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Ecological Perspectives of the Eastern Saline Wetlands Differ Between Visitors and Non-Visitors

by

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AN UNDERGRADUATE THESIS

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Abstract

The Eastern Saline Wetlands of Nebraska can be found in both Lancaster and Saunders counties in Eastern Nebraska. Due to the wetlands' important services in the areas of recreation, wildlife habitat, and flood control, it is necessary to know the extent to which these services are valued and used by residents of Lincoln. Past research completed in 2015 by the Lower Platte South NRD observed public opinions toward wetland restoration and preservation, finding that 46% of the public strongly support it, 35% mildly support it and 16% do not support it (Saline Wetlands Conservation Partnership, 2006). This past study was focused on land use and management; this study will instead relate ecological perspectives and their ability to be affected by wetland visitations. Finding the ecological perspective of the survey respondents is important, as this will then be related to their tendency to visit wetlands. This study is oriented around a survey containing an ecological value analysis known as the New Ecological Paradigm (NEP). Participants will complete the survey that is designed to measure their overall value of the environment and the ecosystem services that the Eastern Saline Wetlands provide. This survey will give the respondent's ecological view and familiarity with Saline Wetland areas. Looking at the demographic of people who visit the Saline Wetlands is intended to find a general wetland appreciation consensus. This consensus pertains to the people of which the Saline Wetlands are most accessible to. This research provides useful information on the way in which Lincoln residents value the Eastern Saline Wetlands. Understanding participants' environmental perspective through the use of the New Ecological Paradigm can help explain current opinions on wetland management and conservation and be beneficial in protecting and preserving the Saline Wetlands for future public use.

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Introduction

Until the middle of the 20th century, the idea of wetland management went hand in hand with wetland drainage and destruction (Mitsch and Gosselink, 1986). This misunderstanding and failure to see value in ecosystem services provided by wetlands has caused many of these areas to be permanently altered for urban development purposes. The Ramsar Convention in 1971 defined wetlands as 'areas of marsh, fen, peatland or water, whether natural or artificial,

permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres' (UNESCO, 1971). This convention remains groundbreaking—serving as a global treaty that protects 'wetlands of International importance'. Wetlands are an important ecosystem that provide habitat to a variety of species in the plant and animal kingdom and provide several ecosystem services to mankind. Historically, wetlands have been subject to destruction from rapid urbanization in the building, industry, and transportation sectors (Mao et al., 2018). One of the many wetlands that have been affected by urbanization and habitat fragmentation are the Eastern Saline Wetlands.

Scattered throughout and along the outskirts of the city of Lincoln, Nebraska, lies bits and pieces of a rare wetland ecosystem known as the Eastern Saline Wetlands. The Eastern Saline Wetlands are a special ecosystem because the organisms that live here have adapted to the noxious, salty soil conditions of the marsh. This unique ecosystem has resulted in a number of persistent native species calling this place their home. Since people generally do not have a biological understanding of the services provided by wetlands, these areas are often destroyed for land development purposes (Lower Platte South NRD)(Mao et al., 2018). The alteration of wetland habitat resulting from a failure to see value in the ecosystem compromises native species and further destroys natural habitat that they rely on.

The Eastern Saline Wetlands in Nebraska are an important and uncommon ecosystem—a

salt marsh. Figure 2 depicts the current boundaries where the Eastern Saline Wetlands are scattered throughout the greater Lincoln area. Although these areas of the Saline wetlands have been preserved through the years of American industrialization, the total area of the wetlands have been greatly minimized in the past century. The Eastern Saline Wetlands were once estimated to be roughly 20,000 acres of land; now only 4,000 acres remain (Lincoln Parks and Recreation). This goes to show that even protected areas are vulnerable to degradation, fragmentation, and destruction; particularly when powerful economic interests are involved (Scholte et al. 2016). An example of this occurred in Uganda with urban development and construction of power plants near the Kinawanataka and Nakivubo swamps. This expansion intruded on the wetlands

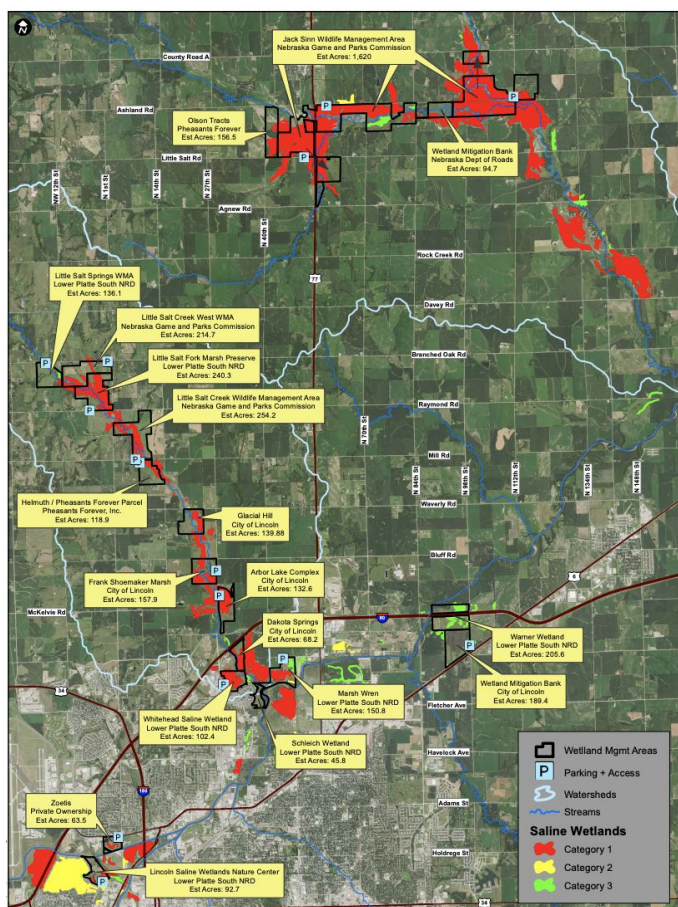


Figure 1: (Lincoln Parks and Recreation)

and since these wetlands were no longer able to hold excess flood water, the area is now susceptible to regular flooding (Kataata). In the case of the Eastern Saline Wetlands, the economic factor that has been valued higher than wetland protection is grazing land, flood control, and agriculture.

The current conservation status of the Eastern Saline Wetlands is ‘critically imperiled’. Along with loss of land, the Saline Wetlands have faced difficulties due to alteration of the Little Salt Creek that meanders through areas of the Saline Wetlands. The channelization of the Little Salt Creek in Lincoln was intended to decrease flooding by increasing the volume of water that the creek could hold, but it has also indirectly worked to decrease biodiversity in terrestrial wildlife, fish, and plants found within the Eastern Saline Wetlands. Other stressors that are affecting habitat in the Eastern Saline Wetlands are: drainage, diking, filling, farming, and overgrazing (Gilbert et al. 1994). The intense land use change that was burdened upon the wetlands in the 20th century ultimately required the implementation of a direct plan to stop the ecosystem degradation—The Saline Wetland Conservation Partnership.

The Saline Wetlands Conservation Partnership (SWCP) was brought forth in 2002 and is partnered with the City of Lincoln, Lancaster County, Lower Platte South Natural Resource District, and the Nebraska Game and Parks Commission. The SWCP’s initiative is to have a zero-net loss of wetlands and wetland functions and ultimately increase the health and productivity of wetlands (Saline Wetlands Conservation Partnership, 2018). Highlighted in the *‘Implementation Plan for the Conservation of Nebraska’s Eastern Saline Wetlands’*, are 11 areas of focus:

- Coordinator
- Education and Outreach
- Planning and Coordination
- Priority Conservation Plan
- Funding
- Taxes
- Wetland Protection
- Stream Restoration
- Wetland Buffer Management and Development
- Research
- Private Lands

Of the 11 areas of interest, 4 directly include the public: Education and Outreach, Funding, Taxes, and Private Lands. These areas are essential in protecting and improving the condition of the Eastern Saline Wetlands. The SWCP relies on public funding in order to undergo land management projects required to heal and restore wetland areas. The greatest way to get funding for land management projects is by having an informed public that values the land for what it provides to them. So, it is imperative that public education and outreach is provided to

show the public that wetlands are a valuable and worthy incentive. The approach of which the SWCP looks to inform the public will determine how much conservation action can be achieved.

In the case of modern ecosystem management, Freeman phrases it: The economic value of resources is equal to the benefits or net of costs that these systems provide to humans (Freeman, 1993). Wetland preservation, as with most long-term initiatives, is not a fast-moving process. In order to make a purposeful impact on wetland conservation, there should ideally be three key factors that come into play: the public's support, appropriate government legislation, and conservation programs (Srestha, 2013). In Figure 2 to the right, a clear connection between these three factors can be observed. It is apparent that in order for there to be change, people need to see value in a wetland that they directly benefit from (Scholte et al. 2016)(Freeman, 1993). Wetlands can be seen as valuable for several aesthetic and recreational reasons. Wetlands also provide ecosystem services that include supplying freshwater, providing food and building materials, promoting biodiversity, flood control, groundwater recharge, and climate change mitigation (Ramsar). Once one grasps the value that a wetland provides, their support of wetlands has the potential to bring about policy change or community action. This will positively affect the wetland so that it can continue to show its value to society. Essentially, in providing value to humans through these several ecosystem services, wetlands are being rewarded with good land management practice.

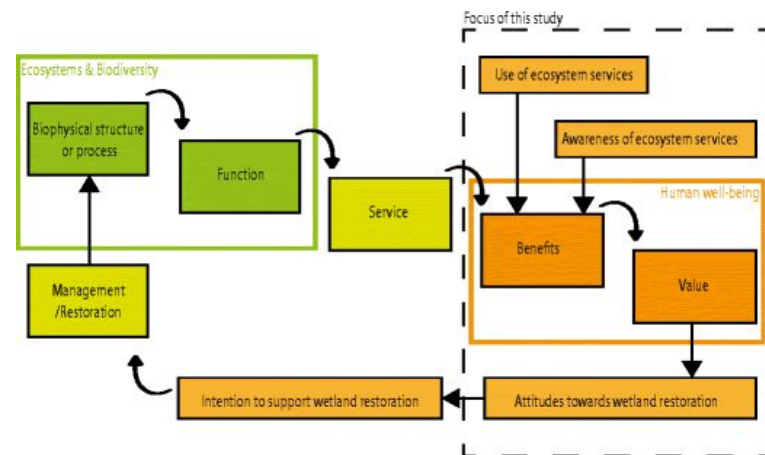


Figure 2: Scholte et al, (2016)

In order for wetlands to be protected, they must serve some value to people. In the past, low opinions of wetlands and shallow water environments led to the destruction of somewhere between 30-50% of wetland habitat in the lower 48 states (Mitsch and Gosselink, 1986). This loss of wetland habitat potentially could have been minimized if the services provided by wetlands were understood by the public and utilized. This research is important because the Eastern Saline Wetlands of Lancaster and Saunders counties are a unique, critically imperiled ecosystem accommodating endangered species such as the Salt Creek Tiger Beetle (*Cicindela nevadica lincolni*) and Saltwort (*Salicornia rubra*). Public knowledge regarding endangered species can help bring awareness to the ultimate goal of wetland preservation (Tisdell, 2006). Without proper education and awareness, the Salt Creek Tiger Beetle, Saltwort, and other native species could be at risk. Finding out general public awareness and familiarity with wetland conservation is beneficial in preventing an uninformed public that does not recognize value that lies in a wetland ecosystem.

The concept of looking at public familiarity in combination with public opinion is aimed at understanding public reasoning. It gives a researcher an understanding of what a society

values and what it does not value. When it comes to the topic of wetlands, many people are familiar with their existence, but since their services are not always quantifiable in dollars, yield, or any other physically appreciable form, they are often taken for granted (Woodward and Yong-Suhk, 2001). These services provided by wetlands include, but are not limited to: maintaining water quality and supply, regulating atmospheric gases, sequestering carbon, protecting shorelines, sustaining unique indigenous species, and use for cultural, recreational, and educational purposes (Clarkson et al., 2014). These services can be presumed as constants until the effects of their loss begin to negatively impact society. For example, if a wetland is degraded to the point that it cannot assist in controlling floods, the economic damage from the flooding can make the root of the problem more recognizable to the public. If the public is informed on wetland matters through educational opportunities through the Saline Wetland Conservation Partnerships, these non-sustainable land management practices could be prevented.

The type of information that is meant to be captured in this study is the degree to which people in Lincoln and the surrounding areas value wetlands. In some cases, subjects in this study may not even be familiar with the Eastern Saline Wetlands. The goal is to find participants' ecological perspectives and compare this to their experience and knowledge of the Eastern Saline Wetlands. In doing this, it can be determined if people's attitudes towards wetlands are backed by firsthand experiences and/or educational knowledge.

In the scenario of analyzing public opinion, an effective approach in the topic of wetland awareness is a cross-sectional assessment that can effectively gauge environmental perspectives held by those who have access to the Eastern Saline Wetlands. Qualitative public feedback is important, so this study will also delve into a short answer sought at finding community based involvement in wetland education. This will allow participants to show the activities that interest them and give them the opportunity to include a written explanation allowing them to voice their preference on what types of community programs would have the biggest draw. With the focal point of this study being in the Eastern Saline Wetlands, input from local participants who could be knowledgeable about Lincoln's unique ecosystem is especially useful, however, knowing the demographic of people that are unfamiliar with the Eastern Saline Wetlands is equally useful. A statistical analysis of the New Ecological Paradigm is used to provide strength of evidence between two demographics, Wetland Visitors and Non-Wetland Visitors.

The ultimate goals of this research are to determine:

1. The difference in ecological perspectives between wetland visitors and non-wetland visitors
2. Find most common areas visited of the Eastern Saline wetlands, the purpose of the visits, and frequency between visits.

3. Allow the public to voice their ideas on community based activities that they would be interested in participating in in the Eastern Saline Wetlands

Understanding public opinion can have an effect on important conservation initiatives. Increasing public knowledge on the poor conservation status of an ecosystem or species makes it more likely for the public to donate and support conservation efforts (Tisdell, 2006). Finding patterns in what the public values can give conservation agencies, such as the Saline Wetlands Conservation Partnership, a clear understanding of how to administer public education and outreach. By stressing the poor conservation status of the Eastern Saline Wetlands to the public of Lincoln and others who use them, the Saline Wetlands Conservation Partnership could potentially increase funding and support for wetland conservation and restoration.

Materials and Methods

With the main objective of this study being the comparison of ecological perspectives of wetland visitors and non-wetland visitors, an effective approach that is used is a cross-sectional assessment. This cross-sectional assessment is administered in the form of a survey targeted at the people who may or may have experience visiting Saline Wetland areas. This survey will contain three sections: a demographic section, a section containing New Ecological Paradigm Likert Scale questions, and a free response question asking about participants' ideas on community based activities to participate in in the Eastern Saline Wetlands. Each section is intended to attain an ultimate level of understanding of what the public values about wetlands and for what reasons.

The first section of the survey is the demographic section. It will serve the purpose of resolving the broad demographic questions that are likely affecting the way a participant answers questions directly pertaining to wetlands. Demographic data has the potential to present patterns in data that could provide explanations to the main research questions. Among the most important pieces of demographic data that will be sought is the participants city of residence and proximity to wetland. The target audience of this study will be any person over the age of 19. The first question on the survey will act as a filter question that asks the participants age. If the participant is younger than 19 years old, they will be redirected to the end of the survey and will not be able to complete it.

The second section of the survey is a value and ranking system and will be the largest section of the survey. It will include a value system on a scale of 1-5 pertaining to general statements about land conservation along with statements directly related to Saline Wetland land conservation. This value system known as the New Ecological Paradigm provides 15 prompting statements that put environmental and economic perspectives at odds (Dunlap et al., 2000). The NEP application in this study uses a scale from 1-5 with 5 indicating that the participant strongly agrees with the statement and a 1 meaning they strongly disagree. Of the 15 statements of the

New Ecological Paradigm, 8 are from the New Environmental Perspective and 7 are from the Dominant Social Perspective (Dunlap et al, 2000). The New Environmental Perspective statements, if agreed with, indicate that the respondent has a more ecologically based viewpoint that recognizes humans as a threat to the natural environment. The Social Dominant Perspective Statements, if agreed with, indicate that the respondent has a higher socially based viewpoint, or believes that it is humanity's duty to rule over the rest of nature. The ecological perspective of wetland visitors and non-wetland visitors will be averaged and compared to one another. The New Ecological Paradigm will provide participants with statements that they may or may not agree with. This section will show the participants outlook towards preserved lands such as the Eastern Saline Wetlands. Questions sought to gauge familiarity with ecosystem services of a wetland will help understand the reasons behind a participants positive or negative perception of wetlands. Statements included in the New Ecological Paradigm that will be rated by the survey participant include:

- We are approaching the limit of the number of people the Earth can support.
- Humans have the right to modify the natural environment to suit their needs.
- When humans interfere with nature it often produces disastrous consequences.
- Human ingenuity will ensure that we do not make the Earth unlivable.
- Humans are seriously abusing the environment.
- The Earth has plenty of natural resources if we just learn how to develop them.
- Plants and animals have as much right as humans to exist.
- The balance of nature is strong enough to cope with the impacts of modern industrial nations.
- Despite our special abilities, humans are still subject to the laws of nature.
- The so-called "ecological crisis" facing humankind has been greatly exaggerated.
- The Earth is like a spaceship with very limited room and resources.
- Humans were meant to rule over the rest of nature.
- The balance of nature is very delicate and easily upset.
- Humans will eventually learn enough about how nature works to be able to control it.
- If things continue on their present course, we will soon experience a major ecological catastrophe. (Dunlap et al., 2000).

The final section of the survey will be aimed at gaining a personal understanding of what outdoor activities Nebraska, and particularly Lincoln residents participate in. Outdoor recreation is a large player in conserving natural ecosystems. The final section of the survey will be a question asking what kind of community based activities would the participant be willing to participate in in the Saline Wetlands. This open-ended short answer question allows survey participants to elaborate on what recreational activities they are interested in. The objective here is to make a connection between what the public is interested in and the ways that the Saline Wetland Ecosystem can meet these demands. The Eastern Saline Wetlands is a versatile location and has lots of recreation opportunities and educational features that could draw the public and elevate conservation efforts. Recreation and educational opportunities include but are not limited to: hiking in an idiosyncratic ecosystem, wetland/upland birdwatching, songbird watching,

nature immersion, and the opportunity to become more familiar with the plant species found only in the salt marsh habitat. Knowing what outdoor activities and learning experiences the public is most enthusiastic about would be useful for the Saline Wetlands Conservation Partnership in creating public education and outreach activities.

The survey is subject to an IRB review to maintain that this study was ethical in its approach towards participants. First, the survey will be created on Google Forms—a website in which surveys can be created and customized. Once the survey is finished, the survey can be easily distributed via social media platforms such as Facebook and Twitter. Once an adequate number of responses have been collected, the survey will be closed for data analysis.

The google form survey is intended to find ecological perspectives of participants and to provide a platform for the general Lincoln public to voice their values, thoughts, and opinions on Eastern Saline Wetland land use and conservation. Once survey responses are collected, they can be prepared for data analysis which will compare the ecological perspectives of wetland visitors to non-wetland visitors. The survey also is intended to find the most common areas of the Saline Wetlands that participants visit, the purpose of their visit, and frequency between visits. These pieces of data can then be compared to the ecological perspective of respondents through use of the New Ecological Paradigm.

Hypothesis

The null hypothesis for this study is that there is not a difference in ecological perspective between wetland and non-wetland visitors. The alternative hypothesis is that those who visit wetlands will have a stronger environmentally based perspective than those who do not visit. The alternative hypothesis is rooted in the idea that wetland visitors will receive benefits or ecosystem services from wetland visits, and thus, have more appreciation for a natural ecosystem. Due to their time spent in the Saline Wetlands, Figure 1 would characterize these people as being the most likely to ‘use the ecosystem services’ and have the highest ‘awareness of ecosystem services’ (Scholte et al., 2016). This would, in turn, result in more benefits and an ecologically based perspective toward wetland management.

Results The survey was completed by 60 respondents. 45.9% of respondents reported they have, at one time or another, visited a portion of Eastern Saline Wetlands. For Lincoln respondents, 78.57% have visited a portion of the Eastern Saline Wetlands while 13.89% of non-Lincoln resident respondents have visited. The gender distribution of this study was 34 males and 26 females. The age distribution of respondents was 73.8% 19-25 years old, 6.6% 26-35 years old, 1.6% 36-45 years old, 9.8% 46-55 years old, 3.3% 56-65, and 3.3% 66-75

years old. The respondents of this study were 46.7% Lincoln residents and 53.3% non-Lincoln residents.

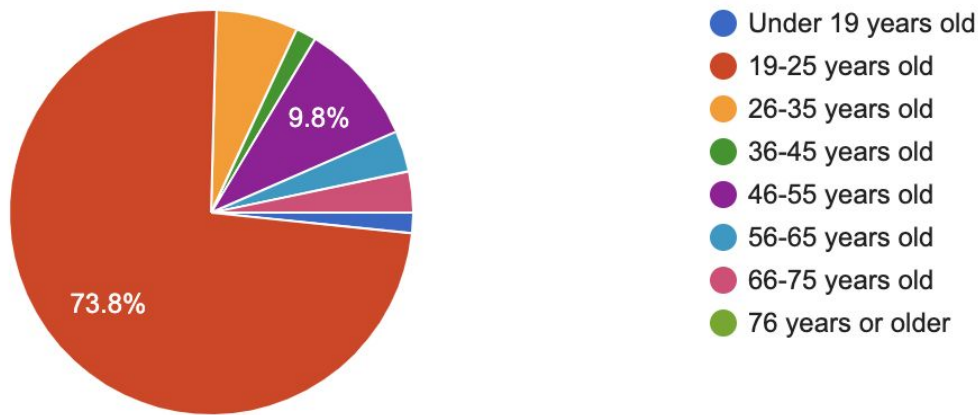


Figure 3: Age of Respondents

The age of respondents is an important topic as it can influence the data. In this case, the vast majority of respondents were in the demographic of 19-25 years old.

Through analyzing responses from the question ‘Have you ever visited a portion of the Eastern Saline Wetlands?’ and comparing the answers with the mean survey responses to the New Ecological Paradigm, a mean ecological perspective value could be created for two demographics; Wetland Visitors and Non-Wetland Visitors. The mean responses were taken from both Dominant Social Paradigm Statements (Figure 4) and New Environmental Paradigm Statements (Figure 5). Wetland Visitors were found to agree with statements from the New Environmental Paradigm more frequently. Non-Wetland Visitors were found to agree with Dominant Social Paradigm Statements more frequently. Both Wetland Visitors and Non-Wetland visitors alike, were more likely to disagree with the Dominant Social Paradigm Statements and more likely to agree with the New Environmental Paradigm Statements.

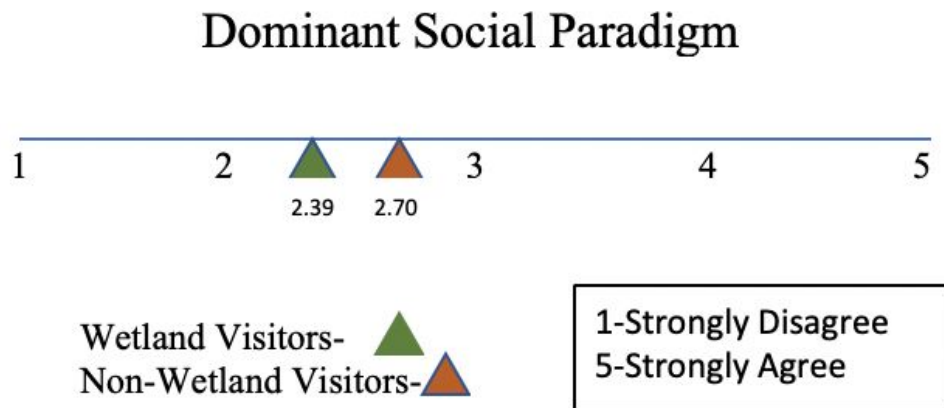


Figure 4: Dominant Social Paradigm comparing wetland visitors and non-wetland visitors

(T-Value: -2.47, p-value: .00692)

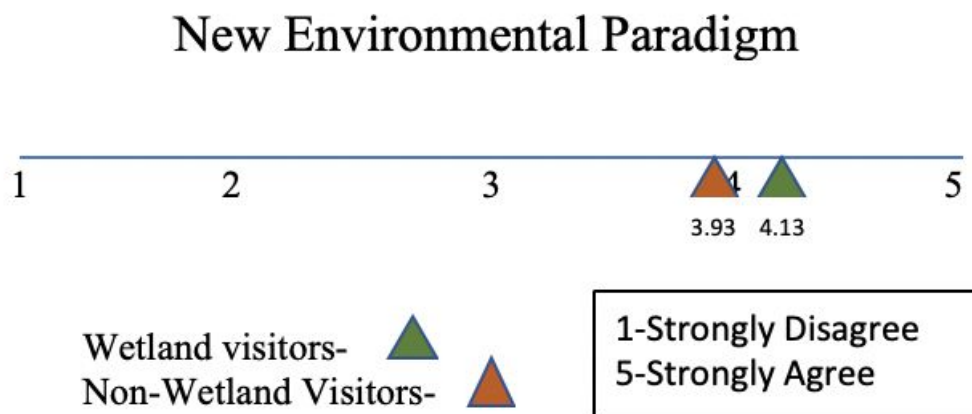


Figure 5: New Environmental Paradigm comparing wetland visitors and non-wetland visitors

(T-Value: 1.70; p-value: .044)

Due to the high level of 19-25 year old respondents, it was of interest to see how strongly this demographic affected the mean New Ecological Paradigm scores. Below, in Figures 6 and 7, the mean scores of both the New Environmental and Dominant Social Paradigm Statements for 19-25 year old respondents are shown. The mean for the respondent population's score to New Environmental Paradigm and Dominant social Paradigm are 4.03 and 2.55 respectively. With a mean New Environmental Paradigm of 4.14, 19-25 year olds had an average .11 Likert Scale point higher than the average mean of the total participant population. The 19-25 year old demographic had a mean response to Dominant Social Paradigm statements of 2.57; .02 Likert

Scale points higher than the participant population mean. This means they agreed with these statements at a slightly higher rate than the total participant population.

19-25 Year Old's New Environmental Paradigm

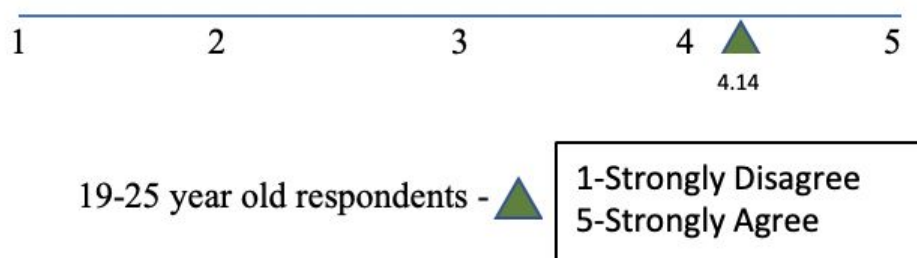


Figure 6: 19-25 year old mean response to New Environmental Paradigm statements

19-25 Year Old's Dominant Social Paradigm

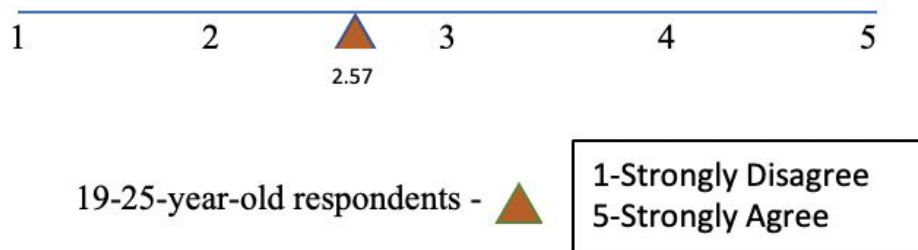


Figure 7: 19-25 year old mean response to Dominant Social Paradigm statements

The survey included a question asking participants to gauge the conservation status of the Eastern Saline Wetlands, a critically imperiled ecosystem. This was aimed at trying to relate public knowledge and public reasoning. In Figure 8, wetland and non-wetland visitors were once again compared; this time, comparisons were made based on the conservation status that respondents felt the Eastern Saline Wetlands is categorized into. Survey respondents were given a brief definition of what each conservation status means. Secure was listed as; 'a commonly

found and widespread ecosystem', vulnerable was listed as; an at-risk ecosystem (80 or fewer in the USA)', Imperiled was listed as; 'an uncommon ecosystem (20 or fewer in the USA)', and critically imperiled listed as; 'extremely threatened ecosystem (5 or fewer in the USA). The Saline Wetlands are a critically imperiled ecosystem. Y-Axis represents the number of responses per choice. Of the 4 choices, the correct answer of 'critically imperiled' was chosen the least by both Wetland Visitors and Non-Wetland Visitors. The most common choice, by both demographics, was 'vulnerable'. Wetland Visitors perceived the Eastern Saline Wetlands to be a 'secure' ecosystem at a higher rate than Non-Wetland Visitors.

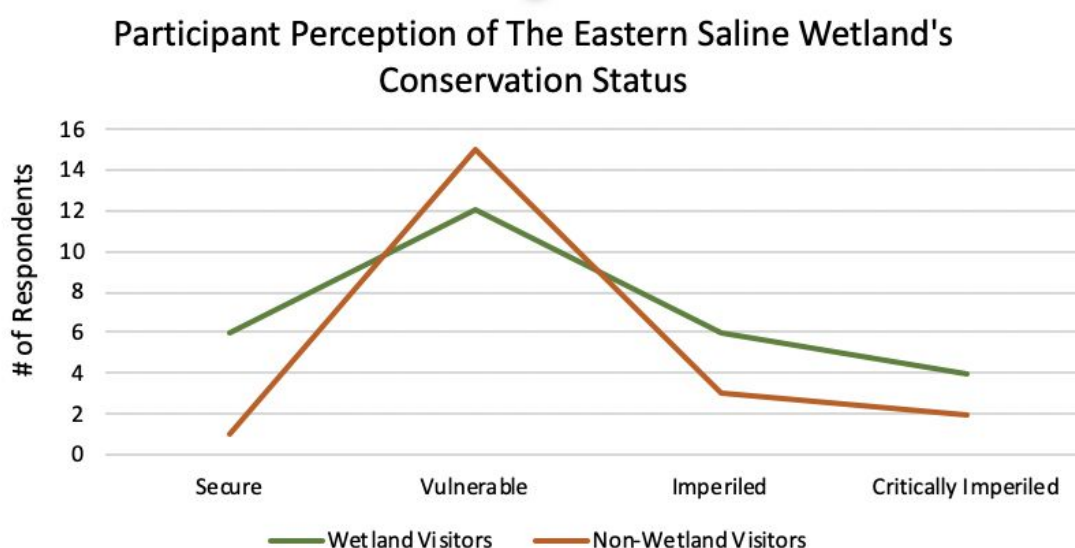


Figure 8: Respondent gauge of conservation status (n= 28 Wetland Visitors, 21 Non-Wetland Visitors)

With one of this study's three main goals being finding most popular respondent areas, activities, and frequency of visits, Figures 9-11 show these trends. For the most visited wetland area question, respondents could choose from 11 Saline Wetland Areas listed on Lincoln Parks and Recreation Website (Lincoln Parks and Recreation). Of the 11, responses were counted for only 5 wetland areas; Pioneers Park, Zoetis Saline Wetland, Frankie Shoemaker Marsh, Whitehead Saline Wetland, and Marsh Wren. Y-Axis represents the number of responses per choice. Pioneers Park was the most popular respondent choice for wetland areas visited most often.

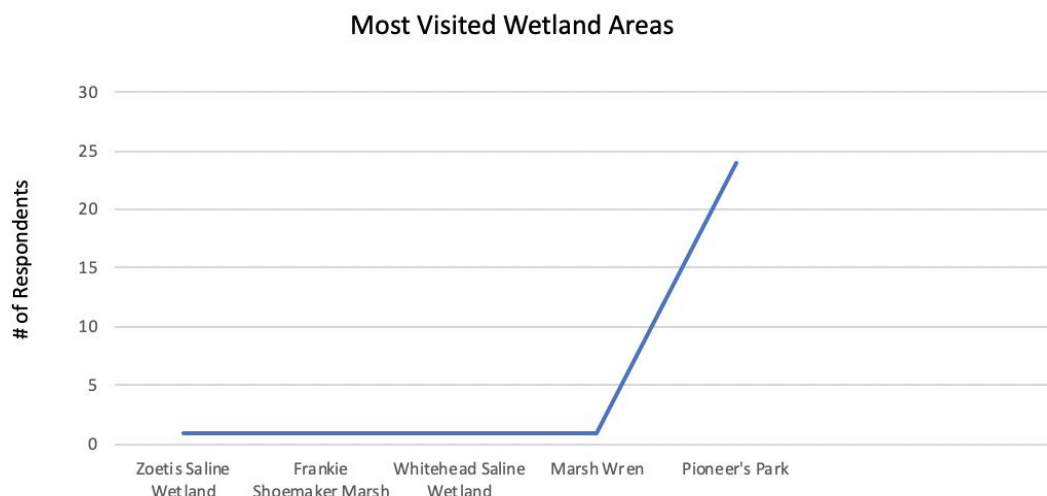


Figure 9: Wetland areas most visited by respondents (n=28 Wetland Visitors)

In Figure 10 below, Wetland visitors frequency of visits is depicted. Time frames accommodate respondents who visit the Saline Wetlands daily, weekly, monthly, yearly, every few years, less than a yearly basis, and never. Y-Axis represents the number of responses per choice. As time increments increase from daily to yearly, there is an upward trend of people's frequency of visits. Yearly is the most common time frame that respondents visit the Eastern Saline Wetlands.

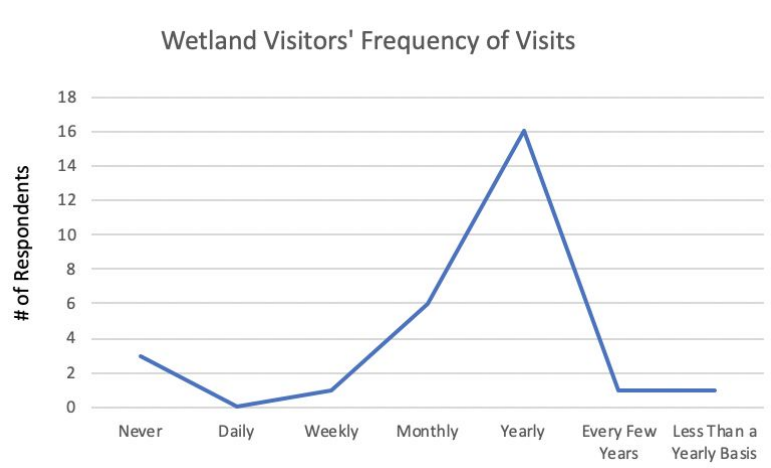


Figure 10: Wetland Visitor Frequency of Visits (n=28 Wetland Visitors)

Figure 11 shows the aspects of the Saline Wetlands that were prioritized by respondents. For both wetland visitors and non-wetland visitors, the most valued aspect of the Eastern Saline Wetlands was Endangered Wildlife/Species Habitat. The second most valued aspect was Aesthetic beauty, with the number of respondents who chose this being just below the count of those who chose Endangered Wildlife/ Species Habitat. The third most valued choice was flood

control, an option chosen more by Non-Wetland Visitors. Finally, the least valued aspect of the Eastern Saline Wetlands was its ability to support populations for public hunting areas.

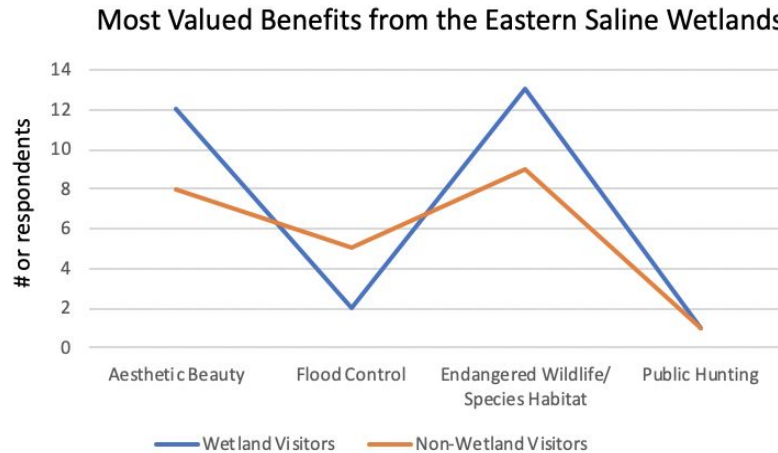


Figure 11: Aspects of the Saline Wetlands that respondents valued most. (n=28 Wetland Visitors, 22 Non-Wetland Visitors)

Discussion

The alternative hypothesis of this study was found to be correct. Respondents who visited Saline Wetlands were found to have been more ecologically sensitive than those who never visited them. Still, Wetland Visitors had a mean score that indicated they were only more ecologically sensitive by a fine margin of 0.2 point on the Likert Scale. This small margin could potentially be due to the fact that the vast majority of respondents were of the same demographic; 19-25 year olds. This could also be a reason that Non-Wetland Visitors were more likely to agree with Dominant Social Paradigm statements by the small margin of 0.31 Likert Scale points. In a comparison of Wetland and Non-Wetland Visitor New Environmental Paradigm, all responses between the two groups brought forth a p-value of .044, indicating that the difference in the ecological perspectives between the two demographics is not being completely influenced by chance, instead true differing perspectives are present. This was also found to be the case for the Dominant Social Perspective statements which had a p-value of .00692. Both of these p-values indicate a rejection of the null hypothesis in favor of the alternative hypothesis.

Since 19-25 year old respondents accounted for 73.8% of the participants of this study, their ecological perspectives were independently taken. This subsample population is representative of study since there was a nearly even amount of Wetland Visitors (21) and Non-Wetland Visitors (23). Their mean response to New Environmental Perspective statements was higher than the participant population mean; meaning 19-25 year olds were a driving factor in the high levels of ecological sensitivity in responses. 19-25 year olds also influence the results

of the mean Dominant Social Paradigm responses since their likelihood to agree with these statements was slightly higher than the mean of the participant population. If Wetland Visitors are more likely to agree with the New Environmental Paradigm statements because of their visits to the Eastern Saline Wetlands, then this is positive for the Saline Conservation Partnership who could use community support and donations to put towards land management. Still from this data, whether an already high respondent ecological sensitivity is influencing wetland visits or if wetland visits are causing respondents to have higher ecological sensitivity cannot be differentiated. Still, it is fair to say that since the data is in accordance with the alternative hypothesis, it could indicate that there is a relationship between people visiting wetlands and their likelihood to have a more ecologically sensitive outlook. Although the finding that Wetland Visitors are likely more ecologically sensitive could be indicative of their visits to wetlands, it will take further research that can more strongly represent the general public.

The most common area visited by survey respondents was by far, Pioneers' Park. Pioneers Park is likely a common destination for wetland visitors because it offers many of the services that respondents suggested in the community based activity free response question such as; wildlife viewing, birdwatching, hiking, kid-friendly, educational, and volunteer opportunities. As seen in Figure 9, Wetland Visitors were most likely to visit the Eastern Saline Wetlands on a yearly basis. There is a noticeable trend, with visitors being least likely to visit daily and progressively increasing with the categories weekly and monthly, until the frequency of visits peaks at yearly. The least common time frames of visits were daily, every few years, and less than a yearly basis.

In Figure 8, the respondents were asked to choose the most valuable aspect of the Eastern Saline Wetlands. The most common choice for both Wetland Visitors and Non-Wetland Visitors turned out to be the Saline Wetlands ability to support endangered species such as the Salt Creek Tiger Beetle and Saltwort, along with other wildlife. Since this study is most representative of the 19-25 age demographic, it is a good sign that the respondents' most valued aspect of the Eastern Saline Wetlands is the ability to protect wildlife. The Saline Wetlands Conservation Partnership could utilize this finding by using the ecologically sensitive perspective of a college-aged generation to promote awareness of low conservation status, receive help from volunteers, and improve knowledge on endangered species and land. In doing this, the Saline Wetlands Conservation Partnership would be creating an informed and 'aware' public, which according to Figure 2, would eventually lead to an intention to support wetland restoration (Scholte et al, 2016). The next most valued aspect was 'Aesthetic Beauty', which suggests that respondents feel that the Eastern Saline Wetlands have the ability to provide value through intangible benefits.

From the free response question regarding community based educational opportunities, respondents displayed interest in several subjects pertaining to the Eastern Saline Wetlands. These responses could be generally categorized into 4 groups; Hikes/Hiking, Wildlife/Plants, Endangered Species, and Wetlands. The subtopics mentioned in Hikes/Hiking included; group

hiking, guided hiking, informative hiking, ranger hikes, and kid- friendly hiking. Wildlife/Plant responses included; birdwatching, wildlife education, and species density lessons. Endangered Species responses included; endangered species rehab course, flood control, resource scarcity education, and education on modern threats to nature. Responses pertaining to wetlands included; geomorphology and wetland design and use. The responses to this question were useful because all of these educational opportunities are feasible and can be observed and practiced in Eastern Saline Wetland areas. These are also areas where the Saline Wetlands Conservation Partnership could focus their public outreach efforts towards. In looking to meet the educational desires of the college aged-generation, the Saline Wetlands Conservation Partnership could likely spark public interest in the importance of Saline Wetland land management, and in doing so, help preserve a unique ecosystem for generations to come.

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