



RESTORATION & MANAGEMENT FRAMEWORK

For

PRRIP HABITAT LANDS



Prepared for:

Platte River Recovery Implementation Program Governance, Technical, and Land Advisory Committees

Completion Date:

7/16/18

GC Approved Date:

9/11/18

Table of Contents

I.	List of Acronyms	4
II.	Introduction.....	5
	A. Program Overview	5
	B. Land Goals and Management Objectives.....	5
	C. Land Plan Implementation 2007-2018.....	6
	1. Land Acquisition.....	6
	2. Habitat Restoration.....	9
	3. Adaptive Management.....	10
III.	Habitat Restoration and Management Framework.....	11
	A. System-Scale Actions	11
	1. Sediment Augmentation.....	11
	2. Flow Releases.....	11
	3. Phragmites Control.....	11
	B. Complex Habitat	12
	1. Least Terns and Piping Plovers.....	12
	2. Whooping Cranes	12
	3. Grasslands and Associated Wetlands.....	12
	4. Invasive Vegetation and Noxious Weeds.....	13
	C. Non-Complex Habitat.....	13
	1. Least Terns and Piping Plovers (OCSW).....	13
	2. Whooping Cranes (Palustrine Wetlands).....	14
	D. Providing Benefits to Other Species of Concern.....	14
IV.	Agricultural Operations and Maintenance Framework.....	14
	A. Agricultural Activities	14
	B. Mining Operations	14
	C. Maintenance of Habitat Lands	14
V.	Communication, Coordination and Responsibilities.....	15
	A. Program Lands.....	15
	B. Neighboring Lands.....	15
VI.	Environmental Laws, Permitting and Compliance.....	15
	A. Section 7 Consultation.....	15

1.	Measures to Minimize or Eliminate Take of Least Tern and Piping Plover.....	15
2.	Measures to Minimize or Eliminate Take of Whooping Crane.....	15
3.	Measures to Minimize or Eliminate Take of Pallid Sturgeon.....	16
B.	Fish and Wildlife Coordination Act and Nebraska Non-game and Endangered Species Conservation Act.....	16
1.	Raptors.....	16
2.	Northern River Otter	16
3.	Western Prairie Fringed Orchid.....	16
4.	Platte River Caddis Fly	16
5.	Vegetation Communities of Conservation Importance	17
6.	Regal Fritillary.....	17
7.	Northern Long-ear Bat.....	17
8.	Sandhill crane.....	17
C.	Migratory Bird Treaty Act.....	17
D.	Bald Eagle Act	17
E.	USACE Section 404 Permitting and NDEQ Section 401 Water Quality Certification	17
F.	NPDES Construction Stormwater Discharge Permit	18
G.	County Floodplain Development Permit	18
H.	State Historic Preservation Office Clearance.....	18
I.	Good Neighbor Policy	18
VII.	Public Access	18
A.	Education.....	18
B.	Recreation.....	18
VIII.	Literature cited.....	18
VIII.	Platte River Recovery Implementation Program Land Atlas.....	19

I. List of Acronyms

AHR – Associated Habitat Reach

CNPPID – Central Platte Public Power and Irrigation District

DOR – Department of Roads

EDO – Executive Director’s Office

GC – Governance Committee

LAC – Land Advisory Committee

MCA – Moving Island Approach

NF – Nearest Forest

NGPC – Nebraska Game and Parks Commission

NPDES – National Pollutant Discharge Elimination System

NPPD – Nebraska Public Power District

OCSW – Off Channel Sand and Water

PRWCT – Platte River Whooping Crane Trust

PVWMA – Platte Valley Weed Management Area

PRRIP or Program – Platte River Recovery Implementation Program

SDHF – Short Duration High Flow

SDM – Structured Decision Making

TAC – Technical Advisory Committee

TNC – The Nature Conservancy

UOCW – Unobstructed Channel Width

USFWS – U.S. Fish and Wildlife Service

WCWMA – West Central Weed Management Area

II. Introduction

A. Program Overview

The Platte River Recovery Implementation Program (PRRIP or Program) provides Endangered Species Act compliance for water-related activities within Colorado, Nebraska, and Wyoming, while working to recover four threatened and endangered target species including the whooping crane, interior least tern¹, piping plover and pallid sturgeon. The Program is authorized for a 13-year First Increment, which began in 2007, and is estimated to cost roughly \$320 million in 2005 dollars with the monetary portion of that being \$187 million. The total cost of the program in terms of cash, water, and land is shared equally between the federal government and the states.

During the First Increment, Endangered Species Act compliance is measured through progress in achieving ten Program Milestones. Those milestones include, among others, protection and restoration of 10,000 acres of habitat, reducing deficits to United States Fish and Wildlife Service (USFWS) target flows by 130,000 to 150,000 acre-feet annually, and implementation of an adaptive management plan to reduce critical uncertainties associated with Program actions. The First Increment land objective and associated milestone have been achieved. The Program currently protects over 12,000 acres in the Associated Habitat Reach (AHR; Appendix A). Likewise, the Program has successfully implemented its adaptive management plan.

The First Increment water objective has not been achieved. The Program currently provides approximately 90,000 acre-feet towards the First Increment objective of 130,000 to 150,000 acre-feet. Additional water projects in the planning and/or design phase are expected to provide an additional 40,000 acre-feet of water. However, they will not be operational prior to the end of the First Increment in 2019 and will require more funding than what is currently available during the First Increment. As such, Milestone 4 will not be achieved by the end of 2019. Program Signatories are proposing a 13-year Extension of the First Increment.

The Extension will not change First Increment objectives or the implementation framework. It will modify the milestones slightly through acquisition of an additional 1,500 acres (“Plus-up Acres”) to create a new habitat complex. It will also provide additional time to complete and operate Program water projects and to conduct the monitoring and research necessary to determine, whether 120,000 acre-feet of water is sufficient and the best use of Program water and habitat resources to benefit the target species.

B. Land Goals and Management Objectives

Program land goals and management objectives for the First Increment have been reproduced below.

1. Program Goals
 - a. Improve and maintain migration habitat for whooping cranes and reproductive habitat for least terns and piping plovers.

¹ In 2017 the USFWS proposed delisting interior least tern, however, the post-delisting process relies upon continuation of existing monitoring efforts and programs throughout the birds’ extensive range. As such, this ruling will not impact the Program’s least tern and piping plover monitoring efforts during the First Increment Extension.

- b. Reduce the likelihood of future listings of other species within the Associated Habitat Reach (AHR).
- 2. Program Objectives
 - a. Protect, restore where appropriate, and maintain 10,000 acres of habitat in the central Platte River area between Lexington and Chapman, Nebraska.
- 3. Management Objectives
 - a. Improve production of least terns and piping plovers from the central Platte River.
 - i. Increase number of fledged least tern and piping plover chicks
 - 1. Increase nesting pairs.
 - 2. Increase fledge ratios and reduce chick mortality from causes such as flooding, predation, weather, inadequate forage.
 - ii. Reduce adult mortality
 - b. Improve survival of whooping cranes during migration.
 - i. Increase availability of whooping crane migration habitat along the central Platte River.
 - c. Within the overall objectives 3.a & 3.b, provide benefits to non-target listed species and non-listed species of concern and reduce the likelihood of future listing.
 - i. Increase availability of habitats for these species (Land Plan “other species of concern”) along the central Platte River.
 - d. “Do no Harm” to pallid sturgeon
 - i. Program participants are currently determining the best approach for the pallid sturgeon. The Program is currently developing a plan for potential future activities related to the pallid sturgeon.²

C. Land Plan Implementation 2007-2018

The Program has invested 11 years in acquisition and management of habitat lands to achieve target species goals and the First Increment land objective. To date, the Program has acquired an interest in nearly 12,500 acres of habitat. These lands are identified as complex or non-complex lands. Complex lands are acquired in blocks of riverine habitat and associated wet meadow and buffer and are referred to as habitat complexes. Non-complex lands are individual tracts located away from the river. Non-complex habitat can take the form of palustrine wetland roosting habitat for whooping cranes or off-channel sand and water (OCSW) nesting sites for least terns and piping plovers. The Program has also invested substantial resources in implementation of research and monitoring to reduce critical management uncertainties.

- 1. Land Acquisition
 - a) *Complex Habitat*

The Program’s Land Plan has guided land acquisition efforts, placing special emphasis on developing habitat complexes near the upstream end of the AHR in bridge segments with little or no protected habitat. To date, the Program has acquired an interest in nearly 12,000 acres of complex habitat within the AHR which extends from Lexington, NE downstream to Chapman, NE (Table

² See PRRIP 2017a for the latest update on the Program’s position regarding pallid sturgeon

1). These lands are organized into seven habitat complexes with individual parcels in two additional bridge segments (Figure 1).

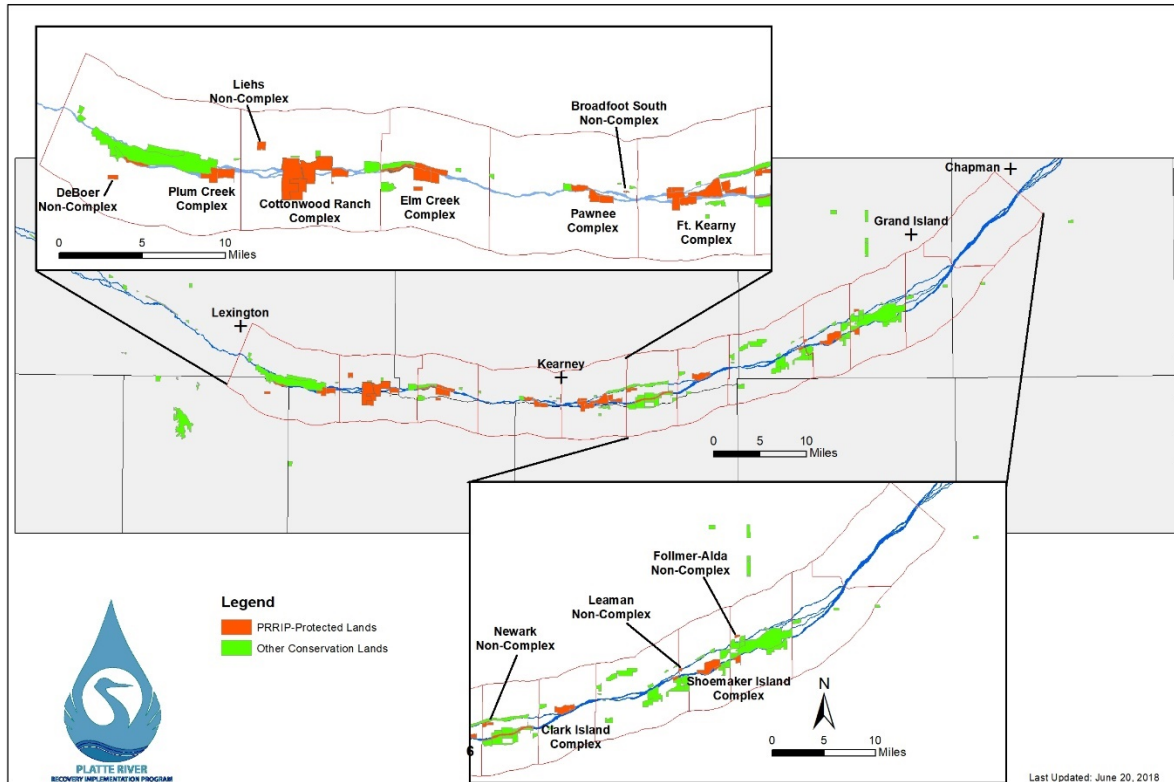


Figure 1. PRRIP Habitat Complexes distributed within the AHR. See Appendix A (Land Atlas) for additional details.

Table 1 provides additional information for each habitat complex. Per Land Plan guidance, the Program has placed special emphasis on the upstream portion of the AHR, establishing or building upon existing habitat complexes in each of the five upstream-most bridge segments (Plum Creek, Cottonwood Ranch, Elm Creek, Pawnee and Fort Kearny). The remaining two complexes were established as a result of the Program acquiring large parcels that were to be sold out of conservation ownership (Dippel and Shoemaker Island). The remaining two parcels are comprised of a management agreement with the Audubon Society for the channel portion of Rowe Sanctuary in the Minden to Gibbon bridge segment and a conservation easement on a single property (Martin Meadows) in the Alda to Grand Island bridge segment (Table 1).

Table 1. PRRIP Habitat Complexes and Individual Parcels

Complex Name	Bridge Segment	Complex Size (ac)	Complex Status
Plum Creek	Lexington – Overton	716	Partial – Focus on Sediment Augmentation
Cottonwood Ranch	Overton – Elm Creek	902	Complete
Elm Creek	Elm Creek – Odessa	1,171	Complete
Pawnee	Odessa – Kearney	474	Partial – May Expand to West
Fort Kearny	Kearney – Minden	2,190	Complete
Younkin	Minden – Gibbon	51	PRRIP Ownership
Clark Island	Gibbon – Shelton	784	Partial – New Complex
N/A	Shelton – Wood River	54	Partial
Shoemaker Island	Wood River – Alda	1,064	Complete
	Sub Total	7,406	
Individual Complex Habitat Parcels			
Robb Management Agreement	Lexington – Overton	150	Sediment Augmentation Management Agreement
NPPD	Overton – Elm Creek	2,650	Sponsorship Agreement
Private Ownership	Elm Creek – Odessa	267	Management Agreement
DOR Agreement and Private Ownership	Odessa – Kearney	268	Management Agreement
Audubon Management Agreement	Minden – Gibbon	783	Management Agreement
TNC Management Agreement	Shelton – Wood River	84	Management Agreement
Crane Trust, and Private Ownership Management Agreement	Wood River – Alda	90	Management Agreement
Martin Meadows	Alda – Grand Island	286	Conservation Easement
Private Ownership	Grand Island – Chapman	10	Management Agreement
	Sub Total	4,588	
	Total³	11,994	

b) Non-Complex Habitat

The Program Document makes provision for acquisition of up to 800 acres of non-complex habitat including 400 acres of palustrine wetland habitat and 400 acres of OCSW. To date, the Program has acquired an interest in 645 acres of non-complex habitat including 254 acres of palustrine wetlands and 391 acres of OCSW (Table 2). The Program’s inability to acquire 400 acres of palustrine wetlands has largely been due to the paucity of this kind of habitat in the AHR, and the Land

³ Reported total is reflective of the 2018 sale of excess lands at Tracts 2010004, 2011001, and 2012002.

Advisory Committee’s general reluctance to purchase upland and convert to palustrine wetland habitat.

In 2016, the Program entered a structured decision making (SDM) process related to least tern and piping plover habitat that resulted in a directive from the Governance Committee (GC) to acquire and/or create an additional 60 acres of OCSW habitat.⁴ In March of 2017, the GC discussed the remaining OCSW acres and paucity of palustrine wetland acres with shortfall and directed the Executive Director’s Office (EDO) to use the remaining, or a portion of the remaining, non-complex acres to make progress towards the development of the additional 60 acres of off-channel least tern and piping plover nesting habitat, but do not preclude the evaluation and acquisition of palustrine wetland habitat. The EDO continues to pursue opportunities to acquire an interest in non-complex habitat parcels.

Table 2. PRRIP Non-Complex Parcels

Parcel Name	Bridge Segment	Parcel Size (ac)	Parcel Type
Broadfoot Kearney	Odessa – Kearney	15	OCSW – Lease (Expires in 2019)
Broadfoot Newark	Kearney – Minden	216	OCSW – Fee Title
Leaman East	Wood River – Alda	85	OCSW – Fee Title
Follmer Alda Pit	Alda – Grand Island	75	OCSW – Fee Title
Sub Total		391	
DeBore	Lexington – Overton	101	Palustrine – Fee Title
Liehs	Overton – Elm Creek	153	Palustrine – Fee Title
Sub Total		254	
Total		645	

2. Habitat Restoration

First Increment restoration activities at Program habitat complexes have included channel widening, clearing of woody vegetation to increase unobstructed sight distances for whooping cranes, wet meadow and grassland restoration, construction of water-control structures to increase wetlands for whooping cranes, and mechanical creation of in-channel nesting islands for least terns and piping plovers. Restoration activities have generally been implemented as part of large-scale adaptive management experiments designed to improve the Program’s understanding of habitat selection by whooping cranes and, in the case of least terns and piping plovers, reproductive success. For example, in-channel least tern and piping plover nesting islands were constructed as part of a paired experimental design to test least tern and piping plover selection of combinations of big and small, high and low islands as well as on- versus off-channel nesting habitat.

Large-scale adaptive management experiments/restoration projects at existing Program complexes have largely been completed. The Program has now shifted toward maintenance of highly-suitable

⁴ 60 acres of bare sand nesting habitat. It is not known how many total acres will need to be acquired to achieve this objective.

target species habitat based on learning from those experiments. Adaptive management-related learning is described below.

3. Adaptive Management

During the period of 2007-2018, the Program has focused on implementation and monitoring of species response to habitat restoration and management actions on Program lands. As a result, the Program has learned a great deal about 1) the characteristics of highly suitable target species habitat, and 2) our ability to create and/or maintain those habitats on Program lands.

a) Least Tern and Piping Plover Habitat

During the period of 2008-2015, the Program constructed and maintained mechanical on- and off-channel nesting habitat for least terns and piping plovers and evaluated the Program's ability to create and maintain suitable on-channel nesting habitat through short-duration high flow (SDHF) releases. Implementation and effectiveness monitoring and research associated with those efforts resulted in a series of peer reviewed least tern and piping plover habitat synthesis chapters (PRRIP 2015), nest site selection and productivity publications (Baasch et al. 2017a, Baasch et al. 2017b, Farrell et al. 2017), and ultimately culminated in an SDM process to adjust Program management actions (Compass 2016).

As a result of the SDM process, the Program has shifted away from mechanical creation and maintenance of new on-channel nesting islands at Program habitat complexes. This includes termination of ongoing island creation at the Elm Creek and Shoemaker Island habitat complexes. The GC did agree to attempt to create and maintain approximately 10 acres of moving complex approach (MCA) nesting island habitat on an annual basis. This includes removal of vegetation from existing bar/island footprints but no grading to increase island height. It is anticipated that most of the MCA habitat creation will occur on non-Program lands. As a result of the SDM process, the Program will also place an increased emphasis on the creation and maintenance of OCSW habitat for least tern and piping plover nesting. Specifically, the Program will continue to maintain existing OCSW habitat and seek to acquire and/or create an additional 60 acres of bare sand nesting habitat.

b) Whooping Crane Habitat

During the period of 2007 – 2017, the Program managed habitat lands to provide a range of unobstructed view widths, conducted systematic monitoring of whooping crane roosting in the AHR, participated in a large-scale satellite telemetry tracking project and implemented a large-scale stopover habitat study. Implementation and effectiveness monitoring associated with these activities resulted in a peer reviewed set of whooping crane synthesis chapters as well as an analysis and summary of data collected via the Program's systematic monitoring protocol (PRRIP 2017b, Howlin and Nasman 2017). Habitat selection analyses completed as part of that effort indicate that the relative probability of whooping crane use increases with increasing distance to nearest forest and increasing width of channel unobstructed by dense vegetation (UOCW) with probability of use maximized when unforested width exceeds 1,100 ft and UOCW exceeds 650 ft.

The Program has not undertaken an SDM process for whooping cranes. Instead, the GC has directed the EDO to manage on-channel roosting habitat per the following guidelines.

- In areas where unforested widths are narrower than 1,100 ft, increase the UOCW to 1,100 ft.

- In cases where channel width is narrower than 650 ft, the channel will be widened to at least 650 ft.
- In cases where the channel is wider than 650 ft, the entire width of channel will be managed free of vegetation. This will result in a range of UOCWs on Program lands from approximately 650 ft up to 1,200 ft.

III. Habitat Restoration and Management Framework

A. System-Scale Actions

Although most Program management actions are site-specific, three activities are intended to provide system-scale benefits. The first is large, scale sediment (sand) augmentation to offset the sediment deficit due to clear-water hydropower returns via Central Nebraska Public and Power and Irrigation District's (CNPPID) J-2 Return near Lexington. The second activity is flow management, specifically flow releases from the Environmental Account or other Program water projects for the purpose of benefiting Program target species. The third system-scale management activity the Program contributes too is phragmites control. Each of these activities is described in more detail below.

1. Sediment Augmentation

In 2017, the Program began full-scale sediment augmentation operations in the south channel of the Platte River downstream of the J-2 Return. Augmentation will include annual mechanical introduction of 60,000 – 80,000 tons of sediment in the reach immediately downstream of the Return. The sediment supply in this reach is on the order of 1,000,000 tons and we anticipate that augmentation will proceed in this area for approximately 10 years. At that point, we will need to progress further downstream or move operations to the Plum Creek complex.

2. Flow Releases

The sole flow management action described in the Program's Adaptive Management plan is the short duration high flow (SDHF) releases. As identified through Adaptive Management experiments, SDHF is unlikely to create and/or maintain suitable target species habitat and is currently unable to be fully tested through a directed flow release. While the Program has committed to improving channel capacity at the North Platte choke point and releasing one full SDHF event, it is anticipated that the Program will shift its focus to evaluating target flows and/or other flow management actions during the Extension. This effort can begin in advance of, or concurrent with, full evaluation of SDHF and is anticipated to begin in 2019.

3. Phragmites Control

The Program will continue to participate in the efforts of the Platte Valley Weed Management Area (PVWMA) and West Central Weed Management Area (WCWMA) efforts to control phragmites on Program Complexes and throughout the Platte River Valley. The Program has been a significant financial contributor to this effort and has encouraged the PVWMA and WCWMA to seek state, local, and private partner funds to further this effort.

B. Complex Habitat

1. Least Terns and Piping Plovers

The Program will no longer construct on-channel least tern and piping plover nesting habitat at Program habitat complexes. Instead, the GC agreed to manage and maintain approximately 10 acres of MCA habitat within the AHR annually. MCA habitat is defined as existing vegetated bar/island area that is cleared, disked, and sprayed to prevent revegetation. It is anticipated that MCA areas will erode over the course of one to several years, at which time it will not be rebuilt. As noted during the SDM process, MCA habitat will likely not meet the Program's minimum habitat suitability requirements for tern and plover nesting habitat but may still be used by the species. MCA habitat is also expected to improve unobstructed channel widths for whooping cranes and contribute to the maintenance of a braided channel morphology.

2. Whooping Cranes

The Program's 2017 whooping crane resource selection analyses will guide management actions at habitat complexes (Program 2017). That analysis found that nearest forest (NF) and the width of channel unobstructed by dense vegetation (UOCW) were the best predictors of whooping crane use locations with probability of selection maximized when NF=550 ft and UOCW = 650 ft. Therefore, in cases where unforested widths are narrower than 1,100 ft (NF X 2), forest clearing will be utilized to increase unforested width to 1,100 ft. In cases where the channel width is narrower than 650 ft, tree clearing, overbank disking, and/or mechanically pushing in banks/islands to widen the channel will be utilized to encourage channel widening to at least 650 ft.

Channel disking will also be used to remove in-channel vegetation to maintain suitable UOCWs. In all cases, vegetation will be managed across the width of the active channel. More specifically, in reaches where UOCWs exceed 650 ft, they will continue to be maintained at existing widths and not allowed to narrow. This will result in a range of UOCWs at Program complexes from approximately 650 ft up to 1,200 ft.

The Program has the capacity to augment wetland hydrology via well pumping at two sites (Morse and Fox tracts). The wetlands will be pumped as necessary during the migration periods to ensure the availability of shallow roosting habitat (<12 inches). Currently, the Morse and a portion of the Cottonwood Ranch tracts are being converted to a Groundwater Recharge site that will also provide benefits to whooping cranes.

3. Grasslands and Associated Wetlands

The Program currently manages lowland grasslands (wet meadows) and other grassland buffer habitat for whooping crane and species of concern (e.g., sandhill cranes). Program grassland sites and wetlands within them will be managed through the use of rotations combining livestock grazing, haying, mowing, and prescribed fire to provide a diverse mixture of vegetative structure and species composition. This will include short vegetative structure for whooping cranes on approximately 1/4 of total grassland area and the remaining 3/4 of the total grassland area in a taller, heterogenous vegetation structure for grassland nesting birds and other species. Grazing will typically occur during a 5-month grazing period (May 1-October 1) each year at a moderate stocking rate. Each management unit will be evaluated annually and adjustments in stocking rate, timing, and duration will be made accordingly. Prescribed fire will be used to suppress cool season grasses, invasive vegetation, and cedar trees and brushy species during the spring and fall. Prescribed fire will be

implemented on each management unit on a 4-year return interval. Program staff, in coordination with the appropriate Program committees, will be responsible for identifying management units for prescribed burns. Contractors, hired by the Program, will acquire burn permits and perform prescribed burns. Contractor oversight will be provided by Program staff. Haying and mowing, where planned or needed, will occur after July 15.

4. Invasive Vegetation and Noxious Weeds

Control of existing and future infestations of invasive vegetation and/or noxious weeds will be accomplished through a variety of methods including herbicide application, prescribed fire, mechanical disturbance/removal, and grazing. Examples of species with the potential to be invasive in certain situations include eastern red cedar, salt cedar, Russian olive, willow, false indigo, intermediate wheatgrass, tall wheatgrass, phragmites, purple loosestrife, reed canary grass, yellow flag iris, etc. An integrated management approach of control will be used to the extent possible and specific control methods will be updated as new information becomes available. Ongoing management needs will be assessed annually and incorporated into Annual Work Plans.⁵ Program staff, tenants, and Contractors will be responsible for identifying infestations and control activities will be implemented by Program Contractors.

C. Non-Complex Habitat

1. Least Terns and Piping Plovers (OCSW)

The creation and maintenance of OCSW will be the Program's primary strategy to achieve least tern and piping plover management objectives. Existing OCSW sites will be maintained free of vegetation through spraying and mechanical removal. Predation will be controlled through the maintenance of predator fencing and trapping which is currently performed by the USDA-APHIS. Permanent or temporary predator fencing will be used on all off-channel nesting areas to minimize land access to the nesting areas by predators. Permanent fencing will typically include a woven wire fence with electrified wires that are placed a minimum of 12 inches above ground level and near the middle and top of the woven wire fence. The 12-inch minimum height of bottom, off-set electrified fence will be checked prior to and periodically during the nesting season annually and will be adjusted to meet this standard when necessary. Sites that are under construction, recently constructed, or that are managed through a management agreement where a permanent fence is not allowed or is not in the best interest of the Program will be protected with temporary electrified fencing that is installed before and removed following the nesting season annually. Temporary electrified fencing will typical include a 48-inch tall electrified poultry fence with vertical strands on a 2-3 inch spacing and horizontal wires on a 4-6 inch spacing. The bottom electrified strand will be maintained as to not contact the ground and short out the fence but may be very near the ground (<1 inch) when on uneven terrain.

New OCSW sites will be designed by the EDO in accordance with findings of the Program off-channel nest site selection research (Baasch et al. 2017a). Appropriate habitat creation/restoration construction techniques will be based on site conditions and the Technical Advisory Committee (TAC)/GC will be asked to approve designs prior to bid letting. As discussed earlier, the GC has

⁵ Annual Work Plans are described in Section IV.

agreed to construct an additional 60 acres of OCSW habitat. It is not yet known if this habitat will be constructed at one or a combination of several locations. However, given the territorial nature of piping plovers, larger sites are anticipated to accommodate greater use by this species.

2. Whooping Cranes (Palustrine Wetlands)

The Program currently manages two palustrine wetland sites (DeBoer and Liehs) and, given the paucity of these types of wetlands in the AHR, it is unlikely that additional sites will be acquired or restored in the future. The existing sites will be managed to provide supplemental hydrology through groundwater pumping (where available) and a diversity of vegetative structure during the whooping crane migration period through use of prescribed fire, grazing, and mechanical disturbance. The Program has the capacity to augment wetland hydrology via well pumping at one site (Liehs tract). The wetland, and associated croplands, will be pumped as necessary during the migration periods to ensure the availability of shallow roosting habitat (<12 inches).

D. Providing Benefits to Other Species of Concern

When implementing land management actions, the Program will, where practical, select restoration, maintenance and other management measures for the target species that do not harm or may benefit other “species of concern,” when such activities are consistent with the needs of the target species and are within the Program budget. An initial list of “species of concern” as related to land management is found in Section VI B.

IV. Agricultural Operations and Maintenance Framework

A. Agricultural Activities

The EDO will develop parcel-specific agricultural operations plans and, where practical, will work with existing tenants once tracts are acquired until a change in land use (i.e. cropland conversion, OCSW habitat creation, etc.) or a violation of the terms of a lease agreement occurs. Farm managers contracted by the Program will develop lease agreements and negotiate a fair market value with tenants, using guidance from EDO, on cropping and grazing strategies on each tract annually.

B. Mining Operations

The EDO will develop site-specific mining operations plans and, where practical, will work with existing sand and gravel mining operators to negotiate an agreed upon amount of royalties the Program will receive from the sale of mined material. The EDO will develop site-design plans as well as a schedule for project completion and will ensure the OCSW habitat meets or exceeds the agreed upon site-design plans.

C. Maintenance of Habitat Lands

The EDO will develop Annual Work Plans for all Program lands with input from the Program’s Land Advisory Committee (LAC) and TAC. EDO staff will conduct or retain contractors to conduct, plan, design, and permit specific activities carried out on habitat lands and EDO staff will provide oversight for all land management activities performed by contractors.

V. Communication, Coordination and Responsibilities

A. Program Lands

The EDO is responsible for coordination and implementation of restoration and management actions on Program lands. Tract-specific habitat and adaptive management objectives and activities are incorporated into Annual Work Plans that are developed by the EDO, reviewed by the LAC and TAC, integrated into the PRRIP Work Plan and ultimately approved by the GC as part of the annual budget approval process.

B. Neighboring Lands

The EDO is responsible for communication and coordination with neighboring land owners. All interactions with property owners will be governed by the Program's Good Neighbor Policy. If the Program wishes to implement specific management actions on non-Program lands and does not desire (or is not able) to negotiate an easement, lease, or purchase, the EDO will work to develop a management agreement with the land owner. The agreement will include the actions to be taken, timeframe, responsibilities, and other pertinent information.

VI. Environmental Laws, Permitting and Compliance

A. Section 7 Consultation

1. Measures to Minimize or Eliminate Take of Least Tern and Piping Plover

Habitat improvement activities occurring on river channel or sandpits between April 15 and August 15 will only be conducted in the absence of nesting least terns and piping plovers. Program Staff will ensure that a survey for these species is conducted in the area that will be disturbed within three days prior to the initiation of activities by qualified individuals (e.g. by Program staff, contractors, or conservation owners).

If least terns or piping plovers nest on off-channel nesting habitat, appropriate measures will be taken to control predation. At a minimum, any land connection to the nesting area for maintenance will be protected by electrified predator fencing. Mammalian trapping will occur at all off-channel sites owned or managed by the Program to reduce the risk of predation. Other measures may be warranted and U.S. Fish and Wildlife Service (USFWS) concurrence will be obtained before implementing additional measures.

2. Measures to Minimize or Eliminate Take of Whooping Crane

For habitat restoration and mechanical land management activities in or within 0.25 miles of the Platte River channels occurring between March 6 and April 29 or October 9 and November 15 shall only take place from one hour following sunrise to two hours prior to sunset unless otherwise approved by the USFWS's Whooping Crane Coordinator. Program staff will notify the USFWS when Program habitat restoration work will be conducted during the above dates from the Highway #283 and Interstate 80 intersection near Lexington downstream to Chapman, Nebraska.

Construction or other work crews working in or within 0.25 miles of the channel during the above dates will check channel areas for the presence of whooping cranes prior to starting work each day and report the presence of whooping cranes to Program staff. When whooping cranes are discovered in the Platte River valley, either by the Program monitoring crew or the above required check by construction or work crews or are known to be in the valley through other sources,

including via notification from the USFWS's Whooping Crane Coordinator, Program staff will confer with the USFWS and will notify construction crews if it is necessary to temporarily halt construction activities.

Construction work will be completed as quickly as possible. Earth moving equipment will be moved from the river channel to an upland site located behind a tree line at the end of each work day if such features are available on the property. In the instance that such features are unavailable, equipment will be moved to a position at least 0.25 miles away from the channel.

Section 7 Consultation with the USFWS will be conducted initially using this complex management planning document for the suite of Program management described within this plan on existing or future acquired lands. The USFWS will review Annual Work Plans in combination with individual tract operations and maintenance plans and notify the Program through the appropriate technical committees if any proposed site-specific projects or activities may require further consultation for potential effects to federally threatened or endangered species. Unless notified by the USFWS, the Program may proceed implementing activities as described within this plan and consulted on.

3. Measures to Minimize or Eliminate Take of Pallid Sturgeon

Land management activities will not result in incidental take of pallid sturgeon.

B. Fish and Wildlife Coordination Act and Nebraska Non-game and Endangered Species Conservation Act

The Program will work with the USFWS and the Nebraska Game and Parks Commission (NGPC) to identify potential impacts to state and/or federally listed endangered or threatened species and species of concern and will address them as part of this document. Program actions to avoid or mitigate potential species impacts not addressed in other portions of Section V are presented below.

1. Raptors

The Program will conduct raptor surveys for management activities that may affect active raptor nests during the period of February 1 through July 15th. If a nest is discovered, that tree will not be removed.

2. Northern River Otter

The Program will conduct natal den surveys when performing restoration or management actions during the period of February 15 to June 15 that may impact river channel or slough banks where natal dens may be present. If natal dens are discovered, the Program will coordinate with the NGPC to design appropriate buffers.

3. Western Prairie Fringed Orchid

Projects that will result in the disturbance of native prairies or wet meadows will be surveyed for the presence of Western Prairie Fringed Orchid during the flowering period of June 15 through July 7. If this species is present, activities will be modified to prevent destruction of existing plants.

4. Platte River Caddis Fly

Surveys for Platte River Caddis Fly potential habitat and populations will be conducted on all Program properties at the time of acquisition, or during the soonest recommended survey period after acquisition. If a population is present on the property and restoration or management actions

may negatively impact the population, the Program will coordinate with USFWS and NGPC to determine appropriate methods to avoid or mitigate impacts.

5. Vegetation Communities of Conservation Importance

Surveys for Northern Cordgrass Wet Prairie, Northern Sedge Wet Meadow, and Wet Mesic Tallgrass Prairie will be conducted on all Program properties during the soonest recommended period after acquisition. If occurrences are found, the Program will coordinate with the USFWS and NGPC to determine appropriate methods to avoid or mitigate negative impacts from Program management actions. Additionally, the Program will investigate opportunities to re-establish these communities if suitable locations are present.

6. Regal Fritillary

The Program will coordinate with the USFWS and NGPC to investigate opportunities to establish native violet species (*Viola spp.*) in native grasslands or grassland restorations to provide a host species for the regal fritillary and promote its conservation.

7. Northern Long-ear Bat

The Program will not remove trees between 1 June and 31 July to avoid impacts to northern long-ear bats during the summer and will coordinate with USFWS and NGPC if the species is found on Program properties.

8. Sandhill crane

The Crane Trust conducts annual surveys to document the abundance and distribution of sandhill cranes throughout the Associated Habitat Reach. The Program will continue to work with the Crane Trust in evaluations of their data to ensure Program management activities do not adversely impact sandhill cranes.

C. Migratory Bird Treaty Act

Land management that involves burning, cutting or mechanical removal of vegetation (with the exception of restoration activities on ground that was previously in agricultural crops) will not occur between April 30 and July 15 without first doing surveys to document species-specific densities of occupied migratory bird nests within the area to be affected. The Program acknowledges a few grassland nesting birds may experience short-term losses, but the benefits of providing heterogeneity within the landscape will provide long-term benefits for many grassland nesting species.

D. Bald Eagle Act

Eagle nests will not be disturbed, a quarter-mile buffer will be maintained while occupied by adults or young, and management activities will not occur within 600 feet. Known eagle roost trees will be left in place.

E. USACE Section 404 Permitting and NDEQ Section 401 Water Quality Certification

Prior to commencement of construction work to be accomplished in wetlands or waters of the United States, including placement of fill material, the Program will obtain a United States Army Corps of Engineers Section 404 permit and Nebraska Department of Environmental Quality Section 401 water quality certification. Work in wetlands or waters of the State that are not

jurisdictional under the Federal Clean Water Act will comply with the Nebraska Department of Environmental Quality's Title 117.

F. NPDES Construction Stormwater Discharge Permit

All construction work that will disturb an area exceeding 1 acre in size will be required to meet the requirements of the Environmental Protection Agency National Pollutant Discharge Elimination System Construction General Permit. This permit includes the development of a Stormwater Pollution Prevention Plan. The Program will submit a Notice of Intent a minimum of seven days before commencement of construction activities.

G. County Floodplain Development Permit

All fill placed within the 100-year floodplain will require a floodplain development permit from the county where the work is undertaken. In order to obtain a permit, a project must have No-Rise certification meaning that it will raise the 100-Year Base Flood Elevation (BFE) by less than one foot.

H. State Historic Preservation Office Clearance

Projects will require screening for impacts to cultural resources including historic properties. Program properties will be submitted to the State Historic Preservation Office for a cultural resources screening at the time of acquisition.

I. Good Neighbor Policy

The Program will comply with local, state, and federal laws, and to the extent permitted by such laws will be responsible for its actions to the same extent as a private individual under like circumstances.

VII. Public Access

A. Education

Access for education, including non-Program research, will be allowed on a case-by-case basis as long as it is compatible with target species usage and does not negatively impact species habitat. Program staff will be responsible for evaluating requests and granting access permission.

B. Recreation

Public access for recreation is allowed when and where it does not interfere with other Program priorities. The Program's recreation access program is governed by the Program's [Public Access Policy](#), which is updated annually by the Governance Committee. The NGPC currently administers the access program, which includes maintenance of an access reservation website (www.platteaccess.org) and physical monitoring of parcels enrolled in the program to ensure that users are adhering to access policies.

VIII. Literature cited

Baasch D.M., P.D. Farrell, J.M Farnsworth, and C.S. Smith. 2017a. Interior least tern and piping plover nest site selection at managed sandpit sites along the central Platte River, Nebraska, USA. *Journal of Field Ornithology* 88:236–249.

Baasch, D.M., P.D. Farrell, J.M. Farnsworth, and C.B. Smith. 2017b. Interior least tern productivity in relation to flow in the central Platte River. *Great Plains Research* 27:35–42.

- Compass Resource Management, Inc. (Compass) 2016. Structured decision making for interior least tern and piping plover habitat on the Platte River. Prepared for the Platte River Recovery Implementation Program.
<https://www.platteriverprogram.org/PubsAndData/ProgramLibrary/FINAL%202016%20PRRIP%20Tern%20and%20Plover%20SDM%20Report.pdf>.
- Farrell P.D., D.M. Baasch, J.M Farnsworth, and C.S. Smith. 2018. Least tern and piping plover nest success and brood survival at off channel sites in the Central Platte River. *Avian Conservation and Ecology* 13:1.
- Howlin S. and K. Nasman. 2017. Correlates of whooping crane habitat selection and trends in use in the central Platte River, Nebraska. Available at:
<https://www.platteriverprogram.org/PubsAndData/ProgramLibrary/Correlates%20of%20Whooping%20Crane%20Habitat%20Selection%20and%20Trends%20in%20Use%20in%20the%20Central%20Platte%20River.pdf>.
- Platte River Recovery Implementation Program (PRRIP). 2015. Interior Least Tern (*Sternula antillarum athalassos*) and Piping Plover (*Charadrius melodus*) Habitat Synthesis Chapters. Available at:
https://www.platteriverprogram.org/PubsAndData/ProgramLibrary/PRRIP%202015_Tern%20and%20Plover%20Habitat%20Synthesis%20Chapters.pdf.
- Platte River Recovery Implementation Program (PRRIP). 2017a. PRRIP GC pallid sturgeon workshop summary notes. Available at:
<https://www.platteriverprogram.org/PubsAndData/ProgramLibrary/PRRIP%20GC%20Pallid%20Sturgeon%20Workshop%20Summary%20Notes.pdf>
- Platte River Recovery Implementation Program (PRRIP). 2017b. Whooping Crane (*Grus americana*) Habitat Synthesis Chapters. Available at:
<https://www.platteriverprogram.org/PubsAndData/ProgramLibrary/PRRIP%20Whooping%20Crane%20Habitat%20Synthesis%20Chapters.pdf>.

APPENDIX A

**PLATTE RIVER RECOVERY IMPLEMENTATION PROGRAM
LAND ATLAS**

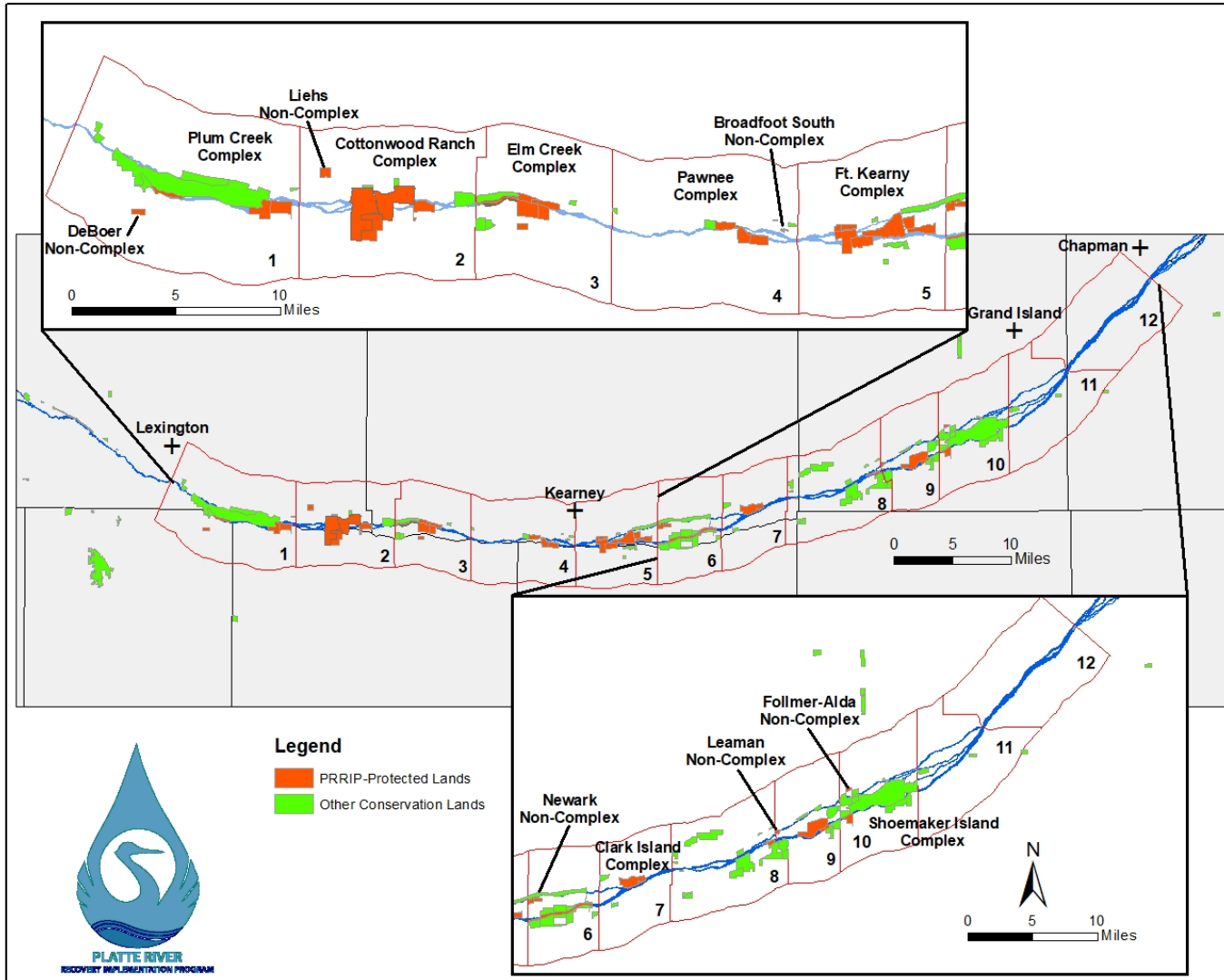


PLATTE RIVER RECOVERY IMPLEMENTATION PROGRAM

LAND ATLAS



Current to: June 20, 2018



INDEX

Bridge Segments

Sheet #	Name
1	Lexington to Overton
2	Overton to Elm Creek
3	Elm Creek to Odessa
4	Odessa to Kearney
5	Kearney to Minden
6	Minden to Gibbon
7	Gibbon to Shelton
8	Shelton to Wood River
9	Wood River to Alda
10	Alda to Grand Island
11	Grand Island to Hwy 34
12	Hwy 34 to Chapman

PRRIP Complexes

Sheet #	Name
1	Plum Creek Complex
2	Cottonwood Ranch Complex
3	Elm Creek Complex
4	Pawnee Complex
5	Fort Kearny Complex
7	Clark Complex
9	Shoemaker Island Complex

PRRIP Non-Complex

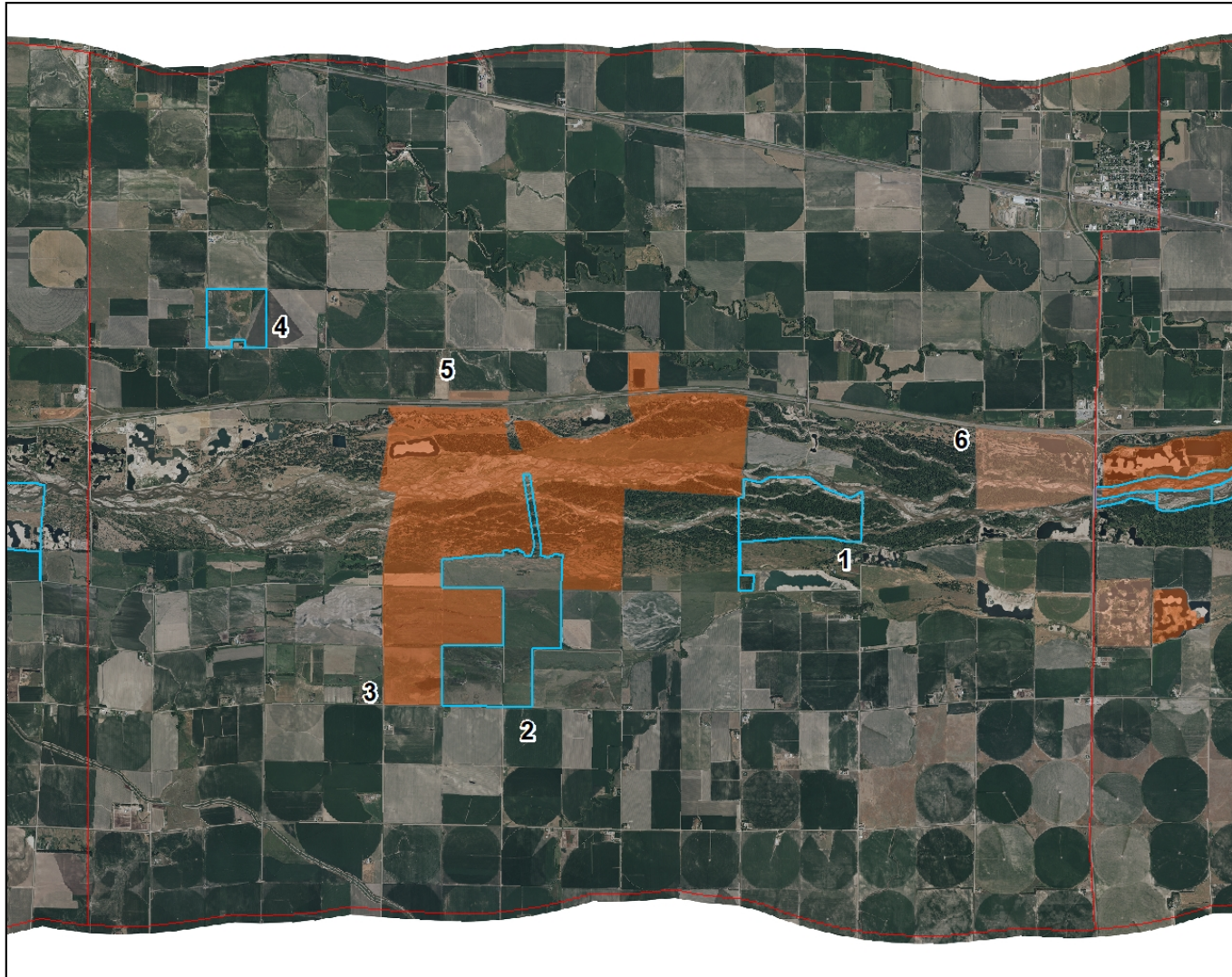
Sheet #	Name
1	DeBoer Wetland
2	Liehs Wetland
4	Broadfoot South Sandpit
6	Newark Sandpit
9	Leaman East Sandpit
10	Follmer Alda Sandpit

A-Z PRRIP Tract Listing

Aten	3	Johns	3
Bartels	3	Johnson	3
BELF	4	Leaman East	9
Binfield	9	Leaman West	8
Blessing	5	Liehs	4
Blue Hole	3	Nartin Meadows	10
Blue Hole East	3	McCormick	3
Broadfoot	4	Morse	2
Broadfoot South	4	Newark	6
Cook	1	Penrose	12
Cottonwood Ranch	2	Robb	1
Crane Trust	9	Rowe	6
DeBoer	1	Sherrard	5
Dyer	1	Spaidell	5
Follmer Alda	10	Stall	2
Fotts/Osborne	9	Sulwold	3
Fox	5	TWC	8
Hostetler	5	Valentine	4
Hubbard	3	Wyoming	5
		Younkin	6

Last Updated: June 20, 2018





Overton to Elm Creek

Sheet 2

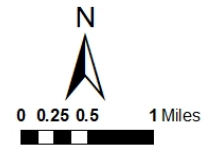
PRRIP Complex Lands: 3,552.0 Ac
 Cottonwood Ranch Complex
 1. Stall - 337.0 Ac
 2. Morse - 565.0 Ac
 3. NPPD Cottonwood Ranch - 2,650.0 Ac

PRRIP Non-Complex Lands: 153.3 Ac
 4. Liehs - 153.3 Ac

Other Conservation Lands:
 5. NGPC - West Elm Creek WMA
 6. NGPC - Blue Hole WMA

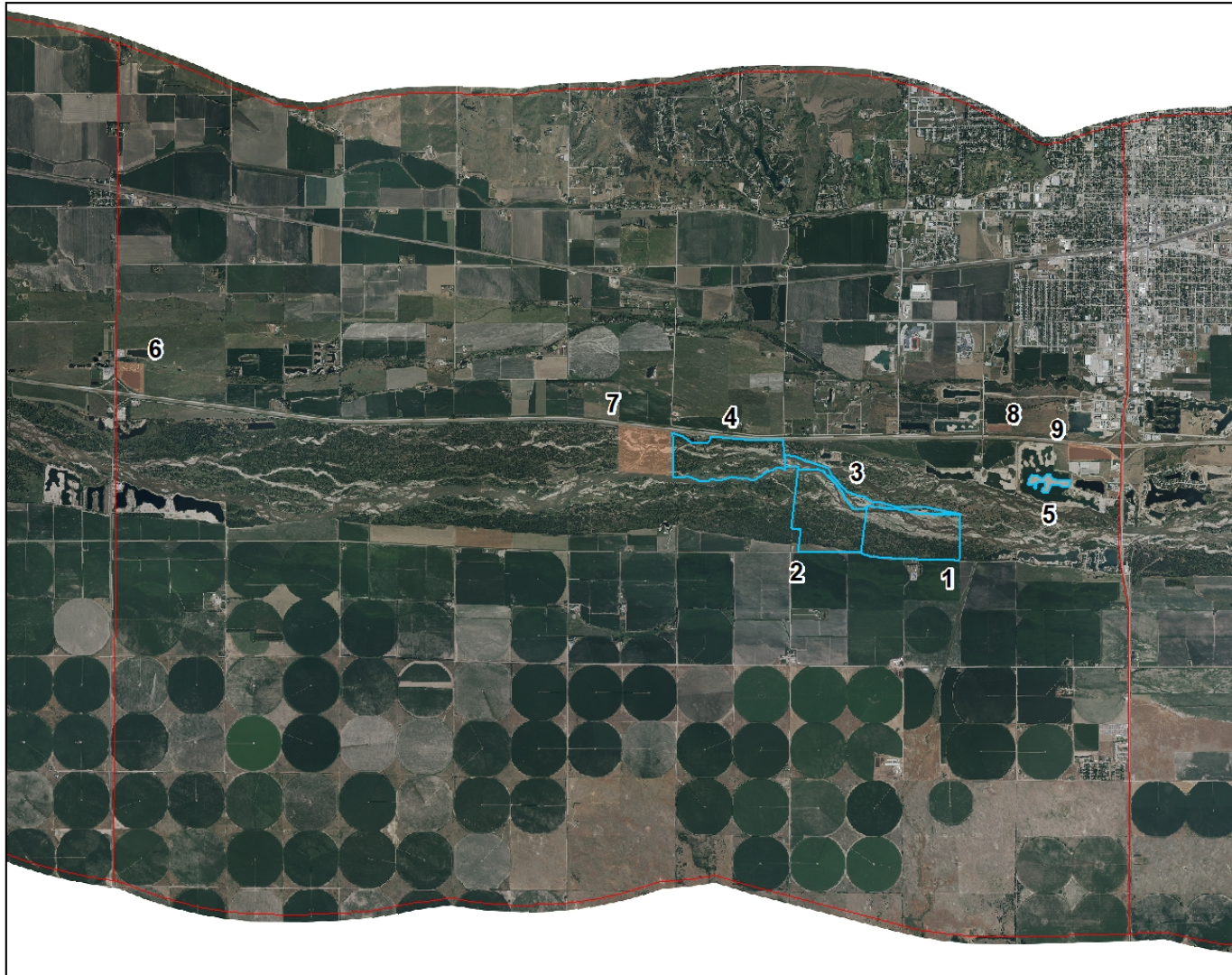
Legend

	Bridge Segment		NPPD
	PRRIP		PRWCT
	Audubon		TNC
	CNPPID		USFWS
	Ducks Unlimited		Wyoming
	NGPC		



Last Updated: June 20, 2018





Odessa to Kearney

Sheet 4

PRRIP Complex Lands: 741.9 Ac
 Pawnee Complex
 1. Volentine - 233.0 Ac
 2. BELF - 240.9 Ac
 3. Broadfoot (Agrmt) - 61.0 Ac
 4. NDOR (Agrmt) - 207.0 Ac

PRRIP Non-Complex Lands: 15.0 Ac
 5. Broadfoot South - 15.0 Ac (Lease)

Other Conservation Lands:
 6. NGPC - Union Pacific SRA
 7. NGPC - East Odessa WMA
 8. NGPC - Kea West WMA
 9. NGPC - Kea Lake WMA

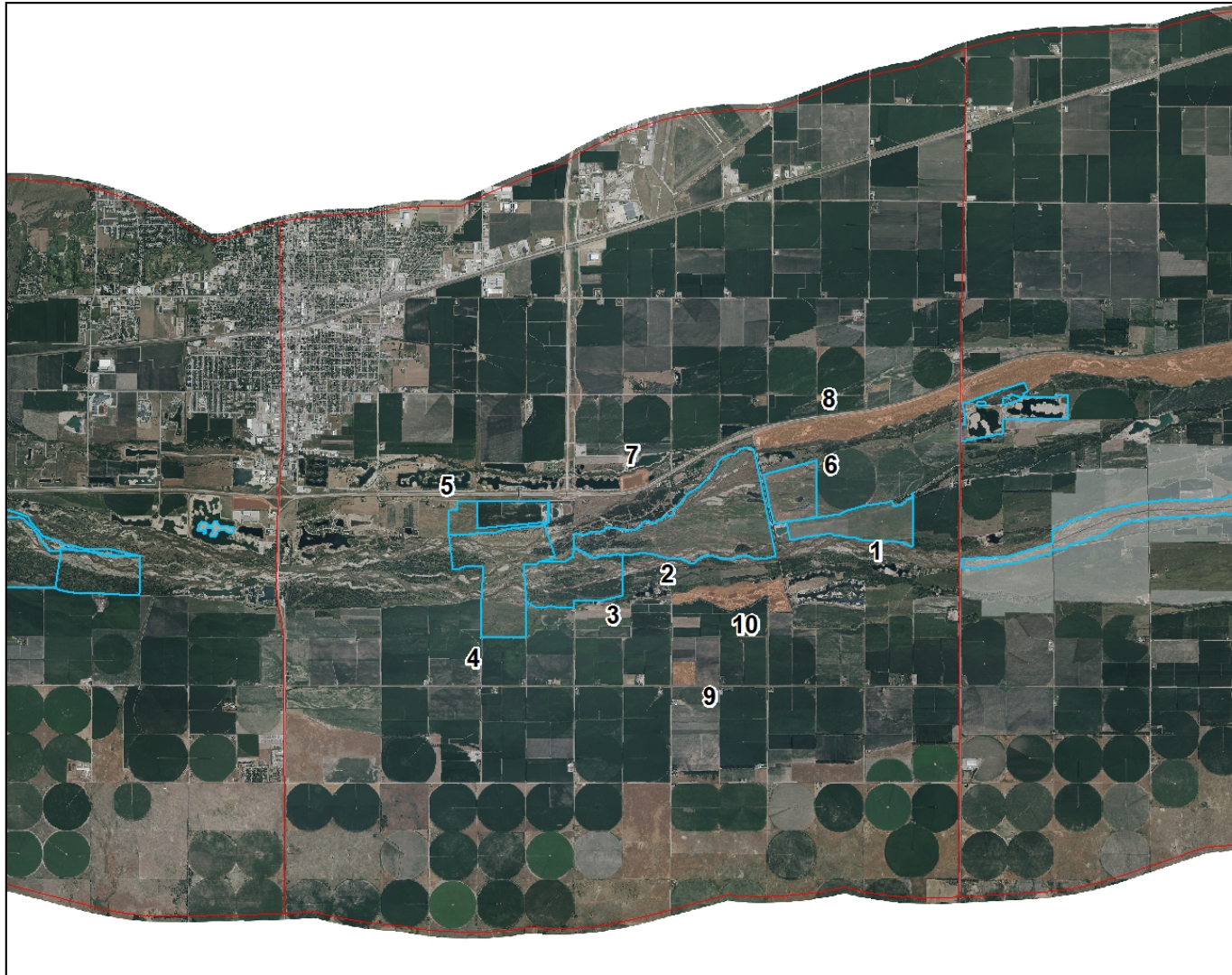
Legend

- Bridge Segment
- PRRIP
- Audubon
- CNPPID
- Ducks Unlimited
- NGPC
- NPPD
- PRWCT
- TNC
- USFWS
- Wyoming



0 0.375 0.75 1.5 Miles

Last Updated: June 20, 2018



Kearney to Minden

Sheet 5

PRRIP Complex Lands: 2,190.1 Ac
 Fort Kearny Complex
 1. Hostetler - 331.6 Ac
 2. Speidell - 725.1 Ac
 3. Sherrerd (Easmt) - 304.4 Ac
 4. Wyoming - 455.3 Ac
 5. Blessing - 79.3 Ac Owned
 116.6 Ac Easmt
 6. Fox - 177.8 Ac

PRRIP Non-Complex Lands: 0 Ac

Other Conservation Lands:
 7. NGPC - Bufflehead WMA
 8. NGPC - Bassway Strip WMA
 9. NGPC - Fort Kearny SHP
 10. NGPC - Fort Kearny SRA

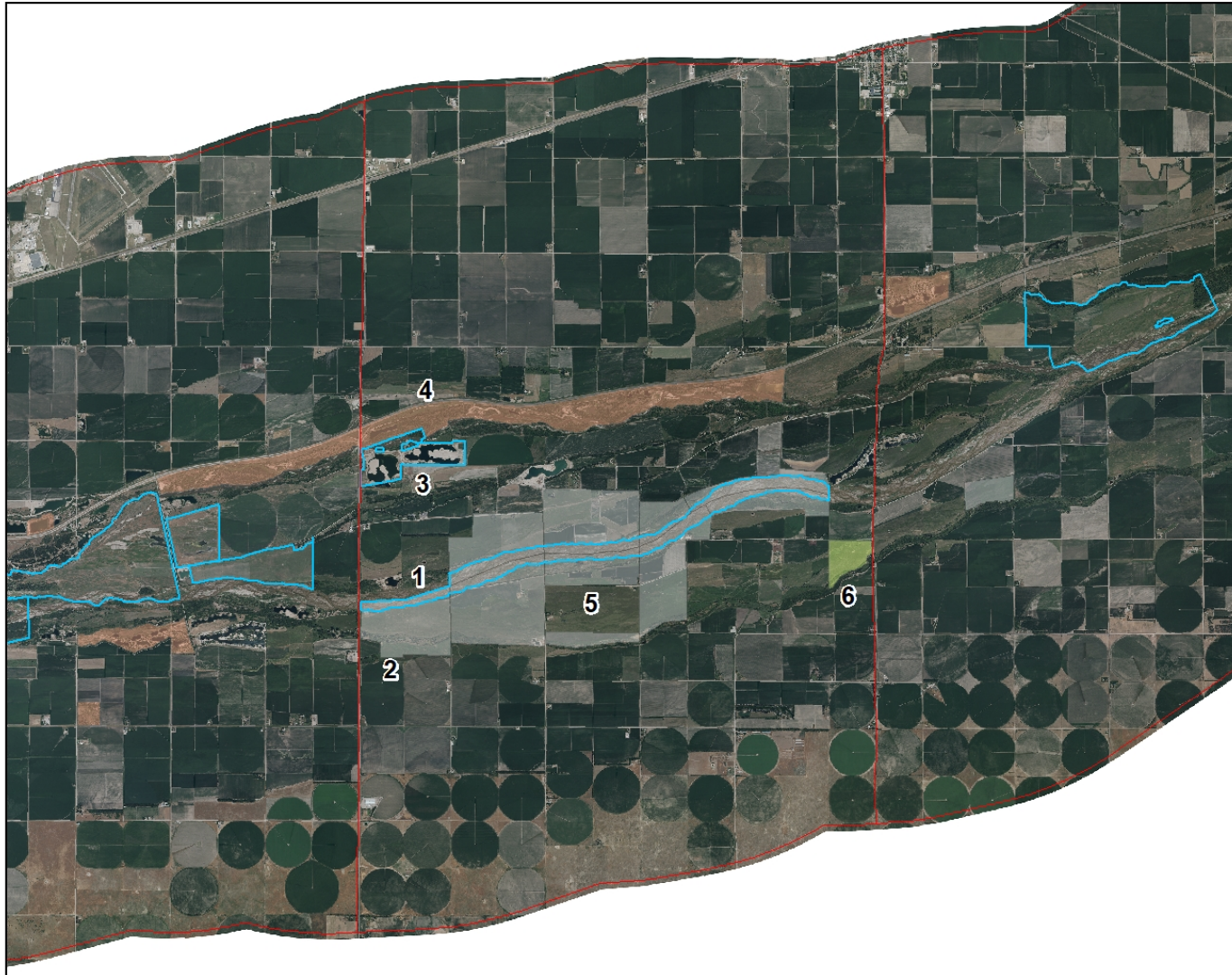
Legend

Bridge Segment	NPPD
PRRIP	PRWCT
Audubon	TNC
CNPPID	USFWS
Ducks Unlimited	Wyoming
NGPC	



0 0.5 1 2 Miles

Last Updated: June 20, 2018



Minden to Gibbon

Sheet 6

PRRIP Complex Lands: 834.0 Ac
 1. Rowe (Agrmt) - 783.0 Ac
 2. Younkin - 51.0 Ac

PRRIP Non-Complex Lands: 216.2 Ac
 3. Newark - 216.2 Ac

Other Conservation Lands:
 4. NGPC - Bassway Strip
 5. Audubon - Rowe Sanctuary
 6. Crane Trust - Bombeck Pasture

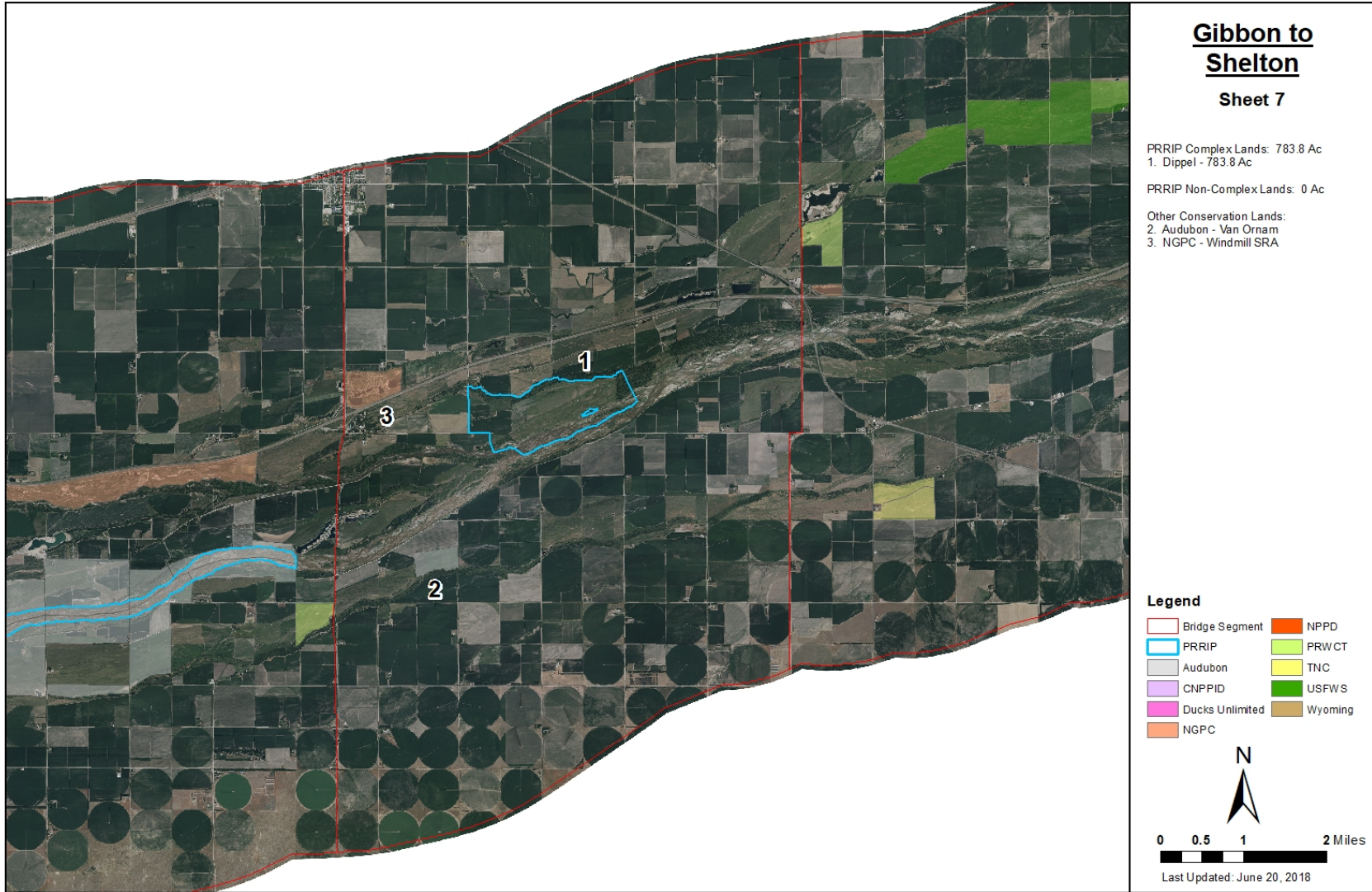
Legend

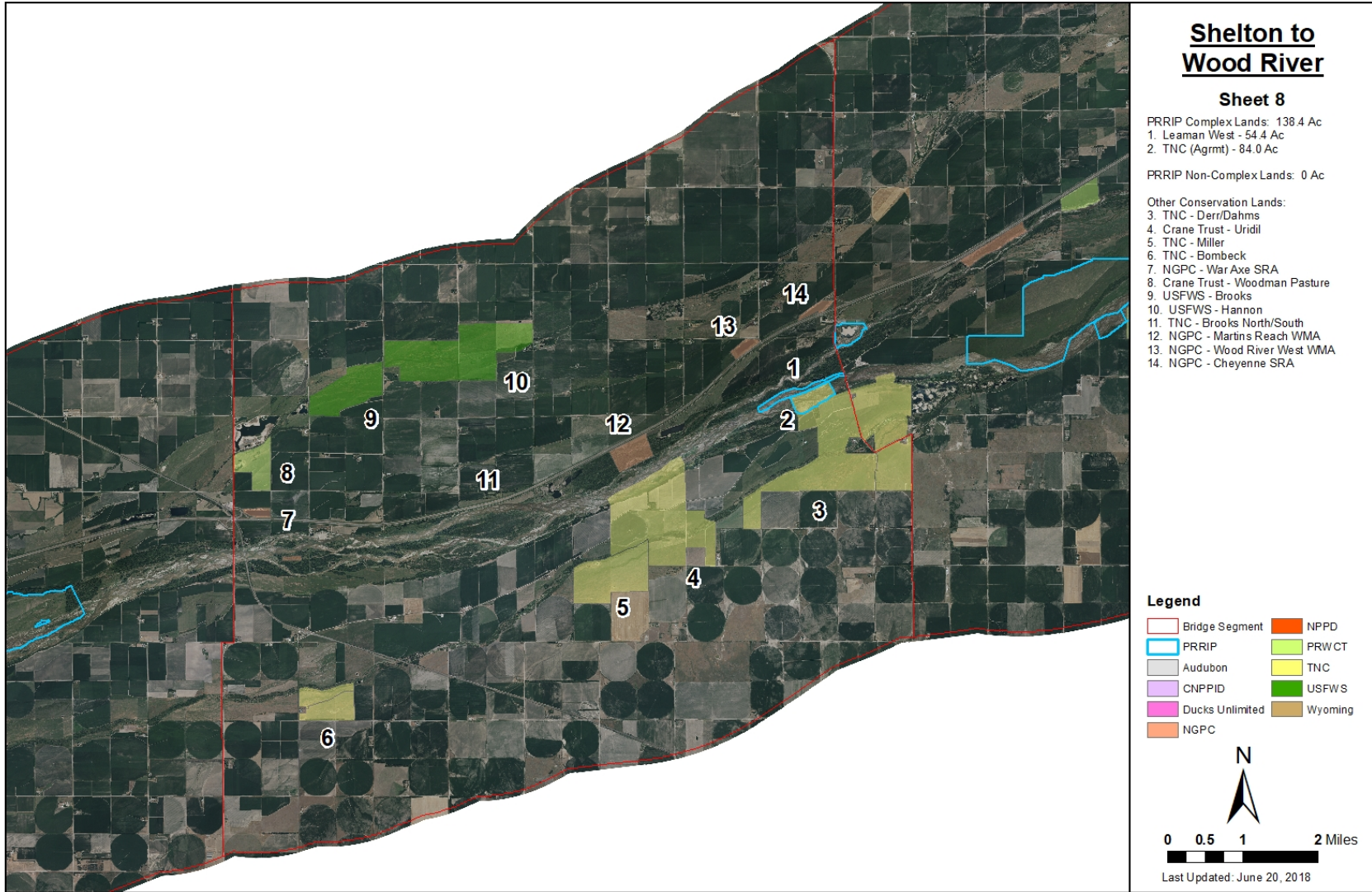
- Bridge Segment
- PRRIP
- Audubon
- CNPPID
- Ducks Unlimited
- NGPC
- NPPD
- PRWCT
- TNC
- USFWS
- Wyoming

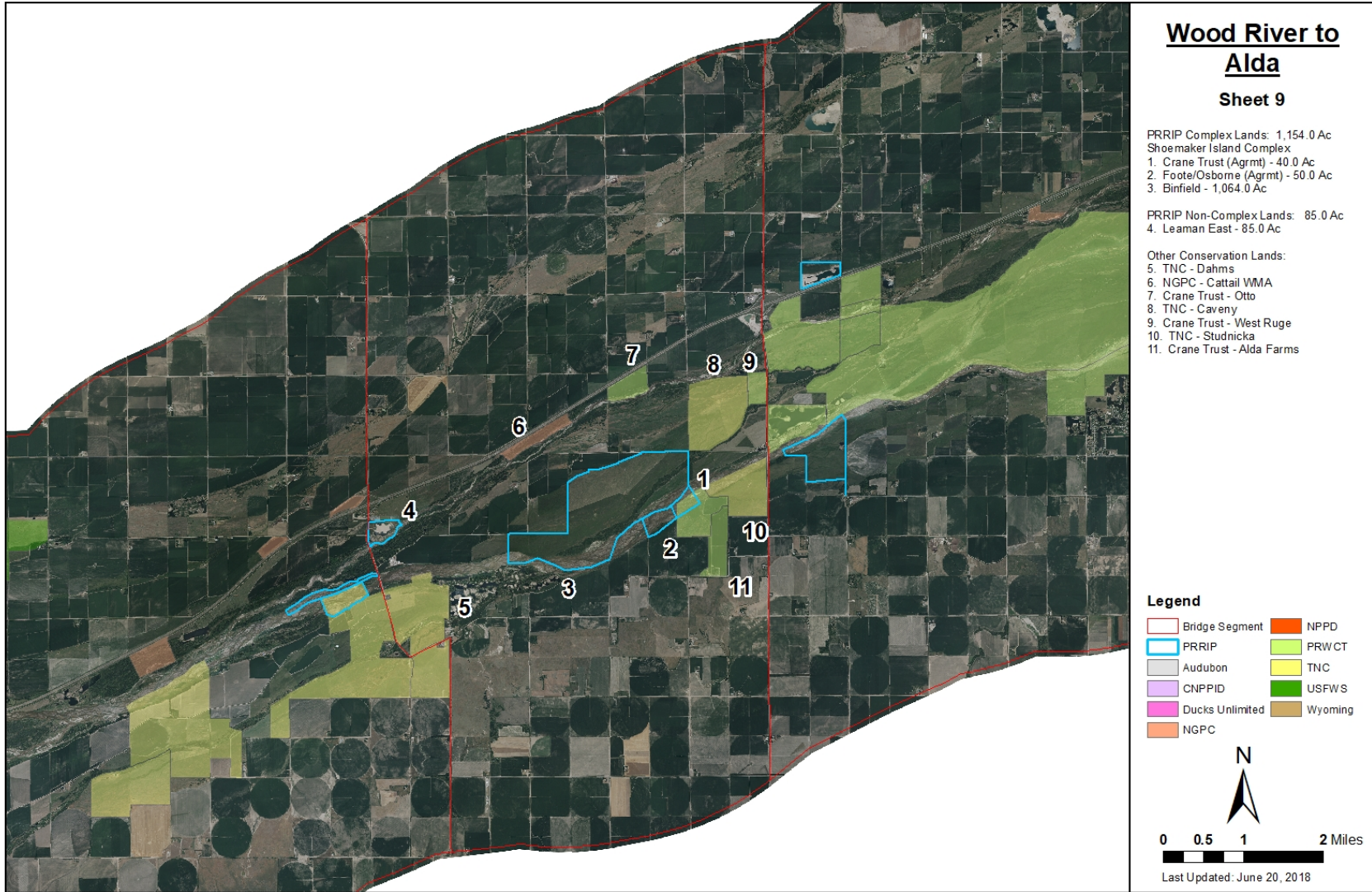


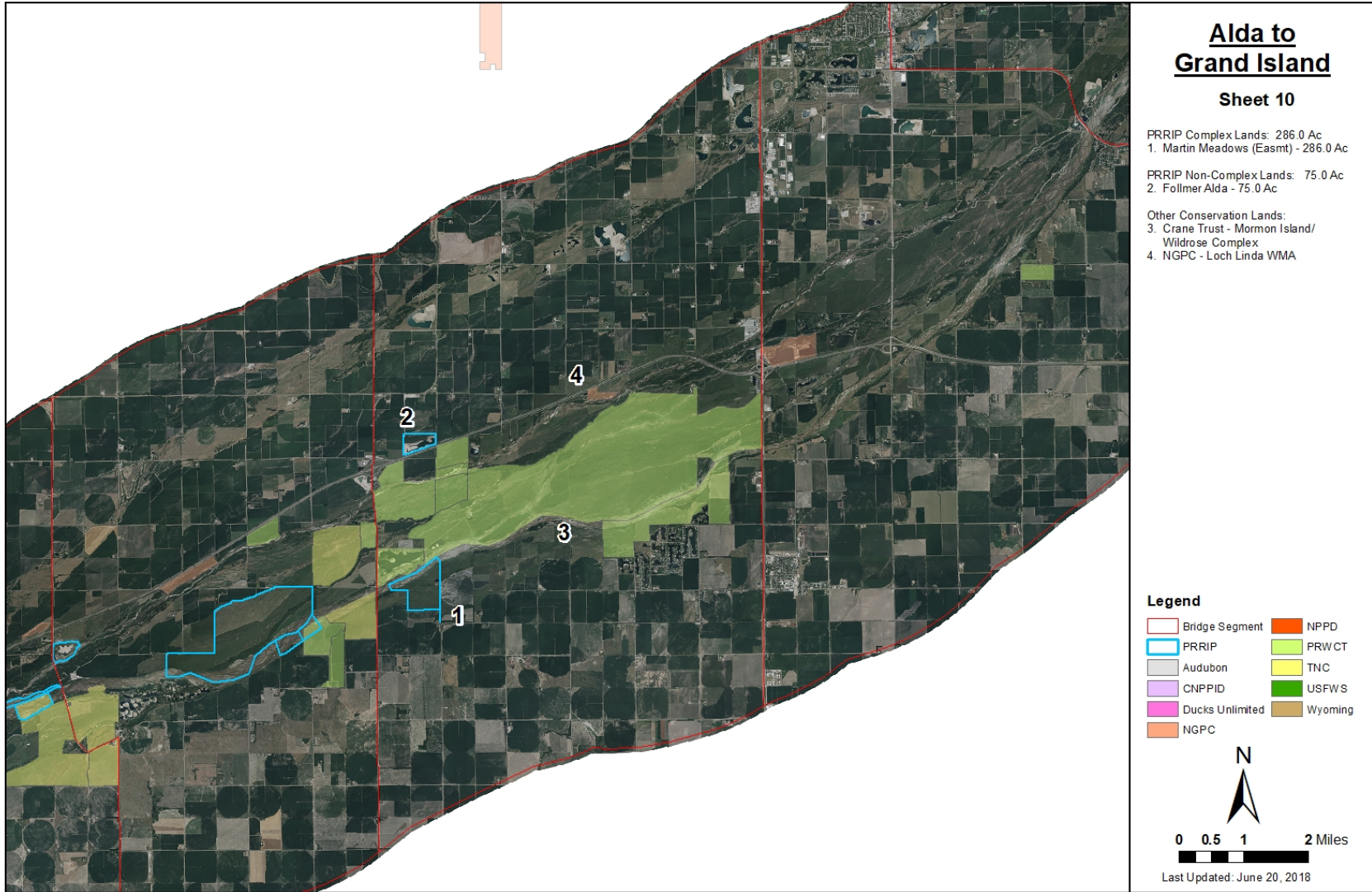
0 0.5 1 2 Miles

Last Updated: June 20, 2018













Highway 34 to Chapman

Sheet 12

PRRIP Complex Lands: 10 Ac
 1 - Penrose (Agrmt) - 10 Ac

PRRIP Non-Complex Lands: 0 Ac

Other Conservation Lands:

Legend

Bridge Segment	NPPD
PRRIP	PRWCT
Audubon	TNC
CNPPID	USFWS
Ducks Unlimited	Wyoming
NGPC	



0 0.5 1 2 Miles

Last Updated: June 20, 2018