this reason they were categorized, vaguely at times, by their profession or position in life without gender identity, although gender was sought as a diversity criterion in the purposive sampling methods and the study included 18 males and 12 females. Most of the respondents expressed indifference to anonymity, and others said they would actually prefer their opinions to be heard. Table 4.1 (Appendix D) illustrates the diversity and position of the respondents in this study.

Quotations from interviews are used to demonstrate each concept related to the dominant themes. The exact language is presented single-spaced, in italicized quotations, and additional words or sentences are provided in brackets to clarify or expand certain excerpts. Quotations below are spaced within the text according to their position within

the interview as continuous text, or with spaces in between signifying several distinct passages from the transcription.

Thematic Framework

A good relationship between agencies and surrounding communities is the basis for successful public participation and cooperation with natural resource management projects on public land. In this particular study, the connection between the Forest Service and the community members was the most heavily referenced and discussed relationship among agencies and communities. This relationship between the Forest Service and surrounding communities, or lack thereof, has prevented improved public involvement on exotic weed projects, and often times involvement with other resource issues. Interestingly, respondents in this study make a distinction between their relationships with the agency versus their relationship with individuals within the agency, as will be discussed throughout the relationship section and illustrated in Table 4.1a (Appendix D).

Results I: Relationship between the Forest Service and Community

Based on the respondents' characterization of the relationship between the Forest Service and the community members, 13 out of the 24 respondents clearly fell into one of three groups: (1) those who view the relationship as completely negative, (2) those with a mixed view seeing negative and positive aspects, and (3) those who characterize the relationships as completely positive. Six respondents were finally placed in the negative group, 13 in the negative and positive group, and 5 in the positive group.

Six respondents had different viewpoints regarding individual Forest Service employees versus the agency as a whole, and are identified in Table 4.1a and within the discussion. Four of these respondents moved from a negative and positive view of the agency to a positive view of the individual employees except for two: one went from a negative/positive view of the agency to a negative view of the individuals, and the other from a negative view of the agency to a negative/positive view of the individuals. The rest of the 18 respondents held the same opinion on both the Forest Service and the individual employees, or only commented on one or the other throughout the interview.

In the discussion below, an organizing system characterizing the respondents' perceptions about their relationship with the agency was developed for each group. Looking at perceptions within groups is necessary for both descriptive and pragmatic reasons. First, people within the different groups expressed different ideas regarding the relationships. Using three different organizing systems better captures the diversity of views that exists within the communities and provides for more insight into the complexities of the relationships. Second, from a pragmatic standpoint, separating individuals according to this typology will help managers better communicate with the community members by providing a better understanding of differences in perspectives within the community.

Respondents with Predominantly Negative Perceptions

Natural resource conflict in these communities prevents management from proceeding, potentially resulting in degradation of the area's natural resources as well as fostering uncertainty, leading to declining morale in the agencies and lack of trust among and between users and managers (Moore and Lee 1999). It seems essential that those

involved make the time to allow honesty, benevolence, and reciprocity to develop (Moore 1995). These developments occur within an environment that is perceived as “fair” by the participants, and this can be the environment where people can hear and be heard.

Figure 4.1 organizes the perceptions of the relationship between the Forest Service and the community members held by individuals who are classified in the negative group (n=6). In the interviews with these individuals, three major themes about the relationship were evident. The first theme is the actual description of the nature of the relationship. Underlying perceptions about the relationship are a lack of trust and credibility, which is discussed in the second theme. The third theme explores both consequences and causes of the lack of trust and ultimately the negative perception of the relationships.

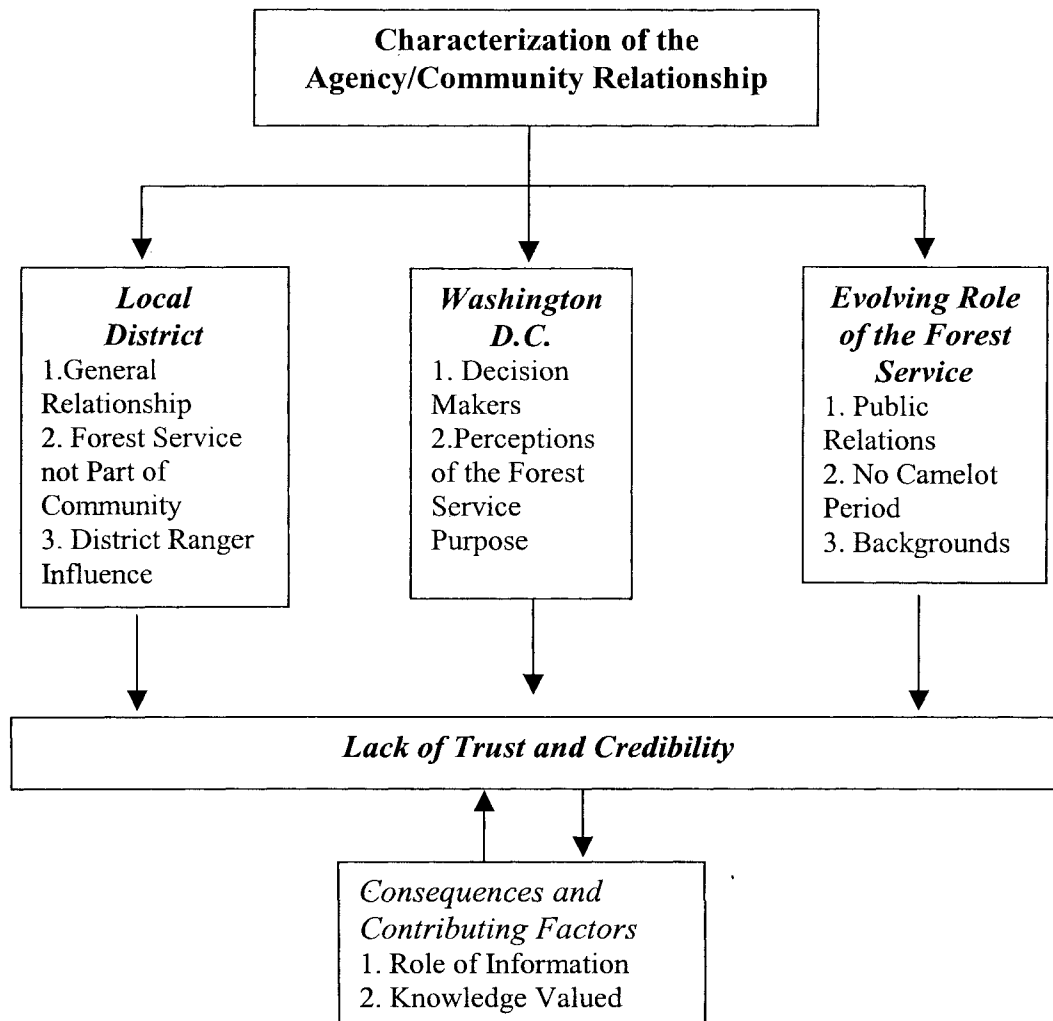


Figure 4.1 – Themes depicting the nature of the relationship between the Forest Service and the community as depicted in the interviews of respondents in the “predominantly negative” category.

Characterization of the Agency/Community Relationship

This theme characterizes these respondents’ perceptions of the relationship between the community and the agency. Within this group, the respondents thought of the agency in three distinct ways: as the local district, as the “Washington” office, and in terms of the distinction between the Forest Service of old and what has evolved to become the “new”

Forest Service. The respondents' perceptions of the relationships with the agency in terms of these three perspectives are presented below.

Local District

This section describes these respondents' perceptions of the relationship between the local Forest Service ranger district and the surrounding communities. The district level is where ranchers, loggers, and other community members coordinate necessary extraction or recreational permits, as well as other forest needs. The sub-themes below cover comments about the relationship in general, how the Forest Service fits into the community and the district ranger's influence on the social atmosphere of the area.

General Relationship

These general comments illustrate a negative perception of the relationships by the respondents. The respondents in this group characterize the relationship between the district and the community as very poor to nonexistent. Further, as indicated in the second excerpt below, respondents in this category often indicate they do not even wish to try and discuss problems with the district office.

Washington logger – [the relationship] *Very poor.*

Washington logger/mill owner - *So basically speaking, the relationship between the Forest Service and the locals is it doesn't exist. There is no relationship. I'll be very blunt and very truthful. I will not go to the Forest Service to be lied to and be pacified so therefore I stay away from the Forest Service.*

One of the Forest Service employees acknowledges this poor relationship. In fact, only half jokingly, this employee holds it up and uses it as an example as to when the job is done right expressing a dedication to the resources above all else within the interview. The next employee simply does not communicate well with a person disagreeing with Forest Service policy.

Montana Forest Service Employee 1 - *Everybody always hates us. By definition of when we're doing the right job, it's always been when we have everybody mad at us.*

Washington retired Forest Service and spouse - *I think it [the job as a Forest Service employee] did have a certain amount of...the people that I communicate with that if they feel strongly against what the Forest Service does and they state their mind and I don't agree with them, I usually don't communicate with them very much or hang around them much. If they're open minded, it's not too bad, but you don't find too many people that's open minded about subjects the Forest Service does. They're either one way or the other, quite closed.*

Forest Service Not Part of Community

Respondents gave example after example of how the Forest Service does not fit into the community as though they are a separate entity. Both Forest Service employees and community members among respondents in this category feel that Forest Service employees are not accepted into the community. As the discussion between the retired Forest Service employee and spouse below illustrates, this inhibits the ability of the Forest Service to understand the public. The retired employee feels there is no opportunity to interact with the public in the way the spouse suggests because the community will not accept them.

Washington retired Forest Service and spouse – Spouse - *I think probably the best way for someone in the Forest Service or any organization to know what the public is saying is to be a part of the public and just listen to what people are saying.*

Employee - *Dear, you go down there and talk to them people and they know who's worked for the Forest Service and who don't, you cannot be part of them.*

Spouse - *I guess that's right, but that would be the best way is if you could get people to just listen to people what's being said around in the community, what their fears are, a lot of what rules what people do is just a fear.*

Employee - *I mean, I never felt that I was one of the public; I still don't feel I'm one of the public when it comes to forest issues. It's hard to get yourself away from something that you done for 29 years. It's really hard to change your way of thinking or even stand off from it, you still feel like you're right in it.*

The Washington logger/mill owner below suggests that even children of Forest Service employees carry a stigma in the community, which supports this separate entity perception well.

***Washington logger/mill owner** - The kids go to school, and the Forest Service employees' kids go to school and there's a stigma attached to being a Forest Service kid in school.*

The next three respondents work or have worked for the Forest Service and discuss the conflicts with family and friends because of their agency affiliation. As the excerpt from the Montana Forest Service employee below illustrates, even Forest Service employees from the local area are subject to this tension within their own families. This first respondent was born and raised in the community with a background in ranching, and feels more broad-minded on certain issues after working for the Forest Service, but possibly less connected to the community because of it.

***Montana Forest Service employee 2**- Oh, I catch a lot of flack a lot of times, but I mean I have my own personal views too. I don't always agree with a lot of the things that the Forest Service does, but, on the other hand, it's been an eye opening experience for me. I'm a lot more broad-minded, I think, than I used to be. Because I don't think you really understand something until you've walked a mile in both sets of shoes. No, there's been a time or two that I've had to try to explain something and why things have to be done a certain way. No, there's been times I've had to go tooth and nail. I have to argue with my spouse about things and I've had to argue with my dad about things.*

This next Montana Forest Service employee feels people have changed becoming more polarized and impatient, causing more conflict in current agency and community relationships.

***Montana Forest Service employee 1**- People are just more intense about things, less patient, more polarized. That's what's changed. We don't get invited to barbecues like we used to.*

In the interview, this employee above also discussed a 1970's study with stop signs in suburban Boston, in 1979 70% of the people either rolled to or made a complete stop, and in 1999 only 3% of the people in the study came to a stop of any kind. This story was intended to illustrate how people are less patient and "more angry" contributing to a polarized atmosphere.

This same Forest Service employee below describes the social reality of being a decision-maker for the local resources, and the social exclusion a position like that may involve causing a further breakdown in agency and community relations.

Montana Forest Service employee 1 - I'll worry about the people that are important in my life. That really hasn't changed for us, but I'll give you an example, casual acquaintance type thing, [a grazing permittee association] always held an annual barbecue/picnic, I'm trying to remember, I think it's in August sometime, somewhere in haying season, the end of the first cutting or something, we always used to get invited to that. Not anymore. And it's because we've cut the grazing due to environmental issues with grazing, reduced allotments and numbers of cows. Things are just more confrontational, mostly only livestock management but some other things like travel management. Other permittees, they'd have barn dances or barbecues or something like that. We used to be invited to those and we don't get invited anymore. So in a small community like this, there's a definite distance now that's set up and created a wall between Forest Service employees and locals than there used to be. But that hasn't really affected our socializing in the valley because the people that we're friends with, we're still friends with. We get all the social interaction that I value. If certain people turned on us... like there's a few ranchers we're friends with, they invite us to summer events and receptions and things like that. It's the casual stuff we enjoy with the people that we have an established relationship with.

This logger below believes the tendency of Forest Service employees to pursue a career moving from forest to forest, gaining experience and not putting down roots contributes to these agency/community relationship problems.

Washington logger - There's other Forest Service people, you know, that have put down roots here. And as part of the system generally they have to make a transfer to climb the ladder. So, you know, a lot of it is personality too. Some managers, you know, people in management positions here that commute from Colville. They're looking for a job in the S.O. [supervisors office] probably. That's my take

on it anyway. They don't want to buy into this community when they really don't want to be here. They want to be somewhere where they can move up.

Lack of trust on local use of the land can be mutual as illustrated by this Forest Service employee. This respondent simply does not trust local residents to abide by the law or protect the natural areas. Although ideas of why this is so are fully sought and contemplated by this respondent, there is still a lack of trust between the employee and the community members.

***Montana Forest Service employee 1** - That is a lot of it is that they feel that what they do because they're locals and because they have this sense of personal ownership of this land, and even the ones that move in here, even the ones that have been here less time than me, thirteen years here isn't enough to qualify as a permanent resident, but even the people that pal around with the locals, the lifetime residents of the valley, they feel like they get honorary lifetime membership or whatever and they adopt the same feelings of ownership, this is my land, I should be able to do what I want, indulge every whim I want out there. If I want to take a jeep to the top of the mountain I can do it because I want to do it and nobody can tell me...part of it is just that sense of not wanting to be told what to do, not wanting to be regulated because that isn't in their...a lot of it is not in their recent experience. Some of these memories are generational, they go back, we've got a lot of families living here that have been around for several generations so it's not just their personal memory, it's, well, my granddad used to...and so that passes on to me. He used to go log wherever he wanted to log, nobody told him what to do, grazed cows wherever he wanted to graze cows so I should be able to do that too. So the memory goes back several generations. From that comes that attitude that you're talking about is that it's my right to do this whereas the rest of us, I think, ...see where that leads if everyone has that attitude then we'd end up with a bunch of trash out there because it's totally unregulated and people are doing whatever they want to do. So you have to have some regulations, some controls. We accept that whereas many of these folks don't because to a great extent they haven't had to live with it until recently. We get that all the time, travel management brings that out a lot is that, "Just don't let anyone else in here." "We should be able to take our ATV's up this trail." I said, "Well, if you can take your ATV up there, what about the thousand visitors we're going to get from Minnesota and now want to go up to these Alpine cirque basins." "No, no. Don't tell them it's there. Don't mark it for them. We should just be able to get up there." It doesn't work that way, guys. This is not the way it works. This is federal land and we have to manage it for all the public, not just the local public.*

District Ranger Influence

With the local ranger district comes the influence of the presiding ranger of the district setting the social mood in small communities where everyone knows everyone else, and the ranger's decisions or interpretations of policy may affect livelihoods. The general trend for district rangers to move ahead professionally is to work on different forests for experience maybe eventually hoping for a forest supervisor position. This is another example of the Forest Service not fitting into the community as mentioned above. The following respondent, as well as others, feel this career development process causes a lack of ties to the community. This causes tensions with the public in part because "short term" rangers make policy decisions that have significant long-term consequences for the people that do stay.

Washington logger - And one thing that bothers me, he [district ranger] has no tie to this community. Came in and he's looking all around to buy property. Has owned a house in Wenatchee and sold that, we're gonna settle here and raise his daughters here. He's looked at every house that's ever been for sale here, and it's not right and he doesn't want to build, ya know and that bothers me. The person they have, there's no tie, no commitment to the community. They're involved, you know, in all these civic organizations and all that, and that's great. But there's no real commitment. My whole life is invested here, so a policy change, environmental or whatever, in the forest or private land, that affects me directly. But this man that has some clout and some say in policy, if this community dies, it really doesn't affect him. He's probably gonna move on. And that kind of bothers me about that individual.

An interesting point made by the same respondent illustrates that in some cases individual rangers can be evaluated separately as people and thought of as friends even if they are considered less than perfect at the job.

Washington logger - I'll say this about our current ranger. I like him. I know him personally. Goes to our church, nice family. But as a ranger--I like him as a human being, but as a ranger I don't like him. And I sympathize with [the district ranger]. I've seen him get cornered at a public function, school concert or somethin' and somebody will pin him to the wall and chew him for this or that. I

don't like that. Call him at work or write him a letter. When he's outside the work, if he's not representing the Forest Service, at the Chamber of Commerce or wherever, he's a private citizen. I don't like that.

The Washington logger is one of the 7 respondents mentioned above who held different views on the relationships between the Forest Service as an agency and the Forest Service employees as individuals. He is the only respondent in the negative perception group of the Forest Service as a whole who expressed positive views about actual individuals in the Forest Service.

This next logger has absolutely no relationship with the ranger, and likened the district's atmosphere to a "German jack boot" and that this "dictatorial" stance generates resentment within the community. The retiree also does not have a relationship with the ranger and does not see the relationship between the agency and the community improving as long as the ranger lacks what this respondent believes to be a receptive attitude.

Washington logger and mill owner - Jack Boot. *German Jack Boot. I see the same mentality, because [the district ranger] up here, I told him, I said I have three son-in-laws and so forth and so on and these guys they're not going to put up with being stopped by the Forest Service and the Game Department because they actually feel that the ground up here is as much theirs as anybody's, and they watch out for it. They're not going to decimate it, they're not going to hurt it, and they also understand that people that come up here and buy a little gas and a few groceries and that are welcome because they help the community out and this is it.*

Washington retiree 2 - *It's always difficult to put a finger on that. If you have a person [district ranger] that's in charge of the Forest Service in that certain area that's not receptive to anything that's said by the public, I don't know anything, if that's their attitude, then we can't improve it. If in the case of he goes to meetings, if he will be at this meeting, you would see that he's at least trying to get an ear of what's going on.*

The following employee is disappointed with recent district ranger applicants and views this type of position as a hassle not many Forest Service people want to deal with

anymore. This leads back to the earlier comment by this same respondent on the polarized nature of natural resource management. The agency worries about finding qualified employees to fill future ranger positions and to tackle these relationship problems.

Montana Forest Service employee 1 - There were about 12 applicants for the District Ranger job in Wise River recently most of them were under qualified. I learned that there were only 20 applicants for the District Ranger job that closed in mid-March in McCall, Idaho, many of those also under qualified. Those jobs, in past years, would get dozens of highly qualified applications. I think a lot of potential candidates just don't want the hassle that goes with the position these days.

Washington D.C. Control

As indicated in Figure 4.1, the respondents in this category discussed their relationship with the Forest Service not only in terms of the local district, but also in terms of the Washington office. The respondents blamed much of the change and conflict in forest policies on Forest Service employees in the Washington D.C. office. Decision-makers were referred to as “people back east” not understanding western forest and community needs, with differing perceptions of the Forest Service purpose.

Decision Makers

This theme reveals an overall distrust of decision-makers in Washington D.C. Two of the respondents make the point of pushing the blame of the current regulations and relations onto the Forest Service employees existing in Washington D.C. or back east instead of the local agency offices. This concept suggests that the local Forest Service employees are just doing what they are told and lack real decision-making power. And in many instances, Forest Service employees feel they must “pass the buck” to D.C. to avoid confrontations with locals.

This retiree clearly feels people back east or in Washington D.C. do not understand enough about the Ione and Metaline Falls areas to make sound management decisions.

Washington retiree 2 - Again, myself I think-I don't know very many people that have an opposite view but myself it seems like the Forest Service is against us, but all they're doing is implementing what was decided in Washington with the national Forest Service. Someone has come up with this plan, but again it's interpretation. I have never said myself as being some sort of anti-government type of guy, but I get here and all of a sudden they're starting to close off areas, and that's the reason I moved up here. I get a little skeptical of the Forest Service. I think I explained that what I thought the Park Service and the Forest Service, maybe those people back east just don't know this forest.

I've been going out, I'm finding that there are some concerns here on how and who back east manages us. I think it was explained one time that easterners think of national forests as they do their national parks, and they don't realize that a park is within some bounds, and the forest is really immense out here, and yet when they put the restrictions on the park, it seems to lap over to the Forest Service, to the different areas. And I think that's what's happening to us.

Interestingly, the following respondent feels public relations or agency attitude is mandated from Washington D.C. and that the local Forest Service employees' approach merely reflects those decisions.

Washington logger - I think as I just said, I think it's going to have to go way beyond the local level to improve at the local level. I think you're going to have to see a big change in management practices mandated from Washington D.C. or wherever. And then I think once that would happen and the local people could start to implement better public relations, roads or recreation or whatever, then I think it would improve. It's not an overnight thing by any means.

But anyway, just kind of all ties back to credibility. And there again, it's not the local people's [Forest Service] policies, but they bear the brunt.

Perceptions of the Forest Service Purpose

These two quotations delve into the federal level of control more so than the local Forest Service level by concentrating on wildlife issues. This illustrates another degree of distrust with the abilities of the Washington office, and questions their responsibilities in managing wildlife.

The following retiree does not trust the Forest Service to know past wildlife history or reintroduction necessities as illustrated in this caribou example, and questions whether we should be dealing with it all. The caribou, salmon, wolves, and grizzly decisions are all national mandates illustrating how Washington D.C. decisions direct local US Fish and Wildlife Service and Forest Service policy.

Washington retiree 2 - I'll tell you, we met some people here who are into the caribou issue up here, they're reintroducing caribou. It's not working. We're bringing species into an area that maybe never were here. The salmon were never in this river, and yet some of the affects are going to spill over onto this area, I think. But when we introduce wolves and species that maybe weren't there or for whatever reason have been eliminated, whether it be the rancher or whatever the reason, then we try to reintroduce them, I don't know, are we monkeying with it?

That's exactly my feeling on it is, then the Sheriff's wife, she said--and she asked him [Washington state senator Bob Morton] and I'm just going to repeat it. She said that why does it take 23,000 acres because that's basically what it comes down to, per grizzly to propagate whereas two teenagers in the back of a Volkswagen can. So we're looking at size versus space. Are the grizzlies even endangered?

This retired Forest Service employee has no doubts about what the purpose of the Forest Service should be: to manage the ground and not the animals on that ground. This respondent is also an advocate for more local control on many issues including wildlife maintained by the state and abolishment of the federal Fish and Wildlife Service.

Washington retired Forest Service and spouse - Well, tell you the truth, I don't think the Forest Service should be into raising animals. I think that ought to be a state job. I don't think the Forest Service should be into taking care of any kind of wildlife. Forest Service should only be concerned with maintaining a habitat and if they maintain a habitat, they shouldn't have a wildlife expert out there counting sheep. They should be maintaining habitat only and let the tail go with the hide. If that animal makes it, he makes it, if he don't make it, that's the way it is. I don't believe in their caribou management right now, the way they go about it, spending millions of dollars going out there whether the Forest Service has got the dollars or who, I think it's up to the state and Forest Service should not be in it. That's one of my bugaboos with them. I think they're way overboard on that. Maintain a habitat for grizzly bear, fine and dandy, but don't worry about how many grizzly bears are here.

Evolving Role of the Forest Service

As indicated in Figure 4.1, the respondents in this category discussed the concept of an “original Forest Service”, versus the evolving Forest Service role. This theme emerged mostly from three respondents discussing the way the Forest Service interacted with and treated the locals in the past, and how they managed the forests. They discussed specific practices that focused on recreation and timber operations, but with a much different social atmosphere. Also, the backgrounds of individual Forest Service employees may explain the differences in worldviews or opinions on natural resource management practices.

One cause of this difference in the role of the Forest Service and ultimately in local relationships are the significant changes the National Environmental Policy Act (NEPA) of 1969 made in daily agency operations. This act encouraged harmony between people and the environment, promoted prevention of environmental damage and an understanding of ecological systems, and established a Council on Environmental Quality. The days of giving a “green slip” to cut wood or a permit to graze cattle to anyone in need without any type of evaluation eventually came to an end, and the relationships in these areas suffered because of it as shown below. Respondents also spoke about how permanent Forest Service employees do not have time to get outside and learn the district, meet people, or pass the time of day anymore due to more paperwork caused by legislation like NEPA.

Public Relations

Respondents remember public relations from the past as being much different from what they are today. The retired Forest Service employee below describes a more

personal touch with fewer regulations in the past on local people and politics. District rangers had different philosophies concerning personal relations with local people back then, but trust still may have been an issue nevertheless as suggested in the very last line of the quote below.

Washington retired Forest Service and spouse - I think there was a certain amount of trust and belief when we had the original Forest Service when the ranger actually come out and met with the little stump farmer and give him a permit to go make posts and things like that, but when the ranger no longer had contact with the total general public and only goes to meetings, the mover and shaker meetings, I can't call it anything else and that's all I can think of, Lions Club and stuff like that, the ranger comes in and that's his bag, you know, to take care of the-to do the public relations by going to the people that are in the know for the county commissioners and all the people that meet which everybody's allowed to do but not everybody does, so the distrusting people don't go to that.

I think it [the atmosphere] changed somewhat back about the time they started making everybody get a green slip to cut posts, you know, or get a wood permit to cut wood. That's when things really got bad. Used to be able to-you could just go out there, drive up in the woods and find a Tamarack tree, fall it and cut it, make wood and come bring it in and that was a way of life. If you wanted to make a few posts, you seen a cedar tree that was dead or something you could just go out there and cut it and make posts. So it changed way back in the late '50's early '60's, the atmosphere changed quite a little then. But I don't know how much trust they had even before that to tell the truth, I don't know.

The loggers below discuss the original atmosphere of the Forest Service from more of a personal and community business angle. Business seemed easier to obtain on public land for local residents and the management emphasis was focused on timber harvest as well as grazing and mining with a utilitarian approach to forest management. Naturally, ranchers, loggers and miners would feel more support from an agency with the same goals unlike today with the Forest Service mission in a slow transformation to “ecosystem-based management”.

Washington logger/mill owner – We used to be able to get a green slip sale, which the Forest Service they had a prescription where if you found a bunch a blow down or trees that were dead or something, they could write out a green slip

and you could go harvest those. In other words, we kept the forest clean and there were a lot of small loggers and that and small mills around that lived here.

Here the same respondent talks about how the friendly impression of the Forest Service employees you met on the forest roads has transformed into more of a law enforcement atmosphere.

Washington logger/mill owner - *You'd always stop and pass the time of day and tell them where the fishing was or whatever, and might even ask them if they had an extra beer. Everybody was friendly. Everybody watched out for everybody. Now you go out and you'll run into [law enforcement officer 1] or [law enforcement officer 2] with their pickup with the red lights on it with a guns strapped to the side of it and they want to know what you're doing out there. That's how far its gone. It shouldn't be that way. Things should not be that way.*

Washington logger - *When I first started working in the woods, when I was still in high school, I feel it was much better. They were more willing to make the resources or whatever in the forest more accessible to users rather than less accessible. They would encourage--there used to be several older men around here, retired guys that would go out and make cedar posts or shake posts or whatever. And they would encourage that because it would help clean up some of these logging areas. There'd be long butts laying around. And then as time went on, it was just a shift where they discouraged it. Had to have a permit to haul cedar. No, I'm not going to sell any. I had a Forest Service guy tell me we'd rather burn it than let somebody steal it. Well, it's not right that it's being stolen, but it's not right to waste it, burn it up or just let it go to waste.*

No Camelot Period

One of the respondents in this category holds a different perception about the evolving role of the Forest Service. This Forest Service employee discusses the atmosphere from the past as just the opposite from the above respondents in that a harmonious relationship never existed, and the Forest Service has always been in the middle of the conflict.

Montana Forest Service employee 1 - *The relationship since I've been here and that's 13 years and from what I've heard from probably the previous ten years, it's always been testy. I don't think there's been any Camelot period in the relationship between the Forest Service and the local community here. There's always been a number of things that we had to do that folks didn't like. We had a big ole' ranchers coalition formed to oppose any additional timber sales from this*

district 15 years ago. That was highly divisive in the community pitting loggers against agriculturalists and, of course, Forest Service was caught in the middle.

That, in my 20 years in the Forest Service, that has been the characteristic view of about every area I've lived in, every community I've lived in. That's been the community's view of the Forest Service is it doesn't give them what they want regardless of whether the community is an environmental protectionist, preservationist slant or a commodity extraction slant, it's never enough. It's never right. And I'd say the difference between now and 20 years ago is maybe in the intensity of the feeling. Things are more polarized now along the same lines. People are more emotional now. People are more intense now about these same issues than they were a couple of decades ago and the timing. The heat in the kitchen is higher.

This employee has only worked for the Forest Service after NEPA and other pertinent Acts have been in place, which may be a possible explanation as to why this respondent's views of the past are different. Even though this employee has experienced many policy changes throughout 20 years as a Forest Service employee, locals dealing with the "old" Forest Service before NEPA probably see a more dramatic change in the agency, and are aggravated by that change. As this employee suggested earlier, locals have had generations of "remembering" frustrations passed down from perhaps parents and grandparents.

Backgrounds

It is important to note that Forest Service employee backgrounds have an impact on the relationships with local community members and how that employee interprets agency goals. As mentioned earlier, the evolving role of the Forest Service currently encourages employees to experience other forests during their careers unlike in the past. Many employees are not local to the area they live and work. Although the Forest Service is a federal agency, regional differences in management and people are vast, and employee transplants to another part of the country can mesh a variety of backgrounds contributing to management style conflicts. For example, the first respondent has always

lived in the Wisdom area, growing up with an agricultural background and recognizes the changes and influences Forest Service decisions have made on local livelihoods and even locally raised employees.

Montana Forest Service employee 2 - I have seen it through the years that as biased as I might be because I was raised in an agricultural-that's my family background, a lot of people who work in the Forest Service have been raised with different backgrounds and their personal prejudices come into play. So I don't think there's a place for that. Not when you're doing things that can affect the way that we manage our lands. I think that sometimes we get a little carried away too and forget that we're dealing with people and their livelihoods.

The following retired agency employee was born and raised in Washington and suggests the Forest Service and the community should work together breaking down the “big brother” image, but is not sure it can ever be possible and holds this negative view throughout the interview.

Washington retired Forest Service and Spouse - Individuals are different, individuals relate to different people and it's tough. First thing you got to do is break that barrier of the big brother looking down on you. Then individually you probably would have an easier time communicating with people. As long as you have this feeling that the Forest Service is "doing to us" for any reason or rhyme all the different things that the Forest Service has to contend with, blocking off the roads or stopping people from going out and doing different things. Until you get some community work in that overall thing, you're never going to have an individual that works for the Forest Service to be able to do much with individuals in the community because they're always at odds with the person that works with the Forest Service. I don't know how you'd ever do it.

This respondent from the east coast has an extensive formal education, and has expressed the idea of “loyalty to the land” a few times releasing a sense of loyalty to the Forest Service or to the public reflecting perhaps a different philosophy and background than the respondent above.

Montana Forest Service 1 - There is much that this agency does that I disagree with-big issue stuff-so I don't have a lot of loyalty to the agency-I give my loyalty to the land. But there are a lot of good people in the agency that feel the same

way-who fight the bonehead policies and decisions and who hang in there because they can make a meaningful difference on the ground.

Trust and Credibility

The problems in relations at the local level, from Washington D.C. decision-making, and the evolving role of the Forest Service discussed above create an environment that promotes and exacerbates lack of trust and credibility problems between the Forest Service and the community members. This lack of trust presents a multitude of problems from necessary public participation in projects to every day relationships with agency employees and community members to relationships among relatives. And, as the excerpts presented below indicate, the individuals in the negative perceptions group describe the relationship between the agency and the community as one filled with mistrust.

The retired Forest Service employee below says the overall rapport is negative and distrustful.

Washington retired Forest Service and Spouse - *The community is not-again, it's the type of community we have, but a very distrusting community towards authority and I don't think we have or the federal government has a very good rapport with the general public. They [the agency] have a certain amount [of rapport] with the commissioners, probably but I don't think the general public has a trust to them that it's in their best interest. I don't think they think the Forest Service is working in their best interest, no.*

The people that are really distrustful of authority don't go to those things [meetings or open houses]. So as a general rule, I don't think there's very much trust by the majority of people that I've talked to anyhow. I don't know why.

The Forest Service employee below worries about the credibility of Forest Service fire programs due to the Los Alamos, New Mexico incident in 2000 and the 1988 Yellowstone fires. Even though these were National Park Service incidents that were

mentioned, many community members in this area see all federal agencies as one, and include county agencies in some instances such as with weed management programs.

Montana Forest Service employee 1 - I don't know what's going to happen after this year with Los Alamos and the big fires here. '88 set us back. We were just starting to rebuild credibility in our prescribed fire program for whatever objectives and now the prescribed fire program objectives have been fuel reduction, forest health, diversity, reintroducing fire back into the landscape because it's a natural part of... After '88, that just shot us right out of the saddle. It was so controversial after that, people were so scared of it. Our own agency just backed off...after ten years, twelve years, we just started to really rebuild credibility in the program and comfort and people were selling the program again saying we have to start managing fire, we can't let these big fires burn at will when nature decides to let them burn, we've got to be proactive, blah, blah, blah and now Los Alamos...so I don't know what's going to happen. We'll see this winter, the fallout, we'll be talking about it, but I fully expect the same backlash reaction against the use of fire.

The logger below undoubtedly does not trust the Forest Service to make management decisions as indicated by the suggestion that the concept of environmental problems such as exotic weeds or water quality is merely created for scientific research grants and agency employee job security.

Washington logger – I think a lot of this stuff, these people creating a hub-bub or something, to create themselves a job. The weeds are a terrible problem or the water quality is just terrible. I think we need to study it. If I'm a biologist I'd like a grant, I'd like to study this. And I think that's a lot of it, environmental stuff is bureaucracy feeding the system. If we can identify a problem, we can hire more people to study it and deal with it, and that makes my job safer. I'm no longer maybe so close to the bottom of the list. If we hire some more people below me, I'm safer from the cutbacks. Congress gives out no money this year, we've got to lay off a bunch of people. If there's a bunch of people below me, I'm safer.

I'm not saying they're weirdos or anything like that, they do feel maybe--they do feel that it's a threat or whatever, but I guess I haven't been shown that some of these things are really a threat. I'm involved with a piece of property that has some environmental concerns. The water has become really highly alkaline, and it's picking up the natural occurring arsenic out of the soil and concentrating it and discharging it into the creek. When you're talking five parts per billion is the acceptable level and it's being concentrated to 500 parts per billion, that doesn't worry me. I drink that water, 500 parts per billion. The dilution, ya know I'm thinking the dilution is so great that you're getting one drop of arsenic for every

billion or 500 drops of arsenic per billion drops of clean water. That kind of stuff doesn't worry me. I guess it's kind of like the weeds or whatever. Okay, there is weeds, and they're spreading and going out where they didn't used to be. But how important is it? How big a threat is it?

Consequences and Contributing Factors

As indicated in figure 4.1 above, because of this lack of trust in the federal government making local decisions and changes in the Forest Service mission, information or knowledge about a particular project from the Forest Service is often times completely dismissed, which are the consequences of poor relationships between the agency and the communities.

Role of Information

This retired Forest Service employee below suggests that the community is predisposed to believe negative rumors about the agency whether they are true or not. In the current environment where relationships between the agency and community are poor and there is a lack of trust, rumors are never confirmed or questioned, or an employee is never believed even if they do speak the truth.

Washington retired Forest Service and spouse - *You know these people say that's the way they're going to do it, that's the way the Forest Service is. Blah, blah, blah, and they'll sit around and talk about the way the Forest Service done something whether they done it or not and that's the way the atmosphere is here. It used to be a little eating joint called Del's down here just across-and it was a hot bed of all these guys getting together and talking about how bad the Forest Service was. It got so I couldn't hardly go in there because I was part of the Forest Service, you know. No matter what kind of story they get to telling if it's even out of the realm of being right you can't convince them it's not because that's the way they perceive it and that's the way it is.*

The logger below acknowledges the responsibility of community members to confirm rumors or misinformation.

Washington logger - *And a lot of it, the bad feelings, is misinformation. You hear rumors. Like most of us we don't bother to go look or ask, is this right, did you*

really say this. People kind of take it and run with it and add to it. I had that happen to me. This gate showed up on the Forest Service road. And the people-- some locals just went nuts. I knew the whole story behind it, but they didn't want to hear that. The road through some national forest to a piece of private land. The private landowner had a permit on that road and he would hire me every year. The road was right in the bottom of a draw. Washed every year. Hunters go up there in the fall and cut ruts in the mud, and in the spring it would wash. Forest Service wouldn't let the landowner rebuild it up slope just a little bit, so he asked well if I've got to spend this money every year to maintain it, put a gate on it and keep people off of it, so they did. But see the people, the community, didn't know that part of the story, that that gate was requested. This was a road they had used and they were mad and they got it taken down.

The previous excerpts suggest that lack of trust and poor agency/community relationships may create problems for disseminating information needed to generate public understanding and support for management actions necessary to deal with cross-boundary problems such as weed management. At the same time poor or selective information dissemination may further engender a lack of trust as indicated in the following excerpt. This same logger perceives an incident as the Forest Service concealing something important for the safety of the community, thus increasing community perceptions about the agency's lack of credibility.

***Washington logger** - The current issue, at least in wildlife, is the caribou. That's a joke. That's a community joke. Bring in more caribou to feed the grizzlies, feed the cougars. And collar the cougars. [But they] Don't tell the neighborhood when the cougars are there. They called the ranger, called the ranger's wife and said keep the kids in the house, there's cougars. They didn't call the rest of the neighbors. Cougars ate the dog. In the daytime, the lady cornered the cougar, walked out and the cougar was in the garage, ate the dog and cat. A collared cougar that the caribou people were tracking. That didn't set well.*

Knowledge Valued

Even though a Forest Service employee may have formal training and experience, the community does not necessarily value that type of knowledge and this contributes to the level of distrust in the agency's abilities to manage public land. This respondent, who has

worked side-by-side with timber sales administrators, values local or experiential knowledge more so than formal or agency knowledge. He also suggests that centralization within the agency is another cause of mistrust in management.

Washington logger and mill owner - Because of the disease and now they've started to show up with fire and the only way to purge that disease is fire. That's the only solution is fire, but the problem is there's so much fuel the trees have not shed their limbs, which indicates that the tree is sick. And when that limb does not shed, the cambium grows out around it, and when you try and make lumber out of it, the knot falls out and you've got extremely low-grade board. So basically speaking, this dates way back to the Forest Service's inception; they didn't understand it then and they don't understand it now, that there's places that should be harvested and there are probably some places that shouldn't be harvested because some places just don't grow good timber. There's good growing ground and there's bad growing ground. That's something else that they don't take into account. They've tried to centralize everything and one tree fits all. Just like taking a fat lady and everybody else has got to wear her clothes. It doesn't work.

The [past district ranger] came up and wanted to see what was going on and I told him, I said we'll take a little walk. We took a little walk, there was red fir timber in there and some hemlock and some cedar that was picture perfect and I didn't want to saw it. It was something that should never have been touched. Anyway one thing led to another and [he] told me, you know, these employees that are under my supervision and that are going to hold you right to the letter of the law. He says probably it would be best to cut it. He said, I see where you're coming from, and he said most likely you should be managing the forest instead of the people that are. And he retired shortly after that. Since then we haven't had a forester for a supervisor.

This retired employee suggests it is the public that needs the knowledge and trust in the agency on topics such as timber harvesting. Although this respondent basically agrees with the other loggers interviewed on this particular timber issue and may not consider local loggers as part of the “general public” because of their extensive background on the subject.

Washington retired Forest Service and spouse - You cut them down and you look at that terrible mess [clear-cut] out there and then if you're real vocal you speak up against it, but you never hear anybody come back and say, "My God, that's a beautiful stand out there," and it's because they took it down and they replanted it

and it grew. That really bothers me that people are short minded about timber. Because we don't-you never-nothing is beautiful all the time. It don't matter what it is. Even we aren't. We fix up and go out and people look at us, but a lot of times when we're in our own house, we're not so pretty. So I think it's just kind of a thing that people are not educated and some people you couldn't educate them because they've got their mindset. They've already decided that was bad, that was terrible.

Respondents with Negative and Positive Perceptions

Figure 4.2 organizes the discussions of the perceptions of the relationship between the Forest Service and the community members by individuals who are classified in the negative and positive group (n=13). In the interviews with these individuals, two major themes about the relationship were evident. The first theme concerns descriptions of the general nature of the relationship by respondents in this group. The second theme illustrates specific relationship issues. It identifies those factors that contributed to positive perceptions about the agency/community relationship. These factors included specific individuals and certain management actions that met with respondents' approval. The figure also identifies factors that generated negative perceptions about the relationship. In some cases these factors mirrored those described in the predominantly negative section (evolving role, district ranger, trust and credibility). However two new factors emerged (role of the public in decision-making and access).

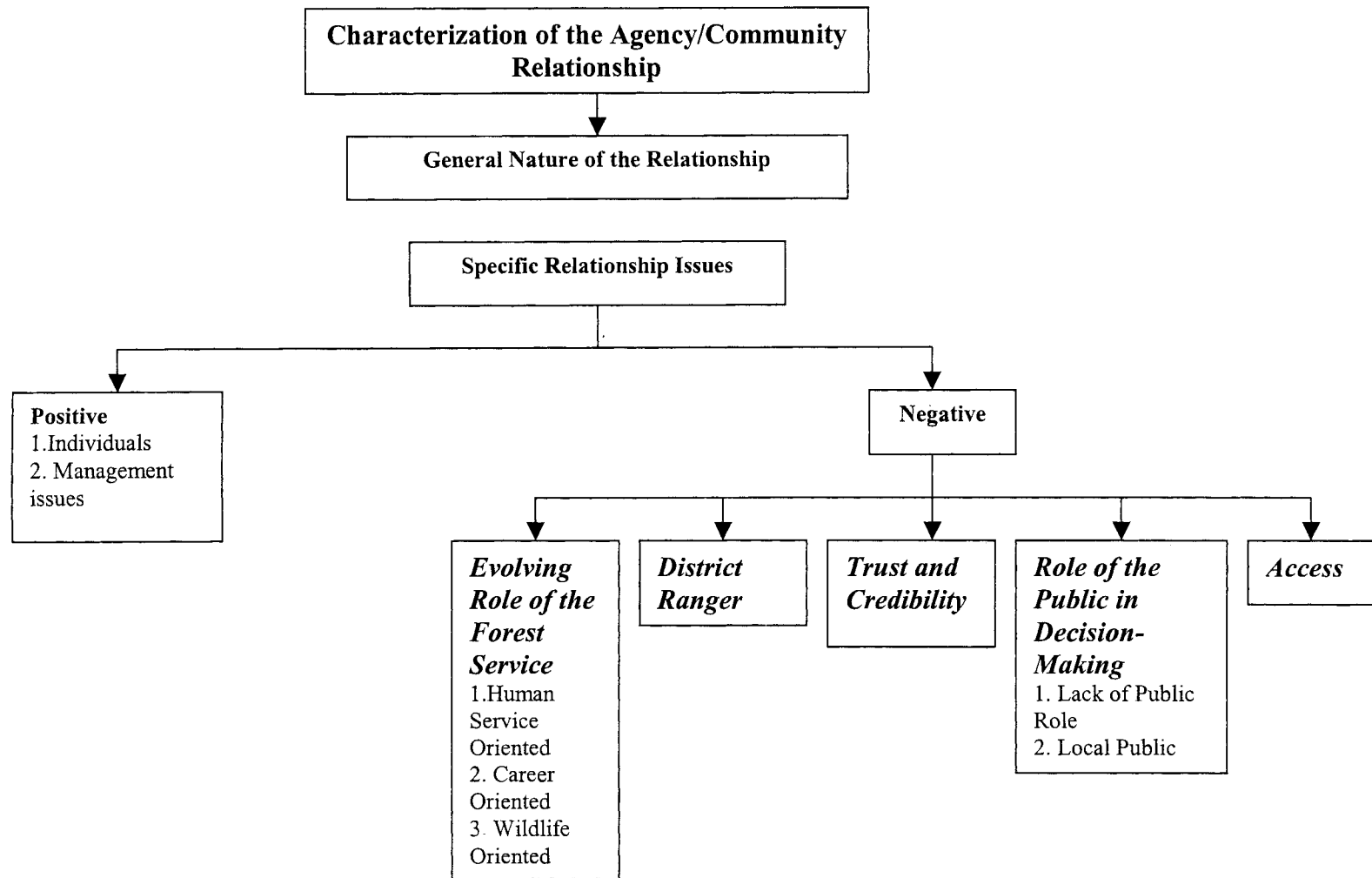


Figure 4.2 – Nature of the relationship between the Forest Service and the community as depicted in the interviews of respondents in the “negative and positive” category.

General Nature of the Relationship

The following comments provide a general or global view of the relationship between the Forest Service and the community as described by the respondents in the negative/positive group. Respondents in this category showed a range of perceptions about the agency/community relationship at the global level. Some felt there was really no relationship to speak of; others were indecisive, wavering between good and bad; some characterized it as positive overall, but that there were points of disagreement; and finally some noted that there was not a global characterization at all, but that some individuals in the community got along with the agency while others do not.

The loggers and health care worker below say there is not a relationship to discuss. Moreover, the loggers believe that local Forest Service employees are instructed by their superiors to disassociate themselves from the rest of the community. They also imply that should the employees go to the bars, they might be accepted as part of the community.

***Montana loggers** - The higher ups want nobody to be acquainted with the community. They are not interested in what we do and we're not interested in what they do. Why if they'd come into the bars and what not you'd have an opportunity to get to know them as people, not as just a-It ain't necessarily good, it ain't necessarily bad. There's just not one [relationship].*

***Washington health care worker** - I'm not really very aware of their presence most of the time. I have some friends that work for the Forest Service, but I haven't really talked to them about their work very much, so I would say it's pretty low key.*

The respondents below specifically discuss the relationship with the Forest Service and community as being good and bad. This small differentiation is included because the respondents actually sum up the relationship with this lack of decision.

***Montana businessperson 1** - Well, it depends. Sometimes it's a good relationship and a lot of times it's not a very good relationship.*

I mean, there's 15 guys up there training for fire but the Fire Department's never asked them to come down to our meetings or anything. I mean there could be more cooperation I believe with the community and the Forest Service.

Mt. Student - *As far as the Forest Service, it's not particularly bad, but it's not particularly good.*

I think they're doing a great job dealing with the people that they deal with. In all honesty, I expected the relationship between the landowners and the Forest Service to be much worse than it was, so I thought that was pretty positive.

These respondents below discuss a generally positive feeling for the overall relationship between the Forest Service and the community, even though their overall interview indicated they still have points of disagreement in other areas of resource management. These particular respondents almost show a bit of empathy for the agency.

Montana retiree 1 - *The Forest Service and in all the other associated agencies I think are doing an excellent job in this part of Montana. But I'm basically basing that on the Big Hole here. I haven't really been out in the forest down by Lima or anywhere outside the forest here, so I can't really say how well we're doing Beaverhead County wise. I get along good with the Forest Service.*

Washington electrician - *Well they have-not the same goal, maybe they do in the sense that they're wanting to protect the forest too, I think in their heart they really are wanting to do that. I guess I just don't agree to what extent or the route that maybe it's going. But I'm sure that in their mind what they're doing is the right thing, I'm sure in their mind they wouldn't, if they didn't agree with it, they wouldn't do that.*

The next two respondents feel that some individuals in the community get along with the agency, others do not, and some view it as a scale of perceptions in between negative and positive.

Washington - weed district employee – *Well, I think it's divided. I think there are those that have a lot of respect, they get along well even if they don't agree with the management things, but they recognize the people involved are people and they're good people. And then there are those that don't care, they're all government leeches as far as they're concerned. You couldn't do anything good ever And then there's kind of a scale in between.*

Montana retiree 1 - The Forest Service, it depends on who ya talk with. If you talk with some of the ranchers and some of them just totally despise the Forest Service, but they have to get along with them. They have to discuss their livelihood with them, and I don't know how you ever improve that inter-job relationships. I don't know.

Positive Perspectives on Specific Relationship Issues

As indicated in figure 4.2, the respondents in this category demonstrate a positive view of certain Forest Service employees and specific management actions. The six respondents below discuss individual employees in a positive light showing how one or more positive individual relationships with community members can make a difference in the overall view of the local office, hopefully becoming a start for improved relationships.

Individuals

As the respondents below indicate, it is possible for community members to disagree with specific individuals in the Forest Service and still feel they can work with them.

Washington ranchers - We've had some disagreement with what the [wildlife biologist] has been doing, but we still can stand and talk to each other and discuss things.

Montana loggers - You don't necessarily have to like somebody. You can respect them. If I could only have one thing from you, I'd rather have your respect than your likeness, and it's an individual thing with the Forest Service.

There were lots of this us and [past district ranger] didn't agree on, but we can go in and sit down and he had this thing which I felt he was wrong. When you build a logging road, he would not let you build it wide enough to be safe to bring a log truck over in the wintertime. And we didn't see eye to eye on that at all. He'd reasonably say build a road there, but like I said, he didn't like to build roads in the forest, and it was hard to get into, but we always sat down with him and we'd go out just like ever, we'd talk about it and pretty soon we'd come up with something that he could live with.

Montana student - I felt a little bit like we were wasting everyone's time, here's a couple of students just walking in, but I appreciated the fact that [the ranger] called all those people together and actually got them to meet with us at one time.

Because we were going to try and individually contact everybody, just meet them, to find out who they are and what they're doing and what they can do for us and what we can do for them.

The Forest Service employee discussed in this next quote was well liked by most of the community, but now works in another ranger district and his absence is well noted here. As the quote below indicates, when Forest Service employees are well liked, community members are likely to attribute enforcement of regulations they do not like to the Forest Service bureaucracy. In fact, as the second data excerpt below indicates, some individuals in the negative/positive group attributed their frustrations with the Forest Service to the 'bureaucracy', but had positive relationships with individuals at the district office level.

Montana businessperson 1 – [The timber sale administrator] *knows his stuff and..., about 90% of the ranchers in this country like [him]. I mean they know that he was the timber manager and, you know, he couldn't give them-there was restrictions on everything that had to be done. They understood it wasn't his fault because [he]-he just happens to be a guy that knows his job, and he agrees with some of this stuff with the ranchers and some of their concerns. He is, you know. He's one of the few people in the Forest Service that these ranchers and loggers around here can get along with. They do. They get along with him. And it's a sad, crying shame that he can't be here to set and laying out pole cutting and things like that.*

Montana ranchers - *No, it's not me and the people; it's me and the bureaucracy. I know a lot of them, not all of them probably, but a lot of those that are full-time, the Forest Service, they are lots of good people. I get along fine with them. I visit with them when they're not working, I go down and talk to them, call them on the phone and all that, but it's the system that stinks basically. There could be a lot of, I don't know where it all comes from, but there could sure be a lot of changes.*

Unlike the negative group who were not accepting of Forest Service employees as part of the community, this retiree does not consider agency affiliation relevant when forming friendships within the community.

Montana retiree 2 - The people that I know that work for the Forest Service that I'm friends with, it's their job. They get paid for it, and it doesn't change me being friends with them at all.

These loggers refer to many Forest Service employees from the past they enjoyed working with and eventually respected. Respect for these respondents is an important element for a person to possess. The data excerpts below also indicate both the negative consequences when individual relationships are strained and the beneficial consequences of positive relationships at the individual level.

Montana loggers - The only way we ever will [get into trouble with a timber sale administrator] is through some dumb mistake that we don't realize what or why. If the only reason we would was to get him in trouble. If we don't like him we will see to it that we will put all the rocks in the road that we can, and we can put a bunch in.

We had some good friends. Rhubarb's step dad out of Dillion.... We liked him, he was a hell of a nice guy. You can get a sale administrator, and like I say, we dealt with more of them, and the sale administrator that we liked, there is stuff that goes on up there every day. Basically he's up there once a week. We're up there five days a week. If we liked him and had a decent working relationship, we will make sure that there's nothing going to happen up there that's going to get him in trouble with the Forest Service.

Other portions of the interview indicated that unfortunately the loggers above do not have current examples of employees they like or respect. It appeared that this was due to differences in worldviews about forest management techniques as well as certain personality traits in current employees, which may reflect the theme of the evolving role of the Forest Service discussed in more detail in the negative perceptions group.

It's scary to start with was when the man really and truly knows what they are doing [being on a fire]. And like I say there's nobody left anymore that I'd have that much confidence in that knows that much about it [fire].

Below, they revisit the “original Forest Service” concept mentioned in the previous negative section by explaining their views of past rangers participating in social events at the bar, compromising on projects, and having a general professional trust.

***Montana loggers** - And we knew the ranger at Wise River for years, good friend.*

The ranger that was before him was one of the better rangers we had. We'd get out here and we'd have horse-shoe tournaments and we'd come in here and all of us would have a lot of fun, get about 2/3 shit-faced, have a lot of fun. He'd join right in with us and Joe would help us and any of us would do anything in the world we could for [him] to keep him out of those deals that happened. Unavoidably things happen, that's just the way it is. It's not anybody's fault. We would have went just as far as we could have to try to help [him].

This final respondent gives a clear example of the importance of Forest Service employees and community members working side by side as a basis for fostering positive relationships. The positive influence this employee had on this respondent was overwhelming. And the second excerpt indicates the importance of employees integrating into the larger community as a means of building positive relationships at the individual level.

***Washington electrician** - Yeah, yeah, I know that well [recreation manager] she stayed the weekend with us up there at Gypsy Meadows and she was out there pulling on that cross-cut saw with the rest of us. Seeing that was a good experience, that was a real positive for the Forest Service for a lot of people that have had some real negative attitudes. Um, having her up there on the weekend and you know, and it's just like you say, you get things explained to you from the other side of the fence. Not just when you go up there to talk to them in the District Office and you come against, you feel like you come against the brick wall. But when you're out there working side by side all day, around the campfire in the evening having dinner and you can discuss things and yeah, totally different. And she, she really I mean, a real positive for the Forest Service. Earned the respect of a huge group, I think that group has about 200 members, that particular chapter of the Back Country Horsemen. They were just happy that she was there and interested in the same thing we're in, like I say that weekend there was major PR for Forest Service, and more so than they probably can even realize if you tried to tell somebody that's sitting at the desk that's putting out the pamphlet that promotes the forest. Then, that, you've got a lot more people this weekend with that one gal up there digging in the ditches with us. Which you know, she obviously got the okay, but yet she's up there on the weekend like I say,*

working with everybody else. Talking around the fire, you know straightening me out on a lot of things. You know, why in the world are we doing this, or doing that? Well here's what, here's our side of it, here's what happens, you know? And then in that situation you finally go, okay. And that they've shown that they really are willing to work in the forest just like some are not willing to work in the forest, just behind a computer screen at a desk.

Actually, most of the people I get along real well with, they're active in the community, [recreation manager] and [AFMO], [wilderness manager], great guy, been in the community, done lots of good things. I like him a lot...

The following employee discusses the local Forest Service individuals as being the tie between the Washington office and the communities, or the personal face for the agency helping to build relationships.

Washington Forest Service employee - *And they can put a personal face on the Forest Service. Otherwise you are a faceless agency that has no heart that keeps throwing bureaucratic crap their way. If they know who the people are, then they can understand it. You know they may say, they are experienced or educated. They seriously are trying to do a good job to protect resources, to manage resources, and they're not just out there to make your life a living hell. To get in your way, to keep you from going hunting where you wanted to hunt or keep you from fishing where you want to fish.*

Management Issues

The respondents below acknowledge certain programs or Forest Service functions of which they approve, even though differences in policy opinion on other issues were the cause of many negative reactions by these same respondents about the relationship with the Forest Service and the community. Again, these are the respondents that Forest Service employees may have the best opportunity to collaborate with on various projects because of the respondents' tendency to recognize the positive aspects of the Forest Service rather than dwell exclusively on negative impressions. These next respondents discussed the handling of certain issues that pleased them. Overall, there does not appear to be a common theme about Forest Service activities that are perceived in a positive

light. In other words, when it comes to specific issues, which the public supports, perspectives are highly varied and individualized.

Motorized Use

Montana businessperson 1 - *Some of the things-the only thing I can think of right off hand that's positive about that Forest Service is they basically take the extreme environmentalists to task because they've said, we're still going to have snowmobiles, and 4wheelers, and some of the things we do in the forest.*

Exotic Weeds

Montana businessperson 1 - *But as far as the good goes, I think they do do some good with the weed spraying.*

Law Enforcement

Washington ranchers - *Well and they usually, the Forest Service is very good at warning people about things, they don't just go out there and start any heavy handedness, any rights that people feel are taken away are hard to swallow.*

Developed Recreation

Montana retiree 2 - *The Forest Service, they must control the campground, and I would say I guess they do a good job. Up here they made a place for horses to park and a place for horses to have a little tie stall. Cement and pipe. And a campground for people. Mussingbrod did that, Twin Lakes did not. Rock Island has an area you can park in but it's not designated and there is no campground. So I think they are trying. I realize everybody has a budget. You can only do so much at a time.*

Wildlife and Fisheries

Montana businessperson 2 - *Animal wise I think we're doing fine, I really do think the Forest Service has done a fine job, the Forest Service and the Fish & Game. I think we've improved our wildlife populations tremendously and made great strides. Fisheries, probably we're on the cusp right now of bringing back and doing better with them.*

Negative Perspectives on Specific Relationship Issues

Evolving Role of the Forest Service

The “original Forest Service” or evolving role of the Forest Service concept also surfaced in this section under the negative dimensions of the respondents’ comments in

that these respondents believe currently the Forest Service lacks certain desirable qualities they were perceived to have in the past. Discussions focused on how the public valued the relationships or public relations skills of the “past” Forest service, unlike now where respondents focused on opinions on policy differences as a reflection of current relations with the agency. As shown in Figure 4.2, respondents expressed the idea that the Forest Service is less human service oriented than they were in the past and are now concentrating efforts on wildlife concerns and needs in addition to (some respondents suggest in lieu of) human needs.

This first respondent mentions the days of rangers on horseback in the campgrounds as a kid, and a general feeling of being welcome in a national forest campground. The second respondent discusses the Forest Service bending the rules for the local residents, which is another emergent topic presented later in this section.

Human Service Oriented (Past)

Washington electrician - ...and maybe you remember this too as a kid, when you'd be standing in a Forest Service campground, seemed like in the evening sometime. Here would come a Forest Ranger around sometime, of course that was back when they did a lot of stuff with horses, or maybe I was just there with horses. The Forest Ranger comes around on a horse, which automatically gets about 20 kids around him you know, all the time because they're on a horse. And they're stopping and talking to different people. And now, you know, everything up here is all concessionaires and I mean you might as well, you get the feeling you might as well go stay in a KOA somewhere. It doesn't have that, it doesn't have a real feel of being out on the Forest Service. And here's the Forest Service personnel to come by to say, what can we do for you? Usually if you have any kind of a conversation with a Forest Service person, it's your car's parked in the wrong spot, or you don't get a lot of the positive inter-action like it seems like it used to, or the way I remembered anyway, as a kid. When these people came around, kind of walking through the campgrounds and that.

Washington ranchers - ... as I remember the forest rangers when we first come to the country, they were very helpful and very I guess, lenient on the rules. Maybe at that time there wasn't as many rules and regulations as there is today. But, there's been a big change from what it was 30 years ago and what it is today.

Montana loggers - Traditionally it used to be [violations overlooked for the locals], not any more. They bug people more and more and more all the time and they are causing more and more resentment.

Interestingly, the Forest Service employee below also feels the Forest Service of the past was different from the current organization, but this employee feels the change was an improvement based on the view that the Forest Service of the past was not necessarily working for the best interest of the forest health or environment, but the district ranger back then was too “ranger friendly.”

Washington Forest Service employee - I think back when there was just one ranger, maybe had somebody that worked for him, I think back then it was probably very positive because they were respected and they were there to help and ranger friendly. And I think then we went into a period where rather than trying to manage a resource and do things for the good of all resources, we tended to go more towards one specific, like timber. And I think we did climb in bed with the industry for quite a while, and that put us on the bad side of the environmental issues. And I think there were probably some things that were done by individuals that were less than ethical, that certainly damaged the credibility of the agency and the positions in the agency.

This county employee relates the original Forest Service concept to past rangers that knew their district territory intimately instead of spending the majority of their time in the office. Additionally, the excerpt indicates the importance some community members attribute to Forest Service employees having field skills required in forest management and related activities.

Washington - weed district employee - I think when it was the ranger's domain, I think the relationship was really good, when I first came...and I still see him. He's still around here in the community. He was a character, but old school. There were just certain things a ranger needed to know how to do, but it was deplorable that they no longer needed to know those things. They weren't out on the ground. A ranger needs to be intimate with the territory he's reigning over (laughing), because how else will he know. He can listen to his people and get really good information, but you know it on an intellectual level. And the ranger has to know it not only on an intellectual level, if he can depend on his people, but he also has to know it, or she, at a gut level and you can only get that by going out and being

on the ground. Not in a truck, but actually out on the ground. And [he] knew that. So to lose the relationship of packing a horse and tying the knots that you needed to know to run a pack train, was just implausible to him. How can you be a ranger and not know this stuff. Because how else are you going to get out there on the ground if you don't. He was a very wise man.

Career Oriented (Present)

The loggers below feel the Forest Service employees working today are only concerned with their careers and not with the health of the forest unlike past employees, which they say causes local resentment.

Montana loggers – logger 2 - My deal is that they don't even have a Forest Service anymore. It went from 15 or 20 years ago it was an excellent organization, and it's absolutely nothing now, absolutely nothing.

Fifteen or 20 years ago there was very conscientious people that worked for the forest. But there wouldn't be anything going on up there, irregardless of politics or whatever, that was the way it was because that was good for the forest.

Interviewer - And you don't think they are concerned about the forest now? Career, career first, first, last, always, only. We have a good friend over in Salmon, in the personnel department of the Salmon, and here's what he told us just after he retired where he could talk, on internet, televisions or computer stuff, 85% of the stuff that comes over the Forest Service computers has absolutely nothing to do with Forest Service business, absolutely nothing. It was his job to sort through and be sure that the messages and stuff go where they needed to go and he told me exactly how long it took him every morning to sort it out and get the, and I think he said out of 50 there would be 7 or 8 that absolutely had to get to where they was going. And papers coming up with bullshit trying to catch somebody's attention to further their career.

Wildlife Oriented (Present)

As in the negative relationship group presented earlier, respondents in the positive/negative relationship group hold perceptions about the Forest Service purpose that are different from what the purposes they see reflected in what the agency implements. A major point of contention on policy deals with wildlife management, specifically the amount of money spent on wildlife projects is hard for some to understand given their perceptions about more pressing human needs as indicated in the

comments below.

Washington electrician - Right, he's had some trouble, gosh. And resource management with I guess the deal with the caribou is probably, kind of a local issue, you wonder why all the money spent on something ...

But, I guess when you live in an area like this with the amount of unemployment that you have and all that stuff going on, you see the millions of dollars being spent on projects like that, it is hard to relate that that's going to be a benefit to your kids or anything else where you know the caribou are going up and down like they have when I first was, been riding around here. You know since '75, '76, we used to see caribou up in there, but so they were going back and forth then. So now do we just add to that amount that are going back and forth, you know?

The excerpts below indicate that the respondent's objections to wildlife management practices stem from not seeing any reasonable rationale for the restrictions (e.g., in the case of snowmobiling in the winter to protect elk grazing habitat), not buying the rationale (e.g., road restrictions for lynx), or perceiving restrictions as actually resulting in negative environmental consequences (e.g. the beaver/whirling disease example). Across the interview this respondent had a difficult time agreeing with many Forest Service actions related to the protection of an animal if that protection interfered with ranching, forest access, hunting, or other instrumental objectives.

Montana businessperson 1 - ...the thing that raw hides me is I don't think that the Forest should be making it so detrimental to the stockmen and the ranchers with horse permits and stuff to say that it takes up all of the graze that the elk are using and everything. And this part of the country where the cows are in the summer time, there's 25 feet of snow in the winter- time, the elk aren't there anyway. There's no graze to be used up. I mean, you know, you can't snowmobile in the winter and you can't do this or that. I mean there's 20 foot of snow in most places. We've measured. I mean, we've got guys that carry sticks and stuff that have dug down so they could touch the ground. It's like 23, 24 feet with marked trees. Came back in the spring and they knew where it was. The elk don't live there during that time of the year. They go down to the low country, in the sage flats and places like that. In the wintertime when the elk are wintering off of their natural feed, the cattlemen are feeding their cows hay anyway. Then the elk and the deer...I've seen in places in Colorado, where I'm from, elk and deer graze right with the hay, right with ranchers' cattle. And if anybody has a problem and

comments below.

Washington electrician - Right, he's had some trouble, gosh. And resource management with I guess the deal with the caribou is probably, kind of a local issue, you wonder why all the money spent on something ...

But, I guess when you live in an area like this with the amount of unemployment that you have and all that stuff going on, you see the millions of dollars being spent on projects like that, it is hard to relate that that's going to be a benefit to your kids or anything else where you know the caribou are going up and down like they have when I first was, been riding around here. You know since '75, '76, we used to see caribou up in there, but so they were going back and forth then. So now do we just add to that amount that are going back and forth, you know?

The excerpts below indicate that the respondent's objections to wildlife management practices stem from not seeing any reasonable rationale for the restrictions (e.g., in the case of snowmobiling in the winter to protect elk grazing habitat), not buying the rationale (e.g., road restrictions for lynx), or perceiving restrictions as actually resulting in negative environmental consequences (e.g. the beaver/whirling disease example). Across the interview this respondent had a difficult time agreeing with many Forest Service actions related to the protection of an animal if that protection interfered with ranching, forest access, hunting, or other instrumental objectives.

Montana businessperson 1 - ...the thing that raw hides me is I don't think that the Forest should be making it so detrimental to the stockmen and the ranchers with horse permits and stuff to say that it takes up all of the graze that the elk are using and everything. And this part of the country where the cows are in the summer time, there's 25 feet of snow in the winter- time, the elk aren't there anyway. There's no graze to be used up. I mean, you know, you can't snowmobile in the winter and you can't do this or that. I mean there's 20 foot of snow in most places. We've measured. I mean, we've got guys that carry sticks and stuff that have dug down so they could touch the ground. It's like 23, 24 feet with marked trees. Came back in the spring and they knew where it was. The elk don't live there during that time of the year. They go down to the low country, in the sage flats and places like that. In the wintertime when the elk are wintering off of their natural feed, the cattlemen are feeding their cows hay anyway. Then the elk and the deer...I've seen in places in Colorado, where I'm from, elk and deer graze right with the hay, right with ranchers' cattle. And if anybody has a problem and

even if that don't work, all they got to do is go down to Jackson, you see elk everyday grazing with cows, eating hay.

It's the same with the lynx study. They won't finish paving the road so that people can enjoy driving through this.. one of the more scenic parts of Montana, because of the lynx, well, I'm sorry, I don't believe that a paved road is going to stop the lynx from crossing if he feels like it. And the amount of traffic that's up there, I doubt if many of them get hit. You know. They ain't going to proliferate and... kind of stuff that is going to have an affect on whether the lynx are there or not, is the coyotes and I expect how many rabbits are left, and that's the lynx's main food. It gets into some type of a never-ending battle. People that don't know what the hell they're talking about trying to make it, run it for other people. Well, you know, you can take like whirling disease... okay? Years ago, when they had trappers that trapped beaver, and beaver was worth money because the dogooders weren't in power, we never had whirling disease in any of our creeks. But now where we have beaver and where they've transplanted beaver, and Montana's one of the few states that even tells people on private land how many beaver they can and cannot trap out. I mean, in most states beaver are a nuisance. But in Montana you can only take so many of them, even if you're on private land. Well, everywhere where beaver builds his dam, he slows the water down. Every time the water gets slowed down, it gets heated up tuber flex worms live in 50 to 86 or 76-degree water. Okay? So instead of having clear, swift flowing, cold streams, we've got clear, slower moving, warm streams. So, the tuber flex worms survive, trout eat the tuber flex worms and now we have whirling disease.

These respondents also reject the idea of restricting forest travel for the protection of an animal, and do not trust the Forest Service to make those kinds of decisions. The loggers below do not usually distinguish between agencies and basically combined the actions of the Forest Service, Park Service, and even county agencies in the area as “one” government.

Montana retiree 2 – *I don't know. They do some research on where the lynx travels and they spend money on that. Well, in my travels around here I have not seen very many lynx. I don't think there are very many here so I don't know why they're doing the studies on them. I think it's foolish. The same as moving the wolves from one place to another. Moved a bunch of them down to West Yellowstone and they came right back through here to go up to Canada. Marvin, down at Reservoir, got their tracks and pictures of them. Got someone's hand down there so they could see. They do do dumb things, or things in my opinion that are dumb.*

Montana loggers – *logger 2 -The wolves is going to take care of the big game, so there won't be any, as far as the big game season in Montana it will go to the wolves.*

Because of wolves. One thing they forgot is that wolves eat, we don't have the buffalo. That was their main source of meat. It ain't gonna work. There's going to be too much pressure on the deer and the elk. Now evidently there's virtually no moose calves in Yellowstone Park. They bragged about having 300 wolves in Yellowstone Park, but there were virtually no moose calves. Now they are having a million dollar study to find out why there are no moose calves. It don't take a rocket scientist to figure out what happened to the moose calves. The wolf got to eat, he's going to take the easiest picking there is. He's going to eat the best you can and the easiest you can. I'm going to do it, he's going to do it, they are going to do it. Everything that I've ever come in contact with is going to take the line of the least resistance to eat (table banging). That's it. That's the only way it is. And it's easier for that wolf to slip in there and grab that moose calf than it is to drag down a moose. An individual wolf can get a calf. It's going to take three or four of them to bring down a mature moose. And most likely one of them maybe gets hurt out of the deal, and you aren't going to take that chance if you don't have to. Or I wouldn't, I don't know about you (laughing).

District Ranger

Perceptions of the district ranger are separated from the other views on individual employees because the respondents indicate the importance of the ranger's presence in a community. A ranger is many times considered a representative or the "front man" for the agency presence in that local district. New employees to the area may mirror a ranger's social attitudes or other employees are held accountable for the ranger's actions. The quotes below illustrate this important distinction.

The next respondents discussed how important the relationship between the district Forest Service ranger and the rest of the community is. This theme is also seen in the first section with predominantly negative respondents.

This retiree is unsure whether district rangers really disclose the range of their decision-making power, and that they blame superiors in the regional office or Washington office for uncomfortable decisions at times.

Montana retiree 1 – [The district ranger] *should have more control up here than what he's got. Of course, maybe he tells you that he can't do anything because it*

comes down from up above and a lot of times it probably does, but a lot of times there's probably things that he could do too and manage a little more closely on the ground than what he does.

This electrician is clear on the general dislike for the ranger in the community to the point where negotiations might be pointless due to a lack of trust. What these locals perceive as a high turn over rate for district rangers is damaging to on-going projects and relationships, and many have given up on working with the Forest Service.

Washington electrician - *I think they could probably do a good deed for themselves right now if they changed the rangers in this district. ...So you know, and I suppose that's why rangers don't stay very long. I mean everybody local up here says, oh here comes another 2-year wonder. We get a ranger for 2 years, they come in and screw up on stuff and then leave again and we have to live here. That's the kind of the locals' attitude you know about how it works, and whether that really happens or not. But when you try and get something long term you know, with somebody where you're trying to deal with somebody to get an outfitters' permit or whatever, so you started dealing with a guy 7 years ago and then 2 years you know you think you're getting somewhere, well he's gone. Then you go up to discuss your problem again and the guy goes, well I don't know anything about this. So you start from square one again and go through the whole process and after a while you just go, oh I'm giving up so.*

Trust and Credibility

Once again, the idea of trust and credibility surfaced in this negative branch of Figure 4.2 as it did in the predominantly negative group. This respondent clearly does not feel the Forest Service was credible in particular past situations while enforcing certain regulations, or following the proper steps to do so.

Montana retiree 1 - *A prime example and I'll relate this back to the Rainbow Family gathering here most recently, they come out and published in the paper all the reasons on why they wanted the emergency road closures up there and they utilized a section of USC whatever it is to close these roads and they had the authority to do that, but I don't think, and I haven't really went down there and looked just because I figure it's over and done with, I won't do this and dig into it, I don't think they jumped through the hoops they were supposed to do what they did. So yes, I have a question in my mind, and I'm not believing why they did everything they did had to be done.*

But then again, I think the incident commander says, "do this, do this, do this, we can do this" without saying, "in order to do this you better do this first." I think they probably skipped a couple steps in there, but albeit for me to throw stones. No, I like to throw stones. Actually, I have to stir the pot up once in awhile (laughing). They utilize elk-calving grounds or wildlife habitat during that, but that wasn't on the original list of why they wanted to close that, but in the papers that was a big concern of theirs. Well, the chain of paperwork that I saw and have copies of that started at the bottom level, ok, here's the letter that we've got to start this ball rolling didn't say a word about wildlife habitat and elk-calving grounds. And then when it got to the newspaper, "yes, we're closing this road because of this," that was one of the prime reasons they had it closed.

Believability, credibility I think is the big issue of what's going to improve their image with the population.

This respondent prefers to believe rumors instead of the Forest Service, as with many other respondents in this project. I researched quite a few of the rumors while in the areas and found they were just that, rumors. Believing the worst-case scenario may be the nature of gossip. But if the reputation and relationship are poor at the start, there is less faith in the "facts" that a group or agency in question may provide.

Washington electrician - *This year, and I don't know for sure, but where they sprayed this year out of that Gypsy Meadows area, there are roads that are actually permanent closures. But they open them up, took the guards off the whatever off the gate and filled in the kelly dip and let the guy back in to spray. And I don't have any proof of that, and that was just a rumor.*

Right, and if it's, I mean it's just, again if it's closed, then it's closed. But it seems kind of strange to anyone to go in there and spray and then it's opened up again. Just for that kind of thing.

This businessperson suggests more openness of Forest Service operations to improve community acceptance and provide a receptive atmosphere.

Montana businessperson 1 - *I think the Forest Service could improve their situation by...more public openness of what's going on in the forest and how they're managing it and why they're doing what they're doing, not just because somebody in Washington told them to do it. And I think that if the public was more aware of why they do things or what they're doing it for, they might be a little bit more receptive to listen and not just balk. Instead of just closing a road they could have...find out that it boils down to a lot of public meetings but it all*

pays the same.

Public Role in Decision Making

Lack of Public Role

In many of the comments relating to public meetings or general participation in resource issues, some respondents felt that their input made no difference. This idea also relates to the trust and credibility of the Forest Service actually doing what they say they will as mentioned in the discussion above. But, specifically it illustrates the frustration with community members about feeling ignored or having no control in resource management decisions.

Most respondents within the negative/positive group feel frustration with not being heard. As illustrated in the excerpts below, the respondents feel the Forest Service follows through on set decisions no matter what the locals say.

Washington ranchers - The meetings were very open, I mean you could get up and express your opinion and discuss things and the meetings were informative and everything, but a lot of times down the road they changed things from what, what was discussed at the meetings. There was 2 or 3 things that they told us at the meetings, this is the way it would operate and be handled in one thing another and in a year or so, it was handled entirely different.

Montana retiree 1 – Maybe with believability, credibility issues, a lot of the population, I guess I shouldn't really be speaking to a lot the population but I talk with a lot of people and they feel like the Forest Service has said one thing and done another in different instances, and specifically if you wanted an example I couldn't give you one. But there's that underlying thought, they don't really trust the Forest Service.

They may say, the Forest Service may say what they want to say, but they are going to do what they want to do is kind of the feeling that a lot of people have. Maybe I do too.

Montana businessperson 1 - Well, I don't know exactly what my goals would be because I'm a private citizen and I think a lot of private citizens' comments are nipped in the bud and they do what they want to do anyway.

Washington electrician - *For instance, did you want to go in and spray these roads, then that would be the time to have a meeting, a public meeting and say, here, here's what's happening, here's what we need to do. Here's what we think we should do, what do you think we should do? Not come in and go, here's what we're going to do. You know, because that just gets everybody's hackles up right off, it's like well you're going to do it anyway, so why'd you have the meeting kind of thing. That seems to be what's happened in the past a lot. Or it just doesn't get brought up, and it's like okay we're going to go in there and do this, hopefully no one will notice or say anything.*

As a possible negative consequence, community members may refuse to participate in future projects where their experiential expertise could be utilized because of this previous breach of trust. In general the respondents in the positive/negative category still had a willingness to be involved in the decision-making about resource issues as long as they felt they were able to participate. At the same time, if they do not perceive the participation process to be legitimate some suggest civil disobedience will follow.

These respondents view the lack of compromise as a barrier to solving many of the management problems and conflicts, and that compromising could resolve policy differences such as this conflict in snowmobiling area designation. The retiree below perceives the Forest Service as not compromising as well as the users.

Montana retiree 2- *To me a compromise is "we meet together" and you have too much of "no, we're not giving in on the lynx because we're going to fight for that." And then you have the snowmobile people that live here saying, well, we're going to snowmobile. They're not going to give in. But there has to be some compromise on both sides. We do, the Forest Service has rules that if you hike up that one road up there you would see a sign that says no snowmobiling, 4-wheelers, probably jeeps, from December 1st to June 1st. Well, I won't say that I always honor it, but I don't snowmobile up there when the elk are down.*

It's not just this is what we're going to do and you guys are going to have to live with it. Because then that says to me I'm breaking the rules. I'm going to make a path around that gate. And if you put up a fence, I'm going to take it down. I'm going to bring wire cutters and cut it down. I'm going to go in there anyway and if you catch me, fine. That would be my attitude, because there's no compromise. They're just shutting it down. Shutting it down is not a compromise.

However, some respondents feel the public has already tried to compromise without success and now believe political action groups are necessary to achieve their interests rather than compromise and further discussion as a means of resolution.

Washington retiree 2 - Through restrictions and probably apathy on our part, being the public's part, allowing the Forest Service, who I think at one time had our interest at heart, but through the years I think other people have...not say a, what's the term? A secret agenda. Within the Forest Service having a secret agenda. I'm going to close this area down because I have the power to do so. And then the apathy on our part. And now as the areas start to get smaller and smaller...I just recently joined a group, it's called the Selkirk Trailblazers which is a 4-wheeler group, which I have nothing to do with, but the snowmobile portion of it, and they are really a political action group. They are trying to keep our lands open, but yet the Colville forest says no. And these are old snowmobile trails that have been there for years. Never abandoned, but never maintained, although this last summer we've maintained them. We're trying to recover something that was never lost, but the Forest Service is saying you abandoned them. Well, we didn't really abandon them. How do you abandon something?

In addition to the perception that they are not being heard, respondents in the negative/positive group were frustrated by other perceived barriers to their ability to participate in decision-making about resource issues. As indicated in the excerpts below, these barriers included are the perceptions that decision making is driven by "environmental" groups, inflexible federal rules and regulations, agency employees from outside the community that are perceived to not understand the local conditions, and restrictions imposed by other federal agencies, especially the US Fish and Wildlife Service and the Endangered Species Act.

The respondents below perceive a decision making process as being driven by "environmentalists" without opportunity for local participation.

Washington ranchers - And they had to stop and re-evaluate their business agenda and allow for more comment because the people were getting really irate that they were allowing the environmentalists to- I can't remember exactly what the particular issue was that they got so upset about. But it was like no matter

what you go and say, they're going to do what they want to do anyway and so, and that wasn't directly personal, but it's going to ..

Montana retiree 2- *The thing is, the Forest Service, the environmental type people, this is the way it is and this is the way we're going to do it. You're endangering this and you're endangering that, I don't know if they just pick them [specific species].*

The student below views the federal government red tape as contrary to an independent nature and as a joke to the local ranchers, further damaging their relations with the Forest Service. There is the notion that because of all the federal regulations and paperwork associated with them, the Forest service employees have no local power.

Montana student - *I was spending a lot of time with some ranchers next to the Mussingbrod fire, I think they really affected my view there. It seemed to me that yeah, the Forest Service had its plan of action, and even at a higher level than the people that were there. They were being mandated by some body else it seemed. It was like why even waste your breath talking to them, their hands are tied. Their paychecks are coming, so.*

I think that in most cases because the Forest Service is federal and they have so many regulations and managerial crap they have to go through, they're sort of the laughing stock for the ranchers. They do a lot of things that don't seem to make good common sense. It seems to me that their response to the Forest Service is, they the Forest Service, doesn't do things in a way that most things are, in a way that's efficient, in a way that saves money. That's frustrating for the rancher. In addition, I think that through past experiences, and I'm only guessing here, there have been people from the Forest Service have approached land owners and have told them what to do or what they need to do, and because the land owners are so darn independent, at least they think they are, they really resent that and they really have a hard time accepting it. For some reason there's a big rift there...

These ranchers are frustrated with enforcement of new grazing regulations, and this is another case where locals feel Forest Service employees are passing the buck as suggested with the ranger above. They feel basically powerless, and affected by decisions that do not affect the Forest Service employees that come and go.

Montana ranchers – *Ya, I know him. [range manager]*

Interviewer: *I just wondered if you guys have talked to him about your views. Yes, we've told him, but, "Well," they'll say, "the lawsuit says this" and we had a lawsuit with the Wilderness Foundation or one of them were going to sue the*

Forest Service and the ranchers all had to intervene so it cost us just to get this settlement that we can only take 50%. That's what they say, "Well, the lawsuit says this."

But we pretty much have to do it the way they say. And another thing that bothers me is these people come in here, like [the range manager] is from New Mexico, they come in here from all over and they're here a few years and then they're gone, so if they do make a mistake nobody, it doesn't hurt them, it hurts us.

This Forest Service employee views the federal regulations and policies as inhibiting local compromise. The ranchers also discuss a happy medium.

Montana Forest Service employee 2 - *I'd like to see-I guess I'd like to see more commodity related things just because so many of these people here are my friends and I hate to have seen what's happened to them and so forth, but I also-I don't want to see the land trashed out. I just think that somewhere-not everybody's going to be happy. Nobody's going to be happy with anything that we do. I just think people are going to have to give up a little of both and try to meet someplace in the middle, but that's what everybody tries to achieve and it's a lot harder to do than saying it's easy and actually doing it with all of our regulations and policies is really tough.*

Washington ranchers - *And of course that's rules and regulations of the Forest Service not to do this, but, looks like there ought to be a happy medium there that they both should, one should give a little bit and one should take a little bit.*

Opposite from above, this Forest service employee emphasized here and throughout the interview the political pressures on the agency, but spoke about an open door policy.

Washington Forest Service employee - *I see it as pretty good here. I know there are things that we do, that we're required to do, that are not popular. But I think in some instances folks are willing to agree to disagree. You'll always have people who are very outspoken and will be vehemently opposed to things, but I think we have a lot of other people who realize that some of the things we do are not things that we have chosen to do. It's the political-it's a knee-jerk reaction to some political issue that came up or some question that has come up. I think we have enough visibility in the community that when people have questions they'll call and ask, and that's a big step right there. Having that door open where people can actually come and ask those questions. And it's nice that they know us well enough to know we're not going to blow smoke, that when they ask us we'll tell them. There are still the few people in the community that will not accept anything we say as factual. They think we manipulate, you know, and that we do blow smoke. And there is nothing we're going to do that's going to change their attitude. We have to accept that and let them vent on things. We can say we're sorry you feel that way, the facts don't support it.*

Interestingly, the next respondent feels the Forest Service wants to work with them, but alludes to the fact that the US Fish and Wildlife Service inhibit what the Forest Service and public can do. These thoughts are scattered throughout this particular interview because threatened and endangered or sensitive species habitat usually means extra work and money for these ranchers such as building new fence to keep cattle from certain streams. Even so, they still see the positive side in the relationship.

Washington ranchers - But whenever you go to a meeting with Forest Service like our range meeting that we went to in Colville a year and a half ago. They were very clear that, hey, we want to work with you, we want to do the right thing here. However, our hands are tied because they are telling us what to do, and "they" was Fish and Wildlife. But, they always seem to be willing to listen, I mean we haven't had anybody in there that has said, go away, leave us alone, don't talk to us.

Local Public Decisions

Respondents commented on how all geographic areas are treated the same with policies and regulation. They often mention local control as the solution to having the resource management atmosphere return to what past Forest Service relations provided with policy. Policy that was more tailored to local communities and having their violations overlooked.

Montana loggers - As it has to be, rather than one size hat fits everybody (laughing). It's ridiculous, and it causes resentment towards the Forest Service. Anytime the federal government enters in to your personal life you resent it.

Well, as I say on that, and I understand where they are coming from, but they treat people up here the way they do where there's major concentrations of people. When you've got 1/2 a million or 800,000 people in the whole state and 32 million in California, and the Forest Service is treating everybody everywhere the same way and really what do we have in common. A camper has to move every two weeks.

And I understand like in California if they didn't a lot of people would stay the whole summer or something or leave their camper parked the whole summer, but up here, what the hell. And all they've got to do is just kind of overlook it, ignore

it, like here at Wisdom. Like if somebody was making a garbage heap out of it, yes, I would understand, but as far as up here and they're not destroying anything, why bug them?

Sure, it's just human nature. We're all the same in that way. And why have the resentment when it could be overlooked, 90% of the time it could be overlooked.

This respondent suggests Forest Service people could have training on living and working in small communities.

Montana businessperson 2- *For some reason I don't feel it's very good here and I don't know why, I really can't put my finger on it, other than it's like a separate entity that is going to do whatever they want by God no matter what the locals think. There has to be some kind of training, thinking taught to the local Forest Service personnel that they are here as equals and not betters. I can give you a for instance, in my business as a grocery store we were told not too long ago that our business would have to change, that there would be no more local ranching or we couldn't depend on that, that we were now going to go to tourism and this was going to be how we were going to make a living. Now we've burned up the trees and done all this stuff and I'm wondering where we are supposed to turn to next. That was a very poor statement to make, and maybe to another person it would have made them really mad (laughing).*

Instead of concentrating on public relations and local control, this respondent discusses how local decision-making helps their local economy and forest health issues.

Washington - weed district employee - *I think the more people know, the more willing they are to accept and improve. Like having a better understanding of what your goal is. Of course, on a larger scale, more of the decisions need to be allowed here at the district level than are granted. If our goal is to restore the health of our forest, then the ranger needs to be able to implement the practices of the way of doing it, that are going to get you there. And I don't think those are always supported as you go up the ranks of the Forest Service. The Congress is definitely the problem. But by bringing that decision-making level local, I think it would help bring greater responsiveness in the community. I know it dangerously sounds like "only local control", but it all depends on who we're talking about getting local, because like we talked about earlier, Louisiana Pacific, it's not local. You might have an office over here or something, but they're not local. Stimson, it's not local. The guy lives here, but he still has his directives from someplace else, and their goals are profit. And when your goal is profit it doesn't work.*

For this respondent, local control over local resources takes precedence over the idea that the forest is federal public land.

Montana businessperson 1 - *And if they need poles and have to create a pole patch or something like that, in order to get it, I think that they should have the first option. And if they don't want any poles then put it up to the general public to regular pole cutters and these fancy places from over in the Bitterroot where everybody has to have a peeled log fencing and stuff like that. I mean, you should keep your assets and the resources in the county and in the area that you live in. I mean, I understand that there's places in Eastern Montana where there's not timber assets, but it all kind of boils back to everything. Some people choose to live in Eastern Montana, some people choose to live in Big Hole. Some people choose to put up with 40 below winters and, you know, not-basically a socially and an economically backward area is the Big Hole. That's just the way it is. You choose where you want to be and I want to be here, you know. I think local ought to have first option at the resources-*

This respondent acknowledges the difficulty of being a government employee, but also suggests that employees have lost a certain working attitude and the ability to work with or relate to smaller community locals.

Montana businessperson 2 - *I was a mail carrier, worked for the experiment station, which was both government and state and, so I know what it's like, but I feel it's more or less a job that you have to spend more time at working harder than you would actually work for yourself because you have to prove to other people that you're doing their job well because they are going to watch you harder than they would if you were working for yourself. And we've lost that attitude for some reason. But these are things that I think we really need to be aware of especially in small areas and I think we're going to handle, our government, our people, our Forest Service thinks they will handle this small area the same way you would some large city, and you can't. It's a different situation completely and they have to be careful about what they put out there and make sure that those people they put out are capable in dealing with those kind of people, locals I should say.*

National Forest Access

National Forest access is one of the main disagreements over Forest Service policies, as many respondents identify with access frustrations on national forest. They mention either not having enough available access or that there is too much, although the latter opinion is not common. The following retiree will not give up access when it is linked with a threatened or endangered species issue. The loggers below are frustrated enough

with access issues to suggest breaking the law, and predicts much less motorized access on the forest in the future.

Montana retiree 2 - Ok, I don't know a lot about things that have been on the endangered species list, but generally it's because of our population that has driven things to that point. They either have to adapt or they don't make it. They've either been trapped, hunted. My riding my horse in there, or my snowmobile, does not put that lynx in danger. None of that has happened. It has been trapping or people shooting them, or maybe they used to live here and now they had to move up there. But it is not my hiking, my horses or my snowmobile that has put those lynx in danger. So I don't feel that that's my responsibility to be punished for something that I didn't do, and that I'm really not influencing that now, because a few people think that they need to protect the land and just close everything off. That's their answer. They did that with the spotted owl in Washington, you probably heard about that. The whole town was out of their livelihood for a spotted owl. That's not right.

Montana loggers - Put a gate across the Forest Service and there is going to be no use for the Forest Service, which is the plans. In 20 years the only benefit out of the Forest Service that they will be will be like the scenic by road up Wise River and drive down the highway and look at it. That's the only thing that will be a happening on the National Forest in 20 years. There is not the slightest doubt in my mind, so what difference does it make whether there are weeds up there or not. But there's not going to be any activity on the forest. Maybe we can walk in it.

...if the Forest Service doesn't have a closure gate and if they do we ought to take a cutting torch and haul the damn thing out and dump it in their damn yard.

Again, this issue connects with trust and credibility for this respondent. The Forest Service pronouncing historical or favorite forest roads as nonexistent, as the retiree describes below, or closed was the main source of frustration for this retiree. The notion of liability concerns on public lands is also a source of frustration mentioned below and in other passages in this particular interview.

Montana retiree 1 - That the closing off of the forest to anything other than horseback and foot traffic I think is my biggest thought because I'm not a horseback rider and I'm not a backpacker, and if I had been a backpacker I would have been up the AP [Anaconda-Pintler Wilderness] hiking around up there. I get out and hike, that's not a big deal. Well, it kind of is, but for a medical reason, not for any other reason that I wouldn't. But I hate to see all roads and trails just be cut off and all of a sudden just magically they aren't there. It pisses me off. And

especially roads that I know are going places and historical roads that I've been on years ago and now all the sudden, gee, we aren't a road. I don't know how they can do that. I know how they can do it, by Congressional leading, they just say, "Yes, we don't have this here." That's what really tightens my jaws up. Probably in the early '70's you could drive to a bunch of different lakes, especially on the west side over here and there are roads going up there, there have been roads forever.

Maybe not a superhighway, but there are roads going up to them and the Forest Service over the years, from the mid-'70's on, saw fit to say that we don't have this road here and they are worried about their liability concerns a lot I think, "Gee, we get some do-do that drives up here in his 40-ft motor home and then what happens and he runs off the road and wrecks his motor home." Well, you can't legislate stupidity. You can't legislate against it. You can, but it's not enforceable (laughing).

This issue also addresses forest access specific to trail outfitters described below. This respondent has basically given up on applying for a special-use permit due to the sheer frustration of dealing with different district rangers every so many years, Forest Service budget problems and actual physical access problems on past trails.

Washington electrician –...I have an outfitting business license and we do rides on our property and other private lands, but we haven't got any permits to use the Forest Service and we've been trying every way we know how to get a permit for that, but it hasn't worked out so far. I've heard a variety of reasons, funding usually being the, seems like the one that comes up most of the time. That they don't have the money to do the impact study, to get it done. And then a couple of times, we've got a dollar amount on the impact study that it would take to get that done, and when we come up with the money, then the amount changes. So, we're having a, I guess I've kind of pretty much given up on the idea, I guess I've come to the conclusion that in this district they really don't want anybody out there doing that commercially. So no matter what happens, it's not going to happen.

The following quotation illustrates an agency employee's recognition of the significance of access to the local community and the conflict this issue generates. This employee further recognizes differences in treatment between locals and non-locals occurs and feels that is unfair. However, this employee feels the local district's hands are tied due to the current regulations and budget limitations that prevent permitting outfitters

in the area. This employee also feels this situation is partly a consequence of the public's demand for less government.

Washington Forest Service employee - That's what he has been told in that situation. Outfitting and guiding, would go under a special use permit. Currently the budget for special use management barely provides enough to cover the administration of permits that we currently have on the books, so there's nothing extra to take on new permits. And the proposal that we had when we were looking at outfitting and guiding was, to be the most efficient that we could, to look at it forest-wide and say okay, what areas would be open to what types of outfitting and guiding and how many service days, and make one analysis that would basically outline that as best we can knowing what's in the foreseeable future as far as recreation-type of activities. And to be able to say well, in this area, taking folks out for photography is great, but hunting would not be good. In these areas horseback would be great, but you know, you can't take them on ORV trails. There are some areas where mountain biking would be appropriate, or here's one where we can have a mix, but the total number of days would be so many allotted to horses and some to mountain bikes, that sort of thing. So you could do one analysis and then when people came in and say I want to start a horseback outfitting and guiding you could say okay, here are the areas that are available, how many days, and then you could just write them the permit because the analysis is done, as opposed to as each one comes in and says I want to do this, having to go through an analysis just for that proposal. But unfortunately there's no money to even do the one guy that walks in with a simple proposal that wants to have mountain bike excursions on open roads. I'm not even funded for the days it would take to do that. So trying to come across and do a large-scale forest-wide analysis, there just aren't funds.

Interviewer - You are saying the forest-wide analysis hasn't even been-
It hasn't even been done, no. They started and they had to stop because there were other priorities that came ahead of it, and at that point the special-use budget just started to decline, so now there's not even any money. If there were enough outfitters and guides that wanted to do this and they could fund the analysis, then they could probably move forward.

Interviewer - If someone asked you when you thought you'd get the budget for this forest-wide analysis-
Never. Not in the foreseeable future. Based on the trends of the budgeting so far, not in the foreseeable future. It's a sucky answer and it's not the answer they want. There are some uses, some outfitting guide uses that probably would be very little or no impact on the resources that, like I said, mountain biking on an existing open road, what's the harm in that. But because they are required to have a permit, you have to go through the steps, and at this point we just don't have the funding to take on anything more. And the other thing is too, and we've done this with other permits, but when the Warner Brothers came up and they wanted to do some filming it was the same situation when wanting to film. We had no money to do the analysis. They gave the Forest Service the money for the analysis.

Interviewer - But the person with the most money gets their way? How is that legal or fair?
It's not, but the public says they want less government and that's what they're getting. Congress appropriates the same money every year for more and more work. You used to camp in campgrounds for free, but not anymore. They wanted less government and they got it.

Respondents with Predominantly Positive Perceptions

The respondents with predominantly positive perceptions of Forest Service and community relations (n=5) are either agency employees of some type or actual friends with more than one Forest Service employee. Figure 4.3 organizes the perceptions of the relationship between the Forest Service and the community members held by individuals who are classified in the positive group. In the interviews with these individuals, two major themes about the relationship were evident. As illustrated in Figure 4.3, the first theme concerns the general range of perceptions about relationships with very general comments. This theme then moves to more specific comments discussing Forest Service employees being accepted into the community. The second theme focuses on specific relationship issues of a positive nature discussing agreements in policy and approving of the district ranger. Interestingly, 4 of the respondents that were in the negative/positive group with regard to community/agency relations also fell into the positive group when discussing individuals (See Appendix D, Table 4.1a)

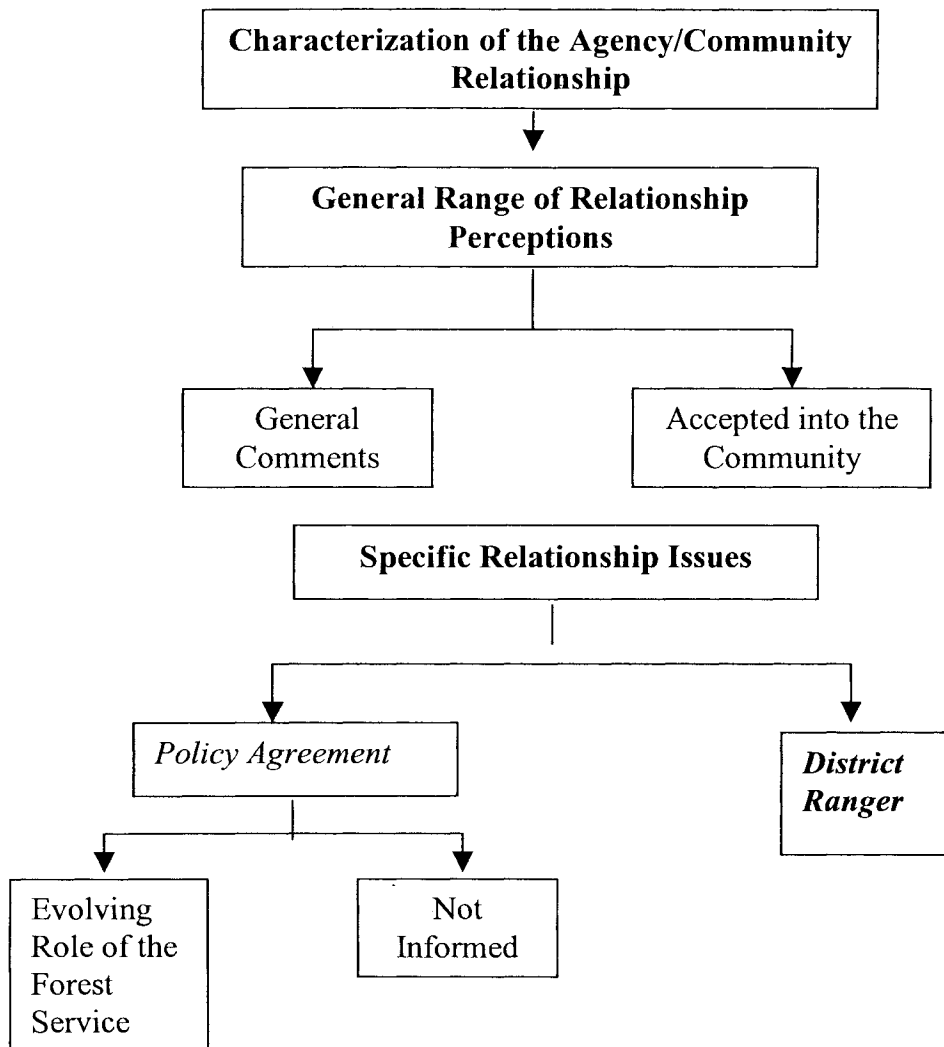


Figure 4.3 –Nature of the relationships between the Forest Service and the community as depicted in the interviews of respondents in the “positive” category.

General Range of Relationship Perceptions

General Views

In contrast to the respondents in the previous category, the following respondents discuss a generally positive feeling for the overall relationship between the Forest Service and the community.

Washington retiree 1 - We all benefit from and if I had a question they could answer in their category, I wouldn't mind asking them and I would expect they would tell me the answers.

I don't have any problems that I want identified or anything, but we've had a relationship with the Forest Service and got along okay.

Washington retired couple– I'm comfortable with the Forest Service. With all the faults I see in it, they're doing the job. They're doing the job day after day and year after year, and they're doing a pretty decent job of it. And all the other agencies, Fish and Wildlife and all of those.

I might be naive, but I think it's [relationship] very good. In all the community functions I've worked in, Forest Service people are well represented. They're usually among the best educated in this community and therefore most valuable in this situation. I do not hear animosity, and even when I hear it, someone is disgruntled with a particular policy, it's not personal and local, it's "the Forest Service." And I think people are thinking at a higher level. This has come down from somewhere and this is what they speak to.

You just kind of have to do it all, and I don't know and I'll go back to what I said before, I trust the Forest Service people to do that. I think those folks know more about what's going on than I do.

I think overall, I like what the Forest Service does. I'm sure glad it's there. Just like the police department or fire department or whatever, because I think people would badly overrun, misuse and abuse it.

Montana rancher – I think good, ya. I think, I think they are, well, trying. I think it's pretty good.

This state employee has sympathy for Forest Service employees, and an appreciation as a user for the agency and what they have to manage.

Montana wildlife technician – There are places where we have boundaries in common where we get together and spray together and report to each other how things are going. The rapport is good, but it's very informal. If there are any weeds left after the fire, in September/October we'll go out and see if there's any new growth and look at some of these sites, but it's kind of fun. I think everybody feels like it's good PR and it's somewhat effective and it helps you keep track of where the particular infestations are too.

I think the motorized vehicles have potential to do a whole lot of damage a whole lot faster. But horses, if you're a hiker and walk along a horse trail, that's a real nuisance. And those kinds of things. Fish, Wildlife & Parks doesn't have to deal

with that but Forest Service and the managers who actually have to deal with that have a real problem because they have so many different kinds of users. And that doesn't always overlap very well. So as a user I appreciate what the Forest Service does in terms of trying to figure out how to manage some areas for some particular kind of use, maybe segregate users one way or another, not spatially, maybe in time. Maybe there's a time of year when horses do less damage but I do appreciate what they do in terms of trying to manage that use.

Forest Service Acceptance into the Community

Overall, the following respondent views Forest Service employees as individuals within the community, not as representatives of their agency. In fact, he is generally unclear on the role of the agency and therefore any contention between the Forest Service and the community.

Washington businessperson - I know them as individuals rather than as agency representatives for want of a better term. Don't know enough about what they do other than just the broad-brush stroke, what does the Forest Service do type of thing. But in terms of specifics for this district, I really don't know. And would be hard pressed if I had to provide an opinion on how good a job they were doing on something I don't even know that they're doing.

Oh, as individuals I like most all of them. And in that regard they seem like reasonable people to be in the positions they're in, whatever they may actually be in, and I'm being pretty vague about that too. But, I don't know what function any given, well I know what some of them do, but a lot of them I don't. I just know that they're Forest Service employees, and I just get along with people, and it's easier to do, unless there is a disagreement that's presented to me. I'm in business, I have to like everybody.

Specific Relationship Issues

Policy Agreement

As mentioned above in the discussion of the negative and positive group, policy can play a major role in supporting or jeopardizing relations between the Forest Service and community. In the quotations below, Forest Service actions were reported to promote positive relationships and a friendship in one case with the rancher directly below.

Evolving Role of the Forest Service

Unlike many of the respondents in the negative/positive group who negatively viewed Forest Service employees as "environmentalists", this rancher prefers the current Forest Service to the Forest Service of the past because of perceived changes in environmental concerns by the agency and the view that they are evolving toward ecosystem-based management.

Montana rancher/outfitter - I think it's generally good. I think they've done a good job of managing the forest and they've done a good job on the grazing permits. I know personally for my outfitting business it's been a good job of keeping track of everything and we really have had no problems at all. We've got along great. The Forest Service has really changed in the last few years. There was a time when I think I had probably some disagreements with them more than I do now. Part of our cattle are on there in the summer and we are concerned about our water quality and keeping those areas pristine I guess and I think the Forest Service is more receptive to that. And there's a good thing about the environmental community coming in I think.

Ya, he goes out with us and we take the horses. This has nothing to do with weeds, but it's a lot of, I guess he has a different perspective and is very well-trained in different plants and what they do and everything and it's just fun to go with him for a day. I didn't know the names of a lot of those plants until I went with him.

Ya, there's been a definite change and I haven't been to a Forest Service meeting in a year or so, but really, there's been a lot of change within the system. I think there's a little more tuned in to protecting the quality of the water, and at one time after the Bull Creek road was put in we had quite a bit of sediment in the stream and we had a fisheries biologist with [the range manager] and I up there and they were taking samples in the water and I think that a lot of that, the sediment that was coming in the creeks was coming off those clear cuts, or off the road bed itself rather than cattle trampling or the other things that get blamed for it.

In addition to having friendships with Forest Service employees, this same rancher perceives the Forest Service as actually flexible in implementing regulations.

We ride in with our horses and check it and if it looks safe and it's look ok and it's [larkspur] pretty well flowered out then go ahead and turn them on, but we might be two weeks later than the actual turn-on date. [A Forest Service employee] has really been a lot of help with that, saved us a lot of cattle through the years.

Taking care of wildlife habitat is important to these respondents and they trust the Forest Service to make those decisions and feeling comfortable with an evolving role of the agency that addresses wildlife. This is in contrast to respondents in previous sections in which more human-oriented values were prioritized.

Washington retired couple – female - If I saw the ad for one [meeting] like explaining our new grizzly habitat policy, I probably wouldn't go. I would be quite satisfied to read a short piece in the newspaper because again, my level of trust is quite high and I assume that wildlife biologists know more about it than I know.

Male - I have a tendency to think that the people who are doing the management of the national forest, as well as the state forest, know what they're doing, and so I don't have really any problems. When they decide they want to close the roads so that the grizzlies can have freedom, I tend to agree with that.

Female - I do too. I like the wildlife to be taken care of.

Male - And the road is closed for vehicles. You can still walk in there.

Uninformed

There is a definite distinction between Montana and Washington respondents on the knowledge base concerning resource issues and the Forest Service in general probably due to the predominantly resource-dependent community in Montana, where as the Washington area is more service-dependent.

This retiree does not feel there is a relationship problem between the Forest Service and the community and also does not understand why there would be. The businessperson discusses a general lack of knowledge on resource management issues, needing more knowledge to make decisions or answer my questions.

Washington retiree 1- I think we have a good relationship with the Forest Service here. They maintain some nice campgrounds and things like that.

Interviewer: If you were a rancher or a logger would it be different?

I don't know. The Forest Service and ranchers, what would they have? Using the forest land to have your stock on? They do that, between here and Colville there's a place where this one family seems every year to put their stock on there and in the fall they gather them all up. I think that's great. That's about all I know. I

don't know how with wood. You can get a permit and they tell you where you can go and get this wood.

Interviewer: What about loggers who used to log and don't log much any more? What do you think the relationship is between the Forest Service and them?

The Forest Service not letting them log it any more? I don't know. I don't know what's going on at all. They can probably have some rules and regulations and know which way they should log and shouldn't, and whatever.

Interviewer: Do you think the Forest Service can do anything to improve relations with the community or anything they could do differently, in your eyes?
I can't think of anything that I would expect them to do that they aren't doing.

Washington businessperson- *Well, I think that [communication] would be the first place to start, just because without a knowledge of what's going on in our National Forest up here, none of us can have an informed opinion and those are the ones that really do count. Everybody's entitled to one, but you want one that has a little bit of thoughtfulness behind it, rather than just this sounds right, right now. And I'm sure you've been in a situation where your first reaction to something is one way, but then on reflection, yeah, that's a little presumptuous, a little hasty. That's too precipitous an approach or this we need to back off. And I think that, well there are a lot of people who will admit to even that modification, but it's going to need to happen as we learn more and more. Hell, just in the time you've been doing this, you probably have tweaked your notions about it somewhat, just as your intelligence on the subject has grown. So in that respect, from here I'd have to know more to be able to express a legitimate opinion. If you have an opinion, you ought to be able to back it up right? And if you can't back it up, then what's the point of even saying anything? I could say yeah, I think that they ought to be planting more trees out there, not enough trees being planted out there. Well, what's the basis for my knowledge? I don't have any basis, I don't know how many trees they plant or don't plant out there, the mere fact that more trees is better doesn't make that a valid opinion ...*

This same respondent was difficult to categorize, but important to this study because of the many people I spoke with in these communities that felt the same way or were just as confused about what the Forest Service actually did in their area. This signifies a lack of overall communication between agencies and communities that could otherwise work together and learn from each other on important issues affecting us all.

Washington businessperson - *I'd like to be able to trust people, I believe to put it roughly, I believe in the system without believing in those who run it. The trouble*

is, is that at any given time any sub-system may have been constructed by exactly those people who I don't trust, and therefore by definition I really can't trust or believe in that sub-system. But it gets smaller and smaller. God almighty, I haven't a clue whether I would trust them to do the right thing or not. I'm not sure that I'd understand, I'm not sure that I'd know what the right thing was, A- to be able to tell whether they were doing it or not, and the question for you ends up being, would it matter if they were doing it for the wrong reason?

I know there are a lot of people who would say God there's a huge problem with the Forest Service and the community relationship. There would be a large number of them that say, is there a problem? I don't think so. And myself, I can see where there might be one, but I'd be hard pressed to actually define what it was and what steps could be taken to correct it. Because as much as anything, it takes interest and involvement and awareness and maybe the one thing I'd say is, make more colorful signs when you're going to have a meeting of some sort.

District Ranger

Here again, the district ranger is a direct influence on the relationship between the agency and community, but opposite from the negative/positive group discussed above, these respondents have positive views to share. This first respondent has had quite a few conflicts over Forest Service policy with snowmobile routes and the lack of horse-friendly campgrounds, but continues to support the current ranger even through perceived flaws and mistakes from the past.

Montana retiree 2 - *I know there's a lot of people that don't seem to like the Forest Service in general. Mainly because I think when [the ranger] first came in here, he said some things about the logging and he shut it down, and I keep trying to tell them [he] isn't that big a boss. He didn't shut the logging down. He was told to shut it down. ...So they see him as the bad guy. In all honesty, I don't. And I have tried to defend him a little bit because my relationship with him... So, I guess my relationship with him has been okay. And I've never gotten in trouble with anybody else as far as the Forest Service goes.*

Washington retired couple – *[The district ranger] is a person, his name comes up very often among people saying who can we get to work on this. [He] is well respected and thought to be one who would be very valuable.*

There was one project I worked on with [him], it involved developing the Selkirk Loop. And he and I were in the original group that developed that. Now [he] really was standing up for the environment up there and I thought he and I were closer in our goals than anybody else there.

These respondents are obviously quite helpful for the Forest Service in possibly gaining support for public land projects like weed management. These positive relationships should be enhanced and maintained from the perspective of public involvement on certain Forest Service projects. This kind of support is clearly invaluable on many social levels, but is necessary when generating public involvement.

Results II: Perceptions of Exotic Weeds

Results Section I identified the range of views concerning the relationship between the Forest Service and community members in two areas of Montana and Washington. The ability to communicate effectively and work toward resolution of specific resource conflicts such as weed management is connected to the rapport between the Forest Service and the community members. A poor relationship therefore represents a potentially significant barrier to cooperative management of resource problems. Another potential barrier to communication and cooperative management of weeds deals with different understandings of what weeds are and differences in terminology used to discuss the problem.

Respondents were asked several questions regarding weeds to illustrate their use of terminology and definitions, thoughts of exotic weed impacts on forest uses, awareness of weed invasion consequences and involvement, and opinions on eradication versus management of weeds. This section focuses on the foundation of weed knowledge within these areas, showing the importance of positive relations for successful public participation and projects on public land.

Weed Concepts and Terminology

This section explores what the concept of a “weed” means to people and their understanding of descriptors like “invasive”, “exotic”, “nonnative” and others. The term weed itself is both value-laden and filled with socially determined and increasingly diverse meanings. Weeds are usually defined in the negative: they are plants that are not wanted. Which plants are wanted and which are unwanted depends on the setting and sometimes on individual prejudices and tastes (Randall 1997). Hull and Robertson (2000) discuss the idea that the language we use to describe nature matters for successful management, and there exist multiple, conflicting, imprecise, and biased definitions of the terms used to discuss nature. Environmental knowledge is collected, produced, and interpreted by multiple language communities (subgroups of natural scientists, social scientists, humanities scholars, environmental professionals, and citizen activists) using incompatible units of analysis (Hull and Robertson 2000). As a consequence, this section of the results explores differences in language, and ultimately meanings held by respondents with regards to weeds.

Historically, concerns about weeds in the context of land management primarily have been based on utilitarian needs and were the result of agricultural and range interests, as discussed in Chapter One. However, the transition from utilitarian values to symbolic values and biodiversity brings on new challenges and issues to exotic plant management on forested lands, but it must not be assumed that all or even many people are making this transition.

Nineteen respondents fell along a weed concept and terminology continuum based on their definitions of a weed and their use of weed terminology as shown in Figure 4.4.

Other questions and probes asked the respondents about different terminology for weeds such as exotic, native, invasive, etc. and general weed concerns. All weed-related questions throughout this second part of the results can be found in the interview guide in page two of Appendix A.

The continuum below displays the spectrum of views combining the relationship between weeds, humans and the environment. At one end of the continuum are views based on strict utilitarian needs from nature and a certain lack of exotic weed awareness. The opposite end of the continuum represents those respondents with a predominantly ecological view and advanced weed awareness. In between these two poles is a transition group who appear to either be transitioning from a utilitarian worldview to an ecological view, or holding both views. All but one of the remaining respondents were agency employees who specifically work with exotic weed management. These individuals do not fit neatly on the continuum due in part to their technical/professional training and the fact that they seem to represent something of a bridge between the ecological view and the utilitarian view. Often times their responses seemed to reflect how they communicated with the public rather than their own personal worldview. The final respondent, the logger/mill owner in Washington did not comment enough on this topic for a clear categorization.

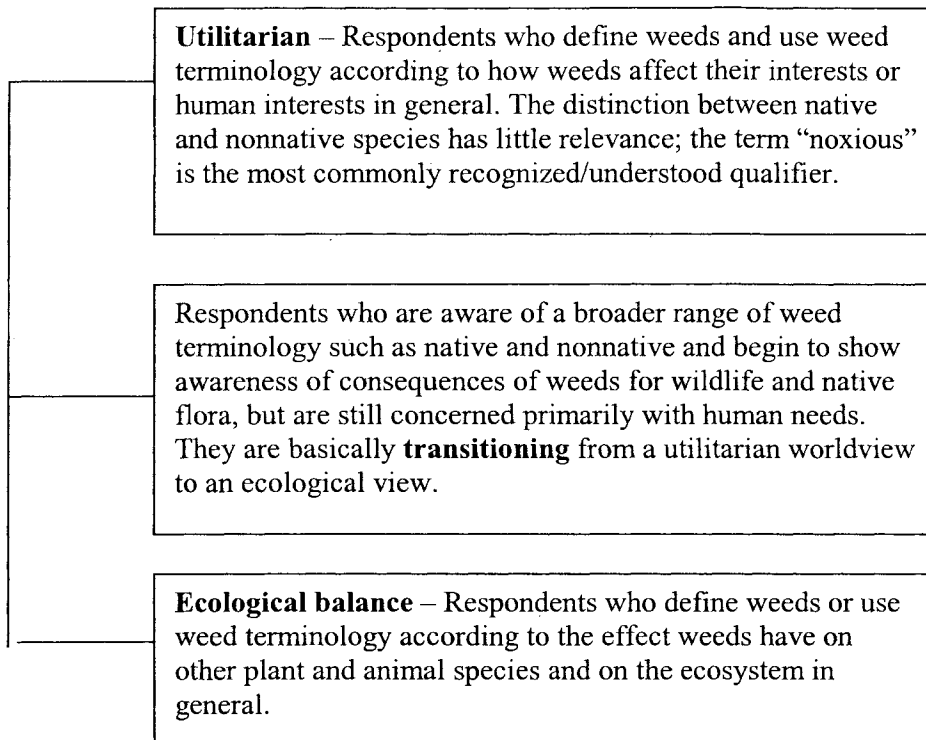


Figure 4.4 – The continuum of exotic weed definitions and terminology where the opposite poles are defined by the respondent’s views and knowledge on the subject.

Utilitarian Views

Concept of Weeds

The respondents who based their definitions or thoughts about weeds on utilitarian views of nature (n= 15) mainly spoke of human needs or desires that a weed could interrupt either by forage loss or safety concerns for domestic stock, recreational and yard nuisances, or work-related hardships. Considerations related to the needs of wild animals, native plants or the ecosystem in general were not reflected in comments made by these respondents.

The first six respondents primarily define weeds by relating them to forage loss or safety concerns for domestic stock. Interestingly as illustrated below, most of the

respondents answered the question, “When you use or hear the term ‘weed’, what comes to mind?” by naming a particular weed instead of actually defining the word.

Interviewer – Ok, so when you use the word ‘weed’ what comes to mind?

Montana rancher/outfitter - *Mostly knapweed I guess. I know that we’ve got some other weed problems, but I guess knapweed is in everybody’s mind.*

Interviewer – So if you heard the term, instead of just weed and you heard the term exotic weed or invasive weed, would that change what comes to mind?

They list Canadian thistle as being a problem and we’ve had Canadian thistle for years and I never really noticed it being a huge problem, I guess because it didn’t take over great big areas. It took over smaller, kind of isolated areas and our horses used to ride along, when you’re riding horses they eat the bloom right off the top. They’ll go clear out of their way to go get the bloom. They love it. They’ll just munch it right down. We really never looked at it as being a real problem, but some areas I guess it is.

Interviewer – So when you think of the word “weed,” what comes to mind?

Montana Forest Service employee 2 – *Knapweed. That would be my first thing to say is just knapweed.*

Define “weed”? Undesirable plant species, I guess undesirable, unutilizable, greenery...I don’t know.

Anything undesirable. Anything that’s not really forage producing.

Montana retiree 1 - *Although I was talking with a couple of the ranchers up here about a month ago and one of them, ...but one of his cousins and with [the rancher’s] uncle, they were talking about weeds and thistles happened to be mentioned and the [rancher’s] boy said, “Geez, the cows won’t eat them.” And the [other rancher] said, “Yes, they will, after they’ve been frozen they love them.” So are thistles a weed or are thistles...I don’t know. I wouldn’t eat them. I wouldn’t eat them anytime, but the Rainbow gathering had some guy up there that used that as an edible food and chopped it down.*

The next retiree uses the word “obnoxious” to describe plants that are a nuisance to pets or stock, which is the main concern here regarding weeds.

Interviewer - When you use the word weed, what comes to mind?

Montana retiree 2 - *Knapweed, that’s the only one I deal with, and I don’t always know that I know it. There’s another little flower that kind of looks like them when they’re little. So, I’m not really a weed authority.*

Yes, I have - the taller stuff, like foxtail and stuff, the horses can't eat it because it has little barbs on the heads. But the stuff I sprayed did not kill it. That yellow stuff

that has a head on it like this and there's little tiny shafts and they get caught on horses tongues or cows, but they can regurgitate it, horses can't. The cows can if it's irritating them and they can try to get rid of it, but horses once it goes in its got to come out. And my horses don't eat it, they don't like it. My dog got very--I won't say sick--but very irritated and I had to take him to the vet from eating it out here. It was kind of growing up naturally along my porch. She was a little puppy and thought it was fun to eat, and I don't know over a hundred dollars later after I had to take her to the vet and she had about 30 barbs in her throat and they had to put her to sleep to take it out. I guess I have had a little bit of...maybe they weren't poisonous or noxious, but they were obnoxious to me.

These ranchers include the native plant larkspur along with other exotic weeds and know the difference between the two, but they define a weed as a plant disturbing their cattle.

Interviewer – So when you use the term ‘weed’ what comes to mind?

Montana ranchers – *Knapweed and leafy spurge, but we spray larkspur too. That kills cattle. Thistle.*

The respondent below questioned the definition of a weed and suggested the definition depended on the interests of the individual asked. Also, when asked about weeds the electrician discussed native ferns as a weed because they shaded out pasture grasses.

Washington electrician - *...as far as I can think of, every place I've always been, there's always some sort of, I guess a weed, I mean what is considered a weed? It's some plant that's been there and I think it's a weed and someone else thinks it's a wildflower then, there's some confusion there too. I've packed in the Cascades... commercially... and it seems like you always notice the different areas had, what we called weeds anyway, but... I don't know enough about plants to know whether it's a native or...*

The ferns to me are a problem that come up because they'll grow real fast up above your grass and then your grass gets shaded out and it doesn't grow very good.

So, they're [ferns], I know they're really not a weed but, they're an annoyance to me and my pastures if they're in the pasture. If they're you know along the tree line and stuff then I like to look at them as much as anybody else, but out in the pasture where they're actually knocking down the growth of your feed for your animals and...

The next respondents mainly define weeds relating to recreational or yard nuisances, with an emphasis on disturbances specifically affecting humans. They discuss native plants being an annoyance such as native thimble berries and a type of plantain. This businessperson discusses weeds not in a native or nonnative sense, but how the plant behaves within a system and shows a lack of knowledge on exotic weed species.

Interviewer – So in your mind, what is a weed?

Washington businessperson – *A plant that you don't want that's there. Just kind of thought of thimble berries as being a weed in a sense. I pretty much go by whatever the definition of it is.*

...aren't there times when just plant plants [native plants] which aren't considered weeds do essentially the same thing? Monopolize if not absolutely take over an ecosystem?

It strikes me that it might not be impossible for just a regular plant to have the same impact on a given ecosystem. And what would you do about that plant?

Again, weeds are defined by what kind of problems they may cause a human as in competing with desired yard grasses.

Interviewer – Ok, so when you use the word 'weed' what comes to mind?

Washington retiree 2 – *To me it's a dandelion or the thistle or the plantain or something like that. Those are the weeds that come to my thoughts.*

The next respondent mainly defines weeds concerning practical or work-related hardships and, like the previous topics of stock concerns and yard nuisances, the problem with weeds is related to human interests only. For example, this logger sees native alders as a weed because it is undesirable and never grows into anything "useful". In the rest of the interview, this logger mentions that weeds do not inhibit the growth of trees and does not believe a weed problem even exists.

Washington logger – *For me it's thistles. They encroach and you see the seed flying through the air. The knapweed's kind of nasty. We've got it in the law here. But you mow it off and it's green (laughing). That's all we have is weeds anyway.*

The hawkweed is kind of a pain because when you're mowing it, when it seeds, it really gets to our sinuses. [We] mow it at the store and it drives ya nuts.

Interviewer – What would be a weed to you? What would the definition be?
I guess a plant that's not desirable. I don't know. I just don't think about it. In the forest, a kind of a weed to me is alder in this area. The way it grows in on roads. It never grows into a tree and it's kind of a weed tree I guess.

Interviewer - When you're in the forest, do you notice many of them?
Not really. I do notice thistles I guess. I do, you go into a burn or something and seems like they get the thistles and the fireweeds kind of come first. I notice that. Is that a weed?

The loggers below are ambivalent about weeds because throughout their interview they discuss weeds as being a problem, but also helpful to humans at times, and will eventually take care of themselves.

Montana loggers – logger 1 - *A weed is a flower misplaced, a plant misplaced. You look at Webster's and that's the definition of a weed. It's a plant out of place. A plant that is a problem. Like I say a while ago, it's not a big concern because I think that over a period of time nature will take care of itself.*

There is no question the knapweed isn't a definite concern and I have no problem with, the best we can control it. I don't think there is any ultimate answer to it other than the natural.

This Forest Service employee has an extensive background in ranching, and weeds that are harmful to cattle are foremost in thought here more so than if a weed is native or nonnative.

Montana Forest Service employee 2 - *Larkspur's a very pretty plant.*

Interviewer - Is that a native plant?

I imagine it is. I'm not really sure. But a lot of people plant-Larkspur's really pretty. A lot of people have Larkspur in their yards, but-I think there's different strains of it, but I mean we used to go out and poison Larkspur on the forest. When I was in high school and younger, the Larkspur was the biggie back then.

This retiree also does not consider native versus nonnative plants the basis for defining weeds, but views plants for what they can do for humans like the dandelion. It does not

choke out the yard, have thorns, or stick to your socks, and it makes salad, and therefore he does not consider it to be a weed.

Montana retiree 1 – Like I said, dandelions are classified as weeds by 98% of the people and 50 years ago dandelions weren't weeds, they were used. That was salad. And now it's totally changed around so everybody has to get rid of them. I don't consider them a weed.

Yes, I just don't like thistle. I don't like wandering into it in my bare feet out there when watering my yard. Yes, I'm a thistle-aggressive person I guess.

As with the respondents above, this retiree defines a weed as a nuisance in the yard or garden inhibiting human activity, but also sees the usefulness of dandelions.

Washington retiree 1 – Dandelions. They're so visible, and you're sure to have them every spring.

Interviewer – They make good salad.

They make good wine too.

Similarly, the loggers below found Johnson grass, an exotic grass, acceptable in the past because it could be used as forage in years of drought back in Missouri. They also see benefits in the importation of knapweed.

Montana loggers - logger 1 - You was talking about the weeds, when I was a kid growing up, Johnson grass in the Midwest is a noxious weed, or used to be. Come to find out, it made the finest hay there ever was in Southern Missouri. They should have been cultivating it (laughing). They had three drought years there, the farmers that had Johnson grass, they had hay. The farmers that didn't have Johnson grass didn't have nothing. Come to find out that it was excellent hay.

We've had problems near the shop here in town. I told Marvin I thought it [knapweed] was kind of pretty and he about whipped me. It does make good honey, it makes the finest honey that I know of. It does have it's benefits. That's what it was brought over it here for.

Finally, for some individuals weeds do not appear to be relevant as illustrated by the respondent below who was blissfully uncertain about exotic weeds.

Interviewer - I was going to ask you, in your view are the weeds a concern around here, but-.

Washington businessperson - Milfoil would be the only one I could answer.

Interviewer - Well you've heard of, you've heard of knapweed?

Yeah.

Interviewer - Could you identify it?

Nope.

Interviewer - What about hawkweed?

Heard of it, couldn't identify it.

Interviewer - What about dalmatian toadflax?

I used to go with a girl with that name.

Understanding of Terminology

This section explores utilitarian respondents' understanding of terminology frequently paired with the word "weeds" to make distinctions between classes of weeds or to communicate degrees of severity of concern. After asking the respondents to define a weed, I also asked them about the meanings of various terms describing weeds such as native, nonnative, exotic, invasive, and noxious. The answers from the utilitarian-minded respondents mainly showed a lack of knowledge for the first three terms and the concepts behind them. Concepts such as native species relative to ecosystem-based management, or the endangerment or loss of native plants which could cause other species using those native plants to become endangered. In contrast, the latter two terms appeared more relevant and readily interpreted by utilitarian respondents.

The following excerpts explore a utilitarian understanding of the concept of native and nonnative. Overall, responses suggest that the distinction lacks relevance to the utilitarian perspective.

Interviewer – Uh huh, okay, so does it matter either way as far as thinking of them as a weed if they're native or nonnative to here?

Washington electrician - *Not for what I'm doing, no, it doesn't, it wouldn't matter if it was. I guess if I was trying to have pasture land out of there just because the weed was native or if it's something that somebody else hauled in and it's choking my pastures out, no it wouldn't concern me. One way or the other, I'd want to manage it.*

This retiree is mainly concerned with how weeds affect pets and horses (also illustrated above with the puppy story), and has never considered if these plants are native to the area or not. Interestingly, this retiree also points out lupine as a plant I was not interested in discussing.

Interviewer – I wonder if those [plants] are native plants?

Montana retiree 2 - *I don't know. I never thought about that.*

I don't think native or nonnative would matter to me. If it bothers what I'm trying to keep alive. Where it came from is kind of redundant at this point for me. I just want to get rid of it here.

The main thing I was trying to get cleared up was something you were not concerned with and it was lupine. I had a lot of lupine and it is toxic to horses, so that was what I was mainly trying to kill out. But it also kills other wide leaf, dandelions.

Similar to the respondent above, the four respondents below did not know whether specific plants in the area were native or nonnative.

Interviewer – Do you know if larkspur is a nonnative?

Montana rancher/outfitter - *You know, I really don't know. We had a little article written on it, and of course, we're getting off the subject again, but it was really interesting on the amount of drugs and things that were involved in larkspur. It's got a fairly high protein content and that's why cows seek it out. And after it's flowered out they don't eat it, or if they do eat it, it doesn't kill them and the poison goes down. But before it flowers out it's deadly to them. I have seen as many as 30 cows dead.*

Interviewer – Do you see - when you say knapweed is invasive, do you mean nonnative?

Washington retiree 2 - *I would have to think that if—I would think it's nonnative, I'm not sure.*

Interviewer – And the plantain, is that native?

I don't know. It seems prior to putting the grass down, that seemed to be our grass. It was just a lot of broadleaf plantain along with the dandelions, and, of course, thistle too.

Interviewer - Is it [a plant respondent was trying to identify] knapweed?

Washington retiree 1 - *That's one of the big ones, and then we see them along the roads and a lot of places. Maybe I have it in the book.*

Interviewer - Is that a book called "Northwest Weeds?" Does that also show invasive weeds too, or nonnative weeds, or is that just a book of weeds?

I never thought about that. I don't know.

Interviewer - Have you ever thought about if they're from here or not?

I don't know.

Interviewer - So you said that oxeye daisy is another one that takes over around here. Is that from around here?

Yes, it's around here and it blooms earlier in the summer.

Interviewer - Is it a native plant?

I think so. We've always had some, but in the last few years it seems like its multiplied and we have more than we used to have. I don't think anything eats it. Any animals I mean.

Interviewer - You said you have a lot of knapweed around here. Is that native?

I don't believe so.

Interviewer - So, the weeds that bother you around here, are they also native plants?

Washington healthcare worker - *I think so. I'm not quite sure. Are burs native to here? There's big burdocks, we have lots of those. And then there's these really tiny little ones. I don't know if they're native to here or if they developed after the trees were cut. This used to be forest originally and it was made over to fields a long time ago.*

This logger is described above as mainly worrying about tree harvests with regard to weed concerns, and the thought of native plants or seeds is not considered for business purposes.

Interviewer - If you use the words exotic weed, invasive weed, or nonnative, do any of those terms change your views?

Washington logger - *No, not really. I guess I don't know enough about 'em.*

Interviewer - The seeds that you get, are they native plant seeds?

I don't know. All I know about clover is there's two kinds. There's a native and a nonnative. One has pink blossoms and one has white blossoms. And one or the other is not native. I don't know what they are and I just get bulk at the feed store.

Interviewer - So that doesn't really play into your purchasing decisions?

No.

These ranchers know which plants are native, but are still mainly concerned with the effect a plant has on their cattle.

Interviewer – Is larkspur a native plant?

Montana ranchers – male - Yes, it's not considered a weed. But it kills cows, not sheep, but it kills cows.

With respect to the term exotic, the range of meanings or perceptions expressed by respondents was highly varied. The following two respondents do not associate the term "exotic" with any plants.

Interviewer – So if you heard the term, instead of just weed and you heard the term exotic weed or invasive weed, would that change what comes to mind?
Montana rancher/outfitter - No.

Interviewer – If you heard the word exotic weed or invasive weed, would that change what comes to mind?
Washington retiree 2 - ...As far as exotic, I wouldn't know which weed would fall into that.

Here, these respondents relate the term exotic to a “beautiful” plant, as do many visitors to an area unaware of the native species, picking and transporting many exotics.

Interviewer – So when using the terms “exotic” or “invasive” does that change what comes to mind?

Montana Forest Service employee 2 - When I think of exotic, I almost think of something almost on the pretty side of things...Although there's a lot of weeds that are really pretty, makes you think, “Oh, those are beautiful,” and a lot of what we have is weeds. Basically, when you think about it, and it's just that there's those few that you don't want to see.

Washington electrician - Let's see the other, native and exotic? Let's see, I should know more because I was trying to pay attention to some of the 4-H classes when we were talking about weeds, about the exotic weeds that people brought in because they looked like a beautiful flower of some kind. And they just take over everywhere, but... And I don't even know which ones they are.

Interestingly, the other terms of exotic, nonnative, etc. are defined as “new” weeds with this respondent and gardener who also does not consider the importance of a weed's origin.

Interviewer – So the term exotic weed or invasive weed, or nonnative weed, does that change what comes to mind?

Washington retiree 1 - I don't know that we had any new weeds. Some years some weeds are worse than other years. I can't think of any new weed. We've always had chickweed and we've always had dandelions.

Interviewer – So exotic and invasive means “new” weeds to you, using those words?

I guess so. I'd have to think about it.

This rancher clearly illustrates “exotic” which does not always convey a clear definition.

Interviewer – If you use the term or heard the term ‘exotic’ weed or ‘invasive’ weed, would that change what comes to mind?

Montana rancher 1 - Ya, I guess I would need further clarification of what you mean by exotic.

This respondent defines “exotic” weeds as plants that have more of an invasive quality and plants that bother humans, but does know the difference between some natives and exotics. Other portions of the interview indicated that this respondent does not care if they are exotic as long as they are useful.

Interviewer – Ok, well, if you heard the term or used the term ‘exotic’ weed or ‘invasive’ weed, would that change what comes to mind?

Montana retiree 1 - Yes, that would probably then weeds in the category of noxious weeds like spotted knapweed and thistle and hounds' tooth and that nature of things. That's my thought about exotic weed.

But exotic weeds are the ones that take over and eliminate the native weeds, I guess.

The following excerpts address respondents' understanding of the term "invasive". Unlike the term "exotic" discussed above where meanings appeared to be highly varied, the responses below suggest a shared understanding that the term "invasive" indicates a problematic plant, even though some respondents are not confident in their ability to identify invasive species and others are.

Montana rancher 1 - ... but an invasive weed, I guess I still have that same feeling that it is something that's probably undesirable and is able to propagate

and compete a lot stronger than some of the native forages that it's growing within.

Interviewer – So, if you used the terms exotic weed or invasive weed would that have a different image for you as far as ‘weed’?

Montana ranchers - *We would call knapweed an invasive weed, but also thistle.*

Interviewer – If you heard the word exotic weed or invasive weed, would that change what comes to mind?

Washington retiree 2 -*I think the invasive is the knapweed, isn't it? Isn't that an invasive weed?*

The health worker below is unsure about the native/nonnative distinction, but did recognize that “invasive” weeds were the ones causing the problems.

Interviewer - When you said noxious weeds, do you see a difference in using the terms invasive or exotic or native or nonnative or-

Washington health care worker - *I'd say the weeds that are invasive are probably the ones that the county is trying to get rid of. That's what it seems like. So, yeah, I think those are the problems. But I don't know which ones are native and which ones aren't so I can't really say on that.*

Interviewer - The plants that concern the county are they nonnative?

I guess so, and they're plants that apparently can take over an area, like the purple-with purple flowers. I don't know the names of anything.

As indicated by the four individuals below, most utilitarian respondents are familiar with the weed term "noxious", and consistently associate the term with detrimental effects to plants and animals. In other words, respondents are able to relate to the term "noxious" unlike the terms "native/nonnative" which are not relevant or part of their vocabulary, and the term "exotic" which does not have consistent meanings.

The respondent below tries to define the weed terms I mentioned and clearly sees a “noxious” weed as something bad and an “exotic” weed as something people valued because of its beauty (see excerpt above in discussion of exotics).

Interviewer – So just using the terms exotic weed or invasive weed or noxious weed or native weed, do they hold different meanings for you?

Washington electrician - Um, let's see we were talking about the difference, noxious weeds, yeah that definitely because of what you know as of the language, oh noxious weed, that's got to be bad.

This businessperson recognizes the different weed-related terms having different meanings depending on the usage. Here again, the term "noxious" is seen as the one used to describe a "problematic" weed.

Interviewer - What about people using the terms exotic weed and invasive weed, nonnative, noxious?

Washington businessperson - Well they all mean something slightly different at the very least, a noxious weed may or may not be, or an exotic weed may or may not be a noxious weed and there's so much transplanting now of this and that...

This respondent defines weeds as plants that have more of an invasive quality and plants that are a nuisance and "noxious" weeds as plants that cannot be eaten. When prompted, this respondent broadens the definition of "noxious" to include "exotic" weeds that are invasive.

Interviewer – So it doesn't matter if it's native or not?

Montana retiree 1 - No. Something that is not feed or forage for an animal, puts cockleburs in my socks, foxtails are weeds, dandelions aren't weeds, they are just green plants with yellow flowers that grow up all the time. I would say the noxious weeds, but I'm not smart enough to know which ones are noxious and which ones aren't, so basically thistles, weeds. Something the critters can't eat, I guess.

Interviewer – Ok, well, if you heard the term or used the term 'exotic' weed or 'invasive' weed, would that change what comes to mind?

Yes, that would probably then weeds in the category of noxious weeds like spotted knapweed and thistle and hounds' tooth and that nature of things. That's my thought about exotic weed.

But exotic weeds are the ones that take over and eliminate the native weeds, I guess.

The loggers below seem comfortable using the term "noxious" because it is a term they grew up with in Missouri.

Interviewer – So when you use the word exotic weed or invasive weed, does that bring a different image to you?

Montana loggers – *logger 1 - No, not really... If it's a noxious weed, that's the term that we grew up with. Like in that time back in that country the Johnson grass was a noxious weed, bindweed was a noxious weed, and hell there was three, what the hell was the other one?*

Logger 2 - Bind weed, Johnson grass, and what the hell is the other one that took over the South?

Logger 1 - We put it in there, Kudzu, to reclaim the old washed out... and it turned into a nightmare apparently. The hogs loved the Kudzu. It was wonderful hog feed.

People know what a weed is, but the finer distinctions such as exotic, noxious, etc. are more problematic.

Transitioning Views

The next range of perspectives on the continuum includes respondents (n= 4) who still reflect a strong utilitarian perspective, yet are more aware than the respondents above of exotic weed related concepts such as native and nonnative and of ecological concepts and consequences. The respondents start with a more utilitarian viewpoint and transition into an ecologically oriented viewpoint.

This first respondent is concerned with wildlife forage as well as having sympathy for the ranchers' weed battles over native cattle forage, but has a primarily utilitarian view. This businessperson is placed in the transition category because of being the only strong utilitarian mentioning a concern for wildlife and a greater understanding of the concepts of exotic and native.

Interviewer – So if you had to just define the word weed, what would you say?

Montana businessperson 1 -*Knapweed. It's just a pain in the ass plant. Elk don't live on them. Sheep don't live on it. Nothing does. But there ought to be some animal that lives on it?*

Interviewer – So the terms exotic weed or invasive weed, would that change what comes to mind?

Knap weed is the bulk of it. It's not native to this country and it is invasive. Knap weed is the major problem in this country. It's totally destroying everything.

This next businessperson has a farming background, and expresses an interest for wildlife forage and preserving plant diversity, but calls all exotic weeds “foreign” clearly knowing the difference throughout the interview. Although, this respondent also said “we must farm this planet” illustrating utilitarian viewpoints on certain issues.

Interviewer – So when you use the term ‘weed’ or other people use the term ‘weed’ what comes to mind?

Montana businessperson 2 – *To me mostly plants that are not native in the area that have been introduced or possibly could compete with other plants that are more local and have been here for hundreds of years, any kind of foreign plant I should say.*

Interviewer – So if you use the term or hear the term ‘exotic’ or ‘invasive’ would that change what comes to mind?

No, not really. I've heard a lot of stories, but there's acres and acres of knapweed fields and when that takes over you've lost feed and that for the wildlife, you've lost habitat for many of the local flora and fauna that were here before that are not adapted to that.

This is where the noticeable transitioning in view points begins. The following couple is concerned with what they consider the “natural scheme” of things. Their argument represents an evolution from a utilitarian viewpoint to more of an ecological viewpoint on exotic weed influences in natural areas. But they are confused on which plants are native to the area, and are not concerned with plant categorization on an eco-systemic level.

They mention Bull thistle (*Cirsium vulgare*) as a native plant, but it is a Eurasian weed accidentally introduced to the U.S. in the 1800's. Interestingly, unlike any other respondent they liken native plants mixing with nonnative plants to Native Americans mixing with Europeans.

Interviewer – Is there a native thistle that grows here?

Washington retired Forest Service and spouse - employee -Yeah, bull thistle.

Interviewer – Are you sure because I thought that was nonnative?

That's native.

Interviewer – So we're not talking about disliking weeds because they're nonnative, we're just talking about weeds in general?

Weeds to us, yeah. A weed to us might not be a weed to nature. And then the foreign weed...the only reason a foreign weed is a nuisance is because it's out of its element where the natural scheme of things is controlled by certain bugs and certain things that live on it. So that's the only reason, they don't have a natural enemy so it can flourish without any problem. That's the way I see it, anyway. I don't know anything about it.

Interviewer – So if you use the terms exotic weed or invasive or nonnative or noxious, do they all have different meanings for you?

I don't know...yeah, I guess they do. A noxious weed, to me, is a weed that no animal would eat, no wild animal or domesticated animal would be a noxious. A foreign would be noxious only in the fact that if nothing would eat it, if you didn't want it to take over and take out all your native plants, that's the reason why a foreign would be...because it doesn't have a natural enemy like the native plants have. I guess there's a place for everything but we got to have a balance. The big thing is to try to hold it down, but try to find something that will take care of it, give it a balance.

Interviewer – So if there was a foreign weed that things could eat, was nice looking and didn't crowd out native grasses, you wouldn't dislike it just because it was foreign? Or would you still get rid of it?

You know, there probably is some of those things around, but we don't realize it because it don't bug us, yeah, you're right, probably not. Never thought about that, but it's probably true.

Interviewer – Well there are just some people that no matter what, if it's not native, they want it out, so I was just wondering how you felt about that?

Spouse - Well, weeds that were native to an area purely at one time have been invaded by outside from other countries, other parts of the country. It can be due to the fact that conditions have changed so that they can survive here where they couldn't survive before. Maybe they're not all bad, there was a native race here but we're all mixed now and we're doing pretty good, so maybe weeds are somewhat the same way.

This retired couple enjoys and prefers native species, but readily accepts naturalized exotics that serve human needs as long as they do not become invasive and threaten native diversity. One of them has been researching the history of the area for a new book,

and discovered plants they previously thought to be natives to the area that are not.

Illustrated throughout their interview and here, they clearly relate the weed problem to species other than humans.

Interviewer – So would it make a difference to you if it was a nonnative or a native weed?

Washington retired couple – female - I would prefer that it be native. If it's native, I assume the various kinds of vegetation keep each other in check. And what can happen in the field is that you've removed everything else, so when you bring an intruder, it can take over.

Interviewer – So using the terms exotic weed, invasive weed, or nonnative weed, does that make a difference to you when thinking about or discussing weeds? *There's one piece of scotch broom down here on this guy's property, just south of here, and I have seen how that can be extremely invasive on the west side taking over miles of space. And I would not like that to happen here. But the thing is should I tell him, or should I tell [the weed board], or should I do anything about that piece of scotch broom? If I guess if it starts spreading I would, because that's going to change the whole environment. If I could do it, I would go back and see this place the way it was when it was a cedar swamp. I would like to see the different kinds of terrain that the earth provides, and I'd like this one to be what it's supposed to be. So it bothers me that outside things come in and take over. Because they don't lead to diversification. They do the contrary.*

I've never seen them take over, but for me tansy [exotic weed] is an insect repellent and a pretty flower.

Interviewer – So it doesn't bother you that it's not from here?

No. Not in itself that doesn't. If tansy took over that would bother me.

Interviewer – That's interesting. So it doesn't bother you to have nonnatives mixed in with the native diversity?

As long as it stays diversified, but that's the problem with knapweed. Not that it's exotic, no and I don't think most people even know that. It's when it gets out of control.

I think the weeds the pioneers brought here for their practical reasons from their point of view, have become naturalized and I'm fine with those. The hops that are everywhere. They are not native. You see currants that have gone wild as long as it's not acres of currants.

Interviewer – So as long, native or nonnative, as long there is diversity, it's ok with you?

Yeah. And not taking over. It would take a botanist to know. I don't know about the wild – I don't even know all the kinds. I think you would have to study botany to know if that one was here a hundred years ago. The canary grass, that very tall

grass that is all through our swamp down here, that's not native. That came here in 1886. Until then they were doing fine with their cattle on bunch grass, and a guy brought in canary grass and now it's everywhere. I'm sure most people must think that's native, but it's not. I prefer the native, but I just know from what I have read about this land over a hundred years, that those changes come and they're going to come and the more people travel it's going to happen. So in itself I don't think you can make nonnative the bugaboo, but I would try to keep the native. If I had a magic wand I would restore this like I said into a cedar swamp where there are now hard, dry cattle trails.

Ecological Approach

These two respondents on the end of this continuum discussed humans as degrading a system enough to allow the weeds to spread and become a problem. This wildlife technician works for the state and spends much of the field season budget on exotic weed management near Butte, which has a major knapweed population.

Interviewer – So when you think of the word “weed” what comes to mind?
Montana wildlife technician – *What comes to mind is exotics, species that Europeans have brought to the western United States in particular in the last 150 years and that includes Timothy, there are a lot of weedy grass species, Blue Bunch, no wait, what's the long grass, Blue Grass, as well as knapweed and spurge and forbs that are now illegal. That's what I think of in terms of exotics. And monocultures, you think of weeds, you think of a patch that is just one species.*

Interviewer – You've already used exotic, noxious, invasive, so one of my questions was in terms of if these terms change what comes to mind, but you've already used them. Is it all the same to you?
They certainly are in the same realm in terms of this. Exotics are plants that were not here originally and they become invasive because they haven't evolved in the system, for one thing, and we have degraded the system that we do have, giving them another toehold.

This Forest Service employee speaks of the exotic weed issue in more national or global terms, and tries to use descriptive terms with the public for better communication. In the previous utilitarian section, it was illustrated that people understood the descriptive words more easily.

Interviewer – when you think of the word “weed” what comes to mind?

Montana Forest Service employee 1 – What comes to mind is degradation, loss of viability of plant communities, loss of viability of ecosystems, impoverishment, just kind of word association things. That’s what I think of. Ecological disaster is not too strong of a word to use. And when you think about it on a national scale, like Florida and a whole bunch of them I can’t imagine, tropical plants and sub-tropical plants, God.

Interviewer – So what about the terms “exotic” or “invasive” does that...that’s what I’ve been asking all the people I interview.

Yeah, “exotic” is...I use it but it’s too subtle. I use invasive more now because it’s more descriptive and kind of drives the point home better. “Exotic” is probably too weak of a term even though scientifically it’s accurate. I think we should use something that the public can understand immediately and doesn’t have to be explained.

Interviewer – So when you do talk to the public...

I say “invasive and nonnatives.” Repetition in this case, is not a bad thing. I tend to repeat things, say it in different ways or whatever so even though “invasive nonnative” is probably redundant. I’ll say it just because it describes it a little better. You can have invasive natives when you have disturbances occur, timber sale or flood or something like that. “Pioneer” is probably a better and more accurate term to use but...yeah.

Ecological with Technocratic Approach

These respondents are not included on the continuum. The individuals in this category (n=3) have jobs specifically dealing with exotic weed management. The respondents below base their definitions or thoughts about weeds focusing on exact or legal terms taking a technocratic approach to the discussion. Both the Forest Service and county employees below speak of using the legal term of “noxious” with the public. The county employee says that “we all know that a native plant is not going to be invasive per se,” but the widespread lack of familiarity with the distinction between native and nonnative illustrated above shows that is not true. It seems as though the county employee may think members of the public know more about exotic weeds than they actually do.

Washington Forest Service employee - I usually use the term noxious weeds. If somebody asks me what is a noxious weed, I’ll tell them it’s an exotic or a

nonnative plant. But usually I'll call them noxious weeds. That's a legal statement, that's a legal term.

Washington weed district employee - *I tend to use the term noxious because that is what we operate with on the legal level. In legal terms, and relating right back to the law that I think people understand that better. But when I'm talking to people that are aware, I tend to just go with invasives because we all know that a native plant is not going to be invasive per se. Yes, fireweed will take over a clear cut, but that's its job, it's a pioneer species. It won't invade into the forest canopy, and it won't degrade the ecosystem, and in fact it's helping it. That's primarily with invasives, they are causing degradation of the environment.*

A noxious weed has to be exotic and it has to be difficult to control and has to cause damage to the resource, whether its agricultural, economic, forest, general environment, habitat, aquatic, whatever the resource is, wetland.

This respondent discusses standardizing weed definitions and language mirroring some of what Hull and Robertson (2000) express about language and moving toward a public ecology to level the playing field of knowledge.

Montana Student - *What exactly are noxious weeds, and I know we have a state list, but it doesn't seem to be used the same across the board with the people who are working with them on a research level, the people that are teaching it, professors and what not, people that are writing literature, the Department of Agriculture. I could go on and on, but it needs to be standardized is basically my idea. And to the point where there's no confusion. This is the definition, it's not going to be changed, we can work with ranchers and finally accept what we mean and understand what we're talking about would be a lot easier. Instead of having to redefine every time you sit down and try to chat with somebody.*

When you really get that in depth, well when I was using literature and things from the Montana State University Extension Office, and I never read much as far as publications and what not, but I find--when I went to go get licensed with the State for spraying restricted chemicals, I found that there were some ambiguity there, like what they were talking about in their noxious weeds. Particularly using exotic weeds. They use all sorts of different terms. I didn't really notice anything as far as agencies go, but as far as just the county levels and the local levels, there was a lot of variation, I guess you could say.

Chapter 5 – Conclusion

Summary - Forest Service and Community Relations

The exotic weed issue has become a major focus of national forest administration, yet the social dimensions of this problem have not been fully explored. Social dimensions are discovered by identifying the diversity of fundamental beliefs and values held by local residents about exotic weeds, and also other forms of natural resource management. Understanding the social landscape within a community is critically important in developing the communication and trust that underlie successful resource management programs.

This study suggests that the relationship between the Forest Service and the surrounding communities is an integral part of, if not central, to the success or failure of many resource management solutions. As discussed in Chapter 1, we should recognize that people often measure their interactions with public land management agencies by the extent to which their values and concerns are given consideration in decisions (Shindler 1997 in Shindler & Cramer 1999). Communities need to trust local agency workers. Barriers to this communication, and as a result possibly to consensus, can be the diverse meanings or values associated with specific landscapes, different beliefs about the role of humans in nature, differences in goals or interests for an area, and perceived inequality in management plans.

As would be expected, individuals within the two communities examined in the study held different views about the relationship between the agency and community. Respondents were placed in three separate groups reflecting the Forest Service and community relationship as (1) those who view the relationship as mostly negative, (2)

those seeing both negative and positive aspects, and (3) those who characterize the relationship as mostly positive. There were six respondents in the negative category, 13 in the negative/positive category, and five in the positive category. Characterizing the respondents was imperative to understand both the subtle and obvious differences of how community members and agency employees reacted to questions about relationships.

The conflicts over resource management issues presented in the results mostly reflect values and relationship conflicts, two of the social conflicts listed in Duane (1997). The community members and agency employees argue over goals, and their decision-making processes communicate their relationships. These conflicts are central to implementing ecosystem-based management in real places with real communities because they explain why reasonable people can disagree about the desirability of implementing specific policy, planning, or management actions (Duane 1997).

Here I will concentrate on a few major elements and outcomes: the evolving role of the Forest Service, and the Forest Service not being part of the community.

Evolving Forest Service Role

One of the problematic disagreements that emerged from the interviews was the notion of the Forest Service role evolving in a manner that drastically differs from what many community members envision and have experienced. This evolving role and difference in worldviews can be very problematic because it reflects a difference in values and an extreme lack of common ground resulting in unstable relationships between many Forest Service employees and community members in both the negative and negative/positive groups. Respondents in both groups also pointed out this evolving role as switching management goals and orientations from predominantly human needs to

ecosystem needs and how they perceive this as interfering with Forest Service public relations, community needs, local decision-making, access and overall trust.

Unfortunately, respondents in the positive group agreeing with or not noticing resource management problems are either some type of agency employee, uninformed about the role of the Forest Service, or are sympathetic to a good friend (s) working for the agency. Respondents in the positive or negative/positive groups did not share optimistic comments about Forest Service management issues and policy, minimizing the chance for common ground and compromise. Most positive comments related to agreement on policy directly dealing with quite specific and narrow self-interests.

I mention this evolving role as problematic because it makes public involvement, identifying common ground, developing compromise and creating possible consensus difficult to impossible to achieve among groups with a difference in worldviews such as utilitarian, conservationist, or preservationist. In Chapter 2 I discuss how Peterson and Horton (1995) use the rancher as an example of beliefs and identities affecting attitudes towards nature. Because their common sense, independence, and the human-land connection are interwoven with each other to create the perception of a good steward, ranchers are threatened by the USFWS discourse that they feel ignores their experience, replaces personal choice with coercion, and trivializes their sense of connectedness with the land (Peterson and Horton 1995). How we mesh these diverse worldviews into working relationships is problematic.

Forest Service Not Part of Community

Another major topic and difference among all three groups involves the Forest Service employee in the community. Both Forest Service employees and community members in

the negative category feel that Forest Service employees are not accepted in the community. One respondent suggests that children of Forest Service employees have a “stigma attached” to them, and the employees in this negative category do not yet feel accepted or never have felt like one of “the public”. Others do not view employees as dedicated to their areas because of a lack of permanent roots or as being outsiders. Employees discuss squabbles with family and friends over Forest Service management practices.

Respondents in the negative/positive category saved their overall positive comments for the individuals working for the Forest Service as opposed to the agency as a whole. Forest Service employees not being accepted into the community is another example of a barrier to positive working relationships with community members and their participation with natural resource management in the decision-making process. Many employees are not accepted into the community because of their policy related decisions affecting local economies, and their different worldviews on managing public lands.

Unexpectedly, the role of the District Ranger had much more of a direct influence on the relationship between the agency and the community than I previously believed. Most respondents in all three groups from both communities considered the district ranger when asked about both the agency relationship and relationships with individual Forest Service employees. Respondents in the negative group are convinced that replacing the district ranger is one of the many necessary elements for mending the relationship with the community and Forest Service, but again, if this new ranger has an opposite or conflicting worldview they are back to “square one” with disagreement.

Role of Public in Decision-making

Both the negative and negative/positive groups feel they have no voice at the decision-making table with the Forest Service, but unfortunately, respondents in the negative group that are directly affected by management decisions have basically given up trying to communicate. As discussed in Chapter 2, top-down decisions reached without the participation of those most directly impacted exacerbate these conflicts, whereas communication built on a foundation of mutual respect could encourage trust, public participation and development of sound management policies (Peterson and Horton 1995).

However, since the respondents in the negative/positive group can recognize positive aspects with the Forest Service/community relationship such as individual employees and particular management issues, these respondents still want to participate in the decision-making process. They trust some employees and still feel they can contribute and compromise if given the chance. For example, a Montana retiree is still willing to compromise and discusses sitting down with Forest Service employees and a map of the area, hashing out designated snowmobile boundaries, but suggests a mediator's presence. Another example is of a Washington rancher that is quite frustrated with certain individual employees from the past, but now feels hopeful about working with a new range employee with a ranching background.

The respondents in the positive group are either unaware of local resource conflicts or basically feel the employees are doing their job.

Role of Information

Another serious communication barrier involves the role of information, which is tied to the trust and credibility community members and Forest Service employees have for each other. The respondents in the negative group describe this relationship as one filled with mistrust, with community members believing pessimistic and often outlandish rumors instead of agency employee information. For example, one respondent believed the weed problem in Washington was “made up” for job security. The negative comments from the negative/positive group also reflect this lack of trust and credibility. I was fortunate enough to follow up on many of these rumors and learned that many of them were just that, rumors. Even information on core public land decisions, such as future wilderness designation plans, were not questioned or investigated by community members. This lack of trust can be mutual between locals and Forest Service employees. While agencies discuss the notion of “informing” the public on projects or decisions, a lack of information is not the root of the problem. Trust is the problem if the people receiving the information do not have faith in the source.

Summary –Weed Concepts and Terminology

The ability to communicate effectively and work toward resolution of specific resource conflicts such as weed management is obviously connected to the rapport between the Forest Service and the community members as illustrated above. Yet another potential barrier to communication and cooperative management of weeds deals with different understandings of what weeds are and differences in terminology used to discuss the problem.

Hull and Robertson (2000) discuss the idea that the language we use to describe nature matters, and there exist multiple, conflicting, imprecise, and biased definitions of the terms used to discuss nature. Environmental knowledge is collected, produced, and interpreted by multiple language communities (subgroups of natural scientists, social scientists, humanities scholars, environmental professionals, and citizen activists) using incompatible units of analysis (Hull and Robertson 2000). Most respondents obviously viewed weeds as plants that are generally unwanted. Their level of knowledge and worldviews on weeds, however, varied significantly.

There are two key differences that are potential barriers to communication and coordinated weed management. First, respondents basically have fundamental differences in their concept of a weed. On the one hand there are those with views of weeds based on strict utilitarian needs from nature and a certain lack of exotic weed awareness. On the other hand, there is a group transitioning from a utilitarian worldview to an ecological view, to those with a predominantly ecological view.

Second, the terminology or language differences exist between respondents at different points along this continuum. For individuals in the utilitarian group, the terms (and concept of) native/nonnative are irrelevant and, for the most part, are not part of their vocabulary. Their perspectives are directed toward instrumental damage. Further, among individuals with a utilitarian view, the meaning of the term exotic is highly variable ranging from uncertainty about the term, to beautiful, to new, to nonnative. Invasive was more widely recognized while the term noxious was the most commonly used term. However, it was often used to describe native (such as larkspur) as well as nonnative weeds. In contrast, those individuals reflecting an ecological worldview

commonly focused on the terms native versus nonnative, exotics, and invasive. These language differences become a barrier when communicating about weed issues. For an example of the communication barrier, a respondent in the ecological end of the continuum discussed the importance of having a universal weed language with the same words and meanings that all could understand and utilize.

Also interesting is the difference in the knowledge base concerning exotic weeds between Montana as a resource-dependent community, and Washington as an area struggling to transition into a service-dependent or tourism-based community. The Montana respondents are more aware overall about exotic weeds as being a problem or a threat, but not necessarily aware of individual species or identifying them. The respondents there expressing exotic weed concerns are connected with ranching or sympathetic to ranchers in some way. Washington respondents are much less to not at all aware of exotic weeds in their area or had simply not considered it as a possible problem other than the ranchers (one couple) and agency employees in that sample.

The respondents in Montana seemed to be socially closer knit with a strong sense of community and awareness or apprehension of “outsiders”. Washington respondents also have a strong sense of community, but a sense of division or competition between Ione and Metaline Falls, unlike Jackson and Wisdom in Montana and also have a more diverse group of residents. This could be the cause of my perception that the Washington respondents are not as closely connected with or interested in each other as the Montana respondents.

Study Limitations and Special Considerations

Even though I faced a few practical complexities while conducting qualitative or

interpretivist research, this was still the best method for the study. There were many intricacies in this type of research exposing the richness of deep-seeded worldviews on a variety of topics otherwise lost in an approach less suited for the research goals and objectives. Understanding the qualities of the sample size, interview process and scientific status of qualitative research presented a challenge in this study.

While the sample size was relatively small (24 respondents), the respondents represented a variety of viewpoints. However, a larger sample could provide an even greater diversity of opinions. Even with this seemingly small number, there was a difficulty in handling large volumes of data. The interviews spanned from 40 minutes to 2 hours of transcription to be proofed, coded and analyzed. Each analysis was quite time consuming and completed without help. Because of the variation in how an analysis may be completed between researchers, it is best to have the same person coding all of the data. It was difficult to estimate how long these interviews, transcriptions and the analysis would take, and my projection dates for completion were inaccurate.

Second, the interview process itself was draining. The average time spent with each respondent was about 5 hours counting the establishment of a rapport as well as the interview itself. Sometimes a meal was involved, playing with the kids, tending the stock or pouring over family photo albums. I also had problems keeping the tape recorder in working order, and would suggest a back up recorder in the future.

Lastly, providing access to the data in a way that allows adequate external critique remains one of the greatest difficulties to maintaining the scientific character of qualitative research due to space restrictions. As a consequence, I had to focus on interpretation even though the entire interview was not accessible to the reader. Although

the quotations selected were organized by topic so readers could have access to the actual data to draw their own conclusions or to independently assess the basis for the researcher's interpretations.

Management Implications

Focus

The changes in the National Forest System Land and Resource Management Planning Regulations proposed in 2000 illustrate the idea that agencies need to change the way they relate to the public. For instance, in the 1982 regulations discuss public participation using phrases such as “broaden the information base, inform the public, provide the public with an understanding, and formal public participation activities may include.” The proposed 2000 regulations discuss collaboration and cooperatively developed landscape goals providing phrases like “Forest Service managers may assume many roles such as a leader, organizer, facilitator, or participant.” And “collaborative development of landscape goals...subject to applicable laws, meaningful, cultural practices, local knowledge, public dialogue, and participating in community-based groups.” The newer regulations clearly call for Forest Service employees to welcome and encourage information sharing, collaborative decision-making, and an integration of the agency into the community, instead of the agency educating and informing the public on the issues and planned projects.

With that said, agencies need to focus on the segment of the community they can most benefit from with regards to these new planning regulations. At the current time, in the communities I studied, achieving these goals with individuals in the negative group appears highly problematic due to their apparent lack of willingness to accept the Forest

Service into the community and lack of trust. In contrast, the group of respondents falling into the negative/positive group on relationships, essentially people with mixed feelings, may be more likely to come to the table and an agreement with other community members and agencies on a project. Certainly their responses seemed to suggest a willingness to be engaged in decision-making processes with the Forest Service. This may determine the appropriate approach for an agency to focus their attention and discover the commonalities they may have with these community members. For example, a rancher and respected member of the community was definitely an asset when trying to round up volunteers on a weed spray day. He called local friends to show up for the community work that otherwise did not show when county or Forest Service employees notified them.

Other respondents in the negative/positive group are willing to work with Forest Service employees on resource issues, providing they feel they can trust the agency again. If the Forest Service works with this “mixed” group and gains back their trust, this group’s friends in the negative group may indirectly regain trust with the agency as well. Also, even though the positive group may seem to agree with current policy, good relationships should be continued because they may not always agree with future policy decisions and may also have friends in the negative group.

Better Relations?

Many respondents, especially in Montana, bring up the issue of Forest Service employees not being accepted in the communities as mentioned above. A few community members suggest employees should socialize with locals more often. Some of the loggers I spoke with suggested employees mingle at the bars and “get drunk” with non-Forest

Service people like the “old days”. Other respondents suggested employees buy homes in the area and generally participate more in community functions. There are certain institutional constraints that make some of these suggestions impossible or unprofessional. The notion of District Rangers buying homes, but wanting to occasionally move around for job advancement was previously discussed.

As another example, local community members usually accept or get along with the seasonal Forest Service employees because: (1) seasonal employees do not make decisions directly affecting local livelihoods, and (2) many of them regularly patron the bars and eating establishments. On the other hand, permanent decision-making employees are usually advised for professional reasons not to “go drinking” with their seasonal employees, and they eventually get the reputation of not participating in local “activities”. Other community members say certain employees would not be welcome even if they tried to participate or “bought everyone a beer”, again due to a difference in worldviews.

Another example of an employee perceived as not wanting to be a part of the community or “thinking they are better” as suggested by a Montana businessperson is my own experience living in the Big Hole Valley for the summer as a Forest Service trainee. I did not eat or drink in the local bars because I am highly allergic to cigarette smoke and do not drink alcohol that often. A few locals asked me why I never joined them at the bar, but did not accept my answer as truthful and suggested I did not want to mingle with local people. In fact, I received a cold welcome from locals after they discovered I worked for the Forest Service when I tried to get to know them. How is this cycle of

employee separation from the community broken when locals suggest employees become part of the community, but then do not accept them when they try?

The research approach employed in this thesis suggests an alternative means of socially integrating into the community. I believe that this research was some of the most valuable training I could ever receive as a future permanent Forest Service employee. I entered the homes of community members that never would have invited me in if it were not for the excuse of this research. Sharing in the hospitality, family stories and pictures, complaints and praises of the Forest Service, and the general information sharing on a variety of topics really opened the lines of communication no matter what worldviews were held. I firmly believe that putting a friendly, understanding face on the Forest Service as an agency through employee patience and determination will help foster mutual respect and possibly better working relationships. For example, one of the respondents commented on the importance of respect over likeness.

Professional and Public Responsibilities

Successfully integrating the Forest Service into the community requires changes in responsibility on both sides. Many comments from the respondents (even a Forest Service employee) focused on their feelings of condescension from Forest Service employees at public meetings or not being heard in meetings using words such as “disenfranchised”.

At times employees said they perceive themselves to be in difficult positions at public meetings with the community, and are therefore discouraged from attending. They tire of the “squeaky-wheel” phenomenon at meetings or excessive drinking before hand, and do not see the productiveness in the meeting process if they cannot get useful input on

projects. Other community members wish the Forest Service would be “firmer” and stand up to the people causing the disturbance, and resent the dysfunction of the public meetings. The idea of key respected community members facilitating or mediating the public meetings is a good one, but unfortunately I have not seen it happen.

It is apparent throughout the interviews that both community members and Forest Service employees feel that public meetings and the general communication are currently unproductive. The constant cycle of negativity illustrated above can be partly solved with employees realizing that the old method of “informing” the public is no longer viable. The local public wants to be involved in the discussions and the decisions affecting their area.

Much of the animosity between the public and the agencies found in these communities could be avoided if employees could help community members feel they were significantly contributing to the solution in some way. It has been shown that even a basic rapport of some kind is appreciated. One of the respondents was quite impressed by working side-by-side with a permanent employee in the field over a weekend, and wished it happened more often. The event made a huge impact in this respondent’s respect for a local Forest Service employee.

An interesting idea might be to have fewer seasonal employees every year and replace them with permanent employees that could be out in the field more and also join in with the community. However, adding more permanent employees to the payroll may look inefficient to many local community members who already say there are too many people working for the Forest Service or the government in general. In reality, it may be more efficient in the long run to have permanent employees throughout the year. They would

not need to take a month and a half out of their three to four months of summer employment strictly for basic training. The hours spent on training for a government driver's license, fire school, sexual harassment and civil rights awareness, chainsaw certification, safety on the job, supervisory skills, learning the area (which does not usually happen in one season), skills specific to their discipline, and paperwork is overwhelming and time consuming. This happens every season with new employees. Of course there are those community members/and or employees that will be unreasonable or unwilling to communicate on issues no matter what the solution, which is why the respondents in the negative/positive group are so important to the effort of teamwork.

Recently, I have been considering Forest Service jobs in various places, calling supervisors asking about the local working conditions. Often when I inquire about the relationship between the local community and the Forest Service with a district office, I get silence or hesitation. Usually the answer suggests to me that the topic is not of importance or discussed unless for "damage control" on certain meetings, policy decisions, and so on. Or, that the relationship is quite poor.

If Forest Service employees could experience an in-depth interview process with community members in their local areas, they would have a better appreciation for them as *people*. This will not change worldviews or the complexity of resource management issues, but forming a good rapport or real relationship between agency employees and other community members may lead to respect and better cooperation.

I also propose that the second part of the solution rests with the public. Instead of community members distrusting, complaining and believing rumors, they could take the responsibility of researching their local resource management issues in question and

sharing that knowledge with other community members/employees. I say this because of the illustrated lack of knowledge on many resource issues in the area as well as exotic weeds among community members. A prime example being a retiree from Washington disagreeing with setting aside land for grizzly habitat, but having never heard of and not believing that grizzlies are listed as an endangered species. Another example is some agency employees thinking locals know more about exotic weeds and other resource issues than they really do, and also assuming they know what to do about weed invasions.

Some locals are stuck in the same old mistrust cycle and seem unwilling to confirm rumors, study the issue, or give agency employees a chance personally or professionally. I believe it is the responsibility of the agency employee to learn as much as they can in their field, but if a community member does not trust anything that employee has to say, then I challenge the community member to study the issue her/himself and be willing to bring it to the decision-making table.

Future Research

After discovering how insightful and useful this research project was just for me as a future Forest Service employee, I strongly feel we need to build a greater understanding of, and receptivity to, qualitative research as an aide to planning and decision making in the fields of natural resources for as many agency employees as possible. Relationships, and ultimately resource management, are far more complex than what can be represented by more quantitative-type methods of discovery. This research approach is not yet well received by many resource managers, but is becoming more and more common among social scientists. Discovering a method of teaching biological researchers, forestry students and current agency employees that biological management issues also have

social aspects often times causing barriers to success could help with the receptivity among agencies and universities. If they recognize there are different worldviews that must be considered and discussed when managing public lands, they be better equipped to handle emotional responses to resource issues.

Because of the large volume of data collected in these in-depth interviews, there were themes I was not able to expand upon such as knowledge valued, identity, wilderness, land agency role, outsider influence, and their various accompanying sub-themes, as well as sub-themes tied to weeds and relationships that were not approached in this thesis. Many of these themes became important while discussing the relationships between the community and the Forest Service, and should be further investigated.

The weeds and relationships themes held interesting sub-themes also worthy of further study. Within the weeds theme other topics emerged that were important regarding management barriers such as views on control methods, eradication versus management, the impact of weeds on forest uses, and education and prevention tactics. Other emergent sub-themes under the relationship theme also important for public participation in weed and other types of management dealt with relations between land management agencies, public meeting atmospheres, and conflicts in goals and interests between the agency and communities.

Respondents in these areas had experiential knowledge, formal knowledge or a combination of both. Combining both types of knowledge for resource management decisions would be beneficial and efficient, but each type may not respect the other type. For example, ranchers from the sample did not value formal education or agency field experience. This too affects the relationship between generations of local families and

Forest Service employees further complicating resource management decisions and would be interesting to study as to why.

As mentioned in the Chapter 3, identity plays a huge role in resource management decisions. I looked at the utilitarian and ecological views regarding the weed concept and language, but to look deeper into the identity and other issues it involves would be yet another deeper level of discovery. Other issues such as motorized versus non-motorized recreation, dependence on public land, ideas of land stewardship, family heritage in the area, feelings of connection to the land, and a sense of community pride. The differences of worldviews mentioned throughout contribute to the barriers between agencies and communities. This difference in worldviews also contributes to the support or opposition of designated wilderness and road-less lands, and the role the agencies play in the management of these protected areas, which can also be a barrier when discussing weed management boundaries and control methods.

Furthermore, it also became apparent from the beginning that my familiarity with and/or years of living in the study areas proved to be much more insightful than the “drive-by research” typical of many projects. The benefits of this previous knowledge base and this type of ethnographic research could encourage the joining of research forces of both agency employees and university affiliates instead of a separation of experience and ideas.

Lastly, the social network differences between the study sites of Montana and Washington are visibly different on many issues as well as weed issues, and would be interesting to study. Even though the Montana interviews illustrated weed management as the common thread between the community and the Forest Service, this common thread

was not present in the Washington sample. The fact that the Montana community is dependent on ranching may be part of the reason for this weed awareness, but the communication and management action toward weeds could be much more efficient and successful. The Washington community is a good example. They do not have this common thread between the community and the agencies on weeds. They also seem to have less communication and more negativity surrounding the relationship, and they have disinterested or uninformed respondents on weeds as well as with a variety of other resource topics more so than the Montana sample. Maybe the communication on weeds in Montana can lead to communication on other topics. Or maybe the people living in the two areas in Montana and Washington are different enough to have different relationships between the community and the agencies. Whatever the reasoning, I still see more communication between the Montana community than I see in the Washington community, and the weed program in Montana is much more successful.

Literature Cited

(1964). The Wilderness Act.

(1969). The National Environmental Policy Act.

(1973). The Federal Noxious Weed Act.

Alkire, C. (1999). Funding Strategies for Wilderness Management. Wilderness Science in a Time of Change Conference, Missoula, Montana, USDA, Forest Service, Rocky Mountain Research Station.

Aplet, G. H. (1999). "On the Nature of Wildness: Exploring What Wilderness Really Protects." Denver University Law Review 76: 347-367.

Associates, I. (1986). Conflict Resolution in Organizations. Third National Conference in Peace-making and Conflict Resolution, Denver.

Babbie, E. (1995). The Practice of Social Research. Belmont, Colorado, Wadsworth Publishing Company.

Baker, R. G. (1965). Characteristics and Modes of Origin of Weeds. The Genetics of Colonizing Species. New York, Academic Press.

Bardwell, L. V. (1991). "Problem-framing: a perspective on environmental problem-solving." Environmental Management 15: 603-612.

Barry, D. (1998). "Toward reconciling the Cultures of Wilderness and Restoration." Restoration and Management Notes 16: 125-127.

Bender, B. (1975). Farming in Pre-history: From Hunter-Gatherer to Food Producer. London, John Baker.

Berger, P. L. a. L., T. (1989). The Construction of Reality: a Treatise in the Sociology of Knowledge. New York, Double Day.

Brunson, M. W. (1995). Social Acceptability of New Perspectives, Practices and Conditions. Corvallis, USDA Forest Service, Pacific Northwest Research Station: 155.

Caldwell, L. K. (1990). Between Two Worlds: Science, the Environmental Movement, and Policy Choice. Cambridge, Cambridge University Printing.

- Campbell, F. T. (1997). Exotic Pest Plant Councils: Cooperating to Assess and Control Invasive Non-indigenous Plant Species. Assessment and Management of Plant Invasions. J. O. Luken, and Thieret, J.W. New York, Springer.
- Campbell, F. T. a. S. E. S. (1994). Fading Forests: North American Trees and the Threat of Exotic Pests. New York, Natural Resources Defense Council.
- Caplan, J. A., and Kessler, W.B. (1991). Multiple-use and Ecosystem Management: a Comparison of Two Paradigms. Ecosystem Management in a Dynamic Society, West Lafayette, Indiana, Purdue University.
- Carlton, J. T. (1996). "Biological Invasion and Cryptogenic Species." Ecology **77**: 1653-1655.
- Carmaz, K. (1991). "Translating Graduate Qualitative Methods into Undergraduate Teaching: Intensive Interviewing as a Case Sample." Teaching Sociology **19**: 384-395.
- Cole, D. N. (1996). "Ecological Manipulation in Wilderness: An Emerging Dilemma." International Journal of Wilderness **2**: 12-16.
- Cole, D. N., and Landres, P.B. (1996). "Threats to Wilderness Ecosystems: Impacts and Research Needs." Ecological Applications **6**: 168-184.
- Cole, D. N. a. S. F. M. (1999). Wilderness Ecosystems, Threats, and Management. Wilderness Science in a Time of Change Conference, Missoula, Montana, USDA, Forest Service Rocky Mountain Research Station.
- Corbin, J., and Strauss, A. (1996). "Analytic Ordering for Theoretical Purpose." Qualitative Inquiry **2**: 139-150.
- Cormier, N. H., and Cormier, L.A. (1985). Interviewing Strategies for Helpers: Fundamental Skills and Cognitive Behavioral Interventions. Monterey, California, Brooks/Cole Publishing Company.
- Cortner, H. J., Shannon, M.A., Wallace, M.G., Burke, S., and Moote, M.A. (1996). Institutional Barriers and Incentives for Ecosystem Management: A Problem Analysis. Portland, Oregon, Pacific Northwest Research Station: 35.
- Creighton, J. L. (1981). The Public Involvement Manual. Cambridge, Abt. Press.
- Creighton, J. L. (1983). The Use of Values: Public Participation in the Planning Process. Public Involvement and Social Impact Assessment. G. A. Daneke. Boulder, Westview Press.

- Cronon, W. (1995). Uncommon Ground: Toward Reinventing Nature. New York, Norton.
- D'Antonio, C. M., and Vitousek, P.M. (1992). "Biological Invasions by Exotic Grasses, the Grass/Fire Cycle and Global Change." Annual Review Ecological Systems **23**: 63-87.
- Dingwall, R. (1997). Context and Method in Qualitative Research. Newbury Park, California, SAGE Publications.
- Duane, T. P. (1997). "Community Participation in Ecosystem Management." Ecology Law Quarterly **24**: 771-797.
- Ehrlich, P. (1980). "An Ecologist Standing Up Among Seated Social Scientists." The CoEvolution Quarterly(fall): 24-35.
- Elton, C. (1958). Ecology of Invasions. London, Methuen.
- Fritz, G. L. (1994). "Precolumbian *Cucurbita argyrosperma* ssp. *argyrosperma* (Cucurbitaceae) in the Eastern Woodlands of North America." Economic Botany **48**: 280-292.
- Gadbow, D. (1998). Bane of the Range. Missoulian. Missoula, Montana.
- Gericke, K. L., Sullivan, J., and Wellman, J.D. (1992). "Public Perception in National Forest Planning." Journal of Forestry **90**: 35-38.
- Gobster, P. H., and Hull, B.R., Ed. (2000). Restoring Nature: Perspectives from the Social Sciences and Humanities. Washington D.C., Island Press.
- Hiebert, R. (1990). "Managing Alien Plants." Trends in Ecology and Evolution **27**: 8-16.
- Hiebert, R. D. (1997). Prioritizing Invasive Plants and Planning for Management. Assessment and Management of Plant Invasions. J. O. Luken, and Thieret, J.W. New York, Springer: 195-210.
- Hudson, L. A., and Ozanne, J.L. (1988). "Alternative Ways of Seeking Knowledge in Consumer Research." Journal of Consumer Research **14**(March): 508-520.
- Hull, B. R., and Robertson, D.P. (2000). The Language of Nature Matters: We Need a More Public Ecology. Restoring Nature: Perspectives from the Social Sciences and Humanities. P. H. Gobster, and Hull, B.R. Washington D.C., Island Press.
- Keiter, R. B. (1994). "Beyond the Boundary Line: Constructing a Law of Ecosystem Management." University of Colorado Law Review **65**(2): 294-333.

- Kellert, S. R. (1996). The Value of Life. Washington D.C., Island Press.
- Kempton, W., Boster, J.S., and Hartley, J.A. (1995). Environmental Values in American Culture. Cambridge, MIT Press.
- Klyza, C. M. (1996). Who Controls Public Lands? Mining, Forestry, and Grazing Policies, 1870-1990. Chapel Hill, University of North Carolina Press.
- Kvale, S. (1983). "The Qualitative Research Interview: a Phenomenological and a Hermeneutical Mode of Understanding." Journal of Phenomenological Psychology **14**: 171-196.
- Kvale, S. (1996). Interviews: An Introduction to Qualitative Research Interviewing. Newbury Park, California, SAGE Publications.
- Lodge, D. M. (1993). "Biological Invasions: Lessons for Ecology." Trends in Ecology and Evolution **8**: 133-137.
- Loope, L. (1993). An Overview of Problems with Introduced Plant Species in National Parks and Biosphere Reserves of the United States. Alien Plant Invasions in Native Ecosystems of Hawai'i Management and Research. C. P. Stone, Smith, C.W., and Tunison, T. Honolulu, University of Hawaii Cooperative National Park Resources Studies Unit.
- Luken, J. O., and Thieret, J.W., Ed. (1997). Assessment and Management of Plant Invasions. New York, Springer.
- Luloff, A. E. (1995). "Regaining Vitality in the Forestry Profession: a Sociologist's Prospective." Journal of Forestry(November): 6-9.
- Lutzow-Felling, C. J., Gardner, D.E., Markin, G.P., and Smith, C.W. (1995). *Myrica faya*: Review of the Biology, Ecology, Distribution and Control, Including an Annotated Bibliography. Manoa, Hawaii, Cooperative National park Resources Studies Unit, University of Hawaii.
- Marler, M. (1998). Exotic Plant Invasions of Federal Wilderness Areas: Current Status and Future Directions. Missoula, Montana, The Aldo Leopold Wilderness Research Institute, Rocky Mountain Research Station: 45.
- Marler, M. (1999). A Survey of Exotic Plants in Federal Wilderness Areas. Wilderness Science in a Time of Change Conference, Missoula, Montana, USDA, Forest Service, Rocky Mountain Research Station.
- McCool, S. F. (2000). Personal Communication. A. Schwaller. Missoula, Montana.

- McCool, S. F., and Freimund, W. (2001). Threatened Landscapes and Fragile Experience: Conflict in Whitebark Pine Restoration. Whitebark Pine Communities - Ecology and Restoration. S. F. A. Diana F. Tomback, Robert E. Keane, Island Press: 440.
- Merriam, G. (1999). Root of the Problem: Divisiveness on Weed Debate Keeps County from Tackling Growing Menace. Missoulian. Missoula, Montana.
- Moore, S. A. (1995). The Role of Trust in Social Networks: Formation, Function and Fragility. Nature Conservation 4: The Role of Networks. D. A. Saunders, Craig, J.L. and Mattiske, E. M. Chipping Norton, Surrey Beatty and Sons: 684.
- Moore, S. A. a. L. R. G. (1999). "Understanding Dispute Resolution Processes for American and Australian Public Wildlands: Towards a Conceptual Framework for Managers." Environment and Management **23**(4): 453-465.
- Norton, B. G. (1998). "Improving Ecological Communication: The Role of Ecologists in Environmental Policy Formation." Ecological Applications **8**(2): 350-364.
- Paehlke, R., and Torgerson, D. (1990). Managing Leviathan - Environmental Politics and the Administrative State. R. Paehlke, Torgerson, D. Lewiston, New York, Broadway Press: 310.
- Patterson, M. E., and Williams, D.R. (2001). An Interpretive Paradigm for Collecting and Analyzing Qualitative Data: Principles, Methods, and Case Examples.
- Patterson, M. E., Watson, A.E., Williams, D.R., and Roggenbuck, J.R. (1998). "An Hermeneutic Approach to Studying the Nature of Wilderness Experiences." Journal of Leisure Research **30**: 423-452.
- Perlin, J. (1991). A Forest Journey: the Role of Wood in the Development of Civilization. Cambridge, Harvard University Press.
- Peterson, T. R., and Horton, C.C. (1995). "Rooted in the Soil: How Understanding the Perspectives of Landowners Can Enhance the Management of Environmental Disputes." Quarterly Journal of Speech **81**: 139-166.
- Pimm, S. L. (1991). The Balance of Nature? Ecological Issues in the Conservation of Species and Communities. Chicago, University of Chicago Press.
- Radnitzky, G. (1970). Contemporary Schools of Metascience. Goteborg, Akademieforlaget.
- Ramakrishnan, P. S., and Vitousek, P.M. (1989). Ecosystem-level Processes and the Consequences of Biological Invasions. Biological Invasions: a Global Perspective. New York, John Wiley: 281-300.

- Randall, J. M. (1993). Exotic Weeds in North American and Hawaiian Natural Areas: The Nature Conservancy's Plan of Attack. Biological Pollution: The Control and Impact of Invasive Exotic Species. B. N. McKnight. Indianapolis, Indiana Academy of Science: 159-172.
- Randall, J. M. (1997). Defining Weeds of Natural Areas. Assessment and Management of Plant Invasions. J. O. Luken, and Thieret, J.W. New York, Springer: 18-25.
- Randall, J. M. (1999). Improving Management of Nonnative Invasive Plants in Wilderness and Other Natural Areas. Wilderness Science in a Time of Change Conference, Missoula, Montana, Rocky Mountain Research Station, USDA.
- Reichard, S. E. (1997). Prevention of Invasive Plant Introduction on National and Local Levels. Assessment and Management of Plant Invasions. J. O. Luken, and Thieret, J.W. New York, Springer: 324.
- Ryan, R. L. (2000). A People-Centered Approach to Designing and Managing Restoration Projects: Insights from Understanding Attachment to Urban Natural Areas. Restoring Nature - Perspectives from the Social Sciences and Humanities. P. H. Gobster, and Hull, B.R. Washington D.C., Island Press: 209-228.
- Samdahl, D. M. (1999). Chapter 8 Epistemological and Methodological Issues in Leisure Research. Leisure Studies: Prospects for the 21st Century. E. L. Jackson, and Burton, T.L. State College, Pennsylvania, Venture Publishing.
- Sampson, R. N., and Hair, D. (1990). Natural Resources for the 21st century. Washinton D.C., Island Press.
- Saver, J. D. (1988). Plant Migration: The Dynamics of Geographic Patterning in Seed Plant Species. Berkeley, University California Press.
- Schiffman, P. M. (1997). Animal-Mediated Dispersal and Disturbance: Driving Forces Behind Alien Plant Naturalization. Assessment and Management of Plant Invasions. J. O. Luken, and Thieret, J.W. New York, Spinger.
- Schnaiberg, A. (1980). The Environment: From Surplus to Scarcity. New York, Oxford University Press.
- Schroeder, H. W. (1991). The Spiritual Aspect of Nature: a Perspective from Depth Psychology. The Northeastern Recreation Research Symposium, Saratoga Springs, New York, USDA Forest Service Northeastern Research Station.

- Schwartz, M. W. (1997). Defining Indigenous Species: An Introduction. Assessment and Management of Plant Invasions. J. O. Luken, and Thieret, J.W. New York, Springer: 7-17.
- Shafer, E. L. (1969). The Average Camper Who Doesn't Exist, USDA Forest Service Research Paper.
- Shindler, B., and Cramer, L.A. (1999). "Shifting Public Values for Forest Management: Making Sense of Wicked Problems." Western Journal of Applied Forestry **14**(1): 28-34.
- Shindler, B., and J. Neburka (1997). "Public Participation in Forest Planning: Eight Attributes of Success." Journal of Forestry **95**(1): 17-19.
- Soule, M.E. (1996). "The Onslaught of Alien Species, and the Challenges in the Coming Decades." Conservation Biology **4**: 233-239.
- Stohlgren, T. J., Binkley, D., Chong, G.W., Kalkhan, M.A., Schell, L.D., Bull, K.A., Otsuki, Y., Newman, G., Bashkin, M., and Son, Y. (1999). "Exotic Plant Species Invade Hot Spots of Native Diversity." Ecological Monographs **69**(1): 25-46.
- Stohlgren, T. J., Bull, K.A., Otsuki, Y., Villa, C.A., and Lee, M. (1998). "Riparian Zones as Havens for Exotic Plant Species in the Central Grasslands." Plant Ecology **138**: 113-125.
- Strauss, A., and Corbin, J. (1990). Basics of Qualitative Research: Grounded Theory Procedures and Techniques. Newbury Park, California, SAGE Publications.
- Tausch, R. J., P.E. Wigard, and Burkhardt, J.W. (1993). "Viewpoint: Plant Community Thresholds, Multiple Steady States, and Multiple Pathways: Legacy to the Quarternary?" Journal of Range Management **46**: 439-447.
- Tesch, R. (1990). Qualitative Research: Analysis Types and Software Tools. New York, Falmer Press.
- Thomas, J. W., and Burchfield, J. (1999). "Comments on "The Religion of Forestry and Scientific Management"." Journal of Forestry **97**: 10-13.
- USDA (1998). Frank Church River of No Return Wilderness Draft Environmental Impact Statement, USDA Forest Service Intermountain and Northern Regions.
- USDA (1999). Collaborative Planning for Sustainability.
- USDCES - United States Department of Commerce, E., and Statistics (1994). 1992 Census of Agriculture. Washington D.C.

- USDI (1997). Weed Coalition Announces National Strategy to Combat the Spread of Non-native Invasive Plants, USDI. 1997.
- Vining, J. (1992a). Value Conflict, Emotion and Forest Management. Ecosystem Management in a Dynamic Society. D. C. L. M. a. G. R. Parker. West Lafayette, Purdue University Department of Forestry and Natural Resources: 26-35.
- Vining, J. (1992b). "Environmental Emotions and Decisions: A Comparison of the Responses and Expectations of Forest Managers, an Environmental Group and the Public." Environment and Behavior 24: 3-34.
- Vining, J., and Tyler, E. (1999). "Values, Emotions and Desired Outcomes as reflected in Public Responses to Forest Management Plans." Human Ecology 6: 21-34.
- Vining, J., Tyler, E., and Kweon, B. (2000). Public Values, Opinions and Emotions in restoration Controversies. Restoring Nature: Perspectives from the Social Sciences and Humanities. P. H. Gobster, and Hull, B.R. Washington D.C., Island Press.
- Vitousek P.M., W. L. R. (1989). "Biological Invasion by *Myrica faya* in Hawaii: Plant Demography, Nitrogen Fixation, Ecosystem Effects." Ecological Monographs 59: 247-265.
- Vitousek, P.M. (1994). "Beyond Global Warming: Ecology and Global Change." Ecology 75. 1861-1876.
- Walker, L. R., and Smith, S.D. (1997). Impacts of Invasive Plants on Community and Ecosystem Properties. Assessment and Management of Plant Invasions. J. O. Luken, and Thieret, J.W. New York, Springer.
- Webb, D. A. (1985). "What are the Criteria for Presuming Native Species?" Watsonia 15: 321-236.
- Westbrooks, R. (1998). Invasive Plants: Changing the Landscape of America Factbook. Washington D.C., Federal Interagency Committee for the Management of Noxious and Exotic Weeds.
- White, P. S., and Bratton, S.P. (1980). "After Preservation: the Philosophical and Practical Problems of Change." Biological Conservationist 18: 241-255.
- White, P. S., Harrod, J., Walker, J.L., and Jentsch, A. (1999). Disturbance, Scale, and Boundary in Wilderness Management. Wilderness Science in a Time of Change Conference, Missoula, Montana, USDA, Forest Service, Rocky Mountain Research Station.

- Whiteaker L.D., G. D. E. (1985). The Distribution of *Myrica faya* Ait. in the state of Hawaii. Manoa, Hawaii, Cooperative National Park Resources Studies Unit, University of Hawaii.
- Williams, D. R., and Patterson, M.E. (1999). Chapter 9 Environmental Psychology: Mapping Landscape Meanings for Ecosystem Management.
- Woodall, C., Handler, A., and Broberg, L. (2000). "Social Dilemmas in Grassland Ecosystems Restorations - Integrating Ecology and Community on a Montana mountainside." Ecological Restoration 18: 39-44.
- Yaffee, S. L. (1994). Wisdom of the Spotted Owl: Policy Lessons for a New Century. Washington D.C., Island Press.
- Yankelovich, D. (1991). Coming to Public Judgment: Making Democracy Work in a Complex World. Syracuse, New York, Syracuse University Press.

Interview Guide

Interview Guide for Community Members

Introduction:

I'm doing this research project to help develop a better understanding of resource management issues in this area from the perspective of residents near national forest land. I'm particularly interested in (1) what role the National Forest lands in the area play in your life or how you use the National Forest lands (2) your views about the issue of weeds on public and private lands in this area; and (3) your views about the relationship between the FS and the community. I want to discover how you feel about the role of humans in managing weeds, or even nature in general. I'm hoping this baseline information would help: to improve the ability to understand your beliefs and interests concerning weed management activities; to develop a more collaborative approach to management and communication about weed issues; and to develop weed management plans in line with individual and community goals.

This is only a guide to make sure I cover the topics I need, and we are not limited to these questions only. We can discuss related topics or questions you present.

With your permission I'd like to tape record the interview in part to make sure I get things down correctly and don't take comments out of context. Also, because it takes much less time if I don't have to write everything down during our conversation. These tapes will not be used for any other purpose and the only people who will ever hear them are myself and a private, non-government secretarial service in Missoula that helps us transcribe them.

Introduction Questions: First I'd like to ask you a few questions so I can better understand where you are coming from for this interview.

1. How long have you lived in this community?
 - a) How long has your family lived here and what brought them here?
 - b) Probes
2. Do you use the National Forest lands in this area?
 - a) If applicable: Can you tell me about the (outfitting, cattle, etc.) business in relation to National Forest lands?
 - b) Where do you visit and what are your activities?
 - c) Do you visit the Anaconda-Pintler Wilderness?
 - d) Can you tell me about a recent trip?
3. Do you own any land that is immediately adjacent to the national forest?
4. As a community member, what resource management issues are of most concern to you?

Study Goal #1: What **terminology** is used when discussing exotic weeds?

Now I'd like to focus on issues related to weeds.

Questions:

1. As a landowner, are weeds an issue or a problem for you?
2. Do you think there is a weed concern in this community area or on the national forest?
 - a) If so, what are your general thoughts about it?
 - b) In relation to the management concerns you mentioned earlier, how would you prioritize weed management?
3. When you hear me, the forest service or your neighbor use the term "weed", what comes to mind?
4. If you heard the term exotic weed or invasive weed, would that change what comes to mind?
5. In your view, what are the weeds of concern around here?
6. Have you noticed weeds present in the Beaverhead-Deerlodge?
 - a) Have you noticed them in the AP Wilderness?
 - b) Do they have an impact on your use of the forest?
 - c) If not, do you think they might ever get to the point where they might have an impact?

Study Goal #3: How are the various weed **control methods** accepted or understood?

Questions:

1. Have you had to take any action to manage weeds on your property?
 - a) If so, what?
2. I'd like to ask a few questions about your views on managing weeds. First, are you familiar with various weed control methods that might be used on national forest lands?
 - a) If so, which ones are you aware of and what do you know about them?
 - b) What do you think the trade-offs are between these methods?
 - c) If not, briefly explain some methods and get feed back.
3. To what extent are these methods acceptable in national forests?
 - a) Do your views change when talking about using these same methods in the AP wilderness?
4. What should the appropriate goals be in a weed management program?

Study Goal #4: What are the **belief systems** and **values** concerning weed management on public land?

Questions:

1. Do you think forest visitors have a responsibility with regards to the weed issue?
 - a) For example, should they have “use ethics” such as washing vehicles before coming to the Big Hole, using weed free hay, reporting weeds, etc.
 - b) What sort of use restrictions, if any, might a user accept like car washing requirements, area closures for re-vegetation work, more strict hay inspections, etc.?
2. What responsibility do you feel humans have in managing weeds?
3. Who do you think has the ultimate responsibility in addressing the weed issue?
4. Do you see weeds as a threat to the natural system around here?
5. What responsibility do you feel humans have in managing nature in general?
6. Would your view change if we were only discussing managing nature within designated wilderness compared to the rest of the forest, or private land?

Study Goal #2: Is the **relationship** between the community members and agency workers healthy?

Questions:

1. Have you ever been involved with the weed management planning?
 - a) If so, why did you choose to become involved?
 - b) How do you think the meeting process went?
 - c) If not, do you think you ever would become involved?
2. What kind of relationships do you feel the forest service in this area has with community members like yourself?
3. If the relationship is poor, how do you think it got that way?
4. What do you think could improve it?
5. Do you feel their management goals fit with your goals or interests or the communities?
6. What do you think the management goals should be?

Closing: Are there any other dimensions to this issue that we need to cover?

Interview Guide for Agency Personnel

Introduction:

I'm doing a research project to help develop a better understanding of resource management issues in this area from the perspective of residents near national forest land. I'm particularly interested (1) in what role the National Forest lands in the area play in your life or how you use the National Forest lands (2) your views about the issue of weeds on public and private lands in this area; and (3) your views about the relationship between the FS and the community. I want to discover how you feel about the role of humans in managing weeds, or even nature in general.

This baseline information would help: to improve the ability to understand your beliefs and interests concerning weed management activities; to develop a more collaborative approach to management and communication about weed issues; and to develop weed management plans in line with individual and community goals.

This is only a guide to make sure I cover the topics I need, and we are not limited to these questions only. We can discuss related topics or questions you present.

With your permission I'd like to tape record the interview in part to make sure I get things down correctly and don't take comments out of context. Also, because it takes much less time if I don't have to write everything down during our conversation. These tapes will not be used for any other purpose and the only people who will ever hear them are myself and a private, non-government secretarial service in Missoula that helps us transcribe them.

Introduction Questions: First I'd like to ask you a few questions so I can better understand where you are coming from.

1. How long have you lived in this community?
 - d) How long has your family lived here and what brought them here?
 - e) Probes
2. Do you recreate as well as work in the forests here?
 - a) Where do you visit and what are your activities?
 - b) Do you visit or work in the AP Wilderness?
 - c) Can you tell me about a recent recreation or work trip?
3. Do you own any land that is immediately adjacent to the national forest?
4. As a community member, what resource management issues are of most concern to you?

Study Goal #1: What **terminology** is used when discussing exotic weeds?

Now I'd like to focus on issues related to weeds.

Questions:

1. As a landowner, are weeds an issue or a problem for you?
2. Tell me about the weed concerns in your community and national forest?

3. In relation to the management concerns you mentioned earlier, how would you prioritize weed management?
4. When you think of the word weed, what comes to mind?
5. Do the terms exotic or invasive change what comes to mind?
 - a) Do you use different terms when speaking with the public?
6. In your view, what are the weeds of concern around here?
7. Have you noticed a difference in weed presence between the Beaverhead-Deerlodge and the AP wilderness?
 - a) How do they affect your work on the forest?
 - b) Do they have an impact on your recreational use of the forests?
 - c) If not, do you think they might ever get to the point where they might have an impact on your recreational experience?

Study Goal #3: How are the various weed **control methods** accepted or understood?

Questions:

1. Have you had to take any action to manage weeds on your property?
 - a) If so, what?
2. I'd like to ask a few questions about your views on weed management. Do you work with a variety of weed control methods?
 - a) Which ones do you use?
 - b) Do you know of other available methods? (If not, briefly explain and get feedback)
 - c) What do you think the tradeoffs between the methods are?
3. To what extent do you feel these methods are acceptable in national forests?
 - a) Do your views change when talking about using these methods in the AP wilderness?

Study Goal #4: What are the **belief systems** and **values** concerning weed management on public land?

Questions:

1. Do you think that forest visitors have a responsibility with regards to the weed issue?
 - c) For example, should they have "use ethics" such as washing vehicles before coming to the Big Hole, using weed free hay, reporting weeds, etc.
 - d) What sort of use restrictions, if any, might a user accept like car washing requirements, area closures for re-vegetation work, more strict hay inspections, etc.?
2. What overall responsibility do you feel humans have in managing weeds?

3. What responsibility do you feel humans have in managing nature in general?
4. Would your view change if we were only discussing managing nature within designated wilderness compared to the rest of the forest, or private land?
5. How effective do you think weed management is in this area?
6. When involved with the weed management planning, how do you feel about the meeting process?
7. How involved is the public?
8. Is it effective and if not, how could it be improved?

Study Goal #2: Is the **relationship** between the community members and Forest Service workers healthy?

Questions:

1. How do you view the communities' perception of weeds?
2. What roles do you see the FS, public and other government agencies playing in the weed topic?
 - a) What level of cooperation do you see on weed management and planning?
3. When involved with the weed management planning, how do you feel about the meeting process within the Forest Service?
 - a) With other government agencies?
4. Does the Forest Service have public meetings here discussing weed issues?
 - a) If so, how often?
 - b) How do the meetings go and do you feel they are successful?
5. Are these meetings effective and if not, how could they be improved?
6. What kind of past relationships did the Forest Service and locals have here?
 - a) How is your current relationship?
 - b) Do you feel the communities' management goals fit with the Forest Service's goals or interests?

Closing: Are there any other dimensions to this issue that we need to cover?

APPENDIX B

Letter to Respondents from District Ranger

File Code: 1500
Date: June 26, 2000

Ann Schwaller is a new member of my staff at Wisdom. She is a student intern working on her Masters thesis at the University of Montana. She is exploring the relationship between weed management on national forests and adjacent communities. As part of her thesis, Ann would like to meet individually with a few community members to gain a better understanding of their views, opinions and activities related to the issue of exotic weed management within this Wisdom Ranger District and the surrounding community. This baseline information will help us communicate and work with you and others in this area on weed management.

You were selected because we value your opinion. You and others to be interviewed have diverse backgrounds and experiences. Ann will interview people with little direct experience as well as people actively involved in weed management issues:

- Your views about the importance of weed issues in this community and the surrounding national forest.
- The affect of weeds on your use of the national forest, your use of other public lands or your private land, etc.
- Beliefs and opinions concerning weed management on public lands.
- Views about specific weed control methods.
- Relations between the Forest Service, the community, and landowners in general.

This discussion can be held at a location and time convenient for you. Ann would, with your permission, like to tape record a portion of the conversation to insure accuracy in transcribing your comments. Ann will omit any part of the conversation you desire and will assure your anonymity. Only Ann and the person transcribing the tapes will listen to them, tapes will not be distributed to anyone else, and your names will not be associated with your comments in any study report or public document.

Ann will call within a few days to set up an interview. Your participation in this effort is entirely voluntary, but we hope that you decide to help with her thesis project, as we believe the information could benefit national forest and community efforts relating to weed management.

Sincerely,

DENNIS HAVIG
District Ranger

Data Analysis Themes

Identity

- Utilitarian versus preservation
- Motorized versus non-motorized
- Natural resource professional
- Public land dependent
- Views self as land steward
- Family heritage
- Land connection
- Sense of community

Weeds

- Weed awareness
- Terminology/definitions
- Policies
- Control methods
- Management versus eradication
- Weed concern and involvement
- Weed education and prevention
- Weed Impact on forest uses

Relationships

- Land agencies and communities
- Individual relationships
- Between land agencies
- Communication
- Goals and interests conflicts
- Agency and public meetings
- Agency and agency meetings

Knowledge Valued

- Agencies as resource educators
- Experiential versus formal

Outsider Influence

- From east
- From Bitterroot
- Educational differences
- Forest visitor responsibilities/influence
- Perceived crowding

Land Agency Role

- Agency employees satisfy public
- Agency employees work for resource needs
- Agencies should lead weed efforts
- Local control of resources

Wilderness

- Promotes versus opposes
- Indifferent
- Promotes versus opposes road-less

Respondent Profiles

Table 4.1 – Respondent Profiles

Respondents	State	Years Residing In State	Years in Study Sites	Agency	Public Land Dependent
Rancher	MT	Life	Life		Yes
Ranchers	MT	Life	Life		Yes
Rancher/outfitter	MT	Life	Life		Yes
Logger	MT	32	32		Yes
Businessperson 1	MT	10	10		
Businessperson 2	MT	Life	19		
Retiree 1	MT	Life	Life		
Retiree 2	MT	7	7		
Student	MT	Life	Summer		
Wildlife Technician	MT	30	16	Yes/state	Yes/job
Forest Service Employee 1	MT	13	13	Yes/federal	Yes/job
Forest Service Employee 2	MT	Life	Life	Yes/federal	Yes/job
Logger	WA	Life	Life		Yes
Logger/Mill Owner	WA	Life	Life		Yes
Ranchers	WA	Life	37		Yes
Retiree 1	WA	80	80		
Retiree 2	WA	3	3		
Retired Forest Service and Spouse	WA	Life	43	Yes/federal	Yes/job
Health Care Worker	WA	8	8		
Retired Couple	WA	Life	36		
Businessperson	WA	25	18		
Electrician	WA	Life	13		
Forest Service Employee	WA	14	14	Yes/federal	Yes/job
Weed District Employee	WA	31	21	Yes/county	Yes/job

Table 4.1a – Respondent Profiles

Respondents	State	Views of the Forest Service/Community	Views of Individual Forest Service Employees/Community
Rancher	MT	Negative and Positive	Positive
Ranchers	MT	Non-applicable	Negative and Positive
Rancher/outfitter	MT	Positive	Positive
Loggers	MT	Negative and Positive	Negative and Positive
Businessperson 1	MT	Negative and Positive	Negative and Positive
Businessperson 2	MT	Negative and Positive	Negative
Retiree 1	MT	Negative and Positive	Negative and Positive
* Retiree 2	MT	Negative and Positive	Positive
Student	MT	Negative and Positive	Positive
Wildlife Technician	MT	Positive	Non-applicable
Forest Service Employee 1	MT	Negative	Negative
Forest Service Employee 2	MT	Negative	Negative
Logger	WA	Negative	Negative and Positive
Logger/Mill Owner	WA	Negative	Negative
Ranchers	WA	Negative and Positive	Negative and Positive
Retiree 1	WA	Positive	Positive
Retiree 2	WA	Negative	Negative
Retired Forest Service and Spouse	WA	Negative	Negative
Health Care Worker	WA	Negative and Positive	Non-applicable
Retired Couple	WA	Positive	Positive
Businessperson	WA	Non-applicable	Positive
Electrician	WA	Negative and Positive	Negative and Positive
Forest Service Employee	WA	Negative and Positive	Positive
Weed District Employee	WA	Negative and Positive	Non-applicable