

**The Endangered Species Act, local power and contested  
issues on the rural-urban interface**

by

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## ABSTRACT

The focus of this research project is to examine some of the effects that implementing the Endangered Species Act can potentially have on a community who is dealing with social and ecological issues due to urban growth, agricultural practices, or other man-made factors. This case study focuses a small area of what are known as the eastern Nebraska saline wetlands near Lincoln, Nebraska in the Little Salt Creek watershed. These wetlands, home to the endangered Salt Creek tiger beetle (*Cicindela nevadica* var. *lincolniana*) and the saltwort plant (*Salicornia rubra*), provide numerous ecological and hydrological services to Lincoln and its surrounding area. But recent developments over the past two centuries have led many of the saline wetlands to be drained and filled, and their hydrology disrupted due to the channelization of streams for both urban and rural uses. More importantly, much of the watershed serves as Salt Creek tiger beetle and saltwort habitat while also providing agricultural income for landowners in the area.

With the listing of the Salt Creek tiger beetle on the Federal list in 2005, the beetle has emerged as the central figure in a debate dividing those who wished to develop and those who aspired to protect these rare saline wetlands. In using an inductive methodology, I employ ethnography to study the situation surrounding the saline wetlands and the community of Lincoln to take a closer look at these questions. A total of 15 people were interviewed from August 2006 to April 2007. The interviewees were chosen based upon their different roles involved in the past and future of the eastern Nebraska saline wetlands. In each interview, the participants were asked to explain their role in the eastern Nebraska saline wetlands; give a brief overview of the wetlands, the salt creek tiger beetle, how it ended up on the Endangered Species Act; and then talk about the community's response to the implementation of the Endangered Species Act.



After analyzing interview transcripts for common, emergent themes, I found that there were several common subjects that surfaced. First and foremost, there is a clear social structure between the four different groups involved: 1) planning officials; 2) agency professionals; 3) The Nature Conservancy, and 4) landowners; with landowners falling at the bottom of the pyramid and agency and planning officials controlling the outcome of the situation. Second, several of the interviewees mention that the implementation of the Endangered Species Act has made the beetle a controversial central issue in the future of the conservation of the Eastern Nebraska saline wetlands. A number of the interviewees (including several agency professionals and landowners) feel that getting the Federal government involved in this process is not a good idea for the future of the salt marshes because it has made the issue a contentious one. Third, through the use of an inter-agency partnership and the Endangered Species Act, social control is gained by legislative force and land use zoning.

## CHAPTER ONE

### INTRODUCTION

#### ***Background: The Endangered Species Act of 1973***

One of the most far-reaching wildlife conservation laws ever ratified throughout the world, the Endangered Species Act (ESA) of 1973 has been at the center of many controversial ecological debates since its enactment (Weber et al., 2005; U.S. Fish and Wildlife Service, 2005b). Like other laws that place limits on private property rights, the Endangered Species Act has its share of both critics and proponents. In many cases, the ESA has been used to inhibit urban expansion, agricultural and/or forestry practices, and human infringement on wildlife habitat, thereby attempting to protect species that are threatened or on the verge of extinction (Easter-Pilcher, 1996; Sidle and Bowman, 1988; U.S. Fish and Wildlife Service, 2007). In 1973, Congress passed this Act in order to counter the increasingly high rates of extinctions facing many fish, wildlife and plant species throughout the United States (U.S. Fish and Wildlife Service, 2005b). The U.S. Fish and Wildlife Service is primarily responsible for implementing this Act, but in order to adequately put it into practice and enforce it, the U.S. Fish and Wildlife Service also works with a number of other local, state and national and non-profit organizations (U.S. Fish and Wildlife Service, 2005b).

In most cases, the Endangered Species Act covers an entire species, but the ESA is general enough to also include sub-species and distinct vertebrate populations (U.S. Fish and Wildlife Service, 2005b). In order for a species to initially become listed on the Federal Endangered Species list, one or more of several criteria need to be met. The first is the presence of threatened destruction or modification of the species' habitat (U.S. Fish and Wildlife Service, 2005b). The second factor considered is whether the species is over-exploited for commercial, recreational, scientific, educational, or other purposes (U.S. Fish

and Wildlife Service, 2005b). The third is whether the species has been negatively affected by disease or predation (U.S. Fish and Wildlife Service, 2005b); the fourth is whether existing regulations protecting this species have been adequate to protect it; and the fifth is whether the species has other manmade factors that may be negatively affecting the species (U.S. Fish and Wildlife Service, 2005b).

### ***Case Study: The Endangered Species Act in Practice***

In order to study some of the effects that implementing the Endangered Species Act can potentially have on a local watershed community that is dealing with ecological and social issues due to urban growth, agricultural practices, or other man-made factors, I chose to look at one particular case study – a watershed on the rural-urban interface of Lincoln, Nebraska.

Over the past several decades, Lincoln, the state capital of Nebraska and home to the University of Nebraska-Lincoln, has faced enormous population pressures on the fringes of the city. From 1990 to 2000, the city's population grew from 213,641 to 250,291 residents; with a 17.7% urban gain and a rural population increase of 12.4% (U.S. Census, 1990 and 2000). Over the past several decades, the rural areas of Lincoln have been experiencing increasing growth pressure from acreage, housing and industrial development. Several watersheds surrounding the city of Lincoln are dealing with these pressures, but the Little Salt Creek watershed on the northern edge of Lincoln (intersected by Interstate 80) is arguably one of the most ecologically endangered [See Figure 1-2, p. 14]. In this watershed, lying within Salt Creek and its drainages and situated to the north and northeast of the capital city Lincoln, there is a small area of what are known as the eastern Nebraska saline wetlands [See Figure 1-3, p15]. An ever-present reminder of an ancient sea that once covered the area, these wetlands are home to a number of species indigenous to the region, namely the Salt Creek tiger beetle (*Cicindela nevadica* var. *lincolniana*) [See Figure 1-1] and the saltwort

plant (*Salicornia rubra*), which are now both listed as “endangered” species due to dwindling populations (Farrar, 2005; Willey and Perkins, 2005, U.S. Fish and Wildlife Service, 2005). In addition to providing habitat for these endangered, native species, these wetlands also serve important hydrological, ecological, social and historical functions to Lincoln and its surrounding areas (Farrar, 2005; Willey and Perkins, 2005).

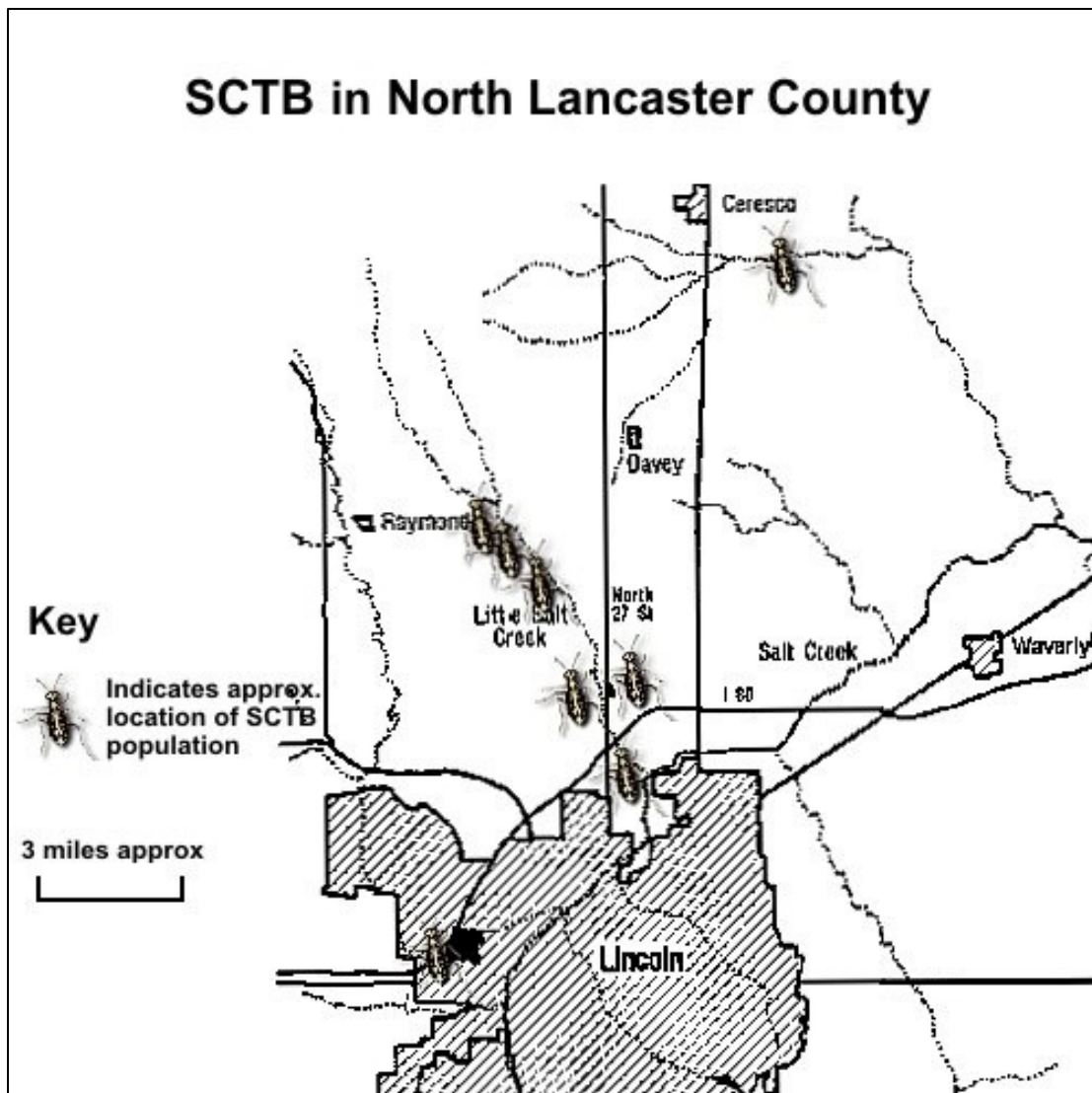


Figure 1-1. Salt Creek Tiger Beetle Habitat. Map Source: [www.entomology.unl.edu/lgh/sctb/maps.htm](http://www.entomology.unl.edu/lgh/sctb/maps.htm)

Historically, the eastern Nebraska saline wetlands have been an important landmark for the city of Lincoln and were one of the reasons that Lincoln became situated in the area that it currently exists [See Events Timeline, pp. 12-13]. The establishment of Lincoln took place, at least in part, where it did because of the initial economic development potential for salt mining in the area (Farrar and Gersib, 1991; Cunningham, 1985). With the proximity of the salt marshes to a booming economic hub - Omaha, Nebraska - which lies nearly 50 miles away from the city, early settlers saw great financial growth possibilities in these salt marshes. The Morton Salt Company, one of the better known companies that began mining in the area, originally set up facilities during the 1860s in the area due to the potential for salt mining in Lincoln (LaGrange et al, 2002; Farrar and Gersib, 1991; Cunningham, 1985).

In addition to serving as a source of historical pride, these salt marshes also play a number of important ecological and hydrological roles to the area. First, these wetlands provide great hydrological benefits to the city of Lincoln by serving as a flood control mechanism and improving water quality through filtration of potentially harmful chemicals and organisms (Farrar and Gersib, 1991; Lincoln City-Lancaster County, 2002). Second, they provide critical habitat for local wildlife, such as various types of birds and game, as well as various species of insects and plants, one of these being the now endangered Salt Creek tiger beetle, which serves as an indicator species for the saline wetlands (Farrar and Gersib, 1991; U.S. Fish and Wildlife Service, 2005; Lincoln City-Lancaster County, 2002), and has recently become the center of public debates over what should happen in the future to this particular region.

### ***The Disappearance of the Saline Wetlands and the Beetle's Critical Habitat***

Although these marshlands serve important social, ecological and hydrological roles in Lincoln, a large part of the saline wetlands present at the time Lincoln was settled no longer exist. Prior to settlement of the area, the saline wetlands occupied nearly 20,000 acres

and were restricted to Salt Creek and its drainage basins (Farrar, 2005). Since the area surrounding Lincoln was settled, many of the wetlands have been drained and filled, and their hydrology disrupted due to the channelization of streams for both urban and rural uses (Farrar, 2005). Additionally, according to the U.S. Fish and Wildlife Service, “since the late 1800s, more than 90 percent of these wetlands have been destroyed or severely degraded through commercial, residential and agricultural development and transportation projects,” (Willey and Perkins, 2005, pg. 4) leaving approximately 122 acres of barren salt flat and saline stream edge habitat for the Salt Creek tiger beetle in the eastern Nebraska saline wetlands (Willey and Perkins, 2005). Of these remaining 122 acres, according to the U.S. Fish and Wildlife service, “merely 15 can be considered ‘not highly degraded’.” (Willey and Perkins, 2005, p. 4) [See Events Timeline, pp. 12-13].

To put things into perspective, an author from Nebraska Commonwealth who came upon Lincoln in the late 19<sup>th</sup> century described the area in this way:

Approaching Lincoln from the east, the first remarkable object that meets the eye of the stranger is a succession of what appears to be several beautiful lakes extending along the lines of Salt Creek to the northward and westward of the town, the nearest a mile distant. As their crystal surfaces glisten like molten silver in the sunlight the illusion is complete, and the most critical landscape painter would be deceived as to their character. But there is no water enclosed in their grassy banks...These apparent lakes are the Salt Basins of Lancaster County, in themselves natural curiosities well worthy of a long journey to visit them. The floor of these basins is hard clay, smooth and level as a brick-yard and polished as that of a Hollander’s kitchen. They are covered with a white layer of crystallized salt, wonderfully pure...Intersecting these salt floors are little streams of salty water, so strongly impregnated that it will abrade the tongue and lips when tasted.

-Nebraska Commonwealth, September 7, 1867 (reprinted in Cunningham, 1985, pp. 14-15).

Unlike the author of 1867, a present-day visitor to the area would probably describe it using much different terms. The threats of development from urban expansion and existing farmland have had an enormous effect on the growth in this region, and in turn have led to

the disruption of the hydrology and ecology of this quickly shrinking area (Ducey, 1985). Consequently, a number of local planning and environmental officials have acted to protect these wetlands from further destruction. In 2002-2003, a major step was taken to protect these wetlands through the founding of a local preservation group called the Saline Wetlands Conservation Partnership (SWCP), which emerged out of a \$750,000 Environmental Trust grant to the city of Lincoln to preserve and re-establish the saline wetlands (Farrar, 2005). The partners for this conservation group each initially contributed \$75,000 to the cause and consist of the city of Lincoln, Lancaster County, the Lower Platte South Natural Resources District, The Nature Conservancy, and the Nebraska Game and Parks Commission (Farrar, 2005). Some of the other peripheral partners involved in this partnership include: Ducks Unlimited, the Nebraska Wildlife Federation, the Nebraska Sierra Club, Lincoln Homebuilders Association, Wachiska Audubon, Pheasants Forever, the Conservation Alliance of the Great Plains, the Cooper Foundation, the Nebraska Department of Environmental Quality, the U.S. Fish and Wildlife Service and the USDA Natural Resources Conservation Service (Farrar, 2005).

### ***The Saline Wetland Conservation Partnership: a Community Working Together***

Beginning as an inter-agency partnership in 2002, the Saline Wetland Conservation Partnership was started when “an inter-local agreement was signed between the City of Lincoln, Lancaster County, Lower Platte South Natural Resources District, The Nature Conservancy, and the Nebraska Game and Parks Commission” (City of Lincoln, 2007, p. 1). The overall mission of the partnership is to put into practice a Conservation Plan for the Eastern Nebraska Saline Wetlands. According to the City of Lincoln web-site, the Conservation Plan goal is:

‘No net loss of saline wetlands and their associated functions with a long-term gain in sustaining wetland functions through the restoration of hydrology, prescribed wetland

management, and watershed protection.’ To meet this goal the Plan includes Comprehensive Strategies that address: 1) Hiring a Coordinator, 2) Outreach and Feedback, 3) Planning and Coordination, 4) Wetland Protection, 5) Priority conservation Planning, 6) Stream Restoration, 7) Private Lands issues, 8) Taxes on public lands, 9) Research, and 10) Funding (City of Lincoln, 2007, pg. 1).

In addition to having a shared goal amongst the Saline Wetland Conservation Partnership, each agency or organization involved also has its own separate mission. Throughout the in-person interviews in this study, respondents were asked to explain their membership in the partnership and explain the role that each partner played within the organization. A number of agency members in the partnership pointed to the importance of including the Lower Platte South NRD in the Saline Wetlands Conservation Partnership because of the amount of flexibility and power they have within the area. One representative from the Lower Platte South NRD explains the mission of the Nebraska Natural Resources Districts and goes on to clarify what NRDs are:

Nebraska is the only state that has NRDs, but Nebraska had a whole bunch of political subdivisions dealing with flood controls, soil conservation, groundwater management. And then back in 1972 they said, “Let’s combine them all, give them some taxing authority.” Up on the wall they’ve got a list of the different things the legislature said – okay, let’s have a locally elected NRD board and hire a staff to work on those types of issues, soil conservation, flood control. Let’s give them some taxing authority so they can raise some money locally to do whatever they think needs to be done, whether it’s just education or it’s a cost-share program because a landowner has got an erosion problem and it’s going to cost quite a bit of money to solve it. You’ve also got where we can determine there’s some project that’s needed because again maybe it’s erosion or flooding, maybe they need the flood control dam to control flooding, those types of things. So anything within that realm, the NRD has the power or authority to look into it, figure out what the plan ought to be and work on implementing the plan. And the local people figure out who they want to elect to be on the board, so there’s those checks and balances in place to make sure that the board is doing what the public wants done...So that’s what the NRDs do. There’s 23 of them across the state. They’re kind of set up on drainage areas out as far as their boundaries. So the priorities of each NRD varies a lot from the Lower Platte South here in Lincoln to where you’re at [other NRD in Nebraska] and there’s different things going on there than there are here. So it allows each local board to make those decisions versus some kind of state wide priority that’s determined. So that’s what we do.



Additionally, several interviewees explained that The Nature Conservancy also plays a large role in the Saline Wetland Conservation Partnership (SWCP). When asked about the overall mission of The Nature Conservancy and why they became a member of the SWCP, one representative from The Nature Conservancy responded,

I would say probably in the last ten years or so we've really ramped up the idea of trying to leverage results by working through partnerships and local institutions. And I'd say we've put a very big emphasis on building local capacity. And like the Saline Wetlands Conservation Partnership is an example of where we're trying to build a local organization to protect saline wetlands so that we as an organization can go somewhere else and do... so we're not kind of chained to the landscapes that we're working in so much...(Lincoln 7, page 1).

Another representative from the non-profit adds that,

[The Nature Conservancy] started out as a bunch of scientists buying land to protect it and then has evolved dramatically from that now to – we still do some land acquisition, but we do a lot of land management. Now we do a lot more partnership work, we do a ton of conservation easements... all kinds of things. But basically the overarching mission is to preserve biodiversity. And so everything we do is aimed at that (Lincoln 7, page 1).

Two other important agency partners within the SWCP are the Nebraska Game and Parks Commission and the Nebraska Department of Environmental Quality (NDEQ). Both of these organizations operate as state organizations whose missions are (respectively) to promote environmental quality and education in Nebraska and to protect Nebraska's "air, land, and water resources" (NDEQ, 2007, pg. 1). These two collaborators, in addition to the city of Lincoln, Lancaster County, The Nature Conservancy, and the Lower Platte South NRD, are important partners in planning and organizing the future of the eastern Nebraska saline wetlands.

### ***Overall Goal of Partnership: Protection of Saline Wetlands***

With the city of Lincoln encroaching on this fragile area and with very little of the original wetlands remaining, the partnership decided they needed to do something to protect these resources. The first actions the partnership took after the organization was formally established was to purchase land containing saline wetlands from willing sellers and to make an effort to get other local landowners to protect their lands from development through conservation easements, which allow the lands to remain in private ownership while still protecting them indefinitely (Farrar, 2005; Willey and Perkins, 2005). Second, the city of Lincoln and Lancaster County approved a Comprehensive Master Plan to guide future growth and expansion in order to preserve the saline wetlands (Farrar, 2005). In order to do this, the city and county decided to exclude the majority of the area immediately north of Lincoln from its long-term development plans for the city (LaGrange et al, 2002). In the meantime, with beetle numbers dwindling and urban development rapidly encroaching on critical wildlife habitat, steps were taken by several conservation groups and officials to get the Salt Creek tiger beetle listed on the Federal Endangered Species list (Cochnar and Perkins, 2005) [See Events Timeline, pp. 12-13].

### ***The Beetle vs. Development: A Public Debate***

With many landowners in the area counting on selling their valuable land to developers in Lincoln for a large profit, or in many cases, to fund their retirement, the notion that the Salt Creek tiger beetle could end up on the Federal Endangered Species list sent shivers down some of these landowners' spines. With the potential for many of their lands to be rendered almost useless to a developer, numerous landowners in the area were left with little choice other than to ride out the storm and hope it would pass, sell their land quickly to developers before the beetle became listed, or sell their land to the Saline Wetland

Conservation Partnership for a price that was possibly less than what they would have received from a prospective developer.

For many in the area, the private lands that were once seen as promising money-makers, within a few years were to become lands under intense public scrutiny and public control. In 2000, the U.S. Fish and Wildlife Service designated the Salt Creek tiger beetle as a candidate species, which means that it was not yet listed on the Federal Endangered Species list but that it was “in some trouble and its status needed to be evaluated periodically” (Willey and Perkins, 2005, p. 5). Then, under legal pressure from the Earthjustice Legal Defense Fund and other plaintiffs, the Fish and Wildlife service agreed to propose a final listing determination for the Salt Creek tiger beetle for the national Federal Register by September 30, 2005 (Cochnar and Perkins, 2005). Finally, on October 6<sup>th</sup>, 2005, the beetle became listed on the Federal Endangered Species list due to low population numbers (Willey and Perkins, 2005) [See Table 1-1].

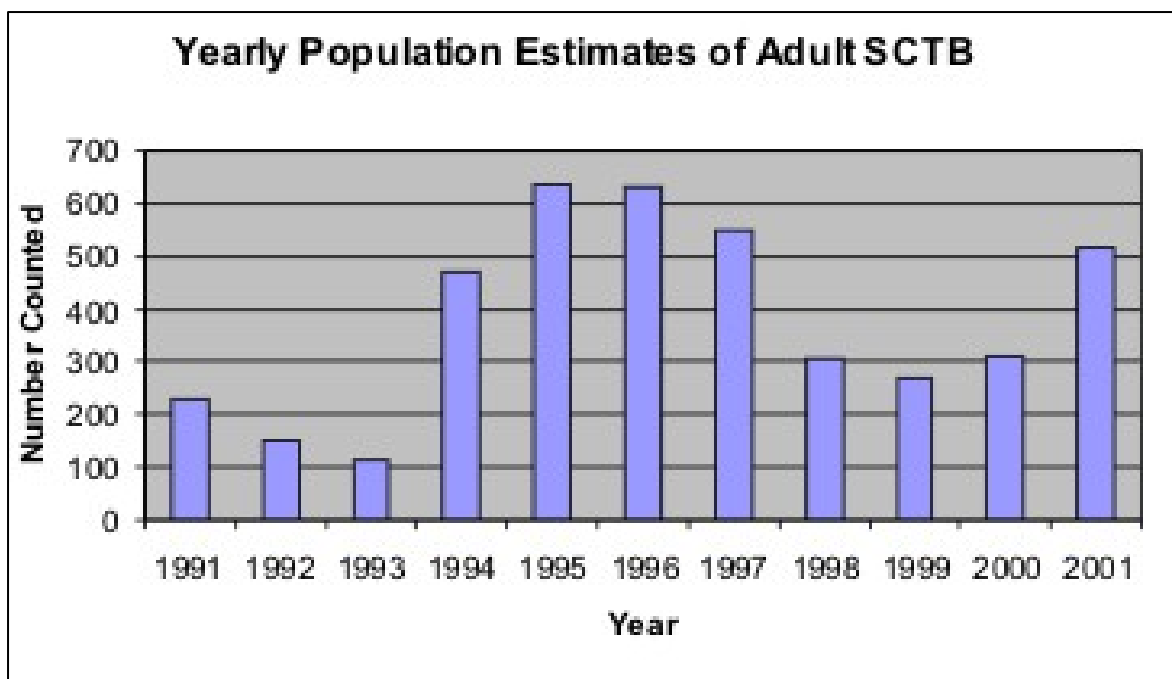


Table 1-1. Salt Creek Tiger Beetle Population Count, 1991-2001  
(<http://entomology.unl.edu/lgh/sctb/maps.htm>)

With the listing of the Salt Creek tiger beetle on the Federal list, the beetle emerged as the central figure in a debate dividing those who wished to develop and those who aspired to protect these rare saline wetlands. Furthermore, with many landowners having lost decision-making power on their lands to local, state and Federal officials, the situation leads to several questions:

- 1) How does one's relationship with the environment affect how one acts and feels in relation to the Endangered Species Act and to this situation in particular?
- 2) How is social control practiced to protect the local resources?
- 3) How can this particular community work together to solve their common land use and water problems?
- 4) Is the Endangered Species Act effective way to go about protecting these natural resources, or are there better avenues to solving these problems?

## **Timeline of Events regarding the Eastern Nebraska Saline Wetlands**

1857 First government survey of the region notes the great amount of salt to be harvested from the saline marshes

1850s-1880s “Salt Boom” takes place; commercial salt extraction from the eastern Nebraska salt marshes

1891 Sanitary District No. 1 (for Lancaster County) organized and begins planning channelization of Salt Creek (purpose to ensure that Lincoln’s sewage was carried away quickly and efficiently)

1917 U.S. Army Corps of Engineers begin channelization of Salt Creek

May 1950 flood in Lincoln – floods nearly 20,000 acres of land and causes other major financial and human losses

Post-May 1950 flood – Salt-Wahoo Watershed Association pushes for more extensive flood control in Lincoln

1950s U.S. Army Corps of Engineers and U.S. Department of Agriculture (USDA) develop flood control plans and plan for the drainage of Salt Creek

1954 Comprehensive flood control plan adopted including many local stakeholders

1950s Mosquito phobia from public – wetlands seen as detrimental to human health

1958 Preparation for the construction of I-80 takes place; Salt Lake drained

1960s Construction of levees along Salt Creek through Lincoln

1960s Sanitary District No. 1 no longer exists

1963 Last time Salt Creek floods in Lincoln

Late 1930s to 1980s Saline wetlands filled with rubble to increase land elevation

Mid 1950s-1988 Lincoln city dump existed on some of the city’s best saline wetlands

1970s to 1980s Small wetlands in north Lincoln filled to accommodate rapid growth

1980s Uniqueness of Eastern Nebraska Saline Wetlands begins to become more widely recognized

1990 Inventory of saline wetlands in Lancaster and Saunders county takes place; Partially funded by the U.S. Environmental Protection Agency (EPA) and conducted by the Nebraska Game and Parks Commission

1991-2005 Research documents declines in Salt Creek Tiger Beetle population size (numbers dwindle to around 150 total)

1995 The Nature Conservancy purchases 60-acre tract of land for Little Salt Fork Marsh Preserve; Burlington Northern Railroad Company creates 1<sup>st</sup> wetland mitigation bank in Nebraska (Little Salt Fork Marsh Preserve)

2000 Salt Creek Tiger Beetle listed on the state of Nebraska's Endangered Species list (listed as a "candidate species")

2001 Salt Creek Tiger Beetle Cabinet meets to discuss the most current informational and biological needs for the beetle

2002 Saline Wetlands Conservation Partnership is established

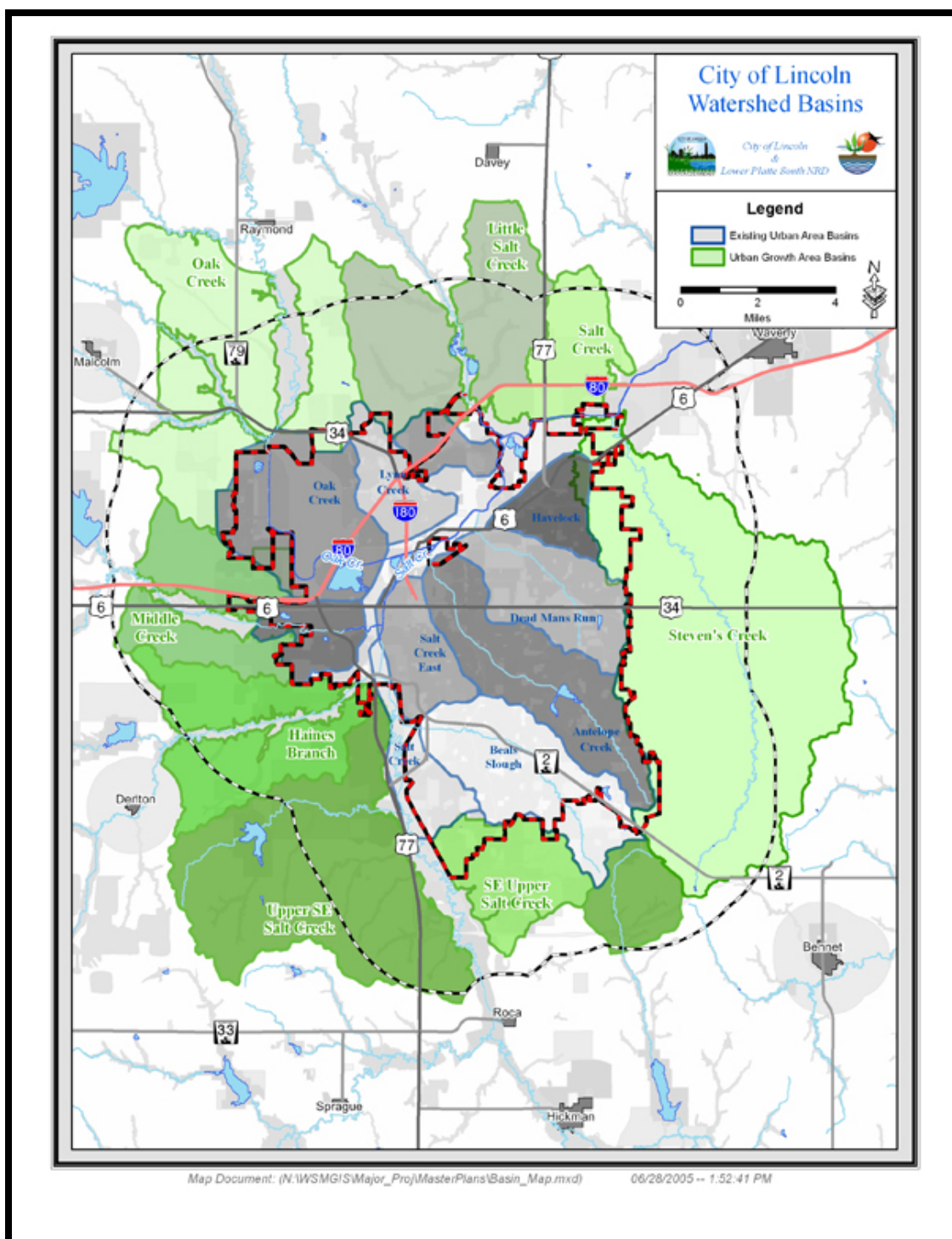
2003 Implementation Plan for the Conservation of Nebraska's Eastern Saline Wetlands completed

2002 and 2005 Nebraska Environmental Trust awards City of Lincoln and Partnership money for restoration and preservation efforts regarding the saline wetlands

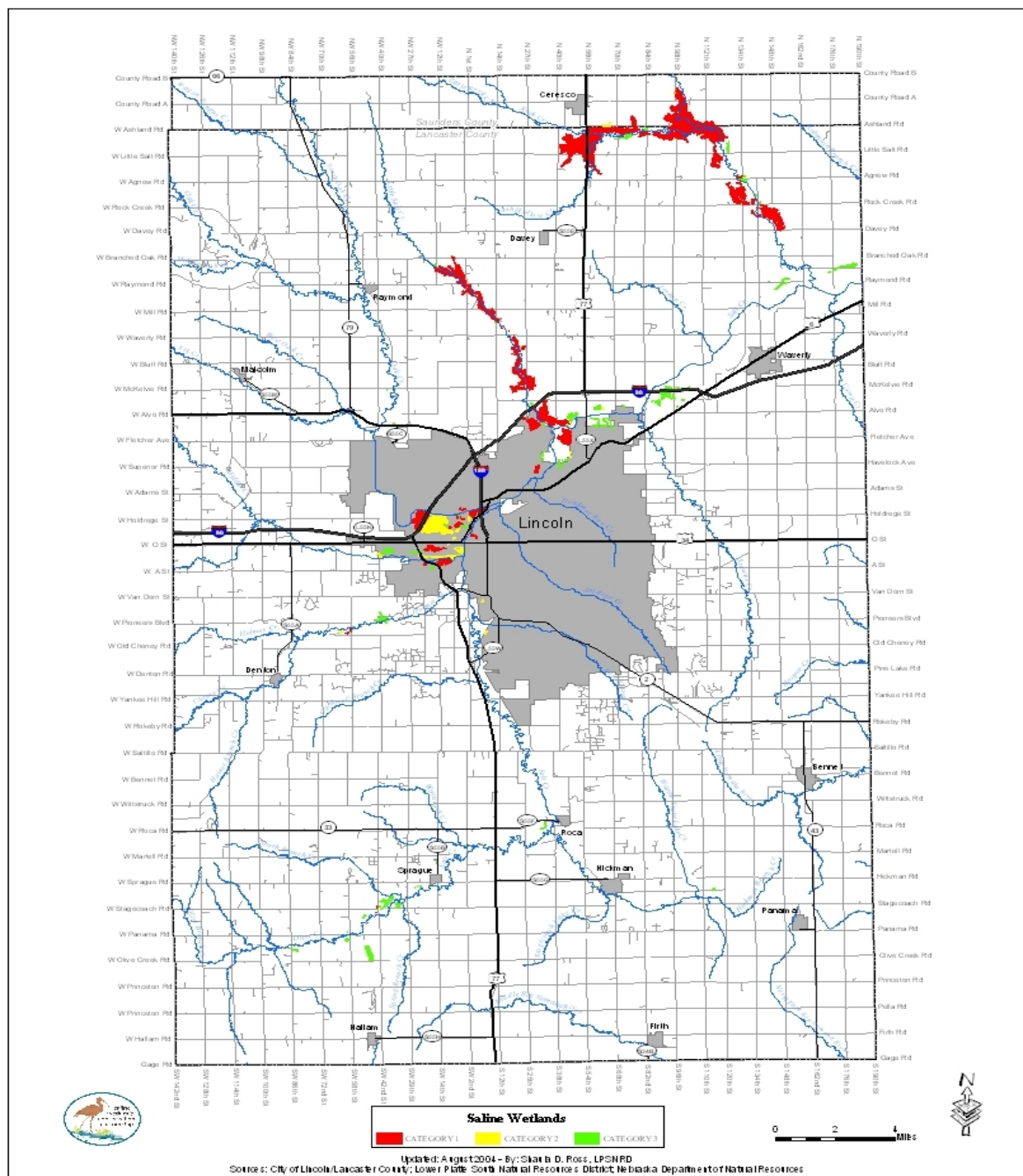
October 6, 2005 Salt Creek Tiger Beetle is listed on the Endangered Species list

May 2007 The U.S. Fish and Wildlife Service proposes draft of "critical habitat designation" for the Salt Creek tiger beetle

**Timeline Sources:** Farrar (1991); Zlotzky and Yost (1998); Willey and Perkins (2005)



**Figure 1-2. Watersheds surrounding Lincoln, Nebraska.** Map source: Lower Platte South NRD, <http://www.lpsnrd.org/docs/BasinProjects/basinproj.htm>



**Figure 1-3. Eastern Nebraska Saline Wetlands (Courtesy of Tom Malmstrom, City of Lincoln/Eastern Nebraska Saline Wetlands Conservation Partnership)**



## CHAPTER TWO

### LITERATURE REVIEW

#### *Different People Operating from Different Paradigms*

In order to answer the questions posed at the end of Chapter 1, we must first ask – who are the key players in this situation and where are they coming from? Too often, we forget to assess our population’s differing perspectives before evaluating a problem. In the case of natural resource management, many conflicting viewpoints are frequently involved. Since development and its effects on the local natural resource base is often an issue that brings many voices to the table, one thing that needs to be realized is that the multiple stakeholders involved are operating under different and often complex assumptions.

As Wright Morton (2003) and Hall (1999) point out, different people with different outlooks, such as the conservationist, the environmentalist, the industrialist, the agency official and the farmer, are often in disagreement as to what should happen within a watershed. In most cases, disagreement exists because of how these different sectors generally think about their watershed and the land within it. Weber (2000) suggests that there are four distinct ways of thinking about the environment: 1) as a preservationist; 2) as a conservationist; 3) as a contemporary environmentalist; and 4) from a grass-roots ecosystem management approach [See Table 2-1].

Weber (2000) describes these four paradigms as competing models of ecosystem management throughout the U.S., with each specific one carrying its own set of assumptions and beliefs. The “preservationist” operates under the assumption that nature does not include the human species and therefore must be kept separate from humans in order to prevent degradation and that human intelligence cannot compare to nature’s intellect. On the other hand, the “conservationist” thinks that the earth can be “saved” from humans through human resourcefulness and technology and typically operates from a top-down approach. Unlike the

conservationist, the “contemporary environmentalist” distrusts agency expertise and sees technology as detrimental to the overall environment because it is one of the main reasons why the environmental crisis exists in the first place (Weber, 2000). Finally, a person operating from the “grass-roots ecosystem management” perspective believes that “good” technologies are a crucial natural resource management tool and that nature is more vigorous and durable than others think (Weber, 2000).

**Table 2-1. Four Environmental Paradigms (Weber, 2000)**

<b>Characteristics</b>	<b>Preservation</b>	<b>Conservation</b>	<b>Contemporary Environmentalism</b>	<b>Grass-Roots Ecosystem Management</b>
<b>Role of science and technology in decision-making</b>	Spiritual/religious qualities of nature are more important than science	Science over politics  Top-down, scientific management (as practiced by government experts) will save us	Science over politics  Distrusts production science, agency expertise  Technology problematic because a key reason why environmental crisis exists	Science fused with politics  “Good” technologies, especially advanced information technologies, are critical management tool
<b>Approach to science</b>	Human-based science not comparable to nature’s (evolved) intelligence	Production science – identifies problems but does not tie to bigger ecological picture	Impact science  Focus on whole of biotic community  “Equilibrium” model of ecology dominates  “Quality” of nature matters	Impact science  Focus on whole of biotic community  “Chaos” model of ecology dominates  “Quality” of nature matters
<b>Are there limits to growth?</b>	Yes, must lock up nature to prevent degradation	Yes, but limits can be forestalled by human ingenuity	Yes, must save nature from humans; earth has limited carrying capacity	Yes, but nature is more robust and resilient than others believe

### ***Power and Local Conflict over Property Rights***

In addition to different perspectives on the environment, there also exist diverse viewpoints on property rights related to environmental protection. As in most private land and natural resource debates, arguments over the rights that private property owners have to their own lands often ensue. Anderson and McChesney (2003) write that,

Property, in its most complete form...gives its owner the right to derive value from the asset, to exclude others from using it, and to transfer the asset to others...However, property rights may be less complete, allowing an owner to derive only some value from an asset, exclude only some people from using it, or transfer only certain uses for a specified time period (Anderson and McChesney, 2003, p. 1).

As Anderson and McChesney (2003) point out, in some cases, property owners may not have complete access to or control over all of their assets, especially when it comes to cases of water and natural resource issues. Since many natural resources are considered “public goods,” the presence of this type of good on one’s so-called private property often presents a social problem.

When it comes to private lands and natural resource issues, the line between common and individual good can often be incredibly thick, with landowners sometimes leaning toward their ability to do what they want with their lands, with the open opportunity of developing if they wish (Jackson-Smith et al., 2005) and agency professionals (based on legal mandates) tilting toward preservation or conservation for the common good, creating a conflict of interest. Jackson-Smith et al. (2005, p. 588) write that, “restrictions on land development are frequently met with intense political opposition from landowners who resent having their ‘development’ options limited and worry about the reductions in the market value of their property.”

Since limitations on private property rights are generally not met with enthusiasm from most landowners who wish to sell their land for development, one can imagine that

these situations are usually not taken lightly. A struggle between local landowners and the local and Federal agency members often surfaces as private landowners who wish to develop their land are forced to choose the common good over their own individual good.

### ***Division of Power and Social Control***

In dealing with most natural resource and development issues, the government plays a dominant role in control over natural resources on private lands. According to Flora (2004), there are several other ways to control natural resource situations in which multiple players are involved. Often, one method is combined with another or others in order to accomplish certain goals.

The technique that is used frequently in the United States, is the use of force through legislation, laws and agency mandates [See Figure 2-1]. In the majority of these cases, the Federal government, or state and/or local agencies hold control but act only when other attempts at conservation and/or the preservation of natural resources have failed. In this situation, power and therefore social control rests mainly in the hands of those who make the laws. Those at the bottom of the pyramid are often given little or no input as those at the top make the rules, sometimes causing those at the ground level to become displeased with the entire situation. In other words, using classical Marxist terminology, the “bourgeois,” or those in power, control what happens in the life of the “proletariat,” (the citizen) and in turn, there often is resentment as the proletariat feels that he/she is not given adequate power (Marx and Engels, 2003 ed.).

Although the use of force is a fairly efficient way of getting to social control, Flora (2004) points out that it is not the only technique that can be used – there are also other routes to arrive at specific resource goals. One of these methods involves using economic means. This type of control operates when those who make and enforce laws give economic incentives to landowners and/or farmers who abide by the rules, or through using negative

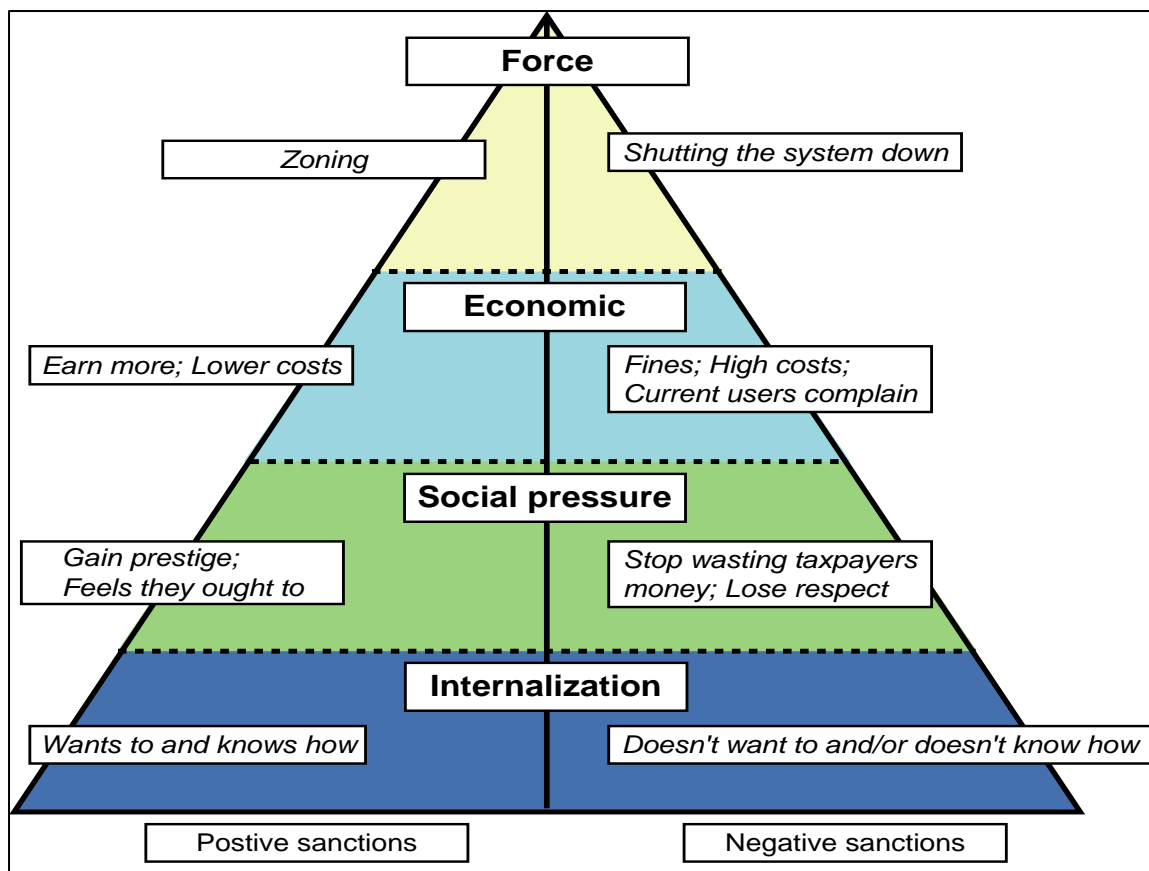
sanctions (such as fines) to penalize so-called bad actors. According to Flora (2004) and Wright Morton (2003), this type of social control mechanism is frequently used by the local, state and Federal governments to influence conservation and development practices.

The third method of social control, which is much less traditional than control by force or economic means, is influence through social pressure. In this situation, members of a local community place collective demands on a person or group to accomplish certain goals. The people who hold power are not necessarily those who hold elected or appointed positions, but rather those who hold influence in the community. In some cases, these individuals are respected community members who are held in high regard by others for their high status, their work ethic, or because they are seen as someone to look up to (Flora, 2004). In other cases, public pressure through the press or mass media can also give power to a community to take action.

Finally, the fourth method, which is often one of the most effective means of social control, comes when the individual internalizes a certain conservation or environmental ethic. At this level, the individual takes it upon him or herself to act in a way that will achieve a certain goal (Flora, 2004). In most cases, these last two methods of social control frequently achieve long lasting effects in terms of accomplishing conservation and development goals.

Flora (2004) points out that when local officials feel overburdened with local problems and therefore cannot adequately address certain environmental situations, outside entities may come in and impose some of the more invasive forms of communal control, such as using force and negative economic sanctions. Flora (2004) goes on to add that community leaders, instead of being organizers using the resources of the community in accordance with the public's goals and objectives, operators and officials can instead blame outside forces for the decisions they did not actually make. Additionally, she points out that this mentality is not without reason but it often leads neither to collaborative community governance nor to a

greater ability to manage the system and the community in a responsible manner (Flora, 2004).

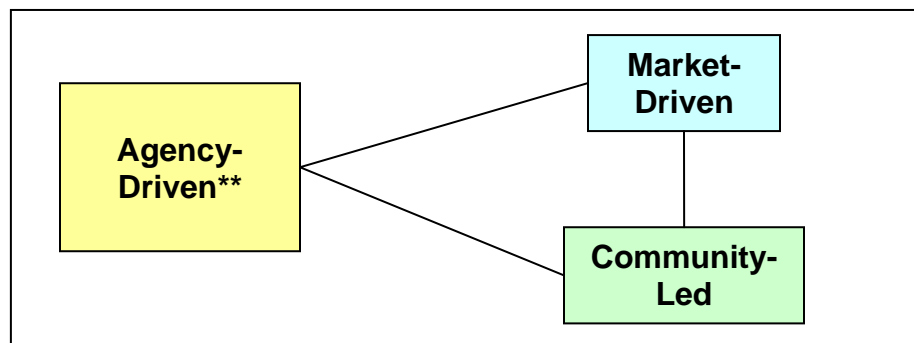


**Figure 2-1. Flora's Model of Social Control Applied to Ecosystem Management**

Additionally, Wright Morton (2003) expands on the social control model and finds that in the United States, there have generally been three different avenues to solving resource problems [See Figure 2-2]. These three methods are: agency-driven, market-driven, and community-led (Wright Morton, 2003). Wright Morton (2003) writes that generally, in the United States, agency-directed activities have been the central resource control mechanism since the late 1800s (Wright Morton, 2003; Novotny and Chesters, 1981).

Wright Morton (2003) also adds that the other two forms of responses to land management (market-driven and community-led) can produce both positive and negative effects on the natural resource base. The market-driven approach, which is aimed at

enhancing individual profitability is an effective way to solve problems of productivity and efficiency, but often has detrimental effects on the environment. The market-driven approach does not take fully into account external negative consequences for the natural resource base (Wright Morton, 2003).



**Figure 2-2. Three Basic Responses to Solving Environmental Problems (Wright Morton, 2003)**

On the other hand, the community-led approach attempts to counteract some of the negative environmental effects brought about by the market-driven and agency-driven approaches. Instead of focusing primarily on efficiency and profitability and “letting the market decide” or letting outside agencies decide how the citizen base should manage their resources, the community-led approach takes into account the public’s overall goals and well-being (Wright Morton, 2003). Wright Morton (2003) adds that market-driven and government-led environmental fixes alone weaken democratic procedures by removing personal and social ownership and civic responsibility from the resident of the watershed (Wright Morton, 2003). The community-led approach tries to give some of this responsibility back to the citizens by allowing the community to define the problems and the solutions for the watershed. Instead of coming at the issue from an “agency-knows-all” attitude, the citizens are asked what they think is relevant and how they feel the situation could be remedied with or without agency and/or economic assistance (Wright Morton, 2003). In other words, this collective effort shifts citizen involvement from simply

supporting agency-led efforts to take on more of a decision-making role (Wright Morton, 2003).

### ***Working Together: Partnerships and Solving Natural Resource Issues***

Although resource management using a top-down approach (through force) can be efficient and, in turn, force civic cooperation, it is not always entirely effective in the long-term (Wright Morton, 2003; Flora, 2004). Force may initially move a community to take action, however it may also cause public distrust. In situations where control through force is not able to stand alone, community partnerships can be employed in order to get to specific resource goals for the long-term. Focht and Trachtenberg (2005, p. 86) suggest that, “the most important aspect of the watershed decision context is trust,” and that over the past several decades, we have seen a general “decline in the general levels of trust within [the U.S.] society...especially regarding bureaucratic structures that have downplayed stakeholder’s desires to participate in policy-making.”

In order to counteract this decline in governmental trust, they propose that an effective way to gain trust in a community is to encourage community involvement through stakeholder participation in “processes for evaluating and managing environmental risks” (Focht and Trachtenberg, 2005, p. 85). They also suggest that there are two different forms of trust: 1) that felt or not felt between stakeholders, and 2) that felt or not felt between local citizens and agency officials (Focht and Trachtenberg, 2005). These types of trust/distrust can combine to form four different roles for stakeholder participation [See Table 2-2].

Focht and Trachtenberg (2005) add that where social distrust exists, stakeholders are not as likely to cooperate with one another. When this happens, stakeholders participate in the process only to protect their own interests. They write that, in this situation, “The proper participation strategy should aim at building consensus on the importance of policy effectiveness, not on policy ends” (Focht and Trachtenberg, p. 95). In



other words, it should help by “producing familiarity, identifying shared values, respect for demonstrated competence, tolerance for different perspectives, and a civic orientation – all of which build social trust” (Focht and Trachtenberg, 2005, p. 95).

**Table 2-2. Hypothesized Stakeholder Participation Roles and Level of Trust (Focht and Trachtenberg, 2005)**

<b>Trust Dimension</b>	<b>Level of Trust</b>	<b>Stakeholder Participation Role</b>
<b>Social</b>	Trust	<i>Cooperative Role</i> Stakeholders are willing to cooperate in the policy process
	Distrust	<i>Defensive Role</i> Stakeholders wish to participate defensively to protect their interests
<b>Official</b>	Trust	<i>Subdued Role</i> Stakeholders are willing to allow policy officials to lead the policy process
	Distrust	<i>Enhanced Role</i> Stakeholders wish to participate energetically in the policy process

Roseland et al. (1998) also make the case for stakeholder involvement in public decision-making in land and natural resource management. They write that “shared decision-making” can be used as a strategy to resolve land use conflict. Shared decision-making, to Roseland et al. (1998, p. 27) means that, “on a certain set of issues, for a defined period of time, those with authority to make a decision and those who will be affected by the decision are empowered to jointly seek an outcome that accommodates rather than compromises the interests of all concerned.” Burroughs (1999) also finds that when stakeholders are given the opportunity to participate in natural resource decisions, knowledge about the resource issues is gained and shared, and citizens in turn take a greater interest in their local natural resource issues.

### ***The Endangered Species Act as Effective?***

Regarding collaboration and enforcement of the Endangered Species Act, Weber et al. (2005) find that long lasting problem-solving capacity demands on-going contact with empowered, locally-based partners (horizontal relationships) as well as continued communication between governmental agencies within the Federal system and local entities, residents and non-governmental institutions (vertical relationships). Weber et al. (2005) make the case that in order to gain public support for the Endangered Species Act on a long-term basis, both horizontal and vertical capacity need to be taken into account. By simply disregarding one section of the community, attempts at collaboration no longer remain as effective.

In many cases, the Endangered Species Act has failed to embrace community collaboration as an effective technique to gain public support and has instead left out specific members of the community, most often landowners (Annett, 1998; Lambert, 1995; Lambert, 1996; Moore, 1992; Peterson et al., 2004), leaving those who depend on the land for economic reasons to wait as others decide their fate. This lack of inclusive collaboration often leads to local conflict when landowners feel left out of the picture and are no longer willing to cooperate with local, state and Federal officials.

### ***The Endangered Species Act and the Eastern Nebraska Saline Wetlands***

With the recent listing of the Salt Creek Tiger Beetle on the Federal Endangered Species, I propose to look for answers to the questions that I posed earlier when I asked, 1) does a person's outlook on the environment affect how he/she feels about the protection and conservation of the saline wetlands; 2) how is social control practiced to protect the natural resources in Lincoln?; 3) how can this particular community work together to solve their common land use and water problems; and finally, 4) is implementing the Endangered

Species Act an effective way to go about protecting Lincoln's natural resources, or are there better routes to solving these problems?

In using an inductive methodology, I employ ethnography to take a closer look at these questions.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### ***Methods and Data***

In many research situations, sending surveys to an appropriately defined sample of participants would be adequate to address a particular research question, but I felt that in this case, survey data alone would not be satisfactory to explain the situation. In order to look into the answers to the four questions I have proposed, a more in-depth examination of the situation in Lincoln, Nebraska is needed. Because I am trying to study the underlying assumptions, beliefs and experiences of those involved on both sides of the controversy over the implementation of the Endangered Species Act, this study consists of a mixture of both quantitative and qualitative data.

In this study, interview data, short interview surveys (based upon the Weber (2000) environmental paradigm categories), a four-state Heartland regional survey and a general Nebraska survey, along with archival and current unobtrusive data such as media reports, the city of Lincoln's Comprehensive Master Plan, and other written public documents regarding the eastern Nebraska saline wetlands and the Salt Creek tiger beetle are used as data. Instead of focusing expressly on quantitative data which can sometimes gloss over the real, underlying situation, I chose to study Lincoln more thoroughly by using an ethnographic methodology.

In using ethnographic methods, multiple data sources support an inductive approach. This type of research, often termed "ethnography,"

Provides a direct means for examining interactions among and within social groups. Ethnographers immerse themselves thoroughly in the social context, taking on the role of the student, to request that participants teach the ethnographer how to interpret the situation (Peterson et al, 2004, p. 745).

Schensul et al. (1999, p. 1), add that, “ethnographers discover what people do and why before they assign meaning to behaviors and beliefs.”

### ***The Research Process***

According to Schensul et al. (1999), in ethnography the development of theory is the first step of the research process, with formative theory serving as the basis. They write that formative theory “starts with a problem or question to be addressed in a localized population” (Schensul et al., 1999, p. 17). They also “recommend that ethnographers begin a study by choosing an initial paradigm” from which to reference, and to “think through the relationship of their research to these frameworks” (Schensul et al, 1999, p.15-16). They make the point that the researcher’s ideas should then be put into a research model to frame the project and to refer to throughout the research process. In doing this, the research model allows the investigator to: 1) bring to light the research objectives, and 2) “provide a set of ideas that can be compared to empirical results and systematically modified” (Schensul et al., 1999, p. 17).

In other words, formative theory provides the opportunity to generate hypotheses to which a researcher can test against their observations. Throughout the research process, these theories are continually modified as time progresses and as new observations are made. The conclusion of the research consists of an interpretation of the results by re-visiting the original theory, which should then provide a starting point for further, ongoing research (Schensul et al., 1999).

This type of research can be very useful in situations where the researcher does not want to go into the study location with a set of assumptions and beliefs about the population to be studied. In addition, it can also be useful to agency officials who are working out in the field with people who are often operating from different paradigms than themselves. To illustrate this, Peterson et al. (2004) make the point that, in the case of environmental

management, ethnography can play an important role for environmental administrators because it can enable them to understand where the people that they are working with are coming from. They write that,

Understanding the practices of group identity and performance should enable natural resource managers to minimize the negative aspects of environmental conflict, while developing more effective strategies for involving human communities in natural resource management policy formation and implementation (Peterson et al., 2004, p. 745).

In other words, ethnography, when performed accurately, can be a highly effective methodology both for researchers and agency professionals in the field.

### ***Collection of Ethnographic Data***

In order to study the relationships between community members to their watershed, to each other and to the saline wetlands, I chose to present these ethnographic findings as a case study. According to Ellen (1984, p. 237), “case studies are the detailed presentation of ethnographic data relating to some sequence of events from which the analyst seeks to make some theoretical inference.” In this particular case study, I used in-person interviews, short interview surveys, a “Water Issues in the Four State Heartland Region” survey, a “Water Issues in Nebraska” survey and other printed documents such as media accounts, the city’s comprehensive plan, and various reports by the agencies in the area to answer my research questions.

### ***Research Subjects***

A total of 15 people were interviewed from August 2006 to April 2007. The interviewees were chosen based upon 4 roles and/or associations with the past and future decisions about the eastern Nebraska saline wetlands. Four of the interviewees were chosen

based upon their roles in the future of planning in the Lincoln area. They included the city's long-range planner, the county planner, a planning commissioner, and the manager of the watershed management section of the public works department. In addition, six interviewees were chosen because of their involvement in local organizations engaged in planning and implementing policy regarding the Lincoln salt marshes. These participants included two representatives from the Nebraska Department of Environmental Quality (NDEQ), the District Conservationist for the Lancaster County Natural Resources Conservation Service (NRCS), a representative from the Nebraska Game and Parks Commission, a representative from the Lower Platte South Natural Resource District (NRD), and the director of the Saline Wetland Conservation Partnership. Additionally, the third group consists of two representatives who were chosen from The Nature Conservancy - a non-profit environmental organization that owns land in the watershed and is one of the main partners in the Saline Wetland Conservation Partnership. Finally, a total of seven landowners were originally chosen to be interviewed who owned land containing saline wetlands or adjacent to the salt marshes, but only three of those landowners were interviewed. Two of the landowners interviewed graze livestock and own land containing Salt Creek tiger beetle habitat; the other is not a farmer, but owns land adjacent to saline wetlands. Of the remaining four landowners, two refused to be interviewed and two are farmers and could not be reached for an interview due to being busy with planting season. The names of these landowners were given to me by a member of the Saline Wetland Conservation Partnership who works with local landowners on a regular basis.

### *Interviews and Surveys*

In each interview, the participants were asked to explain their relationship to the eastern Nebraska saline wetlands; give a brief overview of the wetlands, the Salt Creek tiger beetle, and how it ended up on the Endangered Species Act; and then talk about the community's response to the implementation of the Endangered Species Act [See Appendix A for question prompts]. All of the interviews except one were audio recorded and transcribed verbatim, and then were coded and analyzed according to common emergent themes.

After reviewing the transcripts, three major themes emerged as interviewees expanded upon these questions. First and foremost, a clear social structure becomes evident between the four different groups involved in this watershed: 1) the planning officials; 2) agency and conservation professionals; 3) The Nature Conservancy representatives and 4) landowners. Out of these four groups, landowners fell at the bottom of the pyramid as agency, planning, and non-profit officials controlled the outcomes of the situation. Second, several of the interviewees mention that the implementation of the Endangered Species Act has made the Salt Creek tiger beetle a controversial central issue in the future of the conservation of the eastern Nebraska saline wetlands. Furthermore, a number of the interviewees (including several agency professionals, non-profit representatives and landowners) feel that getting the Federal government involved in this process was not a good idea for the future of the salt marshes because it has made the issue a contentious one. Third, through the use of an inter-agency partnership and the implementation of the Endangered Species Act, the agency, planning, and non-profit professionals are able to control the future outcomes of this area.

Other topics and minor themes that came out of the interviews include: the importance of taking into consideration different perspectives when planning for the future of



the saline wetlands; a lack of trust between landowners and agency officials; and finally, a general fear of the unknown by landowners.

In addition to participating in an in-person interview, each interviewee was also given a short survey in which they ranked where they stood on an environmental continuum based upon stating to what degree they agreed with the following statements:

- The creeks, rivers and lakes and their surrounding habitats in our community are important because they offer aesthetic, natural places for people to replenish the spiritual side of the human personality.
- The creeks, rivers and lakes and their surrounding habitats in our community exist primarily as resources for people to use to make a living, survive and prosper.
- The degradation of creeks, rivers, lakes and their surrounding habitats in our community must be stopped regardless of the costs to our consumptive economy. These resources are irreplaceable and more valuable than the economic values placed upon them.
- The separation of human activity from the creeks, rivers, lakes and their surrounding habitats in our community is impossible and we must find ways to balance people and nature with the goal of protecting our resources while providing for the economic and social base of our community.

These statements, based on the Weber (2000) categories: preservation, conservation, contemporary environmentalist, and grass-roots ecosystem management are designed to test whether the interview respondents' environmental paradigms are related to their beliefs about the eastern Nebraska saline wetlands. The respondents were given the following choices: 1= "Highly Agree"; 2= "Agree"; 3= "No Opinion"; 4= "Disagree"; and 5= "Highly Disagree."

### ***Four-State Regional Heartland Survey***

In addition to using in-person interviews and short interview surveys, I also chose to use data from a four-state “Water Issues in the Four State Heartland Region” survey as well as a “Water Issues in Nebraska” survey to compare the data from this case study to a more general population. These surveys are part of a national project conducted by Dr. Robert Mahler, Professor of Soil and Environmental Sciences at the University of Idaho and were funded by the United States Department of Agriculture Cooperative State Research, Education, and Extension Service under agreement 2004-51130-02249, also known as the Heartland Regional Water Coordination Initiative (Morton and Brown, 2007a; Morton and Brown, 2007b).

These two surveys, respectively, assessed the perceptions and attitudes about water issues in these areas by surveying a random sample of respondents from the Heartland region (Iowa, Nebraska, Kansas, and Missouri) and then a random sample of Nebraska citizens. The four-state Heartland regional survey was mailed to 1,925 randomly selected residents from the four-state area in the spring of 2006; 1,042 surveys were returned (a 54 percent return rate). Additionally, the Nebraska survey was mailed to 325 randomly selected Nebraska residents in the spring of 2006, with 209 of those surveys returned (a 64.3 percent return rate). Findings for both surveys were analyzed and prepared by Iowa State University and the University of Idaho and then were presented in the form of two separate reports (Morton and Brown, 2007a; Morton and Brown, 2007b). All reports are available on-line at [https://www.extension.iastate.edu/store/ListItems.aspx?Keyword=water%20 issues and/or](https://www.extension.iastate.edu/store/ListItems.aspx?Keyword=water%20issues%20and/or%20heartland) <http://www.heartlandwq.iastate.edu>.

### ***Selection of Research Site***

In August of 2005, my major professor and I received funding from a USDA-CSREES (406) grant in order to study civic involvement in watershed management throughout a four-state area including Iowa, Nebraska, Kansas and Missouri. In selecting a site for my thesis project, I originally chose Lincoln, Nebraska based on its similar demographic characteristics to Des Moines, Iowa, another watershed case study that was already taking place during that time.

The Little Salt Fork watershed was chosen as the site for this particular watershed case study based upon the existence of these rare wetlands and the presence of an existing wetland conservation partnership in the area. Compared to other watersheds in this area, this particular watershed seems to be one that is both highly visible to the public and is greatly affected by Federal involvement in the watershed.

### ***Potential Problems with Methodology***

In using an ethnographic methodology, researcher interaction with participants can potentially bias the findings of the research. As Peterson et al (2004, p. 745) point out, “ethnographic researchers, as socially situated humans, recognize that they are neither value-neutral nor unresponsive to contextual sites,” therefore “his or her interactions with informants become part of the research.” In order to control for this potential effect, my major professor and I analyzed our findings separately and then triangulated our data together (Lincoln and Guba, 1985; Peterson et al, 2004).

Additionally, Ellen (1984) suggests that case studies can become a problem when researchers attempt to argue that a case study is representative of an entire population. In this research, this case study may not be a “typical” case, but rather a “telling” case in which events are explained through analytical induction (Ellen, 1984). This type of case study

enables me to, “establish theoretically valid connections between events and phenomena which previously were ineluctable” (Ellen, 1984, p. 239), rather than trying to infer causality between variables.

### ***Validity***

To increase the validity of this study, I used triangulation between various written accounts, interviews, and survey data to provide a more complete picture of the situation surrounding the eastern Nebraska saline wetlands. Additionally, in order to control for individual researcher bias, I triangulated my findings with another colleague’s results from this study to make sure that I did not let my opinions and beliefs take over and control the outcomes of this research.

## CHAPTER FOUR

### RESEARCH FINDINGS ON SOCIAL PRESSURE AND INTERNALIZATION

#### *What Happens When People Operate from Different Paradigms?*

To answer the questions proposed in the previous chapters, I will use the Weber (2000) environmental paradigm categories to explain the differences and similarities that exist between the different sectors of my interview sample. To do this, I analyze the survey data I have gathered (based on the Weber (2000) environmental paradigm categories) from the research participants to see where each group falls in Weber's environmental paradigm grouping. In addition, in order to put the results from the case study into perspective with the rest of the Midwest and Nebraska, I use data from a four-state regional Heartland survey looking at "Water Issues in the Four State Heartland Region" and a "Water Issues in Nebraska" survey to explain the general similarities and differences that exist among the different demographics within this region. Finally, I use quotes from the interview transcripts to explain the perspectives of the different participants involved in the process.

In using Flora's model of social control as applied to ecosystem management to analyze the situation, it appears that social pressure from others and internalization (or one's environmental ethic) play key roles in this case study. In addition, according to the Weber (2000) environmental paradigm categories, the environmental ethic of research participants was analyzed according to their responses to the statements on p. 28. The respondents were asked to state to what degree they agreed or disagreed to these statements. In order to analyze the different perspectives involved in this case study using the Weber (2000) environmental paradigm categories, the respondents were separated into four groups: 1) the planning officials, 2) governmental agencies, 3) a non-profit group, and 4) landowners. To

see whether or not there were any similarities within and between groups, I looked at how each of the interviewees responded to the statements in Table 4-1.

### ***Interview Survey Results***

After looking over the results from the short surveys, it appears that no matter what group the interviewees fell into, most (13 out of 15) respondents either agreed or highly agreed with the grass-roots ecosystem management statement, “The separation of human activity from the creeks, rivers, lakes and their surrounding habitats in our community is impossible and we must find ways to balance people and nature with the goal of protecting our resources while providing for the economic and social base of our community.” The other two respondents marked “no opinion” [See Table 4-1]. Even though disagreement between groups may exist about how best to accomplish this, the respondents appear to agree that protecting the natural resource base is necessary for the needs of the community.

Additionally, 12 out of 15 respondents either agreed or highly agreed with the preservationist perspective that, “The creeks, rivers and lakes and their surrounding habitats in our community are important because they offer aesthetic, natural places for people to replenish the spiritual side of the human personality.” While planning and agency officials (6 out of 10) were more likely to “highly agree” with this statement than landowners or the non-profit representatives in this case study, all five of these other participants (landowners and non-profit officials) also “agreed” with this statement [See Table 4-1].

Where the respondents disagreed most was with the traditional conservationist statement that, “The creeks, rivers and lakes and their surrounding habitats in our community exist primarily as resources for people to use to make a living, survive and prosper.” The only two respondents who agreed with this statement were one landowner and one non-profit agency representative.

Finally, the contemporary environmentalist perspective, represented by the statements, “The degradation of creeks, rivers, lakes and their surrounding habitats in our community must be stopped regardless of the costs to our consumptive economy. These resources are irreplaceable and more valuable than the economic values placed upon them,” drew the most differentiation between survey respondents [See Table 4-1]. The reasons for this delineation could be numerous. First, two of the agency respondents disagreed with the first sentence, “The degradation of creeks, rivers, lakes and their surrounding habitats in our community must be stopped regardless of the costs to our consumptive economy,” but either agreed or highly agreed with the second statement, “These resources are irreplaceable and more valuable than the economic values placed upon them.” These two respondents noted on their surveys that natural resources, especially aquatic resources, are more valuable than our society currently recognizes, yet as one interviewee responds, we cannot “bankrupt society to recover and restore these resources” (Agency 6).

Second, as Weber (2000), points out, the contemporary environmentalist approach often comes about protecting natural resources from the perspective that we should protect our resources no matter the cost to the economy. This perspective often makes those who depend on natural resources for a living uneasy because this type of control takes the power to do what they need to in order to gain a profit out of their hands and places a higher value on community gain rather than on personal economic stability (Bultena et al., 1981; Weber et al., 2005; Anderson and McChesney, 2003; Jackson-Smith et al., 2005). For this reason, before interviewing respondents, I would have hypothesized that landowners, more than any other group, would have disagreed with this statement, but this was not the case. Instead, there was also disagreement among several agency and planning professionals.

**Table 4-1. Results from Case Study Interview Surveys**

<b>Affiliation</b>	<b>Preservation</b>	<b>Conservation</b>	<b>Contemporary Environmentalist</b>	<b>Grass-Roots Ecosystem Management</b>
<b>Planning 1</b>	N/A	N/A	N/A	Highly Agree
<b>Planning 2</b>	Highly Agree	No Opinion	Disagree	Highly Agree
<b>Planning 3</b>	Highly Agree	Disagree	Agree	No Opinion
<b>Planning 4</b>	Highly Agree	Disagree	Agree	Agree
<b>Agency 1</b>	Highly Agree	Disagree	N/A	Highly Agree
<b>Agency 2</b>	No Opinion	Disagree	Agree	Highly Agree
<b>Agency 3</b>	No Opinion	Disagree	No Opinion	Highly Agree
<b>Agency 4</b>	Highly Agree	Disagree	Agree	Agree
<b>Agency 5</b>	Highly Agree	Disagree	1) Disagree; 2) Agree	Highly Agree
<b>Agency 6</b>	Agree	Disagree	1) Disagree; 2) Highly Agree	Highly Agree
<b>Non-profit 1</b>	Agree	Highly Disagree	Agree	No Opinion
<b>Non-profit 2</b>	Agree	Highly Agree	Agree	Highly Agree
<b>Landowner 1</b>	Agree	Agree	Disagree	Agree
<b>Landowner 2</b>	Agree	Disagree	Agree	Agree
<b>Landowner 3</b>	Agree	Disagree	No Opinion	Agree

### ***Different Perspectives***

To explain some of this differentiation, one conservation official from the Game and Parks Commission points out that dealing with the rural-urban interface makes things interesting because, when trying to plan for the future of the community, there are many people with various wants and needs.

It's a real mix. Being in this urban interface. One of the other problems is that the stakeholders were so diverse. I mean, you had people, the traditional farmers out there, who just wanted to farm. And those people I think we made some inroads with, because we were interested in supporting open space, agricultural uses, hay and grazing; those types of things we're interested in the system. But there are people also who hold that land and look at it more as just – I mean, they're farming it as well – but it's an investment to them. As land prices have gone up because of the expanding of the city, they're looking at that really as their retirement package. So they were



very concerned if we did anything, like list the tiger beetle, that could cause land prices in the land they own to really decline in value and would create a financial problem for them. And so they have a whole different view on it. You also have a lot of people who moved into the country to own land for acreages. They're not tied to agriculture. They're not looking at it as their primary investment – it's either a second home site or it's their primary home site but they want open spaces and to be in the country. But they also want infrastructure associated with modern life. And so you've got those three elements in the rural community (Lincoln 8, page 5).

In other words, as this conservation official makes clear, there are different people with dissimilar priorities involved in this case study. When dealing with a watershed located on the rural-urban interface, these different mentalities overlap and can sometimes cause a conflict of interest.

### ***From an Urban Perspective***

From an urban management perspective, the ecological preservation of the eastern Nebraska saline wetlands makes sense. In Lincoln, being environmentally-conscientious is seen as beneficial to the entire community. Therefore, a number of conservation officials (one from the Lower Platte South NRD and the other from the NRCS) explain why the policies and actions taken in Lincoln point to an over-arching environmental conscientiousness.

I think Lincoln actually is more restrictive than what the federal government requires for regulations now too, to deal with – pollution discharges and things of that nature... You're dealing with a college town, you're dealing with a government town, so those communities tend to be a little more receptive to those kinds of issues (Lincoln 5, page 8).

[With development] So that's why they're making it not a high priority. And it also sends a good message to the environmental agencies that are in charge of the regulatory part of this – say, "Hey, you know, we understand it's there. We're not going to turn things loose and let it just go rampant up in that area." (Lincoln 6, page 6).

From an urban planning perspective, as shown in these quotes, environmental consciousness makes perfect sense. By being aware of environmentally-sensitive issues, not only are city planning and conservation officials able to be good stewards by taking care of the city's resources, they are also providing other benefits such as flood and erosion control for the city of Lincoln by controlling what happens on the outskirts of the city.

### ***From a Rural Perspective***

On the other hand, environmental sensitivity is sometimes seen as detrimental to personal gain and investment from a rural, landowner perspective (Bultena et al., 1981; Weber, 2000; Anderson and McChesney, 2003; Jackson-Smith et al., 2005). One representative from The Nature Conservancy talks about the effects that the Endangered Species Act has had on a local landowner that he knows:

One of the younger farmers that was beating us up at these meetings, he and I happened to be in the same childbirth class with our wives. And so we got to know each other outside of that setting, and he's about my age and we were talking. And he put an interesting perspective on it that we weren't getting at those meetings. He said, "You know, I can get out of owning that land, which doesn't do me much good – it's just family land but I don't have an attachment to it. But if I have 500 acres here, at the rate that this stuff is accruing in value, I can turn around and sell that and go get good farm ground in York County or Stuart County and have the farming operation that I want, versus the one that I'm stuck with here. So I really don't want the help here. I want to be there. And it was really kind of in that series of discussions, found out that that was kind of a prevalent attitude, that most farmers, if they're honest, will tell you they view their land as a retirement program, that the only reason they've stayed with it is because, you know, as soon as that 27<sup>th</sup> Street overpass, interchange, went in, they saw it as an opportunity to finally turn around marginally productive (from their standpoint) soils and land. So it was kind of an eye-opener. We thought we would be greeted as champions – you know, we were going to go help out the little guy. And it turns out that the little guy didn't want our help and saw us as being an obstacle to their financial security and their vision of farming success (Lincoln 7, page 4-5).

Additionally, this same The Nature Conservancy representative adds that originally, some members of the Eastern Nebraska Saline Wetlands Conservation Partnership, especially The Nature Conservancy, assumed that the majority of farmers in this area would like to keep their lands in farming, but since these lands were seen as bad farming ground, they were planning to sell it for a large profit to developers. The representative states that:

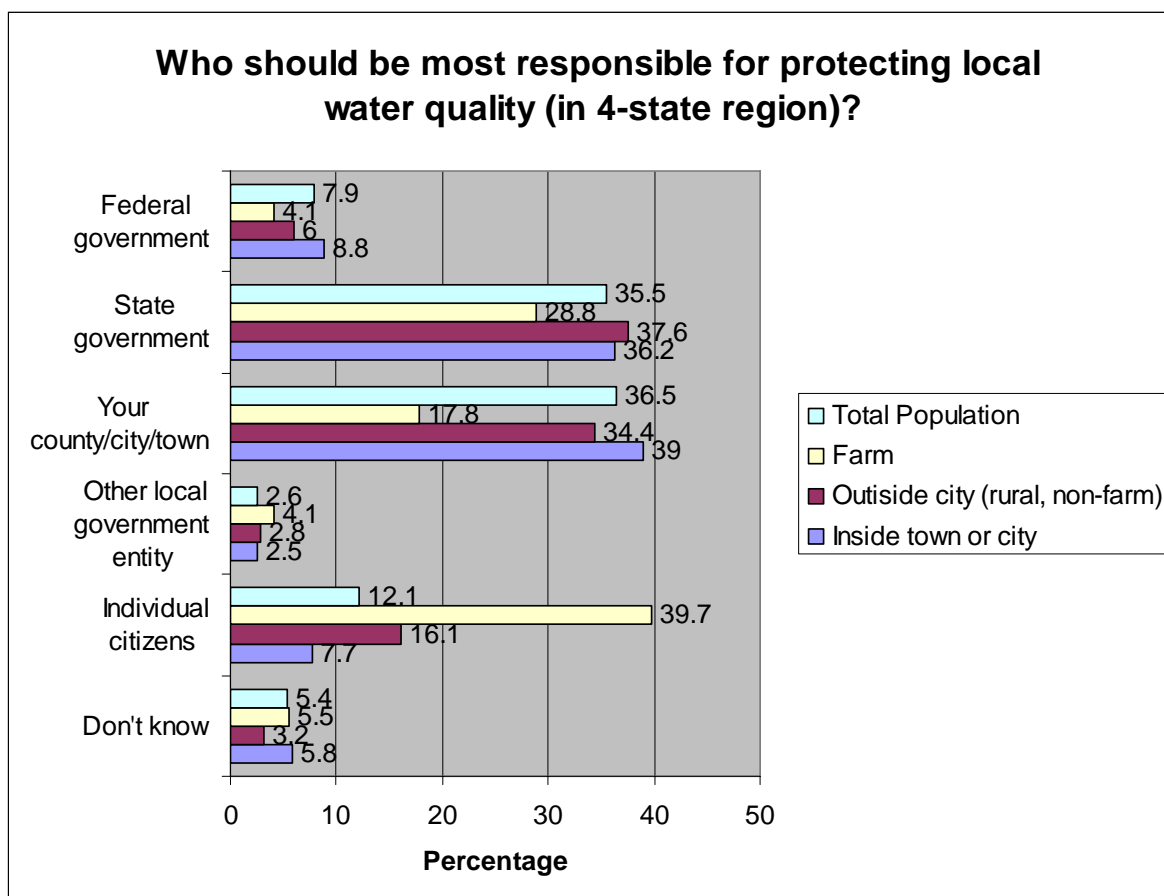
With the saline wetlands we've learned a pretty valuable lesson there pretty early on. We went up there thinking that we'd show up and try to work with local landowners to help them with easements and find ways for them to keep their land in farm production. And what we found out is that they were all up there waiting for town to get to them so they could sell their ground. They weren't really impressed with the ground for farming and grazing as much as they saw the potential for development. And so that partnership didn't evolve as a private lands incentive partnership – it became more of a, you know, how can we be competitive financially with real estate prices? (Lincoln 7, page 3).

Although conservation and planning officials may see environmental preservation as advantageous, those who reap benefits from using the natural resources base may not be as enthusiastic about being given limits to what they can and cannot use.

### ***Heartland Regional Survey and Nebraska Survey Results***

In addition to the short interview surveys and interview transcripts, data from the four state Heartland regional survey and Nebraska survey also show a clear differentiation about the ways in which rural and urban citizens think about water issues and where personal responsibility lies for these resources. Data from the four state survey show that citizens who live on farms are significantly more likely (39.7 percent) than those who live inside a town or city (7.7 percent) to believe that it is the responsibility of individual citizens to protect local water quality [See Figure 4-1]. Furthermore, those who live inside a town or city are more likely to believe that the Federal government (8.8 percent), state government (36.2 percent),

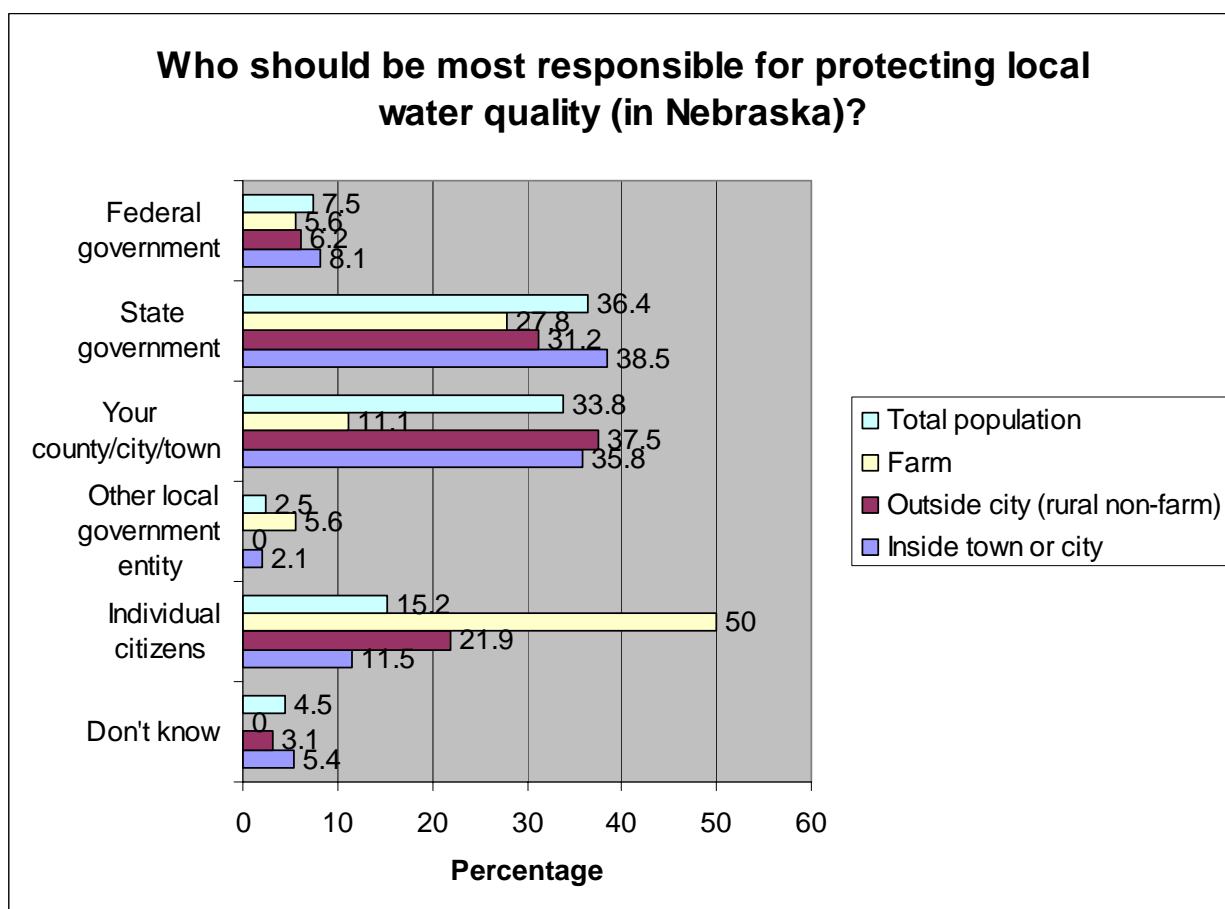
or one's county, city, or town (39 percent) should be responsible for protecting local water resources than those who live on a farm (respectively: 4.1 percent, 28.8 percent, and 17.8 percent).



**Figure 4-1. Who should be most responsible for protecting local water quality in the four state Heartland region? (Morton and Brown, 2007a)**

The results the “Water Issues in Nebraska” survey showed similar findings. Those who live on farms in Nebraska are significantly more likely (50 percent) than those who live in a city or town (11.5 percent) to believe that it is the individual’s responsibility to protect local water resources. Furthermore, those that live in cities or towns are also more likely to believe that it is the responsibility of the different branches of government to protect local

water resources than are those who live on farms. 8.1 percent of those who live in cities or towns believe that it is the responsibility of the Federal government to protect local water quality; 38.5 percent think that it is the state government's domain; and 35.8 percent believe that it should be the responsibility of the county, city or town government, as opposed to those who live on farms, who answered (respectively) 5.6 percent, 27.8 percent, and 11.1 percent [See Figure 4-2].



**Figure 4-2. Who should be most responsible for protecting local water quality in Nebraska? (Morton and Brown, 2007b)**

### ***What Do these Results Mean?***

Together, the collection of interview, short survey, and Heartland survey data show that there is common agreement between the interviewees from the four different groups. Between the 15 people interviewed, all either agreed, highly agreed, or were indifferent to the grass-roots ecosystem management (GREM) statement that, “The separation of human activity from the creeks, rivers, lakes and their surrounding habitats in our community is impossible and we must find ways to balance people and nature with the goal of protecting our resources while providing for the economic and social base of our community.” Although each group may disagree on how best to conserve the saline wetland areas, they all agree to some extent that these areas are valuable to the city of Lincoln. In the interview data, the differences of opinion become apparent as each group talks about the goals of their particular organization or group of people when conserving the saline wetlands.

Moreover, the Heartland survey and Nebraska survey data show that there is a difference of opinion (within the general Heartland and Nebraska populations) between rural and urban populations as to who should be responsible for protecting local water resources. Although the interviewees from this case study did not participate in these particular surveys, the survey data suggest, according to the general population, that there is a difference in how people think about personal responsibility as opposed to agency responsibility when protecting these resources. The results from Figures 4-1 and 4-2 show that the rural, farm population is more likely to think that protecting local water resources is one’s personal responsibility, while the urban population is more likely to believe that it is the responsibility of local, state and national agencies to protect them. These results could explain why there is a difference of opinion as to what would be the best route to protect the eastern Nebraska saline wetlands among the interviewees in this case study.

## CHAPTER FIVE

### RESEARCH FINDINGS ON SOCIAL CONTROL

#### *Who Holds Power in Local Decision-Making Endeavors in Lincoln?*

In using Flora's (2004) model of social control as applied to ecosystem management [See Figure 2-1] to analyze the social structure of the Eastern Nebraska saline wetland area, the findings of this research project indicate the emergence of a visible social arrangement within this particular community. It is evident; in particular, that when divided into four separate groups - 1) the planning officials, 2) governmental agencies, 3) the non-profit sector (The Nature Conservancy), and 4) landowners - the fourth group holds the least amount of power in local decision making processes. Through the use of both force and economic means, the planning officials, governmental agencies, and The Nature Conservancy are able to control how the landowners and other community members act.

Furthermore, in comparing the situation with the eastern Nebraska saline wetlands area to the Wright Morton (2003) model detailing the three basic responses to solving environmental problems, it is evident that the model used in Lincoln is a planning model and therefore is agency-driven, as opposed to a market-driven or community-led response.

#### *Planning control: Comprehensive Master Plan and Zoning*

The main way that the city planning officials and agency members are able to control the future of Lincoln's growth is through planning and zoning regulations. First and foremost, the city of Lincoln's planning officials play a dominant role in the future of the city in that they hold control of these regulations. One of the main mechanisms that allows the planning officials to control what happens in the city is that they have created and operate according to a Comprehensive Master Plan, which is a document outlining future plans for

growth in Lincoln. According to several interviewees (two planning officials and one official from the Lower Platte South Natural Resources District), the Master Plan provides a vision for where the planning department plans to allow building within the next 20 years:

The thing that we're trying to do is more of a comprehensive planning approach. And so when we look at the city of Lincoln...we're trying to do watershed maps or plans for both our new growth areas, areas that we know we'll be growing into, but also to go back and, part of that, look at our existing urban area for our master planning. And ultimately...our goal is to have a unified watershed plan for all the city of Lincoln and the future growth areas. (Lincoln 4, page 4).

I don't know if you got a copy of the comprehensive plan?...Because I mean that was passed in what, 2001, 2002, and that was probably the most environmentally sensitive comprehensive plan this city has ever had, which took into account a lot of those natural features and conservation of those areas. And that watershed right around the time the Salt Creek tiger beetle started to really become a hot button issue within the community. So in that area where they have, the land use is kind of designated as an environmental resource, which kind of gives it a protection status, but doesn't mean that's the way it always is – that's just a guide. That's something the council, the decision-makers may look at when they're looking at proposals for that area, but it doesn't necessarily indicate that it has to remain an environmental resource. But it's a step in the right direction for protection of those types of habitats. And there has been a little bit of a change with some of the growth tiers a little bit to the east of some of that habitat, with some of the pressures on the I-80 interchange at 56<sup>th</sup> Street for development and such that previously might have been projected I think for 50 years out, and now it's more current in the next 25 (Lincoln 5, page 1-2).

The main thing is that the corridor we are trying to not have any urban development in at all. And there it's less for the, it floods, and more about habitat, the Salt Creek tiger beetle (Lincoln 1, page 9).

In other words, through zoning and planning ordinances, city planning officials are attempting to halt the city's development from encroaching on fragile Salt Creek tiger beetle habitat by using an environmentally-sensitive Comprehensive Master Plan to guide the future of Lincoln's growth. In using these policies, the Lincoln planning department and local agencies are able to control what happens to these lands no matter what landowners in the area wish to do with their property.



One Lower Platte South NRD representative talks about the need for the city to develop a Comprehensive Master Plan to control future growth into environmentally-fragile areas:

From a city planning perspective, these regulations allow city planning and agency officials to control how the city of Lincoln grows in the future. With new growth over the past several decades in all directions around Lincoln, especially in the northern section of the city around Interstate 80, planning and agency officials felt that they had to act as soon as possible in order to protect the fragile saline wetlands. Several interviewees talk about this need to take action because of increasing growth in the area. And what sped it up [the protection of the saline wetland areas] was that Lincoln realized that at Interstate 80, we could use a new access through the town. So they put in the interchange at 27<sup>th</sup>...But then as you put a new roadway in, a new interchange, then the pressure comes or the interest comes, and “Boy, I’d like to develop this and this,” and it starts going out from there, and then that’s when it started, the tiger beetle issue started coming up, and that’s why the city gets more involved, going, “Well, wait a minute. We need to look at this. What’s going on?” (Lincoln 5, page 4).

Although a Comprehensive Master Plan is used to guide the future of Lincoln’s growth and landowners in the saline wetland areas are told how they can and cannot develop, small-scale, high-density development in the area is still a possibility, but landowners must act within existing city regulations. One NRCS official explains this situation:

There is a definition of high-density development...and that’s the true Lincoln development. But within that there’s also acreage development, and that’s still open. I mean, honestly, we’ve got potential... zoning rules and regulations. But they can still do high-density development, which basically, in this county, the zoning regulations are such that generally, you need 20 acres to build a house on. Anything less than 20, you can’t do that. However, if you have an 80-acre parcel, you can subdivide into a high-density corner....We’re looking at 80 acres, which technically the way zoning is, you could put four houses on that 80 acres; for every 20 acres you could put in a house. So what the county did to kind of help regulate acreages so we don’t get acreages scattered all over everywhere – if you come in and do a high density on about three acres, this can be in three-acre parcels, and they’ll give them an extra one. So they can sell five parcels out at three acre, the rest of this has to stay in ag. land or ag. use, but they’re given the ability to do that. Now, that’s still on the table for all these folks, so they still have that option to be able to do this (Lincoln 6, page 5).

### ***The Importance of Easements in Land Acquisition***

Additionally, in order to gain control over the future of the Eastern Nebraska saline wetlands, easements are used in which the government gains indefinite control over the practices that a landowner can and cannot carry out on his or her piece of land. An easement is an agreement in which the landowner voluntarily agrees to sell the rights of his or her land to a government agency for conservation or environmental purposes for a certain allotted period of time. Instead of obtaining land through the process of a “taking,” as has been the case in other controversial Endangered Species cases to control for species loss, the government and agency officials in Lincoln have bought land from landowners who voluntarily choose to sell their land or put it in an easement. As NRCS official explains regarding the positive aspects of an easement:

The landowner still retains full ownership of it [the land], but we are paying them for the easement. We take the cropland, if it’s cropland, or pastureland or whatever it is, and restore the wetlands back. So the saline wetlands, we’re working with the Little Salt and in the Rock Creek basins, restoring some wetlands back in those areas. So with that we’re doing a lot of activity (Lincoln 6, page 1).

A landowner adds to this explanation,

But while we’ve done the easement here, we still own the property; but for land use, like having cattle out there or haying, I have to request permission and then send a separate contract for this year – you can go ahead and do it. But then they put a requirement on it that you can only do it in this window so that the grass will be X high for the fall for the wildlife (Lincoln 11, page 14).

In many cases, landowners in this area are not interested in conservation easements.

One NDEQ representative explains why:

In the Salt Creek system, nobody’s really been interested in an easement... 15, 30 [year] or permanent easements. Most of them just say, “We’re not interested in easements. We’ll sell or we won’t,” flat out. I mean, it’s there as a tool; it’s just

nobody's interested... Well, I think it's a development issue. If they attach an easement to it, then it gets more complicated, because if you sell... the easement, that's a permanent easement. When the developer owns it, they would rather you just sell it off to a state agency or the City or whatever and then they don't have to deal with it. All they do is develop the upland and sell it to homeowners. Otherwise, they'd sell off the plots up above and they'd still have this 20 acres down there that they were responsible for... (Lincoln 9, page 13).

Another interviewee explains this from a landowner's perspective by illustrating the problems that come along with any sort of government control:

R We have neighbors who are not happy that we did the easement. In fact, I had several ... talk to us, to me specifically after we had all the little white signs put up and they saw the surveyors out here repeatedly.

I Why would that be then?

R Government control. They don't want government involvement in their farming operations at all.

I So then with your easement, do they think that affects them, or does that?

R They're worried that it will. And then initially I think some of them were worried that the property was being designated as tiger beetle habitat – which wasn't the case, and in fact as I mentioned earlier, Fish and Wildlife came out to see if it was and said, no, it's not. They were worried that it was just the government reaching out and that they were going to be restricted with what they could do with their land. I actually had one neighbor who said that if they ever saw the surveyors out again, he was going to sue the federal government in court for trespassing.

I Even though it wasn't on his land?

R Right. Didn't matter. It was adjacent.

I Would you say that's the general feeling around here, or is it a pretty good mixture?

R Well, it's certainly not with the people who are going into the acreages, but for people who have made a living off the land, there's a lot of nervousness as to government control... And if you're not dependent upon farming for your income, it's harder to see (Lincoln 11, page 15).

As in the previous chapter where I pointed out the differences in rural and urban perspectives, this landowner makes it very clear that some landowners in the rural areas clearly value their private property rights and are very wary of any form of government control.

### ***The Importance of Money and Resources in Social Control***

Additionally, agency and planning professionals have another tool to control the future of the eastern Nebraska saline wetlands – money. In order to buy land from local landowners, money and resources play an important part in the process. As an NDEQ representative points out, “we have a million and a half bucks in that right now, and that is for land acquisition, acquisition of easements and restoration” (Lincoln 9, page 5). Another planning official adds that Natural Resources District (NRD) money plays an important role in buying land for conservation.

Buying the conservation easements, it was a city bond issue and NRD money, I believe – it was partnered with those. A lot of the Salt Creek channel is owned by the NRD, so they can own land outright. They own several of the trail corridors that have been developed. Some of the trail corridors are along drainage ways because they tend to be flat. But they also own a few old, abandoned rail lines and develop trails along them too. So the Natural Resources Districts do quite a bit – it’s not all flood plain, but I think that’s kind of the majority of what they do (Lincoln 1, page 5).

### ***Federal Involvement through the Endangered Species Act***

In addition to the city’s Comprehensive Master Plan, purchasing local land and using conservation easements to control development, one of the main ways that growth in the Eastern Nebraska Saline wetlands area has been halted is through Federal involvement in the area due to the Endangered Species Act. According to the guidelines of the Endangered

Species Act, landowners, local citizens and planning and agency officials are all forced to comply with Federal guidelines or else face the consequences.

Throughout the interview process, a number of planning and conservation officials expanded on how the Salt Creek tiger beetle became listed on the Federal Endangered Species list and how it has had an effect on the future of Lincoln's growth. One NRD representative explains how this happened:

[The listing process] started way back in early 1990s, and I couldn't tell you how exactly. But in the 1990s, how it really started was that the entomologists from the University of Nebraska found that particular subspecies. And they didn't know if it was related to another one out West, and so it was sent to this beetle specialist in New Mexico, and this individual said, no, this is a different subspecies. And so they started doing counts of that particular beetle on properties that they could access in '91, and the numbers were always very low. I think they range anywhere from a thousand to 150, and when you're looking at an insect, that's very, very low...then I think it was more discussions between the Department of Entomology and the Fish and Wildlife Service and the Game and Parks Commission, which is the state wildlife agency. And so they started to look at the issue of – maybe we need to start looking at some types of conservation efforts for the particular habitat. And a lot of the habitat actually started to be purchased and be publicly owned, or attempts were made, back in probably the early 90s. The NRD actually had the first easement on a saline wetland property, and that was like '86 I think...So the efforts date back almost 20 years to conserve the habitat, not particularly the beetle (Lincoln 5, page 4).

After the beetle became listed on the State and Federal Endangered Species List, the land directly north of Lincoln, containing the Eastern Nebraska saline wetlands and Salt Creek tiger beetle habitat was officially protected by not only the city through its extensive Comprehensive Master Plan and easements but also by Federal regulations and mandates.

With the listing of the beetle on the Federal list came a number of mixed reactions from agency and non-profit professionals as well as landowners in the area. Several of the people interviewed felt that the Federal listing of the Salt Creek tiger beetle was not completely necessary. One landowner states that:

As far as I'm concerned the whole thing, it's just blown out of proportion – because it's not a separate species, it's a subspecies. And the ecological significance of it, the significance of its limited gene pool is inconsequential to anything. It's just gotten blown all out of proportion, and there really is a debate as to how many of them there are (Lincoln 11, page 5).

The landowner goes on to add that:

R      It [the case of the tiger beetle] is being used now as an example of excessive government regulation in Washington. And the people who were trying to delist the bald eagle, for example, are using that as an example that Fish and Wildlife has just gone crazy.

I      So you think that this particular beetle is an example of...?

R      Right, as to how ridiculous it is (Lincoln 11, page 6).

Another landowner points out that although he has lived in the area all of his life, it was just recently that people in the area began hearing about the Salt Creek tiger beetle. The landowner states,

Years and years ago, or course we had never heard of the tiger beetle...or I never or other people around here never even knew they were there. But nobody had ever heard of it, you know...I would say.... maybe about 12 years ago was when we first heard anything about them... It was probably 12 years...around 1997 or 98 when they started talking about them. (Lincoln 12, page 3).

Additionally, the two representatives from The Nature Conservancy also point out that they are not sure that classifying the Salt Creek tiger beetle was the best move by the Federal government. According to the interviewees,

R2     The whole tiger beetle...not sure that that was the best strategy.

I      You mean the identification of the beetle?

R2     To list it on the federal...because it really polarizes the...I mean, when we started, we were really hoping to keep it centered on the watershed, the ecosystem, the community things going on there. Now it's like, well, we can't develop this because of that stupid beetle. That is not where we wanted to be.

- R1 And there may be some good things to come out of it, because it may attract research dollars and that kind of thing. It does give you some teeth if you really want to stop something from happening. But, man, it just changed the whole tenor of the discussion. So we were sort of disappointed that it actually finally got listed.
- R2 The ESA designation, I don't know who it helps, but especially you know Nebraska is 97% in private ownership. So when you start talking about an endangered species and impacting an endangered species, 97% of that is going to hit private lands, statistically speaking. And so you're really talking about infringing upon people's property rights, and they get pretty defensive about it. And I can understand that. And we've seen fights, just in the last five years, where it's gotten ugly on different species. You know, they talked about listing the prairie dog, and it brought everybody out – you know, why would you do that? The tiger beetle. And it does seem to make any discourse that much harder to have because then groups like ours are viewed as – you're here to protect the blankety-blank bug or the blankety-blank bird (Lincoln 7, page 12-13).

### ***Lack of Trust and Fear of the Unknown***

Moreover, several interviewees also add that one of the main reasons the protection of the endangered Salt Creek tiger beetle has become so contentious is because many people, especially landowners in the area have feared that their lands would be rendered useless and therefore, they would lose their retirement income and/or face other consequences as a result of the listing of the Salt Creek tiger beetle.

One landowner points out that, “landowners take Federal involvement very seriously because the fines can be horrendous” (Lincoln 10, page 1). Another suggests that fear of the unknown has led a number of landowners in the area to sell before the Salt Creek tiger beetle became Federally listed. The landowner talks about the other landowners around him:

Like this area, Fish and Wildlife came out and inspected it for beetle habitat, and obviously it's not because there's no surface salt. So then they said, “Well, how about if we try to put salt back on?” – a totally artificial situation. But it hasn't done anything at this point in time. So that's why that 80 acres was sold and the 80 acres to the west, both of which... because they were both nervous about, they wouldn't be

able to sell it in 20-acre parcels and make more money if there was some federal law (Lincoln 11, page 5).

The landowner goes on to respond to my questions:

I        So do you think that's why so many acreages have went up?

R        Yes, yup.

I        Because of fear?

R        Yeah. People were selling because they were fearful they wouldn't be able to in the future. So I know the 80 acres there and the 80 acres there, that was reason – because the owners of both properties told us (Lincoln 11, page 7).

Others suggest that the original efforts to work with landowners in the area failed due to misinformation, lack of trust felt by landowners toward agency and planning officials, and because of agencies in the area assuming that these landowners would welcome agency efforts. Additionally, they point out that landowners in the area have become fearful that they will lose their retirement income due to low property values as a result of the Federal listing of the Salt Creek tiger beetle. One Lower Platte South NRD official expands on this:

There is a lot of uncertainty waiting for the Fish and Wildlife Service to...identify critical habitat – and that's where they're at right now. And it's been 13 months now since it was declared endangered and there's still no designation of critical habitat. And in my opinion they're kind of at a standstill right now, so I don't anticipate it happening within the next few months. And there's some people that believe it may not happen for another year yet, but that's like a two-year period where you're looking – you know, development is all around...So without having those types of designations in there on their properties, I mean, it could affect property values. And not knowing where that critical habitat is going to be, because it doesn't necessarily mean it's going to be this specific habitat of where that endangered species is. It could also be buffer areas; it could be a quarter of a mile away. No one is quite certain where they're going to draw those final lines at. So there you could be, actually that habitat could be encroaching upon some very developable land. And that could be, to some of those landowners in that in area that could be very detrimental to them (Lincoln 5, page 2).



Another Game and Parks representative suggests that farmers in the area are scared that they will no longer be able to practice farming as they always have. The interviewee states,

I would say the concern was actually more fear of the unknown, probably, when it was being considered to be listed. There was just lots and lots of fear on how it was going to change everybody's day-to-day activities. Again, once the formal listing came out, no one requested a public hearing and it got listed. And really it's not had much of an effect, from my perspective, on the things that a landowner can do day to day on their operation. No one is out there saying you can't plow that area or you can't spray your soybeans or something like that. That's just not really part of the Act as a general rule, the Federal Endangered Species Act. But there's always that fear of the unknown of what could happen. And people hear horror stories, some without foundation, but from other parts of the country, some landowner who've had their land taken away or really their rights impeded. And again as a general rule, unless they're engaged in something that's requiring a federal permit or federal funding or state funding or a permit from our state listing, if they're just doing private activities on their own, those don't come under either the state or the federal law (Lincoln 8, page 7).

A second agency official (from the NRCS) echoes this response, citing trust as a major issue between landowners and local officials:

I think the conflict lies in the unknown... they're [farmers and landowners] so paranoid up in certain areas, they worried they can't even put anything on their land. Well, that makes you organic. In reality that's what it does. I mean, that turns you into an organic farmer if you can't put down any commercial fertilizer, any commercial herbicide, pesticides, insecticides or whatever you put down. That's got some guys paranoid – they're really concerned that that could happen. And it may happen. But that's where you've got the production ag guys are a little concerned about what's happening up there... up in that area... They're afraid of total regulatory coming in and... We've got folks so scared that they think they won't even be able to use herbicides or pesticides (Lincoln 6, page 8).

As this agency official makes apparent, trust plays a very important part in natural resource management, especially at the community or watershed level. As Focht and Trachtenberg (2005) point out [See Table 5-1], stakeholders can take distinctly different types of roles as participants in natural resource management, but the level of role that they

assume also depends on the level of trust within the community. If social distrust exists, as Focht and Trachtenberg (2005) find, landowners will take on a defensive role to protect their own interests, thus causing conflict within the different groups.

**Figure 5-1. Focht and Trachtenberg (2005) stakeholder participation roles related to level of trust**

Trust Dimension	Level of Trust	Stakeholder Participation Role
<b>Social</b>	Trust	<i>Cooperative Role – Inter-agency partnership trust (Interview data)</i> Stakeholders are willing to cooperate in the policy process
	Distrust	<i>Defensive Role – Landowners not present in process; act to protect own interests (Interview data)</i> Stakeholders wish to participate defensively to protect their interests
<b>Official</b>	Trust	<i>Subdued Role – Urban population is willing to let officials take the lead (Heartland survey)</i> Stakeholders are willing to allow policy officials to lead the policy process
	Distrust	<i>Enhanced Role – Rural/Farm population believes it is the individual's responsibility to protect environment (Heartland survey)</i> Stakeholders wish to participate energetically in the policy process

### ***Problems within this Structure***

Although differences in this power structure have made preserving the Eastern Nebraska saline wetlands and fragile Salt Creek tiger beetle habitat possible, the structure has also caused problems for a number of local landowners, who have often been left out of important planning decisions. Although original efforts aimed at the protection of this section of Lincoln focused on including everyone in the process, those efforts have failed. As one Game and Parks representative points out, the original informational meetings leading up to the listing of the Salt Creek tiger beetle did not see regular attendance from landowners and so there was some confusion as to what was happening.

We tried what's currently called the Saline Wetland Conservation Partnership. We made a run earlier at creating a partnership – It was called the Little Salt Valley Cooperative Project. I don't know if anybody talked to you about that or not. It was a joint effort between our agency and the Nature Conservancy, and we hired a consultant with a sociology background. And she worked with us to facilitate

meetings with the landowners in the Little Salt Watershed. This was probably back in the late nineties or early 2000s. So the hope there was that we would form a partnership with landowners being part of the mix. And that effort ended up not really succeeding, really failing, because of, I think, a whole variety of factors. We had some landowners who were very opposed to...Each time we'd hold a meeting that was open to the public, we'd get different people at the meeting, and so you would always have to be going back to square one each time because you'd have new people show up who didn't know anything about it but were concerned. Things had been kind of stirred that, well, there's this group forming – they're going to take your land rights away. I mean, there were concerns about that aspect (Lincoln 8, page 4).

With early efforts to include landowners in the planning process failing, the Eastern Nebraska Saline Wetland Conservation Partnership (without landowner involvement) emerged as an inter-agency partnership with an overall goal of protecting the saline wetlands in perpetuity.

### ***The Effectiveness of the Partnership***

With regard to community collaboration and environmental protection, a number of planning and agency officials feel that the overall outcome of the partnership has been positive. One NRD official illustrates this point:

I think it's been a real good partnership. Sometimes you can get into partnerships and particular parties maybe don't get along or they're adversarial, and I don't see it at all with this group. I mean, it's a pretty good group. I mean, there's some issues that you always have a few growing pains here and there. But everybody I think complements everybody pretty good with the partnership, so I think it's been working pretty well (Lincoln 5, page 11).

Another agency official from the Game and Parks Commission adds to this:

I spend most of my time with partnership-type activities and different government and private entities throughout the state on wetland conservation projects. And this is a good one. Certainly it's as valuable to sit down periodically and talk and get to know people and have the same people there all the time so you get to know the personalities, a level of trust develops so that you can work together, that there's not some hidden agenda that somebody's trying to promote, that you're open and honest

and you work together on a set of common problems. And certainly the five entities in the partnership are doing that, so, yeah, it's been really positive (Lincoln 8, page 8).

Many within the eastern Nebraska Saline Wetland Conservation Partnership believe that the inter-agency joint venture has had a positive impact on the preservation of the local saline wetlands as well as on the hydrology and ecology of the entire watershed.

### ***Misconceptions about the Partnership and the Influence of the Media***

One of the themes that came out from many of the interviews was that the partnership was formed for the benefit of the whole hydrological and ecological system in north Lincoln, and not just for the benefit of the Salt Creek tiger beetle. One of the agency professionals from the Nebraska Game and Parks Commission puts this into perspective:

One of the things we've tried hard within the partnership to emphasize...is that the partnership is about the whole system, not just the tiger beetle. And it's been hard to keep that distinction because people, once they hear "saline wetlands," because of the press coverage, everybody thinks tiger beetle – it's all about that bug. And it's like, well, that's part of the system, but our interest in saline wetlands is much broader. It's green space, it's the bird communities and other plants and diversity that these wetlands support. It's flood control, it's water quality improvement – other things that the wetlands can provide are also important and certainly should be important in an urbanizing environment like this (Lincoln 8, page 6).

Another from The Nature Conservancy adds to this:

And our mission isn't to protect endangered species. Our mission is to protect biodiversity. If a landscape has an endangered species, we certainly factor that in, but that doesn't determine where we work (Lincoln 7, page 12-13).

Contrary to the popular belief that the partnership was created to protect the Salt Creek tiger beetle, it was instead created to protect biodiversity, to provide flood control, and to enhance the overall hydrologic system in Lincoln.

## CHAPTER SIX

### DISCUSSION AND CONCLUSION

The situation surrounding the eastern Nebraska saline wetlands is a complicated one with many different angles. In order to look at the saline wetland community of Lincoln in-depth, I have studied the community as a case study, interviewing a total of 15 residents involved in the preservation and conservation of these unique wetlands. In doing this, I have found that not everyone in the community of Lincoln thinks that involving the Federal government (by means of the Endangered Species Act) in the preservation of the eastern Nebraska saline wetlands was a good idea. Furthermore, through in-person interviews and using survey data, I have found that there is a difference of opinion as to who should be responsible for the protection of local natural resources and how this should be accomplished.

#### *Control through Force*

In Chapters Two and Five, I point out that Flora (2004) finds that social control using force (such as laws and regulations) is one of the most common ways of protecting natural resources in the United States. In this situation, social control lies mainly in the hands of those who make and enforce the laws, making this a top-down effort. With early efforts at including landowners (and working from the bottom-up) in Lincoln failing, the voices of local landowners in the planning process are nearly non-existent.

Although control through force may sometimes cause polarization of the problems it is designed to correct, it can also be a highly effective means of natural resource protection. The Clean Water Act of 1972 is one example of this type of natural resource management tool. Through the Clean Water Act, the Environmental Protection Agency (EPA) is able to

regulate the amount of pollutants discharged into waterways through regulations, fines and enforcement. Waterways that do not meet EPA standards are then put on a Federal list of polluted water bodies. This list, in many cases, is a catalyst to move people to take action to get off of the list (Wright Morton, 2007).

The Endangered Species Act was created in 1973 to work much as the Clean Water Act does – species that are facing habitat loss and that are dwindling in numbers are put on a Federal Endangered Species list in an effort to force people to take action to protect them. In some cases, this has worked – as in the case of the North American Bald Eagle which was removed from the Federal Endangered Species list on June 28, 2007 (CBS News, 2007; Los Angeles Times, 2007). In others, as in the case of the Salt Creek tiger beetle, the Endangered Species Act has caused local conflict between those worried about their property values and those who wish to protect the dwindling Salt Creek tiger beetle population and its habitat.

### ***Control through Force as Effective?***

Since several interviewees told me that they did not feel that getting the Federal government involved in the preservation of the eastern Nebraska saline wetlands was a good plan, this leads me to believe that they also feel that there are better routes to solving this community's problems. As one representative from The Nature Conservancy told me,

The whole tiger beetle... not sure that that was the best strategy. To list it on the federal [list]..., because it really polarizes the... I mean, when we started, we were really hoping to keep it centered on the watershed, the ecosystem, the community things going on there. Now it's like, well, we can't develop this because of that stupid beetle. That is not where we wanted to be (Lincoln 7, p. 13).

Since the beginning of the implementation of the Endangered Species Act, many of the landowners most concerned about property value fluctuations have moved out of the area. With this in mind, there is a good possibility that the landowners still living in the area may

be more cooperative than those who were scared of what would happen with the implementation of the Endangered Species Act and sold before any legislation took place. Instead of controlling what happens to this community by using force (a top-down approach) or economic means, as Flora (2004) mentions, maybe the community should try once more to be more inclusive and operate from a bottom-up approach. Flora (2004) finds that in operating from a bottom-up approach and getting the community to care about the natural resource base, the effects are long-lasting. Additionally, as Wright Morton (2003) mentions, there are three different approaches typically used to control water or natural resource outcomes: 1) agency-driven, 2) market-driven, or 3) community-led. Since this is clearly an agency-led approach, and is not driven by market forces, maybe the agency partnership should attempt to get the rural community more involved in meetings and getting to desired outcomes.

### ***The Role of Internalization and Social Pressure***

The results from Chapter Four show that in the case of the eastern Nebraska saline wetlands, there is common agreement that protecting water resources are important. On the same note, the majority also agree that when preserving these resources, economic forces must be taken into account. Since the majority of interviewees surveyed either agreed or highly agreed with this statement, it shows that there is common ground from which to move forward. As landowners feel that they are included in the process, trust between community members should also follow as more people begin to know what is going on. The role of trust in this process plays a very large role as landowners work to keep their retirement incomes from diminishing in value. As mentioned by several interviewees, the fear of the unknown is one of the biggest issues dividing agency, planning, and non-profit professionals from landowners. If this gap could be closed through trust-building actions such as holding

more community meetings, including landowners in the partnership process or using the local press to inform the community about new developments, maybe this “fear of the unknown” would diminish as more people begin take part in the decision-making process.

### ***What Can be Learned from this Case Study?***

As noted in this case study, although sometimes agency-directed natural resource management is effective, it can also cause local conflict dividing community members who sit on opposite sides of the fence. To bridge this gap, agency and planning leaders need to take these other perspectives into account when planning for the future of the community.

Since this case study surveyed only a small portion of people from all four categories (agency officials, planning professionals, non-profit representatives and landowners), future research should aim to include more people from each category, especially landowners. By including more landowners in this process, one could hypothesize that the data collected might better resemble the differences between urban and rural, farm populations found in the general Heartland and Nebraska surveys regarding water issues. It may also be helpful to include some of the opinions and perspectives of the general population of Lincoln to see where their attitudes lie on the Weber (2000) environmental paradigm scale.



## **APPENDIX A**

### **INTERVIEW PROMPTS**

#### **Questions for agency/planning officials/non-profit**

1. Could you please take a few minutes to tell me about what you do on a daily basis?
2. Who do you believe are the key players in the protection of the eastern Nebraska saline wetlands?
3. What is the role of [insert organization] in the Saline Wetlands Conservation Partnership?
4. What would you like to see happen to the saline marshes within the next 10 years? Next 20?
5. Could you talk a little bit about the Salt Creek tiger beetle?
6. How is the ecology/hydrology of the saline wetlands different than other wetlands in the area?
7. How would you describe the level of cooperation among the different partners involved in the Saline Wetland Conservation Partnership?
8. Have landowners been involved in the protection of the saline wetlands? What are their general feelings about the issues relating to the saline wetlands and the Endangered Species Act?
9. Is there a local watershed group that exists outside of the Saline Wetland Conservation Partnership?

#### **Questions for landowners**

1. Could you please take a few minutes to tell me about what you do for a living?
2. How long have you lived on your land?

3. Do you like to hunt? Is some of the land you own used for recreational purposes (such as hunting/fishing)?
4. Are you a member of a local watershed group in the area? Does one exist?
5. Could you describe where you are in relation to Little Salt Creek?
6. What would you like to see happen to your land in the next ten years? Next 20?
7. How does your proximity to Little Salt Creek and the salt marsh habitat affect what you expect to happen to your land?
8. What are the environmental and water issues along Little Salt Creek?
9. Who do you believe are the key players in the protection of the local salt marshes?
10. What do you think the general feeling is among other landowners and farmers in the area regarding the saline wetlands? The Salt Creek tiger beetle? The Endangered Species Act?

## APPENDIX B

### SHORT SURVEYS FOR INTERVIEWEES

*Heartland Project: Lincoln, Nebraska Case Study*  
Interview Mini-Questionnaire (Cont'd)

Please indicate the extent to which you agree to the following statements in the boxes below.

(Scale: 1=Highly Agree; 2=Agree; 3=No opinion; 4=Disagree; 5=Highly Disagree)

- ☐ a. The creeks, rivers and lakes and their surrounding habitats in our community are important because they offer aesthetic, natural places for people to replenish the spiritual side of the human personality.
- ☐ b. The creeks, rivers and lakes and their surrounding habitats in our community exist primarily as resources for people to use to make a living, survive and prosper.
- ☐ c. The degradation of creeks, rivers, lakes and their surrounding habitats in our community must be stopped regardless of the costs to our consumptive economy. These resources are irreplaceable and more valuable than the economic values placed upon them.
- ☐ d. The separation of human activity from the creeks, rivers, lakes and their surrounding habitats in our community is impossible and we must find ways to balance people and nature with the goal of protecting our resources while providing for the economic and social base of our community.

**Thank you for responding to these questions!**  
**Please return your completed mini-questionnaire to the interviewer.**

## REFERENCES

- Anderson, T.L. and F.S. McChesney (2003). "The Economic Approach to Property Rights." Property Rights: Cooperation, Conflict and Law. Princeton: Princeton University Press, pp.1-11.
- Annett, A.F. (1998). "Reforming the Endangered Species Act to Protect Species and Property Rights." Backgrounder, #1234. 20 March, 2007.  
[http://www.heritage.org/Research/Energy andEnvironment/BG1234.cfm](http://www.heritage.org/Research/Energy%20and%20Environment/BG1234.cfm)
- Brackney, M. and F.T. McAndrew (2001). "Ecological Worldviews and Receptivity to Different Types of Arguments for Preserving Endangered Species." *The Journal of Environmental Education*. Vol. 33, No. 1, pp. 17-20.
- Bultena, G., P. Nowak, E. Hoiberg, D. Albrecht (1981). "Farmers' attitudes toward land use planning." *Journal of Soil and Water Conservation*. January-February Issue, pp. 37-41.
- Burroughs, R. (1999). "When Stakeholders Choose: Process, Knowledge, and Motivation in Water Quality Decisions." *Society & Natural Resources*. Vol. 12, pp. 797-809.
- CBS News (2007). "Bald Eagle Soars off Endangered List." 1 July, 2007.  
<http://www.cbsnews.com/stories/2007/06/28/tech/main2994344.shtml?source=flashapp>
- City of Lincoln (2007). "Saline Wetland Conservation Partnership." 1 July, 2007.  
<http://www.lincoln.ne.gov/city/parks/admin/wetlands/partners.htm>.
- Cochnar, J. and B. Perkins (2005). "Service Proposes Protection of the Salt Creek Tiger Beetle." News Release: U.S. Fish and Wildlife Service. 22 March 2007.  
<http://mountain-prairie.fws.gov/pressrel/05-06.htm>.
- Cunningham, D. (1985). "Villains, Miscreants, and the Salt of the Earth."

- NEBRASKAland Magazine. July 1985, pp. 14-19, 45-47.
- Ducey, J. (1985). "Nebraska's Salt Basin: Going, Going, Nearly Gone." NEBRASKAland Magazine. July 1985, pp. 20-25.
- Easter-Pilcher, A. (1996). "Implementing the Endangered Species Act." *BioScience*. Vol. 46, No. 5, pp. 355-363.
- Ellen, R.F. (1984). Ethnographic Research: A Guide to General Conduct. London: Academic Press.
- Farrar, J. (2005). "Preserving the Last of the Least: A Partnership of Organizations is Working to Protect the Saline Wetlands." NEBRASKAland Magazine. January-February 2005, p. 46
- Farrar, J. and R. Gersib (1991). "Nebraska Salt Marshes: Last of the Least." Nebraska Game and Parks Commission.
- Flora, C. (2004). "Social Aspects of Small Water Systems." *Journal of Contemporary Water Research and Education*. Issue 128, pp. 6-12.
- Focht, W. and Z. Trachtenberg. (2005). "A Trust-Based Guide to Stakeholder Participation." Swimming Upstream: Collaborative Approaches to Watershed Management. ed. P.Sabatier, W. Focht, M. Lubell, Z. Trachtenberg, A. Vedlitz, and M. Matlock. Cambridge, MA: MIT Press, pp. 85-135.
- Gonzalez-Clements, E. and K.T. Mantonya (2001). "Little Salt Valley Planning Cooperative Project (Final Report)." Development Systems/Applications International, Inc. pp. 1-27.
- Hall, D.W. (1999, Winter). "Operation Future." Leadership link. Columbus, OH: Ohio State University Extension.
- Jackson-Smith, D., U. Kreuter, and R. Krannich (2005). "Understanding the Multidimensionality of Property Rights Orientations: Evidence from Utah and Texas Ranchers." *Society and Natural Resources*. Vol. 18, pp. 587-610.

- LaGrange, T., T. Genrich, G. Johnson, and D. Schulz (2002). "Implementation Plan for the Conservation of Nebraska's Eastern Saline Wetlands (draft)." Eastern Saline Wetlands Project.
- Lambert, T. (1995). "The Endangered Species Act: A Train Wreck Ahead." Policy Study No. 126. Center for the Study of American Business, Washington University.
- Lambert, T. (1996). "Endangered Species Act: Facing Stiff Opposition." *USA Today*. Vol. 124, No. 2610, March 1996, pp. 32-35.
- Lincoln City – Lancaster County, Nebraska (2002). "2025 Comprehensive Plan." Eastern Saline Wetlands Project.
- Lincoln, Y.S. and E.G. Guba (1985). Naturalistic Inquiry. Sage Publications, Beverly Hills, California, USA.
- Los Angeles Times (2007). "A Timeline of the Bald Eagle's History." 1 July, 2007.  
<http://www.latimes.com/news/nationworld/politics/wire/sns-ap-eagles-comeback-timeline,1,3862371.story?coll=sns-ap-politics-headlines>
- Malakoff, D. (1998). "Restored Wetlands Flunk Real-World Test." *Science*. Vol. 280, pp. 371-372.
- Marx, K. and F. Engels (2003). "Manifesto of the Communist Party." Social Theory: Roots and Branches. Peter Kivisto (Ed.). Los Angeles: Roxbury Publishing Co., pp. 16-23.
- Mitsch, W.J., X. Wu, R.W. Nairn, P.E. Weihe, N. Wang, R. Deal, and C.E. Boucher (1998). "Creating and Restoring Wetlands." *BioScience*. Vol. 48, No. 12, pp. 1019-1027+1029-1030.
- Mitsch, W.J. and R.F. Wilson (1996). "Improving the Success of Wetland Creation and Restoration with Know-how, Time, and Self-design." *Ecological Applications*. Vol. 6, pp. 77-83.
- Moore, L.J. (1992) "When Landowners Clash With the Law: Regulations May Crimp

- Your Plans to Build.” *U.S. News & World Report*. 20 March, 2007.  
[http://www.usnews.com/usnews/culture/articles/920406/archive\\_017519](http://www.usnews.com/usnews/culture/articles/920406/archive_017519)
- Morton, L.W., Brown, S. (2007a). “Water Issues in the Four State Heartland Region: A Survey of Public Perceptions and Attitudes about Water.” The Heartland Regional Water Coordination Initiative, Bulletin #SP289. Iowa State University Extension.  
<http://www.heartlandwq.iastate.edu>
- Morton, L.W., Brown, S. (2007b). “Water Issues in Nebraska: A Survey of Public Perceptions and Attitudes about Water.” The Heartland Regional Water Coordination Initiative, Bulletin # SP291. Iowa State University Extension.  
<http://www.heartlandwq.iastate.edu>
- Nebraska Department of Environmental Quality [NDEQ] (2007). “About Us.” 1 July, 2007.  
<http://www.deq.state.ne.us>
- Nebraska Department of Environmental Quality and the City of Lincoln, Nebraska (2002). “Eastern Saline Wetlands Protection and Restoration (Cooperative Agreement).” Project Number: 56-0252.
- Novotny, V. and Chesters, G (1981). Handbook of Non-point Pollution. New York: Van Nostrand Reinhold Company.
- Peterson, M.N., S.A. Allison, M.J. Peterson, T.R. Peterson, and R.R. Lopez (2004). “A Tale of Two Species: Habitat Conservation Plans as Bounded Conflict.” *Journal of Wildlife Management*. Vol. 68, No. 4, pp. 743-761.
- Roberts, L. (1993). “Wetlands Trading is a Loser’s Game, Say Ecologists.” *Science*. Vol. 260, pp. 1890-1892.
- Rohlf, D.J. (1991). “Six Biological Reasons Why the Endangered Species Act Doesn’t Work – and What to Do About It.” *Conservation Biology*. Vol. 5, No. 3, pp. 273-282.
- Roseland, M., J.C. Day, and R.W. Penrose. (1998). “Shared Decision-Making in Public

- Land Planning: An Evaluation of the Cariboo-Chilcotin CORE process [Commission on Resources & Environment].” *Environments*. Vol. 25, pp. 27-47.
- Schensul, S.L.; J.J. Schensul; and M.D. LeCompte (1999). Essential Ethnographic Methods: Observations, Interviews, and Questionnaires. Walnut Creek: Altamira Press.
- Sidle, J.G. and D.B. Bowman (1988). “Habitat Protection Under the Endangered Species Act.” *Conservation Biology*. Vol. 2, No. 1, pp. 116-118.
- University of Nebraska-Lincoln Department of Entomology. 15 January, 2007. Table.  
<http://entomology.unl.edu/lgh/sctb/maps.htm>
- University of Nebraska-Lincoln, Department of Entomology. 15 January, 2007. Map.  
[www.entomology.unl.edu/lgh/sctb/maps.htm](http://www.entomology.unl.edu/lgh/sctb/maps.htm)
- University of Nebraska-Lincoln Water Center. 19 March, 2007. Picture.  
<http://watercenter.unl.edu/archives/SecretsSaltyGW.asp>
- U.S. Census Data (1990). 17 August, 2006. <http://www.census.gov/main/www/cen1990.html>
- U.S. Census Data (2000). 17 August, 2006. <http://www.census.gov/main/www/cen2000.html>
- U.S. Fish and Wildlife Service (2004). “Safe Harbor Agreements for Private Landowners.” 19 March, 2007.  
<http://www.fws.gov/endangered/recovery/harborqa.pdf>
- U.S. Fish and Wildlife Service (2005a). “Salt Creek Tiger Beetle.” 22 March, 2007.  
<http://mountain-prairie.fws.gov/species/invertebrates/saltcreektiger/index.htm>
- U.S. Fish and Wildlife Service (2005b). “Listing a Species as Threatened or Endangered.” 19 March, 2007. <http://www.fws.gov/endangered/listing/listing.pdf>
- U.S. Fish and Wildlife Service (2007). “Our Endangered Species Program and How It Works with Landowners.” 19 March, 2007.  
<http://www.fws.gov/endangered/factsheets/landowners.pdf>
- Weber, E.P. (2000). “A New Vanguard for the Environment: Grass-Roots Ecosystem



- Management as a New Environmental Movement.” *Society & Natural Resources*. Vol. 13, pp. 237-259.
- Weber, E.P., N.P. Lovrich, and M. Gaffney. (2005). “Collaboration, Enforcement, and Endangered Species: A Framework for Assessing Collaborative Problem-Solving Capacity.” *Society & Natural Resources*. Vol. 18, pp. 677-698.
- Wiley, S. and B. Perkins (2005). “Service Lists Salt Creek Tiger Beetle as Endangered.” News Release: U.S. Fish and Wildlife Service. 6 March, 2007.  
<http://mountain-prairie.fws.gov/pressrel/05-72.htm>
- Wright Morton, L. (2003). “Civic Watershed Communities.” *Rural Sociology and Development*. Vol. 9, pp. 121-134.
- Wright Morton, L. (2007). “The Role of Civic Structure in Achieving Performance Based Watershed Management.” *Society and Natural Resources*. [Forthcoming].
- Young, P. (1996). “The ‘New Science’ of Wetland Restoration.” *Environmental Science & Technology*. Vol. 30, pp. 292-296.
- Zedler, J.B. (1996). “Coastal Mitigation in Southern California: the Need for a Regional Restoration Strategy.” *Ecological Applications*. Vol. 6, pp. 84-93.
- Zlotsky, A. and J. Yost (1998). “Little Salt Fork Marsh Preserve: Restoration of an Inland Saline Wetland.” *Land and Water*. September/October Issue, pp. 49-51.