

MEMORANDUM

DATE: February 27, 2008

TO: Lancaster County Board of Commissioners, Lincoln City Council, Lower Platte South Natural Resources District Board of Directors, The 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 Wetland Conservation Partnership
2007 Progress Report

As members of the Saline Wetlands Conservation Partnership (SWCP) I want to make you aware of the activities, which occurred in 2007. The SWCP was initiated in 2003 and continues to progress. The City of Lincoln has been awarded two Nebraska Environmental Trust (NET) grants for the eastern saline wetlands. The first grant was received in 2002 and the second grant is scheduled to be complete this year. These grants have been used for land acquisition and restoration purposes and also provide matching funds for other opportunities.

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 the partnership has purchased nearly 710 acres of saline wetlands and other associated upland habitat, initiated educational activities, participated in saline wetland restoration projects, and provides for operation and maintenance of these areas. Following, is a summary of the 2007 activities.

2007 LAND ACQUISITION

Schell Wetlands – NW 12th 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

WETLAND RESTORATION

- Frank Shoemaker Marsh – Construction was completed in April 2007. The total cost for the restoration project was nearly \$1.2 million. The project was funded from Federal Section 319 funds, 2005 Nebraska Environmental Trust Fund, and State Wildlife Grant funds from the U.S. Fish and Wildlife Service.
- Whitehead Wetlands - Engineering has been completed for the restoration/replacement of an existing drop structure adjacent to Little Salt Creek and incorporating a water control structure to provide management capabilities that would support the existing wetland system. The project also includes removal of sediment which has occurred along 28th Street and access improvements by raising the existing berm at that location. The project began in 2007 and is expected to be completed in mid-2008. The Lower Platte South Natural Resources (LPSNRD) district is funding this project.
- Schleich Wetlands – Engineering has been completed for the restoration of an existing drop structure adjacent to Little Salt Creek. The project began in 2007 and is expected to be completed in 2008. The LPSNRD is funding the engineering services and the City of Lincoln will fund construction with Federal Section 319 funds.

WETLAND MANAGEMENT

- Three seasonal employees were hired by the City of Lincoln in 2007 to perform management on the saline wetland areas. Members of the Partnership established management activities to be addressed within the eastern saline wetlands complex. These employees primarily worked on noxious weed and woody vegetation removal and establishing GPS photo points at publicly owned areas. The Coordinator provided supervision of the employees.

ENDANGERED SPECIES

The Salt Creek tiger beetle (*Cicindela nevadica lincolniana* Casey) was listed on the Federal endangered species list in October 2005. Also listed as a State endangered species, it is endemic to the eastern saline wetlands in Lancaster and southern Saunders counties. The Saltwort (*Salicornia rubra*) is a state listed endangered species. In Nebraska, the eastern saline wetlands are the location where it is found.

On December 12, 2007 the U.S. Fish and Wildlife Service listed the Proposed Rule in the Federal Register regarding the Designation of Critical Habitat for the Salt Creek tiger beetle. A Public Hearing on this designation is scheduled for March 24, 2008. The deadline for public comments is March 31, 2008.

- Representatives of the partnership organizations and the coordinator have been involved with the Habitat Conservation Planning efforts initiated in 2006 in response to the Salt Creek tiger beetle's Federal endangered species listing. The U.S. Fish and Wildlife Service is the sponsoring agency. It is estimated the Habitat Conservation Plan will be completed in 2009
- When requested, the coordinator and other members of the partnership have provided information to consultants of the U.S. Fish and Wildlife Service regarding Federal activities related to the endangered species act

SALINE WETLAND RESEARCH

In 2007, the Nebraska Game and Parks Commission received funding from the U.S. Fish and Wildlife Service to collect biological and hydrological data. This information will be used for the development of a Habitat Conservation Plan for the Salt Creek tiger beetle and the Eastern Saline Wetlands of Nebraska. The research was initiated in the spring of 2007.

Monitoring well installation at four sites along Little Salt Creek is being conducted by the University of Nebraska. Well installations began in May of 2007 and will conclude in 2008. A description of the well type and installation schedule is provided in the narrative of each of the four saline wetland properties; Whitehead Wetlands, King Wetlands, Frank Shoemaker Marsh, and Little Salt Creek Wildlife Management Area (WMA). Each of these 26 wells will be sampled for temperature, conductivity, pH, dissolved oxygen, cations, anions, and isotopes. A summary of other hydrology research is provided below.

Stream Sampling Project

- Weekly conductivity readings/water sampling effort since first week of May 2007
- 6 locations on Little Salt Creek from headwaters to mouth, 4 sample locations on Salt Creek, and 3 sample locations on Rock Creek

Hydroprobe Soil Conductivity/Moisture Data Collection

- 10 sensors and data-logger installed along Little Salt Creek bank west of Arbor Lake site, located in area of known tiger beetle population
- 10 sensors and data-logger installed along Little Salt Creek bank at the Raymond Road/ Little Salt Creek WMA, also in an area of known tiger beetle population
- Sensors measure temperature, soil moisture content (volumetric), and electrical conductivity
- While these sensors have produced some data, salinity levels in soil have complicated their use and reliability. Modifications and improvements to the system are ongoing.
- Plan to deploy a third set of sensors and data logger at a new location in 2008

Additional Research Project Overview

- Engaged in hydrological and hydrogeological research of Nebraska's Eastern saline wetlands
- Part of larger Salt Creek tiger beetle-hydrology-habitat interaction study
- Studying relationships between deep-source saline groundwater, shallow fresh groundwater moving through the alluvium, surface water within Rock, Salt, and Little Salt Creeks, and local precipitation
- Research results to assist natural resource managers actively working to protect, rehabilitate, and further understand the endangered eastern saline wetland ecosystems

Current Efforts (with specific reference to Little Salt Creek)

- Weekly measurements for temperature, conductivity and salinity as well as collection of water samples at 6 locations (from headwaters to mouth) along reach of Little Salt Creek. Measurements and sampling began May 1, 2007
- Participation in the installation and data collection of soil monitoring stations (collecting data on soil temperature, soil moisture and soil salinity) for Habitat Conservation Plan for the Salt Creek Tiger Beetle. Support to the UNL Department of Entomology Salt Creek tiger beetle research project.

Insect surveys are being conducted by the UNL Department of Entomology at saline habitat locations where the Salt Creek tiger beetle still occurs. Sampling began in 2007 and will continue in 2008. The sampling period is from May through September and uses two key sampling techniques; interception (malaise and pitfall) traps, and attraction (black light) traps.

EDUCATION

- North Star High School – Coordinator established annual program with the Environmental Studies class on saline wetlands in 2005. The coordinator in cooperation with the environmental studies instructor at North Star sponsors field trips for a selected group of students to the saline wetlands. These field trips include presentations to the students by personnel of the LPSNRD, and the NGPC. Topics covered regarding the saline wetlands included vegetation, hydrology, entomology, restoration and mitigation, management, well monitoring and sampling, wildlife, and the relationship of urbanized development with natural areas.
- Coordinator educational presentations - The Coordinator continues to present “saline wetland jeopardy” to fifth grade students attending the Earth Wellness Festival and also presented information on saline and freshwater wetlands to Maxey Elementary students. Other presentations were given to local groups and conservation agencies.
- Updated the saline wetlands information on the City web site

FUNDING RESOURCES

- 2002 Nebraska Environmental Trust Grant – Final report was completed for the grant. In November 2007 the NET Board of Directors found the project to be complete and in compliance with the terms of the grant award. This grant primarily funded land acquisition of saline wetland areas.
- 2005 Nebraska Environmental Trust Grant – The grant amount is \$800,000 over a three year period. A total of \$666,783.93 has been expended through 2007. A total of \$438,432.77 was utilized for wetland restoration at Frank Shoemaker Marsh and \$228,351.16 was used for land acquisition.
- Federal Section 319 Grant – The City of Lincoln has received a total of \$1,000,000 for the eastern saline wetland complex. This funding is from 2002 and 2005 grants. Through 2006, a total of \$961,195.77 has been expended. The funds were used on the acquisition of property, wetland restoration, and engineering services. Of the remaining \$38,804.23, \$31,640.00 is to be used for the drop-structure improvements at Schleich Wetlands.
- The coordinator on behalf of the City of Lincoln submitted a grant in 2005 for Federal Section 319 funds in the amount of \$500,000 for the eastern saline wetland complex. In November of 2007 the City was awarded \$250,000. The intention of the grant is for restoration activities. It is anticipated the remaining \$250,000 will be awarded in 2008.

SUMMARY OF OTHER COORDINATOR ACTIVITIES

- Establish GPS photo points at saline wetland sites (two seasons at each site from same point) for baseline landscape monitoring data. The intention is to update the data every five years.
- Provided information and met with the Northwest Economic Associates regarding the economic analysis of the critical habitat designation for the Salt Creek tiger beetle
- Coordinated and sponsored a tour of the eastern saline wetlands for local officials, conservation agencies, and partnering organizations
- On behalf of the Partnership presented “Working Together for Better Results” at the Association of State Wetland Managers Western Workshop
- In 2007, the Coordinator and Partnership has been actively working on a Conservation Action Plan for the eastern saline wetlands. This project is sponsored by the representatives of The Nature Conservancy. When the process is complete it will provide a mechanism to assess and re-assess the biology of the unique ecosystem, identify and monitor the threats, and implement priorities for effective conservation
- Noxious weed and woody vegetation control at publicly owned saline wetland sites
- Project Manager for the Frank Shoemaker Marsh wetland restoration project. Conducted photography documentation of the wetland restoration phases
- Participated in field trips to saline wetlands for students from Dawes Middle School, Zeman Elementary, and UNL education class.
- Member and participant of the Educational Workgroup of the Nebraska Partnership for All-Bird Conservation
- Participant of the City of Lincoln’s Little Salt Creek Watershed Master Plan efforts and Habitat Conservation Plan committee sponsored by the U.S. Fish and Wildlife Service
- Presented updates of the Saline Wetlands Conservation Partnership to several groups including the Lancaster County Ecological Advisory Committee, The Nature Conservancy Board of Directors, and members of the Nebraska Natural Legacy Project
- Grant administration including the preparation and submittal of a 2008 Nebraska Environmental Trust Fund grant on behalf of the City of Lincoln for the eastern saline wetland project 2008
- Provided input on a Habitat Conservation Plan research project to evaluate saline wetland hydrology

SALINE WETLAND PROPERTIES

- **Frank Shoemaker Marsh** – 27th 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

2007 activity summary – Wetland restoration construction was initiated in September 2006 and completed in April 2007. The restoration project was funded with Federal Section 319 funds, 2005 NET Grant, and State Wildlife Grant funds. Noxious weed removal continued especially in areas where the soil was disturbed due to construction activities. Post-restoration monitoring includes observations of wetland vegetation and management of the hydrology through the five water control structures in place. Monitoring wells have been or will be installed by UNL. To date, two shallow wells (15-30 feet) have been installed and in 2008, three medium depth wells (60-80 feet) and one deep well (180-200 feet) will be installed.

- **Melvin King Property** – South of Arbor Road and East of 27th Street
Size: 61.2 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

2007 activity summary – A few salt cedars located along the north bank of Little Salt Creek were removed. A representative of the Prairie Plains Institute observed the second year growth of the high diversity native seeded on the upland area (20 acres) and had positive comments on the progress of the plant species. Monitoring wells have been or will be installed by UNL. To date, two shallow wells (15-30 feet) have been installed and in 2008, two medium depth wells (60-80 feet) will be installed.

- **Warner Saline Wetlands** - 98th 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

2007 activity summary – Woody vegetation removal continues with Honey Locusts and Eastern Red Cedars. The Nebraska Department of Roads met with representatives of the Lower Platte South NRD regarding the purchase of approximately 4 acres of the salt meadow located on the south side of Interstate 80 for the Interstate expansion project.

- **Little Salt Creek Wildlife Management Area** – 1st Street and Raymond Road

Size: 156 acres
Purchase price and date: \$476,000 in June 2004
Funding sources: Federal Section 6 (\$276,000)
2004 NET grant through NGPC (\$200,000)
Owner: NGPC

2007 activity summary – New perimeter fencing installation completed and prescribed grazing was conducted. Future management activities include a prescribed burn and the development of a parking lot. Cedar removal and noxious weed control continues. Monitoring wells have been or will be installed by UNL. To date, two shallow wells (15-30 feet) have been installed and in 2008, two medium depth wells (60-80 feet) will be installed.

- **Arbor Lake Complex** – North of Arbor Road and east of 27th Street.

Total Size: 132.5 acres
Owner: City of Lincoln

Arbor Lake Extension Purchase (Anderson Property)

Size: 69.2 acres
Purchase price and date: \$361,710.67 on September 1, 2004
Funding source: 2002 NET grant through City of Lincoln

2007 activity summary – Continued efforts to control noxious weeds and woody vegetation. The original site was grazed for 30-45 days in the fall to control other vegetation. The City of Lincoln Public Works Department repaired the water control structure. UNL conducted insect inventories throughout the summer along the salt flat areas. The Lincoln Electrical System also finalized the route location of the North Tier III transmission line through the property.

- **Seacrest Range** (43 acres) – Located west of Folsom Street along both the north and south sides of Capitol Parkway West. The area is owned by the City of Lincoln. Efforts continued to remove cedar trees and honey locusts and to control noxious weeds on the site. Mowing of the meadow was discontinued in 2007.

- **Lincoln Saline Wetlands Nature Center** (92.7 acres) – It is located near Capital Beach in Lincoln. This area is owned by the LPSNRD. Management activities in 2007 were noxious weed control and removal of Russian Olive, Honey Locust, and Cedar trees
- **Schleich Wetlands** (50.2 acres) – It is located southwest of Little Salt Creek near where it empties into Salt Creek and east of the Northbridge housing development in Lincoln. This area is owned by the LPSNRD. Management activities in 2007 were noxious weed and woody vegetation control. Several salt cedars were removed from the south bank of Little Salt Creek. Drop-structure repair began in June 2007 and will be complete in 2008.
- **Whitehead Wetlands** (98.8 acres) – It is located east of 27th street and a short distance south of Interstate 80. This area is owned by the LPSNRD. Management activities in 2007 were noxious weed and phragmites control. Construction began in 2007 for the restoration/replacement of an existing drop structure adjacent to Little Salt Creek and removal of sedimentation which has occurred along 28th Street. The project will be completed in 2008. Monitoring wells have been or will be installed by UNL. To date, five shallow wells (15-30 feet), one medium depth (60-80 feet) well and one deep well (180-200 feet) have been installed. In 2008, six medium depth wells will be installed.
- **Noble Tract** (100.5 acres) – It is located on either side of Little Salt Creek and north of Mill Road. Due to resource limitations, The Nature Conservancy expressed an interest in one of the other partners to assume ownership of the property. The property is now owned by the Nebraska Game and Parks Commission.
- **Little Salt Fork Marsh Preserve** (174.2 acres) – It is located northwest of 1st and Raymond Road and owned by The Nature Conservancy. Management activities in 2007 were noxious weed control and woody vegetation removal. Several salt cedars were removed from both sides of Little Salt Creek.
- **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. Perimeter fencing construction was completed in most areas. Funding for these projects was provided by the NET, Federal Section 319 funds through the City of Lincoln, and the State Wildlife Grant fund administered through the NGPC. Management activities in 2007 were noxious weed control, woody vegetation removal, and prescribed grazing.

The Nebraska Environmental Trust on February 7, 2008 recommended preliminary funding to the City of Lincoln in the amount of \$800,000 for the “Eastern Saline Wetlands Project 2008,” with a statement of intent for \$400,000 in year two (2009). Three years will be allowed to expend the funding (year two contract will be for two years).

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. We hope you would agree. Your continued support for the conservation of these natural areas is appreciated. Attached is a summary of Partnership activities from March of 2003. If you have any questions, please contact me at 476-2729 or tmalmstrom@lpsnrd.org.