Spring 2017

Beliefs and Practices Related to Community Water Sources: "The Specialness of Springs"

Anita Kay Westhues
Western Kentucky University, kwesthues@gmail.com

BELIEFS AND PRACTICES RELATED TO COMMUNITY WATER SOURCES: "THE SPECIALNESS OF SPRINGS"

A Thesis
Presented to
The Faculty of the Department of Folk Studies and Anthropology
Western Kentucky University
Bowling Green, Kentucky

In Partial Fulfillment
Of the Requirements for the Degree
Master of Arts

By
Anita Kay Westhues

May 2017

BELIEFS AND PRACTICES RELATED TO COMMUNITY WATER SOURCES:
"THE SPECIALNESS OF SPRINGS"

Date Recommended May 14, 2017

Michael Ann Williams, Director of Thesis

A. Ashley Stinnett

Ann K. Ferrell

Dean, Graduate School

4/24/17
Date

ACKNOWLEDGEMENTS

There are so many individuals that I would like to acknowledge for their contribution to this thesis. A very special thanks to my committee: Dr. Michael Ann Williams, Dr. A. Ashley Stinnett, and Dr. Ann K. Ferrell. As my advisor and thesis chair, Dr. Williams always made the time to discuss my research methodology and theory and provided much needed support in my efforts to secure funding for it. As Dr. Stinnett's graduate assistant, I gained valuable understandings about the field of visual anthropology, and her generous and insightful mentorship guided me through my first year at WKU and furthered my development as a scholar. Dr. Ferrell, through her perceptive suggestions to "further complicate that idea," led to a deeper analysis of my data which enriched my thesis. I also want to thank Dr. Erika Brady, Dr. Tim Evans, and Dr. Kate Horigan for their comments on my thesis proposal.

I am also very grateful to the Graduate School at Western Kentucky University, as well as the Kentucky Oral History Commission, for funding this research. I appreciate their faith in my project, and am delighted that the recorded interviews will be housed in a public archive for others to access. And I thank Brent Bjorkman for his willingness to assist with my grant writing process.

I also want to thank the *Blessed With Many Springs* film team: James "Bear" Scott, who introduced me to my first research participant, and Azadeh Vantanpour, whose friendship and support of my research is appreciated more than she can know.

Many thanks to my dear friend, Gerrie Casey, for reading the draft of this thesis and providing much needed encouragement during my writing process. More than this, you inspire my work as an ethnographer and as an activist every day.

A very special thanks to Joel Martinez, who has stood by me through this unorthodox idea of returning to graduate school at age fifty-plus. You are the best and I am very fortunate to have your love and support.

I am ever grateful for my research participants, who shared their knowledge, insights, photographs and stories with me, and whose words and ideas enrich this thesis: Wayna Adams, Gwen Alston, Shirley Belcher, Tommy Bolton, Joe Bowen, Ova Branham, Lawrence Childress, Billy Cooper, Keith Daniel, June Dunham, Johnny Faulkner, Ann, Margie and Scott Fife, Don Fig, Janice Graves, Anita Gray, David Harrison, Robert Hiser, David Horvath, Larry Meadows, Donald Merrick, Jim Meyers, Jeff Moser, Eugene and Linda Peck, Mary Louise Potts, Carlie Proffitt, Glen Richardson, Joyce and Lee Roach, John Rogers, Nelson Sanders, Rodney Snowden, Norman Warnell, and Kimberly Wilson. It was both a privilege and a pleasure to work with you.

Lastly, I want to acknowledge Drucilla Belcher, our department's office associate who we so unexpectedly lost this past December. Drue was a wonderful and warm person who made me feel at home the first and every time I met her. Her skill at her job was demonstrated in the wide range of "above-and beyond" tasks she cheerfully completed for the students and faculty. She will truly be missed.

CONTENTS

LIST OF FIGURES

BELIEFS AND PRACTICES RELATED TO COMMUNITY WATER SOURCES:
"THE SPECIALNESS OF SPRINGS"

Anita Kay Westhues May 2017 108 Pages

Directed by: Michael Ann Williams, A. Ashley Stinnett, and Ann K. Ferrell

Department of Folk Studies and Anthropology Western Kentucky University

The practice of gathering water from community springs in Kentucky constitutes a rich and complex research setting for the study of folklore beliefs and practices. Local knowledge construction, nostalgia as an evaluative process, contested views about purity and impurity, the protection and retention of a "public commons," and the crisis which ensues when infrastructure maintenance and the delivery of safe drinking water are no longer guaranteed to communities, are all relevant to this vernacular practice. My thesis explores these topics, informed by fieldwork I conducted in nine Kentucky counties, which included formal and informal interviews with individuals who have used springs, as well as participant observation of spring sites.

Roadside water sources are used by the public for drinking water, and are vestiges of the public commons. In addition to gathering water, these sites allow us to gather and study folkloric practice and knowledge. Historically, community springs were utilized before public water systems were implemented, providing a critical source of water for travelers, or for those who did not have private access to a reliable water source. Yet today, even with the presence of municipal water systems, many people still gather water from springs. My thesis integrates archival/historical library research, participant observation, and oral history narratives collected in 2016 as part of a Kentucky Oral History Commission Project Grant, in order to illuminate two fundamental research

questions: Why do people prefer to get water from springs today? And what cultural meanings are constructed through the continued engagement with this tradition?

I examine the historical use of these resources, their relationship to the implementation of municipal water systems, and how localized knowledge about water purity is formed and put into practice in this region. I also explore the use of nostalgia, collective memory, and narrative for constructing place and landscape, as well as theorize on how springs function as public commons resources today. I also use photographs to convey ethnographic knowledge distinct from the written word, providing an opportunity to convey sensory information about the spaces I describe in my research.

INTRODUCTION

For those of us who have only utilized municipal water systems, it is easy to forget that public water is a relatively recent innovation. Data gathered for a 2013 World Health Organization report on global water access indicated that only 55% of the world population "enjoyed the convenience and associated health benefits of a piped supply on premises" (World Health Organization 2013). In the United States, municipal water has been slow to arrive in rural and poverty-stricken areas. For example, many rural Kentucky residents only gained access to public water within the past two or three decades (O'Dell 1996). The individuals in these communities have experienced first-hand the responsibility of locating and/or maintaining their water sources.

My research documents a number of reasons why people still collect water "from the earth" as opposed to turning on a tap at home. For some it is an enjoyable outdoor activity learned from and shared with family members or friends; others collect spring water for health reasons. Additionally, those who do not have access to potable or palatable drinking water may use the wells as an alternative to purchasing bottled water. In all these instances, there is a common thread: water gathered from a well is considered pure, natural, and good for those who consume it.

Water's role in sustaining life gives it a cultural and symbolic power which is expressed in centuries of water lore. Its sacred quality, its association with healing properties, its use in folk narratives, song, and vernacular practices such as water witching are all examples of its role in traditional life. Sensory engagement with water is a universal experience that we practice every day (Strang 2004:261).

Springs have a distinct significance in water lore. They have been considered a bridge between the upper and lower worlds, as well as a place of magic and a spiritual resource (Strang 2004:261). Stories of both love and murder have taken place at springs. Because of their role as a critical water source, they have been sites of conflict over territory and access (Delucia 2015). They are also widely considered to be one of the most pristine sources for drinking water (O'Dell 1996:9).

My own fascination with springs began in Delphi, Indiana, a small town located approximately an hour's drive northwest of Indianapolis. In January of 2008, I was in Delphi photographing the town and its residents, and had stopped to get a bite to eat at The Sandwich Shop downtown. As I was getting ready to leave, two residents I had talked with at the lunch counter told me to "be sure and get some water before you drive back." Unsure of what they meant by this, they explained that the adjacent town of Pittsburg had the best water you can get, for free, and that I needed to stop and get some before I left town. Always curious to learn about "all things local," I drove to the town on a very cold but sunny afternoon.

When I arrived in Pittsburg, I saw that there was little left of the former river town: a few homes, a building that housed a restaurant, and a historical marker commemorating the purchase boundary in the 1818 Treaty of St. Mary's, in which about a third of the state of Indiana was acquired by the U.S. government, resulting in the forced removal of its Native American inhabitants. Cars were parked in a gravel lot that might have once been the site of a gas station or store. There was a person outdoors, collecting water from a pipe running into a concrete catchment basin located near the street corner (Figure 1). I sat across the street in my warm car and watched this until the

cars dispersed, wondering what it was all about. I collected some of the water in a plastic water bottle I had in the car, then drove home.

Figure 1: The Horse Tank Artesian Well, Pittsburg, IN, September 2010.

After doing some research, I learned that what I had been looking at was an artesian well, and that there were several of these still functioning as water sources in Indiana. I subsequently developed an artistic project about public wells which included photography, videography, and oral histories from those who used them. This culminated in an art installation titled *Well Stories*, which premiered at the South Bend Museum of Art in 2011 (see Dukes 2011). The enthusiastic written responses of museum visitors and the questions they raised indicated a high level of interest in the use of community water sources.

I decided to pursue a Master's degree in Folk Studies in order to research the history of community springs, to learn what they represented to the water gatherers, and to understand how they were maintained as public resources. Are they mere repositories of nostalgia, representations of cultural anxiety about modernization, or a robust contemporary set of cultural practices and beliefs worthy of folkloristic investigation?

I should also confess that I am a "water drinker." I like to drink water, and prefer it over most other beverages. As a child, I never drank soda, which in an era before bottled water was ubiquitous, caused my mother to complain that she always had to find water for me to drink whenever we traveled. Growing up on a farm that used water from a dug well, I developed a distaste for "city water" for one of the same reasons expressed by my research participants: the chlorine taste and smell.

Many of us do not actually know where our household water originates, or how the water is handled before it gets to our taps. This knowledge is only made widely available when there is a water quality problem (such as the ongoing tragedy surrounding Flint, Michigan's water supply). We are asked to believe that our local municipality is providing water that is safe to consume, but the power to verify its safety does not reside with the consumer. Knowing the origin of a water source is one method of confirming water's purity.

My research has demonstrated how memory and experience can connect people to a spring long after they have left it. This is illustrated through a story shared by a young man I met at Hammett Hill Spring, located near Bowling Green, Kentucky. He moved from Bosnia to the United States as a boy and found the spring for the first time with his parents. This site, like the springs in Bosnia remembered by him and his family, held a

special significance for them. Assuming the landscape around the spring was available for public use, they returned to have a picnic in the field adjacent to it. While there, the landowner appeared and told them that the property was not open to the public. Luckily the owner was empathetic and invited them to come back and picnic any time. This speaks to a shared understanding of the value of springs and their importance to the human experience. It also illustrates the interconnectivity of place, landscape, and memory.

Communities have used springs for decades, and sometimes upwards of a century, and so these resources are often expected to stay in public use. This is in spite of the fact that their role in the commons is not guaranteed. Most publically-accessed springs are on private property. My thesis will provide examples of cases where access to springs has been threatened, and a sense of ownership and entitlement to the water caused a group to coalesce around keeping an endangered spring accessible.

The theoretical frameworks, research methodologies, and public policy engagement developed in the field of folklore can illuminate our understanding of the process of water gathering. Documenting the folklore practices and beliefs associated with Kentucky springs expands public awareness of these activities and highlights their relationship to issues such as deteriorating or inadequate water infrastructure, or an increase in the privatization of springs by bottled water companies. A primary goal of my research is to contribute to the body of knowledge on these concerns.

LITERATURE REVIEW

Literature relevant to my research includes publications specific to water resources and water use practices in Kentucky; folklore research on water lore; work focusing on the use of nostalgia; scholarship on notions of purity, pollution, and vernacular risk assessment; theory on the meaning of water and its relationship to place, landscape, and memory; and research on the public commons and water rights.

Literature related specifically to Kentucky springs consists of historical and geological publications on local water resources, National Historic Register nomination forms, and newspaper articles. This scholarship helped me to understand both the historic and the geological setting for my research. Gary O'Dell (1996) conducted a study on self-supplied domestic water use in Rockcastle County, Kentucky, just prior to the widespread adaptation of the county's water system. The data collected provides survey information on the types of self-supplied water systems in use, perceptions on water quality, and water usage practices. This scholarship, which includes documentation of access rights to community springs, including deeds of sale and oral testimony from spring users, provides the basis for my inquiry into the notion of a "public commons" that coexists with – and contrasts with – the dominant cultural and political structures of private property rights. It also increased my understanding of how springs were used in rural Kentucky before widespread public water access, and served as a benchmark for comparison with current usage practices. I accessed the *Robert M. Rennick Oral History Collection* (2016), housed at Morehead State University, for information on Estill County springs. Renee Pinkston's thesis on Historic Massey Springs (2014) informed my research on the history of mineral spring spas in Kentucky. I also used data gathered from

the U. S. Bureau of Census (2010), the Kentucky Geological Survey (1963, 2010), and the Department of Environmental Protection (2015-17).

My research on water lore included *The Motif-Index of Folktales* (Thompson 1955), which contains a wealth of motifs concerning water. There are over one hundred motifs which mention water in the Mythological Motifs section alone. Recurring motifs about water include primeval water (A814. Earth from object thrown on primeval water.), control of water (A1111. Impounded water. Water is kept by monster so that mankind cannot use it. A hero defeats the monster and releases the water.), and magical aspects of water (E82. Water of life and death. One water kills, the other restores to life). Motif A940: Origin of other bodies of water, provides 32 motifs on the origins of springs. These motifs constitute meaning about water, as much as the qualities of water constituted the motifs. They reflect human concerns about our dependence on water and its power over us.

My first chapter, which focuses on the practice of nostalgia, draws from Ray Cashman's work on nostalgia and material culture in Northern Ireland (2006), as well as Ann Ferrell's research on the shifting public perception of Kentucky tobacco farmers (2013). Cashman's theories explore how individuals use nostalgia to "generate meaning in the present" (2006:138), pointing out that nostalgia can be manifested through material culture display. My interpretation of historical material culture collections concerning springs is informed by Cashman's scholarship on this subject. Ferrell's examination of tobacco farmers noted that nostalgia was not used to express a desire to return to the past, but rather to comment on a loss of status and the art involved with tobacco farming (2013:194). Amy Shuman's research on "emblematic stories" told by stone carvers in

Pietrasanta, explores their function as a metaphor for a better, idealized past, but also examines how they are used to evaluate the present (2005:62).

Writings by folklore scholars who focus on theories concerning purity, pollution, vernacular knowledge systems, and vernacular risk perception are central to my thesis. Andrew Raedeke's and Sanford Rikoon's model for local, experiential, subjective (LES) and local, experimental, objective (LEO) knowledge systems (1997), as well as Mary Hufford's concept of "knowledge of" and "knowledge about," used to describe vernacular knowledge building in the New Jersey Pinelands (1986) were both useful in my understanding of the ways vernacular knowledge is constructed. Diane Goldstein's work on AIDS-related urban legends and their relationship to vernacular risk perception was used in my interpretation of risk perception and spring water use (2004). Much has been written about the cultural changes that have contributed to the rise of the bottled water industry. Opel (1999) uses the framework of Communication Studies to examine how notions of purity are developed, specifically in regards to this industry. He provides examples of how symbols of purity (particularly references to springs and spring water) have been used to promote the sale of bottled water.

Scholarship concerned with place and placemaking has focused on the relationships between people and the land; it examines how each has affected the other through time. Questions about which spaces are important, and why, as well how places are understood, broaden understandings of the meaning of place and landscape. Keith Basso's analysis of the connection between narrative and landscape among the Western Apache provided valuable insights on the use of collective memory and narrative regarding the creation and function of a sense of place (1996). Timothy Cochrane's study

of Isle Royale fisherman examined how people's attachment to place is formed and how this sense of place is related to one's personal history in a space (1987).

Narratives about water sources are never neutral. In their research on the Kickemiut Spring and/or Brazilian *bicas*, Delucia (2015) and Kane (2009), recounted that good water sources are essential to human life, and because of this they have often been sites of conflict over territory and access. The meaning of community springs has changed over time as they have become less central to survival. But their continued use indicates that their role as key natural sites is still recognized, similar to the colonial water taps Kane studied in Olinda, Brazil (2009).

Much of the folklore scholarship concerned with issues of the environment and the commons are based on work completed by Mary Hufford. Her study of ginseng harvesters is grounded in the history of the enclosure of the public commons (2002). Linking this cultural transformation to the "shrinking civic commons," (102) she describes how uses of the commons facilitate a "relationship between community and landscape," (117) and how a lack of civic engagement weakens this connection. In an earlier article, she discusses ways in which the commons have been reclaimed but are still vulnerable due to their location on private land (1999:165). This applies to the use of many community springs. Erika Brady's study of trapping rights on the Ozark Scenic Riverways also informed my interpretation of the public use of these resources (1994). Jeff Todd Titon's work linking ethnomusicology and sustainability is used to reframe issues related to the commons (2009, 2016). His research has influenced my ideas on the stewardship of community springs.

METHODOLOGY

Site selection

Fieldwork conducted for this thesis focused on community water sources located in Kentucky. My research included the following twelve springs: Calvert Spring (Allen County); Cold Spring (Barren County); Wilkins Spring, Three Springs, and Sookie Spring (Edmondson County); Spout Spring and Tipton Ridge Spring (Estill County); Big Blue Spring (Metcalfe County); Downing Spring (Monroe County); Nada Tunnel Spring and Briscoe Spring (Powell County); and Hammett Hill Spring (Warren County). Selecting the springs depended on two primary criteria: (a) they were in current use, or (b) they had a significant place in a community's collective memory. All the springs studied were gravity-fed springs, and were located in rural areas in Kentucky.

Ethnographic Interviews

Participants for project interviews were recruited through word of mouth, friends, and online social networks. I also set up and staffed an information booth at a community festival and created business cards for the project. Interviewees consisted of persons who gathered water from springs at the time of our interview, as well as those who did not currently gather spring water, but have used it in the past. It also included two retired employees of municipal water companies who assisted with rural public water implementation and the owner of a small spring water bottling plant. There was a 25:11 ratio of men to women.

The ages of individuals varied, but 29 of the 36 people I talked with were approximately fifty years of age or older. Based on my one day of participant observation at the Nada Tunnel Spring, and earlier observations at Indiana springs, water collectors span a much broader age demographic. This bias in my research reflects my interest in

learning how the use of springs has changed through time. That said, I do plan to include younger interviewees as I continue to do ethnographic work on the project.

I first learned about Cold Spring when I helped create a short ethnographic film about community springs for Dr. Ashley Stinnett's Ethnographic Video Production class. Bear Scott, one of my partners in the film project, lived near the spring and knew individuals who used it. It was through Bear that I met Robert Hiser, who used the spring for drinking water and to make homemade wine. In addition to taking part in the film, Robert spent an afternoon with me going door-to-door in the area near the spring, to learn who created its homemade filtering system. Unfortunately, we weren't successful, but we met some additional research participants and learned a lot about the spring in the process. Local historians Ann and Scott Fife were also very gracious about being interviewed and in helping locate possible interviewees.

I found the Wilkins Spring, located in Mammoth Cave National Park, while surveying historic properties for Dr. Michael Ann Williams's Cultural Conservation course. Later, through my role as a research assistant for the National Park Service's Ethnographic Overview and Assessment of Mammoth Cave National Park, I met Tommy Bolton, who regularly made the trip to gather water from the spring. He in turn introduced me to others in the community who still use it. Wilkins Spring is the only surviving community spring of several that once existed on or near park property.

I learned of Hammett Hill Spring from a woman I met while walking in Preston Miller Park in Bowling Green, Kentucky. Located just northwest of Bowling Green, it appeared to be used primarily for a recreation or a "hang out" spot; people visit it, but do not collect the water. Based on my observation, visitors were infrequent, and I was

unsure how to find residents with knowledge about its history. Following Dr. Williams' advice, I knocked on nearby doors and eventually met Shirley Belcher, who grew up in the area and had used the spring for drinking water. She agreed to be interviewed, but did not have any suggestions for other contacts, as most of the older residents in the area had moved away. Later I learned that one of my neighbors grew up in that area and had also gathered water there with his family.

The initial outreach for Nada Spring in Powell County was done through participating in the Nada Tunnel Festival. I learned about the event while doing online research. The festival organizer, Patty Brown, invited me to participate and helped direct people to my table. This turned out to be time well-spent. In addition to collecting interviews, I met many residents in the small community of Nada where the spring is located. This increased my knowledge on the history of the spring and the surrounding community.

The remainder of my contacts for the Powell County area came through a fortuitous meeting with Johnny Faulkner, a retired National Forest Service archeologist who worked at the Red River Gorge. I met Johnny while gathering water for the trip home during my first visit to the spring; he was there filling two 5-gallon water cooler bottles. Johnny introduced me to several former colleagues who worked for the Forest Service and had knowledge of local springs.

Johnny also introduced me to Larry Meadows, who runs the Red River Museum, a history museum located in nearby Clay City. Larry connected me with a number of participants, and even offered the museum as a location for interviews. During one of my trips there to conduct interviews, the museum staff took photographs and wrote a short

story about the project, which was featured in their monthly column in the Clay City Times. This helped to spread the word about the project.

I obtained Human Subject Internal Review Board approval from Western Kentucky University for this research. The Internal Review Board consent form has been used for all interviews. A copy of the consent form is given to the interviewees, and if requested, I have sent them a DVD containing the interview audio file and photographs within two weeks of the interview. This was especially appreciated at the Red River Museum, as those files were added to the museum archives. This "snowball sampling" approach I used to identify these springs also helped me to locate local partners and key individuals for the oral history interviews.

In the interview process, I let a conversation develop organically from a few initial questions. I did develop a set of semi-structured interview questions as part of my Internal Review Board application, and I used these if there was a lull in the conversation, or to check to be sure I had covered all relevant topics. Primarily I was interested in learning about people's experience using springs for drinking water, how they determine if a spring is pure, if they consider a community spring public or private property, how community springs are maintained, and any special associations they have with springs.

Participant Observation

Participant observation activities involved observation and informal conversations at spring sites, as well as gathering data on visitors to a spring within a specific time span (see Appendix 1: Nada Tunnel Spring Participant Observation). For example, I sat at the Nada Tunnel Spring for three hours on a Saturday afternoon, talking with visitors and

noting who visited the spring, how they learned of it and where they came from. My participant observation research allowed me to capture key information on the demographics of water gatherers, as well as usage patterns on a particular date and time.

Photography

Photographs played a central role in my fieldwork research. As a professional photographer, I utilized photographs as a research tool. This form of visual note taking allowed me to document the people, places, and objects that informed my writing. Incorporating photographic images into the research methodology complemented my fieldnotes. As pointed out by visual anthropologists John and Malcolm Collier, photography gathers selective information, "but the information is *specific* (authors' emphasis), with qualifying and contextual relationships that are usually missing from codified written notes" (Collier and Collier 1986:10). My photographs provide greater detail and facilitate the investigation of the complexity manifested in the practice of collecting spring water, helping me construct a more nuanced story. Digital photography makes this practice an easy and inexpensive exercise. I have also incorporated photos taken by my research participants, and this is indicated in the photo captions.

Photographic images are more than just a research tool. Their inclusion in this thesis serves to enhance the reader's understanding of the written descriptions. As stated by the late art critic and essayist John Berger, "It is seeing which establishes our place in the surrounding world; we explain that world with words, but words can never undo the fact that we are surrounded by it" (Berger 1977:7). A photograph communicates visual sensory information in a different way than text. I can describe the setting for this spring, but the images of it provide a more accurate representation of the space. A visual quality,

such as a specific shade of "orange," is communicated more accurately and viscerally through a photo than by simply reading the word orange. Texture in an image can be associated with tactile sensation, such as "wet" or "slimy." And although photographs are two-dimensional objects, viewing spatial relationships portrayed in them can provoke feelings that the viewer is in that space; she or he gains a more physical understanding of the space (Collier and Collier 1986:41). These are all forms of knowledge that are distinct from, yet can be counterpart to, the written word.

Photography, by its nature, is more open to personal interpretations than text; to "fix" a meaning in a photograph, one needs to include a caption. This functions in a similar way as a "frame" does in a written narrative – it provides context and guidance for interpreting the image. An informative caption can also be central to understanding what is being depicted in a photo. An image of bottle caps in plastic bags may be meaningless to an outside viewer. But a person who collects spring water using plastic jugs will recognize the importance of the caps, because without them, you cannot transport the water. With the use of an informative caption, a photo can enable the viewer to deeply "see" what is depicted in a photo. A viewer can notice the details, point out the multiple meanings embedded in the photograph, and evaluate the ethnographer's interpretation of it.

Ethnographic photographs serve multiple purposes. They become cultural artifacts, simultaneously documenting the research project and validating practitioners lived experience. Ethnographic images also enhance the process of public engagement, facilitating increased awareness, empathy, and interest.

Videography

Lastly, fellow students Azadeh Vantanpour, Bear Scott and I created a short ethnographic video about Cold Spring, *Blessed With Many Springs*. Using interviews and footage of spring locations, this film focused on how people's use of springs has changed through time. It also explored the process by which localized knowledge of water purity is constructed and put into practice. This video constituted my first research project on community springs in Kentucky. The process of creating the film — shooting stills, using video for participant observation, developing an interview methodology, and storyboarding — established the foundation for my subsequent research methodology.

The research participants I met through the process of making the video remained extremely helpful throughout the remainder of my research, and the insights I gained from it were incorporated into my thesis. Not incidentally, their participation in the video project strengthened their interest and commitment to the larger project. This resonates with the folklore literature and best practices related to public engagement and community education (Campbell and Lassiter 2015:7). When we involve community members in the process of creating, analyzing and reflecting on the research project, their commitment — and their analytical comments and perspectives — are mobilized and shared. This fieldwork methodology serves to underscore the collective potentiality embedded in folklore research. Local knowledge or common knowledge is most often not explicitly theorized in the minds of community members; it is just "the way things are." Participation in a research project facilitates more conscious awareness of the history, belief system, knowledge base and multiple meanings operating within and between/among participants.

CHAPTER ORGANIZATION

In Chapter One, I examine two factors – knowledge and history – as these frameworks influence the choices made by individuals who use community springs. A historical review of the use of groundwater as a water source in Kentucky opens this chapter. This is followed by a more specific history of springs I studied. Drawing on folklore research on the use of nostalgia to generate meaning in the present (Cashman 2006, Ferrell 2013), I examine nostalgia's use in material culture displays about springs.

Chapter Two examines localized knowledge of water purity and the process of vernacular risk assessment. I explore how information about purity is constructed, and how this construction is related to personal experience and worldview. Taste, clarity, smell, and temperature are all factors in determining good water, but water gatherers I talked with indicated additional concerns. Health considerations, a distrust in the local government's ability to provide safe water, and the belief that purity can be equated with what is considered natural are all factors which can influence perceptions of water quality.

Chapter Three explores the meanings of springs as culturally significant places. I investigate what they represent for their surrounding communities, as well as the individuals who use them. The geographical features of a spring shape the people who interact with it, but human perceptions about landscape also affect springs. A community's collective memory about a place shapes our interpretations of it (Basso 1996). As springs fall out of use, they can become a site for graffiti and trash disposal — indications of a neglected place. The personal narratives I collected, newspaper articles, and folklore theory help to illuminate many of the layers of meaning that are formed through the interaction of place, imagination, and activity at spring sites.

The ownership of community springs is an intriguing question, one that has motivated my interest in this research topic. Who owns the land that contains a specific spring? If it is privately owned, what motivates the owner to share water with the public? Chapter Four proposes that the concept of stewardship, rather than ownership, is more useful in conceptualizing how springs function as public commons resources (Titon 2009). I draw on the history of the public commons, on historical record, and on the personal narratives from both water gatherers and property owners to explore the ways in which the continued use of springs have or have not been successfully negotiated.

CHAPTER 1: ENACTING NOSTALGIA: COLLECTIVE MEMORY AND THE SPRING MYSTIQUE

The practice of gathering water from a spring serves different purposes for different individuals. I have met many people who simply like to stop to get a drink whenever they pass a spring. I have observed water gatherers filling a half dozen gallon jugs for a week's drinking water. Others spend a substantial amount of time loading the backs of hatchbacks and trucks with water they will use out of necessity. In this chapter, I discuss those who have stated that they gather water simply because they prefer it, or enjoy the process of gathering it. Why would someone spend the time and trouble to collect water if they could just turn on a tap?

Figure 2: Robert Kingerly's method for hauling two weeks' supply of water, the Horse Tank Well, Pittsburg, IN.

I have found that a desire to connect with history, as well as a sense of nostalgia, often informs this choice. In this chapter, I will examine my research participants' narratives about their use of springs, and interpret two material culture displays on the topic of springs, to expand on my supposition that nostalgia plays a strong role in people's continued water gathering practices.

Folklorist Ray Cashman defines nostalgia as "a cultural practice that enables people to generate meaning in the present through selective visions of the past" (2006:138). In Kentucky, springs are plentiful and symbolically charged with meaning; they are credited with building a Thoroughbred's strong bones as well as being a distinctive ingredient in Kentucky bourbon (Fryar 2009). Kentucky spring water is used to help manifest a sense of *terroir,* a concept derived from the wine industry. *Terroir* refers to the specific biology, geology and climate, as well as traditional farming or processing practices, which combine to produce a unique regional character in an agricultural product (2009). The validity of this concept has been debated, but its implicit use in a dominant marketing narrative links spring water to a broader sense of Kentucky's history and identity.

It is also important to note that a significant number of rural Kentucky residents have used springs for self-supplied water sources (Maupin et al., 2010). This reflects on the history of infrastructure development in the United States. The introduction of municipal water to rural areas in the U.S. trailed behind other infrastructure developments such as electricity and roads. In Kentucky, the small tax base in rural counties has made it difficult to provide more than a minimum of public improvements and services (O'Dell 1996:31). Data from a 2010 survey on estimated water usage in the United States cited

that approximately 15 percent of Kentucky households still used self-supplied water systems, which included wells, springs, collected rainwater, cisterns, or unmodified natural sources, such as surface streams or ponds (Maupin et al., 2010). At that time, a substantial number of rural people in Kentucky were either maintaining their own water supply, or obtaining water from a source other than a municipal supply to meet their day-to-day needs.

Historically, water gatherers in Kentucky obtained information about how to access spring water from vernacular knowledge and from publications on self-supplied water systems issued by governmental or non-profit agencies (O'Dell 1996:8). In addition to being shaped by local geology, water access is affected by technology. For example, gravity systems used to access water became popular with the increased availability of inexpensive metal pipe, which replaced hand-hewn wooden pipes (Wigginton 1977:336). The methods and materials used to gather water varied greatly.

Figure 3: A hand-hewn wooden water pump and catchment basin, displayed as part of Nelson Sanders' Water Museum in the Edmondson County Water District Office, Brownsville, KY

The amount of time, energy and resources required to gather water depends on a person's geographic location. Those fortunate enough to be situated near a reliable spring or well would have easier access than those who had to travel to a publically-accessed spring or standpipe to obtain water. Cisterns are another means of gathering water. They collect rainwater and must be cleaned periodically. They are dependent on the weather. In dry times, when the water levels are low, cisterns must be supplemented with purchased water (O'Dell 1996).

Many of the individuals I interviewed during my fieldwork, at some point in their lives, relied completely on self-supplied water sources. Approximately half the people I formally interviewed, as well as others I talked with informally at spring sites, relied on self-supplied water sources as children. They shared similar but distinct stories about fulfilling the task of gathering water for home or school, or accompanying their mother to the spring to wash the family's clothes (a task that took most of an entire day). They were often very clear about the amount of work and time saved when public water lines brought water directly into their households. However, they also expressed nostalgia for aspects of water gathering.

For example, I interviewed Margie Fife and her son Scott to learn about their experiences using springs in Barren County, Kentucky. When asked if she had any favorite memories about gathering water from a spring located approximately a quarter of a mile from her childhood home, she shared this story about playing in the spring while her mother washed clothes:

> And then, the main thing that I remember, is my mother. She used to take the clothes down there and wash. And she had this big, big black kettle. And she would heat the — and this was down at the spring. But you'd take all the clothes down there, and we'd go down there and like,

> spend most of the day. And she would wash the clothes, and heat the water in the big kettle. And we would play. … And we'd build all sorts of dams, and everything in the water, in the branch. I remember that. That's the best. (Fife 2016)

Being asked to collect water as a schoolboy also combined hard work with pleasures. June Denham shared his memories of being a student at Oak Grove School in Edmonson County, Kentucky. His story echoed other men's experiences:

> We carried water in buckets up the hill to the school. Yeah, we'd get two buckets at a time. There'd be different ones go at different times. Of course everybody liked to go to the spring. Everybody liked to go to the spring because they could kill time [laughs]. (Denham 2016)

The following recollection from Eugene Peck describes his fascination with how each person took on their share of the daily task of gathering water:

> We lived in the old schoolhouse for a while. Mother was a teacher. And there was no place to live down there, and we just kind of moved in, what had been a lunch room, and lived there for a while. Up on Red River there. And, they had a well. Each school had a well. I don't know why, but each school seemed to have a well. And, the people around that lived, at least three houses there, would carry water from that well. And the kids would come, and we'd all play and visit, you know, and then they'd get their water and go on back home. But each kid had a bucket that suited its size. And that was, you know, thinking back now it was kind of fascinating. They had 4-pound lard buckets for the little kids, they had 8-pound lard buckets for the bigger kids, and had 2 1/2 gallon buckets for the father and mother, you know, the, the old, adult people carrying. And if it was a real, good strong guy, he'd carry two buckets. (Peck 2016)

The previous passage affirms the value of hard work and the idea that everyone did their share, even the children. While these memories shared during interviews conveyed a sense of inter-dependence and egalitarianism, this was not always the case. Individuals found ways to insert status differences into the practice. For example, the use of a dipper was often mentioned as a significant part of drinking spring water (Adams 2016, Denham 2016, Fife 2016, Sanders 2016, Warnell 2016). Dippers were made of a

gourd, steel, aluminum, or enamelware; each was considered to give water a distinct taste. More significantly, dippers were used communally — everyone in a household, church or school drank from the same dipper. The narrative about the use of dippers was used to evaluate past and present practice. For example, it could be used to illustrate how people needed to make do with what they had, or to infer that today's conceptions of hygiene are excessive. It could also be used to comment on an earlier time, when members of a community were closer and more interdependent. When Lee and Joyce Roach were explaining the use of water dippers in the country schools they attended, the following dialogue took place with their daughter Wayna Adams:

LEE: Everybody drank out of the same dipper.

JOYCE: Well, some kids would bring their own cups.

WAYNA: Really?

JOYCE: Yeah, there was a few of them that would bring their own cups. But…

WAYNA: Why?

JOYCE: It was more of a…

WAYNA: Why would they bring their own cups?

JOYCE: Cause they, had a pretty little cup and … it was kind of a status thing. [laughs]

WAYNA: Like bringing a Star Wars lunch box.

JOYCE: Yeah. But most everybody just drank out of a dipper. (Roach and Adams 2016)

The nostalgia expressed in these passages could be considered to be an idealized view of the past. This is especially true in those cases when the described experiences were told from a child's viewpoint. Water collection was related to childhood play and

childhood tasks; not to an adult's responsibility to provide water for daily household use. But nostalgia can serve many purposes. According to Cashman, nostalgia plays a role in constituting a collective memory of a practice, period, or place, and can become a "vehicle for coming to terms with change" (2006:141).

The generation that formerly relied on self-supplied water sources have seen significant changes in water use. The introduction of municipal water systems saved a substantial amount of time and labor; this technological development also made water collection an elective rather than a required activity. The ability to chemically treat and filter water has reduced or eliminated waterborne diseases, and ensured a mostly safe and steady water supply for those who can afford it (Melosi 2000). These improvements have also generated a cost. The concerns expressed by people I interviewed included a dislike for the taste of city water, and the sense that they had less personal control over their water supply. Additionally, some interviewees noted the difficulty of keeping water free of pollution in its natural state, due to increased commercial development.

Johnny Faulkner, a retired archeologist for the National Forest Service, relies on a spring in Powell County for his household water supply. He also occasionally draws drinking water from a variety of community springs in his neighborhood. In my interview with him, he expressed concern over the general loss of personal resourcefulness regarding one's water supply.

> But there's been a trend to cut self-sufficient people off from using their own springs and well water, that used to be very common back in the 50s and 60s. And earlier, you know, that people used. I think it's a bad thing. I think people need to be more self-sufficient and get off this city water. If we get into a natural catastrophe, an earthquake or whatever, we'll be cut off from all this city water, they're going to have to get back to using the creeks and the springs, like they did in the old days. (Faulkner 2016)

Another noteworthy change regarding water use concerns a shift in expectations towards community life. Anita Gray was raised in the Red River Gorge region in Powell County, Kentucky. When I interviewed her, she lived down the road from the Nada Tunnel Spring. In addition to being used by residents, this spring is heavily used by tourists who stop to get a drink of water on their way into the Red River Gorge Geological Area. I assumed the spring was owned by the National Forest Service, as it is located near the Nada Tunnel entrance to the Gorge. Anita and others in the community informed me that the spring is privately owned by the Campbell family. The Campbell family members, including the property owner, have migrated out of Kentucky, but they continue to allow it to be used by the public as a water source.

When I asked Anita why someone would take on the liability risks involved with this, she replied:

> Well I think, it goes back to the way we were raised up here. When I was growing up, say, your house burnt down. Everybody in the community would come in bring stuff to help rebuild that. Or if it was a barn, or somebody got sick? Everybody went in and took care of their crops for them. You were just raised with that, if your neighbor needed help, you helped them. We don't have that anymore. (Gray 2016)

This nostalgia expressed in this excerpt did not necessarily indicate a desire to return to a past way of life. As Ann Ferrell explains in her study of Kentucky tobacco farmers, narratives told about prior farming practices did not indicate a desire to return to the hard work that was required during that time. The narratives indicated a nostalgia for changed values towards the work, indicated by the esteem once associated with the term "tobacco men" (Ferrell 2013:214). In Anita's case, nostalgia indicated an evaluation on the lack of community cohesiveness in the present. Cashman talks about how nostalgia is used to process and comment on a "destabilizing" rate of change. "Unable to slow the

pace of change but unwilling to passively float with the tides of change, people nonetheless claim their right to at least evaluate change in retrospect" (Cashman 2006:146).

Nostalgia surrounding springs is not only expressed through stories about them — it can also be enacted through the process of gathering water from a spring. In engaging in this act, one participates in a vernacular practice associated with the past. The meaning of this past is constructed and differs for each person and generation; for example, one individual might be referencing an actual lived experience, or an imagined past.

Jeffrey Moser is the owner of Briscoe Spring, also located in Powell County. He and his wife recently moved to the area from Lexington, Kentucky to raise their family, so his roots in the community are newly planted. He was not raised with self-supplied water sources, and told me that the continued use of the spring by the public both fascinated and surprised him. In the following interview excerpt, he imagined what life was like for people who have historically depended on a spring:

> I think, I mean personally, like I kind of think — I know it was probably harder living back then, but, I kind of think that was like how life was probably supposed to be. Back then. I think now the earth's gotten really populated and just the gadgets and all the junk we kind of fill our lives with, you know, like people can't quit touching their phones, and now they're just socializing online. People don't really even, you know. Yeah like back then, when everything was absolutely real. Like your interaction with other people was real, and, and the winters were probably colder, and the summers were hotter, but, I don't know, I just kind of think that's how we were really supposed to live. You know, and not that anybody's living wrong now, but I just think it's, it's kind of filled with a lot of stuff, that's not really life. (Moser 2016)

Amy Shuman, when discussing what she refers to as *emblematic stories* told by artisans in Pietrasanta, Italy, describes their metaphorical function: "…the story of the idealized past period is not a literal, historical story but instead points to something larger

than the period itself; it houses all of the meaning needed to understand the present; it is allegorical" (Shuman 2005:62). Gathering water can also function as an allegorical act; one that re-enacts an idealized past and in the process, provides an evaluation of the present.

The nostalgia surrounding springs is also manifested through material culture display. As described by Cashman, material culture from the past, like nostalgia expressed through narrative or vernacular practices, "can provide the raw materials from which people responsibly revise their memory of the past and their identities in the present" (2006:154). I have explored this idea by examining two historical displays concerning springs: Nelson Sanders' Water Museum at the Edmondson County Water District Office, and the restoration of a spring site owned by Janice Graves and Carlie Proffitt in Monroe County, Kentucky.

I first learned about Nelson Sanders' display when he mentioned it, almost as an afterthought, at the end of our interview. Nelson is a retired District Manager for the Edmonson County Water District, and part of our conversation concerned his experiences implementing the municipal water system there. Nelson is also a real estate agent and antique dealer. We met at the corner of KY 728 and Ollie Rd., the site of the old Demunbrun store in the community of Lincoln. He uses the one surviving building there to store, and occasionally sell, his large and rotating collection of antiques and other vintage material culture.

The Water Museum showcases a collection of water-related material culture objects he salvaged during the process of replacing self-supplied water sources with public water lines. Some of these items were also collected during Nelson's work as a

real estate agent. The museum is housed in the conference room of the Water District office. Smaller items are displayed in a glass-enclosed display case at one end of the conference room, and the larger, heavier ones are lined up along one wall.

Figure 4: Examples of technology used for self-supplied water systems, Nelson Sanders' Water Museum in the Edmondson County Water District Office, Brownsville, KY

These objects, which resembled corroded plumbing hardware and old pumps past their use at first glance, signified something of value to Sanders. They symbolized the variety and creativity displayed in the methods people developed to access water. One piece of technology he especially noted was the hand-hewn wooden water pump and catchment basin pictured in Figure 3. For Sanders, this represented not only a lost art, but also the ability to make something out of nothing, to survive by utilizing one's ingenuity and skill (Sanders 2016).

In addition to examining the equipment used outdoors, we also discussed the technology within the home, particularly the utilization of water tables. Nelson Sanders recalled that these tables, which held the day's drinking water, were used in his childhood home, school and church. In his home, the tables were placed indoors and held a bucket of water, a washtub, and a dipper. There was often a granite soap dish mounted on the wall next to it, containing lye soap. Water was collected from the spring or well using the bucket, then brought into the house and set on the table. The dipper was used to drink the water, and if you did not drink it all, you would empty it into the washtub. This water was used for washing your hands. Nelson explained that one did not waste water because it was hard to come by — all the water brought into the house was used (Sanders 2016). Nelson still owns two of his mother's water tables, and they are displayed in his home.

Figure 5: Display representing a household's water table, Nelson Sanders' Water Museum in the Edmondson County Water District Office, Brownsville, KY

The displays Sanders has assembled do more than express "merely sentimental nostalgia" (Cashman 2016:148). They also comment on a perceived loss of community values such as creativity, self-reliance and thrift. According to Cashman, material culture

has a different effect than oral culture. For the collector and viewer, it can "stand in as short-hand for the particular changes they wish to contemplate and for the defiant ideological stances they have adopted in response to modernity and its teleology of progress" (148). Historical objects can replace discussion, or provide an inroad to discussion. Either way they can signify an invitation to engage another person in an analytical activity.

I met Janice Graves and Carlie Proffitt while working on a short film about community springs for Dr. Stinnett's ethnographic film production course. The initial focus for our filmmaking team (which included Azadeh Vantanpour, James "Bear" Scott and myself) was Cold Spring, located in Barren County, Kentucky. Bear, who lived in the area, was out driving one day when he spotted another spring site that resembled a public park. Curious about the function of the place, he left a note with his phone number, asking if we could talk with the owners. This is how we met Janice and Carlie and learned about their efforts to restore a historic roadside spring site.

Proffitt purchased the farm containing the spring in 1980. Prior to this, it was owned by the Downing family. Known locally as the Downing's Spring, it was located on Highway 100 and used as a water source for the Downing house and farm, which was across the road from the spring. It also supplied water to a home located up the hill from the spring and drinking water for passersby. Both houses are now gone, and the spring is no longer used to supply water to households or travelers.

Proffitt grew up in the area and told me that he used to visit the spring as a child. The Downing's had fenced it in, but they built wooden steps over the fence to enable people to access the spring. They also kept a dipper next to the spring. At times, a glass

was turned over on top of a fencepost, for people to use to get a drink (Janice Graves called it “the community glass”).

Figure 6: Janice Graves and Carlie Proffitt’s spring site, Monroe County, KY

As illustrated in Figure 6, the spring is set in a small hollow surrounded by steep hills on three sides. The road is located beyond the lower left-hand corner, out of the photo frame. People had to enter the hollow to access the spring. As a child, Proffitt remembers being fascinated by the setting:

> And just seeing it, the step over, to walk over the fence there, I always thought it was a neat place, you know, as a little kid. I thought, “Oh that’s really neat.” Just walk over and go over and get some water from out of it. My memory of being just, real small back then, maybe eight, ten years old. That’s a, kind of an amazing little area for you to, you know, to see. (Proffitt 2016)

Neither Proffitt not Graves could remember just exactly when the spring fell out of use. Carlie suggested that one of the reasons it closed was due to increased traffic on Highway 100:

> Well, that road now is a real busy area. So, it's hard to even pull in. You know, to stop. And years ago, when it was gravel, it would be a road without much traffic. And you'd pull off easily, and, probably a car would come through for, who knows? 30, 40 minutes, or so, you know. If they did, it was slow, because it was gravel. So, they weren't going as fast as they are today. It's a change of the times with the road being a lot more traveled that it used to be. And people think that's, that's something — olden times — and they just don't do that, you know. (Proffitt 2016)

Janice told me when she moved to the farm after their marriage in 1996, cattle were drinking from the spring, and it was not visible from the road, due to tall grass and brush. She thought the spring site was a beautiful place, and suggested to Carlie that they fence if off from the cattle and create a picnic area there. The opportunity came when a huge windstorm toppled a number trees and large limbs into the hollow, and they had to hire someone with a bulldozer to remove them.

Figure 7: View from picnic area, looking towards Highway 100. Janice Graves and Carlie Proffitt's spring site, Monroe County, KY

After this, they fenced off the spring from the cattle, began mowing the grass, and started to "dress it up" (Graves 2016). The picnic area now contains chairs, a fire pit, and a small barbeque grill. They removed the wire fencing next to the road, and replaced it with a small wooden fence, which is decorated seasonally. They hung the dipper Proffitt found at the spring site on the fence. No longer used to draw water, it now serves as a decorative element and as a symbol of the site's former use. The milk can on the property also signifies a practice from the past. Proffitt recalled how as a child on the farm, he would hear the metallic sound of the valley's dairy farmers popping the lids off the cans each morning, as they prepared to milk their cows.

The restoration of this the spring site created an environment that suggests the practice of water gathering, but does not invite it. Due to the busy roadway and its proximity to cattle, Janice and Carlie never intended for the spring to be used as source of

drinking water. They were interested in experiencing the spring in other ways; they enjoyed being immersed in the sounds, smells, tactile sensations, and visuals of the place. When I asked them how they used the spring, they told me they occasionally have picnics with family and friends, but mostly they just use it to relax and to listen to the sound of the water:

> And yeah, we just, like I said, we just like to go down there some mornings. Carlie would just say, "Hey, do you want to go down to the spring for a while?" Take your coffee, and we'll head down there, and just sit. Like on a Saturday morning. And just sit there for a while, and, you know, just listen. (Graves 2016)

One of Janice's favorite memories of being at the spring was visiting it after a snowfall. They built a fire in the fire pit and watched the spring run down through the snow. During the summer, they cool off by walking in the spring.

> But you can't walk for long in it, your toes will be frozen. I mean, we had little kids, and they'd want to play in it, you know, or whatever. And after a while they start noticing that their feet are, are getting colder and colder (laughing). And I said, "Yeah, if you hold your hand in it for every long, I mean it will start getting numb. It's that cold, all summer long. I mean it's just ice cold water." (Graves 2016)

To Janice's and Carlie's surprise, the property's park-like appearance has once again invited strangers to stop there. A few have photographed the spring. Others have simply sat awhile in the chairs, enjoying the nature and most likely wondering about the meaning and history of the site. Members of the surrounding community have responded positively to the reestablishment of the spring site as a special place.

> So, we've had several people come to us and say that they remember stopping there whenever they were little. So, that makes us feel good. And nobody's ever told us that, until we fixed it up. And then, they were like, "Oh, I remember stopping there." So, it's been, yeah, there's been more conversations about the spring since we've done that. (Graves 2016)

The practice of nostalgia manifested in Janice and Carlie's spring project can be interpreted as more than a desire for a picnic spot near a beautiful and historically significant natural feature. Like the Nelson Sanders' Water Museum, the restoration of the spring site invites contemplation on past ways of life. The Proffitt/Downing spring also serves as a mirror turned on the community itself, reflecting its positive qualities and fostering a sense of pride and identity. Even travelers unfamiliar with the specific locale or past practices of water gathering can experience the park and partake in this act of nostalgia and historical remembering.

The types of nostalgia I explore in this chapter are intertwined with the remaining topics I address in my thesis: purity/impurity, sense of place, and issues surrounding the public commons. These all suggest past practices and belief systems that can be evaluated though engaging in nostalgia.

CHAPTER 2: PURE, COLD, AND GOOD FOR YOU: VERNACULAR KNOWLEDGE AND SPRING WATER

When I asked water gatherers "What makes water good?" one of the most frequent replies I heard was its taste. Good tasting water was described by such adjectives as "cold," "fresh," "crisp," "sweet," and "smooth" (Adams 2016, Bolton 2016, Fig 2016, Meyers 2016, Moser 2016, Proffitt 2016). Nine-year-old Donald Merrick, when asked to describe the taste of Nada Tunnel Spring water, thought it tasted like it had "a little bit of honey in it" (Merrick 2016). In addition to drinking it in its pure form, I was told that spring water was also valued for making coffee or tea. Reports that municipal water tasting "Clorox-y," "like chlorine," "flat," or "salty" were all given as reasons for regular trips to a spring (Bolton 2016, Faulkner 2016, Meyers 2016).

The taste of water has also been cited as a popular reason for purchasing bottled water. According to the 2000 report, *Risk Perception and Bottled Water Use*, issued by the American Water Works Association, "almost half of the people participating in recent published surveys reported that they drink bottled water because it tastes better than tap water" (Anadu and Harding 2000:84). Bottled water companies appear to have incorporated this data into their marketing plans. For example, Nestlé Waters' website contains *A Water Taster's Glossary*, where water taste is divided into six primary categories, including "Light & Pure," "Bold & Distinctive," and "Vivacious & Energizing" (Nestlé Waters 2016).

Although unlikely that any of Nestlé's categories would be used by water gatherers to describe spring water, they do reflect a widespread preoccupation with water's taste. Most spring water gatherers I met — whether they were occasional or regular spring visitors — preferred the taste of the spring water to the water they get from

their tap. Obviously, many factors influence this opinion, including developing a taste for this water while young, the influence of marketing campaigns about spring water, or perceived problems with a municipal water source and/or its infrastructure. This preference can also be informed by a vernacular knowledge about water quality and its relation to geology. Individuals I talked with who have relied on spring water in the past have drawn from vernacular knowledge to make a connection between spring water quality and geology. For example, I have been told that a spring will have a different taste and contain different minerals when it is run through limestone, sandstone, or shale.

Andrew Raedeke's and Sanford Rikoon's article on vernacular agricultural knowledge systems examines the "spatial and temporal dimensions of knowledge" (1997:147). They hypothesize a model for "two distinct, yet overlapping, knowledge communities" referred to as local, experiential, subjective (LES) and local, experimental, objective (LEO) knowledge (1997:148). This categorization was not intended to place a value judgement on one type of knowledge system over another, or to imply that either category was used exclusively, but the model can be used to consider the different ways knowledge is constructed. According to Raedeke and Rikoon, an LES-oriented knowledge system places emphasis on learning from past experiences, and on deriving knowledge from one's "own life histories, reports passed on from one generation to the next, and/or the experiences of others in the immediate social context" (1997:151). It also incorporates one's subjective experience of a place into knowledge making. Scientific information is interpreted through "the combination of personal, social, and cultural templates and uses" associated with a place (1997:152).

Long-time friends Tommy Bolton and Norman Warnell met with me to share their knowledge on the history of springs in the region surrounding Mammoth Cave National Park. Tommy is a farmer whose ancestors settled there through post-Civil War land grants, and Norman is a retired Edmonson County history teacher who has worked as a historical consultant for the park. During our interview, they named over a dozen community springs remembered from their childhood. At the time of the interview, only one was still in use, Wilkins Spring, located on the north side of Mammoth Cave National Park, near the community of Lincoln. Tommy, whose farm borders the south side of the park, gets his drinking water from Wilkins Spring (a 41-mile round-trip drive). He prefers the taste of it to his municipal water supply. When I asked them "what makes a good spring," both expressed a preference for limestone over sandstone springs. I wanted to know if this was due to the taste, and I received slightly different responses.

Figure 8: Wilkins Spring, Edmonson County, KY

NORMAN: Well, I guess maybe if you drank — me, I just always gulp water down, I'd be so thirsty it didn't make much difference. But I'm assuming there is. Now I've seen, around some sandstone springs, water discoloration. And seepage, and stuff like that. And I'm sure that had an impact on the taste of it.

TOMMY: Sandstone springs have minerals, like iron, in them. And this really gives it a bad taste.

WESTHUES: And does it have, like a rusty appearance?

TOMMY: Yes. Yeah, it's really metallic, in your mouth. I like water. I guess I'm different from a lot of people, but I really do like water. And I drink a lot of water. And I can taste different waters. And this one at Wilkins, really has a, real good taste. (Bolton and Warnell 2016)

Johnny Faulkner, when discussing spring water taste, considered both types of water good, but made another distinction concerning texture. He described limestone water as having a "softer, smoother texture" (Faulkner 2106) than sandstone water. A sandstone spring supplies water to his house, but sometimes he has drawn drinking water from community limestone springs because "I just like the taste, the feel of the texture of limestone spring water" (Faulkner 2016).

Conversations such as this illustrate that the concept of taste is subjective. It can depend on things such as appearance, smell, or childhood experiences with taste. It also demonstrates a knowledge drawn from a personal history of a specific place, an intimate understanding of the surrounding landscape. This knowledge is developed over time, and through the experience of all the senses: sight, taste, hearing, smell, and touch.

The benefits of limestone spring water has been cited as the reason for Kentucky's reputation for quality bourbon and moonshine. Alan Fryar states that the chemical content of limestone water makes it especially suitable for distilling bourbon.

The lack of iron in the water prevents whiskey from acquiring a bitter taste and black color. The calcium carbonate present in the water results in an elevated pH, which favors the growth of Bacillus delbrücki, a bacterium that produces lactic acid in yeast mashes (Fryar 2009:609).

If bourbon is one of the official symbols of Kentucky, moonshine is its unofficial stepchild. Both are permeated with nostalgia and pride of place. To both an outsider and an insider audience, moonshine's association with lawbreaking, the Prohibition era, and NASCAR make it a romanticized symbol of the outlaw and the underground economy. Most Kentuckians also know of its relationship to springs. A constant supply of cold spring water is perfect for cooling the coiled copper tube, or "worm," that distills the moonshine (Snowden 2016). Vernacular knowledge about limestone water's effect on moonshine's quality and taste was frequently expressed during interviews, as in the following excerpt from Norman Warnell:

> The water in this area, if it runs out from under sandstone, it's not really dependable like the springs that come out of limestone. Sandstone water, a lot of times, will have a lot of other minerals with it. That's why moonshiners wouldn't set up a still at a sandstone spring. They'd go down into the lower part, down in the lower valley, in a hollow, and get into a good limestone spring. (Warnell 2016)

Johnny Faulkner found the remains of several moonshine stills, situated in rock shelters near springs, during the archeological fieldwork he completed for the Daniel Boone National Forest (Faulkner 2016). The practice of leaving a bottle of moonshine in a spring to keep it cool was another recurrent story told by interviewees (Fife 2016, Hardaway 1952). The frequent use of springs for distilling moonshine also made them a site for confrontations with "revenuers," U. S. Treasury Department agents who were tasked with enforcing the law against bootlegging. Interviewees Ann and Scott Fife used

archival research to create a short video documentary of an ancestor who was killed during an 1879 shootout at a spring in the neighboring community of Bewleytown (Fife and Fife 2016). In Kentucky, moonshine and springs signify each other. Their histories are intertwined and they have become symbols of identity for many Kentuckians.

Not all spring water is associated with good taste. Sulphur springs are caused by water passing through slate rock or shale (Bolton 2016, Faulkner 2016, Meadows 2016, Peck 2016, Snowden 2016). They are considered to have an objectionable taste and smell, which was often compared to rotten eggs. I heard variants of stories in which a sulphur spring owner would provide a thirsty but unsuspecting person a cold drink of sulphur water, just to watch them spit it out (Bolton 2016, Cooper 2016, Peck 2016). Other memories included a distaste for ice cubes (Hiser 2016) and Kool-aid (Daniel 2016) made with sulphur water.

Those who drank it as children told me that their family got used to the smell and taste of sulphur water. A few people I talked with, such as Tommy Bolton, conjectured that it may have contained health benefits.

> When I was a child growing up, until I was, probably 12 years old, we had a sulfur well. It was the only water we had. We got used to it. And you could draw a gallon of water and set it and the sulphur would evaporate out of it in a few hours. And it didn't taste. We got used to it, and we drank it like it was. When a visitor would come, well they'd get a mouthful and spit it out. It was not, desirable. To them. But we got used to it, and didn't pay any attention to it. When we moved away from there, when I was 12 or 13, we went on city water. Rented a house, moved and were on the city water. And that winter, my mother and I took the Asiatic flu and nearly died. And we blamed it on not having the sulphur water [laughs]. (Bolton 2016)

Prior to the twentieth century, the medicinal use of sulphur water was a customary practice in the United States. Anna Durham, in her research on the 19th-century sulphur springs resort Tyree Springs, located twenty miles north of Nashville, Tennessee, quoted

a pamphlet advertising the health benefits of sulphur springs, categorized by the "color" of the spring. A white sulphur spring was used to cure "gastro-intestinal diseases, and debilitated nervous systems," black sulphur springs were considered good for the liver, while red sulphur springs were "nature's cure for all kidney diseases" (Durham 1969:3).

The only person I met who openly admitted to liking sulphur water was Billy Cooper. I met Billy during an interview I had scheduled with Rodney Snowden. Rodney, a retired employee of the Powell County Water District, invited his friend Billy to the interview specifically to talk about the use of his white sulphur spring.

> And I still drink it. [laughs] …where it runs out of the cliff, or rock, it'll be white. Like the sulphur buildup, it'd be white. And you put it in a jug and let it sit a day or two, and you can't hardly tell its sulphur. That's what I was raised on, and we've got city water, but I keep me jug of sulphur water in the house. (Cooper 2016)

He told me others in the community used to stop by his spring to collect the sulphur water, but those people have all passed away. When I asked Billy if he thought there were any health benefits to drinking the water, he replied: "I just prefer it, myself, you know. It goes down better than the tap water, or, any other water" (Cooper 2016).

Other springs considered to produce undesirable drinking water included alum springs (considered by Billy Cooper as having a "bitter" taste) and magnesium springs (which according to Larry Meadows, can cause an upset stomach). Those who were unfortunate enough to have a farm located near one of these springs or wells would have to "get used to" the taste of the water, and endure the distaste that might be expressed by visiting friends and family. People in this position had an option of using community springs to collect their drinking water, but this required transportation and additional time and labor.

The analysis of the mineral content and medicinal uses of spring water was derived from personal experience, but also had its roots in indigenous environmental knowledge. In *New English Canaan* (1637), Thomas Morton described the miraculous effects of springs located in Eastern Massachusetts, and demonstrated a limited knowledge of the water's uses for the native populations who lived there. He named waters that were "most excellent for the cure of Melancolly,'' could ''cure barrennesse,'' or ''causeth a dead sleepe for howres to those that drinke 24. ounces at a draught'' (Morton 1637:228-29).

The phenomenon of 19th-century European-style health spas and mineral water tonics also shaped an interest in the medicinal uses of water. These resorts were developed at the site of mineral springs known for their healing properties. Springs were tested and categorized based on their mineral content, such as iron (chalybeate springs), sulphur, lithium, and alum (Pinkston 2014:42).

Reaching their peak of activity and use in the 19th century, health spas functioned as both upper-class resorts and a place to restore one's well-being. The Sulphur Well Historic District, located in Metcalfe County, Kentucky, is a well-preserved example of the numerous small mineral water spas established in western Kentucky between 1860 and 1949 (Logsdon 1998). By the mid-twentieth century, the industry began to decline. This was due to several factors: an increase in automobile travel (resulting in more options for tourism), improved sanitation in cities (decreasing the need to travel to the country for health reasons), and simply a change in fashion (Pinkston 2014:36).

Figure 9: The Sulphur Well, Sulphur Well, KY

Eugene Peck's ancestors owned Oil Springs, a 19th century mineral spa located in Clark County, Kentucky. According to Eugene, the spa contained five sulphur springs, some of which contained traces of petroleum. The family sold the spring in 1893, after running it for half a century. They remained very connected to the place, even after it was sold to Camp Fire USA. In the 1950s, family members still returned there to picnic and drink the sulphur water.

When asked if they did this for health reasons, Eugene told me as far as he knew it was just an outing for the family, an opportunity to get together and connect with their past (Peck 2016). Later, he shared a childhood memory of watching his grandpa, who

was born in the latter half of the 19th century, collect the oil in one of the springs there during a family visit.

> EUGENE: Down over the hill, there, there was a pipe in the ground, about so big. And, we went down, and grandpa wanted some of that oil. And they took a milk bucket and washed it out. And went down there. And there was a fishing pole, you know, a bamboo pole, like you would just cut out here on the side of a creek somewhere. And it had like a cup wired to the end of it. And they stuck that down in the pipe, and they actually got oil out. And he got him about a half a gallon of that oil. This was 1951. So, it couldn't have been very deep, down to where that oil was, 'cause a fishing pole couldn't be over 8 or 10 feet long.
>
> WESTHUES: What did he do with the water he got in that cup?
>
> PECK: He took a popsicle stick, and he would, after he ate, he would dip the popsicle stick in there and lick it off. He said that was good for your stomach. It was, it was, it had been opened, you know, and the lighter fuel had all evaporated. And it was black as, as tar. It was really, really black. And it wasn't that thick, but it was, the color, was like you think of motor oil in a car. The color was all gone, like that, and it was just real black. And I don't know how it tasted, I never had the nerve to try it. (Peck 2016)

As odd as this practice might seem to a reader today, the use of oil for medical purposes had a precedence. American Oil, Keir's Rock Oil, and other "oil tonics" were sold as patent medicines by emerging petroleum companies in the mid-19th century (Brice 2008:73). These tonics, like bottled mineral water and spas, were marketed as cures for several illnesses prevalent during that time period.

Sensory experiences of water inform our perception of its purity. For many, clear water is a sign that it is safe to drink; in contrast, water that is cloudy or contains color is generally considered unsafe. The image of a brownish glass of liquid is often used as a symbolic representation of polluted water in media reports. In "When the Water Turned Brown," a *New York Times* article on the Flint, Michigan water crisis, Flint residents

reported that the water's appearance and smell were the first indicators that their municipal water supply was polluted (Goodnough, Davey, and Smith 2016).

Scientifically, water purity is a complicated concept. Water is never just H_20 — it contains minerals, nutrients, and contaminants, some which can be seen, most which are invisible. Many water gatherers told me that they did not know if the springs they used had ever been tested for contaminants (Bolton 2016, Meadows 2016, Roach 2016, Warnell 2016). So how do they determine that the water is safe for consumption?

Mary Hufford, in her study of the New Jersey Pinelands titled *One Space, Many Places*, uses the framework of ethnoscience to delineate differences between emic and etic knowledge systems concerning place. The emic term "knowledge of" refers to knowledge of one's own culture and environment, developed from shared heritage and lived experience. "Knowledge about" describes knowledge acquired through scientific or scholarly methods (Hufford 1986:41). As Hufford outlined in her report, these two knowledge sources can overlap, but more often they "talk past" each other, losing out on an opportunity to create new knowledge. Scientific versus common names for local flora and fauna is one example of this concept (Hufford 1986:42), which also applies to notions of purity in water.

Examining the cultural practices of the various residents of the Pinelands, Hufford describes how the "knowledge of how a place works descends directly from those who put the early systems together" (Hufford 1986:51). The significance of collective memory and familiarity with landscape for knowledge construction is illustrated in this excerpt from my interview with Norman Warnell:

> We still have spring water — I don't have city water. And that was an old homestead there, taken up about 1800, and they were drinking out

> of the same spring. It's in the Glen Dean limestone layer. And it comes out from under a, real steep, high hill. It has a sandstone cap on top of it. So, there's not much danger of getting any pollution into it. (Warnell 2016)

Later in our conversation, Warnell discussed the types of physical environments which could create an unsafe spring. He shared this story about a tragedy that happened in his community a few generations ago.

> WARNELL: In an area in where you had some bad springs, now. The one on top of the hill, up by Maple Springs, there on Sam Denunbrum's place. And it's not coming out — it's not deep in the hollow like what Good Spring is — and that's the one that killed so many people. Preacher Roy Sander's dad died from typhoid from drinking out of that spring. And a bunch more people died from typhoid, from that spring.
>
> WESTHUES: Approximately what time was that?
>
> WARNELL: Well it was 19 — I'm going to guess — around World War One or a little before.
>
> WESTHUES: That's awful.
>
> WARNELL: Because he was about Dad's age, and he was just a kid when his father died. Clifton, if Clifton Sanders was here, he could tell us who all died from it. There was bunch of people, that took typhoid, and they traced it back to that spring. And it's about — cross-country it would be a mile from Good Spring. But altogether, it was an upper level of rock, and apparently, the water was easily polluted. (Warnell 2016)

Warnell's rooted experience of time and space provides a foundation for his present-day interpretations and decision making processes, as discussed in Raedeke and Rikoon's LES-oriented knowledge system (1997), and Hufford's example of "collective memory in action" (1986:51). Both subjective experience and objective (scientific) data are considered in his analysis of the safety of springs.

During my interview with the Roach family, Joyce, Lee, and Wayna discussed how the natural filtration of spring water contributed to its quality and taste, although it

was “probably not as sanitary” (Roach 2016). Lee then described a large crack in the sandstone ridge near his farm, which he believed collected rainwater which eventually emerged as springs.

> Up here, there’s a big hole, like a funnel. Feeds the water into the sandstone. Its filled with leaves, its spongy. But it’s probably, full of leaves — it’s still — oh you get down into it, you can’t see out. Why it’s as big as this room. A hole, a round hole, filled with leaves and stuff. But it’s above this spring on this side, and the spring on the other side, in the same hollow. There’s a big crack up there, about 3 feet wide and I don’t know how long. On top of the ridge. And it probably collects water the same way. (Roach 2016)

To recognize that spring water has desirable qualities derived from its natural environment, which are not defined solely by a scientific concept of sanitation, diverges from the official concept of water quality. Whether it is delivered through pipes from a municipal system, or bottled for sale, the prevailing knowledge of what makes water good involves separating it from its local ecosystem and removing most traces of nature in its delivery. Gathering water from the earth involves interactions with elements that are often considered impure. This includes the buckets, bottles and jugs used to collect it, as well as natural material found at a spring, such as dirt, algae, insects, or animals.

Figure 10: Moss growing on the catchment basin of Spout Spring, Estill County, KY

People who used springs would occasionally tell a story about organic material considered acceptable at a spring site — such as crawdads, rust, or mud — which were considered unclean or undesirable when they appeared out of a natural context. Like Mary Douglas's definition of dirt as "matter out of place," what is considered dirty reveals a context-dependent "systematic order and classification of matter" (Douglas 1966:44). In the case of springs, this order is often framed in terms of nature vs. culture. Nature, such as iron in water, creates dirt in the form of rusty red stains when it is used to wash clothes (Roach 2016). Culture, in the form of urban development, causes pollution when sited too close to a spring (Fife 2016, Meadows 2016, Peck 2016, Warnell 2016). In each case, the item considered to be harmful is situated in a location where it does not "belong."

Eugene Peck shared this story which illustrated the arbitrary nature of the concept of pollution:

> When I was a kid, we moved up on Red River. It's where, what you call the Red River Gorge. We lived up there. And we had a spring. And it, got down to where it just dripped in the summertime. Barely dripped in the real dry weather. So, we had to catch, you know, we had to put up a tank there, and let the tank fill up, and so for the barrel there, you know, let it fill up. And sometimes it got muddy. And we made some muddy ice one time. … We had a kerosene refrigerator. And they had, they froze this ice out of the, I guess I brought muddy water to the house and put it in the tray. And anyway, the ice come out muddy, and some neighbors made some remarks about it. But it was, we didn't know the difference. We didn't know that it was polluted or anything else. But it was pretty clean. There was no real, no pollution in the neighborhood. There was not a house within a half mile, so you know. There was nothing to pollute. (Peck 2016)

Peck did not consider the dirt to be polluted, because in his experience it was not harmful. It was a necessary by-product of the daily struggle to obtain water. The spring itself was considered clean because of its remote setting, far from human occupation. In

contrast, for someone like myself, who has not experienced this type of dependence on springs, drinking a glass of water with muddy ice cubes would be considered unpleasant at the very least, if not a health risk.

Diane Goldstein, in her work on vernacular risk perception, examines models developed by health educators to influence public practice of risk assessment. Like Hufford's concept of "knowledge about," risk is often framed by health educators as an objective fact which can be proven by using scientific methods. Alternately, lay risk assessment functions more like "knowledge of," in that it takes into consideration past and present experience, cultural influences, as well as other types of knowledge when determining risk (Goldstein 2004:70).

Joyce Roach shared the following story about her grandmother's spring near her house in Wilder Hollow. The spring used a noticeably "unsanitary" method for maintaining its purity:

JOYCE: Yeah, that's the one I was telling about, they dug it out and lined it with rocks. They even had a catfish in there.

WAYNA: They kept the catfish in the spring?

JOYCE: They kept a catfish in the spring. And we always wanted to go see the catfish.

WAYNA: Why?

JOYCE: To keep the algae and stuff out. Cause it was, it was real shady.

WAYNA: He didn't dip out of that part of it.

JOYCE: Yeah!

LEE: Yeah, that catfish ain't gonna hurt you. It won't bite hard.

JOYCE: [chuckles] They dipped the top part.

WAYNA: That is something right there!

JOYCE: They did — they kept — they did!

LEE: Yeah, I heard people put catfish in wells. (Adams, Roach, and Roach 2016)

Listening to this story, I could not help but make a connection between this practice and Motif B124.1.1. *Salmon of knowledge*, in which a wise salmon resides in a well. Searching the internet for information related to this motif, I discovered *Folklore of Wells*, published in India in 1918. The author, R. P. Masani, was an amateur folklorist who became interested in this topic while serving as the Municipal Secretary of Bombay. As part of the city's campaign against malaria, owners of contaminated wells were asked to close them. Religious beliefs and folklore practices concerning wells made this a problematic endeavor:

> The least objectionable expedient for protecting wells from the malarial mosquito was to stock them with fish. In many cases it was cheerfully resorted to as an experimental measure for killing the larvae. But even this simple remedy was not acceptable to some. In objecting to it a member of the Jain community submitted that the fish would devour the larvae and that it was against his religion to do any harm to insect life. It, however, required no very great efforts of casuistry to induce him to believe that it would be no transgression on his part if he merely allowed the Department to put the fish into the well. (Masani 1918:7-8)

This is very relevant to the practice described by Joyce Roach. For example, mosquito larvae frequently infiltrated rainwater cisterns, as described by Rodney Snowden:

> Yeah. And they'd get into every water hole that you got, if you had any way to get to it, they'd get in it. And, and see, because rainwater — it didn't have no — you'd put in a little Clorox, and it'd take care of it. ... But if, you'd be drinking, run you out a cup of water, and have little black fellows in there, you know. You know you're messed up. (Snowden 2016)

In the past, the risks involved with self-supplied water systems were accepted out of necessity. In present-day Kentucky, significantly fewer people depend on springs and wells, due to financial investments that made municipal water systems available to most rural residents (Maupin et al., 2010). Water delivered through these systems is treated for parasites and other diseases and delivered to the consumer, without requiring any effort on their part. In this case, why might an individual take the perceived health risk often associated with drinking water from a spring?

My research documents that water gatherers consider those elements present in water sources found in nature preferable to elements added to tap water. This choice involves more than a taste preference. It is also informed by a negative evaluation of a public water source, a distrust in the capabilities of a public water facility, and/or a disapproval of the processes used to clean water. News reports on the risks of pharmaceuticals in public water supplies and of toxic materials leaching from aging pipes, as well as by the ongoing debate on the risks of the fluoridation and chlorination of water, all inform these preferences and choices.

The chemicals added to public water systems are necessary to meet the needs of residential, commercial, and industrial customers. It is rare that a spring can produce enough volume to meet this demand, so water must be sourced from lakes and rivers — places considered unsafe sources for a self-supplied water supply. These sources not only require more purification than spring water; the quality of the water can also vary seasonally. When I interviewed Jim Meyers, the owner of Calvert Spring Water Company, he described how lake turnover affected the taste and quality of water sourced from Barren River Lake. Lake turnover is the process of lake water moving from the top

to the bottom of a lake. This happens in the fall, when the warmer surface water cools and sinks to the bottom, and the coolest layer of water at the bottom rises to the top (National Geographic Society 2017). Barren River Lake is used to supply water to both the Glasgow Water Company and the Allen County Water District.

> Both of them, at this time of the year, have a lake turnover. It's kind of like a pond would turn over. Because of the temperature inversion, and whatever. Causes the water to make a big — and during that time of the year, you really, it's almost impossible for them to get the taste out of that. Even, it doesn't make a difference what kind of process, it's hard. There was even an article in the paper. Just recently in Glasgow, because of that fact. Because of the time of year that happens. Like when it happens, you're going to have bad tasting water in the city water system. For a while. (Meyers 2016)

The process of risk assessment can influence a preference for spring water. Some individuals I have talked with informally have named boil water advisories as a reason they gather spring water. These are public health advisories issued by water utilities and health departments, due to an increased health risk associated with drinking district water. Customers under a boil water advisory are asked to boil tap water for several minutes before use, in order to avoid drinking water that may be contaminated with water-borne pathogens. Advisories are temporary and are often caused by a broken water line or a loss of electricity due to a storm. They are rarely applied to an entire water district, but rather pertain to the community surrounding the broken water line.

Based on data supplied by the Kentucky Department for Environmental Protection, boil water advisories regularly occur in many of the counties included in my research study (see Appendix 2: Kentucky Boil Water Advisories by County, 2015-16**)**. During a two-year period (2015-16) these six counties issued the following number of advisories: Allen: 5; Edmonson: 4; Estill: 58; Monroe: 38; Powell: 54; and Warren: 100. The principal reason provided for the advisories was a line break or leak. This data

provides a broader picture of why one might have misgivings about the safety of a public water source. As Andy Opel points out in his research, bottled water companies have also made use of this type of data in their advertising copy, to capitalize on fears about contaminated municipal water (2009:68).

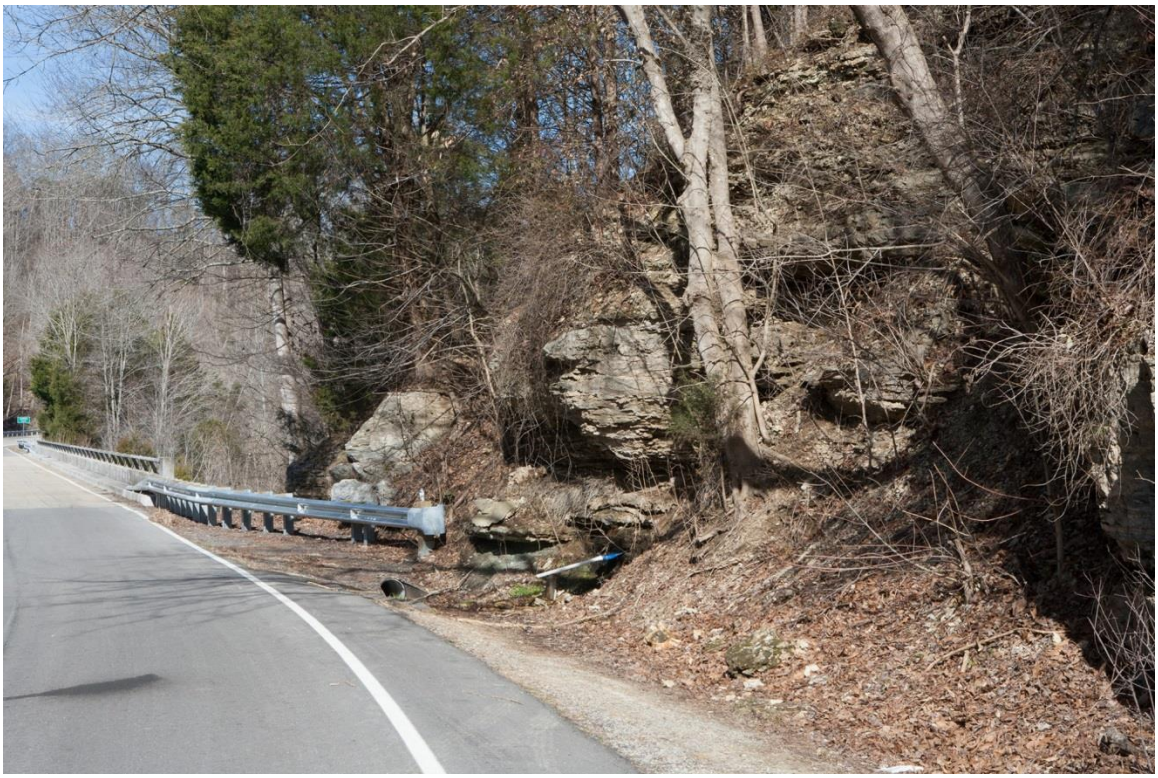

Figure 11: Cold Spring, Barren County, KY

Gwen Alston and Richard Horvath live down the road from Cold Spring, a roadside spring located in Barren County, Kentucky. I talked with them when I learned that they sourced all their drinking water from that spring. They filter the water in-house, using a Berkey water filtration system. When I asked why they go through this extra effort, they replied that they were concerned that the water supply (Barren River Lake) was not being adequately protected from contaminants, such as runoff from cattle feeder

operations. Richard also expressed a general lack of faith in the proper management of water treatment facilities.

> So, you're putting your health trust in the people that run the water treatment plant. And how well they run it, and check things. And they may do a wonderful job. Or they may not. Again, it's how much chance do you want to take. And, if there's a fairly simple solution, to not taking a chance — or we feel, taking less of a chance — why not, why not do it? I mean it's down the road, a mile and a half. (Horvath 2016)

I asked them why they considered spring water to be a better alternative, since both types of water could be filtered. They told me that *The Hidden Messages of Water*, published by the alternative medicine practitioner and author Dr. Masuri Emoto, had a significant influence on their perspective on water. Emoto conducted experiments with water crystals to prove the effect of human consciousness on the molecular structure of water (Emoto 2011). His book, despite being criticized for its pseudo-science perspective, made the *New York Times* bestseller list in 2005 and its influence was mentioned by three of my 36 interviewees. In the following excerpt, Gwen explained how the ideas expressed in Emoto's book changed her awareness concerning water:

> So, in the end, his research, kind of the conclusion of his research is, we should be kind to one another because, you know, being kind to one another makes us better, makes all living creatures better. But it was just kind of a reminder that water's a living thing. So, we want to live in a respectful, beneficial relationship with the water that we require, you know, to be alive. So that's why I like to start with the spring water. Which is living, which is alive, which hasn't been abused through, you know, the process, the extraordinary measures that have to be used to clean it up after its been contaminated and polluted. So that's why we like to drink it. And it tastes better! It tastes better too. (Alston 2016)

Goldstein, in her analysis of vernacular theory and risk perception, proposes that although both "objective" information and "subjective" experience is used to assess risk, the "authority of experience is frequently weighted as superior to 'objective'

information." In doing this, vernacular theory can also "raise questions about dominate cultural assumptions" (Goldstein 2004:73). In some of the examples provided here, ideas about what tastes "good" and what circumstances cause water to be safe to drink have challenged the prevailing discourse on purity and water.

Despite the good intentions and hard work of the public employees who made sure water was made available to all the county residents who wanted it, a lack of financial support has resulted in a decline in the condition of public water infrastructure in Kentucky, as it has elsewhere in the United States. It may seem incongruous that a person believes it is safer to drink water directly from the earth, choosing to avoid the established, scientifically-derived methods for water purification. In the case of water gatherers, going with what you know may be considered less risky than trusting in others to clean a contaminated water source. The variation in taste that can occur between spring water and "city" water is also a strong factor in this choice. Whether informed by personal experience, or inspired by corporate marketing campaigns, another critical influence is a belief in the relationship between nature and purity.

CHAPTER 3: THE SPECIALNESS OF SPRINGS: GENERATING MEANING THROUGH A SENSE OF PLACE

Examining our attachments to springs as places is a complex endeavor. The degree of one's familiarity with a place increases the depth of understandings one can draw from it. In Keith Basso's study of the Western Apache's conceptual map of the landscape, he reflects on the difficulty of interpreting a landscape's meaning as an outsider:

> In other words, one must acknowledge that local understandings of external realities are fashioned from local cultural materials, and that, knowing little or nothing of the latter, one's ability to make appropriate sense of "what is" and "what occurs" in another's environment in bound to be deficient. (Basso 1996:72)

The meanings generated by springs and their surrounding landscapes are interwoven with the concepts discussed in earlier chapters: nostalgia, nature vs. culture, purity versus impurity. These contexts are layered and interpreted through the experience of individuals. A spring may represent a time of hardship, a memory of play, a special connection with the natural world, or aspects of all of these things. As Basso points out, the individual's cultural framework for interpreting a landscape also shapes its meaning (Basso 1996:73).

A spring's role as a water source makes it an essential resource for human survival. Throughout history, they have been sites of contestation and negotiation for groups that have sought access to them. Christine Delucia reconstructed the role of Kickemuit Spring in King Phillip's War, which took place in 17th century New England between Native Americans and Puritan settlers (Delucia 2015). Delucia provided several examples of springs in New England that had been memorialized with commemorative plaques. These place markers communicated a "specific strain of historical narrative,

predominantly about the progress of English settlement and the downfall of Indians" (Delucia 2015:496).

Basso's research explored ways that "place-making is a form of history making" (Basso 1996:6). U.S. colonialism obscured and erased cultural references and memories about the land made by those who were displaced. The act of erasure was quickly overlaid with a new veneer of meaning, one that was pro-white and pro-settler. Memorials are one way of accomplishing this, another is the use of maps. Maps not only represent the geography and the cultural artifacts (such as roads and railroads) of a place, they also insert place names and human-defined boundaries onto the landscape which are used to convey meanings related to ownership, authority, and re-constructed memory.

Looking at topographical maps of Kentucky, one can read the place names of hundreds of springs. Some are abandoned, others are still in use. Their names reflect a history of the spring's property owners (Campbell, Ford, Wilkins) or their noted physical characteristics (Cold, Blowing, Sweet). Some of the springs I studied had multiple names, one ascribed by the map, another by the community members who lived near it. For example, Jeff Moser's spring was called Briscoe Spring on his property deed, but Johnny Faulkner had found an earlier map on which it was named Shanty Spring. To complicate this, many community members I talked with called it South Fork Spring, due to the road it was on (South Fork Rd.).

Place names can lose meaning in other ways. Mary Hufford, in *One Space, Many Places,* described how developers will often incorporate local place names into development sites. Instead of marking these older places as significant, this process serves to obscure the meanings and history associated with the place and to "sever the

connection between places and their curators" (Hufford 1986:57). During my residency in Bowling Green, I lived in Jennings Spring Apartments, which, like the numerous complexes surrounding it, channeled storm sewage runoff into nearby Jennings Creek, fed by Jennings Spring. A walking path created by the city's Greenways Commission passed by the source of the spring, which was connected to the Lost River karst system. For days following a storm, the spring and creek had a significant odor, that made walking near it an unpleasant experience. Co-opting the name, Jennings Spring, for an apartment complex not only obscures the spring's history, it also marks the disconnect between a desire to connect with nature, and the apartment complex's role in its pollution.

Figure 12: Jennings Spring, Bowling Green, KY

Despite this, Jennings Spring contained meaning as a place for me and others I met who stopped to view it. The brush between the path and the spring has been cleared to encourage passersby to stop and look. When walking, I usually stopped there for a minute to relax and take in the view. The spring emerges from a cave, creating small pools that at times contained turtles and small fish. After heavy rains, I would sometimes encounter people walking in the dry end of the creek, searching for artifacts that might have washed up and lodged there. In addition to this detailed examination with the minutia of the spring, many other people jogged past it every day without noticing it. As reported by Hufford, in her study of the New Jersey Pinelands (1986), the spring and creek represented different places for different individuals.

In addition to being a source of water, springs are places embedded with cultural significance. They have been considered a liminal space connecting the upper and lower worlds, and a site of magical and spiritual occurrences (Strang 2004:261). Stories of both love and tragedy have taken place at springs.

I first met Robert Hiser during the making of our ethnographic film, *Blessed With Many Springs*. Robert was one of our interviewees and an excerpt from his interview was used for the title of the film. He collected water from Cold Spring and used it for drinking water and to make wine — in fact, he gave a bottle of his homemade wine to a member of my film crew, Bear Scott, as a wedding gift. Robert had learned about the locations of many springs in Metcalfe County, during his work as a county surveyor. He offered to show me Big Blue Spring, a large boiling spring that Robert considered to be an amazing natural landmark. This spring is noted on the map of Metcalfe County and I tried to locate it earlier, but I could not find it.

We met in the town of Glasgow and rode together to locate the spring in his old, beat up truck, which turned out to be very useful in getting to the spring sites. We visited two springs that day. Big Blue Springs was the largest but most difficult to find. Hiser remembered its general location, but we had to stop and ask a few neighbors before driving down a one-lane dirt road to the small house at its end. There we met a family who knew the location of the spring and one of the sons offered to take us to it.

The spring was less than a half mile from the house, located in a small wooded area set between cornfields. It bubbled (or boiled) up in the middle of a sinkhole approximately ten feet wide, and because it had rained the day before, the water was not blue; it was muddy and had a reddish cast. Our guide (who asked to remain anonymous) told us that the spring was very cold, even in the hottest weather, and it never went dry. During our conversation, he told a ghost story about fishing at the spring and hearing horses galloping and seeing dust clouds in the field. Later one evening he returned and used a ghost tracker app on his phone to record some mysterious voices there. His companion reportedly photographed figures of a young girl and older man standing under a tree near the spring. He then told us about a legend connected with the spring. A group of people traveling through this area long ago mistakenly ran their horse and buggies into the spring's sinkhole and died.

Legends such as this one may or may not be based on an actual event, but they make sense as a response to the danger inherent in the spring's sinkhole and the force of its water. Jim Meyers, when talking about the history of Calvert Spring, related a story about schoolboys who would throw rocks "the size of basketballs, almost" in the spring, to watch the water push the rocks back out (Meyers 2016). Diane Goldstein, when

discussing ostension, states that "contexts do not simply inform texts, but rather that texts and contexts are relational; they structure each other and give meaning to each other" (Goldstein 2004:124). The ostension enacted at the spring was validated and shaped by the legend. But the spring as place could also be considered a context, creating a sense of mystery that inspired and supported the construction of this imaginative legend.

Timothy Cochrane's study of fisherman in the Isle Royale employs the framework of humanistic cultural geography to develop his theory on people's attachment to place (Cochrane 1987:5-7). While I disagree with his statement that "people with profound attachment to place… are the most unaware of that relationship," I do agree with his observation that "the strongest positive response to place is not easily put into words" (Cochrane 1987:9). Our attachments to places do not only involve aesthetic judgements, special social experiences, or nostalgic memories. They can also be formed by the routine of daily work in a space, or what cultural geographer Edward Relph calls "drudgery" and Yi-Fu Tuan describes as "humble events" which "can in time, build up strong sentiment for place" (Cochrane 1987:8-9). Those who relied (or rely) on self-supplied water systems can draw from all of these sources to derive meaning.

To learn more about the ways individuals felt about springs as places, I asked my interview participants to share a special memory about a spring. This question generally encouraged a positive, rather than a neutral or critical reflection, but at times I would get a reply such as the one from Anita Gray, who answered, "Nothing, that was just a way of life. It was — everybody had a spring or well, because there was no city water" (Gray 2016). Lawrence Childress also began his reply in a similar fashion, but went on to describe the physical characteristics of the spring, and occasional picnics there.

> Well, we were just always getting water, I mean it — we had a spring, on the — another one. And it had a — we called it the pond — and there was a place there, it was about twice as big as this table. And it was, I don't know, a foot deep, or something, and it was just as clear as it could be. And the water was coming out from under the rocks there. Out of the rock there, and it was coming out. … We always called it the pond. And we'd go down there sometimes, and, you know we'd go down there and have a picnic down there. Sometimes. I mean we always called it the pond. [laughs] It was on Mom and Dad's place. (Childress 2016)

Descriptions of spring sites indicated what the speaker considered worth remembering, what was considered special about that particular place. In describing a community spring used by their family, Joyce Roach and Wayna Adams mentioned the two big beech trees set at the top of the spring (Adams and Roach 2016). Nelson Sanders recalled a spring that flowed under the roots of a tree, which was used for refrigeration (Sanders 2016). Tommy Bolton mentioned a once-popular spring near his house that blew cold air as it flowed out from a cave (Bolton 2016). These features are considered meaningful to those who once experienced them, not simply for their physical characteristics, but for the thoughts they inspire. Basso describes this as "interanimation": the idea that "familiar places are experienced as inherently meaningful, their significance and value being found to reside in (and it may seem, to emanate from) the form and arrangement of their observable characteristics" (Basso 1996:108).

All the features of springs that interviewees identified as significant came from the natural world. Elements introduced by purposeful human activity also shaped the meaning of springs. Springhouses were constructed at springs, hollowed-out rocks or logs were placed to enhance water collection, and barrels were brought to the spring to be used for catchment basins. All of these human-made features were included in descriptions of the unique elements of a particular site. June Denham told me that the

rocks surrounding the spring near his childhood school were marked by those who had previously used it.

> DENHAM: Well, you'd go down, you went down this path, you know, had to cross a fence. That guy had the thing fenced off, you know, 'cause he ran cattle in there. But then you'd go down and when you got to the spring, it was just kind of around a big rock, oh, twice as big as my truck. And it was just coming out of this hole in the ground, you know, backing out of this little bluff, like. You walked back in there and they had a hole in that rock, that sandstone rock. Had a hole in there to dip that water out to pour in the bucket.
>
> WESTHUES: And you said people had carved their names around it?
>
> DENHAM: All over the rocks. All over them rocks, there's a lot of names on them rocks. (Denham 2016)

These features signify the spring's use as a communal space. Another example came from the Hickory Cabin Knob spring, remembered by Normal Warnell. Because it was located at the half-way point on the road between Mammoth Cave and Stockholm (approximately a mile), the spring became a stopping point for refreshment, but also for socializing and getting caught up on community news (Warnell 2016).

The site of a spring can also be intertwined with a broader history, as in this memory of a spring once used by Johnny Faulkner:

> Back when I was growing up, I was a hunter. I often coon hunted, and squirrel hunted. And I was raised up down in a, near Pilot Knob, Kentucky. The famous Pilot Knob, where Daniel Boone looked and discovered the Bluegrass in 1769. In the summer, and I'm sure — just guessing — I'm sure as those long hunters went up to that high peak and, in the summertime, in June, whatever, in 1769, that they probably, no doubt, knew where that spring was. If they frequented that very much. I'm not saying that they did, I don't know that. But it's a really good spring, and I'm sure there were many people who knew about it long before I did.
>
> But, as a kid, back in the 1960s. When we were hunting back there, at the base of Pilot Knob, we would often sit there. And we had our own cup hanging there on a tree. That stayed there. There was no trail by the

> spring at that time; now there is. That was a very fond spring, that we would go, and get, leaves off trees to make a funnel to fill up our canteens, or just drink from the, the leak. It was a, we put in the edge of the, you know, the spring, where it was dripping off the water. Seeping off the water. So yeah, I had fond memories of that. Back as a kid. (Faulkner 2016)

In this story, time was collapsed and the spring became a link between two different time periods. Faulkner's connection with the spring is associated with Daniel Boone's historic discovery of the Bluegrass in 1769. His story imagines an earlier way of life that was considered more connected to and dependent on nature than the present day. Rural Kentucky spring sites can be used to suggest "what happened here?" (Basso 1996:6) — reflecting on past ways of life to inform thoughts about the present.

In his essay on Isle Royale fishermen, Cochrane references Edward Relph's concept on how varying levels of experience influence our perception of place. His theory proposes a loose continuum that extended from "self-promoted alienation to a profound commitment toward a place" (quoted in Cochrane 1987:7). The examples I provided above reflect a deep history with place, but how does a spring's meaning change when it falls out of the collective memory? To examine this, I focus on Hammett Hill Spring, located just a few miles northwest of Bowling Green, Kentucky. Once a popular community spring, at the time of my research Hammett Hill Spring was no longer used for water collection (Belcher 2016). I learned of its existence from a woman I met in my neighborhood park. I later located it, labeled as Ford's Spring, on a topographic map of Kentucky.

The spring was piped to emerge from a large rock, then flowed across a rocky pathway, and was channeled underneath the road and onto the property across the street. The lack of an adequate parking space, plus evidence of graffiti in its abandoned pump

house, indicated that it was no longer used for drinking. The site was lovely nonetheless, and I was so focused on making photographs there that I did not notice that the graffiti had an explicitly racist message (see Figure 13). I only discovered this after I returned to campus and reviewed my images of the spring. This resulted in a bit of a shock; how could I have missed that? My positive feelings about springs made it a special place to me, and I did not look at it with a critical eye; I did not really "see" it. I wondered, what happened to the spring that caused it to be a site for such an objectionable message?

Figure 13: Graffiti in the pump house at Hammett Hill Spring, Warren County, KY

I attempted to find someone who knew about the spring, but the scarcity of visitors made this difficult. I eventually had the pleasure of meeting and interviewing Shirley Belcher, who was raised on a farm down the road from the spring. During our conversation, she told me that her childhood school, Ford's Spring School, was located a few yards from the spring, and that she had always knew of it by the name Ford's Spring. As a child, she carried water from the spring to the school, as was expected of

schoolchildren at that time, and it was also used as a community spring. Her family did not collect it for drinking water because they had a dug well (Belcher 2016).

Belcher thought that a change in ownership was the primary factor in ending public access to the spring. Sometime in the late 1960s or early 1970s, a new property owner built the pump house and pumped the water into his residence, effectively ending its use as a public spring. The parking area was later blocked with rocks (they were not there when I visited the spring). She told me that this was the first house in the area to have running water, but the spring has not been used as a community spring since then (Belcher 2016). I asked her about the graffiti (which had been painted over when we conducted our interview), and she replied that it was "everywhere." She could not remember when it first appeared (2016). Belcher told me that the introduction of public water changed the use of the spring. When I asked if this changed people's feelings towards the spring, she replied:

> It probably has. Particularly the people in this neighborhood now probably care nothing at all about that spring. Because they don't have any history of this area. Although some of them have lived here, 20 and 30 years, the water line was in. So, you know, they've not actually had to look for water somewhere else. (2016)

During my door-by-door investigation to find someone who had knowledge of the spring, Belcher was the only person I met who knew anything about it. I did meet the property owners, but they were new to the area and could only confirm that they owned it. It appeared that the spring's use as a critical water source had disappeared from the collective memory of the surrounding neighborhood. Stephanie Kane, in her study of *bicas*, decorative 16th century water taps which once delivered fresh water to Brazilian cities, described how the concept of contamination was applied both literarily and metaphorically to *bica* sites. The taps, no longer considered a safe supply of water, are

often marked with graffiti and are still used for drinking and bathing by those without access to water (Kane 2009). The neglected condition of the taps, as well as the economic class of those who frequented them, "create public anxieties that project back onto them" (2009:305). They mark the spaces as contaminated, masking their earlier role in providing critical sustenance and enabling colonial advancement (314).

While this helps to explain why Hammett Hill Spring might be marked as a neglected space, subject to visible signs of social angst such as graffiti, I found that the site did invite other interpretations, as explained in my introduction. I also discovered a short YouTube video of it online, made by an individual who posted the following description:

> This spring is not entirely visible from the road unless you're looking for it. It's right across the road from the 'Amazing Grace Ranch'. The water tastes fresh filled with the life-force. Its setting is in the shade indirectly from the sunlight. This spring is not very approachable and there's almost no room to park the car let alone a larger vehicle. Hammett Hill can be treacherous in the winter period due to its setting and configuration. There's also wild life in the environment so caution is most definitely advised at all times. (YouTube 2012)

The text and video appear to be directed towards an audience who is looking for a spring water source. The text, describing the water's taste as "filled with life-force" indicates an association with nourishing or sacred qualities, while at the same time, the reader is warned of its possible dangers. The spring's strong association with sustenance and folklore "sustains a particular characterization" which "influences narratives" about it (Cochrane 1987:20). This is illustrated in the stories told by Joe Bowen.

I was introduced to Joe at the Nada Tunnel Festival, held during the month of June in Nada, Kentucky. He was raised in Powell County, and now owns a bed and breakfast near the Red River Gorge Geological Area. He organized an 8K foot race

through the Gorge to raise money for the festival. The race ended with a run through the Nada Tunnel, and included souvenir flashlights for participants. This was not Bowen's first fundraiser – he told me that he had biked 14,000 miles across the U.S. to raise money for a charity. He also broke a Guinness World Record by walking across much of the U.S. on stilts to raise money for Muscular Dystrophy.

An amazing and unique individual, Joe specifically asked to be interviewed at the Nada Tunnel Spring. During our interview, we were constantly stopping to talk with people who arrived to gather water. Some of the people we met were recreational visitors to the Gorge, others were area residents. A few people honked and waved at Joe as they drove by. It was evident that he was a well-known and well-liked member of the community.

Prior to our interview, Joe told me that Kentuckians "just don't want to let go" of visiting springs, that it was an important part of their culture. He shared several stories about his experiences of using springs in his youth. Then he told a story that had been passed down in this family, describing how his grandfather, Charlie Sparks, met his grandmother Cleopatra.

> … Grandpa said that he came by the spring in Primrose. And he and his buddy stopped and let the horses drink, and then they got some — they started to get some water for themselves. And this beautiful young girl came walking down the path, and she had this — a beautiful glass. And he said, she came to the spring, and filled it up, and handed him this glass of water. And he told these two young men, after they got on their horses and left, he said, "I'm going back and marrying that woman." And he did. (Bowen 2016)

Joe told this story as part of a longer narrative, in which he explained how people "took care of each other" in his grandparent's day by making sure travelers had water. He

also described how the "spring is part of us" — by creating spaces for humans to gather, refresh themselves and reflect.

> And this, this is silly coming from a 73-year-old man, but, I got a lady friend, that rides bicycles with me. And we will kiss here at the spring. [laughs] It's just something you do. You, you get a drink, and then you get a nice kiss, and then you get on your bicycle, and go on. But it's, it's silly from a 73-year-old man, but it's true. I don't know if it's because it's a nice cool spot, or this water, or I don't know what it is, but it happens. (Bowen 2016)

Stories such as these, which portray what Johnny Faulkner described as "the specialness of springs" (Faulkner 2016), provide multi-faceted levels of meaning for those who have used these water sources on a regular basis. What other meanings might this place hold for a tourist who stops to get a drink of spring water from the Nada Tunnel Spring during a visit to the Red River Gorge? While I did not record interviews with casual users of this spring, I conducted participant observation research at the site for three hours in a late afternoon on a Saturday in July (see Appendix 1: Nada Tunnel Spring Participant Observation). I had spent some time observing the spring site a few times prior to this day, but had not systematically taken notes on who arrived to gather water. Selecting a weekend influenced the usage data, because there are more tourists on weekends. Also, Nada residents I talked with told me that they generally did not come to collect the water on weekends, or during certain times of the day, because they had to wait in line to collect it (Gray 2016). There were eight Nada residents who stopped during the selected period, but this might have more to do with curiosity, as we had set up chairs and a video camera at the spring.

Approximately 76 individuals, in 25 groups, stopped to use the spring during a three-hour period that day. This was more than the total population of the community of Nada, which reported 52 residents in the 2010 census (U.S. Bureau of the Census 2010).

Ten of the 25 groups consisted of area residents (from Powell or Montgomery counties), and the remainder were tourists from Ohio, Indiana, northeastern Kentucky, and one visitor from Colorado. All but two groups were getting water to drink for the day, either for camping, rock climbing, or while out driving. One group (two couples and their dog) used it for all their household water, and told me they gathered around sixty gallons per week. An elderly man used the spring for his drinking water and collected about eight gallons.

Figure 14: Visitors to Nada Tunnel Spring, Powell County, KY

This small window of activity reflected the different levels of use by those who access a spring. Some stop to get a quick drink, others use it to supply their daily drinking water, while some access a spring for all their household water (wash water, drinking water, etc.). In turn, each of these types of water collectors have a different sense of the spring as place. For some, the spring became associated with a fun recreational experience, while for others it was the site of a weekly task that needed to be circumnavigated around the arrival of those recreational visitors. These social

experiences become part of the "sense of place," informing and shaping subsequent experiences and memories of the spring (Basso 1196:146).

Being at a spring brings you closer to nature. As explained in the previous chapter, the location of a spring in a natural area, away from human influence, is one key factor used to assess its purity. Being at and drinking from a spring also provides a person with time to reflect on "the symbolic dimensions of the physical environment" (Basso 1996:146), the memories, thoughts and feelings that a particular place inspires in a person. Joe Bowen eloquently expressed this as we sat at the Nada Tunnel Spring during our interview:

> And I think we should be connected to the earth as much as possible. This is how — or this is why — we are able to live. And we've been separated from this. … And we came from this earth, and we're going back. Maybe not our spirits, but our physical bodies are going to go back. Where it came from. Just like the tree, just like that, see that dead tree that fell down there? That tree will be recycled into this earth, so it can make other trees and other animals and insects, and that's exactly what we're going to do, too. And that's beautiful, that is awesome, that's life. And the spiritual part of it, I don't know. But I do, I've got my own feelings about how that works. And it's good. (Bowen 2106)

There is a significant difference between drinking from a spring and simply being present in a landscape. Spring users consume part of the place. It becomes a part of your physical being, and in very real sense, you carry it away with you. Jeff Moser described this when he talked about one of his favorite uses for spring water:

> When we first moved here, I was framing houses with somebody. And I would go down there, and I'd get a Gott Cooler, I'd freeze a chunk of ice … And I'd fill that thing up with spring water. And all day, while these people were drinking Mountain Dews and sodas and stuff, I'd drink that spring water. And I'd be like, ahhh, it was just like a little secret treat you know. This stuff, I didn't buy at the store, I didn't run it out of a tap, I got this out of a mountain in Powell County today. (Moser 2016)

Like beach sand found on the floor of a car long after a trip to the shore, spring water can evoke place, experience, and memory. Its layers of meaning as a place depend on the depth of experience one has with a spring site, and is also influenced by its physical properties and its strong characterization of a symbol of life and mystery. The weight of the dominant narrative about springs is illuminated when one examines its use in the bottled water industry. The fact that this industry removes water from its local context and hastens the process of the market enclosure of water creates a disconnect which is rarely confronted by its consumers.

CHAPTER 4: WATER OWNERS, OR WATER STEWARDS? SPRINGS AND THE PUBLIC COMMONS

Community springs are considered to function as part of the public commons, but that does not mean they have not been claimed as private property. Historically, springs were often named after their property owners and were central to the claims settlers made on the land. In addition to providing water to the landowner, public springs met the needs of travelers and community members without access to potable water. This practice mirrors the historical example of the agricultural commons in 17th century Europe, in which privately-owned land was made available to local families for cultivating food and grazing livestock, thereby enabling them to sustain themselves (Titon 2016:490).

As Jeff Todd Titon states in his article "Orality, Commonality, Commons, Sustainability, and Resilience," the agricultural commons have largely disappeared from contemporary Western society, although other types of cultural commons exist, such as the Internet, the creative commons, or the town commons (such as the European village green) (2016:490). The community springs I examine in this thesis are vestiges of the agricultural public commons; they continue to function in a similar manner in today's world. In this chapter, I address the question of how the use of community springs as public commons resources has been negotiated and maintained in contemporary society.

When I first formulated my ideas for this chapter, I thought of framing this in terms of ownership: are community springs considered to be publicly or privately owned? As I investigated the responses I received for this question, I learned that the concept was more complicated than one of ownership. Titon suggests that the question of "who owns culture?" places the folklorist in a "universe of ownership" (2009:135) – directing the conversation towards the problematic issues of private versus public ownership and

cultural relativism. Instead, Titon proposes that folklorists should be concerned with supporting what he calls the "stewards of culture." He provides a definition of a stewardship as "the idea that humans are caretakers, not owners, of resources" (121) and discusses the term's use in the field of conservation ecology (124). While I am not convinced that this approach alone would be adequate for countering the privatization of a water source by a multinational corporation such as Nestlé Waters, it provides a useful framework for discussing the history and present use of community springs.

In discussing the historic use of community springs with Rodney Snowden, I asked him why a property owner would be willing to share a spring with the public. He answered by telling the following story:

> A lot of the old people believed that if you had water, it was a gift from God. That you didn't own it. … I remember one time, over in Powell County, there was a guy that had a spring right behind the house. I had a brother-in-law that lived there. And, he'd go over there and get a bucket of water. He'd you know, haul water from somewhere else, but when they'd run out, he'd go and get it. Well he saw him over there and he told him, "You can't have no more water, don't bother that water, I need it for my cattle." Well, in two months, after that, it went dry. He took a backhoe over there and he couldn't even find any wet spot. So, if you, if you have a spring, if somebody needs water, you better give it to them. That is, I'm just bringing that theory out, you know, you were saying, wonder why they'd do that? That might have been why they done that. They figure if you don't share your water, God can reach back there and get her and take her off. I mean, and, that's exactly the way, you know, a lot of them thought. (Snowden 2016)

The concept of a spring steward, as opposed to a spring owner, was clearly expressed in this excerpt. The privileged position of being the caretaker of a good spring obligated the landowner to help those in need. This story was used by Rodney to explain past practices regarding springs, but I am also interested in learning if, and how, spring

stewardship is performed today. To do this, I examine both unsuccessful and successful attempts at maintaining public access to a spring.

Spout Spring, located near the Spout Springs community in Estill County, Kentucky, was fondly referenced by interviewees from Powell and Estill Counties (Cooper 2016, Fig 2016, Meadows 2016, Peck 2016, Snowden 2016). Its place in the history of the region is confirmed by two highly regarded factors: evidence of its use in prehistoric times (Meadows 2016), and the role it played in the Civil War. According to local legend, soldiers were fired on by opposing forces when they stopped to drink from the spring, and at least one soldier who died there is said to be buried in Jackson's Chapel cemetery across the road from the spring (Hardaway 1952). In 1978, Estill County resident Kathryn Canter described the spring to Robert Rennick, who was conducting interviews for his book *Kentucky Place Names*. She named two subsequent owners of the spring (the McKinneys and the Tuttles) and then described it as being "famous for a long time. And it has never run dry. Any time you go by there, you can see the water running from the spring. And people come there and get water, and [it was] used to water their horses. And it's sort of a little, historic spot" (Canter and Rennick 1978). As Hufford illustrated in her work on ginseng and the commons, this type of story, which a community tells about a place, makes a claim on the land and helps to illustrate its cultural significance (Hufford 2002:116). The claim is a collective one; the spring belongs to the community as well as to the owners Kathryn named.

Figure 15: Spout Spring (view from above), Estill County, KY

The traditional use of roadside springs in rural Kentucky illustrates the concept of stewardship. Spout Spring's prominent place in Estill County's collective memory was due to the quality of its water and the spring's location on a major thoroughfare (Meadows 2016, Snowden 2016). Some of my interviewees shared childhood stories of traveling by car to visit family members in the 1950s. A special memory of these trips involved stopping at springs along the way to obtain drinking water. A spring was considered available for public use if it was piped to enable access from a roadway and had a parking spot nearby (Roach 2016, Rogers 2016). This type of use is comparable to the practice of river usage described by Erika Brady, in her examination of the impact of

tourism on the Ozark National Scenic Riverways (Brady 1994). For residents with deep roots in that region, "the rivers are part of a social as well as a geographic landscape," a public space "of and for the members of the community" (1994:147). This assessment, as applied to a public spring, is still prevalent among water gatherers. Joe Bowen, when asked if he knew who owned the Nada Tunnel Spring, replied:

> But I don't even know who owns it. But I've been using it all my life. And people that come here, they just assume that this is a community spring. Now it really, that spring is owned by somebody. But it's used by the community. No one tries to — there's no fence here. There's no sign that says, "No trespassing" or "Do not mess with the spring." (Bowen 2016)

Larry Meadows was the only person I talked with who told me that he asked permission to use a public spring. Larry's family owned a feed store in Clay City, and they relied on a spring at his childhood home. He had heard about the good tasting water at Spout Spring and wanted to try it. At that time, the spring was owned by Sam Tuttle, a prominent farmer and high school agricultural teacher who is credited with developing the Rocky Mountain Horse breed. In the following excerpt, Larry describes his first visit to Spout Spring:

> Well anyway, I went up and asked him, I said, "Uh, Mr. Tuttle, I, I remember you trading here at the store and stuff and I just wanted to ask you about — if it's — maybe — do you sell water?" I was trying to be nice. "Do you sell, sell water?" He said, and this, this is something to remember, I was having a hard time believing it, but I had to believe it. He said, "Why," he said, "sure you can have water, I ain't taking nothing for my water." He said, "Let me tell you something son." He said, "I remember you own the store." He said, "You're the first person who ever asked me for permission." (Meadows 2016)

The fact that Larry felt the need to ask permission could be a show of respect, or a result of the business relationship between his family and Sam Tuttle. It could also be interpreted as an indicator of a change in attitude towards public springs. Sam and Laura

Tuttle owned the spring from 1938 until Sam's death in 1988. Prior to that it was owned by the McKinney family (Rennick 2016). During the period in which the Tuttles owned it, the use of the spring changed significantly. Road improvements, and an increase in the use of cars, enabled more people to access the spring. A change in use also coincided with the development of the municipal water system in Estill County. According to Larry Meadows, when the water system in Clay City was first installed in the 1960s, muddy water would occasionally come out of the taps. This might happen, for example, after water hydrants were used to fight fires (Meadows 2016). This made it unsuitable for drinking, or even for washing clothes, and resulted in more people accessing the spring for household water, as described by Rodney Snowden:

> Later years, they used plastic bottles, or glass bottles, or jars, or jugs, or buckets. Lard cans. Just anything they could get to carry it in. And anything that would hold water, I guess. … I remember, people would come, and he would let anybody have any water, any time of day. They got — they'd make such a mess! They'd bring old bottles, and if they wouldn't hold water, they'd just throw it over, you know. (Snowden 2016)

Later, a change in land use affected the quality of the spring. Larry Meadows told me that he stopped using the spring after Sam started pasturing cattle above it, because he was concerned about contamination (2016). Sometime in the late 1970s or early 1980s, the state health department tested the water, and it tested positive for Escherichia coli. A sign was erected, stating that Spout Spring was closed due to contamination. According to Rodney Snowden, people continued to gather water there anyway.

> In later years, they got to saying that they had fecal matter in Spout Springs. But people didn't pay no attention to that, they came and got it anyhow. But, it might of had. You know most surface water has. I mean, its, its — but, it would be, I think you can get used to a lot of things, you know. … Me and Gene proved that, haven't we? We've got to this age and we still make it, we've drunk it. Pretty much. (Snowden 2016)

The idea that someone would drink water that has been officially determined to be unsafe does not, as might be assumed, always reflect a general mistrust in the government. It can also indicate a desire to choose a risk that is known. Spring users are often aware that contaminated material can increase during a period after a rain, and later subside. To draw from an example in Indiana, the Carroll County Health Department regularly tests a popular artesian well in Pittsburg, Indiana, and posts the results at the site. Nitrogen levels fluctuate in the water, due to herbicide runoff during the agricultural planting season (see Figure 16). The well is occasionally closed due to this, and reopened once the levels are scientifically considered safe for drinking.

Figure 16: Test results, Carroll County Health Department, Horse Tank Well, Pittsburg, IN

When considering the safety of water sources, it is important to note that contaminants in municipal water systems have also been widely reported. For example, a 2016 report by the Environmental Working Group cited high levels of chromium-6 (a carcinogen that occurs naturally but also is produced by industrial processes) in Kentucky's public water supply. The story, reported in newspapers throughout the state, was part of a national call to revise the safety level for this chemical, which has been under review by the Environmental Protection Agency (EPA) since 2011 (Environmental Working Group 2016). Considering the many studies that have criticized aspects of the EPA's acceptable drinking water standards, putting your faith in the municipal water supply could also be interpreted as taking a risk.

Spout Spring was eventually closed to the public by a subsequent property owner. He blocked access to it by placing large rocks in the roadside parking space. Interviewees provided multiple reasons for why he might have done this, including concerns about liability (Fig 2016, Meadows 2016, Peck 2016), problems with people dumping trash at the site (Snowden 2016) or a problem with home robberies (Snowden 2016). Several people I talked with, both formally and informally, expressed regret that the spring was closed. A 2010 *Topix* forum discussion thread, titled "Spout Springs should be open to the public?," contained a half dozen posts which proposed reasons why it was no longer in use (Topix 2010). I met the current owner in July of 2016, when I asked him for permission to photograph the spring. He told me he still occasionally encounters people who gather water there, although he did not believe it was safe to drink, due to its proximity to the cattle pasture.

The community's claim to this resource runs deep and continues to be a topic for debate. The ability of the property owner, as well as the community of water gatherers to provide good stewardship for the spring was compromised by several factors: the limitations of the public water supply, the need for the property owner to capitalize on his property, and the tendency towards littering in places where humans gather. In turn, these issues were also shaped by decisions made at the state, national, and global level. It can be difficult to separate out the exact reason for stewardship to fail, since it is evident that multiple factors contribute. To illustrate this, I will examine the fate of some community springs located in the Mammoth Cave National Park.

Mammoth Cave National Park was established in 1941 to protect what is now considered the longest cave system in the world. The park encompasses 52,830 acres, most of which is located in Edmonson County, Kentucky (National Park Service 2017). Similar to the model used to create the Great Smoky Mountains and the Shenandoah National Parks, people who lived on and owned land on park property were displaced and their structures removed, to create a natural space that contained no traces of a living human culture — except that related to tourism (Noble 1991). The history of the people who lived in the park was marginalized and erased, but as I learned through interviews with five Edmonson County residents, it has not been forgotten.

The drive to separate nature from culture by erasing the history of human occupation of what became Mammoth Cave National Park resulted in the loss of several community springs located inside the park boundaries. Nelson Sanders, whose family roots go back to the pre-park period, described two of these in our interview: Sookey Spring, located on the north side of the park, near the old Lincoln School, and Good

Spring, located behind the Good Spring Baptist Church. Sookey Spring was used by Nelson's family for their water supply. They dipped the water out of a dirt-lined pool down the hill from the spring, using a team of mules, a road wagon, lard cans and wooden barrels. It was also used as the water source for Lincoln School. Nelson did not know who owned the spring during the time it was used by his family. Through the 1970s, the National Park Service allowed the Lincoln community to access the spring but they did not maintain the road leading to the spring. As residents obtained dug wells and it became more difficult to access the spring, it fell out of use. In the late 1970s the Park Service closed the spring by adding a gate across the road, although people can still walk there. Near the end of our discussion, Nelson, who spent most of his career as District Manager for the Edmonson County Water District, surmised that when the park was formed, the Park Service took some of the best watering places in Edmonson County (Nelson 2016). The National Park Service mandate against resource gathering on national park land, in order to protect those resources, curtailed the practice of water gathering on park property.

When I interviewed Tommy Bolton and Norman Warnell about community springs in Edmonson County, they named nine springs that were used by their adjacent communities before the park was created. The largest and most well-known was the Three Springs system. A deed to this spring system can be traced back to John Croghan, a doctor and businessman who owned the Mammoth Cave Estate and managed cave tours there in the last half of the 19th century. Water from three springs were combined into a holding tank and then gravity fed to the hotel, the Mammoth Cave railroad, staff quarters, and area churches (Bolton and Warnell 2016). Croghan's family retained ownership of

the cave and springs until they were bought by the Mammoth Cave Park Association in 1926 (National Park Service 2017). In 1938-39, just before the National Park was established, the Civilian Conservation Corps (CCC) built the Three Springs Pumphouse and the Bransford Spring Pumphouse (which supplemented the Three Springs' supply) to pump the spring water to new and existing park structures (Lally 1989).

Figure 17: Three Springs Pumphouse, Mammoth Cave National Park, Mammoth Cave, KY (photo property of the National Park Service)

Both pumphouses, which are still in excellent shape, are beautiful examples of cut-sandstone construction. They have been added to the National Register for Historic Places, as part of the Mammoth Cave National Park Historic District (Lally 1989). Their period of significance is listed as 1939-42, reflecting the time that the CCC was active in the park, but the pumphouses were used to supply water to the park until the early 1980s. The park's ownership of the springs served to marginalize their significance as resources, by placing the emphasis on the built environment.

The springs, like the people who farmed the agricultural land in the park, are minimized in this narrative. Like the ginseng Mary Hufford examined in her article "Narratives of Progress, Preservation, and Ginseng," community springs, as public commons resources, have fallen "through a crack between preservation and progress" (2002:117). Features in the natural landscape that "illustrate official narratives of progress and preservation" (2002:113) such as the CCC-constructed Three Springs Pumphouse, are highlighted and preserved, while more modest symbols of subsistence, such as the springs themselves, are erased.

The only community spring in the park still in use at the time of my research was Wilkins Spring. Considered by my interviewees as a kind of outlier, its location on a gravel road, at the bottom of a steep hill on the north side of the park ensured that it would not be found by many park visitors. No one could tell me if the spring water was regularly tested by the park, although June Denham did test it himself before he started using it (Denham 2016). Tommy and Norman, when discussing how the spring was maintained, were critical of park contributions to its upkeep:

> TOMMY: Someone fools with the pipe every now and then. I'm sure it's a local over there. It gets knocked down, or falls down, or whatever. Nearly every time I go over there, it's a little different. So you can tell that somebody's put it back up. And somebody brings rope and ties it to a stake every now and then. So somebody does keep it up. I just wonder how long the Park's going to allow that.
>
> NORMAN: If they find out about it, they'll definitely … [laughs]. (Bolton and Warnell 2016)

June Denham told me that he tried to keep Wilkins Spring "cleaned up" when he visited it, because he did not want the park to use littering as an excuse to close the spring. Worried that the park was "just waiting to have a reason to close it," he guessed

that the spring was still accessible because the road needed to stay open to provide access to the two cemeteries located on the same road (Denham 2016).

Figure 18: June Denham at Wilkins Spring, Mammoth Cave National Park, Mammoth Cave, KY

When I asked Norman Warnell if the spring was owned by the park, he explained that the Wilkins Cemetery, just up the hill from the spring, was held in reserve and that it was not owned by the park. He did not know if the spring was held in reserve as well. This practice, of setting aside property for public use in a deed of sale, is one way springs have historically been protected as public resources. Don Fig, a retired director of the Gladie Visitor's Center at the Red River Gorge, related how the Nada Tunnel Spring was "cut out and reserved" for community use when the property surrounding it was sold to the National Forest Service in the late 1960s (2016). Rodney Snowden also reserved a spring by leaving a small parcel of land surrounding the spring in his name when he sold

the surrounding farm. He did this to guarantee access for a neighbor who relied on it (Snowden 2016).

Jeff Moser learned about this practice when he purchased property containing Briscoe Spring.

> So anyway, so we always knew it as the Briscoe Spring, when we very first moved here, on our deed. And the other homeowner, who we bought the place from, made it very clear, like right away. He, he was like — that was one thing he was passionate about — was he was like, you know, "Don't ever do anything to this spring." And we were like, "No, no way." You know, but he didn't know us, so he didn't really know, you know, like what we would think about the community using the spring that's right, just at the bottom corner of our property, on the road frontage. And then it says on the deed, which was put on there before he bought it, from, you know, I don't know how many landowners there were. … But anyway, so, so on the deed, which goes way back, it was put on there, that, I don't remember exactly how it was worded, but it was, you know, "Don't, don't mess with, or obstruct, the spring in any way, you know. People are dependent on it." A lot of community people are dependent on it. And we were, we just thought that was great. (Moser 2016)

Jeff's role as a steward for the spring extended beyond providing access to the water. Concerned that the uneven footing at the site made it dangerous to use, he first tried to use a large, flat rock as a stepping stone. The same week he added it, the rock disappeared. Thinking that this was not the best solution — "I don't think anybody owned the rock" (Moser 2016) — he decided to pour a concrete sidewalk, with the help of his friend Joe Bowen. The level surface also made it easier to collect the water, as one could set a container under the pipe without it tipping. Improving the spring had another positive effect: "After that, that spring, I never saw any trash down there for a long time. It was like, it just upped the pride, right there in everybody" (Moser 2016).

During our interview, he described his plans to add a stone bench, so people could sit down while waiting to draw their water. He did this a month after we talked, and then

texted me the photo of the completed bench, shown in Figure 19. Talking with Jeff, it became clear that he saw his efforts as a continuation of others' work on the spring. Its concrete catchment tank was built long before he purchased the property. Since he has owned it, the roof and faucets on the tank have been replaced, although he has no idea who made these repairs (Moser 2016).

Figure 19: Briscoe Spring with bench and concrete pathway, built by Jeff Moser, Powell County, KY (photo provided by Jeff Moser)

Alterations like these are often added to springs to make water collection easier. The water is frequently piped, and sometimes a containment tank is added to separate sediment and shorten the time spent gathering water. There are usually a few maintained parking spaces nearby. Other modifications include the use of flat rocks to keep the water

stream from eroding the ground beneath it, pathways to the spring made of wood, rock, or other material, and homemade filters, spouts, and pipe supports.

When I asked spring users if they knew who made these improvements, often they could not tell me. They assumed that they were added by the landowner, or by individuals using the spring. Robert Hiser and I spent a good part of a July afternoon knocking on nearby neighbors' doors to learn who built and maintained the filter used at Cold Spring (pictured in Figure 20), but we were not successful. During an interview with Donald Merrick, a nine-year-old boy who lived down the road from the Nada Tunnel Spring, I asked if he knew who repaired the spring. "Me!," he answered, and then proceeded to tell me how he once measured and replaced an old wooden pipe support (Merrick 2016).

Figure 20: Spring filtering system, made with a paint tray and window screen, Cold Spring, Barren County, KY

Keeping a spring free of trash is also a sign of stewardship. A well-used site, such as the Nada Tunnel Spring, can easily become littered with plastic bottles and caps, paper cups, and other refuse. Claiming a collective responsibility for the spring, some of the Nada residents I talked with took it upon themselves to keep the site clean and sometimes left plastic garbage bags at the site for others to use (Bowen 2016, Gray 2016, Merrick 2016). The question of why people who use a natural resource would also litter it was puzzling to me and several of my interview participants (Adams 2016, Faulkner 2016, Meadows 2016). During my research period, it was evident that Red River Gorge tourists were not the only population which littered. For example, the Tipton Ridge Spring site in Estill County contained an excess of trash both times I visited it (see Figure 21). In cases like this, it is difficult to recognize who takes the role of a spring steward.

Figure 21: Trash left at Tipton Ridge Spring, Estill County, KY

My final example, Calvert Spring, located east of Scottsville, Kentucky, is a story of a private owner returning a spring to its community. Calvert Spring, like Spout Spring, has a long, well-documented history, including evidence of prehistoric use and as the site of a Civil War encampment. In 1952, the town of Scottsville purchased the spring and used it for the town's water supply (Hopkins 1963:52). The spring water was so pure that it did not need filtration, and it was only chlorinated enough to meet federal safety standards (Meyers 2016).

Scottsville's municipal water was a source of pride for the residents of the city and was widely considered to be very good tasting water. Calvert Spring was featured in the 1984 *Allen County Calendars of Pictorial Histories*, an annual calendar published by the Scottsville Women's Club, which featured artwork by Scottsville High School students of local historical landmarks (see Figure 22). The text below, which was included to provide context for the drawing, gives an indication of the spring's meaning to the community.

> This remarkable spring which furnishes most of the water for the city of Scottsville and some of the county residents is located off the Pitchford Ridge Road on Long Creek nine miles east of Scottsville. The water flows from a single crack in the rocks. It has a very good taste and is so pure that very little chlorine has to be added. In former years, it was known as the Cliburn Spring because the land on which it is located was owned by Mr. Jody Cliburn, grandfather of Mrs. Robert B. Pitchford and Mrs. Jack Barlow. During the 1940's (WW II) when the army was here on maneuvers, this was a popular place for the soldiers to do their laundry. During the severe drought of the summer of 1983, when many nearby towns suffered from a water shortage, Calvert Spring didn't fail us. It furnished more than half a million gallons of water per day with a tremendous amount of water overflowing. A stream 40 inches wide and 14 inches deep flows off into the creek. The city has three storage tanks with a total capacity of 760,000 gallons. The pumping system from Calvert Spring keeps those tanks overflowing most of the time. On February 7, 1952, the Scottsville City Council adopted a resolution to purchase the spring property from the

heirs of William Washington Calvert. (Scottsville Women's Club 1984)

As an auto-ethnography, this text provides as much information about the community of Scottsville as it does the spring. The lineage of ownership of the spring, its role in national patriotism, and its capacity for providing water, even during times of drought, are highlighted here. When reading this, I wondered if many residents in Kentucky, or elsewhere in the United States, have this much information about, and connection to, their city water source.

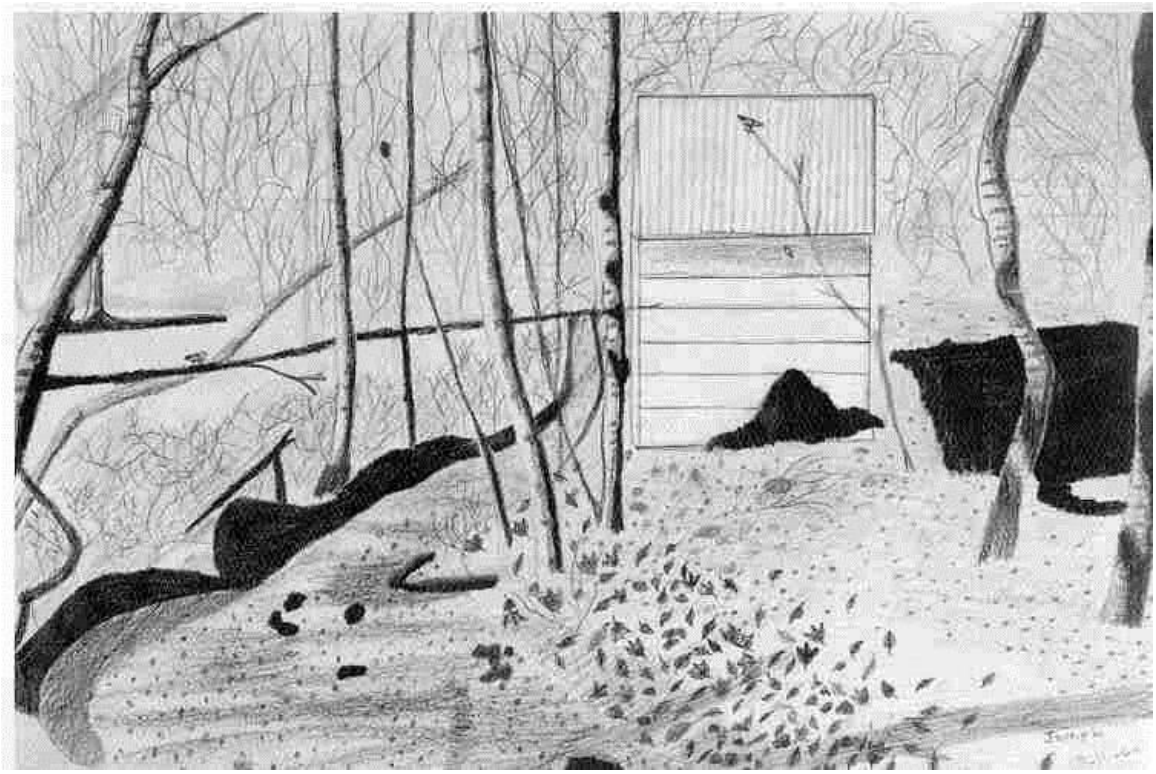

Figure 22: Calvert Spring, drawn by Joseph Sullivan (8th grade), for the Allen County Calendar of Pictorial Histories, published by the Scottville Women's Club, 1984

Ten years after this calendar was published, Scottsville's use of the spring ended. In 1994, the city decided that they needed more volume to meet the needs of a new industrial park. State regulations required that the city use an above-ground source for the necessary volume, so the city abandoned the spring and built a new plant which used

water from Barren River Lake. At a cost of three million dollars, the plant was located on the opposite end of the county from the spring. The long distance required new infrastructure. According to customers, the quality and taste of Scottsville's water noticeably diminished, and many people in the water district voiced their dissatisfaction with this new water source (Meyers 2016).

The same year that the city abandoned the spring, Glasgow, Kentucky resident Jim Meyers saw an opportunity for a business venture. Jim, who ran a temporary employment agency, had hired an engineer from Scottsville who did work for the National Aeronautics and Space Administration (NASA). When the engineer worked out of town, he would take gallons of Scottsville's tap water with him, because "the water in Scottsville was so good" (Meyers 2016). Bottled water was just starting to appear on the market, and after the spring was closed, the two decided to purchase it from the city and start a bottled water plant. They built the plant from scratch, and used a minimum of processing: a combination of ozonation, UV lighting, and filtration. At the time of our interview, Calvert Spring Water provided 5-gallon bottles and coolers to a ten-county area within the Barren River Area Development region. The water was sold to households, businesses, and industrial sites. High local demand for the water also led them to sell small bottles to retailers in the Scottsville vicinity, although high shipping costs have deterred them from pursuing more far-reaching distribution and marketing networks.

This story is relevant to the concept of stewardship in several ways. It provides an example of a city providing, and then abandoning, stewardship of a local water source. The business model developed by Jim was designed to return the water to the

community. For example, he did not become a high-end “boutique” retailer, or sell the water rights to a company that would remove the water from the community or state. In this way, one could say he has become the modern steward of Calvert Spring.

These examples of successful and unsuccessful spring stewardship provide valuable models to consider when addressing issues surrounding the public commons. Public resources on private land are always vulnerable, yet the spring owners mentioned above have managed to protect access to a spring for decades, if not longer. However, a broad approach to conservation is needed to ensure the quality of public water sources.

CONCLUSION

The themes and tensions that emerged in this thesis invite us to reflect critically on our own pre-conceived notions of vernacular knowledge construction and water purity. Many of the research participants I talked with had a richly developed classification system of water taste and quality, based on a localized knowledge of geology and personal experience. This cultural knowledge pre-dates the contemporary fetishization of taste classification systems used by the bottled water industry, or in popular practices such as home brewing.

My research provided many examples of the overlapping framework that is used to construct knowledge about springs and water purity. Like the model for LES- and LEO-knowledge systems developed by Andrew Raedeke and Sanford Rikoon (1997), and Mary Hufford's concept of "knowledge of" and "knowledge about" (1986), water gatherers can draw from both emic and etic sources to create their knowledge of springs, incorporating aspects of both enjoyment and utility. This was illustrated in my interview with Nelson Sanders. He expressed immense pride in his work as a key agent in supplying public water to Edmonson County residents, but at the same time, the material culture artifacts displayed in his water museum revealed a deep respect for those who had to use their ingenuity and skill to "make do with less" (Sanders 2016).

An important contribution of folklore is the use of ethnography as a research methodology to foreground the knowledge base and expressions of people whose lives are often dismissed or overlooked. The interview excerpts shared throughout this thesis are not just anecdotal. They document the use of critical analysis and reflection in making decisions about appropriate water sources. For those of us who use municipal water

systems, expecting water quality to be pure and good tasting each time we turn on the tap is an act of blind faith. We have little to no knowledge about the quality, composition, or source of the water we drink and take for granted.

My research shows that preconceived notions concerning water quality appear in both emic and etic knowledge bases. It also demonstrates that the use of knowledge systems and technology has always been part of people's efforts to access water and determine its purity. Typically the contrast between urban and rural worlds ascribes greater intelligence, ingenuity, and skill to urban people living in more cosmopolitan areas. The evidence I gathered at "Special Springs" provides the data to correct some of these unreflective assumptions.

My thesis is firmly grounded in the theoretical models, research methodologies, and thematic concerns of folklore. The disciplinary focus of folklore facilitated a complex and nuanced presentation of the practices and beliefs developed by water gatherers and the springs they honor, visit, and use. Attention to material culture items and the incorporation of ethnographic interviews and participant-observation allowed me to delve more deeply into the research project. As a result, our understanding of the experiences of water gathers and the meanings they ascribe to the springs they utilize becomes more visible to the world outside rural Kentucky. The research conducted for this thesis affirms the profound value of rural people's lives, their relationships with nature, and the local knowledge or meaning systems they develop, use and pass on to future generations.

BIBLIOGRAPHY

A Water Taster's Glossary. 2016. *Nestlé Waters*. http://www.nestle-waters.com/brands/taste-of-water/a-water-tasters-glossary (accessed February 15, 2016).

Adams, Wayna. 2016. Audio recorded interview with Kay Westhues. July 23, 2016, Menifee County, Kentucky.

Alston, Gwen. 2016. Audio recorded interview with Kay Westhues. July 17, 2016, Barren County, Kentucky.

Anadu, Edith C., and Anna K. Harding. 2000. Risk Perception and Bottled Water Use. *Journal* (American Water Works Association) 92(11):82-92.

Basso, Keith H. 1996. *Wisdom Sits in Places: Landscape and Language among the Western Apache*. Albuquerque: University of New Mexico Press.

Belcher, Shirley. 2016. Audio recorded interview with Kay Westhues. June 23, 2016, Bowling Green, Kentucky.

Berger, John. 1977. *Ways of Seeing*. London: Penguin Books.

Bolton, Tommy. 2016. Audio recorded interview with Kay Westhues. July 8, 2016, Brownsville, Kentucky.

Bowen, Joe. 2016. Audio recorded interview with Kay Westhues. June 17, 2016, Nada, Kentucky.

Brady, Erika. 1994. "The River's Like Our Back Yard": Tourism and Cultural Identity in the Ozark National Scenic Riverways. In *Conserving Culture: A New Discourse on Heritage,* ed. Mary Hufford, pp. 138-151. Urbana: University of Illinois Press.

Brice, William R. 2008. Samuel M. Kier (1813-1874) — The Oft-Forgotten Oil Pioneer. *Oil-Industry History*, 9(1):73-96.

Campbell, Elizabeth, and Luke Eric Lassiter. 2015. *Doing Ethnography Today*. West Sussex: John Wiley & Sons.

Cashman, Ray, 2006. Critical Nostalgia and Material Culture in Northern Ireland. *Journal of American Folklore*, 119(472):137-160.

Childress, Lawrence. 2016. Audio recorded interview with Kay Westhues. September 22, 2016, Brownsville, Kentucky.

Cochrane, Timothy. 1987. Place, People, and Folklore: An Isle Royale Case Study. *Western Folklore* 46(1):1-20.

Collier, John, and Malcolm Collier. 1986. *Visual Anthropology: Photography as a Research Method*. Albuquerque: University of New Mexico Press.

Cooper, Billy. 2016. Audio recorded interview with Kay Westhues. July 22, 2016, Estill County, Kentucky.

Daniel, Keith. 2016. Audio recorded interview with Kay Westhues. June 19, 2016, Clay City, Kentucky.

Delucia, Christine. 2015. Locating Kickemuit: Springs, Stone Memorials, and Contested Placemaking in the Northeastern Borderlands. *Early American Studies* 13(2):467–502.

Douglas, Mary. [1966] 2002. *Purity and Danger: An Analysis of Concepts of Pollution and Taboo.* New York: Routledge.

Dukes, Howard. 2011. Water, water everywhere: Westhues' photos plumb subculture of well users. *South Bend Tribune*. March 27, 2011.

Denham, June. 2016. Audio recorded interview with Kay Westhues. July 16, 2016, Brownsville, Kentucky.

Durham, Anna T. 1969. Tyree Springs. *Tennessee Historical Quarterly* 28(2):156-165.

Emoto, Masaru. 2011. *The Hidden Messages in Water.* New York: Simon and Schuster.

Environmental Working Group. 2016. National Drinking Water Database: Chromium (Total) In Kentucky. http://www.ewg.org/tap-water/whatsinyourwater/1020/KY/Kentucky/Chromium-total/ (accessed March 14, 2017).

Estill County, Kentucky; Canter, Kathryn; and Rennick, Robert M. 1978. Kathryn Canter Interview - Part 3 (Estill County). *Robert M. Rennick Oral History Collection*. Paper 151. http://scholarworks.moreheadstate.edu/rennick_oh_collection/151

Faulkner, Johnny. 2016. Audio recorded interview with Kay Westhues. July 24, 2016, Clay City, Kentucky.

Ferrell, Ann K. 2013. *Burley: Kentucky Tobacco in a New Century*. Lexington: University Press of Kentucky.

Fife, Ann and Scott Fife. 2016. Audio recorded interview with Kay Westhues. July 16, 2016, Barren County, Kentucky.

Fife, Margie. 2016. Audio recorded interview with Kay Westhues. April 10, 2016, Barren County, Kentucky.

Fig, Don. 2016. Audio recorded interview with Kay Westhues. July 22, 2016, Stanton, Kentucky.

Fryar, Alan E. 2009. Springs and the Origin of Bourbon. *Ground Water* 47(4):605–10.

Goldstein, Diane. 2004. *Once Upon a Virus*. Logan: Utah State University Press.

Goodnough, Abby, Monica Davey, and Mitch Smith. 2016. When the Water Turned Brown. *New York Times Online*. January 23, 2016. https://www.nytimes.com/2016/01/24/us/when-the-water-turned-brown.html.

Graves, Janice. 2016. Audio recorded interview with Kay Westhues. March 26, 2016, Monroe County, Kentucky.

Gray, Anita. 2016. Audio recorded interview with Kay Westhues. July 25, 2016, Nada, Kentucky.

Hammett Hill Spring Water, Bowling Green, Kentucky. 2012. YouTube. https://youtu.be/wwLVu2D64aA (accessed February 18, 2016).

Hardaway, Howard. 1952. Along the Back Roads of Estill County. *Louisville Courier-Journal*. September 7, pg. 102.

Hiser, Robert. 2016. Audio recorded interview with Kay Westhues. July 10, 2016, Metcalfe County, KY

Hopkins, William B. 1963. *Geology and Groundwater Resources in the Scottsville Area Kentucky*. Kentucky Geological Survey, University of Kentucky.

Horvath, Richard. 2016. Audio recorded interview with Kay Westhues. July 17, 2016, Barren County, Kentucky.

Hufford, Mary. 1986. *One Space, Many Places: Folklife and Land Use in New Jersey's Pinelands National Reserve Report and Recommendations to the New Jersey Pinelands Commission for Cultural Conservation in the Pinelands National Reserve*. Washington D.C.: American Folklife Center and Library of Congress.

——. 1999. Working in the Cracks: Public Space, Ecological Crisis, and the Folklorist. *Journal of Folklore Research.* 36(2/3):157-167.

——. 2002. Reclaiming the Commons: Narratives of Progress, Preservation, and Ginseng. In *Culture, Environment, and Conservation in the Appalachian South*, ed. Benita J. Howell, pp. 100-120. Urbana: University of Illinois Press

Kane, Stephanie C. 2009. Animated Architecture: Maria Luiza Mendez Lins and the Colonial Water Taps of Olinda, Brazil. *Journal of Folklore Research* 46(3):293-324

Lally, Kelly A. 1989. "Bransford Springs Pumphouse." National Register of Historic Places nomination form.

——. 1989. "Three Springs Pumphouse." National Register of Historic Places nomination form.

Logsdon, Donna G. 1998. "Sulphur Well Historic District." National Register of Historic Places nomination form.

Masani, Rustom Pestonji. 1918. *Folklore of Wells. Being a Study of Water-Worship in East and West*. Bombay: D. B. Tarapokevala Sons & Co.

Maupin, M.A., Kenny, J.F., Hutson, S.S., Lovelace, J.K., Barber, N.L., and Linsey, K.S., 2014, Estimated Use of Water in the United States. County-Level Data for 2010. *U.S. Geological Survey*. https://water.usgs.gov/watuse/data/2010/.

Meadows, Larry. 2016. Audio recorded interview with Kay Westhues. June 19, 2016, Clay City, Kentucky.

Melosi, M. 2000. Pure and Plentiful: The Development of Modern Waterworks in the United States, 1801–2000. *Water Policy* 2(4-5):243–65.

Merrick, Donald. 2016. Audio recorded interview with Kay Westhues. June 17, 2016, Nada, Kentucky.

Meyers, Jim. 2016. Audio recorded interview with Kay Westhues. September 23, 2016, Bowling Green, Kentucky.

Morton, Thomas. 1967. *New English Canaan of Thomas Morton*. New York: B. Franklin.

Moser, Jeff. 2016. Audio recorded interview with Kay Westhues. October 8, 2016, Powell County, Kentucky.

National Geographic Society. 2017. Lake Turnover. http://www.nationalgeographic.org/media/lake-turnover/ (accessed March 14, 2017).

National Park Service. 2017. Mammoth Cave. https://www.nps.gov/maca/learn/index.htm (accessed March 14, 2017).

Noble, Bruce J. 1991. *Cultural Resource Management in Mammoth Cave National Park: A National Park Service/Kentucky Heritage Council Cooperative Project Summary*. Department of the Interior, National Park Service.

O'Dell, Gary Andrew. 1996. The Search for Water: Self-Supply Strategies in a Rural Appalachian Neighborhood. PhD diss., University of Kentucky.

Opel, Andy. 1999. Constructing Purity: Bottled Water and the Commodification of Nature. *The Journal of American Culture* 22(4):67–76.

Peck, Eugene. 2016. Audio recorded interview with Kay Westhues. July 22, 2016, Estill County, Kentucky.

Pink, Sarah. 2103. *Doing Visual Ethnography*. London, Thousand Oaks, New Delhi: Sage Publishing.

Pinkston, Renee. 2014. A Rejuvenating Resort Remembered: The Use of Folklore and Archaeology in the Investigation of the Historic Massey Springs Resort in South-Central Kentucky. Masters Theses & Specialist Projects. Western Kentucky University.

Proffitt, Carlie. 2016. Audio recorded interview with Kay Westhues. March 26, 2016, Monroe County, Kentucky.

Raedeke, Andrew H., and J. Sanford Rikoon. 1997. Temporal and Spatial Dimensions of Knowledge: Implications for Sustainable Agriculture. *Agriculture and Human Values* 14(2):145-158.

Rennick, Robert M. 2016. Estill County - Place Names. *Robert M. Rennick Manuscript Collection - Kentucky Place Names*. Paper 62. http://scholarworks.moreheadstate.edu/rennick_ms_collection/62

Roach, Joyce. 2016. Audio recorded interview with Kay Westhues. July 23, 2016, Menifee County, Kentucky.

Roach, Lee. 2016. Audio recorded interview with Kay Westhues. July 23, 2016, Menifee County, Kentucky.

Rogers, John. 2016. Audio recorded interview with Kay Westhues. June 19, 2016, Clay City, Kentucky.

Sanders, Nelson. 2016. Interview with Kay Westhues. July 16, 2016, Edmondson County, Kentucky.

Scottsville Women's' Club. 1984. Allen County Calendars of Pictorial Histories. http://www.rootsweb.ancestry.com/~kyallen/calendar.htm (accessed March 17, 2017).

Shuman, Amy. 2005. *Other People's Stories: Entitlement Claims and the Critique of Empathy*. Urbana and Chicago: University of Illinois Press.

Snowden, Rodney. 2016. Audio recorded interview with Kay Westhues. July 22, 2016, Estill County, Kentucky.

Strang, Veronica. 2004. *The Meaning of Water*. Oxford: Berg Publishers.

Thompson, Stith. 1955. *Motif-index of folk-literature: a classification of narrative elements in folktales, ballads, myths, fables, mediaeval romances, exempla, fabliaux, jest-books and local legends*. Volumes 2, 4. Indiana University Press.

Titon, Jeff Todd. 2009. Music and Sustainability: An Ecological Viewpoint. Music and Sustainability, special issue. *The World of Music*. 51(1):119–37.

——. 2016. Orality, Commonality, Commons, Sustainability, and Resilience. *The Journal of American Folklore* 129(514):486-97.

Topix. 2010. Spout Springs should be open to the public?. http://www.topix.com/forum/city/irvine-ky/TFUVPK7OPMNTI1R5B (accessed March 13, 2107).

U.S. Bureau of the Census. 2010. Population. Washington, DC: U.S. Government Printing Office.

United States Geographical Survey. 2010. Water Use in the United States. https://water.usgs.gov/watuse/ (accessed April 18, 2017).

Warnell, Norman. 2016. Audio recorded interview with Kay Westhues. July 8, 2016, Brownsville, Kentucky.

Wigginton, Eliot. 1977. *Foxfire 4: Fiddle Making, Springhouses, Horse Trading, Sassafras Tea, Berry Buckets, Gardening, and Further Affairs of Plain Living*. New York: Anchor Books.

World Health Organization. 2013. Progress on sanitation and drinking water: Fast facts. http://www.who.int/water_sanitation_health/monitoring/coverage/jmp_fast_facts/en/ (accessed April 18, 2017).

APPENDIX 1: NADA TUNNEL SPRING PARTICIPANT OBSERVATION

Spring: Nada Tunnel Spring

Date: Saturday, July 23, 2016

Timespan: 4:00 pm to 7:00 pm

Summary: Approximately 76 people (25 groups) stopped to use the spring during this time period. Ten of the 25 groups were area residents (from Powell or Montgomery counties). The remainder came from Ohio, northern Kentucky, or Indiana, excepting one person from Colorado. Most people learned of the spring by living near it, by driving past it, or by word of mouth. Two groups learned of it through the Internet, and another through a canoeing company. Two groups were using the spring to furnish water for their home; the remainder were just getting a quick drink.

# of people	Age range	Gender	Place of residence	How they learned of the spring	Notes
4 + Dog (Ollie)	20-50	2F 2M	Stanton, KY (moved from Ann Arbor MI)	From a friend	Two couples are building a cabin and are using the spring to supplement their water until they finish it. Have been visiting the spring for 2 years now. They get around 60 gallons per week.
4	10-40	1F 1M + 2 kids	Nada KY	Live next to it.	They were going camping and collecting water for the trip. Usually they gather water at night to avoid waiting in line.
4	30-40	2F 2M	Ohio and Chicago	Website: motorcycleriders.com	Motorcyclists on their way home from a vacation in the Smokies.
7	12-50	M	Cynthiana, KY	From previous camping trips	Two families camping together. Van full of young boys. Just stopped to get a drink.

1	65	M	Nada, KY	Lives in a cabin down the road.	His grandmother was a Campbell, the family who owned the spring when Nada was a logging town.
1	50s	M	Loveland, CO	Camping in the area and saw people gathering water there. Asked at the Gladie Visitors Center if it was OK to drink the water, they said it was fine, so he has been collecting it.	His third and final week of camping.
4	40s	2F 2M	Fort Wayne, IN	A biker website (could not remember which one)	Motorcyclists on vacation.
5	10-30	1M 1F 3 kids	Lexington KY and Cleveland OH	Heard from someone in the group that knew about the spring.	On a camping trip
2	20s	2M	Mt. Sterling KY	Learned about it from family	Motorcyclists, have been coming to the spring for as long as he can remember. Just stopped to get a drink.
3 + dog	20s	3M	Cincinnati and Youngstown OH	Just drove past it and found it.	On a camping trip
1	70s	M	Campton KY	Grew up in the area	Just stopped to get a drink.
2	50s	1F 1M	Cincinnati OH	Learned from a friend about 20 years ago.	Been stopping off and on while at the gorge.

2	30s	2M	Lexington KY	Learned about it from Kentucky Adventure, a canoe trip business.	Came from a river trip in the gorge.
1	40s	F	Pine Ridge KY	From the area	She told us her church is to drive her motorcycle through the Gorge 2 times a day. Part of the road was called Snakey Alley, because it was so curvy.
6-7?	20s	M	Northern KY and Cincinnati OH		Just out riding, most of them were sitting in the back of the truck.
2	20s	1F 1M	Mt. Sterling KY	From the area	Stopped to wash their feet.
3	?	1M and 2 kids	Lexington and Northern KY	Been coming to the gorge area since he was young – learned about the spring then.	
4	10-30	1F 1M 2 kids	Nada KY	Live down the road	They are related to the Campbell's who owned the spring.
5+?	20s	?	?		Truck full of kids; came and went before we had a chance to speak with them.
1	20-30?	M	Hamilton OH	Heard about it from someone in Winchester KY.	A rock climber – called the spring 'sippin water' – told a story of how he shared it with someone and they gulped it down. He told us about the time he brought some of this water on a bicycle race – how he felt like he had special water, an elixir -
4	20s	2F 2M	Columbus OH		Rock climbers

1	70s	M	Clay City KY	From the area	"Birdman" – a retired barber who worked in Winchester. He stayed for a long while filling up several large plastic containers. He gets all his drinking water from this spring. He collects about 8 gallons, which lasts him about 2 months. He puts this water into 8 oz. bottles and keeps it in the freezer. He used to collect it from Spout Spring before it closed. He grew up with wells and does not like the taste of chlorine. His family had a sulphur well when he was young. Later he drilled a well on his property, not realizing there was a cemetery above it. Which made him not want to use the well.
1	?	?	Magoffin County KY	Heard from a friend	Stopped by after hiking.
1	50s	M	Nada KY	Lives down the road	This man walked to the spring to get some water after getting home from work. He told us the spring was tested by the county health dept. 4 times a year.

APPENDIX 2: KENTUCKY BOIL WATER ADVISORIES BY COUNTY, 2015-16

This chart reflects data on boil water advisory incident reports supplied by the Kentucky Department for Environmental Protection on March 21, 2017. The report spans a two-year period, from January 2015 to December 2016, and includes data on the following Kentucky counties: Allen, Edmonson, Estill, Metcalfe, Monroe, Powell, and Warren.