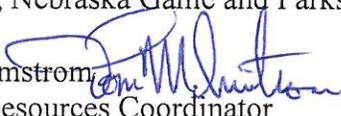


MEMORANDUM

DATE: April 24, 2015

TO: Lincoln City Council, Lower Platte South Natural Resources District Board of Directors, Nebraska Game and Parks Commission, and The Nature Conservancy

FROM: Tom Malmstrom   
Natural Resources Coordinator  
Parks and Recreation Department  
Saline Wetlands Conservation Partnership

RE: Saline Wetlands Conservation Partnership – 2014 Progress Report

On behalf of the Saline Wetlands Conservation Partnership (SWCP) I want to make you aware of the activities, which occurred in 2014. The SWCP was initiated in 2003 and continues to progress. The City of Lincoln has been awarded four Nebraska Environmental Trust Fund (NET) grants since 2002 for the eastern saline wetlands. The most recent award the City of Lincoln received was a \$1,400,000 grant over a three year period in 2012. The grant period was recently extended for one year and will terminate on June 30, 2016. These grants have been used for land acquisition, wetland restoration, and land management purposes and provide matching funds for other grant opportunities.

Efforts of the SWCP are to protect, restore, and manage the rare and unique saline wetland habitat. The Partnership continues to utilize the "Implementation Plan for the Conservation of Nebraska's Eastern Saline Wetlands (2003)," for guidance in efforts to conserve the saline wetlands. Since its inception, partners have purchased nearly 1,516 acres of habitat containing saline wetlands, freshwater wetlands, native prairie, and other associated upland habitat, initiated educational activities, participated in saline wetland restoration and conservation projects, and provided for operation and maintenance of these areas.

Illustration 1 identifies saline wetland properties, which have been acquired through fee-title acquisitions or conservation easements since the 1980's. Illustration 2 identifies other saline wetland locations including Pioneers Park and saline wetland conservation easements.

# Illustration 1

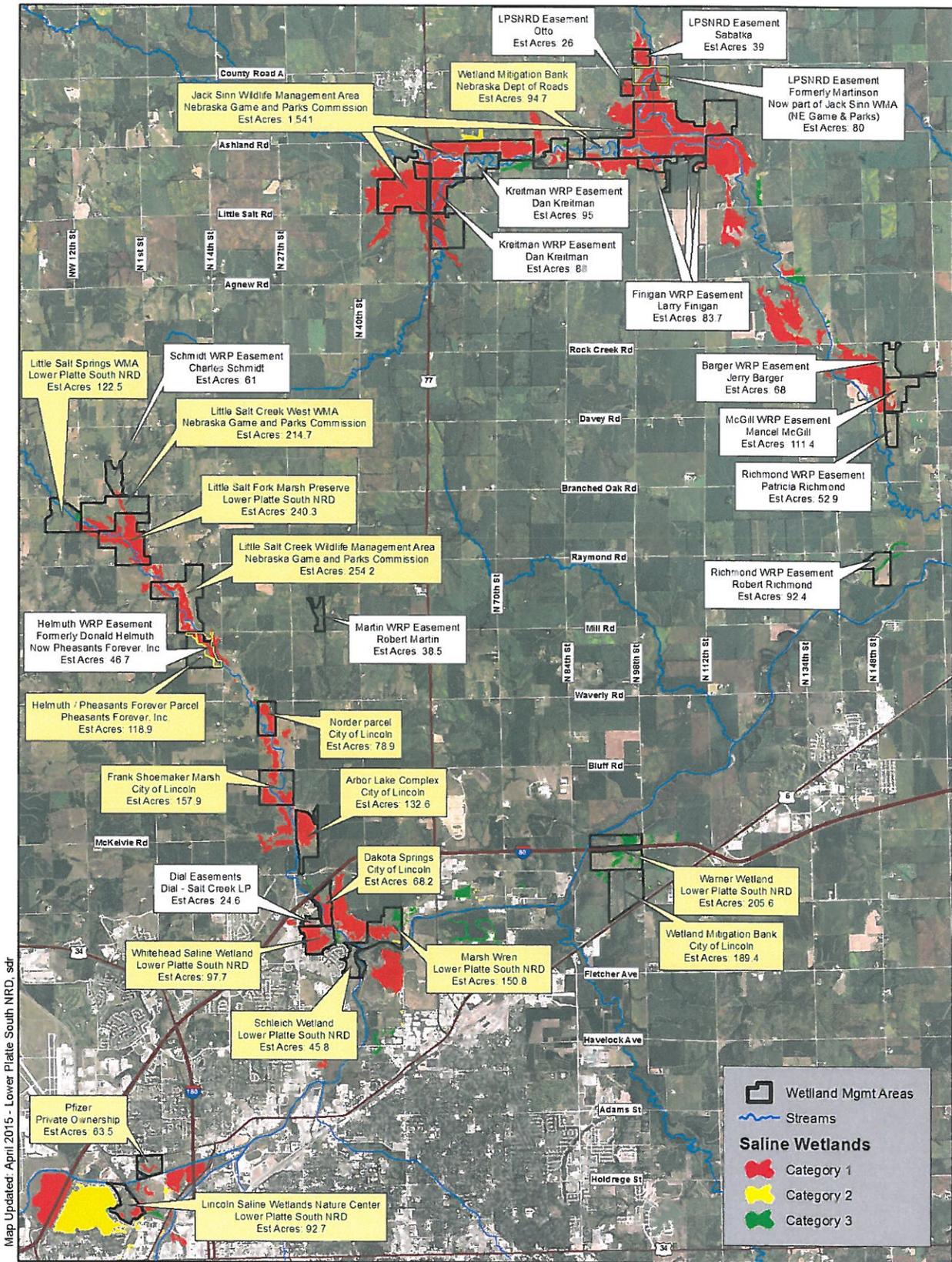
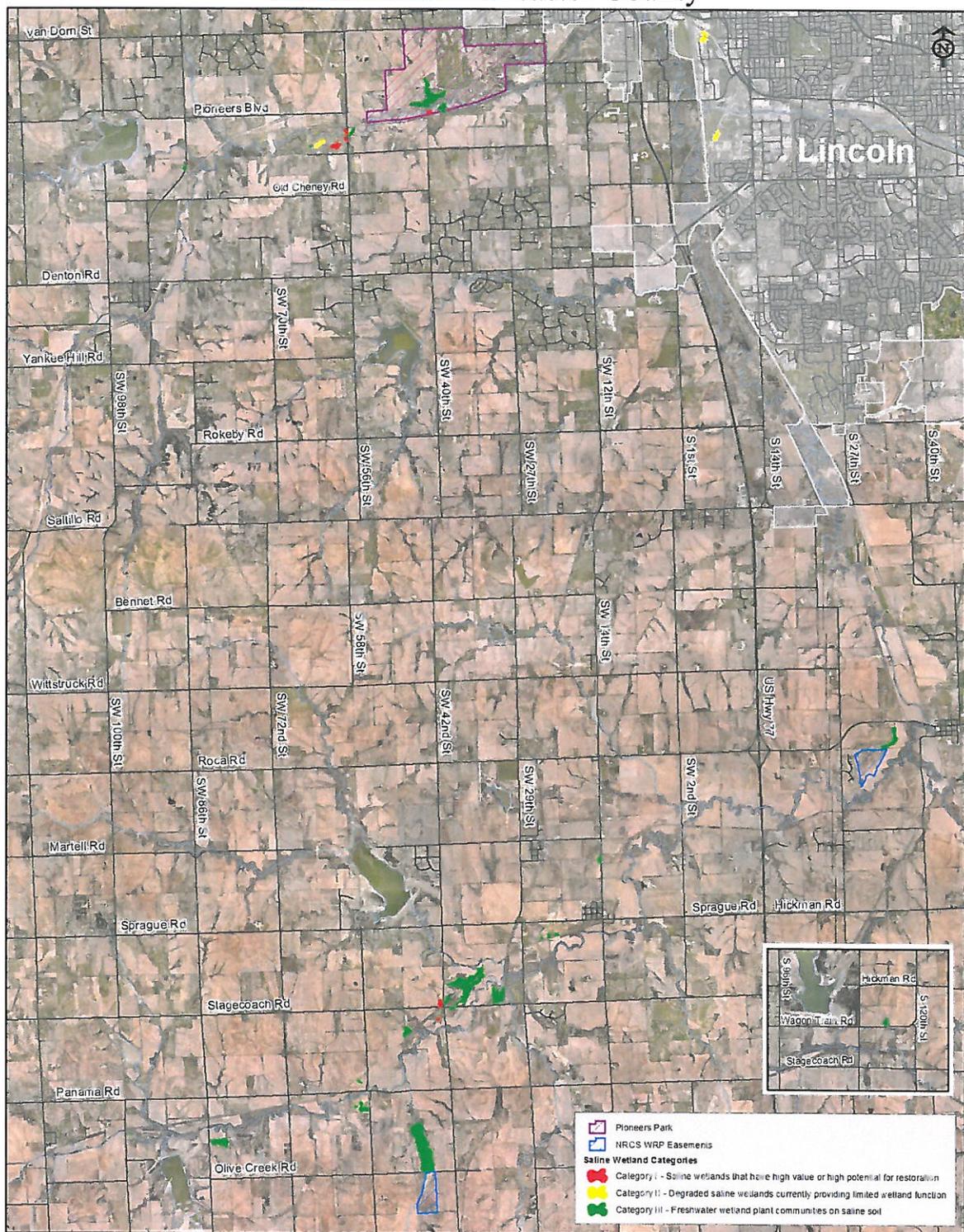


Illustration 2

### Southwestern Lancaster County



Q:\ArcGIS\_projects\Wetlands\ManagementAreas\_Grouped\SW\_Lancaster\SW\_LancasterCo\_8x11.mxd - Map Created: April 2014, LPSNRD

## SUMMARY OF 2014 ACTIVITIES

### LAND ACQUISITIONS

- **Jack Sinn Wildlife Management Area (Kreitman addition)** – Between North 70<sup>th</sup> and North 84<sup>th</sup> streets and south of Ashland Road
  - Size: 183.5 acres
  - Purchase price and date: \$375,000 on June 4, 2014
  - Funding sources: Nebraska Game and Parks Commission (\$225,000)  
2012 NET Grant (\$150,000)
  - Owner: Nebraska Game and Parks Commission

**Notes** – The property contains 73 acres of Category 1 saline wetlands and eight (8) acres of Category 3 saline wetlands, and 95 acres of saline hydric soils. (Gilbert and Stutheit 1994). The property is traversed by approximately 1.1 mile of Rock Creek; nearly the entire property is within the floodplain. The property is contiguous with the 1,360 acre Jack Sinn Wildlife Management Area that is owned and managed by the Nebraska Game and Parks Commission. Areas along Rock Creek within this property have been designated by the U.S. Fish and Wildlife Service as critical habitat for the Salt Creek tiger beetle.

- **Norder Tract** – Between North 14<sup>th</sup> and North 27<sup>th</sup> streets and south of Waverly Road
  - Size: 78.9 acres
  - Purchase price and date: \$457,000 on September 15, 2014
  - Funding sources: Federal Section 6 (\$270,000)  
2012 NET Grant (\$187,000)
  - Owner: City of Lincoln



**Notes** – The property contains 30 acres of Category 1 saline wetlands and 60 acres of saline hydric soils. The property is traversed by approximately 0.6 mile of Little Salt Creek. Except for the northeast upland area (10 acres) the rest of the property is within the floodplain. Areas along Little Salt Creek within this property have been designated by the U.S. Fish and Wildlife Service as critical habitat for the Salt Creek tiger beetle.

## WETLAND RESTORATION

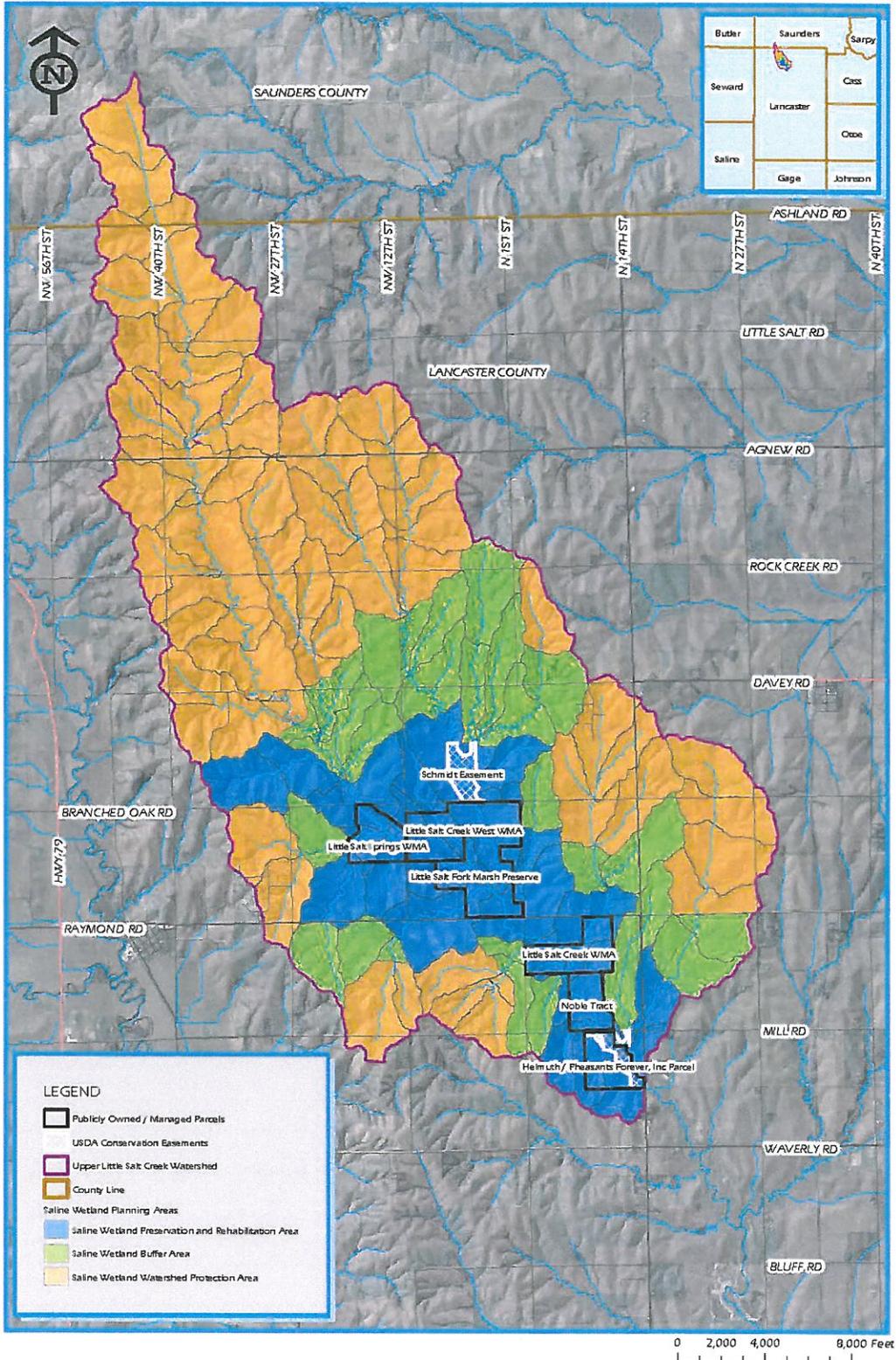
### **Upper Little Salt Creek Saline Wetlands Plan Project**

In 2013, The Flatwater Group, Inc. was hired to perform the preliminary design study and survey properties managed by the Saline Wetlands Conservation Partnership. This project will develop a plan for the Upper Little Salt Creek saline wetlands which evaluates the unique environmental resource and provides recommendations for future planning and project development. The final document is expected by the end of 2015. Illustration 3 identifies the Upper Little Salt Creek project area.

The project has identified, evaluated, and mapped the sensitive biological resources and constraints. This included field work to identify and establish plant transects throughout the project area. The following project tasks were conducted in 2014:

- Background research and preliminary reconnaissance
- Initiated blog and data sharing for project team
- Developed methodology for project
- Defined planning area boundary
- Compiled data base into ArcGIS format for map development
- Mapped plant communities identified by project botanist
- Conducted field examinations of previous restoration projects
- Identified, evaluated and mapped sensitive biological resources
- Project work sessions and coordination meetings with Project Core Team – April, July, and November
- Identified and mapped biological constraints within the project planning area
- Determined future biological studies and evaluations to be conducted
- Provided output figures from spatial analysis
- Determined potential impacts of future land management
- Initiated development of phased schedule and cost estimates for final plan to guide future implementation projects
- Conducted Project priority identification meetings with Project Core Team – November and December
- Organized project priorities based on Core Team recommendations
- Initiated assimilation information from all tasks into draft planning document
- Discussed schedule for public open house in early 2015

Illustration 3



Upper Little Salt Creek Saline Wetlands Plan - Planning Area Boundaries

## **WETLAND MANAGEMENT**

Two seasonal employees hired by the City of Lincoln performed management on the saline wetland areas. Members of the Partnership established management activities to be addressed within the saline wetlands complex. These employees primarily worked on noxious weed and woody vegetation removal, structure maintenance, and access. Funding for these positions is provided with 2001 State Wildlife Grant funds the NGPC received from the U.S. Fish and Wildlife Service. A total of 309 hours were worked by the seasonal employees in 2014 on saline wetland management activities primarily from May through mid-August. The Coordinator provided supervision of the employees.

In addition, the Lower Platte South Natural Resources District has one fulltime Maintenance Technician who assists the seasonal employees with work performed on the saline wetlands. The time this position spends on the saline wetlands is paid for with stewardship funds through an agreement the NRD and The Nature Conservancy have to support the saline wetland areas.

## **SALINE WETLAND RESEARCH**

The SWCP has worked with partners on a variety of projects within the saline wetlands. Funding for some of these projects has come from the Nebraska Environmental Trust, U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency, and the Nebraska Game and Parks Commission. Following is a summary of research conducted in 2014.

### **Biogeochemical controls on saline wetland plant establishment in Nebraska's Eastern Saline Wetlands**

Dr. Amy Burgin, Assistant Professor  
School of Natural Resources  
University of Nebraska – Lincoln

Keunyea Song PhD., Postdoctoral Researcher  
School of Natural Resources  
University of Nebraska – Lincoln

In December 2013, the City of Lincoln executed and approved a Memorandum of Understanding with the Nebraska Game and Parks Commission to cooperate on the research project “Biogeochemical controls on saline wetland plant establishment in Nebraska’s Eastern Saline Wetlands.” The University of Nebraska – Lincoln will complete the project over a two year period. Funding for this research is provided by a Nebraska Natural Legacy Project grant received from the Nebraska Environmental Trust and funds contributed by the Saline Wetlands Conservation Partnership.

The goal of the research project is to further support saline wetland restoration techniques by understanding the environmental conditions needed for saline wetland plant communities. In 2014 the focus included:

- The effects of different salinity
- The effects of different intensity of salt water intrusion on soil biogeochemistry in restoration area.

The research activities began in April 2014, with visits to various saline wetland areas. The site for the project was assessed and discussions with the project partners occurred on the experimental project design.

In May and June of 2014, the final experimental design was completed. The final design includes 2 hydrology patterns and 4 salinity levels with 4 replications for a total of 32 experimental plots along with an additional two control plots. The 34 plots were randomly assigned in 3 dredged experimental areas. Barriers were installed to minimize the pore-water or any overflowing water exchange between plots.



**Experimental plots at the research site**

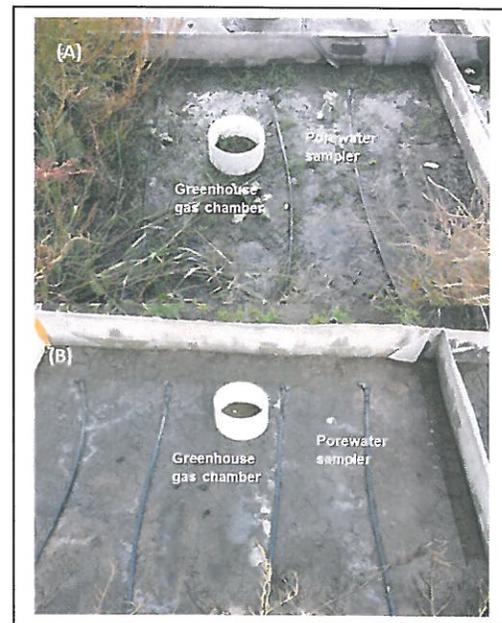
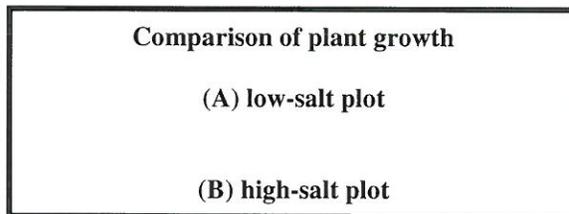
Saline groundwater is pumped from three nearby wells (depths of 20 feet, 90 feet, and 180 feet). The freshwater treatment from Lincoln tap water is used as a salinity control to differentiate the effects of salinity and water addition. The two control plots have no water added.

The water system is designed to create two intensities of salt water intrusion. The first salt water intrusion is a slow hydrologic loading rate. In this treatment, 55 gallons of water is slowly released through drip tapes with an approximate flow rate of four liters/hour for two days. The second salt water intrusion method includes rapid flooding. Water is added to the plots at the flow rate (four liters/minute) pumped from the groundwater wells.

A weather station was installed in June 2014, and measures the solar radiation, air temperature, relative humidity, rainfall, wind speed, wind direction.

Groundwater with different salt gradients was added into the experimental plots beginning in July 2014, except for rainy and cloudy days. From late July, significant suppression of plant productivity under middle and high salt conditions was observed. Salt crust formation was also evident on the surface especially in the middle and high salt intruded plots. No salt crust formation was observed in freshwater and low salt plots.

A pore water sampler was installed into each plot to measure the change of pore water chemistry over time. The pore water is collected twice each month. Generally the pore water sampling occurs one to two days after the salt water addition each week. Sampled pore water is filtered within 24 hours and stored in a freezer until the subsequent analysis. The greenhouse gas flux has been measured at least twice a month using PCV greenhouse gas chambers. Monthly biogeochemical property measurements began in August 2014. These measurements include sulfate reduction, denitrification, extracellular enzyme activities and soil extractable nutrient contents.



The project partners met in July 2014, to determine, which saline plant species should be targeted for the research and the planting design for the project. The meeting summary includes:

- Use seven saline plant species: Saltgrass (*Distichlis spicata*); Foxtail barley (*Hordeum jubatum*); Marsh elder (*Iva annua*); Saltwort (*Salicornia rubra*); Sea blite (*Suaeda calceoliformis*); Spearscale (*Atriplex subspicata*); and Saltmarsh aster (*Aster subulatus*).
- Quantity of seeds application per plot was determined by researcher. Based on the seeding rates in restored wetlands, 4.3 ounces (128 ml) of seeds per plot (surface area: 136 m<sup>2</sup>) will be used.
- It was determined to do a dormant seeding. Seeding time was mid-November but subject to change depending on the seed collection and preparation procedure.

Seeds were collected beginning in September 2014, for the seven identified saline wetland plant species with the assistance of the Prairie Plains Resource Institute. The seeds were collected in saline wetlands in close proximity to the experimental site. Once collected, the seeds were hammer-milled at the Prairie Plains Resource Institute and then in November 2014, delivered to University of Nebraska.

The seeds went through a purification process to remove other plant materials for lab-scale germination tests and to prepare seed for distribution into plots in March 2015. The purification process included hand picking, sequential sieving, and gentle blowing. Purified seeds were cold-stratified in a refrigerator in UNL.

The experimental site sampling and gas flux measurements were taken until November 2014. A monthly core incubation experiment was also conducted until November 2014. In December the site was prepared for winter by removing the water barrels, irrigation systems, hoses and other materials. The equipment and materials will be stored at UNL until April 2015.

The research team had several meetings through November and December in 2014 to discuss details for the germination experimental design. There is little information known about effective seeding for saline wetland restoration. The germination rate information of the targeted saline wetland plant species under various conditions could assist in the development of plausible restoration techniques.

In 2015, salt effects will be tested using the water from the three groundwater wells with varying salinity at the experiment site and one freshwater sample as a control. Three temperature treatments; 5-10° C, 5-20° C, and 10-20° C will be used to determine the optimum seed planting time. These temperatures represent the maximum and minimum temperatures for the months of March, April, and May, respectively, in Lincoln, Nebraska. A thermal-period and photo-period of 13 hours warm/light and 11 hours cool/dark will be used for the duration of the experiment. This represents the average photo-period in Lincoln, Nebraska from March through May. In addition, germination test will be carried out in temperature controlled chambers at UNL in February 2015.

## **ENDANGERED SPECIES**

Efforts of the SWCP are to protect, restore, and manage the rare and unique saline wetland habitat and not just endangered species. The Salt Creek tiger beetle and Saltwort plant are indicator or bio species where their presence or absence in Nebraska's eastern saline wetlands indicate certain environmental conditions, such as soil type, pollution levels, etc. Therefore it is imperative the SWCP helps to monitor the endangered species of these wetlands for conservation efforts, as well as monitoring other indicator species.



The Salt Creek tiger beetle (*Cicindela nevadica lincolniana* Casey) was listed a state endangered species in 2000 and Federal endangered species on October 2005. It is endemic to the saline wetlands in Lancaster and southern Saunders counties. Saltwort (*Salicornia rubra*) is a state listed endangered species. In Nebraska, the Saltwort is only found in these saline wetlands.

In 2007, the U.S. Fish and Wildlife Service (USFWS) listed the Proposed Rule in the Federal Register for the Designation of Critical Habitat for the Salt Creek tiger beetle. In April 2009, the USFWS reopened Critical Habitat Designation to add a total of 138 acres to three of the four previously proposed units. The proposed revised critical habitat designation for the species included four critical habitat units totaling approximately 1,933 acres. The rule was made final on April 6, 2010.

In February 2011, three conservation groups; The Center for Native Ecosystems; Center for Biological Diversity; and the Xerces Society sued the USFWS saying it was not protecting enough habitat to save the insect. An agreement was reached in June 2011, to require the Service to re-examine the areas already designated as critical habitat but also new areas in Lancaster County.

In June 2013, the USFWS proposed to revise critical habitat for the endangered Salt Creek tiger beetle. Public comments were accepted until August 3, 2013. The revision was required by the terms of a June 7, 2011 settlement agreement between the USFWS and the Center for Native Ecosystems, the Center for Biological Diversity, and the Xerces Society. Based on the best available information, the USFWS recommended a proposal to designate 1,110 acres along four stream corridors as critical habitat; less than the previous designation of 1,933 acres. However, it increases the number of unoccupied units from one to three.

The final revision to designate 1,110 acres of critical habitat for the Salt Creek tiger beetle was approved on May 5, 2014. Critical habitat is identified along four streams that still contain sufficient potential habitat to support viable populations of Salt Creek tiger beetle; Little Salt Creek, Rock Creek, Oak Creek, and Haines Branch Creek. The Little Salt Creek unit includes the three remaining populations, while the Rock, Oak, and Haines Branch Creek units are currently unoccupied. The designation consists of stream corridors with exposed salt seeps and salt flats that provide habitat for the species, and surrounding vegetative areas that provide food resources and shade. It is estimated the critical habitat can support at least six viable populations of Salt Creek tiger beetles and will ensure recovery of the species.

The critical habitat units include land under private ownership, lands owned by the Nebraska Game and Parks Commission, the City of Lincoln, the Lower Platte South Natural Resources District, and Pheasants Forever. Approximately 29 percent of the critical habitat is protected from future disturbance by conservation easements or fee title land acquisitions as a result of a conservation plan developed in 2003 by Nebraska Game and Parks Commission, City of Lincoln, Lancaster County, Lower Platte South Natural Resources District, and The Nature Conservancy.

### **Salt Creek Tiger Beetle Research**

The following research information provided by:  
Stephen M. Spomer  
Entomology Department, University of Nebraska-Lincoln

### **2014 Salt Creek tiger beetle Surveys & Research**

#### **Field Collection and Rearing- 2014:**

Permits for obtaining eggs from Salt Creek tiger beetle allowed field collections of males and females. Eleven pairs were collected on June 11, 2014 and 4 more pairs were collected on June 18, 2014 and transported to Omaha's Henry Doorly Zoo. The adults were returned to the collection sites after mating and egg-laying had occurred in ten days. Progeny from these adults are being reared by Omaha's Henry Doorly Zoo, Lincoln Children's Zoo, and UNL.

## **Population Estimates for 2014:**

The first sighting of a Salt Creek tiger beetle adult was on June 6, 2014. Preliminary surveys began on June 20, 2014. Population estimates were conducted between July 1, 2014 and July 9, 2014. A total of 143 Salt Creek tiger beetles were counted, which was a reduction in adult numbers from 2013.

## **Re-introduction Efforts**

To assist with the re-introduction of Salt Creek tiger beetles reared in the zoos, seven data loggers, commonly referred to as HOBO units, were purchased in 2014 and placed at locations where the beetles were released or locations which have future potential for release. The HOBO units monitor soil temperature at various depths and surface moisture throughout the year.

In order to monitor the beetle release locations and gather data from the HOBO units the U.S. Fish and Wildlife Service worked with the Nebraska Master Naturalist program. Volunteers worked in pairs throughout the summer at each location; visiting the sites where releases occurred on a weekly basis and those sites with HOBO units monitoring saline wetland habitat for potential release on a monthly basis. The U.S. Fish and Wildlife Service conducted training for the Nebraska Master Naturalist volunteers on May 23, 2014.



**Nebraska Master Naturalist volunteers  
downloading information from a HOBO unit at  
a Salt Creek tiger beetle release location**

In 2014, approximately 150 larvae of the Salt Creek tiger beetle reared in 2013 were released in the spring and another 25 in the fall. This was accomplished through a cooperative captive rearing program among the USFWS, NGPC, UNL, Omaha Henry Doorly Zoo, and the Lincoln Children Zoo. Researchers monitor the released larvae.

## SUMMARY OF SALINE WETLANDS AND SOILS PROTECTED (2001-2014)

In order to preserve and restore these wetlands, an Implementation Plan for the Conservation of Nebraska’s Eastern Saline Wetlands was completed in 2003. This plan identifies four Landscape Objectives, which establish projection and restoration targets for the conservation of the Eastern Saline Wetlands. A summary of acres acquired through fee-title acquisition since 2001 by the SWCP is provided below. Acres of saline wetlands that have been acquired but have not yet been restored are not listed in the table. Conservation easement information is not provided in the summary.

<b>LANDSCAPE OBJECTIVE</b>	<b>ACRES OF WETLAND PROTECTED OR RESTORED</b>
1 – Permanently protect 100% (148 acres) of intact Category 1 saline wetlands and their associated conservation zones to ensure that the wetlands and their functions are sustained	43.3
2 – Restore and Protect 80% (1,412 acres) of unprotected degraded Category 1 saline wetlands and their associated conservation zones to ensure that the wetlands and their functions are sustained	288.5
3 – Restore (to intact Category 1 wetlands) and protect 50% (167 acres) of unprotected Category 3 saline wetlands and their associated conservation zones to ensure that the wetlands and their functions are sustained as intact Category 1 wetlands	62.0
4 – Restore (to intact Category 1 wetlands) and protect 50% (2,360 acres) of unprotected current non-wetland areas on saline hydric soils so that they become intact and sustained Category 1 saline wetlands	287.4
<b>TOTAL</b>	<b>681.2</b>

Source: Ted LaGrange and Rachel Simpson of the NGPC, 2014

### EDUCATION

The Lower Platte South NRD provides opportunities for local schools to visit the saline wetlands to learn about saline wetland soils, vegetation, and hydrology. Students also examine invertebrate health within the wetlands and in streams to indicate stream health. In 2014, nearly 250 students from the local area had field visits to the Whitehead Saline Wetland, which is owned and managed by the NRD.



The Coordinator continues to present “saline wetland jeopardy” to fifth grade students attending the Earth Wellness Festival. Other presentations were given to local groups, UNL classes and conservation agencies.

## Nebraska Game and Parks Commission Southeast Birding Day

On May 14, 2014 a total of 47 people participated in the annual NGPC Southeast District Birding Day on Nebraska's eastern saline wetlands within the Little Salt Creek watershed near 1<sup>st</sup> Street and Raymond Road, Lancaster County, Nebraska. The participants included the general public, representatives of a variety of conservation agencies, and representatives of the Saline Wetlands Conservation Partnership.

Participants were split into groups and birded on three Eastern Saline Wetland sites; Little Salt Fork Marsh Preserve, Little Salt Creek West WMA, and Little Salt Springs. Partners of the Saline Wetlands Conservation Partnership acquired these critically imperiled saline wetlands, creating a significant habitat complex at this location of approximately 600 acres. The area provides multi-use public access in close proximity to the City of Lincoln.

Following the birding in the morning the group met in Raymond Park for an early lunch and discussion about conservation efforts within the Eastern Saline Wetlands. Tom Malmstrom, Partnership Coordinator provided an overview of the activities the partnership is involved in; Gordon Coke, The Flatwater Group Biologist, provided specific information on a restoration project and also a planning effort that they are pursuing for the partnership; Dan Schulz, LPSNRD Biologist, provided information on Eastern Saline Wetland management issues; and Joel Jorgenson of the NGPC provided a birder's perspective on biological use of these wetlands, including information on a "secretive" marsh bird survey conducted in 2013.

The bird species (common name) identified during this birding day on the saline wetlands is identified below. A total of 92 species were identified.

American Widgeon	Gadwall	Canada Goose	Mallard	Blue-winged Teal	Northern Shoveler
Green-winged Teal	Ruddy Duck	Wild Turkey	Ring-necked Pheasant	Northern Bob-white Quail	Great Blue Heron
Great Egret	Cattle Egret	Turkey Vulture	Northern Harrier	Red-tailed Hawk	Sora
American Coot	Killdeer	Lesser Yellowlegs	Least Sandpiper	White-rumped Sandpiper	Wilson's Phalarope
Franklin's Gull	Black Tern	Forester's Tern	Rock Pigeon	Mourning Dove	Eurasian Collared-Dove
Chimney Swift	Ruby-throated Hummingbird	Red-headed Woodpecker	Red-bellied Woodpecker	Downy Woodpecker	Northern Flicker
Western Kingbird	Least Flycatcher	Eastern Phoebe	Eastern Kingbird	Warbling Vireo	Bell's Vireo
Blue Jay	American Crow	Purple Martin	Tree Swallow	Northern Rough-winged Swallow	Cliff Swallow
Barn Swallow	Bank Swallow	Black-capped Chickadee	Tufted Titmouse	Sedge Wren	House Wren
Marsh Wren	Eastern Bluebird	American Robin	Gray Catbird	Brown Thrasher	European Starling
Tennessee Warbler	Yellow Warbler	Yellow-rumped Warbler	Common Yellowthroat	Chestnut-sided Warbler	Wilson's Warbler
Chipping Sparrow	Clay-colored Sparrow	Field Sparrow	Song Sparrow	White-throated Sparrow	Harris's Sparrow
Savannah Sparrow	Grasshopper Sparrow	LeConte's Sparrow	Lincoln's Sparrow	White-crowned Sparrow	Northern Cardinal
Rose-breasted Grosbeak	Blue Grosbeak	Dicksissel	Bobolink	Red-winged Blackbird	Eastern Meadowlark
Western Meadowlark	Yellow-headed Blackbird	Common Grackle	Brown-headed Cowbird	Orchard Oriole	Baltimore Oriole
American Goldfinch	House Sparrow				

## FUNDING RESOURCES

- Federal Section 6 – In 2012, the NGPC through the U.S. Fish and Wildlife Service was awarded \$270,000 for the acquisition of a property containing saline wetlands. This funding was used for the acquisition of the Norder Tract in 2014.

In 2013, the NGPC through the U.S. Fish and Wildlife Service was awarded \$190,300 for the acquisition of a property containing saline wetlands. The funding remains available for land acquisition of saline wetlands.

- A grant was submitted to the Nebraska Environmental Trust in 2011 for the “Eastern Saline Wetlands Project – 2012.” The grant was approved in the amount \$1.4 million for land acquisition, restoration, and planning activities for a three year grant period. To date, \$606,702.80 has been expended.
- In 2012, The Nature Conservancy and the Lower Platte South Natural Resources District amended a previous grant agreement to specifically build, enhance and/or maintain effective ecological stewardship of the saline wetlands. Beginning June 30, 2012 and through July 1, 2019 The Nature Conservancy will disburse \$7,500 annually contingent upon corresponding disbursement of matching funds from the Lower Platte South Natural Resources District for the Project.
- In 2002, the Nebraska Game and Parks Commission obtained a *2001 State Wildlife Grant* from the U.S. Fish and Wildlife Service entitled “Eastern Nebraska Saline Wetland Conservation Partnership”. The grant award was for \$620,000. The grant has been used to fund a variety of planning and implementation activities for the Partnership, including land acquisition, wetland restoration, wetland management, equipment purchases, and support for the Coordinator position. The grant has no expiration date, but the Partnership is getting very close having the funds fully spent and closing out the grant.

## **SUMMARY OF OTHER COORDINATOR ACTIVITIES**

- Participant of the U.S. Corps of Engineers Nebraska inter-agency wetland group.
- Attended meetings regarding City and County projects regarding construction activities scheduled near or on saline wetland areas
- Presented information on saline wetlands and the partnership to conservation agencies and the public at Birding Day, Pioneers Park Nature Center staff, and worked with several UNL classes on saline wetland and natural resource projects
- Land management – Supervision of seasonal employees, annual saline wetland discussions with agency land managers, and noxious weed and woody vegetation control and GPS location identification at saline wetland sites. Worked with adjacent landowner regarding construction of .5 mile of fence completed by the Partnership.
- Toured saline wetland areas with UNL Freshman Engineering Class, and USFWS and Nebraska Game and Parks Commission financial aid personnel
- Youth education – presented and participated in the Earth Wellness Festival and UNL Career Day and assisted LPSNRD on article of previous North Star High School education at saline wetlands
- Participated in several meetings and discussions regarding 27<sup>th</sup> Street Right-of-Way acquisition on Frank Shoemaker Marsh with County Roads and the NGPC and LPSNRD forester developed a tree remediation plan for post-construction
- Attended NET Grantee Seminar, NGPC Habitat Partners Meeting, NGPC Southeast District Birding Day, Noxious Weed Conference, and Wetland Delineation and Identification field training
- Met and toured old landfill site with consultant and provided input for conceptual design
- Provided site management for UNL Biogeochemical research project at Arbor Lake and completed a shallow well pump installation for the project
- Participated in information meetings on the Air Quality Index for conservation burning
- Initiated and finalized the termination of Arbor Lake management agreement with NGPC
- Worked with USFWS and NGPC on endangered species monitoring regarding equipment needs, re-introduction site locations, accessibility issues for Master Naturalist teams to gather monitoring information, and participated in release of endangered species
- Toured saline wetland areas with several agencies and local zoos regarding endangered species recovery habitat for re-introduction and participated in monitoring discussions with the Master Naturalist and USFWS

- Provided assistance to LPSNRD hiring a consultant, leading consultant tours, review of engineering proposals, site visits, and correspondence on the Marsh Wren restoration project
- Worked with LPSNRD on Whitehead Saline Wetlands Water Level Control construction project
- Completed pesticide re-certification training
- Met with and assisted Clemson University professor with salt marsh insect surveys
- Worked with two landowners, fund administrators and agency representatives for the acquisition of two properties. Initiated activity with one other landowner
- Participant of Prairie Corridor technical advisory committee; attended several site visits, assisted with management activities, completed one management plan, provided over sight for native seed planting, established correspondence with adjacent landowners, and participated in Spring Creek Prairie land management committee meeting.
- Toured Prairie Plains Resource Institute field sites of planted prairies
- Participant and core team representative of Nebraska Wetland Assessment grant project
- Miscellaneous grant administration and participation in grant applications through conservation agencies regarding wetland projects
- Worked on proposal for Plan for the Upper Little Salt Creek Saline Wetlands

## SALINE WETLAND PROPERTIES

- **Frank Shoemaker Marsh** – 27<sup>th</sup> Street and Bluff Road  
Size: 160 acres  
Purchase price and date: \$472,000 on June 12, 2003  
Funding sources: 2001 State Wildlife Grant through the  
USFWS (\$222,000)  
2002 NET grant (\$250,000)  
Owner: City of Lincoln

**Activity summary** – Noxious weed removal continued and included the documentation of several new plots of Phragmites. Bridge entry-points built up due to settling of soil.

Several monitoring wells installed by UNL are monitored. The total number of wells includes three shallow wells (15-30 feet), three intermediate wells (60-90 feet), and one deep well (~180 feet).

Lancaster County Roads Department identified location of right-of-way, which is to be acquired along the east side of property along 27<sup>th</sup> Street in 2015. This would include tree removal and replacement, fence removal and re-installation, and parking lot modification. Work is expected to commence in the fall of 2015

- **Dakota Springs** – South of Arbor Road and East of 27<sup>th</sup> Street  
Size: 68.7 acres  
Purchase price and date: \$204,700 in January 2004  
Funding sources: Federal Section 6 (\$153,525)  
2002 NET grant (\$51,175)  
Owner: City of Lincoln

### **Dakota Springs Extension Purchase (Dial Realty, 7.45 acres)**

Purchase price and date: \$48,500 on December 31, 2008  
Funding source: Federal Section 6

**Activity summary** – Noxious weed and woody vegetation removal continued. Portion of property hayed. Trees cleared along access road. Continue work on musk thistles in 2014. HOB0 Unit with soil temperature and surface water probes installed to provide information on saline wetland habitat.

Monitoring wells installed by UNL and are monitored. The total number of wells in place includes two shallow wells (15-30 feet) and two intermediate wells (60-90 feet).

- **Warner Saline Wetlands** - 98<sup>th</sup> Street and Interstate 80  
 Size: 140 acres  
 Purchase price and date: \$298,580 on December 7, 2004  
 Funding sources: Federal Section 319 (\$179,148)  
 LPSNRD (\$43,043.20)  
 SWCP (\$76,388.80)  
 Owner: LPSNRD

**Activity summary** – Noxious weed control and woody vegetation removal continues with honey locust and cedars. South property was grazed. North parcel is a youth mentor hunt site.

- **Little Salt Creek Wildlife Management Area** – 1<sup>st</sup> Street and Raymond Road  
 Total Size: 256.5 acres  
 Purchase price and date: \$476,000 in June 2004 (original 156 acres)  
 Funding sources: Federal Section 6 (\$276,000)  
 2004 NET grant through NGPC (\$200,000)  
 Owner: NGPC

**Noble Tract Extension** - Along Little Salt Creek, between Mill Road and the southern boundary of the original Little Salt Creek Wildlife Management Area. (100.5 acres)

**Activity summary** – Prescribed grazing and haying of upland was conducted. Cedar removal and noxious weed control continues. HOBO Unit with soil temperature and surface water probes installed to provide information on saline wetland habitat (Noble tract).

Monitoring wells were installed by UNL and are monitored. The total number of wells includes three shallow wells (15-30 feet) and three intermediate wells (60-90 feet).

- **Little Salt Creek West Wildlife Management Area** – South of Branched Oak Road between NW 12<sup>th</sup> and 1<sup>st</sup> Streets  
 Total Size: 220.0 acres  
 Purchase price and date: \$979,000 on October 9, 2009  
 Funding sources: Federal Section 6 (\$560,000)  
 2005 NET Grant (\$42,838.58)  
 2008 NET Grant (\$366,250.42)  
 Ducks Unlimited (\$10,000)  
 Owner: Nebraska Game and Parks Commission

**Activity summary** – Prescribed grazing was conducted. Cedar removal and noxious weed control continues. Food plots were established and ground previously farmed was planted with natives. HOBO Unit with soil temperature and surface water probes installed to provide information on saline wetland habitat.

- **Arbor Lake Complex** – North of Arbor Road and east of 27<sup>th</sup> Street.  
Total Size: 132.5 acres  
Owner: City of Lincoln

**Arbor Lake Extension Purchase (Anderson Property, 69.2 acres)**

Purchase price and date: \$361,710.67 on September 1, 2004  
Funding source: 2002 NET grant through City of Lincoln

**Activity summary** –Wetland restoration construction was completed in May 2012. Post-restoration monitoring is continual. Three HOBO units with soil temperature and surface water probes installed to provide information on saline wetland habitat. Management agreement with the NGPC was terminated after 25 years; City of Lincoln will provide land management activities.

Monitoring wells installed by UNL are continually monitored. The total number of wells includes three shallow wells (15-40 feet) and two intermediate wells (60-90 feet).

- **Little Salt Springs** – NW 12<sup>th</sup> Street and Branched Oak Road  
Size: 123 acres  
Purchase price and date: \$472,188 on July 31, 2007  
Funding sources: Lower Platte South NRD (\$187,960.35)  
2005 NET grant (\$227,227.95)  
Partnership Funds (\$57,000)  
Owner: Lower Platte South NRD

**Activity summary** – Continue to control noxious weeds and woody vegetation with emphasis on phragmites along west side of Little Salt Creek. HOBO Unit with soil temperature and surface water probes installed to provide information on saline wetland habitat. The driveway to private residence and access easement was rocked.

- **Marsh Wren** – Between 40<sup>th</sup> and 56<sup>th</sup> Streets and north of Salt Creek  
Total Size: 80.0 acres  
Purchase price and date: \$320,000 on May 27, 2009  
Funding sources: Lower Platte South NRD (\$25,000)  
SWCP (\$25,000)  
City of Lincoln floodplain acquisition funds (\$178,000  
(\$89,250 each from the City of Lincoln and the LPSNRD)  
2005 NET Grant (\$91,500)  
Owner: Lower Platte South Natural Resources District

**Marsh Wren addition** – East of 40<sup>th</sup> Street and immediately north of Salt Creek

Size: 49.4 acres  
Purchase price and date: \$270,000 on June 19, 2012  
Funding sources: Federal Section 6 (\$135,000)  
2008 NET Grant (\$130,000)  
SWCP (\$5,000)  
Owner: Lower Platte South Natural Resources District

**Activity summary** – Noxious weed and woody vegetation removal continued. Lease terminated with local Hunt Club on December 31, 2013. Fence was completed along northerly boundary of addition property. A consultant was selected and initiated engineering restoration design in 2014. Access easement was acquired from adjacent landowner.

- **Allen Parcel** – Between Branched Oak Road and Raymond Road and west of 1<sup>st</sup> Street  
Size: 66.6 acres  
Purchase price and date: \$304,000 on February 17, 2010  
Funding sources: Lower Platte South NRD (\$76,000)  
SWCP (\$75,000)  
2008 NET Grant (\$153,000)  
Owner: Lower Platte South Natural Resources District

**Activity summary** – Noxious weed and woody vegetation removal continued. The east boundary fence was installed in 2014.

- **Helmuth Parcel** – South of Mill Road and west of 14<sup>th</sup> Street  
Size: 119.0 acres  
Purchase price and date: \$630,000 on November 23, 2010  
Funding sources: Federal Section 6 (\$275,000)  
2001 State Wildlife Grant through the  
U.S. Fish and Wildlife Service (\$131,666.50)  
NGPC (\$23,333.50)  
Donation from Helmuth family (\$200,000)  
Owner: Pheasants Forever, Inc.

**Activity summary** – Prescribed grazing and haying of upland was conducted. Cedar removal and noxious weed control continues. Signage installed identifying property.

- **Seacrest Range** (43 acres) – Located west of Folsom Street along both the north and south sides of Rosa Parks Way. The area is owned by the City of Lincoln. Efforts continued to remove woody vegetation and to control noxious weeds (Leafy spurge).
- **Lincoln Saline Wetlands Nature Center** (92.7 acres) – It is located near Capitol Beach in Lincoln. The area is owned by the LPSNRD. Management activities in 2014 were noxious weed control and removal of Russian olive, Honey locust, and cedar trees. Considerable efforts to control Phragmites. Well installed by UNL is monitored for groundwater levels and water quality.
- **Schleich Wetlands** (50.2 acres) – It is located southwest of Little Salt Creek near where it empties into Salt Creek and east of the Northridge subdivision in Lincoln. The area is owned by the LPSNRD. Management activities in 2014 were noxious weed and removal invasive trees. Engineering complete for maintenance bridge installation on southern drainage area.

- **Whitehead Wetlands** (98.8 acres) – It is located east of 27<sup>th</sup> street and a short distance south of Interstate 80. The area is owned by the LPSNRD. Management activities in 2014 were noxious weed control and removal of woody vegetation.

The LPSNRD contracted with a consultant to complete an engineering design to assist with site hydrology. Engineering design and construction were completed in 2014.

Monitoring wells installed by UNL are monitored. The total number of wells includes five shallow wells (15-30 feet), four intermediate wells (60-90 feet), and one deep well (~180 feet).

- **Little Salt Fork Marsh Preserve** (174.2 acres) – It is located northwest of 1<sup>st</sup> and Raymond Road and owned by the Lower Platte South NRD. Management activities in 2014 included control of noxious weeds. Initial discussion was held with Lancaster County regarding Raymond Road Bridge improvements.
- **Jack Sinn Wildlife Management Area** (1,352.3 acres) – Located south of Ceresco in Saunders and Lancaster counties. This area is owned by the NGPC. Management activities in 2014 were noxious weed control, woody vegetation removal, and prescribed fire and grazing. HOBO Unit with soil temperature and surface water probes installed to provide information on saline wetland habitat.

This program has been very successful and continues to accomplish many of the goals of the Implementation Plan for the Conservation of the Eastern Saline Wetlands. Your continued support for the conservation of these natural areas is appreciated. If you have any questions, please contact me at 402-476-2729 or [tmalmstrom@lpsnrd.org](mailto:tmalmstrom@lpsnrd.org). You can visit the saline wetland website at <http://lincoln.ne.gov/city/parks/ParksFacilities/wetlands/index.htm>