To the extended Mickler family, the true historians of Palm Valley, Florida
ACKNOWLEDGMENTS

I thank my parents for instilling the importance of education in me. I also thank my Southern mother who indirectly taught me about Southern food and gardening and my Northern dad who showed me how you can try to fit in even if your accent is a dead giveaway. I thank David Goodman whose Cajun cooking and reflective thoughts helped me survive this process. I would also like to thank the members of my committee, J. Richard Stepp, Marianne Schmink and Peter Collings for their wise advice. I thank the Mickler and Mier families for their cooperation and inspiration. Knowing Sid, Jo and Donna Mickler has been a true pleasure and inspiration for this body of work.
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DERBORAH J. ANDREWS

I investigated the intergenerational transmission of traditional or local ecological knowledge of a Florida Cracker family in a coastal location that has been impacted by urban sprawl over the past 30 years. At the outset, I investigated whether the Cracker family possessed traditional ecological knowledge as well as the dimensions of the knowledge, establishing a neo-indigenous group. Due to the dramatic landscape changes due to urban sprawl, I investigated whether local ecological knowledge is being passed on from generation to generation and whether there were changes to or loss of knowledge. The results of this study demonstrate that while the landscape is under tremendous stress and development pressure, local ecological knowledge is still being passed on to the subsequent generations. Ecological experts emerged for three generations, with at least one member exhibiting extraordinary knowledge of local flora and fauna. The oldest two generations had knowledge of ecological changes to the native fauna, including the arrival of exotic species during their lifetimes. A comparative analysis was conducted of non-Cracker local residents, with a comparison of local plant and animal knowledge. The results showed that the Cracker family possessed a greater
knowledge of local flora and fauna names. The results also showed an inverse relationship between formal education levels and local ecological knowledge. This study demonstrates that families and cultures with a deep history in a region can possess meaningful ecological knowledge that can be of value in ongoing and future conservation and land management efforts, despite lack of advanced formal education.
CHAPTER 1
INTRODUCTION

A goal of anthropology is to explore and understand how cultures perceive, construct and interact with their environment (Ross 2002). Ethnobiology is the study of the relationship between people and the complex of relationships with the biological environment (Svanberg 2007). Local peoples often develop what is known as traditional ecological knowledge, which is transmitted from generation to generation. Traditional ecological knowledge includes: (1) the names of natural phenomena, (2) the functions and uses of the phenomena, (3) the land and resource management system and institutions that govern them, and (4) the cosmologies, worldviews and ethics of the people (Berkes 1999).

In Chapter 2, I address the theoretical basis for traditional ecological knowledge and describe the literature on the subject of traditional ecological knowledge, including the above four factors or components of traditional ecological knowledge identified by Fikret Berkes (1999), which are used as a model throughout this thesis. I also address the methods of transmission of traditional ecological knowledge, including the role of the family. This chapter also identifies experts in traditional ecological knowledge. Chapter 2 thus provides the theoretical foundation for this thesis.

The initial question addressed by this study is what ecological knowledge consists of for a subset of southern American culture known as Florida Crackers, including each of the four criteria identified by Berkes (1999). The study subjects include descendants of a pioneer family in Palm Valley, St. Johns County, Florida, as well as relative newcomers. The Mickler family (pronounced Mick 'ler, and often mispronounced) traces its presence in Palm Valley, Florida back to 1843. Some members of the Mickler family
still live in Palm Valley; others grew up in Palm Valley but have moved to nearby towns such as Jacksonville Beach and St. Augustine. Others have left Florida altogether. This study investigates the intergenerational transmission of knowledge of the flora and fauna of Palm Valley within the Mickler family. The purpose is to determine the level of traditional ecological knowledge possessed by the family, what constitutes their traditional ecological knowledge, and whether this knowledge is being transmitted or lost by the subsequent generations of a pioneer family with historic ties to the land.

The research question revolves around the issue of whether the change in the landscape, with much less reliance on the land for livelihood such as farming and hunting, has caused a reduction of the knowledge of the local ecology. Prior studies in other regions of the world have found a loss, to a certain extent, of traditional ecological knowledge (Timbrook 2000; Minnis 2000; Quave and Pieroni 2009). With this in mind, various members of the extended family across several generations participated in this study. I also investigated whether the traditional ecological knowledge is being preserved through the emergence of experts within the family or community, for each successive generation, thereby serving as both a source of knowledge and a source to learn from so that the knowledge continues to be passed on from generation to generation.

The context of this study is described in Chapter 3. Since culture is reflected in community (Arensberg 1955), this research study took place in a small community called Palm Valley, Florida, which is located along the Atlantic coast in northeast Florida. I describe the geographic location, as well as the environmental features. The prehistoric landscape is described, including the anthropogenic changes and indigenous
horticulture and agriculture. The historic description continues from Spanish colonial contact forward to the urban sprawl that started in the late 1970s in this region. The history of humans in this region is important in understanding the changes to the environment and landscape that have occurred across time, from the extinction of megafauna through the present day urban sprawl phenomenon.

While indigenous people are often defined as the people who inhabited a region prior to colonial contact, the concept of who is a “native” is relative to time and space. Populations migrate, change and adapt to the environment. For example, in the southern United States some indigenous groups, such as the Timucuan and Calusa, were eradicated or absorbed into other cultures such that there are no longer any recognizable members of some indigenous tribes. Thus in a landscape or space, such as northeast Florida, native human populations can diminish, to be replaced by new immigrants who took up residence in the vacated lands.

The United States has a wide variety of cultures that are incorporated into the larger American culture. One well known United States culture is the Southern culture, consisting of the unique characteristics of populations of the southeastern United States. One population subset of Southern culture is known as “Crackers.” Cracker culture is a rural culture, with the residential preference for living in the woods and swamps, and not within structured towns. “[C]racker does not signify an economic condition, but a patterned lifestyle, although poverty, at least during some periods of Florida history, undoubtedly helped shape the culture” (Ste. Claire 1998:66). Especially in Florida and Georgia, Crackers immigrated into territory that was vacated by both the original Native Americans, such as the Timucuan, and also by the colonial Spaniards.
Cracker culture in general is described in Chapter 4. Early migration patterns to the deep South are described, along with the evolution of the term “Cracker” to describe the backwoods people who occupied the region across time. While the use of the term “Cracker” is applied here to identify a subculture of southern Americans, the term and the associated identity of the people has a history of its own. Thus the term “Cracker” is a convenient way to identify a sub-set of southern Americans, but also can either be derogatory or a matter of self-identity, as later described through the examples of Cracker Cowboys and the late Florida Governor Lawton Chiles.

The focus of this study is a Cracker family that migrated to Palm Valley in the 1850s. In Chapter 4, I describe the research subjects as well as the research methodology. The study is to determine the existence of traditional ecological knowledge in this family, and to determine whether the knowledge is being transmitted intergenerationally in spite of urban sprawl. Plant and animal knowledge is measured using freelists, as well as information about knowledge of and actual uses of wild plants and animals by the participants. The family participants are compared intergenerationally, and comparison is also made to a set of non-family, local participants. To further evaluate impacts of urban sprawl, the participants are asked about any observed changes to plants or animals. I also address the question of whether the traditional local ecological knowledge is situated with experts, and if so, whether this is a phenomenon of the role of elders. With traditional or local ecological knowledge differing from purely scientific approaches to gaining knowledge, I evaluate whether formal education is a predictor of the level of ecological knowledge. This model of inquiry is not necessarily limited to the population under study here, but rather can be
applied to any population to determine whether a subpopulation has emerged with
greater ties to the land and greater ecological knowledge that can be useful in
conservation efforts and land use decisions.
CHAPTER 2
THEORETICAL BACKGROUND: TRADITIONAL ECOLOGICAL KNOWLEDGE

Human beings are a natural part of the environment and as such have influenced, changed and managed natural resources for millennia. The landscape reflects these impacts, and many, if not most, regions have changed dramatically due to human interactions with the environment. Notwithstanding changes to the environment, local people develop traditional ecological knowledge. This thesis investigates the presence of traditional or local ecological knowledge among a pioneer family whose presence goes back over 150 years. Changes to the landscape occurred prior to the arrival of these pioneers by both the Native Americans as well as the European explorers and colonizers.

The local knowledge of the environment by a culture varies among societies. This local knowledge of native peoples has been called “Traditional Ecological Knowledge” or TEK. Traditional ecological knowledge is defined as the “cumulative body of knowledge and beliefs, handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and their environment” (Berkes et al. 1995:282). Other terms for traditional ecological knowledge include local ecological knowledge, indigenous knowledge, or ecoliteracy (Pilgrim et al. 2008; Davis and Wagner 2003).

Traditional ecological knowledge is diachronic and is essentially the summation of ecological adaptation of people in a locale (Berkes et al. 1995). Traditional ecological knowledge is based on continuous history with the environment. Traditional ecological knowledge is based on a system of knowledge that is dynamic and incorporates each
generation’s understanding, experience and knowledge into the system (Davis and Wagner 2003).

People have their own “science” of resource use and knowledge (Sillitoe 1998:223). Berkes et al. (1995) describes traditional ecological knowledge as differing from scientific knowledge in many ways including: limited geographical scale, reliance on qualitative data, and slower, less systematic accumulation of information. Thus it is perceived differently than science, which is more formal, follows universally accepted rules, is objective and can be replicated (Chalmers and Fabricius 2007). While traditional ecological knowledge may lack the formalities of scientific endeavor, it has more bases in morality, ethics, spiritual and holistic perspective than science. Traditional ecological knowledge can be both ecological and spiritual (Tsuji 1996). Traditional ecological knowledge, however, can also be based on scientific principles.

As noted earlier, traditional ecological knowledge includes: (1) the names of natural phenomena, (2) the functions and uses of the phenomena, (3) the land and resource management system and institutions that govern them, and (4) the cosmologies, worldviews and ethics of the people (Berkes 1999). These four factors will form the test of traditional ecological knowledge in this thesis.

Traditional ecological knowledge is based on indigenous knowledge and the systems of beliefs that are a part of that knowledge. While the use of the term “traditional” in TEK may seem to imply something that is out-dated, in fact, traditional ecological knowledge can be quite innovative, adaptive and complex (Schmink et al. 1992). Since traditional ecological knowledge can be adaptive and innovative, this study
examines a subculture that does not have the deep history in the region, as would classic indigenous cultures.

While traditional ecological knowledge is important to each particular culture, it also has great importance in the long-term understanding of continued adaptation to the environment. Traditional ecological knowledge includes information and practices that maintain the continuity of natural resources across the generations (Pilgrim et al. 2008).

The theoretical aspect of traditional ecological knowledge is the ability to identify and name the natural resource. Thus this study will test the knowledge of the names of native, local flora and fauna. The technical aspect of traditional ecological knowledge is the practical skill of finding and using the natural resource, which is a higher level of mastery. More detail about the environment is learned when there is more active involvement. This includes where and when to find the resource, as well as how to prepare and use the resource, which is more detail oriented (Setalaphruk and Price 2007). In this study, technical ecological knowledge will be examined through use of free lists of native, wild plants and animals since naming and identification of the ecological resource is a cornerstone of establishing knowledge. In addition, higher levels of mastery of ecological knowledge will be examined, including uses of plants and animals for food, crafting, and construction, as well as knowledge of ecosystems and ability to locate the natural resource, as demonstrated, for example, by hunting, fishing, shellfishing or gathering.

Traditional ecological knowledge is a practical application of information in order to survive and thrive. Information about the natural environment is used for many reasons, including food sources, water sources, remedies, and avoidance of hazards, such as
poisonous plants and animals (Berkes et al. 1995). On a broader, landscape scale, the knowledge of the various aspects of the environment allows for efficient travel and collection of food, water and resources. Most certainly the collective knowledge of plants and their habitats, coupled with seasonal and annual observations, led to the development of horticultural and agricultural practices. This study will investigate the uses of local flora and fauna, including food sources and gardening.

Relevance and Benefits of Traditional Ecological Knowledge

Traditional ecological knowledge can provide information about the changes to the environment and ecosystem, and can provide information on causes of the changes from a historical perspective (Chalmers and Fabricius 2007). The widespread extinction of flora and fauna over the last several centuries of natural resource exploitation has led to the acknowledgment that biodiversity is important and that traditional ecological knowledge is of value in biodiversity conservation.

Among the benefits of traditional ecological knowledge are:

- TEK offers new biological knowledge and ecological insights;
- some TEK systems provide models for sustainable resource management;
- TEK is relevant for protected areas and conservation education;
- the use of TEK is often crucial for development planning; and
- may be used in environmental assessment (Berkes et al. 1995:282).

Traditional environmental knowledge can be of great value and usefulness in the understanding of the environment, as well as pharmaceuticals, agricultural diversity, and wild harvests. The loss of traditional ecological knowledge can hamper conservation efforts around the world (Pilgrim et al. 2008). Together with indigenous rights and environmentalist movements, traditional ecological knowledge and the interests of stakeholders have been integrated into evaluation of land management
practices and conservation efforts. “The fact that these voices are now being heard reflects, to a large extent, the widespread concern that exists respecting the social and economic sustainability of natural-resource-based livelihoods throughout the world” (Davis and Wagner 2003:464).

This study examines traditional ecological knowledge during a time of urban sprawl, which fragments and destroys the natural landscape. Loss of habitat, as well as species, is contrary to conservation policies. Knowledge of the location of important habitat, especially for protected species, is useful in land use and management practices such as comprehensive planning and zoning. Inquiry was conducted into changes to flora and fauna observed in the landscape in order to evaluate knowledge of and changes to species in the landscape. Thus, the ecological knowledge that may be possessed by Crackers can be of use in conservation practices and development of policy.

Transmission of Traditional Ecological Knowledge

Traditional ecological knowledge is a tacit, implicit form of knowledge. Traditional ecological knowledge is based on interaction with the environment, often through trial and error, and using feedback (Chalmers and Fabricius 2007). “Ecological knowledge does not function in isolation. It is embedded in institutions and local social norms” (Berkes et al. 2000:1258). This knowledge is distinct from individual knowledge: it is based on cultural, social and institutional knowledge held by groups of individuals (Chalmers and Fabricius 2007). The key to traditional ecological knowledge is that it is transmitted from generation to generation, such that each successive generation gains the benefit of the information accumulated over the generations. As new information is
gained, it is added to this body of knowledge and passed on to the next generation. In this study the method of transmission of knowledge will be investigated.

The practice of traditional ecological knowledge is based on local, cultural socialization. Mechanisms are necessary to establish coding and internalization of the knowledge so that it can be remembered through the generations. “Rituals help people remember the rules and appropriately interpret signals from ecosystem change” (Berkes et al. 2000:1258). Thus social practices are a part of the intergenerational transmission of traditional ecological knowledge.

Traditional ecological knowledge is usually learned in the household context and within the family group, and is based on close interpersonal relations (Setalaphruk and Price 2007). Knowledge is usually transmitted through interactions between parents and children. Children can acquire traditional ecological knowledge through observation, participation or play. The acquisition of traditional ecological knowledge, such as learning plant names, can be informal, and be the result of overhearing conversations or asking questions (Zarger and Stepp 2004).

Traditional ecological knowledge is often gender-based learning. Mothers and grandmothers are usually the teachers of wild plant knowledge (Setalaphruk and Price 2007). The learning of plant names is linked to language acquisition, and the mother is usually the most important source of learning plant names in early childhood. In later childhood, fathers, other relatives and peers become more important sources of learning (Zarger and Stepp 2004). Fathers and grandfathers are usually the teachers of wild animal knowledge. When parents are absent and grandparents are the caretakers of the children, studies have found little difference in traditional ecological knowledge
when compared to parent-reared children (Setalaphruk and Price 2007). This perhaps demonstrates that grandparents have a key role in transmitting traditional ecological knowledge, especially considering the normally busy lives of parents.

Within-generation learning also occurs, especially when parents are absent. Such within-generation learning occurs from siblings and friends, as well as other relatives. As part of their play, children gather wild foods, sharing the consumption of the food on the spot, which is itself an exchange of knowledge. Children’s chores also are a way of learning traditional ecological knowledge. An important aspect of the transmission of traditional ecological knowledge is involvement in the environmentally-based activity (Setalaphruk and Price 2007).

Traditional ecological knowledge is usually transferred across generations through oral tradition and observation (Pilgrim et al. 2008; Tsuji 1996; Van Eijck and Roth 2007). Oral tradition, however, is not limited to myths, but rather, is an intellectual endeavor and form of education. The process of learning also involves use of the natural resource (Ignas 2004).

The methods of transmission of ecological knowledge will be examined in this study, to determine if the educational methods conform with prior studies, despite the fact that this population is relatively recent in the landscape. In addition, any changes to the transmission will be reviewed to determine if the present urban sprawl landscape is linked to changes in learning.

**Traditional Ecological Knowledge, Identity and Cosmology**

Due to the social aspect of the transmission of traditional ecological knowledge, it often contributes to cultural identity, customs, traditions, beliefs and worldviews (Pilgrim et al. 2007). Traditional ecological knowledge often provides a worldview for the culture
In traditional ecological knowledge, the natural phenomena are part of the cultural community (Pierotti 2000). “[A]n essential component for traditional knowledge and practice for ecologically sustainable outcomes is a worldview that provides appropriate environmental ethics. The pervasive cosmology of traditional societies may be characterized as a ‘community of beings’ world view in which humans are part of an interacting set of living things, a view that was also common in Europe up until Medieval times” (Berkes et al. 2000:1259). Older religions that incorporate humans with the natural environment provide a framework of meaning for traditional ecological knowledge and associated behavior in relation to the environment. Generational change caused by missionaries leading to rejection of traditional religions and adoption of Christianity has led to the loss of traditional ecological knowledge and a change in behavior towards the environment (Ross 2002).

Since the natural environment is a part of the cultural formation of traditional ecological knowledge, the change in the landscape caused by urban sprawl can affect the cultural component of the environment. Thus any intergenerational changes will be examined to determine if there is evidence of cultural loss due to the environmental impacts caused by urban sprawl.

**Experts in Traditional Ecological Knowledge**

Not everyone has the same level of traditional ecological knowledge (Setalaphruk and Price 2007). Different groups and individuals use natural resources and the landscape for different purposes (Chalmers and Fabricius 2007). Accordingly, there are often people who are considered expert in traditional ecological knowledge. Expertise is a relative term however, and there can be varying levels of expertise. A person may be
an expert when compared to other people, but may not be an expert within the local community (Ross 2002).

“Folklore and knowledge carriers help maintain ecologically sound management practices. These carriers may be local stewards and leaders (Pinkerton 1998), elders (Berkes 1998), or mythical figures in the local culture” (Berkes et al. 2000:1257). Natural resource use is often controlled by leaders. “Many traditional resource harvesting systems rely on the guidance of a traditional expert to organize the harvest, control access, supervise local rules and generally act as a ‘steward’” (Berkes et al. 1995:286). When traditional ecological knowledge systems are impacted by the course of historical, political or economic events, the remains of this knowledge lie within the memories of local elders (Davis and Wagner 2003). The use of experts is important in assessing changes that have occurred in the environment (Chalmers and Fabricius 2007).

Since traditional ecological knowledge levels vary, it is important to identify and work with experts (Chalmers and Fabricius 2007). One technique of identifying local experts is to get peer recommendations by asking who the participant thought was most knowledgeable about the subject (Davis and Wagner 2003). This method of identifying potential experts enables the compilation of a rank order of potential experts (Davis and Wagner 2003). While it has been assumed that elders have the most knowledge, at least one study found that retired fisherman were not high on the list of those believed by local fisherman to have the most knowledge (Davis and Wagner 2003).

Obtaining information from local institutions is also a method of identifying local experts (Chalmers and Fabricius 2007). Dependency on natural resources is also a means of identifying communities and experts that have traditional ecological
knowledge (Davis and Wagner 2003). In contrast to scientists, local experts use intuition to describe and assess complex environmental processes, and can provide a historical perspective from intergenerational transmission of knowledge (Chalmers and Fabricius 2007).

In this study, I will evaluate the levels of ecological knowledge through freelisting. In addition, I will compile information on the participants’ uses of native flora and fauna. Based on ranking amongst the participants in name knowledge, I will evaluate whether experts emerge. I will also compare this information to the experts identified by the participants.

**Cultural Change and Loss of Traditional Ecological Knowledge**

Loss of traditional ecological knowledge is of great concern, especially in cultures that are directly dependent on the land for survival. The loss of traditional ecological knowledge is often due to migration, cultural assimilation, environmental loss, climate change, poverty, death of elders and urbanization (Christiancho and Vining 2009). In this study, cultural change or loss will be evaluated against the backdrop of urban sprawl.

Traditional ecological knowledge is based on the local, cultural knowledge of the environment by the people who spend their daily, and perhaps majority, of their lives in that setting. The culture has motivation to continue its way of life in that setting through a balanced approach to the environment and human needs. A key component of traditional ecological knowledge is the ethical, spiritual and holistic relationship with the environment such that the culture can continue without radical or destructive change. Since traditional ecological knowledge is diachronic, the knowledge of sustainable use
of natural resources has been tested across time and has led to the status quo in the culture.

Unfortunately, as communities rely less on local resources and adopt modern lifestyles, traditional ecological knowledge is often lost. Adoption of market systems and globalization can lead to the loss of traditional ecological knowledge (Pilgrim et al. 2008). "Western science of resource management has until recently emphasized exploitation efficiency, in terms of physical and monetary yields, rather than sustainability in resource use" (Berkes et al. 1995:283). The loss of environmental benefits, however, acts to limit economic growth in the future (Pilgrim et al. 2008).

Political, economic and historical events and practices can erode or destroy the knowledge system due to the impacts on the local culture and people (Davis and Wagner 2003; Van Eijck and Roth 2007). The loss of traditional ecological knowledge has been linked to increased modernization, urbanization, wealth, and a decrease in dependence and frequency of interaction with the environment (Pilgrim et al. 2008). The decline in ecological knowledge is associated with less dependence on agriculture and gathering of wild materials, leading to a disconnection with the environment (Pilgrim et al. 2008:1007). Changes in belief systems and religion can also lead to a loss of traditional ecological knowledge, especially when the environment was integrated in the original belief system. In addition, the extinction of or increased rarity of species also leads to the loss of traditional ecological knowledge (Ross 2002).

Formal schooling which does not focus on ecology also leads to this loss of knowledge (Pilgrim et al. 2008). The negative impact of the imposition of colonizer's education system can be "Culticide" (Van Eijch and Roth 2007:929). In other words,
forced changes in education systems can lead to a loss of traditional ecological knowledge, however, that loss varies, and even in cultures that now have formal schooling, traditional ecological knowledge persists (Zarger and Stepp 2004).

Colonial mentalities have under-appreciated traditional ecological knowledge and have had a negative impact on indigenous culture (Ignas 2004). Such attitudes can undermine cultural identity and resilience. Governmental policies against the use of traditional practices and languages have led to the loss of traditional ecological knowledge (Tsuji 1996). Thus the interference with the transmission of traditional ecological knowledge is contrary to the “ultimate goal” of the culture achieving “economic stability and spiritual tranquility” (Ignas 2004:53, quoting Pfeifer 1989).

It is also possible that lifestyle changes may lead to a substitution of knowledge, such as, for example, an increase in knowledge about global warming, recycling, energy efficiency and organic foods (Pilgrim et al. 2008). Thus, the intergenerational transmission may not be about the environment directly, but instead household conservation habits may be taught.

Against this backdrop is the radical change in the approach to the environment brought via corporate and economic migration and motivation. The history of the Americas is replete with the exploitation of the natural resources by non-natives. While the Americas were accidentally discovered when Christopher Columbus was looking for a new trade route to India, reports of natural resources discovered in the Americas were immediate, launching new expeditions to exploit natural resources. Migration to the Americas occurred, introducing new people and cultures to the landscape, including Florida Crackers.
This thesis investigates the question of whether local ecological knowledge is a part of so-called Cracker Culture and whether there continues to be intergenerational transmission of this knowledge in light of the landscape changes to Palm Valley, Florida in recent times. The underlying premise is that Cracker culture is inherently tied to the natural landscape, with its preferred rural residential choice. Activities are linked to the environment, including hunting, fishing, and gardening, thereby providing informal educational experiences, which are tied to family and identity. Through analysis of intergenerational differences, as well as the participants' acknowledged and perceived differences, changes will be investigated.
CHAPTER 3
CONTEXT OF STUDY OF TRADITIONAL ECOLOGICAL KNOWLEDGE

Environmental History

Location

The study area is Palm Valley, which is located in northeast Florida, in St. Johns County, Florida, north of St. Augustine, and south of Jacksonville Beach. St. Johns County is one of the two counties initially established in 1821 by Florida General Andrew Jackson, who was appointed Governor of Florida (Austin 2004). The eastern border of both Palm Valley and St. Johns County is bounded by the Atlantic Ocean. The western border of Palm Valley has historically been considered to be east of U.S. 1 and Durbin Swamp. “It’s a cabbage-palm swamp, near St. Augustine, split wide open by the Inland Coastal Waterway” (Mickler 1986).

The southern boundary of Palm Valley is located in the Guana Tolomato Matanzas National Estuarine Research Reserve (GTMNERR), so-named for three rivers in St. Johns County. The Guana and Tolomato Rivers are located in Palm Valley, with the Matanzas River located south of St. Augustine. The area known as “the Guana” or “Guano,” was in private ownership until it became a state park and wildlife management area several decades ago. In 1999 it was nominated to become part of the GTMNERR due to its “outstanding representation of the east Florida sub-region of the Carolinian bioregion and its unique combination of natural and cultural resources” (DEP 2009:5). The Guana River has its headwaters in Ponte Vedra Beach, and runs south to the Tolomato River. This river system is a significant ecological resource for the area. The confluence of the Tolomato and Guana Rivers is depicted in Figure 3-1.
Figure 3-1. 1942 Aerial map of the convergence of the Guana and Tolomato Rivers, in what is now the GTMNERR. From University of Florida photo archives.

Palm Valley is bisected by the Intracoastal Waterway. In 1912, the Intracoastal Waterway dredging through Palm Valley was completed by the Florida East Coast Canal and Transportation Company (Neitz 2006). This connected the San Pablo River to the north, with the Tolomato River to the south, making a continuous inland waterway through Palm Valley. The man-made portion of the intracoastal waterway is known locally as “the Ditch.” The intracoastal waterway cuts through Palm Valley, and in the past allowed a means to transport timber from the local sawmills established in Palm Valley. The sawmills no longer remain; however, two existing planned communities are named after this industry: Sawmill Lakes and Odums Mill.

In 1915, the first Palm Valley bridge was built across the Intracoastal Waterway near the original headwaters of the Tolomato River. The bridge was later replaced in
1933 and was operated by the US Army Corps of Engineers (Neitz 2006). A third bridge was built in 1937. This drawbridge was later replaced by a four lane span in 2002.

Palm Valley lies along the Atlantic Coast in the Upper Coastal Basin, and is drained into the Guana River and the Tolomato River, north of St. Augustine. The Upper Coastal Basin extends about 10 miles inland from the Atlantic Ocean and consists of a series of linear estuaries parallel to the coast, within the Silver Bluff terrace. Some of these coastal features are less than 5,000 years old and were formed during changing sea levels during glacial recession (Miller 1998).

Along the northern border lies Ponte Vedra Beach, formerly known as Mineral City during the time of extensive mining of the area. Over time, the border between Palm Valley and Ponte Vedra Beach has eroded or overlapped, primarily due to the prestige associated with Ponte Vedra Beach after the mining ended, and the country club lifestyle began in the 20th Century.

Geology

Northeast Florida is located in the Coastal Plain physiographic province of North America. The surface landscape features are determined by the geologic processes of marine terrace development during the Pleistocene Epoch, and perhaps even the Miocene. The varying elevations were formed by the advance and retreat of the ocean over time. The coastal landscape is geologically young (Miller 1998).

Tertiary age limestone forms the bedrock. The Floridan aquifer provides the main supply of subsurface, artesian water for the region, and is generally several hundred feet below the surface. The Floridan aquifer underlies all of Florida and parts of southern Georgia. Below the Floridan aquifer is a permeable bed above salt water, which can intrude into the Floridan aquifer if pumping exceeds replenishment, and
especially in coastal areas. Above the Floridan aquifer and the aquiclue is the non-artesian, shallow aquifer, which occasionally has surface expression (Miller 1998; DEP 2009).

The soils are sandy and do not hold nutrients well. “[T]he combination of water bodies and sandy, droughty soils indicates a higher settlement potential for some periods, but agricultural activities on such land would probably be unsuccessful” (Miller 1998:17). The land surface is relatively flat, and ranges from sea level to 150 feet. The current topographic map of Ponte Vedra Beach and Palm Valley is depicted in Figure 3-2. Due to the presence of surface water, however, the landscape is varied and a slight change in elevation can change the habitat. Water is a dominant factor in northeast Florida (Miller 1998).

Figure 3-2. USGS topographic map of Palm Valley and Ponte Vedra.
Vegetative Communities

During the Late Pleistocene, the environment was dominated by pine forest, with some small areas of broad-leaved trees such as oak and hickory, and open herbaceous communities. Vegetation changed significantly during the Holocene (Miller 1998).

Fourteen different habitat types have been presently identified in the Guana, using Florida Natural Areas Inventory (FNAI) classifications (DEP 2009). These habitats include: beach dune, coastal strand, mesic flatwoods, scrub, shell mound, xeric hammock, depression marsh, coastal interdunal swale, maritime hammock, tidal marsh, tidal swamp, unconsolidated substrate, ruderal and open water. A total of 576 different plants have been presently identified in the Guana, including non-native species (DEP 2009).

Fauna

During the Late Pleistocene, megafauna occupied Florida, including mammoth (*Mammuthus jeffersoni*), mastodon (*Mammut americanum*), saber-toothed cat (*Smilodon* sp.), bison (*Bison antiquus*), horse (*Equus* sp.), ground sloth (*Megalonyx* sp.) giant beaver (*Castoroides ohioensis*), giant armadillo (*Holmesina* sp.) and giant tortoise (*Geochelone* sp.). Other species included muskrat (*Ondatra zibethicus*), peccary (*Platygonus compressus*), dire wolf (*Canis dirus*), bear (*Tremarctos floridanus*), and jaguar (*Felis onca*). Many species became extinct during the Holocene, including the megafauna. There are two theories of extinction: 1) overhunting, and 2) habitat change. Following these extinctions, the largest game animal was the white tailed deer. Fish and shellfish also became an important food source during the Archaic period (Miller 1998).

Native animals historically used for food sources are: deer, black bear, gray and fox squirrel, raccoons, opossum, marsh and cottontail rabbits, red and gray foxes,
gopher tortoises (*Gopherus polyphemus*), turtles, alligators, otters, porpoises, manatees, shellfish, fish, shrimp, frogs and some snakes. One of the most important modern commercial fishing ventures is shrimping (Miller 1998; WPAa 1939).

The Spaniards brought pigs, horses, chickens, cattle, sheep and goats to Florida. The most important food stock was the pig, due to its rapid and efficient growth and prolific breeding. The only domesticated animal in North America prior to contact was the dog, and perhaps turkeys (Miller 1998). Forty-five mammals, forty-nine reptiles and twenty-one amphibians have been presently identified in the Guana (DEP 2009).

**Present Climate**

The Northeast Florida climate is humid subtropical, characteristic of the southeastern United States Atlantic coastal plain. Rainfall averages about 50 inches a year, occurring mostly from June through September, with more frequency and amount along the coast. Snow and ice are rare. The normal summer rainfall pattern is afternoon thunderstorms. Tropical storms and hurricanes also occur, and can cause up to 30 percent of the annual rainfall (Miller 1998).

The mean annual temperature for Jacksonville is about 68 degrees Fahrenheit. The average daily summer temperature is between 70 and 90 degrees Fahrenheit. The average daily winter temperature is between 45 to 70 degrees Fahrenheit. Extreme temperatures range from above 100 degrees to 12 degrees Fahrenheit. Freezing temperatures occur about a dozen times a year in Northeast Florida (Miller 1998).

**Anthropogenic Changes**

Native Americans occupied Florida for the past 10,000 years. While this is a relatively short length of time in human history, there is no doubt that there were anthropogenic changes to the landscape based on human occupation. The ecology of
the region has changed based on both natural phenomena and human induced changes. Human activities, including burning, timbering, farming, herding, gathering, hunting, ditching, draining, dredging, filling, affect and change the environment. Environmental factors and technological adaptations influence culture, including size and complexity of social groups, migration, timing and patterns of movement and settlement (Miller 1998).

**Indigenous Horticulture and Agriculture**

At some point in time humans began intentional manipulation of plants beyond procuring food and disposing of unwanted parts. In the Eastern Woodlands of North America, the transition to manipulation of the environment related to procurement of floral resources resulted in what has been dubbed the Eastern Horticultural Complex, generally applicable to the pre-historic southeastern United States and based on repeated occurrences of certain plants in the archaeological record. In the beginning of horticulture, there are single crop species that were cultivated, but this rapidly changed with the emergence of the Eastern Horticultural Complex (Smith and Yarnell 2009). The Eastern Horticultural Complex is set forth in Table 3-1.

Tropical cultigens clearly were transported to the Eastern Woodlands well after the adoption of the Eastern Horticultural Complex. Corn (Zea mays L.), common beans (Phaseolus vulgaris L.), and cushaw squash (Curcubita argyrosperma) are non-native cultivars that were domesticated elsewhere (White and Weinstein 2008). Corn was present in the Eastern Woodlands for about a millennium before its widespread use, all the while the Eastern Horticultural Complex thrived. Like corn, beans also took awhile to obtain great importance in the agricultural scheme in North America, although beans are hard to identify in archaeological assemblages and therefore their use may not be
well-documented (Hastorf 1999). Similarly, cushaw squashes (*Curcubita argyrosperma*)
did not appear in the Eastern Woodlands until about 1000 AD, although pepo squashes
had been around for thousands of years (Scarry 2008). Corn became one of the key
components of the early pioneer diet in Florida. Squash and beans were also important
components of that diet.

One of the key factors in adopting new cultigens is the similarity to existing, native
cultigens, both in processing and cultivation (Roth 2006). The incorporation of European
species into Native American horticultural practices demonstrates this theory. Peaches
(*Prunus persica* L.) are of European origin but were added to Native American orchards
as documented by the observations of Lawson in 1701 and Bartram in 1773 (Hammett
2000:277). The relatively quick adoption of peaches is likely due to the fact that native
plums (*Prunus* spp. or *Prunus umbellata* Elliott) are very similar to peaches (*Prunus
persica* L.) (Hammett 2000:277).

It has been suggested that Florida may be the entry point for some traveling plants
(Riley et al. 1990). Certain components of the Eastern Horticultural Complex have been
identified in Florida, such as chenopod (Hutchinson et al. 1998) and sunflower (Organ et
al. 2005), although references identifying other species are not always clear. While
chenopod has been found in some Florida sites, the botanical remains do not
necessarily include the Eastern Horticultural Complex, but rather, demonstrate other
plant foods, including sabal palm berries (*Sabal palmetto* (Walter) Lodd. ex Schult. &
Schult. F) and other fruits, along with panic grass (*Panicum* sp.L.) and arrowhead
(*Sagitarria* sp. L.), a root food source (Hutchinson et al. 1998), demonstrating perhaps
unique components associated with Florida.
Corn had a major role in provisioning the early explorers of Florida, including the De Soto expedition. Once colonization was established, the Spaniards attempted to utilize European styles of food and food preparation. This effort, however, was not entirely successful, with the incorporation of native food products and preparations, such that the Spaniards were “eating like an Indian” (Rodriguez-Alegria 2005). Thus, Native American food products and practices were incorporated into the colonial culture, and traditional ecological knowledge merged with European-based knowledge with regard to food and agriculture.

Table 3-1. Eastern Horticultural Complex

<table>
<thead>
<tr>
<th>Cultivation Date</th>
<th>Species and source of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>5025 cal BP</td>
<td>Pepo squash (<em>curcubita pepo</em> var. ovifera) (Smith and Yarnell 2009)</td>
</tr>
<tr>
<td>5000 BP</td>
<td>Ragweed (<em>Ambrosia trifida</em>) (Pickersgill 2007)</td>
</tr>
<tr>
<td>4840 cal BP</td>
<td>Sunflower (<em>Helianthus annus</em> L. var. <em>macrocarpus</em>) (Smith and Yarnell 2009)</td>
</tr>
<tr>
<td>4400 cal BP</td>
<td>Marshelder/Sumpweed (<em>Iva annua</em> L. var. <em>macrocarpa</em>) (Smith and Yarnell 2009)</td>
</tr>
<tr>
<td>2000 BP</td>
<td>Little barley (<em>Hordeum pasillum</em>) (Pickersgill 2007)</td>
</tr>
<tr>
<td>3800 cal BP</td>
<td>Chenopodium (<em>C. berlandieri</em> ssp. <em>jonesianum</em> Moquin-Tandon) (Smith and Yarnell 2009)</td>
</tr>
<tr>
<td>3800 cal BP</td>
<td>Bottle gourd (<em>Lagenaria siceraria</em>) (Smith and Yarnell 2009)</td>
</tr>
<tr>
<td>2900 cal BP</td>
<td>Erect knotweed (<em>Polygonum erectum</em> L.) (Scarry 2008)</td>
</tr>
<tr>
<td>1000 BP</td>
<td>Amaranthus / Pigweed (<em>Amaranthus</em> spp. L.) (Fritz 1995)</td>
</tr>
</tbody>
</table>

Fire

Important anthropogenic changes occurred to the landscape due to fire. Native Americans maintained rangeland through the use of fire. The burning served the purposes of clearing land, maintaining range, releasing nutrients into the soil, encouraging tender new growth for animals to feed upon, and to drive game during hunts (Miller 1998). Such indigenous use of fire is widespread and is a function of
traditional ecological knowledge (Berkes et al. 2000). Fire maintains grassland and
rangeland, which would otherwise revert to woodland and forest (Chalmers and
Fabricius 2007). Humans around the world have intentionally used fire to manage
landscapes as grasslands, rangeland and cultivated areas (Chalmers and Fabricius
2007). The long-leaf pine communities in Florida are fire adapted and require regular
burns to be maintained. Fire suppression leads to replacement by hardwood forests
(Miller 1998).

Since much of Florida’s ecosystem is reliant upon fire, it is an important
consideration in assessing ecology. Fire is also an important consideration in locating
structures and residences in order to avoid destruction during forest fires. Thus the use
of and knowledge of fire across the landscape is a component of traditional ecological
knowledge.

**Population Data**

Florida was sparsely populated for the first 400 years of colonial contact. In the
early 1800s, the population was barely 1,000 people (Haase 1992). The U.S. Census
records report that the entire population of St. Johns County in 1900 was 9,165 people.
The present population of St. Johns County is 190,039, according to the 2010 census.
The present racial composition of St. Johns County is: White: 89.3%, Black 5.6%,
Hispanic 5.2%, Asian 2.1%, American Indian .03%.

The growth of St. Johns County is set forth in Table 3-2. In 1900 there were 9,165
residents in St. Johns County, slowly growing over the next few decades. The
population increased rapidly from the 1970s onward.

Palm Valley is now a separate community district for the census. In 2000, the
population in Palm Valley was 19,860, growing slightly to 20,019 in 2010. There are few
parcels of land in Palm Valley that have not been developed, or are not otherwise owned by the government, such as the Guana State Park. Many individual lots are being converted from modest homes or trailers to large estates since most lots in Palm Valley are at least one acre in size. The new town of Nocatee has been approved and partially built in the western end of Palm Valley, and additional growth is expected to occur west of the Intracoastal Waterway. Thus urban sprawl will continue to occur west of Palm Valley, with little change east of the Intracoastal Waterway due to the lack of undeveloped land.

East of the Intracoastal Waterway, future growth is limited by the St. Johns County Comprehensive Plan, especially since it is in a State-designated coastal high hazard area. Interestingly, when the WPA sent writers across Florida in the 1930s, the writer sent to Palm Valley noted that it is “practically uninhabited today” (WPAa1939). In the 1940s about 16 families lived in Palm Valley, estimated to be between 50 and 100 people (Sid Mickler personal communication 2011). Thus Palm Valley was sparsely populated up until sometime in the 1970s when urban sprawl began to spread into the area.

Table 3-2. Census data for St. Johns County, Florida

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900</td>
<td>9,165</td>
</tr>
<tr>
<td>1910</td>
<td>13,208</td>
</tr>
<tr>
<td>1920</td>
<td>13,061</td>
</tr>
<tr>
<td>1930</td>
<td>18,676</td>
</tr>
<tr>
<td>1940</td>
<td>20,012</td>
</tr>
<tr>
<td>1950</td>
<td>24,998</td>
</tr>
<tr>
<td>1960</td>
<td>30,034</td>
</tr>
<tr>
<td>1970</td>
<td>30,727</td>
</tr>
<tr>
<td>1980</td>
<td>51,303</td>
</tr>
<tr>
<td>1990</td>
<td>83,829</td>
</tr>
<tr>
<td>2000</td>
<td>123,135</td>
</tr>
<tr>
<td>2010</td>
<td>190,039</td>
</tr>
</tbody>
</table>
Early Historic Background

In the beginning God gave man dominion over the earth and all things therein contained, so ever since, man has been busy killing off the animals and birds, cutting down the trees and draining water off the land, and wondering why frosts are worse lately than they used to be.

—Lawrence Will, Cracker History of Okeechobee

Ponce de Leon arrived at the northeast coast of Florida on April 2, 1513, which is the first officially recorded contact with Native Americans in Florida. Based on the hostile reactions of the Native Americans to Ponce de Leon and other explorers, it is postulated that there was prior European contact in the form of slave-seeking raids from Caribbean islands, which were occupied by Europeans prior to mainland occupation. In addition, when Ponce de Leon arrived in the Gulf of Mexico in 1502, he entered the land of the Calusa, which was ruled by a chief named Carlos, who had a Spanish-speaking interpreter, supporting the notion of prior Spanish contact. Later, in 1537, Spain granted exploration rights to Hernando de Soto, allowing him to conquer Florida and seize treasures (Miller 1998).

Fort Caroline, located at the mouth of the St. Johns River, and north of Palm Valley, was established in 1564 by France and was the first permanent colony in North America. Jean Ribault wrote about his 1562 encounter with the Timucuan Indians at the mouth of the St. Johns River, and described their agriculture of corn, beans, gourds, squash, cucumbers, citron, peas, and unknown roots and other plants (Miller 1998). Notably, citron is not a native species, and this may be an early example of the incorporation of new, exotic species into Native American agriculture.
Ribault also reported that the Timucuan women wore Spanish moss, an interesting use of a native plant species. Fort Caroline was later conquered by Pedro Menendez for Spain (Miller 1998).

Spain established a colony in St. Augustine in 1565. Spain established a mission system, which relied upon native labor for food production, with limited success. While crops were grown under this system, the soil was poor and yields were small. Father Juan Rogel reported in 1661 that the Native Americans would leave in late spring when the acorns ripened, and gathered back together every two months for festivities, but not in the same location (Miller 1998). The Spaniards adapted indigenous food and pottery into their practices, despite “moral judgments against Spaniards ‘eating like an Indian’” (Rodriguez-Alegria 2005:551). St. Augustine relied upon Spain for food and provisions on a regular basis and never truly became self-sufficient (Miller 1998).

In 1696 the Castillo de San Marcos was built in St. Augustine, after numerous attacks by Timucuans, English and French. The fort was built of mined coquina stone, which is lithified shell and sand that has hardened, and was an important building material (Miller 1998). The Castillo de San Marcos still stands today, as well as other examples of coquina-based construction.

**Diego Plains, Predecessor to Palm Valley**

During the time of European colonial exploration, Florida was claimed as a territory by Spain. Lying between Fort Caroline and St. Augustine was an area known as Diego Plains, later to be re-named Palm Valley. An old mission church called Church of the Palmettos was reportedly built in Diego Plains, north of St. Augustine, in the mid-1600s (Neitz 2006).
Land was divided among settlers via the issuance of land grants by Spain. Don Diego de Espinosa, a resident of St. Augustine, was provided a Spanish land grant in 1730 to property located in St. Johns County, Florida at the present location of Palm Valley / Ponte Vedra Beach (Jones 1993). A cattle ranch was established called Diego Plains. The meat, tallow and hides of the cattle provided export items (Miller 1998). The land was known as Diego Plains for the next hundred plus years.

This ranch was later fortified and called Fort San Diego (Miller 1998). Espinosa fortified his ranch to protect it from hostile Native Americans by building a fifteen foot high wooden palisade around the ranch buildings. The fortification also included two bastions and became known as Fort Diego (Jones 1993; Neitz 2006).

**The Defeat of Fort Diego**

In 1739, Spain and Great Britain were at war in the colonies. General James Oglethorpe was the head of the English Colony of Georgia and was charged with attacking Spanish settlements. General Oglethorpe was sent to attack St. Augustine in 1740 (Committee of the General Assembly of South Carolina 1978). During an expedition in Florida, Oglethorpe attacked Fort Diego with 400 of his Georgia regiment (Van Campen 1959). A garrison of fifty-seven men led by Espinosa attempted to defend the fort, but surrendered on May 9, 1740. Oglethorpe reported capturing nine swivel guns, eleven 2-pound falconettes cannons, seven small arms, and a stockpile of ammunition (Jones 1993; Neitz 2006). Fort San Diego was defeated by General Oglethorpe in 1740 (Miller 1998). After capture, Oglethorpe had a ditch dug around the Fort, then left a few troops behind as he continued onward to assault St. Augustine (Jones 1993). Oglethorpe reported on the difficulty with the Florida terrain, including the thick timber, underbrush and palmetto, as well as the mosquitoes, sand gnats and
poisonous snakes. By 1743, Oglethorpe abandoned the fort, leaving it in ruins (Jones 1993).

In 1918, Jess Henson and his son Robert Henson, Jr., dug up a two-pounder falconette in the woods, 30 inches in length, and 150 pounds, which is believed to have been from Fort Diego (Jones 1993; Neitz 2006). The cannon was originally displayed in a storefront window on Bay Street in Jacksonville, and later was controlled by the State (Jones 1993). Its present whereabouts are unknown (Jones 1993; Neitz 2006).

Fort Ruth, a civil war outpost, was located in Diego. Two quarts of musket balls were found on Flavian Mickler’s property (Neitz 2006). The precise locations of these historic fort sites are presently unknown, although the State has placed a historic marker in the general vicinity, depicted in Figure 3-3.

![State historic marker located off Landrum Lane in Palm Valley, 2011. Photo by author.](image)

**Figure 3-3.** State historic marker located off Landrum Lane in Palm Valley, 2011. Photo by author.

**Turpentine and Timber**

The natural resources of the area provided both subsistence and industry for the Crackers and others. Diego continued to be a remote timbering and agricultural area for the next hundred plus years. Enterprises included sawmills, indigo and sugar cane
fields, among others. Due to its remoteness from urbanized areas in St. Augustine or Jacksonville, life was very rustic and the inhabitants were true pioneers and had to rely on their own resourcefulness and the land to eke out a living in Palm Valley.

The harvesting of timber was one of the first industries, starting with the Spanish contact period when Pedro Menendez built a ship in St. Augustine. Live oak trees were used to build ships in the early colonial days. Cypress, cedar and pine were also harvested (Kennedy 1942). Timbering became a major industry in northeast Florida (Miller 1998). In 1831, John James Audubon visited St. Augustine, calling it “the poorest hole in Creation” and describing the “Country around nothing but base sand Hills” (Miller 1998:155). By 1870 railroads were used to ship the pine and turpentine. A decade and a half later, by 1885 much of the long leaf pine forests had been timbered, leaving a graveyard of stumps (Ray 1999). The long leaf pine forests were not replanted.

In the late nineteenth century, what wood had not been timbered, was exploited. Florida’s virgin pine forest had been completely cut down by 1932 (Miller 1998). Due to the discovery of pulp made from second generation pines in 1933 (Kennedy 1942), pine timbering continues today for the various pulp mills. New growth, planted pine timbering continues to this day. Much of the present forest land is pine plantations grown for pulp production (Miller 1998). The slash pine is the tree of choice for the present timber industry in the region due to its rapid growth, especially as compared to long leaf pine growth rates.

Prior to the large-scale timbering of the old growth pines, the turpentine industry was important in Cracker country. Remnants of this industry remain on stumps of trees
that were long ago tapped for turpentine. The tree trunks were repeatedly slashed to tap
the turpentine, creating a design on the tree trunk called a “cat face,” depicted in Figure
3-4. The turpentine practice has been memorialized in song: “Deep in the piney wood,
Hell in its own place, Working that sticky gold, Flowing from a cat face” (Grey 2007).

Figure 3-4. Cat face on a pine stump located in Palm Valley in 2011. Photo by author.

Change of Ruling Nations, Arrival of the Crackers

Not long after the English raids on Fort San Diego, Picolata and St. Augustine,
Spain ceded Florida to England in February 1763, under the Treaty of Paris. While
Spanish rule was based on a combination of government and church control, English
rule was more commercially-based, and therefore achieved more success in a short
time than the lengthy Spanish rule. England’s goal was to settle the lands, rather than
setting up missions and converting natives as the Spanish had done (Miller 1998).
The origin of Cracker Culture has been linked to the migration of Scottish, Irish and borderland English to the United States, and then throughout the south after Spain ceded Florida to Great Britain. This migration to the United States began around the 1690s and throughout the 1700s, prior to the Revolutionary War (Berthelot et al. 2008; Tindall 1995). When Spain ceded Florida to the British, people migrated south to Florida and were remote from the colonies, and presented a problem for British officials (Ste. Claire 1998). Many of these people were to be identified as Crackers.

By this time few Timucuan Indians survived. Lower Creek Indians from Georgia, however, started to move into the former Timucuan territory. The Creeks later branched into the early Seminole tribes (Miller 1998). Not only did the Creeks move into the vacant territory, but Celtic immigrants migrated south from the Carolinas and the British colonies into Georgia and Florida as Spain withdrew from the region.

Spain regained Florida under the Second Treaty of Paris in 1783, after the conclusion of the Revolutionary War (Miller 1998). Spanish officer Don Vicente Manuel de Zespedes y Velasco reported back to Spain from St. Augustine about his problems with the Crackers, who had migrated to Florida during British rule. This Spaniard recommended that Spain exert control over the St. Marys River along the Florida-Georgia border to prevent the influx of Crackers, who were considered to be renegades. The original Crackers were not of Spanish origin. The Spaniards believed that the original Crackers came via the British colonies, and some bred with local Native Americans since few women migrated from Europe then (Lewis 1984).

Under Spanish occupation in the early 1800s, the population of the Spanish settlements of St. Augustine, St. Marks and Pensacola was barely 1,000 (Haase 1992).
Spanish rule later ceased and Florida was ceded to the United States via a treaty signed with Spain on February 22, 1819, leading to the Territorial Period of Florida (Miller 1998).

In 1824, the new Florida territory was surveyed with townships laid out so that the public land could be divided and settled. Land sales began out of St. Augustine in 1827. The number of settlers to the area increased after Florida became a territory (Haase 1992).

During territorial time, steamboats provided a major means of transportation in Florida. The King’s Road, which was built during the British period, crossed the St. Johns River at Cowford, north of St. Augustine. Cowford was renamed Jacksonville, and incorporated in 1832, with less than a thousand residents (Miller 1998). Plantations and subsistence farming were the main industries at this time.

In the 1830s the Seminole Indian Wars led to some abandonment of the interior of Florida by settlers. In the 1830s, Andrew Jackson’s Indian Removal Policy relocated the Seminoles to Oklahoma. The Seminole Wars occurred from 1835-1842, until Osceola was captured and died in captivity. Some Seminoles survived by hiding out in the Everglades (Tindall 1995). After the passage of the Armed Occupation Act in 1842, the settler population began to return (Miller 1998). One traveler’s account describes the population in 1843 as follows: “Among the population of Florida are large numbers of crackers from Georgia who have lately taken up lands here” (Shippee 1937:27). The number of settlers increased after Florida became a state in 1845 (Haase 1992).

The Civil War and Reconstruction

The Civil War is one of the most common events associated with the South. However, due to the fact that most people who were considered to be Crackers were
not slave owners, the war was not necessarily a defining event in the non-plantation component of the South as regards the abolition of slavery. In fact, a Cracker may take offense at being called a redneck since that term is often associated with a white racist. Crackers and rednecks are not synonymous terms. The term Cracker, however, has been used as a racial epithet directed at white people.

Under Spanish rule, Florida was a haven for runaway slaves, but under British rule slavery was established. Florida sided with the Confederacy during the Civil War, but was quickly brought under the control of the U.S. Navy. This occupation destroyed the plantation economy that relied upon slave labor (Miller 1998).

After the Civil War, settlement of Florida was encouraged by the United States government by deeding swamp and overflowed lands to the state. Henry M. Flagler, the railroad magnate, took advantage of these deeds and acquired land for his railroad that was built during the late nineteenth and early twentieth century (Miller 1998).

After the Civil War, Florida tourism was promoted as a winter vacation resort and also as a refuge for the ill. In 1888, Henry Flagler, who cofounded Standard Oil with John D. Rockefeller, opened a resort in St. Augustine, along his railroad, the Florida East Coast Railway. President Grover Cleveland was a guest in 1890, along with the Rockefellers and Vanderbilts (Miller 1998).

One common sport was to shoot alligators and use their parts for souvenirs and goods (Rogers 1955). When their population declined by the 1920s, the Alligator Farm in St. Augustine became a popular place for tourists to see an alligator. Similarly, another sport was to shoot herons and collect their feathery plumes for sale (Miller 1998; Will 1977), which led to the decline in population and later legal protection.
Flagler’s railroad opened the way for the commercial and agricultural development of Florida. With the dredging of the St. Johns River that started in 1880, thereby removing the sand bars that had limited the size of ships entering the river for hundreds of years, Jacksonville became a major port city (Miller 1998). All of these efforts had the effect of increasing population in Florida. The native population was decimated and much of the interior of Florida was sparsely occupied. While the Creeks moved into Florida where the now extinct Timucuans once resided, the population never reached the pre-contact levels.

**How Palm Valley Got its Name**

The area under study was originally called Diego or Diego Plains due to the Spanish land grant. In the early 1900s the name changed to Palm Valley. Since cabbage palms and saw palmettos dominated much of Palm Valley, the residents harvested the fronds for shipping throughout the United States and Canada for Palm Sunday festivities (Neitz 2006). The palm buds were cut and stacked, then wrapped in burlap for shipping. This re-naming of the area to Palm Valley demonstrates a clear effort to break from the past Spanish history, and establish a community identity based on local culture. The Palm Valley Community Center was established in 1948, and a War surplus barracks was purchased from Camp Blanding and relocated to Palm Valley via the Intracoastal Waterway, where it is located along Canal Boulevard.
Figure 3-5. Photos from 2011. A) Refurbished Palm Valley Community Center that was originally a war surplus building from Camp Blanding, B) State historic marker located in front of the Palm Valley Community Center. Photos by author.

Foundation of the Country Club Lifestyle that Led to Urban Sprawl

All we need is one more
damn developer
tearin’ her heart out

All we need is one more
Mickey Mouse
another golf course
another country club
another gated community

—JJ Grey, *Lochloosa*

The original post office for the area was in Palm Valley; however, the post office was later relocated to the swanky Ponte Vedra Inn and Club. Ponte Vedra Beach lies adjacent to Palm Valley to the east and north, and was originally named Mineral City in 1918, due to the mining of rare trace metals that were found in 1916. During the peak of mining operations, the National Lead Company built a clubhouse, polo fields and a golf course for its employees. When the mining ended in 1928, this property was converted to a private club and resort and the name was changed to reflect this change in community identity and to attract residential development of the beachfront property (WPA 1939a). The Florida highway system was improved after World War II, which also
led to increased settlement of Florida (Miller 1998). All of these transportation projects opened up Palm Valley for increased commercial use and residential settlement.

While the coastal region of northeast Florida is characterized by coastal marshes, coastal strand, cabbage palm and oak hammock and sand pine scrub forests, almost all virgin forest has been cut. Development, however, has caused the greatest amount of change in vegetative communities, creating impermeable surfaces and introducing exotic species (Miller 1998).

The residential development of the area started in Ponte Vedra Beach when the mining ended in 1928. The beachfront and adjacent neighborhood was the first area to develop in suburban style. The area, like much of Florida, was marketed as a retirement destination, and the resort lifestyle was promoted. This urban sprawl occurred in many areas of Florida, including the so-called “Redneck Riviera” on Florida’s panhandle, resulting in the demolition of beachside cracker cottages and their replacement by modern houses with no architectural style linked to Florida’s past (Jackson 2003).

During the depression the WPA sent writers to document Florida, including Palm Valley, which was described as “practically uninhabited” (WPA 1939a). However, Palm Valley was known as a center for moonshine distilling during prohibition. The landscape of Palm Valley was described by Mary W. Diddell, a WPA writer, as follows: “There are left in the state a few places where the forest primeval may still be seen in all its pristine glory and grandeur; Palm Valley is one of these places” (WPAb1939). Aerial photographs taken in 1942 are depicted in Figure 3-6, showing the desolate nature of the community, with the northernmost portion of Ponte Vedra Beach showing some development around the Ponte Vedra Inn and Club, shown on Figure 3-6B.
In the 1970s, the Tournament Players Club, a premier national golf organization, relocated to the former Diego Plains land grant, and was developed into a gated community called Sawgrass. Figure 3-7A is an aerial photograph taken in 1971, prior to urban sprawl. In comparison, Figure 3-7B is an aerial photograph taken in 1980, and shows the arrival of urban sprawl coinciding with the development of Sawgrass and other developments. The marketing of this area identified it as Ponte Vedra Beach, although it is in Palm Valley. Due to the moving of the post office from Palm Valley to Ponte Vedra Beach, both communities have the same Ponte Vedra Beach postal name and zip code. Marketing of the area also includes it in the greater Jacksonville area, even though it is in a different county. In addition, Jacksonville and Duval County provided jobs, services and schools for Palm Valley residents due to its proximity and ease of access. Thus, contrary to a county-based community (Arensberg 1955), Duval County to the north provided the school system for early Palm Valley residents, and continues to be a source of jobs and commercial services for the community. Thus while Palm Valley is the community under study, it had ties to adjacent Duval County and Jacksonville due to proximity, as well as being under the political authority of St. Johns County, with its seat of government in St. Augustine, south of Palm Valley.

While today there are many housing subdivisions and several shopping centers in Palm Valley and Ponte Vedra Beach, there are relatively few high-density condominiums, and a 35 foot building height restriction is presently in place. Horse farms and small ranchettes are still located in Palm Valley, especially in the areas that originally subdivided and developed from 1950-1980. In addition to the golf courses and man-made recreation areas, there are also conservation areas, with the entire southern
boundary of Palm Valley encompassed by the Guana State Park and the GTMNERR. Thus there continue to be an abundance of natural resources in Palm Valley, despite the increased human habitation. However, west of the Intracoastal Waterway is a large development called Nocatee, which expands urban sprawl into the pine plantations and swamps that dominated the sparsely populated area. Nocatee is still under construction and 15,000 residential housing units are planned, along with millions of square feet of commercial and industrial development, further exacerbating urban sprawl.
Figure 3-6. Series of Aerial maps from 1942. A) Palm Valley canal, with dredge spoil piles on the west bank, B) Ponte Vedra Beach, with development of the Ponte Vedra Inn and Club, C) west of the Palm Valley Canal, showing Palm Valley Road and D) the center of Palm Valley, showing Canal Boulevard and Palm Valley Road. From University of Florida photo archives.

Figure 3-7. Series of Aerial maps of Palm Valley/Ponte Vedra Beach. A) from 1971 with little sprawl, B) from 1980 showing arrival of urban sprawl. From University of Florida photo archives.
CHAPTER 4
CRACKER CULTURE

I remember my grandpa tellin me
about the early days of Florida
Born a swamp cracka two miles from Granny’s Bay
comin up the way of the wilderness

—JJ Grey, Florida

Origin of Cracker Culture

Cracker culture originated after Europeans made contact with the New World, so
the history of Cracker culture has developed over the past few hundred years.
McWhiney (1988) has linked the origin of Cracker Culture to the migration of Scottish,
Irish and borderland English to the United States, and then throughout the south,
although there are immigrants of various other origins that migrated to Florida. The
distinction between English and Celtic cultures has been postulated as an explanation
of the north-south cultural divide in the United States. Many aspects of cracker culture
have been linked back to Celtic origins (McWhiney 1988). Even today, authors that
consider themselves to be Crackers have Celtic origins (e.g. Ray 1999). Not all
Crackers are of Celtic origin, since some are of Spanish or Iberian origin (Cash
1941:25). Over the years, the origin has expanded, and today Florida Crackers have a
variety of origins.

The migration of people identified as Crackers began around the 1690s and
throughout the 1700s, prior to the Revolutionary War (Berthelot et al. 2008; Tindall
1995). Prior to the Revolutionary War the South was mostly wilderness, with the
exception of Charleston, Savannah and New Orleans. Notwithstanding the long history
of Crackers in the southern United States, anthropological studies specifically directed
at Crackers is limited, consistent with Hill’s (1977) observation that anthropologist have
not focused much on studying the plain folk of the United States. The various subcultures of the South are of interest to anthropologists, especially in light of adjustment to communities that were once remote, but are now subject to changes brought by progress (Pearsall 1966). Accordingly, the history of Crackers as well as the history specific to Florida in general, and Palm Valley in particular, is instructive in understanding the changes to the culture brought by urban sprawl.

Cash (1941) wrote a highly acclaimed book called “Mind of the South” that examines the distinction of the southern culture, and specifically addressed Crackers, clearly using that term in describing the intracultural variation in the South. The early immigrants included poor laborers of European peasantry who worked as “yeomen farmers” and were not slave owners (Cash 1941:22). The Crackers were a “pioneer breed” that inhabited the “vast backcountry of the seaboard states” (Cash 1941:9). This “pioneer breed” lived in remote areas that were, at the time, considered marginal lands (Cash 1941:23). “They were the people to whom the term ’cracker’ properly applied” (Cash 1941:23). Crackers were raised with outdoor activity, as opposed to traditional, indoor schooling. A dominant trait among Crackers is “intense individualism” (Cash 1941:31).

“The close-pressing throng of his fellowmen, rigid class distinctions, the yoke of law and government, economic imperatives – all these bear upon him with crushing weight and confine his individualistic activities to a very narrow space indeed” (Cash 1941:31). Self sufficiency is a key characteristic of a Cracker, being lord of his domain in the wilderness (Cash 1941; Ste. Claire 1998). Thus while Crackers are people who are individualistic, self sufficient, and have a preference for living in the backwoods, they by
no means are the only people with these characteristics. In the South, and especially southern Georgia and Florida, the use of the term Cracker continued to describe certain people.

In the beginning, the South was settled along the coastal areas, with the soils of the interior of the South considered to be too poor to support a plantation. With the invention of the cotton gin, however, the backcountry soils could support cotton harvests, which opened the interior areas up to more plantation farming between 1800 and 1860, quickly changing the landscape. The expansion of the plantation system after the invention of the cotton gin caused forests to be destroyed to create more farm land. The Cracker lifestyle was based on the forest, and this change in landscape had devastating effects on nutrition due to the loss of diversity of foods. Crackers became more reliant upon hops and cornpone (Cash 1941).

While McWhiney and Cash specifically use the term “Cracker” when addressing that subset of the southern population, others have struggled with defining an appropriate term to describe similar people. The term “plain folk” has been used to describe the non-slave holding, non-elite southern population, which included the majority of the population (Owsley 1949). For purposes of this paper, the term “Cracker” is used to describe Florida and south Georgia people who identify as such.

A unique historic and cultural factor in the development of the Cracker lifestyle is slavery in the plantation system in the South. Crackers generally did not own slaves since slaves were associated with plantations and also because Crackers tended to be either poor or self-sufficient. With African slaves providing the manual and menial labor on plantations, there was not as much pressure on poor whites to provide labor,
allowing them to pursue their own lifestyle. Another unique aspect is that Crackers were often related by blood to the plantation owners, with some plantation owners having once been poor (Cash 1941).

While Crackers were poor, and at the bottom of the white social order, their social status was “above Native Americans and above free and enslaved blacks. From the vantage point of the frontier settlement, poor white homesteaders sat at the top of their small, isolated world. Regionally, however, social relations were being constructed differently” (Gibson 1996:381).

Over one hundred years ago, “'The negroes in our plantations have a saying, If negro was not negro, Irishmen would be negro'” (McWhiney 1988:241). Thus, historically speaking, Cracker status was considered in relation to African-American culture. However, not all Crackers are poor, and “it’s not unusual to see a dusty pickup truck and a shiny Cadillac sitting side by side in a double garage” (Stein 1995:73). Thus the Cracker occupied a unique and unusual niche in the American South.

A predominant characteristic of Cracker culture is strong family ties (McWhiney 1988; Hill and McCall 2009). “Geographical isolation, plus the endogamous relationships of isolated groups, have produced an extended consanguine group in which the importance of family sentiments as a basis for social order cannot be overestimated” (Hill and McCall 2009:47). The parents are the disciplinarians of the family, while the grandparents are a source of affection and permissiveness. Kinship is the basis of loyalties and a key part of the community cohesiveness. When many relatives reside in one county, kinship provides a powerful political action group (Hill and
Accordingly, in this study, a family was selected as the population to determine the questions about traditional ecological knowledge.

**Origin of the Term “Cracker”**

**Shakespearean Use**

The use of words and terms can have a history unto themselves, demonstrating the dynamic and fluid nature of terms, especially as they relate to people and their identities. The term “Cracker” originated through name-calling, and has a history of perjorative meaning (Lewis 1984). One of the earliest uses of the word “cracker” to describe a person was by William Shakespeare, who wrote in King John circa 1595: “What cracker is this same that deafes our eares with this abundance of superfluous breath?” In England the term cracker refers to a braggart or fast talker. The Celts also used the term “cracker” to refer to a boastful person (Ste. Claire 1998). A Cracker was someone who cracks jokes. Thus the first documented use of the term was to call someone a name.

While the earliest uses of the term “cracker” were to describe a braggart, by the mid-1800s the word was used “to characterize poor or rogue settlers of the rural south, and later, to describe a proud Florida backcountry culture” (Ste. Claire 1998:34). While the term “cracker” is often used in reference to certain Florida or Georgia residents, the term cracker was also used to describe settlers as far north as Maryland (Ste. Claire 1998; Lewis 1984). Generally, Cracker was used to describe the Scots-Irish settlers in the south (Ste. Claire 1998). Crackers were backwoodsmen and people who lived primitively, and subsisted by hunting and trading with Indians (Lewis 1984).
Cracking Whips and Cracker Cattle

There are two other origins of the term “cracker” in Southern history, based on sound. People were called Cracker due to the cracking of whips at horses pulling carriages or to drive cattle (Ste. Claire 1998). The term “cracker” is also used to describe a southern cowboy, who drove free-range cattle with the crack of a whip.

we saw many of the country people coming into town; … They were in general as primitive in their dress as the farmers of the remotest parts of England and Wales a century ago. … They are called by the townspeople “Crackers,” from the frequency with which they crack their large whips, as if they derived a peculiar pleasure from the sound… (Hill and McCall 2009:45)(quoting Buckingham 1842)).

Thus the cracking of whips was a cultural signifier and identity marker, announcing the Crackers’ presence to those within earshot.

Based on the term “cracker” to refer to the cracking of whips, the Cracker Trail is a cattle trail used by cowhunters to drive cattle, and an elementary school in Highland County, Florida is named Cracker Trail Elementary School (Ste. Claire 1998). Cracker cattlemen cracked their whips as a form of communication since the sound could be heard for miles (Stein 1995). Thus it appears that once again, other people used the term “Cracker” to identify other people, in this instance farmers and cowboys who passed by cracking their whips.

The Spaniards were the first to raise cattle in Florida when, in 1521, Ponce de Leon brought Andalusian cattle to Florida during his second expedition (Yarlett 1985). During the 1800s and the first half of the 1900s, cattle were raised on the open range in Florida by what were known as Cracker Cowboys (Otto 1984). It appears that the cowboys adopted the moniker “Cracker Cowboy,” demonstrating a phenomenon that started with either name-calling or identification based on sound, to adoption of the term
as an identity marker. In fact one famous cowboy, Jacob Summerlin, who is reputed to be the first white child born after the end of the Spanish occupation of Florida, is called the “King of the Crackers” (Akerman and Akerman 2004). Another famous Cracker Cowboy is Morgan Bonaparte “Bone” Mizell, whose image was drawn by artist Frederic Remington. Bone Mizell’s character is legendary, with one famous tale where he fell asleep, dead drunk in the middle of a field. His friends lit campfires all around his sleeping body, whereupon he woke up the next morning and said “Well, by God! Dead and in hell! And I’m the first one up” (St. Johns County Cattlemen Assoc. 2011).

Open range cattle ranching necessitated the use of a whip to herd cattle in the piney woods and palmetto scrub. The open range herding was accepted by the State of Florida such that there was a law that required farmers to fence their crops to keep the cattle out, rather than requiring the cattle herders to install fences to keep the cattle in. The Cracker Cowboys usually owned small homesteads, but raised their branded cattle on open range, which included unclaimed or unfenced public lands. The open range closed in 1949. The cattle raising practices originated in the Carolina Low Country in the late 1600s (Otto 1984). Thus there was a long tradition of open range cattle farming in Palm Valley, which situated the cattle farmers across the landscape due to the cattle roaming free.

The cattle raised in Florida during this time period were known as cracker cows (Yarlett 1985) or Florida scrub cattle and were descendents of longhorn criollo breeds which had been brought to the New World by the Spaniards. These scrub cattle were small, but hardy and tolerant of the heat and humidity of Florida (Otto 1984). These cattle were used for beef, jerky, tallow and hides (Miller 1998). Photographs of cracker
cattle, as well as the cracking of whips used to drive the cattle are depicted in Figure 3-8.

![Figure 3-8](image)

Figure 3-8. Series of Cracker Day photos. A) Cracker cattle, B) Cracker cattle, C) Cracker cattle and D) whip cracking demonstration at Cracker Day, Elkton, Florida 2011. Photos by author.

Herders often burned the pine flatwoods during the late winter in order to remove dead grass, fertilize the soil and stimulate new growth for the cattle to graze upon (Otto 1984). Thus, the practice established by indigenous peoples of burning the landscape continued. Fire suppression policies later changes these practices. Fire suppression was harmful to Florida's fire-adapted ecology, especially the long leaf pine forests.
When the calves were born, they were penned to keep them from predators, which also caused the cows to return to feed the calves, thus allowing opportunity to milk the cows. Predators included panthers and wolves (Otto 1984).

When it was time to select the cattle for market, the owners conducted a “cow hunt” to locate and drive the cattle to market. Dogs were used to round the cattle up and drive them. Whips were also used to gather the cattle, but lariats and lassos were not used (Otto 1984). Florida’s frontier days lasted up to the 20th century, and open range herding and cattle drives occurred until the practice was banned. In 1937 a cracker cowboy drove cattle 160 miles without encountering a fence (Pleasants 1977). Cracker cattle continue to exist today and the cracking of whips is demonstrated at the Cracker Day festival in Elkton, Florida, organized by the St. Johns County Cattlemen’s Association. It is clear that Florida cowboys consider themselves Crackers, and stories of Florida Cracker Cowboys continue to be published (Plowden 2009).

**Corn Cracking**

The term “cracker” also “alludes to the cracking of dry corn by poor southerners who relied on ground corn as a chief dietary staple” (Ste. Claire 1998:29). The term “cracker” was used to describe “poor people who could not afford to buy finer grain to make grits and cornmeal” (Ste. Claire 1998:30). It is believed that the “corn cracker” term originated in Georgia, and as settlers moved south into Florida from Georgia, the name also traveled with them (Stein 1995).

In describing Crackers, an early writer wrote:

These people, who live in the manner described, are known by the name of “ Crackers,” so-called from the circumstance that they formerly pounded all their corn, which is their principal article of diet. It was done by placing the corn on a flat rock, and then beating it with another, but now the hand-mill is used by many, which facilitates the process of cracking the corn, although
the meal made by the mill is not much finer. There are but a few water-mills in the south part of Georgia, owing to a want of falls” (Hill and McCall 2009:45)(quoting Burke 1850).

The use of corn in meals is ubiquitous among Cracker cuisine. Various types of bread products are made with cornmeal, including corn bread, corn pone and ho cakes. Ho cakes are made with cornmeal, salt and water, thin in texture, and are fried in a skillet (Rawlings 1961). Ho cakes have been exalted in song by self-proclaimed Cracker JJ Grey: “My granny makes the best crackling ho cakes” (Grey 2001b).

The horticultural practices of Crackers were not considered to be advanced or ambitious. The cultivation of crops was considered to be done “reluctantly and haphazardly” (McWhiney 1988). Crackers were described in 1857 as living on “’hog and hominy’” (Rogers 1955).

That was the key to how the plain folk lived: in the literal sense of the phrase, they lived “high off the hog.” When the larder got low, they simply stuck another hog. For vegetables, almost no tillage was necessary, since green gardens in the southern soil and climate, once planted, grew wild, reseeding themselves year after year if they were appropriately neglected, as was also the case with “pumpkins, sweet potatoes, and several other vegetables.” (McWhiney 1988:75).

One agricultural practice was to use the area of the cow pens for gardens since the soil was enriched by the manure (Otto 1984).

Another rustic reference to Crackers who were poor is the reference to “biscuit crackers – poor people ate hardtack, cornmeal mixed with water and lard, baked outdoors on a rock by a fire” (Ste. Claire 1998). Thus, Crackers were also associated with rural ways, including grinding their own corn, which is also associated with a lower economic status, although it is also consistent with self sufficiency, which is an indicator of Cracker identity (Ste. Claire 1998).
Moonshine

In a similar reference to cracking corn, “‘Corn crackers’ were moonshiners who used cracked corn mash, which after fermentation, they distilled into ‘white lightening’ which freely flowed at election campaign rallies of that time” (Ste. Claire 1998). The stereotype of a Cracker was sometimes expanded to include illegal enterprises in general (Lewis 1984). One author, however, refers to Cracker children as “corn Crackers” (Haase 1992).

The practice of moonshining in the south has been argued as further evidence of the transposition of Celtic culture into U.S. southern culture. “Southerners, like their Celtic ancestors, probably made as much whiskey as they bought; indeed, the illegal manufacturing of whiskey, called moonshining both in Ireland and in the South, has always been a respected activity where Celtic culture prevailed.” Both used whiskey as medicine (McWhiney 1988). Palm Valley was a local center of moonshine distilling during the prohibition era (WPAa 1939). The Eighteenth Amendment to the U.S. Constitution was ratified in 1919 and prohibited the manufacture and sale of alcohol, but was repealed via the Twenty-first Amendment in 1933.

Use of the Term “Cracker”

Regardless of which origin of the term “Cracker” is considered, the import was fairly pejorative in nature since it either referred to a braggart, to whip cracking, or to poor, southern people who had to use primitive means to process corn for food or alcohol. The term Cracker is used as a moniker for a country or backwards person. While the term cracker can be used in a playful manner, it also is a “synonym for socially isolated citizenry” (Pederson 1980:201). The term “Cracker” has been used as a synonym for “poor white trash” and sometimes interchangeable with the term redneck.
Much like Jeff Foxworthy has capitalized on redneck jokes, Ernest Mickler took the humorous approach to being considered white trash and published a cookbook called “White Trash Cooking” (Mickler 1986), which turned out to be a profitable use of humor, even if the rest of the family did not appreciate the implication of being called white trash.

Even government officials called poor whites “Crackers” (Gibson 1996). While the term “Cracker” has been used as a synonym for poor, white country people, Crackers were usually at least a step above the poorest, since they were land owners and also usually owned livestock, thus differentiating themselves from a mere economic class (Kimelman 2000). Being a Cracker is more of a country lifestyle, rather than just an economic status. Rather than simply calling Crackers poor or otherwise referring to a low social status, an alternative, and perhaps more accurate description is that Crackers are self reliant, self sufficient, honest, and have a simple, direct approach to people and problems (Ste. Claire 1998).

Crackers are an unpretentious people, scattered on farms and in rural communities of inland Florida and in the small towns of Main Street, Florida. And there are even some like I, who were born in the bigger coastal cities, who believe that the love for the land, and God, and family supersede the values of fast-paced life and consider it an honor to be called a “Cracker” (Stein 1995:xx).

By the beginning of the 1900s the term was used more affectionately, and, for example, was used in ball team names (Ste. Claire 1998). In response to the commercialization of Florida during the 1930s, Florida residents joined forces against the tropical image that was being marketed primarily by out-of-state speculators (Nelson 2008). “The Florida Cracker, a long-used derogatory moniker, was re-packaged and reformatted to provide the label for a diverse and often divisive group that nonetheless
were united in their rejection of the state’s catering to so-called ‘foreigners.’ (Nelson 2008: ix). “[T]he word ‘cracker’[was] a badge of defiance, an oppositional label used to identify a native, non-elite Floridian who wants exemption from the plastic commercialism present in many areas of the state…” (Nelson 2008:227).

“By the 1950s, the term once again became a pejorative, eroding into a racial slur for bigoted backwoods Southern whites” (Ste. Claire 1998:35). “When people today talk about ‘Cracker Florida,’ they are conjuring up images created by both non-native writers in Depression-era Florida and by rural ‘natives’ during their clashes with state promoters” (Nelson 2008:227).

Crackers were often described by outsiders in relation to their social status and culture. Travelers and writers in the 19th and 20th centuries wrote about the Cracker culture they encountered in the South. These descriptions created a stereotype Cracker for the rest of the country to read about. “In the late 19th century, Crackers were easy fodder for writers traveling through the state looking for colorful anecdotes for a northern reading public. The misunderstood Florida backwoods settlers were caricatured in cartoon and parodied in print across America” (Ste. Claire 1998). Harper’s New Monthly magazine had many cartoons and drawings of Florida “Crackers.” The artist Frederic Remington also is known for his depiction of Cracker cowboys of Florida, that he created from his 1890 visit to De Soto County, Florida (Stein 1995). It has been noted that Abraham Lincoln, whose family originates from North Carolina, has the physique of a typical Cracker of that time (Cash 1941).

Many notable novelists also described and wrote about Crackers. One of the most notable authors who described Crackers was Majorie Kinnan Rawlings (Bigelow 1965).
Majorie Kinnan Rawlings depicted Crackers as “stoic and fiercely independent. Primitive, pre-modern, and wholly ‘other,’ Crackers were like an Anglo version of the Seminoles” (Nelson 2008:232). Rawlings’ novels have introduced many people to the Cracker culture she encountered when she lived in Florida. Even today, biographies of Rawlings, including those directed at children, explain Cracker identity (e.g. Sammons 2010).

Marjory Stoneman Douglass, in Florida: The Long Frontier (1967), described the South after the Civil War:

Keen-eyed Yankee visitors had already written about the people who made up the almost unseen background of the state, calling them ‘natives’ or ‘Crackers,” lank whiskered men, tobacco stained, with the marks of malaria on them; thin bony wives, and sallow, white-headed children. They had retreated after the war into deeper wilderness, in the immemorial rugged frontier life of log cabin and clearing, hunting and fishing. They were seen driving rickety ox carts along pine woods roads, or coming in barefooted to boat landing stores to trade skins or deer meat for chewing tobacco, snuff, bacon, calico, powder. Sometimes they worked at logging or sawmilling. They had taken the place of the almost vanished Indian in the remote country where they kept alive the legends, the ballads, the tunes, the customs of their Georgian, Carolinian, Scotch-Irish, Irish, English, or even German ancestry. They were, as they had been, proud, secretive, unlettered, suspicious, enduring as time. They had taken the land for their own and had held it, making it America. It would be a long time before anyone noticed them more closely. (quoted in Ste. Claire 1998).

Thus the term “Cracker” also refers to people who are considered to be “natives” of Florida or Georgia, and perhaps other southern states.

Stories about Florida, including fiction and non-fiction, often refer to the local or native Floridians as Crackers, if they lived in the rural countryside or back woods swamp areas. Various books have been written containing short stories or anecdotes about Cracker Florida (e.g. Will 1977; Washington 1983; Bellville 2006; Burt 2009).
Crackers have also been the subject of fictional novels (e.g. Denison 1887; Smith 1984).

The use of the term “Cracker” can be at once a term of pride or a fighting word (Whitfield 1993). As J.J. Grey (2002), a Northeast Florida musician sings: “Call me dirt floor cracker, But them words just feel me with pride.” Gainesville, Florida was once considered a Cracker town, dominated by Cracker linguistics, which has since changed due to the international influence from the University of Florida (Hayes 1958). However, a graduate student in the Department of Anthropology at the University of Florida owns a registered Florida Cracker horse and also admits being a local Cracker.

In recent years some people proudly proclaim themselves to be Crackers. Probably the most famous self-proclaimed Florida Cracker was Governor Lawton Chiles. Chiles’ Cracker-inspired statements are legendary. During the governor’s race against Jeb Bush, Chiles remarked “The old he-coon walks just before the light of day,” evoking laughter amongst Crackers and puzzlement amongst everyone else (St. Petersburg Times 1998). This statement is a classic Cracker-type reference, using environmental knowledge of animal behavior likely learned through hunting, as an analogy to human behavior in a political setting. In response to a political opponent speaking to a crowd in Spanish, Chiles reportedly stated “Ich bin ein Cracker,” again using humor by adapting a well-known line from a serious political speech by President Kennedy, poking good-natured fun at himself using the term Cracker (Sun Sentinel 1994). When Chiles died, an obituary said “Florida Crackers Lose a Kinsman” (St. Petersburg Times 1998). Thus, in more recent times the use of the term Cracker has been a matter of pride about being a native Floridian during times of enormous
population growth of the state. While the term Cracker can be used as an insult to a
white person, especially when used by someone who clearly is not a Cracker, the use of
the term is fluid, changing with the times and circumstances. The present use of the
term Cracker is less derogatory, and more a means of self-identity.

As used in this thesis, I apply the term to the family, rather than the term being a
label that was brought forth by the family members as an identity label. When asked if
she was a Cracker, one informant said: “I consider myself to be a country girl. I haven’t
really thought about it but I guess I am [a Cracker]” (Donna Mickler, personal
communication 2011). Thus, based on my research into what people are considered to
be Crackers, I have drawn the conclusion that this label is appropriate here, with no
derogatory notions intended. Based on the various descriptions of Cracker culture
across time, the enduring theme is the connection with nature. While Crackers are the
original white pioneers in Florida, not all white, native Floridians are necessarily
Crackers. As demonstrated by Chiles’ in his use of a colloquial saying about a he-coon,
the incorporation of the environment is a natural part of the Cracker lifestyle and
identity, exhibited though subsistence, recreation, crafting, interior and exterior
decoration, foods, speech and community.

**Historic Cracker Subsistence and Land Use Practices**

Food is an important aspect of society and reflects social meaning and symbolism
(Mintz 1985). The family dinner and family reunion are important rituals and ceremonies
in Cracker culture (Hill and McCall 2009). “Such ceremonies serve to cement the
kinship ties, to solidify group loyalties and to provide the occasion for rendering the
devotion and respect due ancestors” (Hill and McCall 2009:48). Crackers prefer cooking
from scratch. Food was often cooked outdoors, in a kitchen attached to the house or in
a lean to (Stein 1995). In his book on Cracker architecture, which is intrinsically tied to the land, Haase notes:

Raising crops, gardening, tending the land and the animals – all this communion with nature must have had a mellowing influence upon the likes of these originally gaunt, suspicious and introverted settlers (Haase 1992:36).

In Cracker culture, the family is the primary unit upon which economic production is based. Gender and age determine the tasks that each person performs in contributing to the economic unit (Hill and McCall 2009). Boys learn to hunt, fish and throw a cast net so they can contribute to the family’s economy (Gibson 1996a). Cracker children “can scale a fish, skin a squirrel, plant potatoes, change a tire and sweep a room” (Stein 1995:72). In the past, the school drop-out rate was often high, especially since hunting and fishing skills were more important to the family business (Gibson 1996a). Hunting, fishing, herding and small-scale farming exemplify cracker agriculture and subsistence practices. Cracker culture was based on a subsistence economy (Hill and McCall 2009). Crackers prefer home-made to store bought goods (Stein 1995).

Hunting provided both subsistence and trade items. Crackers were considered to be expert hunters (Lewis 1984). Both meat and skins were used for subsistence and trade. In nearby southern Georgia, raccoon hides were similarly sold to Sears Roebuck for $10 for a good hide (Ray 1994).

Raccoon, opossum, rabbit, squirrel, wild hog, rattlesnake, alligator, frogs, bear and deer provide wild meat. Many varieties of birds also have served as food, including ducks, wild turkey, quail, songbirds, and wading birds. Care must be taken when preparing certain animals as food. For example, due to its venom, the rattlesnake’s head must be removed before cooking. Raccoons have musk glands which also must
be carefully removed before cooking, as Rawlings found out the hard way (Rawlings 1961).

Turtles and their eggs are also eaten. Sea turtles were also gathered for food (Denham and Brown 2000). Turtles known as cooters were cooked in stew and pie, as well as fried (Rawlings 1961; Mickler 1986). There are both hard shell and soft shell cooters, with the soft shell cooter having more edible meat. The alligator cooter is the most desired turtle due to its taste and whiter meat, but it is aggressive and can bite. While Rawlings did not think that people ate gopher tortoises, she noted that “Minorcans hunted [gopher tortoises] for some unknown purpose, perhaps medicinal” (Rawlings 1961:226). Gopher turtles were eaten by both Crackers and Minorcans, and were called Hoover chicken during the depression (Ray 1994).

Fish, crabs, shrimp and shellfish are also part of the diet, as well as being used for trade. Catching catfish with your bare hands is called “noodling” (Ray 1999:41).

Cracker families had gardens and grew vegetables, including potatoes, corn, sweet potatoes, tomatoes, okra, cow peas, green beans, peanuts, turnip greens, mustard greens, collard greens, and other vegetables. For sweets, sugar cane was often grown in the family garden (Stein 1995).

Palm fronds were harvested for export and sale to churches for Palm Sunday ceremonies (Kennedy 1942). Palm fronds were also put to various other uses: the green fronds were used for thatching and weaving, and the dried frond and boots were used as starters for fires (Neitz 2006). The heart of the cabbage palm is known as swamp cabbage. Heart of palm is used to make “cabbage stew” (Kennedy 1942:3-4). Heart of palm was harvested both for personal use and for export. It is a gourmet food
usually served in salads. Exported heart of palm is usually canned and later used in fresh salads. Unfortunately, the harvesting of heart of palm kills the entire tree (Kennedy 1942). Cabbage palms were dug up for landscaping in later years (Neitz 2006).

Cabbage palm berries were food for hogs (Neitz 2006). Cabbage palm and palmetto berries were also used for subsistence purposes (Kennedy 1942). Jonathan Dickinson wrote in 1699 about his shipwreck and encounters with native Americans along the east coast of Florida, noting that they ate palm berries that were foul tasting. Later, due to the lack of food, Dickinson’s party subsisted on these berries for survival (Dickinson 1961).

Palmetto (Serenoa repens (W. Bartram) Small) berries were used to flavor the moonshine that was produced in Palm Valley during Prohibition (WPA 1939a). St. Augustine Minorcans soak palm berries in wine, then serve them as “Minorcan plums” (Kennedy 1942:5).

Other edible plants included blackberries (Rubus sp.), blue berries (Vaccinium ssp. L.), and huckleberries (Gaylussacia Kunth), which could be made into jelly, pie and cobbler, and sunflower-like Jerusalem artichokes (Helianthus tuberosus L.) roots were pickled in a jar (Ray 1999). Wild greens and poke weeds were also used for salad or a side dish (Rawlings 1961).

A plant called deer tongue (Carphephorus ssp. Cass.) was harvested for both use and sale (Ste. Claire 1998). Deer tongue is used as an additive to tobacco and is used by major manufacturers today. During his thousand mile walk through the south, John Muir encountered deer tongue, and Woods Botany (1862 edition), which Muir consulted for his identifications, has a reference to deer’s tongue: “The fleshy leaves exhale a rich
fragrance even for years after they are dry, and are therefore by the southern planters largely mixed with their cured tobacco, to impart its fragrance to that nauseous weed” (Muir 1991:20, n.1).

Native ginseng (*Panax quinquefolius* L.) was harvested for export to China. John Muir noted that the proceeds from the sale of ginseng were one way of purchasing luxury goods such as coffee. “But the coffee was the greatest luxury which these people knew. At that time ginseng root was valued at seventy cents a pound, and there was a law prohibiting it being gathered until the first of September” (Muir 1991:24 n.1). Native chickory (*Cichorium* L.) was used to make a kind of coffee (Ray 1999). Chickory is still used as an additive to some coffee brands today.

The gathering of Spanish moss (*Tillandsia usneoides* (L.) L.) (which is neither a moss nor from Spain) also provided a native product for export. The Spanish moss was gathered from trees, cured by hanging in the sun to dry, and exported for use in the furniture market as upholstery filling. Spanish moss was desirable for this purpose since it did not attract vermin and was resilient (Kennedy 1942). Spanish moss was also gathered for family use (Denham and Brown 2000).

Wild grapes were also plentiful and in the past the vines that were five to six inches in diameter, with three to four berries to a cluster were used to make muscadine wine (Muir 1991). Elderberries have also been used to make wine (Rawlings 1961). Other berries and fruits, including huckleberries, plums and peaches were also gathered for family use. Two rare jellies are made from mahaw (*Crataegus aestivales* (Walt.) Torr. & Gray), a type of hawthorn, and roselle (*Hibiscus sabdariffa* L.) (Rawlings 1961). Pawpaws are also eaten, if they can be picked before wildlife eat them (Rawlings 1961).
Wax myrtle (*Morella cerifera* (L.) Small) berries are used to make candles from the wax (Denham and Brown 2000).

Crackers also used the natural resources in the construction of their homes. Cracker homes were built of logs and rough hewn wood. Cracker architecture is distinct, with a suite of architectural options that were used during the early pioneer period in Florida. These architectural styles included: single pen, double pen, saddle bag, dog-trot, and 4-square Georgian, among others. As a family and its needs for space arose, additions were often tacked onto the main house. Acknowledging the natural and recurring presence of fire from lightening strikes, Cracker homes were often built in a clearing, away from the forest (Haase 1992).

Thus the Crackers utilized natural resources in their everyday living and subsistence patterns, as well as for trade. Given the importance of native flora and fauna in Cracker lifestyle, this thesis examines the present ecological knowledge of a native Florida family. I examine the data against the historic information about Crackers as well as the prior research on Crackers to determine if the family falls within the category of Cracker. I also examine the ecological knowledge of the family. Given the fact that much has changed in Florida since the origin of the term Cracker as applied to people in the deep South, I examine the current state of ecological knowledge and importance in lifestyle, especially in light of urban sprawl. Intergenerational differences are examined to determine if the existence of urban sprawl from the late 1970s forward has altered the transmission or content of knowledge. The ecological knowledge of the Cracker family is analyzed in light of conservation efforts and possession of relevant, useful information about the ecology of the region.
CHAPTER 5
TRADITIONAL ECOLOGICAL KNOWLEDGE IN PALM VALLEY: A FAMILY CASE STUDY

The history and characteristics of Palm Valley provide a classic example of Cracker landscape. Palm Valley contains swamps, marshes, creeks, rivers, maritime hammock and coastal plain areas, which were sparsely populated in the past. Even today, the population of Palm Valley / Ponte Vedra Beach is relatively low in density. Living in rural areas such as farms, forests and swamps is a key factor in Cracker culture. One reason that Cracker culture developed in the south is because it had a longer frontier period, where the rural areas took longer to be occupied than the northern United States (Berthelot et al. 2008). Using a community study (Arensberg 1955), this research was based on an ethnographic study of members of an extended family, as well as local residents, and data were gathered from participants from Fall 2010 to Fall 2011. The rationale behind studying a particular family is the great importance of family in Cracker culture, especially in a low residential density rural environment. With multiple generations of the family living in or around Palm Valley, it provides a unique opportunity to investigate traditional ecological knowledge of Florida natives who are still present on the land where their ancestors settled shortly after arriving from Europe.

The Participants

The qualifications to be a research participant were that the person had to have lived in Palm Valley, Florida at some point in their life. Members of the Mickler family were specifically sought out since the family is well-known in the area due to their long-time presence in Palm Valley. The present patriarch of the family has been actively involved in various local community organizations, including the Palm Valley Community
Center, the Beaches Historical Society and the Council on Aging. The family is well known for providing oral histories of the area. As a result, this family was selected as a sample of a Florida Cracker family. In order to find participants, various members of the Mickler family were contacted to ask for their cooperation and assistance. The various members were also asked to provide names and contact information for other family members who might be available for this study. Palm Valley residents who were not related to the Mickler family were also used for a preliminary comparison.

**The Origin of the Micklers**

The origin of the Mickler family in the United States has been traced to the mid 1700s, when Peter Mickler arrived in the United States, settling in the Dutch Forks area of South Carolina. It is unknown where Peter Mickler originated from, but based on the immigration pattern at the time, it is speculated that he arrived on a ship from Rotterdam, and may be of either German or French Huguenots descent (Mickler 1991). It is believed that Peter Mickler came to the United States due to the reign of Louis XIV and his campaign to discourage Protestantism, especially since in 1788 Peter Mickler was part of a petition to form a Protestant church in South Carolina (Mickler 1991). Thus, the origin of the Mickler family does not appear to come from Celtic origin in this instance, as postulated by McWhinney (1984).

In 1759 John Michler received a land grant of 200 acres in Georgia. In 1789, 300 acres of land were deeded in Camden County, Georgia to Daniel Mickler and his sons William and Jacob. It is speculated that Peter, John and Daniel may be brothers, since John Benjamin Mickler of St. Augustine recalled a family origination story about three brothers emigrating from Germany.
The Minorcan Connection

In 1763, after the British took control of Florida from Spain, a Scottish physician named Dr. Andrew Turnbull was granted several thousand acres of land in Florida and established a plantation-based colony named New Smyrna. Dr. Turnbull recruited colonists from the Port of Mahon on the isle of Minorca, located in the Mediterranean off the coast of Spain. These Minorcan colonists were under indentured contract, but later appealed to the British Governor of Florida to release them (Mickler 1991). In 1777, the New Smyrna colony ended, with most of the surviving Minorcans moving to St. Augustine in July 1777. In 1783, Spain regained St. Augustine.

One of the best documented Minorcan families is the de Ortegus family. Lazaro Ortegus and Catalina Llegres were married and were both from Mahon, Minorca. They had a daughter named Ana Margarita de Ortegus. In 1814, Ana Margarita de Ortegus married Don Antonia Fernandez de Mier, who was from Cadiz, Spain. They had four children, and one of the daughters, Manuela, married Jacob Mickler. Thus the Micklers merged with the Miers and the Minorcans. As Cash (1941) described, Crackers also originated from Iberian immigrants. Members of the Mier family were also included in this study since they are part of the same family. The descendants of the Minorcans retain their identity, primarily through food and a distinct variety of pepper known as the datil pepper. The two participants with the Mier surname in this study both self-identified as Crackers, as well as being of Minorcan descent.

Arrival in Palm Valley

Jacob Mickler was deeded 160 acres in the southwest quarter of section 11, Township 17, range 33, issued by the St. Augustine land office on July 16, 1843 (Mickler 1991). After the Civil War, Jacob’s nephews John H. and William Mickler also
moved to St. Johns County, Florida (Mickler 1991). The Miers likewise trace their roots in Palm Valley back to about the 1850s.

Jacob and Manuela Mickler had a son named Robert A. Mickler. During the late 1800s Robert Mickler, as a side business, gathered palm fronds to ship to the northern market to be used for decorations on Palm Sunday (Mickler 1991). Thus, consistent with Kennedy's (1942) observations, the gathering of palm fronds for Palm Sunday services was a subsistence practice in Palm Valley among the Mickler family.

In 1894, Sydney A. Mickler was born in Palm Valley, Florida. Sydney Mickler is best known for building Mickler’s Pier, which was located at the present location of Mickler’s Landing, an oceanfront beach access in St. Johns County. A sign for Mickler’s Pier from 1935 is depicted in Figure 4-1. His son, Sydney Mickler Jr. was a primary informant of this study, and was born in St. Augustine in 1926 and grew up in Palm Valley. For 12 years he lived in nearby Jacksonville Beach, but moved back to Palm Valley and has lived there since. Thus he has lived in Palm Valley for 74 of his 86 years. Sid was interviewed as a primary local expert on the traditional ecological knowledge of Palm Valley. Both family and non-family members identified him as an expert or otherwise suggested that I talk to him about this project.

Figure 4-1. 1935 sign for the Palm Valley Fishing Pier. Photo by author.
Methodology

This research was designed around a specific family that has a long history of residency in Palm Valley, Florida, and as such, a non-probability sample of family members was used. The participants included several generations of the family, ranging in age from 12 years to 90 years old.

In order to preliminarily test the question of whether the extended Mickler family has a greater knowledge of the environment of Palm Valley, a convenience sample of twelve non-Mickler residents participated in the same questionnaire and free-listing exercise. The non-Mickler sample was selected based on residency in the Palm Valley area (east of U.S. A1A in Ponte Vedra Beach), with efforts to obtain similar ages and gender proportionate to the Mickler family sample. While non-probability samples were used and there are limitations to this sampling technique, it is an appropriate method for pilot studies, and can form a basis for future study (Bernard 2011).

The research methods used to gather information for this study consisted of questionnaires, free lists and semi-structured interviews. The methodology was approved by the University of Florida, Institutional Review Board 2. Each participant was provided a consent form describing the investigation and informing them of the availability of the results of the study upon its conclusion. The adult participants were asked to sign the consent form. Parental consent was obtained for juvenile participants. The first step in this process was having the participants fill out a questionnaire form.

The questionnaire sought background information on their residence history, education, work background, uses of native flora and fauna and other questions. The questionnaire sought information about whether they hunted, fished, or gardened and whether the participant used or knew of any home remedies or medicines using wild
plants or animals products. Participants were asked to identify whether they used wild plants or animals products for crafting or construction. Participants were also asked about how they learned this knowledge, how they thought their level of knowledge compared to others, and who they thought held the most knowledge.

The participants were interviewed. Additional information was gathered from the Mickler family members who demonstrated a greater knowledge of the history and ecology of Palm Valley. Each questionnaire asked to identify the family member with the most knowledge of local plants and the most knowledge of local animals, in order to preliminarily identify experts.

In order to measure each participant’s ecological knowledge, they were asked to prepare two different free lists; one for native plants and one for native animals. Free lists are often used to determine topical knowledge and cultural saliency (Quinlan 2005). The focus of this study is on topical knowledge, since this is a comparison of levels of knowledge across generations and as compared to the non-family sample. The free list of plant and animal names was used since the first factor identified by Berkes (1999) as establishing traditional ecological knowledge is ability to name the natural features.

In a free list exercise, the participants are asked to list all of the things that they know in a particular domain (Quinlan 2005). For this study, the two domains were: 1) wild animals native to Palm Valley, and 2) wild plants native to Palm Valley. The participants were asked to exclude fish and insects, but to include mammals, reptiles, amphibians and birds. When they had difficulty thinking of more animals, but indicated that they thought they knew more, the following suggestions were made: “think of the animals you would see at the beach,” “think of the animals you would see in the woods,”
“think of the animals you would see at a bird feeder,” “think of the animals you would see at night.” The participants were told that they did not have to have actually seen all the animals they listed. For example, several listed the Florida panther, but not all have actually seen one. Thus this study focused on two domains, local plants and animals, but did not focus on the groupings or mechanisms for categorization or creation of the domains (Berlin 1992).

In order to obtain local ecological knowledge, rather than knowledge of plants and animals in general, the free-list question elicited native, wild plants and animals. Thus if the participant thought that a plant or animal was exotic and not from this area, it should be excluded from the list. There is some debate over how to determine whether a species is native or not, including whether natural dispersal methods that expand the range of a species into new areas should be accepted as native. This paper does not delve into this debate, and ultimately the distinction between native versus non-native plants only made a difference in the results for one participant, which is more specifically explained below.

At the outset, it was unknown whether the correctness of whether a plant or animal is native to the area would result in a distinction among the responses of the participants. Accordingly, a list of native flora and fauna was prepared for determination of the responses correctly identified “native” flora and fauna. The initial list of animals was prepared from Robert DeWitt Ivey’s University of Florida master’s thesis entitled “The Mammals, Excluding Bats, of Palm Valley Florida.” The purpose of this study was to study the mammals and their life histories and habitat usage in the precise locale of the present investigation. Ivey’s study was field-based and included trapping of live
animals over four years (Ivey 1947). This study also included interviews of several local residents, including Merlin Mickler, Eston Barkoskie and J. De Grove. This graduate study provides a good baseline of the mammals that inhabited Palm Valley over 50 years ago. In addition, this study provides descriptions of the various habitats that occur in Palm Valley. The scientific names of the flora and fauna were identified and I searched to see if a determination has been made as to whether the flora and fauna are native to Northeast Florida.

After completing the animal list, the participants were asked to provide a free list of all plants that they thought were native to Palm Valley. The species list from the GTMNERR report was added since this natural area is located in large part in Palm Valley and the management plan lists 576 different plant species. This list was used to determine whether or not the responses of the participants were correct in identifying native species, since it includes a section on exotic species that have invaded the area. If a participant named a species that did not occur on either list, then further research was conducted to establish the origin of the plant.

Since participants used common names, broad interpretation was given to whether the species was native or not. If the common name could include a native species, then it was considered to be native. Many common names encompass many different species, including predominantly exotic species, but if a local species would be captured by this common name, credit was given for correctness. In the end, these distinctions did not make much difference, which will be explained further in the results.

A simple calculation of the number of plants and number of animals was used to compare participants. “An informant’s list length is a measure of that person’s depth of
knowledge or familiarity within a domain” (Quinlan 2005:4). While free lists can be further analyzed using calculations such as Smith’s S (Smith 1998), “even simple forms of numerical reasoning adds impartial components to ethnographic research” (Handwerker and Borgatti 1998). Since the focus of this study was the level of ecological knowledge of native plants and animals, rankings based on number of plants and animals listed were analyzed. Incorrect responses, vis-à-vis the native verses exotic distinction, were included in the calculation and significant anomalies are noted in the discussion.

The data were also analyzed to evaluate the level of knowledge of the functions and uses of plants and animals in order to determine whether the second factor for traditional ecological knowledge identified by Berkes (1999). Information on whether the participants hunted, fished, shellfished or gardened was compiled and compared to the family versus the non-family group. Questions were asked of each participant about usage of plants and animals for crafting, construction, home remedies, or other purposes.

The participants were also asked about their knowledge of the regulations related to plants and animals in order to determine if the third factor for traditional ecological knowledge identified by Berkes (1999) was present. This included knowledge of hunting regulations and the identification of species that are listed as endangered, threatened or species of special concern. The participants were also asked about changes to the presence of plants or animals during their lifetime to link changes associated with urban sprawl.
The fourth factor identified by Berkes (1999) for presence of traditional ecological knowledge is worldview, cosmology and ethics. This information was evaluated based on interviews and examples provided in the participants’ discussion of plants and animals and their relationship with them. Photographs were also taken to document examples of visual representation indicating cosmology, worldview and ethics related to plants and animals.

**Limitations**

This study is not intended to be a definitive statement on the state of traditional ecological knowledge for all people who consider themselves to be Crackers, or for that matter Florida natives. Instead, this study is intended to be an inquiry into whether all four factors of traditional ecological knowledge exist, and to establish what the nature of the ecological knowledge is in this population. Since a family was used as the population, the size of the sample is obviously limited. In addition, this study only examines these questions at a single point in time. A long-term study across time would be useful in measuring changes to traditional ecological knowledge as urban sprawl continues its progression across the landscape. Additional tests could be developed to measure ecological knowledge, including field identification methods used on the participants to determine their ability to correctly identify the plants that they could name. While I was able to conduct some field identification with two of my primary informants, a study could be designed to field test all participants in order to quantify additional measures of ecological knowledge, apart from name identification and oral description. Additional quantitative analysis could also be conducted to further refine knowledge and correlation of factors.
CHAPTER 6
TRADITIONAL ECOLOGICAL KNOWLEDGE RESULTS AND DISCUSSION

Theoretical Ecological Knowledge: Names of Natural Phenomena

The first factor in establishing the presence of traditional ecological knowledge is knowledge of the names of natural phenomena (Berkes 1999). In order to test whether this first factor of traditional or local ecological knowledge is present, the participants were asked to prepare two freelists: native plants and native animals.

Fauna

Based on all of the identifications by all family participants, a total of 145 animals were listed as native to Palm Valley. A total of 34 mammals, 35 reptiles, 10 amphibians, and 66 birds were identified by the participants as being native to Palm Valley. Forty-five mammals, 49 reptiles, 258 birds and 21 amphibians have been presently identified in the Guana State Park and Wildlife Management Area (DEP 2009). Notably, with regard to the birds there are 24 species of warblers, 14 species of sparrows and 9 different tern species, demonstrating that there are many species of fairly common birds. In addition, the GTMNERR report (DEP 2009) lists 7 species of mice, 6 species of rats, 3 species of bats and 3 whales as present (DEP 2009), which explains the differences between the mammal lists. It is likely that few Americans would know all of these species names. Several participants identified the stump tailed moccasin as being present in Palm Valley, although the GTMNERR report (DEP 2009) did not list this particular species even though it is ubiquitous throughout Florida.

Based on the freelists, the top ten ranking of animals are listed in Table 6-1 and shows the total number of participant responses, as well as a division between family and other, non-family local participant responses. Most animals were identified to the
species, although a few were identified by family name. For the animals identified by family name, there are a large number of species inhabiting Palm Valley, and in addition to the family name, certain species were also identified. For example, while duck (Anatidae) was listed, several ducks including wood ducks (Aix sponsa L.), mallards (Anas platyrhynchos L.) and teals (Anas discors L.) were also listed.

Table 6-1. Animal names

<table>
<thead>
<tr>
<th>Rank</th>
<th>Name</th>
<th>Scientific Name</th>
<th>Total Responses</th>
<th>Family /Local Responses</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Squirrel</td>
<td>Sciurus carolinensis</td>
<td>22</td>
<td>13</td>
</tr>
<tr>
<td>2-tie</td>
<td>Raccoon</td>
<td>Procyon lotor</td>
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<td>12</td>
</tr>
<tr>
<td>2-tie</td>
<td>Cardinal</td>
<td>Cardinalis cardinalis</td>
<td>21</td>
<td>11</td>
</tr>
<tr>
<td>4-tie</td>
<td>Rattlesnake</td>
<td>Crotalus sp.</td>
<td>20</td>
<td>13</td>
</tr>
<tr>
<td>4-tie</td>
<td>Deer</td>
<td>Odocoileus virginianus</td>
<td>20</td>
<td>12</td>
</tr>
<tr>
<td>6</td>
<td>Sea gull</td>
<td>Laridae</td>
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<td>Alligator mississippiensis</td>
<td>18</td>
<td>8</td>
</tr>
<tr>
<td>8-tie</td>
<td>Moccasin</td>
<td>Agkistrodon sp.</td>
<td>16</td>
<td>12</td>
</tr>
<tr>
<td>8-tie</td>
<td>Osprey</td>
<td>Pandion haliaetus</td>
<td>16</td>
<td>10</td>
</tr>
<tr>
<td>8-tie</td>
<td>Wild hog</td>
<td>Sus scrofa</td>
<td>16</td>
<td>10</td>
</tr>
</tbody>
</table>

The most frequently named animals include four deadly species: rattlesnake, alligator, moccasin and wild hog. Four of the top ten species are common birds in the area. Two species, squirrel and raccoon, can be seen in urban and rural environments. Deer is the largest common land mammal, and is fairly common in the area.

There was not a complete consensus among all the participants on the animals. However, there was complete consensus among the family for two species: squirrel and rattlesnake. The family participants have a high level of consensus, with almost all members naming the top twelve ranked animals. The youngest family member was the exception and failed to name six of the top ten animals. While the family members had a higher consensus on the animals, an exception is alligator, which is the only category where other, non-family local participants listed this animal more often than the family
members. Notably two family members (Donna and Sid), later identified as experts, excluded wild hog from the list since this animal is not native to the area and was introduced by Spanish colonists, demonstrating an acute knowledge of the animals and an understanding of the distinction the question posed.

Table 6-2 shows the top ten ranked bird responses. There is a high consensus on cardinal among both groups, with the non-family local participants having a significantly lower degree of consensus on birds as compared to the family. Cardinals are ubiquitous across the United States, and is one of the few predominantly red birds (males) making them easily distinguishable for even the most novice bird watcher.

Table 6-2. Bird names

<table>
<thead>
<tr>
<th>Rank</th>
<th>Name</th>
<th>Scientific Name</th>
<th>Total Responses</th>
<th>Family /Local Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cardinal</td>
<td><em>Cardinalis cardinalis</em></td>
<td>21</td>
<td>11/10</td>
</tr>
<tr>
<td>2</td>
<td>Sea gull</td>
<td>Laridae</td>
<td>19</td>
<td>11/8</td>
</tr>
<tr>
<td>3</td>
<td>Osprey</td>
<td><em>Pandion haliaetus</em></td>
<td>16</td>
<td>10/6</td>
</tr>
<tr>
<td>4-tie</td>
<td>Egret</td>
<td>Ereidae</td>
<td>14</td>
<td>8/6</td>
</tr>
<tr>
<td>4-tie</td>
<td>Owl</td>
<td><em>Bubo sp.</em></td>
<td>14</td>
<td>9/5</td>
</tr>
<tr>
<td>4-tie</td>
<td>Duck</td>
<td>Anatidae</td>
<td>14</td>
<td>11/4</td>
</tr>
<tr>
<td>7-tie</td>
<td>Hummingbird</td>
<td><em>Archilochus</em> sp.</td>
<td>13</td>
<td>10/3</td>
</tr>
<tr>
<td>7-tie</td>
<td>Dove</td>
<td>Columbinae</td>
<td>13</td>
<td>10/3</td>
</tr>
<tr>
<td>9-tie</td>
<td>Hawk</td>
<td>Accipitridae</td>
<td>12</td>
<td>9/3</td>
</tr>
<tr>
<td>9-tie</td>
<td>Woodpecker</td>
<td>Picidae</td>
<td>12</td>
<td>7/5</td>
</tr>
</tbody>
</table>

Flora

Table 6-3 shows the top ten ranked plant responses, with pine and cabbage palm tied for the top spot. The top named plants are ubiquitous to Florida. Many of these plants are often located in backyards. Several plants are edible (blackberries and wild grape), and therefore have additional saliency. Poison ivy (*Toxicodendron radicans* (L.) Kuntze) is a plant to avoid and therefore has additional saliency.
Table 6-3. Plant names

<table>
<thead>
<tr>
<th>Rank</th>
<th>Name</th>
<th>Scientific Name</th>
<th>Total Responses</th>
<th>Family /Local Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-tie</td>
<td>Pine</td>
<td>Pinus sp. L.</td>
<td>22</td>
<td>13 9</td>
</tr>
<tr>
<td>1-tie</td>
<td>Palm/</td>
<td>Sabal palmetto</td>
<td>22</td>
<td>13 9</td>
</tr>
<tr>
<td></td>
<td>Cabbage palm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Oak</td>
<td>Quercus sp. L.</td>
<td>17</td>
<td>13 5</td>
</tr>
<tr>
<td>4</td>
<td>Palmetto</td>
<td>Serenoa repens</td>
<td>15</td>
<td>10 5</td>
</tr>
<tr>
<td>5-tie</td>
<td>Live Oak</td>
<td>Quercus virginiana</td>
<td>13</td>
<td>8 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Miller</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5-tie</td>
<td>Poison Ivy</td>
<td>Toxicodendron radicans</td>
<td>13</td>
<td>7 6</td>
</tr>
<tr>
<td>7</td>
<td>Cedar</td>
<td>Juniperus virginiana</td>
<td>11</td>
<td>11 0</td>
</tr>
<tr>
<td>8</td>
<td>Blackberries</td>
<td>Rubus sp.</td>
<td>10</td>
<td>9 1</td>
</tr>
<tr>
<td>9-tie</td>
<td>Cypress</td>
<td>Taxodium distichum</td>
<td>9</td>
<td>9 0</td>
</tr>
<tr>
<td>9-tie</td>
<td>Spanish moss</td>
<td>Tillandsia usneoides</td>
<td>9</td>
<td>6 3</td>
</tr>
</tbody>
</table>

Based on a comparison of the responses between the family and the other non-family local participants, there was complete consensus on the top three plants – pine, palm/cabbage palm and oak -- with all 13 family members identifying these trees. Like the animals, there was no complete consensus on plants among the local, non-family participants. The family members had the majority of the responses in the top categories, and for two species -- cedar and cypress -- only family members identified those trees. These responses demonstrate that this Cracker family has extraordinary local ecological knowledge when compared to the local, non-Cracker population.

Notably, many participants named species that are not native, and are exotic species, many of which can be purchased at local nurseries and cannot survive without human care. Both sets of participants included some non-native plants in the list. The family included 11 non-native plants out of the 120 total plants identified by the family. In comparison, the other non-family locals listed 22 non-native plants out of a total of 72 total plants identified by the group. Thus the error rate was significantly higher for the non-family local participants as compared to the family participants. If a plant has a clear origin on another continent or not in the southeastern United States, it was
considered to be non-native. If the common name was too generic to specifically identify a plant, but would include a plant native to the southeastern United States, it was considered to be native. In ranking the participants on the number of plants or animals listed, however, all responses were included. Based on an analysis of the clearly incorrect responses, only one person would have dropped in ranking. The rest of the participants had minor, incorrect responses that did not affect their ranking.

On average, the family members named 41 animals each and the non-family members named about 29 animals each. The average number of plants identified was 28 for family members and 16 for non-family participants. There does not appear to be a clear trend by either gender or age, with the exception of the youngest member, at 12 years old, having the least knowledge of animals, and lesser, but not the least knowledge of plants. Given the number of plant species identified out of the total 576 plants identified in the DEP 2009, a greater proportion of animals are known as compared to the universe of plants. This trend of knowing proportionately more animals than plants is also present in the local, non-family sample. Thus, it appears that whatever system of education is used to learn about plants, it is not thorough and there are many more plants to learn about, especially as compared to animals. While other indigenous populations, especially those in the tropics, have a greater breadth of plant knowledge, the landscape under study here has been heavily fragmented and impacted, with only 539 total plants identified by scientists (DEP 2009).

Notably, the local participant who identified the largest number of plants named many non-native, exotic plants, including asparagus fern (*Asparagus setaceus* (Kunth) Jessop), kudzu (*Pueraria DC.*), sago palm (*Cycas revoluta* Thunb.), crape myrtle
(Lagerstroemia indica L.), and loquat (Eriobotrya Lindl.), among others. This high number of incorrect responses skews her ranking in the plant category and demonstrates a lack of plant knowledge with regard to the native aspects comprising the landscape. These plants do not thrive in the wild in the area (DEP 2009).

If all responses are included, including the incorrect, non-native plants, 8 family members are ranked in the top 10 list of plant names, ranging in age from 28 to 85 years old, with family members holding the top five spots. The fifth ranked respondent, however, is the non-family local respondent with a high number of incorrect responses, which, if limited to correct responses, would eliminate her from the top 10 ranking for plant name knowledge. Notably, the youngest family member at 12 years old, listed more plant names than two family members, tying with an 81 year old male family member. This youngest member also knew more plant names than nine non-family local participants, tying with a 53 year old local male participant.

Sid’s daughter, Donna, listed the greatest number of plant and animal names compared to any other participant, despite the fact that she dropped out of high school. In fact, none of the participating family members have a college degree, yet had a far greater knowledge than the non-family local participants, some of whom had college degrees, including a lawyer, a physician and a person with a Master of Science degree.

**Technical Ecological Knowledge**

Use of local food resources is an aspect of traditional ecological knowledge. There are two aspects of traditional ecological knowledge: theoretical and technical. Theoretical knowledge is the ability to name ecological resources. The technical aspect of traditional ecological knowledge is the practical skill of finding and using the natural resource, which is a higher level of mastery. More detail about the environment is
learned when there is more active involvement. This includes where and when to find the resource, as well as how to prepare and use the resource, which is more detail oriented (Setalaphruk and Price 2007). Members of the Mickler family have hunted, gardened, gathered wild fruit, and have exhibited a high level of mastery of local ecological knowledge.

**Faunal Usage**

Consistent with Lewis’ (1984) and Cash’s (1941) assertion that Crackers are expert hunters, the Micklers are a family of hunters. When he was growing up, Sid Mickler and his family hunted the following animals for their hides: alligator, deer, otter, raccoon and fox. Deer hides were used for rugs and chair coverings. Otter hides supplemented the income and sold for $20 a piece, “which was fantastic!” (Mickler 2010 personal communication). A good raccoon hide sold for $2. Fox hides sold for 50 cents, and were full of fleas, although the fur was highly desired. They did not hunt bobcat, which was also full of fleas. Almost all family members have hunted, including the youngest great-granddaughter in this study. Two female family members do not hunt. Every member responded that they ate wild game, including: deer, squirrel, turkey, frog legs, alligator, rabbits, raccoon, turtles, ducks, doves, quail, rattlesnake, and wild hog. Some of these animals are not eaten today, with the youngest family member reporting eating only squirrel. All generations also reported that they have gone fishing and shrimping.

In the past and prior to urban sprawl, the Mickler family hunted alligators for trade, similar to the practices documented by Gibson (1996). Alligator hides were sold, but the rest of the alligator was discarded. Alligators were too common to be a novelty. There was a problem with living in the woods and swamp and disposing of waste meat. Sid’s
father caught a 10 foot alligator, dug a moat, and built a fence to keep it in. For about three years, the alligator lived there and they fed it the scrap meat, until it finally escaped. “It made a good garbage disposer” (Sid Mickler 2010 personal communication). The one-eyed alligator was named Ole Nelson (Neitz 2006). When Sid was an alligator hunter, his family did not eat alligator. It was not until year’s later in a restaurant that Sid discovered that alligator tasted good, which he wished he had known growing up. Sid’s daughter, Donna, displays an alligator hide in her home, depicted in Figure 6-1C.

The Mickler family had a beehive when Sid was growing up. When asked if the honey was used for any home remedies, he said that “with 10 kids around, the honey disappeared too fast to use for anything else.” (Sid Mickler 2010 personal communication). Sid had beehives during his adult life. His daughter Donna also has beehives, and maintains a self-service honey stand, complete with a warning about the goat that butts, depicted in Figure 6-1A and B. Donna used to take a hive over to the Worley’s garden, where the Worley’s operated a self service vegetable stand, similar to Donna’s honey stand. Since Nocatee was built, however, the Worley’s closed their front-yard enterprise since their land is slated for a new highway overpass due to the projected traffic increase caused by the Nocatee development. Other Mickler family members also have or have had beehives. At the time of one interview, a family member had two queen bees and was getting ready to split the hive. In maintaining bee hives, not only are the Micklers procuring local honey, they are providing a service to all who benefit from the pollination by their bees.
When Sid was growing up, the Mickler family would go on outings together to gather food. Sid’s father had a Model A Ford and would take the family to Cape Canaveral to hunt for turtle eggs, which were sold to the bakery for extra money (Neitz 2006). When Sid had kids of his own, he would frequently take them to the beach and cast net for fish. Thus the family learned through participation and observation, which is a typical method of learning traditional ecological knowledge (Berkes et al. 2000). Learning in the family setting is also consistent with the transmission of traditional ecological knowledge (Setalaphruk and Price 2007).

Figure 6-1. Photos from Twenty Mile Road in Palm Valley. A) Donna’s self-service honey stand, B) warning sign on honey stand, C) Alligator hide and D) bobcat killed when Butler Boulevard opened. Photos by author.
Floral Usage

Just as both William Bartram (1928) and John Muir (1991) noted over a hundred years ago, grape vines were in great abundance throughout the south and in Palm Valley. The oldest members of the Mickler family recall riding down A1A with their parents, where they would get out and shake the trees that had grape vines wrapped around them, making the abundant grapes fall to the ground as the children gathered them. Their mother also made grape jelly from the wild grapes that the family would gather. Both Sid and Donna presently have grape arbors on their property.

Many other native berries were gathered for use, including huckleberries, blueberries, mahaw berries, and elderberries. The mahaw berries were used to make a delicious jelly, just as observed by Rawlings, who called it “rare and ethereal,” noting that the berries must be picked at the precise time of ripeness or the jelly will either be bitter or will not jell (Rawlings 1961:221). Mahaw trees were intentionally planted in their yards. Various members of the Mickler family, both male and female, make homemade jellies and sauces, as depicted in Figure 6-2.

When Sid was growing up he spent a lot of time exploring the outdoors. There were times when Sid would be hungry and have to look for food in the wild. Sid reported eating acorn while out in the woods, far away from home, remarking “when you are hungry you will eat anything!” (Sid Mickler 2010 personal communication). Sid also has tried palmetto berries when he was hungry, much like Dickinson (1961) and his party during their journey to St. Augustine from 1696-1697, after their shipwreck. Most family members have eaten wild berries. Sid also reported eating cattail roots.
Donna also explored eating wild foods. For example, she ate some wild sea oats since they seemed like they would be a food, not knowing that some indigenous communities in Central American use sea oats as food (Austin 2004).

Sid’s granddaughter recalls playing outdoors and eating sourweed as a treat. Child’s play is also a method of learning traditional ecological knowledge (Zarger and Stepp 2004).

Figure 6-2. Dried herbs, jellies and pickled peppers from Donna’s pantry. Photo by author.

**Gardening**

Consistent with Stein’s (1995) finding that gardening is important to Cracker culture, gardening continues to be a practice among the Mickler family. The Minorcan connection is further asserted through the cultivation of datil peppers, grown from seeds that are not commercially distributed, and are treated as secret family treasures. The Datil pepper plant is depicted in Figure 6-3B. Datil peppers are a variety of peppers that
was developed in the St. Augustine area in the Minorcan community (WPA 1939b). The datil peppers are a prime example of a Minorcan identity marker. Various sauces and condiments are manufactured using datil peppers.

Many family members reported that they had vegetable and herb gardens, with an example depicted in Figure 6-3. A variety of vegetables and herbs have been grown in these family gardens, including: carrots, cabbage, potatoes (sweet and Irish), snap beans, butter beans, peas, field peas, tomatoes, cucumbers, eggplant, corn, beans, green beans, collards, broccoli, cauliflower, onions, bell peppers, datil peppers, watermelon, pumpkin, cantaloupe, turnips, mustard, lettuce, radishes, okra, squash, sunflowers, cilantro, lemon grass, basil (many varieties), mint, chili peppers, and curry. Family members also grew fruit, including: strawberries, persimmons, grapes (many varieties), peaches, pears, oranges, grapefruit, figs, and mahaw. Surprisingly, the oldest female member of the family did not garden. However, she worked outside of the home in addition to raising children.

All three members of the indigenous “three sisters” agriculture system – corn, beans and squash – continue to be a part of Cracker food culture. Only two members of the original Eastern Horticultural Complex are used by this family: sunflowers and squashes, with the small-seeded weedy species not in use by this family. Like Native American’s incorporation of new species brought by European colonists, such as citrus and peaches, exotic species have also been incorporated by this family, as demonstrated by the cultivation of exotic herbs such as basil, cilantro, curry and lemongrass.
Figure 6-3. Donna’s garden. A) garden entrance guarded by a loofa gourd, B) Minorcan datil pepper plant, C) herbs in wheel barrow with chia pet donkey, called “Hauling Ass” and D) exotic herbs with antique tiller. Photos by author.

Construction and Crafting

One of the factors in determining the presence of traditional or local ecological knowledge is knowledge of the use of the plants (Berkes 1999). There are two types of knowledge: theoretical and technical (Setalaphruk and Price 2007). Construction and crafting using native products is a prime example of technical ecological knowledge.
With the help of family and others, Sid’s father built the Palm Valley Fishing Pier using logs of cabbage palms, logged from the location of where CR 210 once intersected Neck Road. Cabbage palm trunks were used as piling for the pier and withstood storms that rocked the pier (Mickler 1991:98). This was a private pier, and there was a charge of thirty cents per day to fish. Sydney and his children would catch shrimp for bait to sell by using cornmeal and canned mackerel as bait, and catching the shrimp with a cast net (Neitz 2006). They used a windmill to aerate the water to keep the shrimp alive. When there was no wind, they used a hand crank (Neitz 2006). A storm destroyed the pier in the late 1940s (Neitz 2006:99). While there is no longer a pier at that location, St. Johns County purchased land in the location of the historic pier, installed a dune walk-over and parking facilities and named in Mickler’s Landing, acknowledging the family’s historic presence at the site.

Until World War II, the Mickler family harvested cabbage palms, and the palm fronds were harvested for export and sale to churches for Palm Sunday ceremonies, just as observed by Kennedy (1942:6) elsewhere in Florida.

Most family members have used native plants or animals for crafting. The crafts included: grape vine wreaths, deer antler chandelier, archery bows and arrows, forts from palm fronds, mats from palm fronds, pine needle baskets, cedar for handles, sticks for bird carving legs, driftwood for carving base, glue from deer, tanned hides for chair covers and rugs, leaves to stain cloth, bees wax for candles, turkey feathers and feet for decorations, Christmas decorations using greenery, mistletoe, pine cones and berries.

Most family members reported using wild flora and fauna in crafting and play. The youngest great-granddaughter listed using palmetto fronds for forts and hideouts,
bamboo for teepees, grass for bracelets and dandelions for crowns, necklaces and bracelets, demonstrating hands-on education through use and experimentation with the plants. This activity supports the fact that learning traditional ecological knowledge is based on interaction with the environment (Chalmers and Fabricus 2007; Zarger and Stepp 2004).

Other members of the family make craft objects, including grape vines for wreaths, ferns and other greenery for flower arrangements. Various items were used for Christmas decorations, including pine cones, cedar branches, mulberries, holly, magnolia leaves pine needles, Spanish moss and sea shells. Bees wax was used to make candles. Leaves were used to stain cloth and for imprints in concrete floors, depicted in Figure 6-4A. When a turkey walked across the wet concrete it left tracks in the floor, which Donna left in place as an item of interest in the history of the creation of the floor, depicted in Figure 6-4B.

Donna’s homestead is a living museum. She likes to collect material culture of prior times, and incorporates them into her style of interior and exterior design. The most striking design features are her exterior designs, which she has elevated to an art form.

One example of incorporating unique, rustic design is the siding of her pole barn, which is the section of wood with the bark on it that is removed by milling, depicted in Figure 6-4C. The mill would throw it away, so Donna got it and put it to functional and artistic use, as well as recycling.

Sid Mickler is a well-known artist in the area and carved birds out of wood, usually with a driftwood base, depicted in Figure 6-5. He would give these birds as gifts as well
as items for charity auction at the local Catholic Church, Our Lady Star of the Sea. He also made gifts for family members to commemorate special events, such as the birth of a grandchild.

In addition to crafting, native flora and fauna are displayed in and around the home. Shortly after J. Turner Butler Boulevard was opened, providing a new east-west highway to the beaches, a bobcat was run over. A neighbor picked up the carcass and stored it in the freezer intending to mount it one day. This neighbor never took the bobcat to the taxidermist, but instead, it was given to Donna, who now proudly displays the first road-kill bobcat from Butler Boulevard, depicted in Figure 6-3D.

Other natural items are displayed in the home. A cypress knee is proudly displayed on the shelf with family pictures, depicted in Figure 6-4D.

There appears to be ongoing social reproduction of the Cracker lifestyle and the attendant connections with the environment and traditional ecological knowledge. Family plays a large role in this cultural continuation. Learning to hunt, fish, and garden is learned in the family and continues to be a source of transmission of traditional ecological knowledge.

There are also ritual commemorative practices that preserve this tradition and knowledge. The crafting of goods using natural products is one such practice. In addition, especially as regards Donna, the history is being preserved by keeping such items as taxidermied animals that have oral stories that accompany them, such as the stuffed bobcat previously mentioned. Donna also keeps photographs of the “trees of her life” and has them framed on a mantle, much like family photos. She also has collected
“cat faces” and considers them lost art. Cat faces are the markings on trees that were made during turpentine harvesting in the past.

Figure 6-4. Donna’s homestead photos. A) leaf imprint on concrete floor, B) unintended turkey tracks on concrete floor, C) recycled pine bark for pole barn siding, with barbed-wire and antler wreath, and D) cypress knee on mantel with family photos. Photos by author.
Home Remedies

I asked the participants about any home remedies using local plants or animals. Due to the low response, I expanded the question to any home remedies, not just those using local flora or fauna products. This expanded the list to: salt water, spider webs, aloe vera, tulsi, tobacco, kerosene and sugar, and sheep's wool. Three participants listed spider webs as a remedy to stop bleeding, including one participant who learned of this home remedy when responding as a police officer to a call where a knife fight
occurred and a woman was bleeding profusely. “The porch looked like a hog had been butchered. Another black woman reached up on the porch and swept down all the spider webs and cob webs and applied it to the wound” (Tom Voutour 2010, personal communication). Three other participants identified spider webs as a quick remedy when cut in the woods.

Due to the sparse knowledge of home remedies using native flora or fauna, it appears that any prior knowledge has been lost. This is likely due to the efficacy and convenience of modern remedies. The use of aloe vera, however, indicates a willingness to use home remedies and to adopt non-native plants as home remedies.

The original inhabitants of the Palm Valley area were the Timucuan tribe of Native Americans. Unfortunately, the Timucuan tribe was decimated by disease and warfare during the Spanish colonization. Thereafter, Seminoles started inhabiting the area beginning in the 1700s. Snow and Stans (2001) compiled a list of 74 “herbs” used in Seminole remedies, although at least nine do not appear to be plants. Of a previous list of plants used in Native American remedies, the best known plants used for Seminole native remedies are: wax myrtle, huckleberry, blue flag or iris, elderberry, button snakeroot, ginseng, goldenrod, mallow, maple, pennyroyal sage, sassafras, saw palmetto, sumac, sundew and willow (Snow and Stans 2001:41).

Of these 15 best known Native American plant remedies, 9 were identified as known native plants by the participants in this study. Of the 54 total “herbs” identified by Snow and Stans (2001), 23 were identified as known native plants by the participants in this study. Despite this knowledge of many plants that have been used for remedies, none of the participants identified them in home remedies. Thus the native knowledge of
plant remedies did not transmit to this family. In fact, very few plants were identified in home remedies. The most frequently cited plant used for a home remedy is the non-native aloe vera plant. The only other plants mentioned were tobacco, wild onions (for a horse remedy), and tulsi tea, an herb from India grown by one participant.

**Ecological Knowledge of Land and Resource Management Systems**

The third factor in establishing traditional ecological knowledge is knowledge of the land and resource management system and institutions that govern them (Berkes 1999). As a family of hunters, the Micklers are aware of the regulations restricting hunting. As would be expected by Putz (2003), the Micklers also use fire to manage the land and dispose of organic debris. This study was conducted during a drought, and the family members ceased using fires due to the risk of starting a wildfire, demonstrating knowledge of both the regulations about fire usage as well as practical considerations.

**Threatened and Endangered Species**

The family exhibited knowledge of species listed by the state or federal government as protected. The federally protected species include: Florida panther (*Felis concolor coryi*), Florida black bear (*Ursus americanus floridanus*), wood stork (*Mycteria americana*), manatee (*Trichechus manatus*), and indigo snake (*Drymarchon corais couperi*) (DEP 2009:156-57). At least two participants have seen a Florida panther. Another participant has heard a Florida panther scream, but did not see the panther. Florida panthers have more recently been caught on camera by private parties in Palm Valley, both east and west of the Intracoastal Waterway. A Florida black bear was recently killed in Fall 2010 trying to cross I-95 in St. Johns County, Florida.

Some of the identified species are also listed by the State of Florida as “species of special concern.” The State-listed species of special concern identified by the
participants are: American alligator (\textit{Alligator mississippiensis}), diamondback rattlesnake (\textit{Crotalus adamanteus}), gopher tortoise, king snake (\textit{Lampropeltis getula getula}), swallow-tailed kite (\textit{Elanoides forficatus}), white ibis (\textit{Eudocimus albus} L.), snowy egret (\textit{Egretta thula}), roseate spoonbill (\textit{Platalea ajaja} L.), bald eagle (\textit{Haliaeetus leucocephalus} L.), osprey (\textit{Pandion haliaetus} L.), painted bunting (\textit{Passirina ciris}), and brown pelican (\textit{Pelecanus occidentalis} L.)(DEP 2009:156-57). A few other species were identified generically, such as egret, heron, tern, but were not specifically identified to a degree to which it was determined to be the listed species. Most participants have seen bald eagles in Palm Valley.

One regulatory change that the family is aware of is the state protection given to gopher tortoises. Gopher tortoises have been used to make turtle soup or gopher stew. When Sid’s children were growing up, local hunters would catch gopher tortoises and sell them to country folk for $1.00 apiece out of the back of pick-up trucks. This practice has ceased, although the state wildlife agencies still have problems with poaching.

**Species Changes**

Traditional ecological knowledge includes changes in the environment from a historical perspective (Chalmers and Fabricus 2007). Several family members had observed changes to the composition of the animals. Two participants noted that there is now a brown lizard that inhabits Palm Valley. This is a recognition of the invasion of the Cuban brown anole (\textit{Anolis sagrei}), an exotic species that is now throughout Florida. A whitish colored frog, likely the Cuban treefrog (\textit{Osteopilus septentrionalis}) has been observed and was identified as originating in Cuba. The Cuban treefrog is considered to be an invasive species and is a threat to biodiversity since it eats native frogs.
Several participants have seen coyotes (*Canis latrans*) on both sides of the intracoastal waterway. In addition, comment was made that Canadian geese (*Branta Canadensis*) have not been seen in the past, but are present now, appearing in disturbed settings such as neighborhood ponds. Due to the decline in Canadian geese populations in the 1960s, the Florida Fish and Wildlife Service reintroduced Canadian geese to Florida, including adjacent Duval County. Canadian geese eat grasses, and are adapted to urbanized areas, including golf courses, and some have ceased to migrate. Chinese tallow trees (*Triadica sebifera*) were also noted as recent arrivals in Palm Valley.

In addition to observations about the arrival of new species, there were reports of less frequent observations of otters, toads, frogs, and spiders. The recognition of the changes to the species composition is a classic example of the usefulness of traditional ecological knowledge especially for land management practices (Davis and Wagner 2003). This information can help in biodiversity conservation, environmental assessments and education (Berkes et al. 1995). Unfortunately there does not appear to be any structured use of this information by organizations or the government.

**Traditional Ecological Knowledge, Cosmology and Ethics**

Cosmology is the fourth factor in identifying the existence of traditional ecological knowledge (Berkes 1999). Family members have religious icons displayed in the yards. Donna’s garden is an example of the acknowledged link between the spiritual and the environmental. The grotto, poem and verses demonstrate this connection, and are depicted in Figure 6-6.

Donna has pictures of the “trees of her life” on display in her home, demonstrating the incorporation of environmental features into her belief system. A live oak tree was
planted by her driveway that she and her husband hauled from many miles away. The tree is lopsided, showing the burden of being dragged many miles to its final destination.

The trees are a significant part of living in the woods. Donna lives in an area dominated by pine trees that are planted in rows, demonstrating that the prior land use was a timber farm, which still occurs in the area. Living amongst the pine trees, Donna explained that the sound of the wind in the pines is magical and she never heard it until she lived on Twenty Mile road, since her childhood home was not located in a timber area.

TheTwenty Mile Road area is now surrounded by a new town called Nocatee, which is planned to have in excess of 30,000 residents at build out. Prior to this planned development, only a few dozen families inhabited the 15,000 acres that is now a part of Nocatee. Portions of Nocatee have been built, including a highway and some internal roads. Donna noted that the roads were elevated above the natural surface level of the land, essentially placing her and her neighbors in a hole. When the time comes, Donna plans to move further out to the country since it is not her desire to live in a planned community. She is concerned, however, that whoever purchases her land would have to bring in fill dirt to bring the land up to the level of the surrounding development to keep from being flooded based on the altered hydrology. The fill would mean that all of the trees on her land would be destroyed, a fact that clearly bothers her.

The ecological knowledge of this Cracker family is threatened by the extensive residential and commercial growth that has both occurred and been approved for future development. The families that still reside in Palm Valley are now surrounded by
extensive development. While they live on lots that are at least an acre, the open woods, fields and swamps are being drained, bulldozed and paved on a daily basis. This loss of habitat will likely result in the loss of these natural educational opportunities that the families experienced in the past. With the high density development, a special trip to a park will have to be made to have access to the vast natural resources with which these family members grew up. In fact, Donna’s family had plans to build her dream house and get rid of the trailer they presently reside in; however, the new town of Nocatee sprung up in the surrounding 15,000 acres and the plans were put aside. In time, her family will leave since they will no longer be living in the country. Only the slowed economy has delayed the inevitable departure from Palm Valley.

Figure 6-6. Garden photos. A) Hand-painted prayer in garden, B) religious grotto in garden. Photos by author.
Figure 6-7. Series of photos. A) patron saint statue by grape arbor, and B) entrance to paddock, inscribed with: “He speaks and the sound of his Voice is so Sweet the birds hush their song.” Photos by author.

**Intergenerational Transmission: Family Comparison**

The results of this study demonstrate that the Mickler family has a wide-ranging knowledge of the flora and fauna of Palm Valley. Table 6-4 sets forth the family comparison for animal names.

<table>
<thead>
<tr>
<th>Gender</th>
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<tbody>
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<tr>
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</table>

Table 6-5 sets forth the family comparison for plant names.
Table 6-5. Comparison of family knowledge of plant names

<table>
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<th>Number of Plants Freelisted</th>
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</table>

The oldest generation consisted of four family members ranging from 77-91 years old, including Sid, his sister, and the two Miers. While Sid had a vast knowledge of flora and fauna, and was most often listed as the person within the family with the most knowledge, his 91 year old sister had very limited knowledge. Thus the older generation does not necessarily have the greatest knowledge, and it may well depend on the individual. While Sid described many activities he participated in related to the land, his sister was not nearly as active in the outdoors. This generation ranked second (three-way tie), sixth, tenth and twelfth in knowledge of animal names. In knowledge of plant names, this generation ranked sixth, seventh, tenth and thirteenth in ranking.

The second generation consisted of five family members ranging in age from 46 to 63. The overall most knowledgeable person was Donna and she is in this generation. My key informant, Sid, correctly selected Donna as the person with the most knowledge. Donna named 65 plants, with the next closest participant naming 34 plants. Her knowledge of plants is remarkable in comparison to the entire sample. Donna’s
knowledge of animals is also remarkable, but not quite as extreme in comparison, naming 69 animals, with three people tying for second place, each naming 53 animals. Donna clearly has a great knowledge of local flora and fauna. The members of this generation ranked first, second (three-way tie), fifth, sixth and ninth in knowledge of animal names. For knowledge of plant names, this generation placed first, third, two members tied for fourth, and eighth place. This generation is skewed slightly toward the middle to top rankings.

The third generation consisted of three members ranging in age from 28-31 years old. These three family members ranked second (three-way tie), eighth and eleventh in knowledge of animal names, and ranking second, ninth and twelfth in knowledge of plant names. Notably, the person who ranked second in both plant and animals names is Donna’s son, Keith, emerging as the expert for this generation. During his first year of school, his teacher informed Donna that he was not doing well, to which she responded that he had more common sense than the adults at the school. This study demonstrates that doing well in school does not equate with greater local ecological knowledge.

The youngest family participant is Sid’s 12 year old great grand-daughter. While her knowledge of animals was the least in the family, she has a greater knowledge of plants than her peers in this study, as well as a greater knowledge of plants than 11 other participants, both family and non-family, tying with a 81 year old male family member and a 53 year old male, non-family member in knowledge of names of plants. It would be worth following up on the family to determine if these trends continue along these lines, especially as regards the youngest generation.
Urban sprawl did not begin in Palm Valley until the late 1970s. Thus the first two generations in this study became adults prior to the urban sprawl impact on the environment. The third generation, however, was born during urban sprawl and a rapidly increasing population in St. Johns County. Nonetheless, members of the third generation continued to have extensive knowledge and use of the native flora and fauna. The families, however, did not live in the new, urban sprawl areas, and were somewhat removed from the initial sprawl pattern. In fact, Donna’s family lived on the west side of the Intracoastal Waterway, which did not develop into a major sprawl pattern until about the past five years. Thus while the third generation was born during the advance of urban sprawl, there were still undeveloped areas during their childhoods. In addition, the Guana State Park and adjacent beaches, rivers and marshes provide fairly intact environmental resources, that now abut urban sprawl, but still provide a haven and natural resource. The fourth generation would be worth follow-up study since urban sprawl has reached across Palm Valley and St. Johns County, thereby limiting natural resources and providing a fragmented environment.

With regard to the question of experts, the two names that had the highest response to the question about which family member had the greatest knowledge were Sid and Donna. As it turns out, these two had the greatest knowledge for their respective generations. Other participants either tied with or exceeded Sid’s knowledge of names, but it was clear at the time of the interview that Sid was quite tired, which may have had an impact on the results. One non-family participant listed “old-timers” as the persons with the most knowledge, which is consistent with other indigenous groups who have tribal elders as the experts in traditional ecological knowledge.
CHAPTER 7
CONCLUSIONS

The Mickler family collectively provided information on all four of Berkes' (1999) traditional ecological factors: 1) names of natural phenomena, 2) functions and uses of phenomena, 3) land and resources management systems, 4) cosmology. Thus it is clear that relative newcomers to a region can possess traditional ecological knowledge and establish a new line of such a system. As Hill and Helvely (2009) found, the key appears to be a close-knit family, where learning and activities take place. Collectively, this family has spent a lot of time in the woods and swamps of Florida and have taken note of new species such as Cuban anole, Cuban toad, and Canadian geese, as well as the rarity or non-existence of species, such as the otter, Florida black bear and Florida panther. Even the loss of abundance of spiders, toads and frogs during the years is noted by family members.

Given the educational levels of the family, with none of the participants having completed any college degrees, and some not completing high school, the knowledge of the local flora and fauna was outstanding. In addition, the correct identification of native flora and fauna was excellent. In addition to this knowledge, the Mickler family identified native flora and fauna that were not identified in the DEP 2009. While there is some discontinuity in the knowledge of the local flora and fauna, the knowledge is not being presently lost, and in fact there appears to be some increase in knowledge, especially as it relates to native plants. There is a large disparity in plant knowledge as compared to animals, for both Crackers and local participants, and this disparity is worth further thought on the need for more education about plant species, especially given the large number of plant species that exist. The fact that the environment has been heavily
impacted since colonization may explain a lesser knowledge of plants. Timbering was and still is a major industry in northeast Florida, and has resulted in mono-culture tree-farming of slash pines, to the exclusion of many other species, and natural communities that are supported by such species like long leaf pine.

There does not appear to be a loss of traditional ecological knowledge, and certain family members become experts, with a keen interest in the environment and outdoors. This expertise is recognized by other family members and apparent in the homes and lifestyles of the experts. Even with today’s market-based economy, the younger members of the family still enjoy outdoor activities such as fishing and hunting, and demonstrate a solid knowledge of flora and fauna. It appears that perhaps the middle-aged members take more interest in this knowledge and are in a position to pass this tradition on to their children and grandchildren, although such a conclusion would need more participants to verify the age differences. There also appear to be experts that emerge in each generation, with at least one family member per generation demonstrating a greater knowledge than their cohort.

While the Mickler family originates from Europe and are therefore immigrants to this area, they have established roots in this area. Given the fact that there are no recognized indigenous or Native American tribes in this region, and have not been since the first Mickler arrived in Palm Valley, the Micklers filled the niche of the new indigenous people. It appears that Crackers, with their love of the outdoors, backwoods, and living off the land, are the new indigenous people of the area. Unfortunately, with the rampant development and commercialization of Florida as a tourism, retirement, commercial and residential destination, the Florida Cracker culture too is threatened.
With the preference for living in the country, urban sprawl threatens this lifestyle, leaving the family members with the decision to either live amongst the urban sprawl where their family has resided for more than a century, or to uproot and move further out into the country.

While there are limitations to this study, especially based on sample size, which is constrained by family size, the findings were quite clear that the knowledge is being passed to the new generations. It would be worth expanding this study or using this model with other similarly situated Cracker families or similar groups in other parts of the country who have historic roots in remote areas that were once pioneer borderlands.

The Mickler family is as indigenous a group as can be found in this region. The Crackers are a sort of neo-indigenous culture in the sense that they occupied backwoods regions that were vacant or being vacated by the original Native Americans, with whom they shared a love of living with nature. Much like many other indigenous groups, they share an oral history style that passes information on from generation to generation. The ecological knowledge demonstrated by the Micklers was not learned in school or from books; it was learned from family and experience. Thus traditional ecological knowledge can occur in neo-indigenous groups, and experts can arise amongst them. Local peoples, even those who started here as immigrants, can become experts in local ecological knowledge, developing their own traditional ecological knowledge. Local, state and federal regulators, as well as educators, should appreciate and acknowledge this alternative form of knowledge and useful resource. Families such as the Micklers, and subcultures such as the Florida Cracker culture, should be recognized and sought out in making land use and conservation decisions.
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Whitfield, Stephen J.

Will, Lawrence
Yarlett, Lewis L.

Zarger, Rebecca K. and John R. Stepp
BIOGRAPHICAL SKETCH

Deborah Andrews graduated from the University of Maryland with a Bachelor of Arts in Psychology. Thereafter, Deborah graduated from the University of Florida School of Law with honors, joining the law firm of King & Spalding in Washington, D.C., after taking the Florida Bar. Deborah is also a member of the District of Columbia Bar, as well as the bar of various federal courts including the Middle District of Florida, the District of Columbia, the District of Maryland, the Fourth Circuit, the District of Columbia Circuit and the U.S. Supreme Court Bar. Deborah later moved to Florida and established her own law practice. As an attorney, Deborah practiced environmental and land use law, administrative law, litigation, corporate regulatory matters, estates and trusts.

While in Florida, Deborah has worked primarily on public interest matters, specializing in environmental and land use issues, as well as continuing her civil litigation practice. Deborah has worked on a variety of environmental issues, including issues related to wetlands, water quality, beaches, estuaries, wildlife, habitat, potable drinking water and consumptive use of water, conservation, park preservation, management and acquisition of public lands, urban sprawl, transportation, coastal construction, and alternative energy sources.

Deborah was appointed to the St. Johns County Buffer Committee, which studied impacts to wetlands and wildlife, and the need to buffer water resources. In 2000, Deborah was awarded the Florida Bar President’s Pro Bono Service Award for the 7th Judicial Circuit. She has also received several awards from the Sierra Club. Deborah has also served on various local community boards and has been active in local and state issues. In 2010 Deborah returned to the University of Florida to pursue graduate work in environmental anthropology.