



2012-2016 RESTORATION AND MAINTENANCE PLAN

For

TRACT 2010002



Prepared for:
Platte River Recovery Implementation Program
Land Advisory Committee

Completion Date:
06/13/2012



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I. PROPERTY DESCRIPTION AND BACKGROUND

A. Purpose

The purpose of this plan is to outline the restoration, operations and maintenance activities, as well as species habitat and adaptive management research and monitoring activities that will occur on Tract 2010002 (Evaluation Tract Number 0818) during the period of 2012-2016.

B. Tract Location and Size

Tract 2010002 is approximately 15 acres in size and is located in portions of Section 14, T-8N, R-16W. Figure A-1 (located in Appendix A) delineates the property boundary. The tract is located in the Odessa to Kearney bridge segment. Figure A-2 shows the parcel location within the bridge segment and its proximity to existing leased and owned conservation lands.

C. Land Interest

A short term lease with the landowner for the period of April 15, 2010 to October 1, 2019 is held by the Platte River Recovery Implementation Foundation (PRRIF) on behalf of the Program.

D. Communication and Coordination

The Executive Director's Office (ED Office) is responsible for communication and coordination with neighboring landowners. Neighbors will not be asked to provide formal comment on annual Work Plans but will be notified and consulted regarding specific restoration or management activities that could impact their properties.



II. RESPONSIBILITIES

A. Management Responsibilities

1. Planning

Annual Work Plans for this property are to be written by representatives of the Executive Director's office with oversight and input from the Program's Land Advisory Committee (LAC). Program staff will be responsible for conducting, or retaining contractors to conduct, planning, design, and permitting for specific activities carried out under this plan.

2. Implementation of Management Activities

Implementation of management activities will be carried out by Program staff or by contractors under the oversight of Program staff.

3. Enforcement

Program staff is responsible for establishing controlled access to the property and will notify law enforcement agencies and others of issues as appropriate.

B. Budget and Invoicing

Program staff will be responsible for budgeting and invoicing of activities on this property. No later than March 1 of each year during the term, a report showing income and expenditures for the property during the preceding fiscal (same as calendar) year will be completed and presented to the LAC and Governance Committee (GC) for review.

C. Plan Authorization and Modifications

The LAC and TAC will provide comments on this Plan and the LAC will forward a recommendation to the GC. The GC must authorize this Plan before it can be executed. In addition, the LAC and TAC will provide comments on annual Work Plans and the LAC will forward a recommendation on the annual Work Plans to the GC. The GC must approve the annual Work Plans before they can be executed.

It is anticipated that once every five years, the restoration and management plan will go through a major revision process where the goals, objectives, and activities will be reevaluated. Plan updates will be subject to the same comment and approval process as the original Plan.



III. EXISTING HABITATS

A. Complex and Non-Complex Habitat

The entirety of the tract will be managed as non-complex habitat. The sand pit area of this tract is considered as non-complex habitat in accordance with section II.B.2 and *Table 2. Non-Complex Habitat Guidelines* of the Program Land Plan.

1. Associated Complex Habitat

The nearby Fort Kearny Complex managed habitats can function as associated complex habitats for the purpose of adaptive management paired design experiments.

2. Non-Complex Habitat Acres

The sand pit portion of this tract, encompassing the entire 17 acres, is considered as non-complex habitat.

3. Excess Acres

This tract does not contain any excess acres.

B. Land Cover

Existing land cover/use on and adjacent to this Tract was evaluated utilizing the updated 2005 land cover overlay developed in cooperation with the Whooping Crane Maintenance Trust Inc. (Crane Trust) and the United States Fish and Wildlife Service (USFWS). The land cover classifications from the overlay were compared to the most recent United States Department of Agriculture (USDA) Farm Service Agency (FSA) and Program aerial photography in order to identify any land use changes that have occurred since the development of that dataset. The 2005 land cover/use for this Tract is summarized in Table 1. Several additional land cover/use related maps are located in Appendix A including:

- Figure A-3 – 2005 Land Cover/Use
- Figure A-4 – National Wetland Inventory
- Figure A-5 – 1938 Aerial Photography
- Figure A-6 – 1998 CIR Aerial Photography
- Figure A-7 – 2011 CIR Aerial Photography

**Table 1 – Tract 2010002 2005 Land Cover/Use Summary**

Land Cover Classification	Acres	Percent of Tract
Bareground/Sparse Veg	15	100.00%
	15	100.00%

C. Existing Land Features of Interest***1. Non-Riverine Surface Water***

The lease for this tract includes only the bare sand peninsula, but is surrounded by approximately 75 acres of sand pit lake.

2. River Frontage and Active Channel Widths

Tract 2010002 includes no river frontage.

3. Contiguous Sand Substrates

According to June 2011 Program aerial photography, there were approximately 15 acres of contiguous sand substrate.

4. Island and Channel Bank Height

This tract includes no river channel.

5. Groundwater

There is no intent for wet meadow or wetland restoration for this tract.

6. Flooding in Non-Wetland Areas

There is no evidence of temporary inundation of non-wetland areas.

7. Power/Transmission Lines

There are no above ground power lines on tract 2010002.

D. Incompatible Uses and Environmental Concerns

Tract 2010002 does not currently have land uses that are incompatible with target species habitat. No environmental concerns have been identified.

E. Certified Irrigated Acres

Tract 2010002 includes no NRD certified irrigated acres.



IV. OPERATIONS AND MAINTENANCE

A. Goals and Objectives

Goals and objectives will function as the benchmark for evaluation of ongoing land-related actions. Implementation of Program actions to address goals and objectives will be accomplished at both complex and tract-level scales. Associated complex habitat for this non-complex tract is located in the Fort Kearny Complex.

1. *Adaptive Management Goals and Objectives*

This section contains objectives related to the experimental design of implementation of the Program's Adaptive Management Plan and experiments to be conducted through that plan. The following summarizes major adaptive management experimental design components that may be conducted completely or in part within this tract:

1. *"Paired Design" – River nesting vs. OCSW nesting*
 - a. The objective of this experiment is to determine differences in nest success and productivity, as well as species selection and use, between river nesting and OCSW nesting of the target species by offering both types of available habitats in close proximity.
2. *Conservation Monitoring and Directed Research*
 - a. System-wide Program conservation monitoring protocols (tern and plover, whooping crane, geomorphology/in-channel vegetation, water quality) and directed research projects (tern and plover foraging habits study, vegetation scour research) may occur on this tract based on monitoring and research priorities and schedules.

Ø *Goal 1 – Refine Program's understanding of interaction between LETE and PIPL riverine and off-channel sand and water (OCSW) nesting habitat.*

- *Objective 1a* – Test Program System, LETE and PIPL hypotheses related to bird response to habitat development, habitat preference for and productivity on riverine versus OCSW nesting habitat. (Priority hypotheses S1b, T1, P1, TP1)

§ **Strategy** – Monitor LETE and PIPL use and productivity on Program sandpit OCSW habitat and adjacent Fort Kearny Complex riverine habitat. Occurrence, use and productivity will be monitored per the Program's LETE and PIPL monitoring protocol.

- **Methods** – Past maintenance has included using mechanical methods and/or annual application of pre-emergent herbicide to control vegetation. OCSW habitat creation and maintenance methods are presented under Objective 2a. Monitoring methods are presented in the Program's LETE and PIPL monitoring protocol.



§ **Area** – See Objective 2a and Figure A-8 for location of OCSW habitat. The location of the Program-owned Fort Kearny Complex properties can be seen on Figure A-2.

§ **Timeline** – Maintenance and monitoring will occur annually.

§ **Cost** – None

§ **Responsibilities** – Program staff or contractors under the supervision of Program staff are responsible for maintenance and monitoring.

2. *Species Habitat*

Ø *Goal 2 – Improve sand and water (off-channel sand and water; OCSW) habitat for interior least terns (LETE) and piping plovers (PIPL)*

- **Objective 2a** – Maintain off-channel sand and water (OCSW) target bird species habitat that approximates *Table 2. Non-Complex Habitat Guidelines* of the Program Land Plan, to the degree appropriate, and approximates at least the Program’s minimum habitat guidelines.

§ **Strategy** – Maintain and protect OCSW nesting habitat on the peninsula located within the sandpit leased area.

- **Methods** – Typical OCSW maintenance will be accomplished by annual application of pre-emergent herbicide and installation of predator fencing (see also Obj. 3a). Mechanically clearing and grubbing of vegetation from proposed nesting areas will occur when necessary.

§ **Area** – Habitat restoration and management activities are presented in Figure A-8.

§ **Timeline** – OCSW habitat maintenance will occur annually. Temporary electric predator fence will be installed by May 1 annually, and remain until at least August 15 (or later if active nests remain).

§ **Cost** – Annual maintenance costs are estimated at \$2,000.

§ **Responsibilities** – Program staff is responsible for coordination of maintenance activities. Contractors will perform herbicide applications.



3. *Property Maintenance*

Ø *Goal 3 – Fulfill basic property ownership obligations and needs.*

○ *Objective 3a – Establish and maintain predator fencing and signage.*

§ **Strategy** – A temporary electric fence will be constructed annually at the east entrance to the nesting area to exclude people and predators from accessing the nesting area over land.

- **Methods** – The fence will be in place throughout the nesting period and taken down once nesting is complete. Maintenance methods may include mowing or spraying of woody species in the cleared area as well as routine fence upkeep.

§ **Area** – Fence will be located at the east entrance to the peninsula (identified on Figure A-8).

§ **Timeline** – Fence will be installed annually prior to May 1 and remain until at least August 15 or later if nesting is still occurring.

§ **Costs** – Electric fence is expected to cost on the order of \$2,000 and approximately \$200 annually for maintenance.

§ **Responsibilities** – Program staff are responsible for installation and removal annually.

○ *Objective 3b – Control noxious weeds on property.*

§ **Strategy** – Infestations of noxious weeds will be eliminated (to the extent possible) annually. Ongoing management/control needs will be assessed annually and incorporated into Work Plans. This tract will be maintained with little to no vegetation (see Obj. 2a) and noxious weed control needs should be minimal.

- **Methods** - Herbicide application will be the primary method for control of noxious weeds. Biological controls will be considered but only used if deemed effective enough to result in effective control within three growing seasons.

§ **Area** – Noxious weed control will be conducted on the entirety of the property.



- § **Timeline** – Noxious weed assessment and control activities will be conducted annually.
- § **Costs** – Annual costs will be identified in the annual Work Plans and are expected to be less than \$500.
- § **Responsibilities** – Program Staff are responsible for identifying infestations and planning/coordinating control efforts. Control activities will be carried out by contractors. The contractor will typically be the county weed authority.

Ø *Goal 4 – Minimize habitat impacts due to invasive vegetation.*

- *Objective 4a* – Eliminate existing and control future infestations of invasive vegetation not listed as noxious weeds.
 - § **Strategy** – Existing stands of invasive vegetation will be eliminated (to the extent possible). Ongoing management/control needs will be assessed annually and incorporated into Work Plans. This tract will be maintained with little to no vegetation (see Obj. 2a) and invasive vegetation control needs should be minimal
 - **Methods** – When necessary, invasive vegetation control will be accomplished through a combination of herbicide application and mechanical removal.
 - § **Area** – Invasive vegetation will be controlled on the entire property.
 - § **Timeline** – Maintenance and control efforts will continue annually.
 - § **Costs** – Annual costs will be identified in the annual Work Plans as needed and are expected to be less than \$1,000.
 - § **Responsibilities** – Program staff will be responsible for identifying infestations. Control activities will be carried out by contractors.

4. Land Asset Management

Ø *Goal 5 – Secure long-term protection of habitat.*

- *Objective 5a* – Begin negotiations with current landowner to secure longer-term interest in the property.



- § **Strategy** – ED staff will work with existing landowner to secure longer-term interest in the property. Options will be explored for the Program to extend their interest in the identified parcel past the existing lease termination date of October 1, 2019.
 - **Methods** – ED Office will work with landowner through the Program’s good neighbor and willing-seller willing-buyer policies to secure a longer-term interest in the property.
- § **Area** – Existing lease area or expansion of area as agreed to by the Program and landowner.
- § **Timeline** – Discussions with landowner will occur prior to the end of the current planning period (2016).
- § **Costs** – Costs will be developed as negotiated and mutually agreed upon by landowner and Program.
- § **Responsibilities** – Program staff is responsible for planning and negotiations.



V. MONITORING AND RESEARCH

A. Baseline Monitoring

A variety of monitoring activities will be conducted on and around this property as part of the system-wide investigations conducted under the Integrated Monitoring and Research Plan (IMRP). Baseline monitoring efforts include:

1. Land Cover Analysis

- **Objectives** – Document pre-Program land cover conditions. Land cover analysis will be performed again near the end of the First Increment to document changes in land cover.
- **Hypotheses Links** – S1, S1a
- **Timeline** – Pre-Program completed in 2007. Next analysis in 2018.
- **Responsibilities** – ED Office

2. Channel LiDAR Project

- **Objectives** – Document channel topography annually.
- **Hypotheses Links** – S1, S1a, Flow1, Sediment1-4
- **Timeline** – Baseline LiDAR collection completed in March of 2009. Collection to continue annually under leaf-off and low flow conditions.
- **Responsibilities** – Collection and analysis by contractor under supervision of ED Office.

3. Aerial Photography

- **Purpose** – Document annual channel features and vegetation.
- **Hypotheses Links** - TP 5, Sediment 3, WC3
- **Timeline** – Annual during First Increment per protocol.
- **Responsibilities** – Data collection performed by contractors under supervision ED Office. Analysis by ED Office.

4. In-Channel Geomorphology and Vegetation Monitoring

- **Purpose** – System-wide analysis of changes/trends in geomorphology and in-channel vegetation over time. Correlate Program actions with changes/trends.
- **Hypotheses Links** – Flow1-5, Sediment1-4
- **Timeline** – Annual during First Increment.
- **Responsibilities** – Monitoring performed by contractors under supervision ED Office.

5. Least Tern, Piping Plover and Whooping Crane Monitoring

- **Purpose** - Document WC use, document LETE and PIPL use, nesting pairs, and fledging success.
- **Hypotheses Links** – T1, P1, TP1-5, WC1 & 3
- **Timeline** – Annual during First Increment.
- **Responsibilities** – Monitoring performed by contractors or cooperators under supervision ED Office.



6. *Species of Interest Surveys*

- **Purpose** - Document habitat for and use of Program properties by “species of concern” or other species of interest.
- **Hypotheses Links** – S2
- **Timeline** – Following acquisition and later, as appropriate, after restoration.
- **Responsibilities** – Coordination by ED Office. Surveys by contractors or agency personnel.

B. Research

Research efforts to be conducted in full or part on this complex under the IMRP include:

1. *LETE and PIPL riverine versus OCSW experiment (Goal 1, Objective 1a)*

- **Purpose** - Determine LETE and PIPL preference for and productivity on riverine versus OCSW nesting habitat.
- **Hypotheses Links** - S1b, TP1
- **Timeline** – Maintenance and monitoring annually.
- **Responsibilities** – Program staff or contractors under the supervision of Program staff (in conjunction with the appropriate advisory committees) are responsible for design, permitting and monitoring. Construction and maintenance activities will be bid.



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 insure that a survey for these species is conducted by qualified individuals (e.g. by Program staff, contractor, conservation owner) in the area that will be disturbed within three days prior to the initiation of activities.

If least terns or piping plovers nest on the off-channel nesting complex, 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. Other measures may be warranted and Service concurrence will be obtained before implementing additional measures.

2. Measures to Minimize or Eliminate Take of Whooping Crane

For habitat restoration and land management activities in or within 0.25 miles of the Platte River channel occurring between March 23 and May 10, or October 1 and November 15, construction shall only take place from one hour following sunrise to two hours prior to sunset unless otherwise approved by the Service's Coordinator of the Whooping Crane Migration Tracking Program. Program staff will notify the Service when Program habitat restoration work will be conducted during the above dates from the Highway #283 and Interstate 80 intersection near Lexington, Nebraska 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 Service's Coordinator, Program staff will confer with the Service and will notify construction crews if it is necessary to temporarily halt construction activities.

Construction work should 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 should be moved to a position at least 0.25 miles away from the channel.

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 NGPC to identify potential impacts to state and federal species of concern and address them as part of this document. Program actions to avoid or mitigate potential species impacts not addressed in other portions of Section VI 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 7th. If this species is present, activities will be modified to prevent destruction of existing plants.

4. Platte River Caddis Fly

The tract was not surveyed for presence of Platte River caddisfly (PRCF). The bare sand and open water habitat that encompasses the entirety of this tract is not conducive to PRCF populations based on current knowledge of their biology.

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.

**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 15 and July 15 without first doing surveys to insure that no occupied migratory bird nest will be destroyed.

D. Bald Eagle Act

Eagle nests will not be disturbed and a quarter mile buffer will be maintained while occupied by adults or young. Known eagle roost trees will be left in place.

E. United States Army Corps of Engineers Section 404 Permitting and Nebraska Department of Environmental Quality Section 401 Water Quality Certification

Prior to commencement of construction work to be accomplished in wetlands or waters of the United States, including dredging or placement of fill material, the Program will obtain a 404 permit and 401 water quality certification. Work in wetlands or waters of the State that are not jurisdictional under the Federal Clean Water Act will still need to comply with the Nebraska Department of Environmental Quality's Title 117.

F. National Pollutant Discharge Elimination System 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 NPDES 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

The legal description of Tract 2010002 will be provided to the State Historic Preservation Office (SHPO) to facilitate the early identification of potential cultural resources related issues. Potential cultural resources concerns on the property are not expected, as it is a location that has been actively mined for sand and gravel. If Program actions uncover potential artifacts or human remains, work will cease until such time that the Program can consult with SHPO to determine the appropriate course of action.



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

Public access for education is not allowed under the current lease with the landowner.

B. Recreation

Public access for recreation is not allowed under the current lease with the landowner.



APPENDIX A – FIGURES



2010002
Approx. 17 Ac.

Base Layer: June 2011 PRRIP Aerial Imagery



Legend
2010002
Section

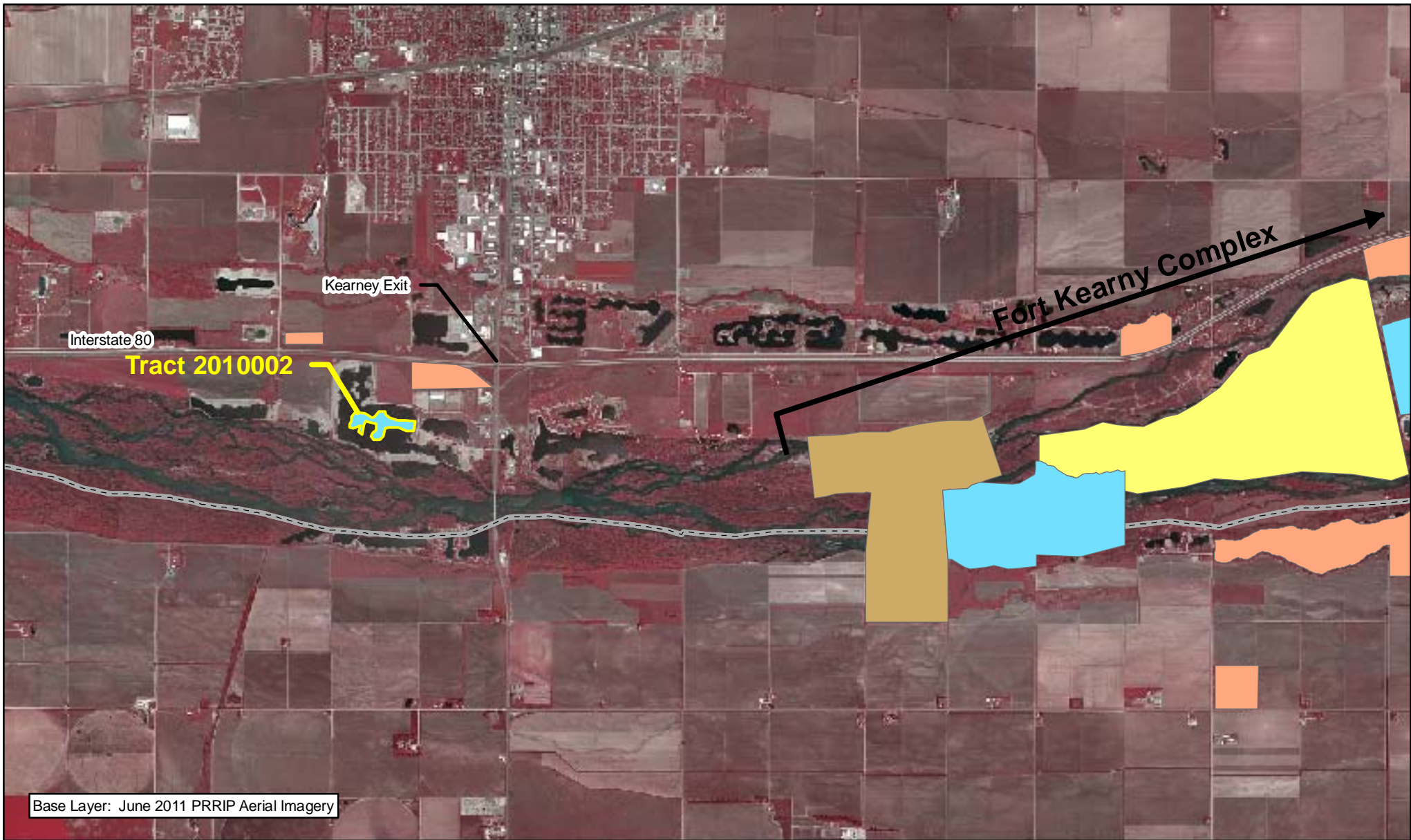


0.25 Miles











TRACT 2010002
BOUNDARY MAP

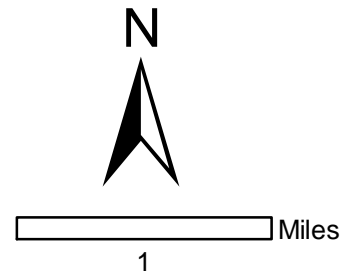
Date: 01/04/12
By: JDB

Figure A-1



Legend

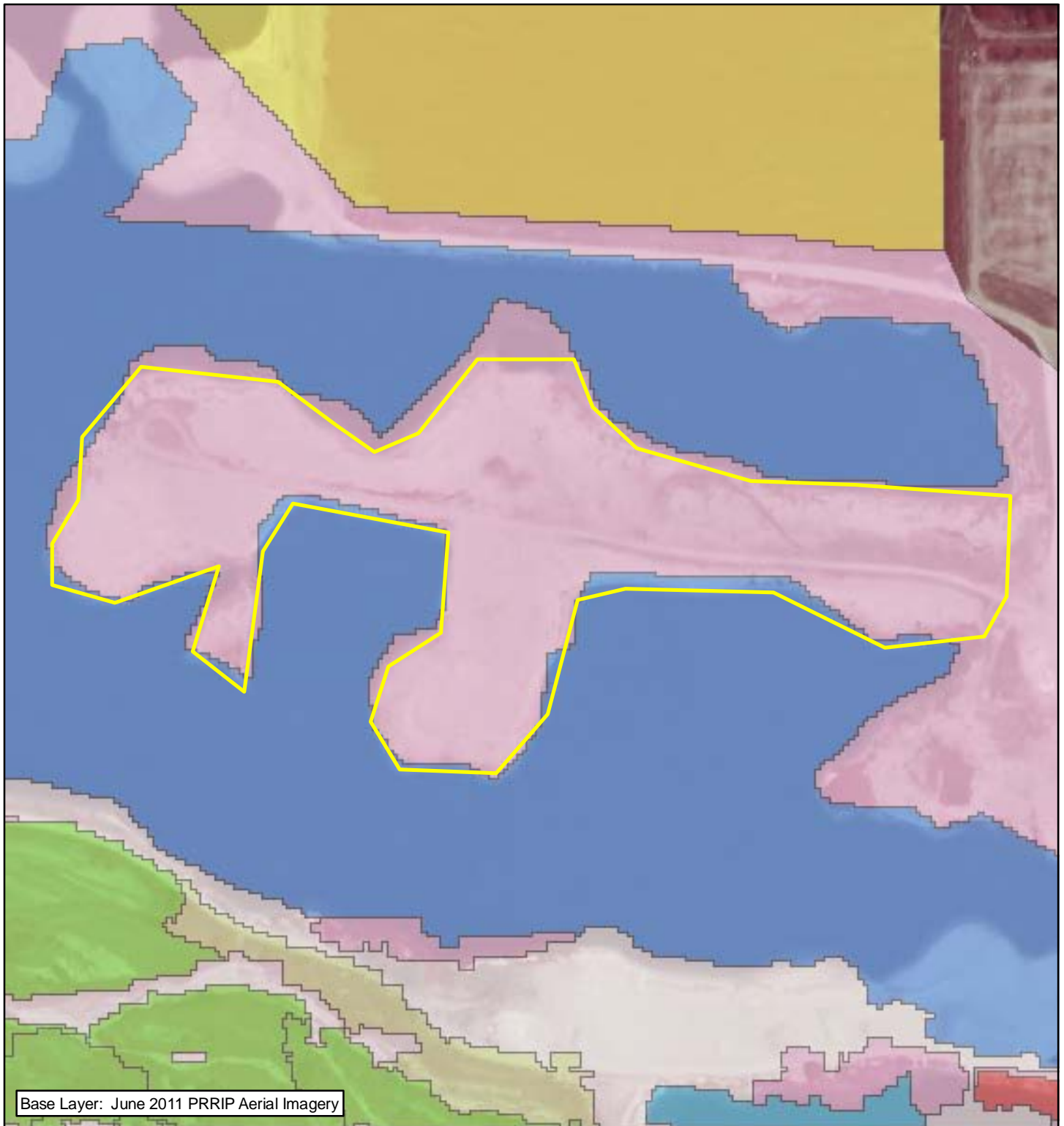
	2010002		Audubon		PRRIP
	County		CNPPID		PRWCT
			NGPC		TNC
			NPPD		Wyoming



TRACT 2010002 LOCATION MAP

Date: 01/04/12
By: JDB

Figure A-2



Legend

- | | |
|-----------------------|--------------------------|
| 2010002 | River Early Successional |
| Ag | River Shrubland |
| Bareground/Sparse Veg | Roads |
| Canal/Drainage | Rural Developed |
| Mesic Wet Meadow | Sand Pit |
| Phragmites | Unvegetated Sandbar |
| Riparian Shrubland | Upland Woodland |
| Riparian Woodland | Warmwater Slough |
| River Channel | Xeric Wet Meadow |



0.05 Miles

TRACT 2010002 2005 LAND COVER/USE

Date: 01/04/12
By: JDB

Figure A-3



Legend

- 2010002
- Lacustrine Unconsolidated Bottom (LUB)
- Palustrine Aquatic Bed (PAB)
- Palustrine Emergent (PE)
- Palustrine Forested (PF)
- Palustrine Scrub-Shrub (PSS)
- Palustrine Unconsolidated Bottom Excavated (PUBx)
- Riverine Unconsolidated Bottom (RUB)
- Riverine Unconsolidated Shore (RUS)
- Riverine Streambed (RS)

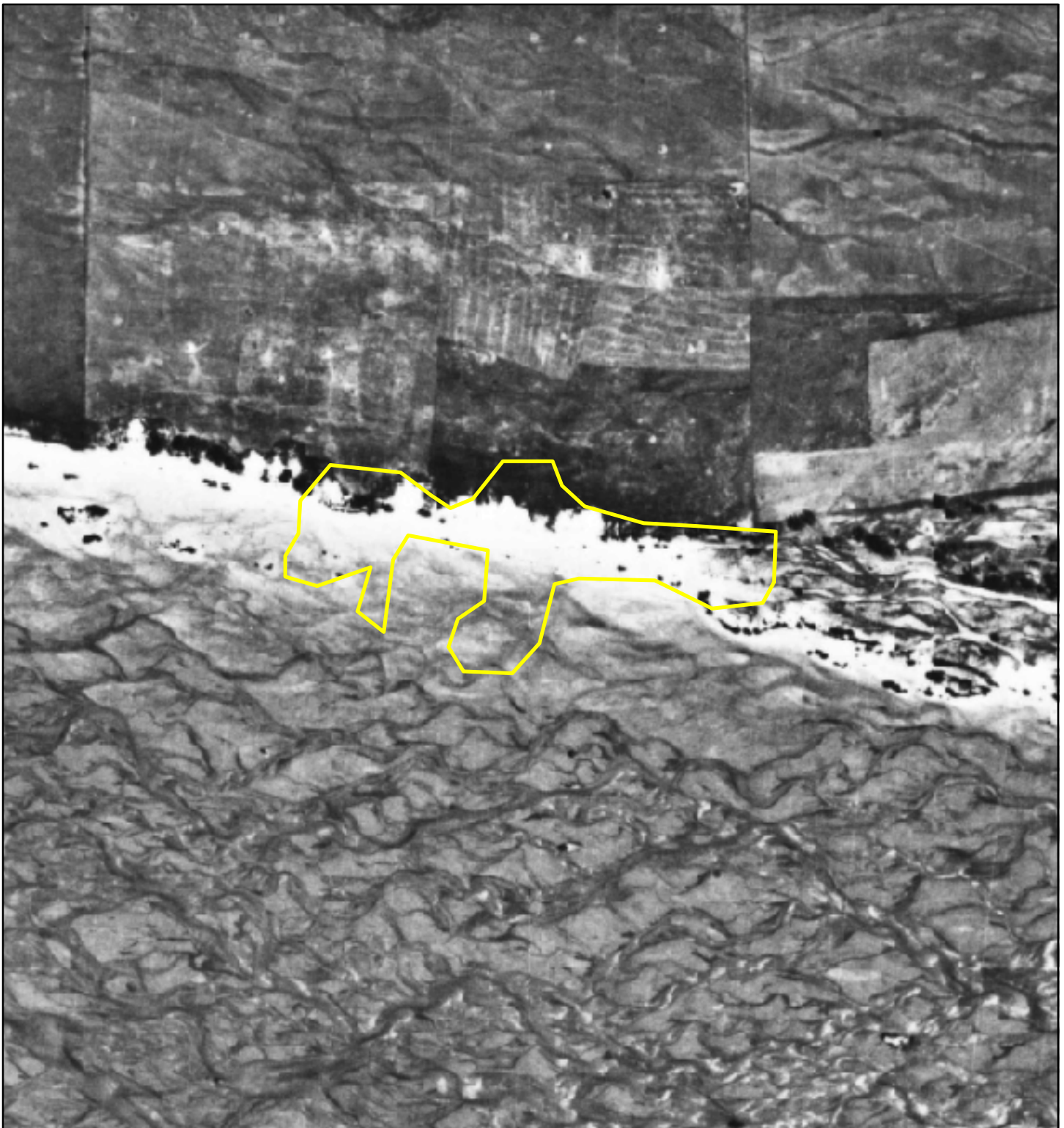


Miles
0.05

TRACT 2010002
NWI MAP


Date: 01/04/12
By: JDB

Figure A-4



Legend
 2010002

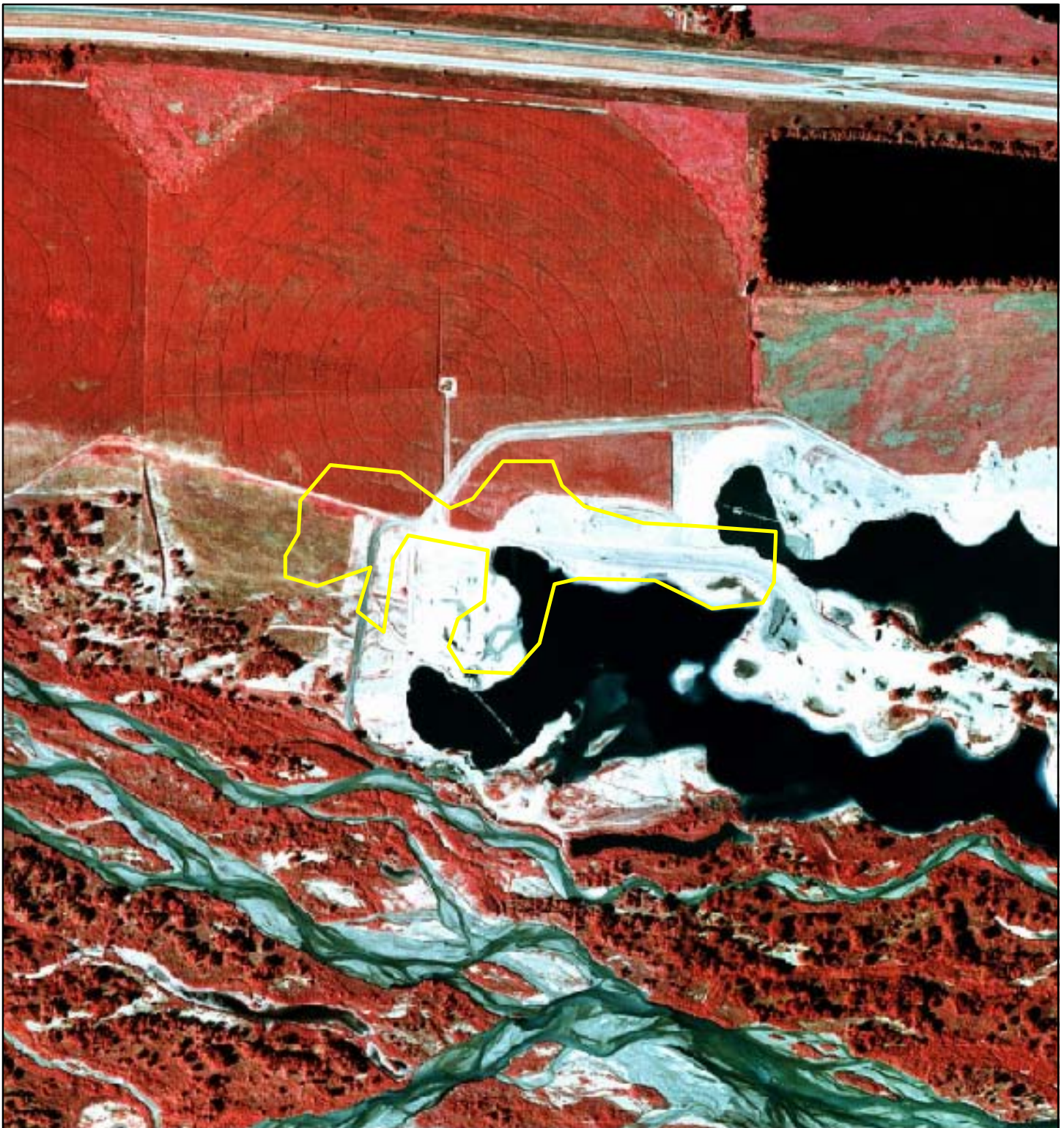


 Miles
0.1

TRACT 2010002
1938 IMAGERY


Date: 01/04/12
By: JDB

Figure A-5



Legend
 2010002



 Miles
0.1

TRACT 2010002
1998 CIR IMAGERY


Date: 01/04/12
By: JDB

Figure A-6



Legend
 2010002



 Miles
0.1

TRACT 2010002
2011 CIR IMAGERY

Date: 01/04/12
By: JDB

Figure A-7



Legend
2010002



0.1 Miles

TRACT 2010002 HABITAT ACTIVITIES

Date: 01/27/12
By: JDB

Figure A-8