



LOWER PLATTE SOUTH natural resources district

3125 Portia Street | P.O. Box 83581 • Lincoln, Nebraska 68501-3581 | P: 402.476.2729 • F: 402.476.6454 | www.lpsnrd.org

TO: Board of Directors

FROM: Dan Schulz, Resources Coordinator 

DATE: September 11, 2019

SUBJECT: Recreation, Forestry & Wildlife Subcommittee Meeting Minutes

On Tuesday, September 10, 2019, the Recreation, Forestry and Wildlife Subcommittee met in the District conference room at 5:45PM. Subcommittee members present were Chair-Anthony Schutz, Gary Aldridge, Tom Green, Don Jacobson, Ray Stevens and Sarah Wilson. Others present were Ariana Kennedy, Tom Malmstrom and Dan Schulz.

The first agenda item was the Saline Wetland Conservation Partnership (SWCP) annual report. Tom Malmstrom, coordinator for the SWCP reviewed highlights of 2018 and what's been accomplished so far in 2019. He provided information on land management, restoration activities, grant applications, public outreach, a new five year partnership agreement and the status the rearing and re-introduction of the Salt Creek tiger beetle. Attached is a copy of Tom's report.

The second agenda item was the Honvlez seeding proposal for the Prairie Corridor on Haines Branch (PCHB) project. Schulz reviewed the attached proposal from Prairie Plains Resource Institute (PPRI). He indicated the Honvlez conservation easement specified when Honvlez ceased farming, the 61 acres of cropland would be planted to native grasses and forbs. PPRI has done several of these restorations that have a large diversity of species (200+) from local ecotypes (collected within 150 miles of the Honvlez site). Schulz indicated the cost of the seed and seeding would be reimbursed to the District by the PCHB project funds.

It was moved by Wilson, seconded by Stevens and unanimously approved to recommend that the Board of Directors accept the proposal from Prairie Plains Resources Institute to provide the seed and to plant 61 acres located on the Honvlez conservation easement at a cost not to exceed \$30,510.00.

The third agenda item was the Prairie Pines Recreational Trails Program Application letter of support (see attached). Kennedy reviewed The University of Nebraska's interest in a trail connection to their property from the Murdock Trail along 112th street.

The fourth item was the Little Salt Creek Watershed Saline Wetland Enhancement and Protection Project-Public Law 566 Funding Application Submittal. Schulz indicated the 4 million dollar application was submitted that would fund projects in the Little Salt Creek Watershed identified in the Little Salt Creek Master Plan (done by the City of Lincoln and the District) and also the saline wetland improvement projects identified in the Upper Little Salt Creek Saline Wetlands Plan (done by the SWCP). Schulz also indicated the District expects to hear about approval in September.

As the last item, Kennedy gave reports on the Oak Creek Trail landslide/closure, the status of repairs on the MoPac East and Homestead Trails and the Lied Platte River Bridge.

Schutz adjourned the meeting at 6:52PM.

MEMORANDUM

DATE: May 24, 2019

TO: City of Lincoln Parks and Recreation Department, Lower Platte South Natural Resources District Board of Directors, Nebraska Game and Parks Commission, and Nebraska Chapter Pheasants Forever, Inc.

FROM: Tom Malmstrom
Natural Resources Coordinator/Park Planner II - Parks and Recreation Department
Saline Wetlands Conservation Partnership

RE: Saline Wetlands Conservation Partnership – 2018 Progress Report

On behalf of the Saline Wetlands Conservation Partnership (SWCP) I want to make you aware of the activities, which occurred in 2018. The SWCP was initiated in 2003 and continues efforts to conserve Nebraska's eastern saline wetlands. In 2016, the City of Lincoln received a \$795,000 grant from the Nebraska Environmental Trust over a three year period from 2016 to 2019. This grant has recently received an extension to 2020. The SWCP also utilizes other grant sources for land acquisition, wetland restoration, education, and land management.

Efforts of the SWCP are to protect, restore, and manage the rare and unique saline wetland habitat. *Nebraska's Eastern Saline Wetlands Conservation Plan, 2018* updated the initial Implementation Plan completed in 2003. This update is located on the City web site here: <https://lincoln.ne.gov/city/parks/parksfacilities/wetlands/links/ImplementationPlan.pdf> This update reflects on the past 15 years and provides conservation guidance for future efforts to conserve the saline wetlands.

This past year the SWCP worked with Michael Forsberg who wrote "Success in the Salt Marsh." The publication was printed in the August-September 2018 issue of the *NEBRASKAland Magazine*, published by the Nebraska Game and Parks Commission and is available here: <https://lincoln.ne.gov/city/parks/parksfacilities/wetlands/links/successinthesaltmarsh.pdf>. This modern version of the 1991 NEBRASKAland Magazine article "*The Last of the Least*" provides insight into efforts to conserve this resource since the formation of the SWCP in 2003.

Since its inception, approximately 1,676 acres of habitat containing saline wetlands, freshwater wetlands, native prairie, and other associated upland habitat have been conserved through fee-title acquisition from willing sellers. Activities continue with education, saline wetland restoration and conservation projects, and the operation and maintenance of conservation areas.

Illustration 1 identifies saline wetland properties, which have been acquired through fee-title acquisitions from willing sellers since the 1980's.

Illustration 1

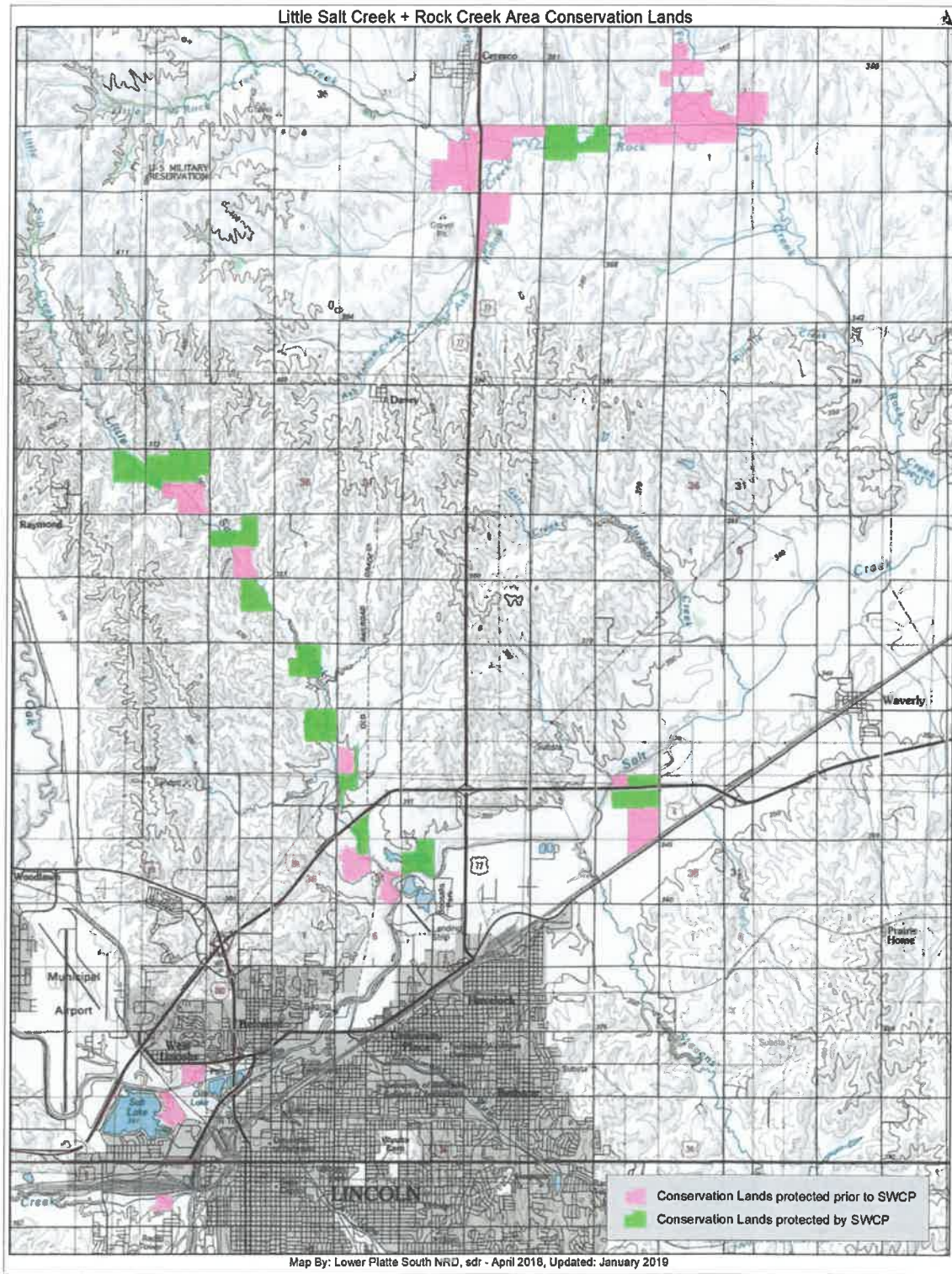
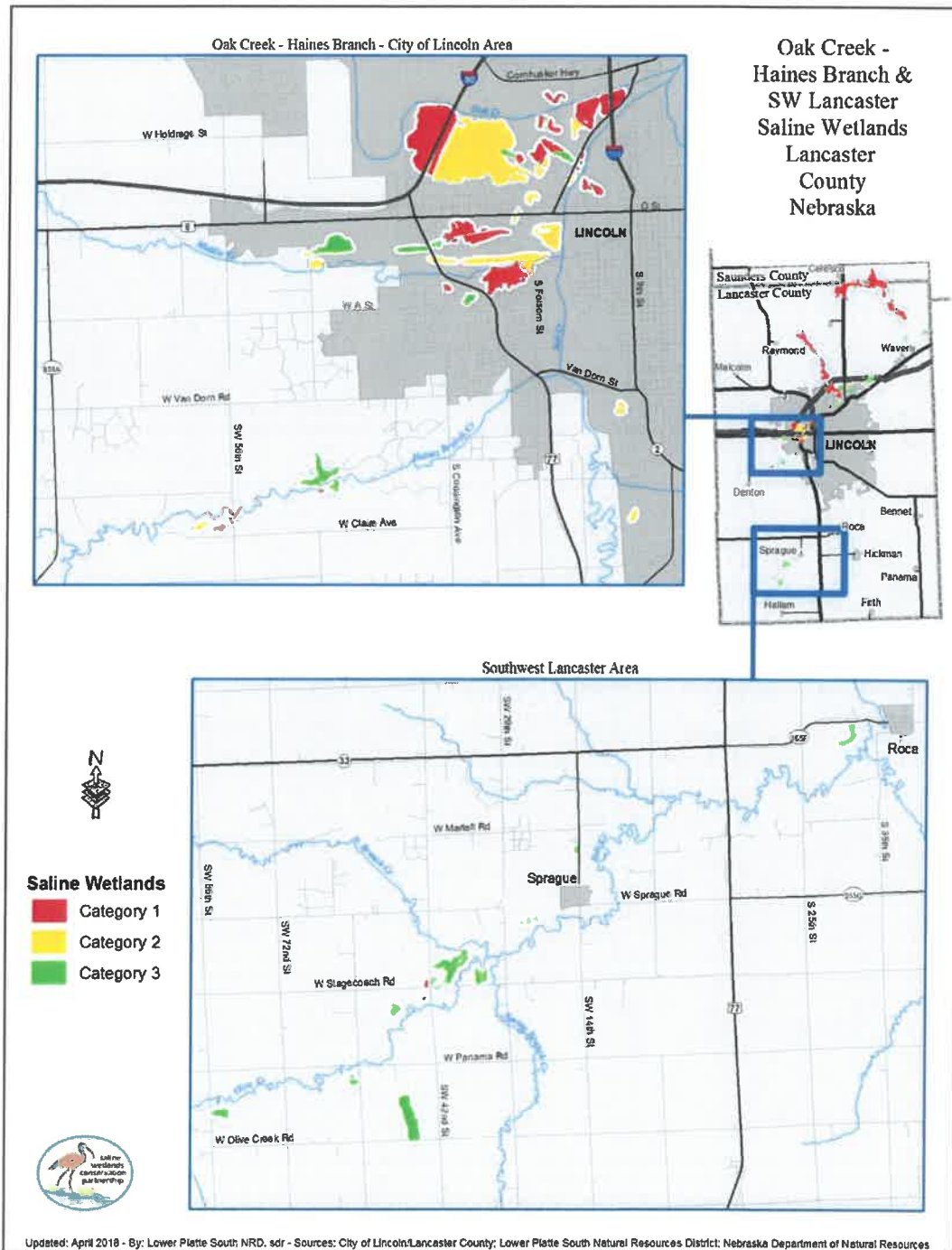


Illustration 2 identifies saline wetland locations located in southwestern Lancaster County. Saline wetland locations in the Oak Creek- Haines Branch inset include Pioneers Park and the Capital Beach/Airport areas. A few saline wetland conservation easements are located in the Southwest Lancaster inset near Roca and along West Olive Creek Road and Southwest 42nd Street.

Illustration 2



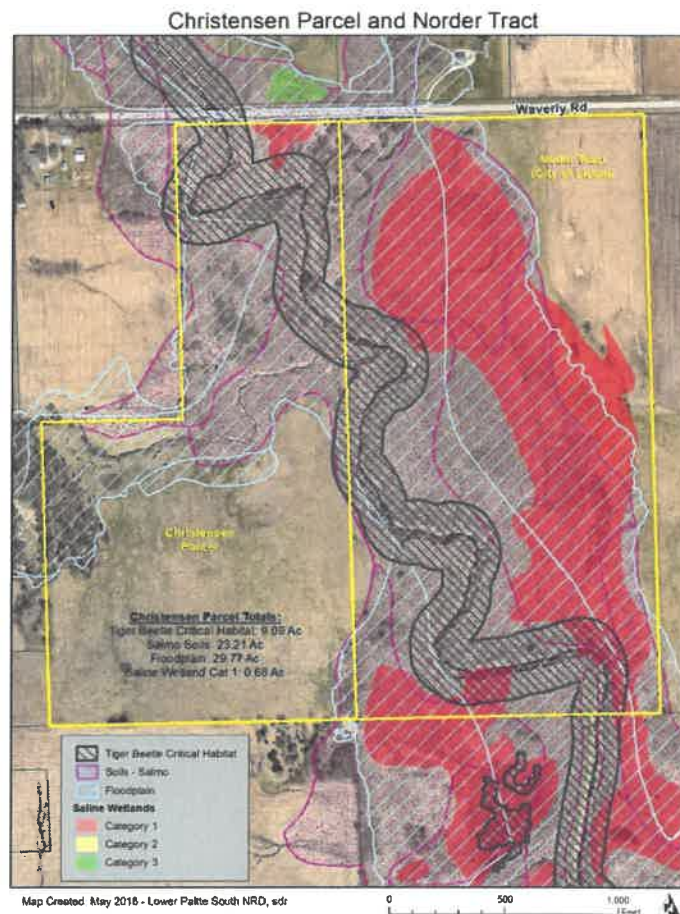
SUMMARY OF 2018 ACTIVITIES

LAND ACQUISITION

- **Glacial Hill addition (Kevin Christensen property) – South of Waverly road between North 27th and 14th streets**

Size: 60.0 acres
Purchase price and date: \$350,700 on December 20, 2018
Funding sources: City of Lincoln 2016 NET Grant funds (\$275,000)
City of Lincoln Park Acquisition funding (\$75,000)
SWCP (\$700)
Owner: City of Lincoln

Notes – The Christensen tract is located adjacent to the City’s Norder tract (south of Waverly Road between 14th and 27th streets) that was acquired back in 2014. The 60 acre Christensen tract contains a small stretch of Little Salt Creek, some saline wetlands, endangered species critical habitat, and a large expanse of native prairie.



Management activities will be consistent with other saline wetland management areas, which may include noxious weed control, prescribed grazing, haying, woody vegetation removal, and public access improvements. The area will be open to the public once safe access is established.

WETLAND RESTORATION

Upper Little Salt Creek Saline Wetlands Project

In December 2015, The Flatwater Group, Inc. (TFG) completed the *Upper Little Salt Creek Saline Wetlands Plan*, a master planning effort which identified the planning area and goals for land management, rehabilitation and conservation. In order to assist the Saline Wetlands Conservation Partnership (SWCP) with future decision making for the planning area the effort included collecting field and spatial data to evaluate existing conditions and an evaluation of the techniques used on previous saline wetland rehabilitation projects. As a result of the planning effort, the Lower Platte South Natural Resources District (LPSNRD) on behalf of the SWCP contracted with TFG to provide professional engineering services for the design of wetland restoration projects within the reaches of the upper Little Salt Creek planning area.

The project goals are to restore sites to high quality saline wetlands suitable for the perpetuation of saline wetland flora and fauna and associated avian migrant species. The design will account for the existing and future surface water hydrology of the contributing watersheds, dynamics of the channelization of Little Salt Creek, suitability of the saline water source(s), and threatened and endangered species use of the planning area.

It is anticipated the design process will be completed the end of 2019.

Marsh Wren Community Wetland Area

The property is owned by the Lower Platte South Natural Resources District (LPSNRD). This is a saline wetland restoration project of Marsh Wren which is located on the north side of Salt Creek between approximately North 40th Street and North 48th Street on the north edge of the City of Lincoln. The property includes approximately 150-acres containing saline wetlands and other habitat. The Marsh Wren saline wetland restoration project was initiated with the cooperation of the Saline Wetlands Conservation Partnership and was completed in 2017.

The comprehensive project did include traditional restoration methods. But in order to meet a primary goal of saline wetland restoration, physical manipulation of hydrology through pumping of saline groundwater to the wetland surface was used as a design measure and is continually monitored and adjusted to address specific saline wetland needs.

Glacial Hill (Norder) Project

A consultant was hired in March 2017 to assist with a planning and design project for Glacial Hill. The evaluation of the property occurred through multiple seasons of the year. The collaborative efforts with the Saline Wetlands Conservation Partnership used information generated from data collection and field investigation, coupled with on-site group investigations and evaluations, to analyze proposed restoration design interventions for the property owned by the City of Lincoln.

This project was completed in early 2018. The conceptual restoration design and cost estimate for the implementation of wetland conservation is shown on the following page.

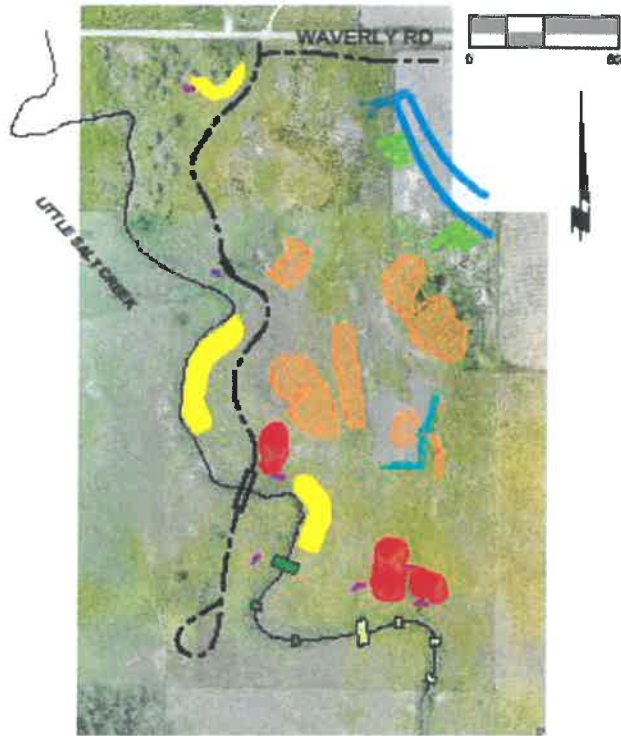
**NORDER TRACT WETLAND COMPLEX
CONCEPTUAL RESTORATION DESIGN
COST ESTIMATE**



The Planner Group, Inc.
2000 Longwood Blvd. Suite 200
Lynchburg, VA 24503
(434) 425-5467



PROJECT NO. LINC-2017-01	SHEET NO. COST EST.
Date: 1/28/2018	Drawn: JZ/MPF
Scale: 1" = 100'	Checked: --
	Approved: --



SITE MAP LEGEND / COST SUMMARY TABLE

Priority Level 1		
	Item 1A - In-Stream Grade Control Structures (3ft Elev)	\$ 218,000.00
	Item 1B - Head-Cut Repairs / Monitoring	\$ 26,000.00
	Item 1C - In-Stream Grade Control Structures (6ft Elev)	\$ 153,000.00
Subtotal		\$ 449,000.00
Priority Level 2		
	Item 2A - Stream-Side Saline Habitat Shelves	\$ 140,000.00
	Item 2B - Shallow Excavation w/ Dendritic Channels	\$ 37,000.00
	Item 2C - Shallow Excavations	\$ 63,000.00
	Item 2D - Pond Berm and Outlet Improvements	\$ 8,000.00
	Item 2E - Excavation Test Plots	\$ 15,000.00
	Item 2F - Grassed Terraces / Waterways	\$ 7,000.00
Subtotal		\$ 270,000.00
Priority Level 3		
	Item 3A - Pedestrian / Access Trails	\$ 5,000.00
	Item 3B - Pedestrian / Access Bridge	\$ 256,000.00
	Item 3C - Low Water Crossing	\$ 15,000.00
Subtotal		\$ 276,000.00
Project Total		\$ 995,000.00

Note: Cost estimate includes 8% for general work items (mobilization, staking, site security erosion control, etc...) and a 25% contingency for conceptual level design.

SALINE WETLAND RESEARCH

The SWCP has worked with partners on a variety of projects within the saline wetlands. Funding for 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.

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 in Nebraska's eastern saline wetlands can 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.

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 contain sufficient potential habitat to support viable populations of Salt Creek tiger beetle; Little Salt Creek, Rock Creek, Oak Creek, and Haines Branch Creek. 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 30 percent of the critical habitat is protected from future disturbance by conservation easements or fee title land acquisitions.

Salt Creek Tiger Beetle Research

The following research information provided by:

Stephen M. Spomer
Entomology Department, University of Nebraska-
Lincoln
Federal Permit #TE37351A-0, State Permit #552

Robert R. Harms
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service



2018 Salt Creek tiger beetle Surveys and Research

Field Collection and Rearing in 2018:

Recovery permits authorize pairing of male and female Salt Creek tiger beetles. Pairs originated from wild Salt Creek tiger beetle larvae that were produced and overwintered in 2017-2018 were placed in rearing chambers at Omaha's Henry Doorly Zoo and Aquarium where they bred and later laid eggs. After mating and egg-laying occurred the adult Salt Creek tiger beetles were re-introduced to wild population sites. Progeny from these adults are being reared by Omaha's Henry Doorly Zoo and Aquarium, Lincoln Children's Zoo, Topeka Zoo and UNL.

Approximately 120 larvae were raised at the UNL Entomology Department in 2018.

Population Estimates for 2018:

Preliminary population estimates began on May 28, 2018. The first sighting of a Salt Creek tiger beetle adult was on June 1, 2018. Population estimates were conducted between June 11, 2018 and June 18, 2018. All adults had disappeared by the mid-to-late July. A total of 370 wild Salt Creek tiger beetles were observed. The number of beetles per site surveyed ranged from 0 to 108.

In the past five years wild Salt Creek tiger beetles observed annually have ranged from 143 to 370 individuals. The 370 observed in 2018 was identical to the amount observed in 2017.

Re-introduction Efforts

To assist with the re-introduction of Salt Creek tiger beetles reared in the zoos, data loggers, commonly referred to as HOBO units, are 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 soil moisture just below the soil surface throughout the year.



There were no spring larval re-introductions in 2018 due to substantial spring flooding in previous years. Approximately 92 Salt Creek tiger beetle adults reared in 2018 were released on June 22, 2018, June 28, 2018, July 10, 2018, and July 23, 2018. There were no fall re-introductions. This was accomplished through a cooperative captive rearing program among the USFWS, NGPC, UNL, Omaha Henry Doorly Zoo and Aquarium, and the Lincoln Children Zoo. The NGPC Board of Commissioners at their August 2018 meeting approved a process to allow for the release of the Salt Creek tiger beetle on NGPC properties.

In order to monitor the beetle release locations and gather data from the HOB0 units the U.S. Fish and Wildlife Service and Nebraska Game and Parks Commission have worked with the Nebraska Master Naturalist program. In the past, volunteers worked in pairs during the summer at each location; visiting the sites where releases occurred on a weekly basis and those sites with HOB0 units monitoring saline wetland habitat for potential release on a monthly basis.

Asclepias spp. (Milkweed) Survey

The following survey information provided by:

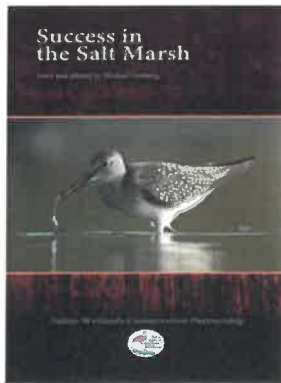
Mercy Dinwiddie
Wildlife Biologist II
Nebraska Game and Parks Commission
Nebraska Wildlife Federation

The surveys were conducted to measure the abundance and diversity of *Asclepias* spp. The information gathered will provide guidance to assist in conservation decision making for the monarch butterfly. The sites selected are based on high diversity native plantings conducted by a vendor on conservation lands. In 2017 and 2018 Arbor Lake saline wetland was surveyed. In 2017, 115 Common milkweed (*Asclepias syriaca*) were found on the selected survey site (7.2 acres). In 2018, 178 stems of common milkweed in addition to 8 stems of Sullivant's Milkweed (*Asclepias sullivantii*) and 10 stems of Swamp Milkweed (*Asclepias incarnata*) were found. Preliminary data from the planted locations indicates an expectation of 786 *Asclepias* spp. per hectare (2.47 acres) for sites that were planted with a high diversity seed mix.



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 the spring and fall of 2018 the NRD hosted field trips with High School Biology students, Middle School 7th grade Environmental Studies students, and 5th grade students at the Lincoln Saline Wetlands Nature Center and Whitehead Wetlands. Over 500 students enjoyed netting insects at the site, learning about the vegetation and potential wildlife and netting for macroinvertebrates in the water! In the summer of 2018, staff utilized Lincoln Saline Wetlands Nature Center for field trips with Day Camps from the NRD and over 50 students got to explore!



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.

The City of Lincoln on behalf of the SWCP executed a contract with Michael Forsberg Photography, Inc. in 2017 to update the NEBRASKAland publication “Nebraska Salt Marshes -Last of the Least.” “Success in the Salt Marsh” was published in the 2018 August/September issue of the NEBRASKAland magazine.

A mounted scope was installed on the deck at Marsh Wren in August 2018. It was funded by the Nebraska Chapter of Pheasants Forever Inc. with assistance from the Wild Bird Habitat store in Lincoln, Nebraska. On September 12, 2018 the Saline Wetland Conservation Partnership sponsored an Open House at the Marsh Wren saline wetland. The event featured several stations which provided information on saline wetland biology, the Marsh Wren wetland restoration project, and other efforts to conserve natural resources throughout Nebraska. Approximately 120 persons attended the open house.



SUMMARY OF SALINE WETLANDS AND SOILS PROTECTED (2001-present)

In order to preserve and restore these wetlands, an Implementation Plan for the Conservation of Nebraska's Eastern Saline Wetlands was initially completed in 2003. Recently, this was updated with the 2018 Nebraska's Eastern Saline Wetlands Conservation Plan. The Implementation Plan update will continue to address the preservation and restoration of Nebraska's eastern saline wetlands. The Plan Goal, Comprehensive strategies, and Landscape objectives are established for future conservation of the wetlands. A summary of wetland acres conserved through fee-title acquisition and conservation easements since 2001 through the efforts of the Partnership is provided below. This summary is based on targets identified within Landscape objectives 1–4.

Summary of wetland acres conserved through fee-title acquisition

IMPLEMENTATION OF LANDSCAPE OBJECTIVES	TOTAL ACRES PER OBJECTIVE*	ACRES OF WETLAND PROTECTED OR RESTORED 2002-2017
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	148	47
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	1,412	443
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	167	99
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	2,360	520
TOTAL	4,087	1,109

*Acres identified in 2003 Implementation Plan

Source: Ted LaGrange and Rachel Simpson of the NGPC, June 2018

WETLAND MANAGEMENT

Four seasonal employees hired by the Lower Platte South NRD performed management on the saline wetland areas. Members of the SWCP establish 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 stewardship funds through an agreement between the LPSNRD and The Nature Conservancy to support saline wetland management areas. Approximately 1,300 hours were worked by the seasonal employees in 2018 on saline wetland management activities from May through November. The Coordinator and LPSNRD provided supervision of the employees.

The LPSNRD has one fulltime Maintenance Technician who assists the seasonal employees with work performed on the saline wetlands. This work is also compensated through the stewardship fund. The Coordinator also holds an annual meeting of the land managers of the saline wetland management areas to share and discuss issues and methods of land management on these areas.

Well Distribution

A well was constructed at Warner Wetlands in May 2018. Two solar well pumps located at the Arbor Lake Complex were removed and were placed at Warner Wetlands and Little Salt Springs for watering livestock. Material not re-purposed was placed in storage for later use.

The following Table provides a summary of the well distribution throughout the saline wetland management areas. Information gathered from the wells assist with the understanding of saline wetland hydrogeology of Nebraska's eastern saline wetlands.

Saline Wetland Management Area	Wells # (depths)			
	15-40 feet	41-90 feet	90 feet +	Other
Frank Shoemaker Marsh	3 (20', 25', 25')	3 (72.5, 75', 87.5')		1 (unknown depth)
Dakota Springs	3 (15', 25', 30')	2 (88', 79')	1 (98')	
Little Salt Creek WMA	2 (15', 15')	3 (77.5', 78', 83.5')	1 (182')	
Little Salt Fork Marsh Preserve	4 (9', 12', 25', 33')		2 (155', 201')	
Arbor Lake Complex	3 (14', 25', 28')	1 (41')	4 (113', 100', 120', 180')	
Little Salt Springs				1 (livestock)
Marsh Wren			2 6" (E. 216' and W. 155')	
Lincoln Saline Wetland Nature Center				1 (unknown depth)
Whitehead Saline Wetland	5 (15', 22', 23', 29'(?), 40')	1 (78')	2 (113', 188')	1 (unknown depth) 1 (Dial easement 30')
Jack Sinn WMA	1 (34.5')	4 (43', 45', 45', 63')	4 (93', 143', 143', 191')	2 (unknown depth)
Warner Wetlands		1 (60')		

FUNDING RESOURCES

The following funding resources provide a summary of recent awards. It does not include all of the grant awards received since the inception of the SWCP in 2002.

- Federal Section 6 Land Recovery Acquisition grants – 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 is pending for saline wetland acquisition.

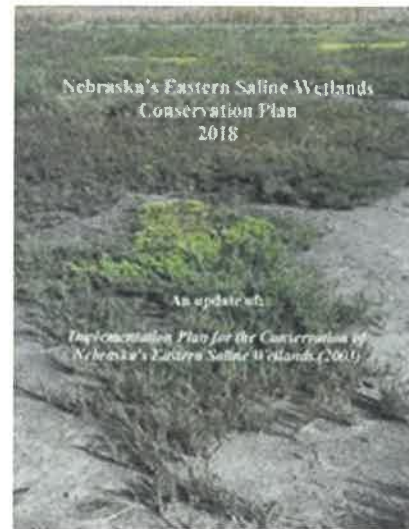
In 2016, the NGPC through the U.S. Fish and Wildlife Service was awarded \$206,536 for the acquisition of a property containing saline wetlands. The funding is pending for land acquisition of saline wetlands.

- 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. The grant received two one year extensions to accommodate the Marsh Wren wetland restoration project. The grant funds have been expended and the Final Report was submitted in July 2017.
- 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 funds have been spent and the grant was closed in 2015.
- A grant was submitted to the Nebraska Environmental Trust in 2015 for the “Eastern Saline Wetlands Project – 2016.” The grant was approved in the amount of \$795,000 over three years primarily for wetland restoration/engineering/management and planning activities. A one year extension of the grant was approved through June 2020.

SUMMARY OF OTHER COORDINATOR ACTIVITIES

- Attended meetings regarding City and County projects regarding construction activities scheduled near or on saline wetland areas
- Attend and participate in City of Lincoln Parks and Recreation Department meetings regarding greenways, Wilderness Park, Pioneers Park Nature Center annual land management meeting, Spring Creek Prairie Fall Festival, tour of Flint Hills in Kansas, and the Prairie Corridor project
- Presentations on saline wetlands and the partnership to Nebraska Game and Parks Commission Habitat Partners, the LPSNRD Recreation, Forestry, and Wildlife sub-committee, and UNL classes
- Participated in tour of UNL Water Sciences Lab and active shooter training at LPSNRD
- Tour sites and present information on the Partnership and saline wetlands to Prairie Corridor tour, international student group
- Land management – Participate in interviews of potential seasonal employees, supervision of seasonal employees, annual saline wetland discussion with agency land managers, and noxious weed and woody vegetation control and GPS location identification at saline wetland sites
- Toured saline wetland areas with Platte Basin time-lapse team and Prairie Plains Resource Institute
- Youth education – presented and participated in the Earth Wellness Festival and UNL Career Day
- Monitored and completed parking lot, fencing, and tree planting at Frank Shoemaker Marsh regarding the 27th Street Right-of-Way widening project through the Lancaster County Roads Department
- Participated with the LPSNRD, and the NGPC on Consultant interviews for the Final Engineering of the Upper Little Salt Creek Saline Wetlands Project
- Assisted with Upper Little Salt Creek Saline Wetlands Project. Toured sites and had several meetings regarding the final engineering project
- Attended NGPC Habitat Partners meeting, The Midwest Wildlife Society annual conference, Rainwater Basin Joint Venture Seminar, and Nebraska Natural Legacy conference
- Worked with USFWS and NGPC on endangered species monitoring efforts, re-introduction site locations, accessibility issues for Master Naturalist teams to gather monitoring information, and participated in release of endangered species

- Marsh Wren restoration project - Provide assistance to LPSNRD, presentation and site tour with international student group, and monitoring of completed project
- Initiated an update along with Saline Wetlands Conservation Partnership of the Implementation Plan for the Conservation of Nebraska's Eastern Saline Wetlands. "Nebraska's Eastern Saline Wetlands Conservation Plan 2018" was completed in 2018
- Worked with City legal counsel in development of Waiver, Release, and Access Agreements for private haying of City owned land; executed agreements with cooperator and monitor work per agreement
- Worked with and provided assistance as needed to Michael Forsberg on the update of the "Last of the Least" publication. *Success in the Salt Marsh* was completed in August 2018.
- Executed contract The Flatwater Group, Inc. to conduct planning and engineering services for the Glacial Hill (Norder Tract)
- Worked with consultants and Saline Wetlands Conservation Partnership representatives to complete design of Glacial Hill (Norder Tract)
- Completed Digital Imaging agreement with City Legal Counsel for execution with NGPC and Pheasants Forever, Inc. and interviewed and hired an employee to perform work. Discuss and assist employee with the project
- Assisting the LPSNRD and UNL student on Master Degree project using cameras to capture saline wetland images throughout the year for future educational project using a mobile application method
- Participant of Prairie Corridor technical advisory committee, core team representative of Nebraska Wetland Assessment grant project, U.S. Corps of Engineers Nebraska inter-agency wetland group, Technical Advisory Group of the LPSNRD Water Quality Management Plan
- Work with landowners and representatives, fund administrators and agencies regarding the acquisition of land
- Miscellaneous grant administration and participation in grant applications through conservation agencies regarding wetland projects



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



Activity summary – Noxious weed removal continued and cedar removal was concentrated around wetland cells and west of Little Salt Creek.

Lancaster County Roads Department completed the widening of 27th Street. Fencing, parking lot development, and tree planting were completed as part of the widening project in 2018.

- **Dakota Springs** – South of Arbor Road and East of 27th 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. Access gate installed by LPSNRD

- **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

Activity summary – A well was constructed and solar pump installed, which was repurposed from Arbor Lake. Noxious weed and woody vegetation removal continues.

- **Little Salt Creek Wildlife Management Area – 1st 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 (100.5 acres) - Along Little Salt Creek, between Mill Road and the southern boundary of the original Little Salt Creek Wildlife Management Area.

Activity summary – Prescribed grazing and haying of upland was conducted. Cedar removal and noxious weed control continues. Platte Basin time lapse camera location.



- **Little Salt Creek West Wildlife Management Area – South of Branched Oak Road between NW 12th and 1st 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. Boundary fence installation.

- **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, 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. Noxious weed and woody vegetation removal.

- Marsh Wren – Between 40th and 56th 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 (Anderson property) – East of 40th 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. Construction completed on wetland restoration project. Area opened to public in September 2017. Tree planting along east boundary for light attenuation was completed. The saline water distribution system is monitored for water release and any necessary modifications. Viewing scope installed on overlook.

- Little Salt Fork Marsh Preserve addition (Allen property) – Between Branched Oak Road and Raymond Road and west of 1st 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. Monitor 2017 native seeding.

- **Little Salt Springs** – 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



Michael Forsberg Photography

Little Salt Springs Addition (Downs Property) – West Branched Oak Road between NW 12th and NW 27th streets

- Size: 13.3 acres
- Purchase price and date: \$175,000 on October 15, 2015
- Funding sources: Lower Platte South NRD (\$43,201.17)
2012 NET Grant (\$131,798.83)
- Owner: Lower Platte South NRD

Activity summary – Solar pump re-purposed from Arbor Lake was installed at existing well. Continue to control noxious weeds and woody vegetation removal. Old farm residence and outbuildings razed. Parking lot constructed at old residence drive along West Branched Oak Road.

- **Helmuth Marsh** – South of Mill Road and west of 14th 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. Shrub plantings for wildlife completed.

- **Jack Sinn Wildlife Management Area (Kreitman addition) – Between North 70th and North 84th 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

Activity summary – Noxious weed and woody vegetation removal. Fencing plan developed to allow for prescribed grazing



- **Jack Sinn Wildlife Management Area Addition (Laurel Nelson property) – On West Branched Oak Road between NW 12th and NW 27th streets**

Size: 79.8 acres
 Purchase price and date: \$378,000 on December 29, 2017
 Funding sources: Pittman-Robertson funds through the Nebraska Game and Parks Commission (NGPC)
 Owner: NGPC

Activity summary – Noxious weed and woody vegetation removal. Fencing plan developed to allow for prescribed grazing and parking lot being planned for access

- **Glacial Hill (Norder Tract) – Between North 14th and North 27th 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

Activity summary – Preliminary planning and engineering project completed for site. Noxious weed and woody vegetation removal. Prescribed grazing.

The following saline wetland properties were acquired prior to the inception of the SWCP in 2002. The properties are supported through the activities identified in “Nebraska’s Eastern Saline Wetlands Conservation Plan (2018).”

- **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). Flood control levee on east boundary and south of Rosa Parks Way completed. New levee seeded in 2018 and access developed from southeast area of property.
- **Lincoln Saline Wetlands Nature Center** (92.7 acres) – Located near Capitol Beach in Lincoln. The area is owned by the LPSNRD. Management activities in 2018 included noxious weed control (considerable phragmites) and woody vegetation. Working with consultants regarding soil borrow from infill project on-site for the Lincoln Police garage
- **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 2018 were noxious weeds and removal of invasive trees.
- **Whitehead Wetlands** (98.8 acres) – It is located east of 27th street and a short distance south of Interstate 80. The area is owned by the LPSNRD. Management activities in 2018 were noxious weed control and removal of woody vegetation.
- **Little Salt Fork Marsh Preserve** (174.2 acres) – Located northwest of north 1st Street and Raymond Road and owned by the Lower Platte South NRD. Management activities in 2018 included control of noxious weeds. Lancaster County will replace the Raymond Road Bridge in 2019.



- **Jack Sinn Wildlife Management Area** (1,620.0 acres) – Located south of Ceresco in Saunders and Lancaster counties. The area is owned by the NGPC. Management activities in 2018 were noxious weed control, woody vegetation removal, and prescribed fire and grazing.

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 402-441-7063 or tmalmstrom@lincoln.ne.gov at the City Parks and Recreation Department or 402-476-2729 or tmalmstrom@lpsnrd.org at the NRD.

You can visit the saline wetland website at
<http://lincoln.ne.gov/city/parks/ParksFacilities/wetlands/index.htm>





Honvlez Tract HDLE Prairie Restoration Proposal

August 10, 2019

Prairie Plains Resource Institute (PPRI) has been providing high-diversity/local ecotype (HDLE) prairie restoration services in central and eastern Nebraska since 1980. Our work includes multiple examples in Lancaster County, including 11 plantings within the Haines Branch corridor and 6 plantings at Spring Creek Prairie.

PPRI has partnered with Lincoln Parks & Recreation and Lower Platte South NRD in the past, and is again offering ecological restoration services in the effort to establish examples of high-quality prairie within the corridor. Specifically, this seeding project will be implemented on the Honvlez Tract located in the SE $\frac{1}{4}$ of S22, T9N, R5E, Lancaster County, Nebraska.

Geographic Information System (GIS) analysis shows the project site is 61.0 acres in size, with 118 feet of relief. The soils mainly range from clay loam and silt loam to fine sandy loam, and are moderately well drained to somewhat excessively drained (Appendix B; figure 2). The site's variance in topography and soil types calls for 3 seed mixes containing 201 species to restore two diverse habitat types: upland tallgrass prairie and mesic (lowland tallgrass) prairie (figure 1).



Figure 1. Honvlez Tract seeding units derived from SSURGO soil unit boundaries, Tagged Vector Contours and LIDAR.

With myriad wildflower species blooming throughout the growing season, these diverse native plant communities provide superior butterfly and pollinator habitat while preserving some of the local native plant genetic material that has been lost to years of agricultural conversion and urban development. Furthermore, HDLE restorations are resilient to drought and other extreme climatic and weather events because they are populated with the progeny of the very plants that evolved in Nebraska over centuries of such variable conditions.

These newly restored acres will enhance stream buffering capabilities, slowing runoff and providing increased filtering services. The site will also provide excellent upland game and non-game habitat, as well as expanding education and recreation opportunities in the area.

Project Specifics:

- An upland/sand prairie seed mix will be broadcast onto the eastern portion of the site no later than May 15th, 2020, at a cost of \$500.00 per acre, for a total of \$15,690.00.
- A mesic (lowland tallgrass) prairie seed mix will be broadcast onto the western portion of the site no later than May 15th, 2020, at a cost of \$500.00 per acre, for a total of \$14,820.00.
- Total seeding cost: \$30,510.00
- The 3 seed mixes will contain no less than 201 species combined (Appendix A).
- The upland and mesic seed mixes will be planted at no less than 8 gallons of combine harvested grass seed per acre, 2.0 gallons of hand-collected forb mix per acre.
- 100% of this seed mix was harvested from wild populations of native plants within 150 miles of the project site.
- PPRI will use an EZ Flow drop spreader pulled by an ATV to broadcast the seed.
- Any GPS/GIS data generated by PPRI during the restoration process will be made available to LPSNRD and/or the City of Lincoln.
- This seed mix will provide high quality monarch/pollinator habitat, enhancing the overall conservation value of the area.
- The established native plant community will provide high quality upland game and non-game habitat.
- The established native plant community will provide educational and recreational opportunities to the public.
- Project contact: Mike Bullerman, Restoration Ecologist, 402-694-9847, prc_ppri@hamilton.net

Appendix A: HDLE Seed Mix Species List (201 spp.)

Honvlez Tract Seed Mixes - 2019							
GRASSES (28)			CAT	WIS	SAND	UPLAND	MESIC
Andropogon	gerardii	Big Bluestem	G	FAC	X	X	X
Bouteloua	curtipendula	Side-oats Grama	G	UPL	X	X	
Calamagrostis	stricta	Northern Reedgrass	G	FACW			X
Calamovilfa	longifolia	Prairie Sandreed	G	SAND	X		
Digitaria	cognata	Fall Witchgrass	G	SAND	X	X	X
Elymus	canadensis	Canada Wildrye	G	FACU	X	X	X
Elymus	trachycaulus	Slender Wheatgrass	G	FACU			X
Elymus	virginicus	Virginia Wildrye	G	FAC		X	X
Eragrostis	spectabilis	Purple Lovegrass	G	FACU	X	X	X
Eragrostis	trichodes	Sand Lovegrass	G	SAND	X		
Hesperostipa	comata	Needle & Thread	G	SAND	X		
Hesperostipa	spartea	Porcupine Grass	G	UPL	X	X	
Hordeum	jubatum	Foxtail Barley	G	FACW			X
Koeleria	macrantha	June Grass	G	UPL	X	X	X
Panicum	acuminatum	Tapered Rosette Grass	G	FACW	X	X	X
Panicum	oligosanthes	Scribner's Panicum	G	FACU	X	X	X
Panicum	virgalum	Switchgrass	G	FAC	X	X	X
Pascopyrum	smithii	Western Wheatgrass	G	FACU		X	X
Paspalum	stramineum	Slender Paspalum	G	SAND	X	X	
Redfieldia	flexuosa	Blowout Grass	G	SAND	X		
Schizachyrium	scoparium	Little Bluestem	G	FACU	X	X	
Sorghastrum	nutans	Indiangrass	G	FACU	X	X	X
Spartina	pectinata	Prairie Cordgrass	G	FACW			X
Sphenopholis	obtusata	Prairie Wedgegrass	G	FACW		X	X
Sporobolus	asper	Tall Dropseed	G	FACU	X	X	X
Sporobolus	cryptandrus	Sand Dropseed	G	SAND	X		
Sporobolus	heterolepis	Prairie Dropseed	G	FACU		X	
Tridens	flavus	Purpletop	G	UPL	X	X	X
SEDGES/RUSHES (20)			CAT	WIS	SAND	UPLAND	MESIC
Carex	brevior	Fescue Sedge	SR	FAC	X	X	X
Carex	crawei	Crawe's Sedge	SR	FACW			X
Carex	crisatella	Crested Sedge	SR	FACW			X
Carex	gravida	Heavy Sedge	SR	UPL	X	X	X
Carex	gravida	Wetland Gravida	SR	OBL			X
Carex	tribuloides	Blunt Broomsedge	SR	FACW			X
Carex	laeviconica	Smooth Cone Sedge	SR	OBL			X
Carex	mesochorea	Midland Sedge	SR	UPL	X	X	X
Carex	molesta	Troublesome Sedge	SR	FAC	X	X	X
Carex	pellita	Wooly Sedge	SR	OBL			X
Carex	scoparia	Broom Sedge	SR	FACW			X
Carex	vulpinoidea	Fox Sedge	SR	OBL			X
Cyperus	schweinitzii	Schweinitz Flat Sedge	SR	SAND	X		
Fimbristylis	puberula	Hairy Fimbry	SR	OBL			X
Juncus	dudleyi	Dudley Rush	SR	FACW	X	X	X
Juncus	interior	Interior Rush	SR	FAC			X
Juncus	tenuis	Tenuis Rush	SR	FAC		X	X
Schoenoplectus	pungens	Common Threesquare	SR	OBL			X
Scirpus	pallidus	Pale Bulrush	SR	OBL			X
Scirpus	pendulus	Rufous Bulrush	SR	OBL			X

LEGUMES (23)			CAT	WIS	SAND	UPLAND	MESIC
Amorpha	canescens	Leadplant	L	UPL	X	X	X
Astragalus	canadensis	Canada Milkvetch	L	FACU		X	X
Astragalus	crassicaerpus	Buffalo Bean	L	UPL		X	
Baptisia	alba	White Wild Indigo	L	FACU		X	
Baptisia	bracteata	Wild Indigo	L	UPL		X	
Cassia	chamaecrista	Partridge Pea	L	FACU	X	X	X
Cassia	marylandica	Maryland Senna	L	FAC		X	
Dalea	candidum	White Prairieclover	L	UPL	X	X	X
Dalea	leporina	Foxtail Dalea	L	FACU		X	X
Dalea	purpurea	Purple Prairieclover	L	UPL	X	X	X
Desmanthus	illinoensis	Illinois Bundleflower	L	FACU		X	X
Desmodium	canadense	Canada Tickclover	L	FAC	X	X	X
Desmodium	canescens	Hoary Tickclover	L	UPL	X	X	
Desmodium	illinoense	Illinois Tickclover	L	UPL		X	X
Glycyrrhiza	lepidota	Wild Licorice	L	FACU	X	X	X
Lespedeza	capitata	Roundhead Bushclover	L	UPL	X	X	X
Lotus	purshianus	Deervetch	L	FAC	X	X	X
Oxytropis	lambertii	Lambert Locoweed	L	FACU	X		
Psoralea	argophylla	Silver-leaf Scurf Pea	L	UPL	X	X	X
Psoralea	digitata	Palm-leaf Scurfpea	L	SAND	X		
Psoralea	tenuiflora	Wild Alfalfa	L	UPL	X	X	X
Schrankia	nuttallii	Sensitivebriar	L	UPL	X	X	X
Strophostyles	leiosperma	Wild Bean	L	UPL	X	X	X
COMPOSITES (55)			CAT	WIS	SAND	UPLAND	MESIC
Achillea	millefolium	Yarrow	C	FACU	X	X	X
Arnoglossum	plantagineum	Indian Plantain	C	FACU		X	
Artemisia	ludoviciana	Sagewort	C	FACU	X	X	X
Aster	ericoides	Heath Aster	C	FAC	X	X	X
Aster	novae-angliae	New England Aster	C	FACW			X
Aster	oblongifolius	Aromatic Aster	C	UPL		X	
Aster	prealtus	Blue Willowleaf Aster	C	FACW			X
Aster	simplex	Tall White Aster	C	FACW			X
Boltonia	asteroides	False Aster	C	FACW			X
Brickellia	eupatoroides	False Boneset	C	UPL	X	X	X
Chrysopsis	villosa	Golden Aster	C	UPL	X	X	
Cirsium	altissimum	Tall Thistle	C	FAC		X	X
Cirsium	flodmanii	Flodman Thistle	C	FAC	X	X	X
Coreopsis	tinctoria	Plains Coreopsis	C	FAC			X
Echinacea	angustifolia	Purple Coneflower	C	UPL	X	X	X
Erigeron	philadelphicus	Marsh Fleabane	C	FAC		X	X
Erigeron	strigosus	Daisy Fleabane	C	FACW			X
Eupatorium	altissimum	Tall Joe Pye Weed	C	FACU		X	X
Euthamia	graminifolia	Grassleaf Goldenrod	C	FACW	X	X	X
Gnaphalium	obtusifolium	Fragrant Cudweed	C	UPL	X	X	X
Grindelia	squarrosa	Gumweed	C	FACU	X	X	X
Helenium	autumnale	Sneezeweed	C	FACW			X
Helenium	flexuosum	Sneezeweed	C	FACW			X
Helianthus	grosseserratus	Sawtooth Sunflower	C	FACW			X
Helianthus	maximiliani	Maximillian Sunflower	C	UPL	X	X	X
Helianthus	rigidus	Stiff Sunflower	C	UPL	X	X	X
Helianthus	tuberosus	Jerusalem Artichoke	C	FAC			X

Heliopsis	helianthoides	False Sunflower	C	FACU	X	X	X
Heterotheca	villosa	Camphorweed	C	UPL	X		
Hieracium	longipilum	Longbeard Hawkweed	C	UPL		X	
Iva	annua	Small Marsh Elder	C	FAC			X
Lactuca	canadensis	Canada Lettuce	C	FACU	X	X	X
Lactuca	ludoviciana	Wild Lettuce	C	FAC	X	X	X
Liatris	aspera	Rough Gayfeather	C	UPL		X	
Liatris	lancifolia	Thickspike Gayfeather	C	FACW			X
Liatris	punctata	Dotted Gayfeather	C	UPL	X	X	X
Liatris	pycnostachya	Prairie Blazing Star	C	FAC		X	
Liatris	squarrosa v. glabr	Scaly Blazing Star	C	UPL	X	X	
Liatris	squarrosa v. hirsut	Scaly Blazing Star	C	UPL		X	
Prenathes	aspera	Rough Rattlesnake Root	C	UPL		X	X
Ratibida	columnifera	Upright Prairie Coneflower	C	UPL	X	X	X
Rudbeckia	hirta	Black-eyed Susan	C	FACU	X	X	X
Rudbeckia	laciniata	Cutleaf Coneflower	C	FAC			X
Senecio	plattensis	Prairie Ragwort	C	FACU		X	X
Silphium	integrifolium	Entire-leaf Rosinweed	C	FACU		X	X
Silphium	laciniatum	Compass Plant	C	UPL		X	X
Silphium	perfoliatum	Cup Plant	C	FAC		X	X
Solidago	canadensis	Canada Goldenrod	C	FACU		X	X
Solidago	gigantea	Giant Goldenrod	C	FACW	X	X	X
Solidago	missouriensis	Missouri Goldenrod	C	UPL	X	X	X
Solidago	mollis	Western Goldenrod	C	UPL	X	X	
Solidago	rigida	Stiff Goldenrod	C	FACU	X	X	X
Solidago	speciosa	Showy Goldenrod	C	UPL	X	X	X
Vernonia	baldwinii	Western Ironweed	C	FACW		X	X
Vernonia	fasciculata	Ironweed	C	FAC		X	X
MISCELLANEOUS (75)			CAT	WIS	SAND	UPLAND	MESIC
Agalinis	aspera	Tall False Foxglove	M	FACU	X	X	
Allium	canadense	Canada Garlic (Seed)	M	FAC	X	X	X
Allium	canadense	Canada Garlic (Sets)	M	FAC		X	X
Allium	textile	White Onion	M	UPL	X		
Anemone	canadensis	Meadow Anemone	M	FACW			X
Anemone	cylindrica	Candle Anemone	M	UPL	X	X	X
Apocynum	cannabinum	Prairie Dogbane	M	FAC		X	X
Asclepias	arenaria	Sand Milkweed	M	SAND	X		
Asclepias	speciosa	Showy Milkweed	M	FAC	X	X	X
Asclepias	sullivantii	Sullivant's Milkweed	M	FAC		X	X
Asclepias	syriaca	Common Milkweed	M	FAC		X	
Asclepias	tuberosa	Butterfly Milkweed	M	UPL		X	
Asclepias	verticillata	Whorled Milkweed	M	FACU		X	X
Callirhoe	alcaeoides	Pale Poppy Mallow	M	UPL		X	X
Callirhoe	involucrata	Purple Poppy Mallow	M	UPL	X	X	X
Calyophus	serrulatus	Serrate-leaf Primrose	M	UPL		X	
Ceanothus	americanus	New Jersey Tea	M	UPL		X	
Ceanothus	herbaceous	New Jersey Tea	M	UPL	X	X	
Cleome	serrulata	Rocky Mountain Beeplant	M	FACU	X		
Croton	texensis	Skunk Weed	M	UPL	X		
Cucurbita	foetidissima	Buffalo Gourd	M	UPL		X	
Eriogonum	annuum	Annual Eriogonum	M	SAND	X		
Euphorbia	corollata	Flowering Spurge	M	UPL		X	

Euphorbia	davidii	Western Toothed Spurge	M	UPL	X		
Euphorbia	hexagona	Six-angle Spurge	M	SAND	X		
Euphorbia	marginata	Snow-On-The-Mountain	M	FACU	X	X	X
Froelichia	floridana	Field Snake-Cotton	M	SAND	X		
Gaura	longiflora	Large-flowered Guara	M	UPL		X	
Gaura	parviflora	Velvety Guara	M	UPL	X	X	X
Gentiana	puberulenta	Downy Gentian	M	UPL		X	X
Linum	rigidum	Stiffstem Flax	M	SAND	X		
Linum	sulcatum	grooved Flax	M	UPL		X	X
Lithospermum	canescens	Hoary Puccoon	M	UPL	X		
Lithospermum	caroliniense	Hairy Puccoon	M	SAND	X		
Lobelia	siphilitica	Blue Cardinal Flower	M	OBL			X
Lobelia	spicata	Palespike Lobelia	M	FAC			X
Mirabilis	hirsuta	Hairy Four O'clock	M	SAND	X		
Mirabilis	nyctaginea	Wild Four O'clock	M	UPL	X	X	X
Monarda	fistulosa	Wild Bergamot	M	FACU	X	X	X
Oenothera	rhombipetala	4-point Evening Primrose	M	SAND	X		
Oenothera	villosa	Common Evening Primrose	M	FAC	X	X	X
Onosmodium	molle	Marbleseed	M	FACU		X	X
Penstemon	angustifolius	Narrowleaf Penstemon	M	SAND	X		
Penstemon	digitalis	Smooth Penstemon	M	FAC			X
Penstemon	gracilis	Slender Penstemon	M	FACU	X	X	X
Penstemon	grandiflorus	Shell-leaf Penstemon	M	UPL	X	X	X
Phlox	pilosa	Prairie Phlox	M	FAC		X	
Physalis	longifolia	Common Ground-cherry	M	UPL	X	X	X
Physalis	pumila	Sandhills Ground-cherry	M	SAND	X		
Plantago	patagonica	Wooly Plantain	M	UPL	X	X	X
Polygonum	pensylvanicum	Pennsylvania smartweed	M	FACW			X
Polytaenia	nuttallii	Prairie Parsley	M	FACU			X
Potentilla	arguta	Prairie Cinquefoil	M	FAC	X	X	X
Potentilla	norvegica	Norwegian Cinquefoil	M	FACU			X
Prunella	vulgaris	Self-heal	M	FACW			X
Prunus	pumila	Sandcherry	M	SAND	X		
Pycnanthemum	virginianum	Mountain Mint	M	FAC		X	X
Rosa	arkansana	Wild Rose	M	FACU	X	X	X
Rosa	woodsii	Wood's Rose	M	FACU	X	X	X
Rumex	venosus	Wild Begonia	M	SAND	X		
Salvia	azurea	Pitcher Sage	M	UPL		X	X
Silene	anterrhina	Sleepy Catchfly	M	UPL	X	X	
Sisyrinchium	campestre	Prairie Blue-eyed Grass	M	UPL	X	X	X
Sisyrinchium	montanum	Strict Blue-eyed Grass	M	FAC			X
Teucrium	canadense	American Germander	M	FACW			X
Thalictrum	dasycarpum	Purple Meadow Rue	M	FACW			X
Tradescantia	bracteata	Bracted Spiderwort	M	FAC		X	X
Tradescantia	occidentale	Western Spiderwort	M	SAND	X		
Tradescantia	ohiensis	Ohio Spiderwort	M	FACU		X	
Triodanis	leptocarpa	Venus' Lookingglass	M	UPL		X	
Verbena	hastata	Blue Vervain	M	FACW			X
Verbena	stricta	Hoary Vervain	M	UPL	X	X	X
Verbena	urticifolia	Elm-leaf Verbena	M	UPL	X	X	X
Zizia	aurea	Golden Alexander	M	FAC		X	
Symphoricarpos	orbiculatus	Coralberry	S	FACU		X	X

Appendix B: Non-technical Soil Descriptions & Map

Colo silty clay loam (<1%) 0.06 acres: |"Nontechnical description"|"SOI"|"61"|"This deep, nearly level, somewhat poorly drained soil formed in alluvium on bottom land. It has a silty clay loam surface layer and moderately slowly permeable, silty clay loam underlying material. It is occasionally flooded."|"98106"|"98106:m:65403"

Dickinson fine sandy loam (5.6%) 3.39 acres: |"Nontechnical description"|"SOI"|"456"|"This strongly sloping somewhat excessively drained soil formed in loamy and sandy materials on uplands. It has a fine sandy loam surface layer with moderately rapidly permeable subsoil. Erosion has removed most of the original surface layer."|"98114"|"98114:m:65411"

Kennebec silt loam (46.4%) 28.31 acres: |"Nontechnical description"|"SOI"|"462"|"This nearly level, moderately well drained soil formed in alluvium on bottom land. It has a silt loam surface layer and moderately permeable silt clay loam underlying material. It is occasionally flooded."|"98121"|"98121:m:65418"

Morrill clay loam (3.7%) 2.24 acres: |"Nontechnical description"|"SOI"|"467"|"This deep, strongly sloping, well drained soil formed in glacial material on uplands. It has a clay loam surface layer and moderately slowly permeable clay loam subsoil. Erosion has removed most of the original surface layer."|"98129"|"98129:m:65426"

Nodaway silt loam (2.1%) 1.27 acres: |"Nontechnical description"|"SOI"|"119"|"This deep, nearly level, moderately well drained soil formed in alluvium on bottom land. It has a silt loam surface layer and moderately permeable, silt loam underlying material. It is occasionally flooded."|"98131"|"98131:m:65428"

Pawnee clay loam (3.6%) 2.22 acres: |"Nontechnical description"|"SOI"|"86"|"This deep, gently sloping, moderately well drained soil formed in glacial till on uplands. It has a clay loam surface layer and slowly permeable, clay subsoil. Erosion has removed part of the original surface layer."|"98133"|"98133:m:65430"

Shelby clay loam (0.6%) 0.36 acres: |"Nontechnical description"|"SOI"|"479"|"This deep, strongly sloping, moderately well drained soil formed in glacial till on uplands. It has a clay loam surface layer and moderately slowly permeable clay loam subsoil."|"98145"|"98145:m:65443"

Steinauer clay loam (11.7%) 7.13 acres: |"Nontechnical description"|"SOI"|"279"|"This deep, strongly sloping, well drained soil formed in calcareous glacial till on uplands. It has a calcareous clay loam surface layer and moderately slowly permeable, clay loam underlying material. Erosion has removed most of the original surface layer."|"98149"|"98149:m:65447"

Steinauer loam (5.5%) 3.37 acres: |"Nontechnical description"|"SOI"|"482"|"This deep, moderately steep and steep, somewhat excessively drained soil formed in calcareous glacial till on uplands. It has a loam surface layer and moderately slowly permeable loam and clay loam underlying material."|"98148"|"98148:m:65446"

Appendix B: Non-technical Soil Descriptions & Map (cont.)

Wymore silty clay loam (20.8%) 12.68 acres: "Nontechnical description"|"SOI"|"103"|"This deep, gently sloping, moderately well drained soil formed in loess on uplands. It has a silty clay loam surface layer and slowly permeable, silty clay subsoil. Erosion has removed part of the original surface layer."|"98161"|"98161:m:65460"



Figure 2. Honvlez Tract SSURGO soil map units.



LOWER PLATTE SOUTH natural resources district

3125 Portia Street | P.O. Box 83581 • Lincoln, Nebraska 68501-3581 | P: 402.476.2729 • F: 402.476.6454 | www.lpsnrd.org

August 23, 2019

Nebraska Game & Parks Commission
Attn. Recreational Trail Program, Alex Duryea
P.O. Box 30370
Lincoln, NE 68503-0370

RE: Prairie Pines Connection Trail

Dear Alex:

The Lower Platte South Natural Resources District (LPSNRD) is submitting this letter of support for the Prairie Pines Connection Trail Recreational Trails Program grant. LPSNRD has held a conservation easement on this property since 1982 when Walt and Virginia Bagley (original property owners) and LPSNRD worked together to establish a conservation easement on their property.

Walt was a forester in his professional career and had many tree plantings, grasslands, windbreaks, woodlands as well as other best management practices on his property. The Bagley's felt it was important to protect this property for the future by entering into a conservation easement and later, donating the property to the University of Nebraska Foundation.

The University of Nebraska Foundation along with several other partners have preserved and enhanced the property as the Bagley's had intended and furthered the educational aspect of the property. Currently, there is not a trail link from the city of Lincoln for Prairie Pines visitors to use. However the city of Lincoln's Murdock Trail is less than a 1/3 of a mile away from the northwest property corner of Prairie Pines. The proposed connection trail would allow visitors to access Prairie Pines. Once visitors are on the property, they can continue along the proposed trail to the Welcome Center. LPSNRD feels this link will be beneficial for visitors to Prairie Pines and is in support of this project.

If you have any questions, you may contact me at pzillig@lpsnrd.org or (402) 476-2729. Thank you for your time and consideration on this trail project.

Sincerely,

Paul Zillig
General Manager

PC: Prairie Pines file

Watershed and Flood Prevention Operations - Fiscal Year 2019 PL-566 Funding Application

Sponsor: Lower Platte South Natural Resources District

Project: Little Salt Creek Watershed Saline Wetland Enhancement and Protection Project

GENERAL ELIGIBILITY

The Lower Platte South Natural Resources District (LPSNRD) is submitting this funding application for saline wetland habitat enhancement and protection, wetland rehabilitation and erosion and sediment control projects in the Little Salt Creek watershed in Lancaster County, Nebraska. The LPSNRD is a local government entity with taxing and eminent domain authority with a long history of partnerships with NRCS that started in the 1960's with Upper Salt Creek Watershed and continued with Oak Middle Watershed and North Oak Watershed which were all PL-566 flood control projects. LPSNRD is fully willing and prepared to commence with construction of these saline wetland and Little Salt Creek watershed improvement projects and is requesting \$4,000,000 for planning, design and construction.

LPSNRD has been involved in saline wetland rehabilitation and protection projects for over 30 years as both lead sponsor and participating member of the Saline Wetlands Conservation Partnership (SWCP). Since 2003, the SWCP and its partners have spent over \$13,000,000 on acquisition, rehabilitation, engineering and design, planning, education and operation and management of saline wetland properties. This application requests funds to support a variety of saline wetland related projects throughout the Little Salt Creek watershed as identified in a number of planning and conceptual design projects that include Upper Little Salt Creek Saline Wetlands Master Plan (SWCP; 2015), Little Salt Creek Master Plan (City of Lincoln & LPSNRD; 2009), Norder Tract Conceptual Design Memo (SWCP; 2018), and other saline wetland habitat enhancement and protection projects. These projects will enhance and protect approximately 680-acres of saline wetlands located within the 1,700-acres on 12 public properties within the 29,000-acre watershed. Restoration of these protected public properties will include hydrologic control structures that will provide site managers expanded flexibility to promote the natural flood buffering effects of wetlands. The flexibility of this project design, specifically hydrologic control structures, gives consideration to climate variation with the overall goal of a more resilient ecosystem. The restored ecosystem will be more resilient in comparison to the existing agricultural monoculture that has replaced many wetlands in the watershed. Additionally, there are 171-acres protected with conservation easements through NRCS's Wetland Reserve Program in the Little Salt Creek watershed. The LPSNRD will utilize existing working relationships and institutional NRCS field technician scientific knowledge of these rare saline wetlands to maximize funding resources. All proposed water control structures will provide less than 12,500 AF floodwater detention and no project components propose greater than 25,000 AF total storage capacity. Once a PL-566 Watershed Plan has been authorized, design will commence. During design development, regulatory permits will be sought and received. The Watershed Plan/EIS will be completed within 24 months. In addition to habitat enhancement, the planned projects will also include improvements for grazing access for private lease on public lands to support rural communities.

PROJECT OVERVIEW

LPSNRD has been involved in saline wetland rehabilitation projects since saline wetlands were categorized in the early 1990s. LPSNRD was a founding member of the Saline Wetlands Conservation Partnership (SWCP) in 2003 and has been active as sponsor/landowner on a number of saline wetland rehabilitation projects. Beginning with the District's first purchase of a saline wetland conservation easement in 1986, LPSNRD has demonstrated a capacity to manage projects and design solutions of similar size, scope and budget to the preferred alternative as outlined in this application.

This application requests funds to support a variety of saline wetland related projects throughout the Little Salt Creek watershed. Nebraska's eastern saline wetlands complex is one of the most endangered wetland ecosystems in the state with less than 4,000 saline wetland acres remaining of original estimated 20,000 acres. Within the Little Salt Creek (LSC) watershed, there are approximately 680-acres of high quality to degraded saline wetlands as well as native prairie uplands and freshwater wetlands. Regionally unique and endangered plants and insects as well as resident and migratory wildlife inhabit the area. The federally endangered Salt Creek tiger beetle, state endangered saltwort plant and other unique species inhabit these areas. In addition to valuable habitat, these wetlands provide recreational, educational, and research opportunities within close proximity to the city of Lincoln, Nebraska. Ongoing threats to saline wetlands include urban encroachment, invasive plant species, sedimentation, land and agricultural development, water pollution, stream degradation and local water table declines.

Studies assessing solutions to these saline wetland threats include the LSC Master Plan (City of Lincoln & LPSNRD; 2009), Upper LSC Saline Wetlands Master Plan (SWCP; 2015), Norder Tract Conceptual Design Memo (SWCP; 2018), and other saline wetland habitat enhancement and protection projects. Summaries and full documents are available for NRCS review. These documents identify dozens of saline wetland improvement projects (SWIPs) that will restore and protect approximately 680-acres of saline wetlands located within the 1,700-acres on 12 public properties within the 29,000-acre watershed. Ongoing wetland rehabilitation and land and resource management projects are vital to the survival of this unique wetland ecosystem. Examples of these SWIPs include; instream grade control structures to decrease streambed incision and subsequent wetland water table declines, sediment removal and retention structures, habitat improvements, conservation buffers, repair of damaged existing low-hazard berm infrastructure, channel realignment/stream lengthening, streambank armoring/erosion protection, invasive vegetation control, and access improvements. Additionally, there are 146-acres protected with conservation easements through NRCS's WRP in the LSC watershed.

In addition to the protection of this rare natural resource, there will be economic returns through ongoing and expanded grazing on these public lands and recreational benefits by improving site conditions. Expenditures to-date are \$13,000,000 (74%) from SWCP and partners, NRCS PL-566 share request is \$4,000,000 (23%) and other funds (e.g. LPSNRD future grants) are \$500,000 (3%), see table below. Estimated project timeline would include construction commencement in fall 2020 with completion in 18-24 months.

ITEM	COST	SPONSOR ADMIN COST	TOTAL
Planning	\$250,000	\$40,000	\$290,000
Design	\$550,000	\$60,000	\$610,000
Construction	\$3,200,000	\$400,000	\$3,600,000
TOTAL	\$4,000,000	\$500,000	\$4,500,000

ENVIRONMENTAL EVALUATION

See attached NRCS-CPA-52, "Environmental Evaluation Worksheet"

PARTNERSHIP, CONSULTATION, COORDINATION, AND PUBLIC PARTICIPATION

The local and state NRCS offices will be reviewing and working with LPSNRD and their contractors on planning, design and construction and will leverage existing LPSNRD/NRCS partnerships to maximize funding resources. Additionally, the LPSNRD and Nebraska NRCS office will work closely with the NRCS National Water Management Center in Little Rock, Arkansas to prepare the planning document.

LPSNRD is the project sponsor and a full-share partner in the Saline Wetlands Conservation Partnership (SWCP). The SWCP was created in 2003 to offer additional protection and management of the Nebraska's diminishing saline wetlands. The SWCP is unique in its approach to preserve and restore the integrity of Nebraska's Eastern saline wetlands in that it takes a partnership approach to address conservation of saline wetlands and the needs of the community. In 2002, the City of Lincoln received a \$750,000 Nebraska Environmental Trust (NET) grant for implementation of the Eastern Saline Wetlands Project to meet the further conservation needs of Nebraska's Eastern saline wetlands. The initial interlocal agreement was signed in 2003 between the City of Lincoln (Nebraska), Lancaster County (Nebraska), LPSNRD, The Nature Conservancy and the Nebraska Game and Parks Commission (NGPC). Currently, full-share partners are the City of Lincoln, LPSNRD, NGPC, and Nebraska Chapter of Pheasants Forever, Inc. An agreement between these partners was executed in 2019 for a duration of 5 years ending in June 2024. This agreement specifies the continuation of the SWCP, employment of a coordinator for the project, and to provide a mechanism for the implementation of "Nebraska's Eastern Saline Wetland Conservation Plan 2018". Further funding for the SWCP has been provided through NET grants and state and federal funding programs.

The initial Implementation Plan for the Conservation of Nebraska's Eastern Saline Wetlands (<https://www.lincoln.ne.gov/city/parks/parksfacilities/wetlands/links/ImplementationPlan.pdf>) was completed by the SWCP in 2003. This plan was updated in 2018 and titled "Nebraska's Eastern Saline Wetlands Conservation Plan 2018". The plan is a holistic watershed approach designed to preserve both wetlands and their surrounding watersheds and its implementation involves local, state, and federal agencies working in concert with private individuals and organizations to develop additional strategies and programs that encourage saline wetland conservation.

Since 2003, the SWCP and its partners have spent nearly \$13,000,000 on acquisition, restoration, engineering and design, planning, education and operation and management of saline wetland properties. Public participation/information has been a key to the success of the SWCP and their collective efforts. All SWCP design and construction projects have included public meetings and participation. Within the proposed planning area, public meetings were held for the Little Salt Creek Watershed Master Plan in April 2008 and February 2009 and a public meeting was held for the Upper Little Salt Creek plan in March 2015. Additionally, the SWCP engages in educational outreach through periodic public open houses, scientific research symposiums and K-12 and college level educational opportunities in the classroom and at field sites. Other project partners have included NRCS, University of Nebraska, USFWS, Nebraska Dept. of Environmental Quality, private landowners, The Nature Conservancy, Lancaster County, Cooper Foundation, Nebraska Wildlife Federation and Wachiska Audubon Society.

EQUAL OPPORTUNITY

This proposed project is for saline wetland enhancement and protection on existing public properties and will provide safe and convenient all-weather access for all the public. Neither the project location nor the proposed improvement measures impact or impede a particular segment of society. This project will provide fair and equal access for people of all races, cultures, and incomes. The project has no impacts on environmental justice. The project team includes a diverse group of public agency staff, technical experts from University of Nebraska, and private business consultants.

THE POTENTIAL OR PREFERRED ALTERNATIVE

Numerous studies have been completed that assess and outline solutions to these saline wetland threats including the Little Salt Creek Master Plan (City of Lincoln & LPSNRD; 2009), Upper Little Salt Creek Saline Wetlands Master Plan (SWCP; 2015), Norder Tract Conceptual Design Memo (SWCP; 2018), and other saline wetland habitat enhancement and protection projects. Summaries and full documents are available for NRCS review on request. These documents identify dozens of saline wetland improvement projects (SWIPs) and capital improvement projects that will restore and protect saline wetlands within the 29,000-acre watershed. This watershed includes a rare ecosystem with federally designated critical habitat for the endangered Salt Creek tiger beetle in addition to existing NRCS investments and a Burlington Northern Railroad wetland mitigation bank that contains saline wetlands.

Performance outcome measures can be evaluated utilizing baseline information collected at numerous sites. Within a portion of the watershed, the ULSC master planning project evaluated the unique environmental resources through a spatial analysis methodology. The spatial analysis methodology was employed with GIS datasets for vegetation, soils, and hydrology resources. The analysis generated saline wetland condition ratings and rehabilitation strategies on a grid basis throughout the planning area. The outcome was saline wetland improvement projects (SWIPs) for wetland and channel rehabilitation projects. SWIPs include instream grade control structures to decrease streambed incision and subsequent wetland water table declines, sediment removal and retention structures, habitat improvements, conservation buffers, repair of damaged existing low-hazard berm infrastructure, channel realignment/stream lengthening, streambank armoring/erosion protection, invasive vegetation control, and access improvements. At completion of construction, CWA Section 404 permit monitoring, compliance and performance evaluation will be completed by LPSNRD and SWCP members.

The preferred alternative includes armor/protection of 20 headcuts, realignment of approximately 1,000 linear feet of stream channel, installation of 4 conservation buffers, installation of 12 instream grade control structures, repair of 2 existing WLCS and connected berms, repair of 3 sections of stream terrace, replacement of WLCS, construction of 4 sediment detention traps, installation of land manager/livestock low-water stream crossing, construction of approximately 2,000 linear feet of streamside saline habitat shelf, installation of 2 new WLCSs, and construction of 9 CIPs for grade control on mainstem Little Salt Creek. All proposed water control structures will provide less than 12,500 AF floodwater detention and no project components propose greater than 25,000 AF total storage capacity.

Expenditures to-date are \$13,000,000 (74%) from SWCP and partners, NRCS PL-566 share request is \$4,000,000 (23%) and other funds (e.g. LPSNRD future grants) are \$500,000 (3%). Estimated project timeline would include construction commencement in fall 2020 with completion in 18-24 months. The LPSNRD and SWCP will continue to leverage the Nebraska Environmental Trust and EPA Section 319 funding opportunities to support saline wetland enhancement.