



BIENNIAL REPORT

2015  
16

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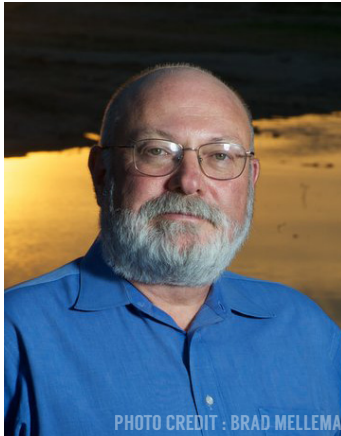
**PLATTE RIVER**  
RECOVERY IMPLEMENTATION PROGRAM

## PROGRAM TARGET SPECIES



- Top Left Piping Plover | 1986 Federally Listed as a Threatened Species  
Top Right Pallid Sturgeon | 1990 Federally Listed as an Endangered Species  
Bottom Left Whooping Crane | 1967 Federally Listed as an Endangered Species  
Bottom Right Interior Least Tern | 1985 Federally Listed as an Endangered Species

# From the Executive Director



Serving the threatened and endangered species of the Platte River as well as the people who live here.

The past two years have been a roller coaster ride, significant progress and major accomplishments tempered by setbacks and disappointments. The end of this biennial period marks the completion of a decade of implementation in the authorized thirteen-year program. The easy things, easy in a relative sense, were generally accomplished earlier on in the process leaving mostly the harder things to complete now. As you will see in this document, many items were tackled and moved into the accomplished category over the past biennium, because they are new and challenging there is a great sense of accomplishment when they are checked off the list. But you will also see that activities that are of an ongoing nature, which may not have the pizzazz of the new items in the previous category, were maintained and improved upon and the cumulative results of those labors are also gratifying. These are the exhilarating peaks of the roller coaster. And sometimes, try as you might, you don't achieve your objective or make the progress you had hoped, or even get set back in your efforts. You will see the items we are coming up short on in this document as well. These can be frustrating and constitute the dips of the roller coaster, but the peaks and the dips are both part of the ride we all got on back in 2007. Among the successes to be proud of, chief among them is the fact that the stakeholders are still at the table and collaborating through the peaks and the dips.

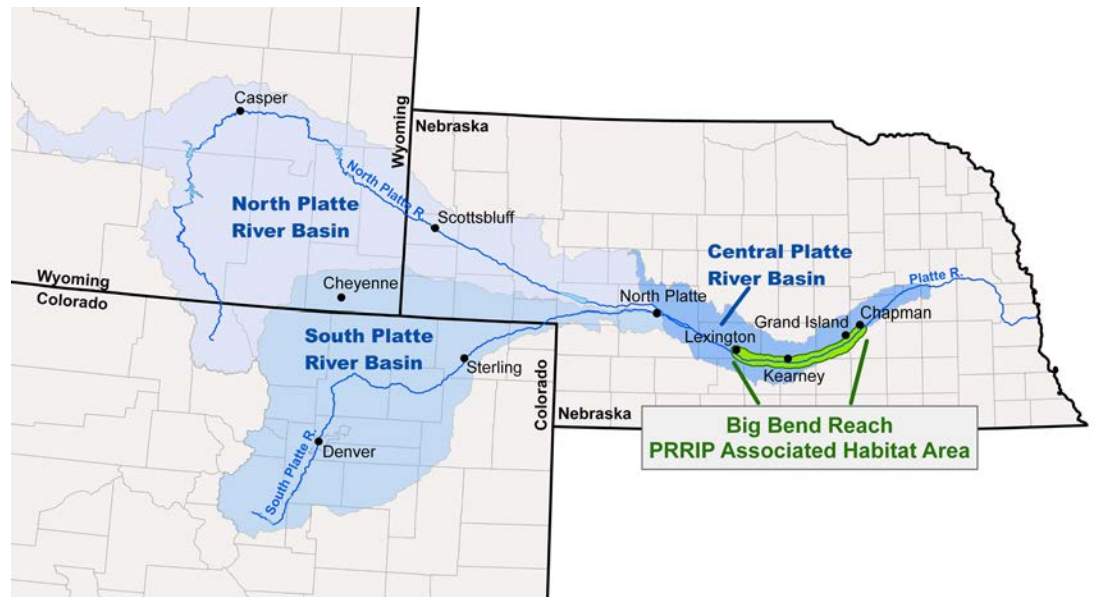
The Water Plan is the category in which we are coming up short. In all other categories we have met the milestones established for the Program. At this point we have not met the water milestone, and it is clear that we will not meet the water milestone by December 31, 2019. A great deal of effort had been focused on the J2 Regulating Reservoir as the center piece of the Water Plan. For a variety of reasons that project is on hold, and a hard pivot to other water projects was necessary. The stakeholders had a choice, declare failure and stop the ride; or work toward an extension to finish what we started. As there was not a quitter among them, "finish what we started" is the consensus mantra. Efforts to implement Water Plan projects are pushing forward aggressively as are all components of the Program while extension efforts are proceeding. With lessons learned, those projects are moving forward as quickly as possible.

At this point, the proposal for the extension has been written and agreed to by the Governance Committee. That was a critical first step, but many steps remain before the extension of the first increment is a reality. Budgets and finances need to be finalized. Environmental documents need to be updated. The Governors of the three states and the Secretary of the Interior must be convinced to sign the extension, and Congress needs to pass authorizing legislation. Budgets and finances, executive signatures, and Congressional authorizations are not known to be particularly easy, but the Program has accomplished much and provides a huge benefit to all parties so the stakeholders are prepared to see it through.

The sense of urgency remains high, things are moving quickly, and there is a well-founded sense of realistic optimism for the future. Peruse this document and see where we have been, but stay with us and see where we get to. Buckle up, the ride continues.



Jerry F. Kenny, Ph.D., P.E.



# Program History

On July 1, 1997 the governors of Nebraska, Colorado, Wyoming and the Secretary of the Interior entered into a Cooperative Agreement to address the needs of four threatened or endangered species using the Platte River Basin while allowing water development to continue to occur. The named species were the endangered whooping crane, least tern, pallid sturgeon and the threatened piping plover. The agreement proposed a framework for a long-term Recovery Implementation Program to aid these species. Initially, the agreement was for three years to develop a basin-wide cooperative program. However, negotiations regarding the details of that program took place from 1997 to 2006.

In late 2006, the governors of Nebraska, Colorado, Wyoming and the Secretary of the Interior signed the final program agreement, effective January 1, 2007. In May 2007 an Executive Director was selected and began his tenure with the program on July 1, 2007. On May 8, 2008 the President signed into law legislation to implement the federal share of the Program as part of the Consolidated Natural Resources Act of 2008. This legislation included authorization for the federal funding of the Program.



The Program provides Endangered Species Act compliance for water related activities within Colorado, Nebraska, and Wyoming, while working to recover the threatened and endangered target species. 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 federal government will contribute \$157 million in cash, and Colorado and Wyoming will jointly contribute \$30 million. The remaining portion will come in terms of land and water from the states; Nebraska's entire contribution will be of this nature. The total cost of the program in terms of cash, water, and land is shared equally between the federal government and the states. Federal funds are appropriated on a year-to-year basis and distributed on an as needed basis. Wyoming provides funds on roughly a quarterly basis and Colorado provides funds in lump sum blocks. To date, the majority of the states' funds have been secured.

During the First Increment, Endangered Species Act compliance is measured through progress in achieving ten Program Milestones that are related to the First Increment Objectives. Milestones and current Program status are presented on the last page of the Biennial Report.

The First Increment land objective and associated milestone has been achieved. The Program currently protects over 12,000 acres in the Associated Habitat Reach (AHR).

The First Increment water objective has not been achieved, nor has the Nebraska Depletion Plan. All State initial water projects and the Colorado, Wyoming, and Federal depletions plans are operational. 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.

The 2006 Final Program Agreement makes provision for the Agreement to be extended or amended by the written agreement of all signatories. The Signatories are proposing a 13-year Extension of the First Increment. The Extension would not change First Increment objectives or the implementation framework. It would modify the milestones slightly by an additional 1,500 acres in a new habitat complex and reduce the water target to 120,000 acre-feet average annual reduction in deficit to target flow. It would 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. Additional research and monitoring is necessary to provide a sound knowledge base upon which to structure a Second Increment.

# Executive Summary

This is the fifth accomplishments report of the Program, covering 2015 and 2016, and highlights the accomplishments achieved during that time. This report is organized to mirror the structure of the Program and is correspondingly divided into four main sections; Land, Water, Adaptive Management, and Program Administration and Outreach.

## Land

The Program, to date, has acquired approximately 12,700 acres through sponsorship agreements, purchases, leases, or perpetual easements from willing sellers/partners. All acres for Complex Habitat Land Goals have been met. One hundred fifty (150) acres remain to fulfill the program Non-Complex goals. The Program pays property taxes on all purchased lands. In 2015 the Program paid just under \$154,000 in taxes and over \$169,700 in 2016. The second half of the Pawnee complex was added in 2015, the Kearney to Odessa bridge segment. Acquired land requires basic land management and the Program has developed and implemented land management plans that include activities such as building and repairing of fences, tree clearing, weed spraying and planting of grass. All of these activities are conducted under the good neighbor policy and the Program has maintained both good tenant and good neighbor relationships.

## Water

The focus of the Program's Water Plan in 2015 and 2016 was the continued development of projects that will cumulatively achieve the Water Plan objective of reducing shortages to U.S. Fish and Wildlife Service target flows by an average of 130,000 to 150,000 acre-feet per year (AFY) as measured at Grand Island, Nebraska. Projects to facilitate the retiming of excess flows were the primary focus of these efforts, with secondary emphasis on the purchase or lease of water. The initial state water projects—the Environmental Account (EA) in Lake McConaughy (Nebraska), the Pathfinder Modification Project (Wyoming), and Tamarack I (Colorado)—were completed by 2012 and are credited with providing 80,000 AFY toward the Program's water objective.

The Program's previously-implemented Water Action Plan (WAP) projects including Phelps County Canal groundwater recharge, the Pathfinder Municipal Account Lease, and a combined water leasing-groundwater recharge project with the Central Platte Natural Resources District (CPNRD) continued to operate successfully. The proposed J-2 Regulating Reservoirs project was formally placed on hold by the Program's Governance Committee due to rising costs and unresolved administrative issues. However, Program staff quickly began developing and assessing the feasibility of several new project concepts to replace J-2, including broad-scale recharge, slurry wall gravel pit storage, and "acquire & retire" projects.

In addition to these water supply projects, the Program continues to evaluate ways to increase flow capacity through the North Platte chokepoint to allow larger flow releases from the Lake McConaughy Environmental Account (EA). A range of approaches is under consideration and work continues on the design and implementation of flood risk reduction projects and vegetation clearing.

# Adaptive Management

Adaptive Management Plan activities in 2015 and 2016 continued to focus on management action implementation, associated monitoring, and data synthesis. Notably, the Program became the first large-scale endangered species recovery program in the country to complete one full loop of the adaptive management (AM) cycle. In 2016, the Governance Committee (GC) used a Structured Decision Making (SDM) process to complete the final “Adjust” step of AM by agreeing to change management actions for terns and plovers based in part on the results of data analysis and synthesis from AM implementation. Additionally, the Program completed synthesis and peer review of investigations related to the ability of Flow-Sediment-Mechanical actions to create and maintain highly favorable in-channel whooping crane roosting habitat, setting the stage for GC decisions related to management actions for whooping cranes. Systematic monitoring for whooping cranes, least terns and piping plovers, geomorphology, and vegetation continued in both years. Aerial imagery and LiDAR were collected both years. The Program remained a Core Partner for the Whooping Crane Telemetry Tracking Project. The Program completed its third and fourth data synthesis reports, the 2014 and 2015 “State of the Platte” Reports. Independent science activities included three peer reviews, two meetings of the Independent Scientific Advisory Committee, publication of seven manuscripts in peer-reviewed journals, and Program-wide Adaptive Management Plan Reporting Sessions in both years.

## Program Administration and Outreach

Through 2016, the Program has expended over \$104 million. After the initial two years, expenditures have averaged about \$12.5 million a year, fluctuations driven primarily by acquisitions and water project expenditures.

While all of the Executive Director’s Office is considered Administrative, staff efforts are largely focused on providing technical and organizational support for the planning and implementation of land, water, and adaptive management activities of the Program. Besides providing direct technical services, Program staff also provides technical support, oversight, and direction to all Program contractors.

Public outreach educates and informs the public about the Program and Program activities through a variety of venues. Since 2013, the Program has been one of the sponsors of the Nebraska Educational Television time-lapse project on the Platte River and a sponsor of youth outdoor education at Rowe Sanctuary, Prairie Loft and South Platte River Environmental Education. The Program sponsored six events in 2015–2016 and we made over 6,900 contacts at Program exhibits at various professional conferences and public events. The Executive Director’s Office staff presented on various aspects of the Program to a variety of audiences in 2015 and 2016 (20 and 19 presentations respectively).

While not directly an EDO function, one of the key benefits provided by the Program is a streamlined Section 7 Consultation process. During the first increment, the U.S. Fish and Wildlife Service have provided 180 streamlined Section 7 consultations through calendar year 2016.

An aerial photograph of a wide river with a central text box. The river is blue, and the surrounding land is green and brown. The text box is white with a black border and contains the following text:

**ACQUIRING, ENHANCING,  
RESTORING AND PROTECTING  
HABITAT LANDS FOR THE  
TARGET BIRD SPECIES**

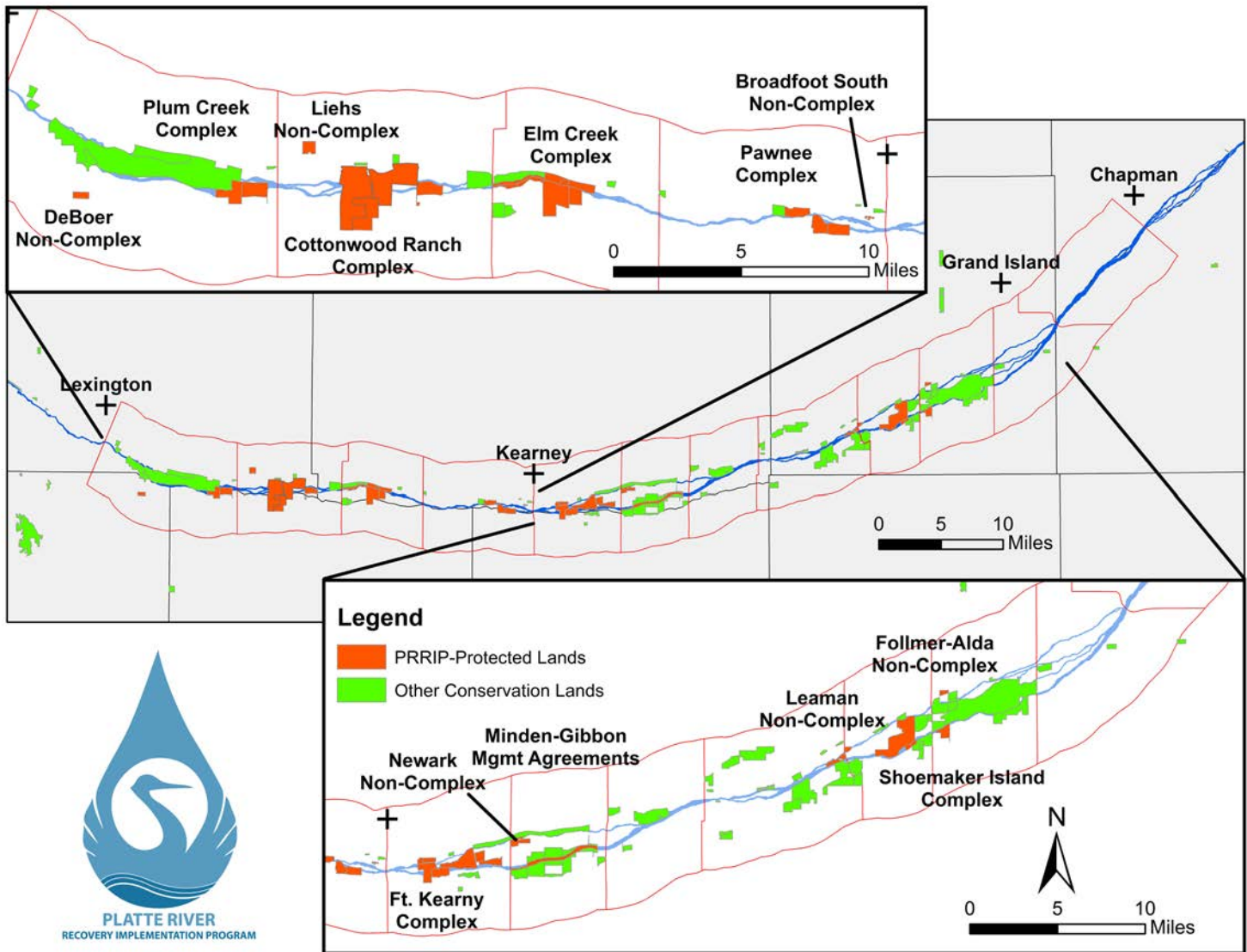




# LAND

- Objective** Acquisition, protection and restoration of 10,000 acres of habitat for the three avian species
- Key Concepts** Willing seller/willing buyer  
Good Neighbor Policy  
Will not shift tax burden
- Highlights** Acquisition of an additional 250 acres between the Kearney and Odessa bridge segment, named the Pawnee Complex  
Addition of 750 acres to the center of the Fort Kearney Complex increasing that complex to nearly 2,200 acres  
Separation of 25 acres of Program land to create a Clean Water Act wetland to mitigate for proposed land use in the North Platte Choke point  
Widespread public support of Platte River Recreation Access Program (PRRA)  
Taxes paid in six Nebraska counties

# PRRIP Acquired Lands and Other Conservation Lands



The Program evaluated a total of twenty properties in 2015/2016. This resulted in additional acres purchased and brought the total acres of Program land controlled to 12,650 acres. There are approximately 154 acres of non-complex acres needed to complete the Program Non-Complex goal of 800 acres.

The new complex between the Kearney and Odessa bridge segment, named the Pawnee Complex, expanded in 2015–16. Two new agreements and one exchange of property increased the Pawnee Complex to a total of 742 acres.

The 2015 addition of the 750 acre Speidell tract to the center of the Fort Kearny Complex increased its size and made it the second largest complex for the Program. The eight complexes are listed by size in the following table. The Program pays property taxes on all purchased lands. In 2015 the Program paid \$153,940.18 in taxes and \$169,721.54 in 2016.

# PRRIP LANDS AND ACRES

Complex	Number of Acres
Cottonwood Ranch	3,552
Fort Kearney	2,190
Shoemaker Island	1,940
Elm Creek	1,570
Plum Creek	866
Gibbon to Minden	834
Pawnee	742
Alda to Grand Island	286
Total Complex Land	11,980
Total Non-Complex Land	645
Clean Water Act Land	25
<b>Grand Total</b>	<b>12,650</b>



## Platte River Recreation Access

In Nebraska, 97% of the land is privately owned. The opportunity for recreational use of the land by the general public is therefore limited. Private ownership also affects the public's access to the Platte River. The Platte River Recreation Access (PRRA) program is in its sixth year. The PRRA provides the public the opportunity to use selected portions of the approximately 12,000 acres controlled by the PRRIP during times when targeted species are not present. The PRRIP contracted with the Nebraska Game and Parks Commission (NGPC) to administer and enforce the PRRA. The PRRA website ([www.platteaccess.org](http://www.platteaccess.org)), allows the public to access and sign up for dates available to use open land along the Platte River. The sites are available to a limited number of people each day and are completely closed to public access during the target species protection periods. Permission slips must be in hand to access land, and enforcement is a priority in order to follow the Program's good neighbor policy.

Allowed activities include; deer hunting, turkey hunting, hiking, fishing, bird watching, mushroom hunting, and limited waterfowl and small-game hunting.

Following are statistics on usage of the land.

As of 2016, the PRRA had 14 sites and 5,824 acres available to the public

In 2015 the PRRA had 287 users and 330 users in 2016

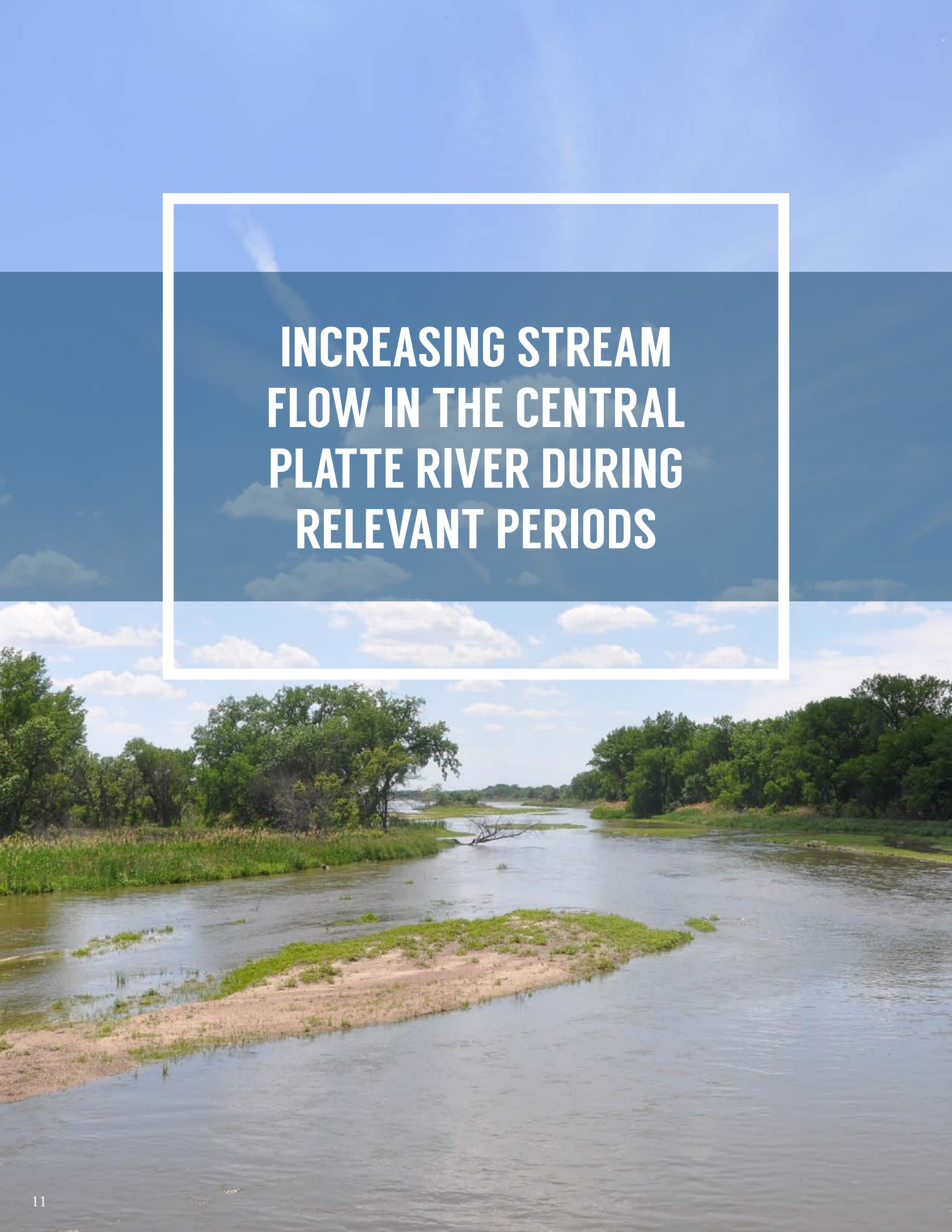
The most popular recreational activity is hunting, followed by hiking/photography and bird watching (primarily in March)

Distance from the users' home to the site ranged from 8 miles to 700 miles

69% of users surveyed learned of the PRRA program by word of mouth

79% of users were moderately to very satisfied with their recreational experience on the property

80% of users would recommend PRRA sites to friends and relatives



# **INCREASING STREAM FLOW IN THE CENTRAL PLATTE RIVER DURING RELEVANT PERIODS**



# WATER

**Objective** Reducing deficits to USFWS target flows by average annual of 130,000 to 150,000 AFY at Grand Island

Short Duration High Flow (SDHF) for Adaptive Management

**Key Concepts** Addressing New (Post-1997) Water-Related Activity Impacts  
Three States and Federal Depletions Plans

Addressing Existing (Pre-1997) Water-Related Activity Impacts  
Three Initial Projects—Tamarack 1 (CO), Pathfinder Modification (WY), Lake McConaughy Environmental Account (NE)  
New water conservation/supply projects

Short Duration High Flow (SDHF)

**Highlights** The 2014 Water Action Plan (WAP) Update was completed in May 2015, reporting on the progress, priority, and status of 14 water projects or project concepts eight years into the Program's First Increment (2007–2019).

The Program developed three new WAP project concepts—broad-scale recharge, slurry wall gravel pit storage, and acquire & retire—and initiated extensive feasibility assessments.

The Program successfully implemented a pilot project to lease surface water from irrigators within the Central Nebraska Public Power and Irrigation District (CNPPID) systems.

Retiming of excess flows through groundwater recharge during the non-irrigation season continued to be successful, with operations involving several irrigation canals and an existing reservoir.

Design and permitting of the State Channel flood risk reduction project completed at the North Platte Chokepoint. Construction will be completed in 2017.

# WATER OBJECTIVE

Reducing shortages to target flows by an average of 130,000 to 150,000 acre-feet per year (AFY)

A combination of reregulation and water conservation/supply projects will contribute to Platte River streamflows during periods of shortage

Initial water projects by the three Platte Basin states—the Environmental Account (EA) in Lake McConaughy (Nebraska), the Pathfinder Modification Project (Wyoming), and Tamarack I (Colorado)—collectively provide 80,000 AFY toward the Program's First Increment water objective. The EA was operational once the Program began in 2007; the Pathfinder Modification Project became operational in 2012; and the Tamarack I project began operating in 2010 with additional wells constructed in 2013 to increase the project's yield.

The remaining portion of the First Increment water objective (50,000 to 70,000 AFY) will be met through a diverse portfolio of incentive-based water conservation and water supply activities, first identified in the 2000 Reconnaissance-Level Water Action Plan (WAP). Progress toward the development of these additional projects since the inception of the First Increment was reported in the 2009 and 2014 WAP updates. Program water plan activities during 2015–2016 focused on further developing these projects or project concept options. A decision by the Program's Governance Committee to place the J-2 Regulating Reservoirs project on hold in late 2016 effectively reduced the previously-reported cumulative yields of implemented or approved WAP projects. However, the Program dedicated considerable resources and effort during 2015–2016 to develop and assess the feasibility of several new WAP project concepts which are anticipated to successfully replace the yield of the J-2 project.

Implemented and Proposed Water Action Plan (WAP) Projects to meet Program objectives

## Nebraska Groundwater Recharge

Recharge operations using the Phelps County Canal in the CNPPID system were implemented in 2011 and continued to be successful through 2016. A total volume of 8,795 AF was diverted into the canal for recharge activities for the Program in 2015–2016.

A well was installed on Program property in 2015 to recapture recharged water from the Phelps County Canal and improve the project yield. The volume pumped by this well was 120 AF in October and November 2016.

Recharge through the CNPPID's Elwood Reservoir also occurred during 2015–2016, totaling 17,665 AF for the Program.

The Program entered into agreements with the Nebraska Public Power District (NPPD) to recharge groundwater through the Gothenburg and Dawson County canals during the non-irrigation season. About 18,113 AF of excess flows were diverted for recharge during 2015–2016.

Program staff developed the broad-scale recharge (BSR) concept in 2015 and completed various feasibility assessments throughout 2016. The Program's Cottonwood Ranch complex was selected for initial implementation of a BSR project, with design and permitting expected to be completed in 2017 and construction anticipated to begin no later than 2018.





### **Nebraska Water Leasing**

In 2013, the Program signed an agreement with the Central Platte Natural Resources District (CPNRD) to lease accretions from recharge of excess flows and the net consumptive use credit from transferred surface water rights (up to 20,500 AFY combined) under the Thirty-Mile, Cozad and Orchard-Alfalfa canals. Volumes of water leased from CPNRD were 16,939 in 2015 and 17,189 in 2016.

The Program successfully implemented a pilot project to lease surface water from irrigators on up to 2,000 acres within the CNPPID systems. The leased water (778 AF in 2016) is transferred to the EA in Lake McConaughy.

The Program previously signed a lease for a total volume of 38,400 AF from the Pathfinder Municipal Account over the course of the First Increment. Releases from Pathfinder Reservoir under the Municipal Account Lease occurred in 2015 and 2016 for a total volume of 14,400 AF delivered downstream to the EA in Lake McConaughy.

Throughout much of 2016, Program staff evaluated the feasibility of using below-grade slurry wall gravel pit storage in the alluvial materials at various sites along the central Platte River to retire excess flows. An initial slurry wall project is slated to begin in 2017.

The Program completed its first “acquire & retire” transaction for a small parcel of irrigated pastureland under the Alliance Canal near Bayard, Nebraska. Irrigation and field monitoring activities by Program staff will commence in 2017 in support of an eventual analysis of historical consumptive use.

### **North Platte River Chokepoint Capacity Enlargement Activities**

The Program completed the design and permitting of the State Channel project at the North Platte Chokepoint. This project will direct high flows away from flood prone areas and down a vestigial river channel. Construction of the State Channel project will take place in 2017. The Program continues to investigate other methods for increasing channel capacity and reduce flood risk in the area, including disking and vegetation removal to improve conveyance.

The Program continued to support and collaborate with The Platte Valley and West Central Weed Management Areas to work toward control of invasive vegetation in the river channel from Lake McConaughy to Columbus, Nebraska. These efforts include spraying and mechanical efforts to kill and remove vegetation from the channel to restore conveyance capacity and enhance habitat.





**SYSTEMATIC PROCESS TO TEST  
ACTIONS AND APPLY INFORMATION  
LEARNED TO IMPROVE MANAGEMENT  
OF LAND AND WATER**





# ADAPTIVE MANAGEMENT

<b>Objective</b>	<p>Improve production of least tern and piping plover from the central Platte River Valley</p> <p>Contribute to survival of whooping cranes during migration</p> <p>Avoid adverse impact from Program actions on pallid sturgeon populations</p> <p>Within overall objectives 1–3, provide benefits to non-target listed species and non-listed species of concern and reduce likelihood of future listings</p>
<b>Key Concepts</b>	<p>All research tied to management actions</p> <p>Scientific rigor is essential for meaningful learning</p> <p>Developing useful scientific information to assist with decision making</p>
<b>Highlights</b>	<p>Completed one full loop of the six-step adaptive management (AM) cycle—a first for a large-scale endangered species recovery program.</p> <p>Completed peer review of investigations related to the ability of the Flow-Sediment-Mechanical (FSM) actions to create and maintain tern and plover habitat.</p> <p>Synthesis and peer review of investigations related to the ability of the FSM actions to create and maintain highly favorable in-channel whooping crane roosting habitat.</p>



# Monitoring

## **Whooping Cranes**

Annual spring and fall migration monitoring in 2015 and 2016

Completed reports for both years

## **Terns and Plovers**

Annual nesting season monitoring in 2015 and 2016 with final reports

Completed reports for both years

## **Geomorphology and In-Channel Vegetation**

Monitoring conducted in 2015 and 2016

Completed reports for both years

## **LiDAR and Aerial Photography**

Aerial imagery acquired in both 2015 and 2016

LiDAR successfully flown in 2015 and 2016

# Research

## **Whooping Cranes**

Core Partner for the Whooping Crane Telemetry Tracking Project

Completed Whooping Crane Stopover Site Evaluation Project in 2015

Completed whooping crane habitat selection analyses based on Program monitoring data as well as telemetry data collected throughout the Great Plains

Developed the Whooping Crane Synthesis Chapters and WEST Report to collate information related to the ability of the Flow-Sediment-Mechanical (FSM) actions to create and maintain highly favorable in-channel whooping crane roosting habitat



## **Terns and Plovers**

Completed extensive banding of terns and plovers on central Platte River during both years to track reproductive success, site fidelity, and survival over time (continue resighting efforts in 2017 and 2018)

Developed manuscripts to be published in 2017 including:

- Negotiating recovery of interior least tern and piping plover on the central Platte River
- Reproductive ecology of interior least tern and piping plover in relation to Platte River hydrology and sandbar dynamics
- Least tern and piping plover nest success and brood survival at off channel sites in the central Platte River
- Interior least tern and piping plover nest site selection at managed sandpit sites along the central Platte River

Conducted a Structured Decision Making (SDM) process to assist with the final step of AM and the GC decision-making process related to short-duration high flows (SDHF) and terns/plovers. Management adjustments include:

- Create an additional 60 acres of bare-sand nesting habitat for terns and plovers
- Maintain 10 acres of in-channel nesting habitat by removing vegetation from existing sandbars

## **Wet Meadows Hydrology Investigations**

Continued monitoring involving data collection from river stage gages, groundwater monitoring well transects, weather stations, soil moisture monitoring equipment, and other hydrologic monitoring equipment at two primary wet meadow sites established in 2013 and 2014, and at two additional secondary wet meadow sites established in 2014 with groundwater monitoring wells, river stage gages, and limited equipment to monitor weather patterns.

Analysis of hydrologic data at two primary wet meadow sites based on data collected from monitoring efforts initiated. Analysis includes use of water balance and groundwater models developed for these sites

# **Independent Science Review**

## **Independent Scientific Advisory Committee (ISAC)**

Two Independent Scientific Advisory Committee (ISAC) meetings in 2015 and 2016

Specific ISAC input on Program SDM process, decision analysis, whooping crane habitat synthesis chapters, WEST report, forage fish data analysis, and State of the Platte reports



# Independent Science Review, Cont.

## **Peer Review**

Completed peer review and secured Governance Committee acceptance of the tern and plover habitat synthesis chapters

Three-person peer review of combined whooping crane habitat synthesis chapters and the WEST Report in 2016

Completed peer review of wet meadows hydrology project monitoring approach

## **Publications**

Interior least tern productivity in relation to flow in the central Platte River (Great Plains Research)

Evaluation of nocturnal roost and diurnal sites used by whooping cranes in the Great Plains, United States (USGS Open File Report)

Investigating the accuracy of estimated unvegetated channel widths in a braided river system: a Platte River case study (Geomorphology)

Whooping crane stopover site use intensity within the Great Plains (USGS Open File Report)

A comparison of breeding population estimators using nest and brood monitoring data (Ecology and Evolution)

Use of opportunistic sightings and expert knowledge to predict and compare whooping crane stopover habitat (Biology)

A combined field, laboratory and numerical study of the forces applied to, and the potential for removal of, bar top vegetation in a braided river (Earth Surface Processes and Landforms)

# Implementation

## **Sediment Augmentation**

Based on pilot augmentation efforts, plans for full-scale augmentation developed for south channel of Platte River between Lexington and Overton

Designs, permits, and land use agreements in final stages to be ready for 2017 implementation

## **FSM “Proof of Concept” Experiment**

Completed final year of three-year experiment at Shoemaker Island Complex

Actions included geomorphology, vegetation, and sandbar monitoring, modeling, and data analysis



### **Complex Management and Habitat Rehabilitation Actions**

Plum Creek Complex management actions – Conducted prescribed fires on grassland areas in 2015. Maintained off-channel bare-sand nesting habitat on sandpit peninsulas in 2015 and 2016.

Cottonwood Ranch Complex management actions – Conducted prescribed fires on grassland areas in 2015 and 2016. Maintained off-channel bare-sand nesting habitat in 2015 and 2016.

Implemented active pumping and structural improvements to improve wet meadow whooping crane habitat suitability and hydrology.

Elm Creek Complex management actions – Conducted prescribed fires on grassland areas in 2015 and 2016.

Pawnee Complex management actions – Removed trees and disked along and within the channel to increase unobstructed channel widths and unforested corridor widths in 2016.

Ft. Kearny Complex management actions – Conducted prescribed fires on grassland areas in 2015 and 2016. Removed trees along the channel and implemented active pumping to improve whooping crane wet meadow habitat suitability.

Shoemaker Island Complex management actions – Conducted prescribed fires on grassland areas in 2015 and 2016.

Non-complex tern and plover habitat – Constructed bare-sand nesting habitat at Newark East and Follmer Alda and maintained bare-sand nesting habitat at Leaman East, Newark West and Broadfoot South in 2015 and 2016.

Non-complex palustrine wetland habitat – Excavated wetland habitat for whooping cranes at DeBoer and Leih's in 2015. Installed well and implemented active pumping to improve whooping crane wetland habitat suitability in 2016.

## **Planning**

Completed 2015 State of the Platte Report; includes an assessment of ten Program “Big Questions” and associated priority hypotheses

Adaptive Management Plan Reporting Sessions in 2015 and 2016 – gathering of ISAC, Technical Advisory Committee, Governance Committee, Program staff, Program contractors, Special Advisors, and interested parties to discuss results of previous year’s monitoring and research, data analysis, and data synthesis



# **COST EFFECTIVE ADMINISTRATION**

**INFORM AND EDUCATE THE  
PUBLIC ABOUT THE PRRIP**



# PROGRAM ADMINISTRATION & OUTREACH

**Administration Highlights** Over \$18.8 million expended, total expenditures of over \$104 million since 2007

Oversight of 186 different consultants, contractors, and vendors during 2015–2016 and 350 since 2007

**Outreach Highlights** Provided funding for experiential programs for children and youth that educated over 17,000

Purchased a stream table that demonstrates basic principles of river behavior and sediment transport for use in public outreach and education events

Over 6,900 contacts with the public at Program exhibits

The organizational structure of the PRRIP is different than many of the other existing Recovery Implementation Programs. The key organizational difference is that the actual day-to-day implementation actions are carried out by an independent entity, Headwaters Corporation (a private sector firm), rather than a government agency. The services of the Executive Director and Program Staff are provided through a contract with Headwaters Corporation. In most other recovery Programs, these implementation functions are performed by Federal employees acting through their specific agency. This fairly unique structure was selected to truly embody the collaborative nature under which the Platte River Recovery Implementation Program has been undertaken.

Control of the Program rests with a group of stakeholders that prominently includes State and Federal representatives, water users and environmental groups. Governance of the Program is provided by representatives of the Department of Interior; the States of Colorado, Nebraska, and Wyoming; water

users; and environmental groups. Represented in the Program's Governance and Advisory Committee structure are a broad spectrum of diverse stakeholders from a variety of organizations and entities, including: the Bureau of Reclamation, Fish and Wildlife Service, the State of Colorado, the State of Nebraska, the State of Wyoming, Colorado Water Conservation Board, Colorado Department of Water Resources, Denver Water, Greeley Water and Sewer Department, Northern Colorado Water Conservancy District, Lower South Platte Water Conservancy District, Wyoming Water Development Board, Wyoming State Engineers Office, Casper-Alcova Irrigation District, Goshen Irrigation District, Pathfinder Irrigation District, Nebraska Department of Natural Resources, Nebraska Game and Parks Commission, Central Platte Natural Resources District (NRD), Twin Platte NRD, Tri-Basin NRD, Central Nebraska Public Power and Irrigation District, Nebraska Public Power District, The Nature Conservancy, The Audubon Society, and The Nebraska Wildlife Federation.

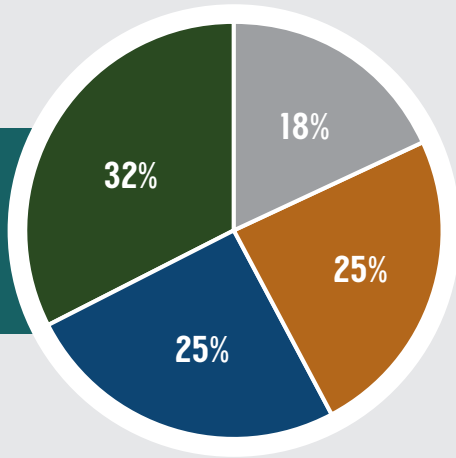
Through 2016, the Program expended over \$104 million. The total expenditures by year are shown on the graph on the following page. After the initial two years, expenditures have averaged about \$12.5 million a year, fluctuations driven primarily by land acquisitions and water project expenditures.

The series of pie charts on the following page provide a breakdown of the expenditures by category; Land, Water, AMP and Other (implementation support, administration, oversight and outreach costs). The pie charts tell a clear story. The distribution of expenditures in 2015–2016 show significant expenditures for water, science, and implementation support. In contrast to the distribution for 2007–2014, when there was balance between expenditures for science and water, but expenditures for land were still predominant. When considered in total, the expenditures for 2007–2016 were basically balanced amongst the four categories of expenditures. The 2015–2016 distribution continues the shift in distribution of expenditures from land to water and foreshadows the ultimate distribution we expect for the first increment.

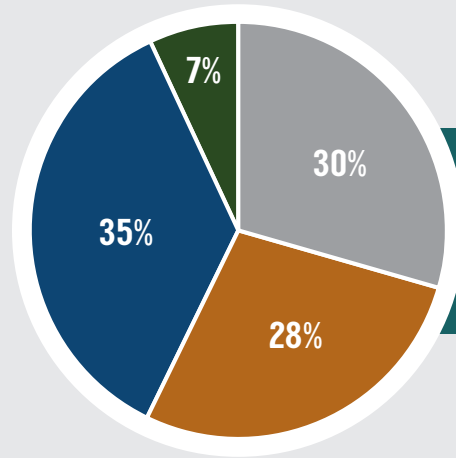


# PRRIP EXPENDITURES

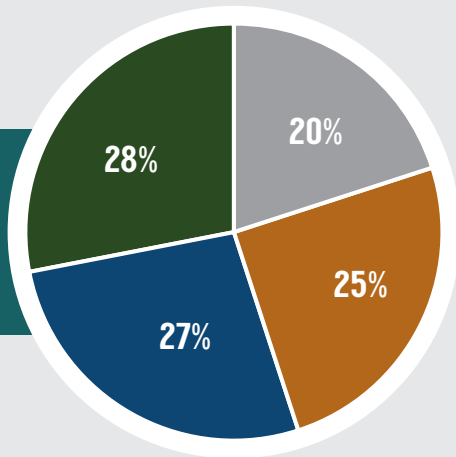
2007–2014 Expenditures



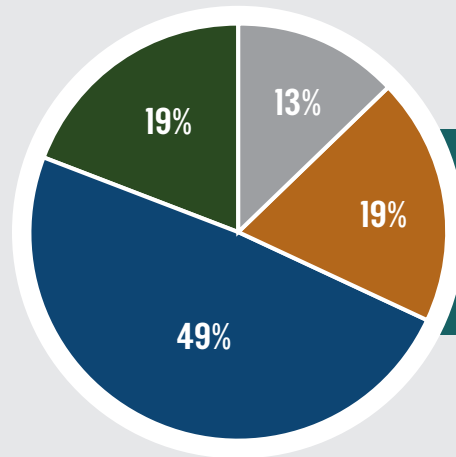
2015–2016 Expenditures



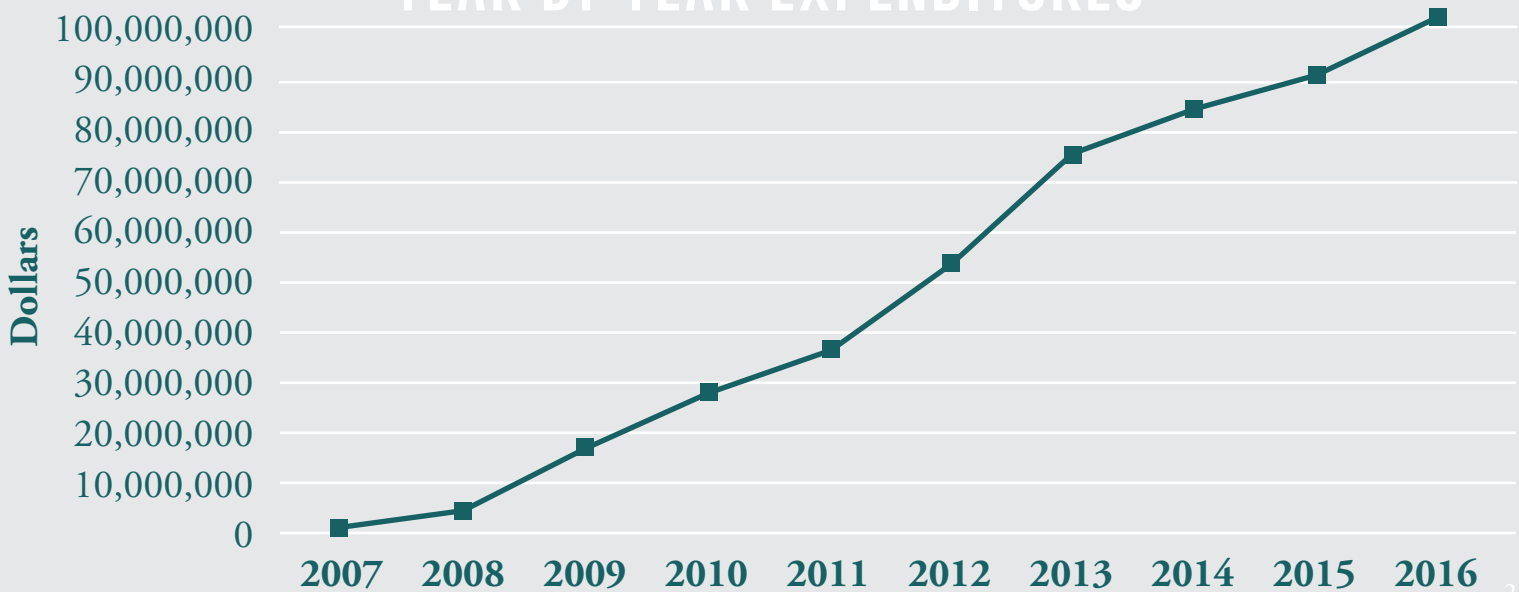
2007–2016 Expenditures



2007–2019 Estimated Expenditures



# YEAR BY YEAR EXPENDITURES





## Outreach

### The Platte Basin Timelapse Project

The Program continued funding of the Platte Basin Timelapse Project (PBT) in 2015 and 2016. The PBT is a partnership of Nebraska Educational Telecommunications, Michael Forsberg Photography, the University of Nebraska Institute of Agriculture and Natural Resources and Nikon Corporation. The project has more than 50 timelapse camera systems placed throughout the 90,000 square-mile basin, from its headwaters along the Continental Divide in the Colorado Rockies to the river's confluence with the Missouri River on Nebraska's eastern border. Each timelapse camera tells one part of the story of the proverbial drop of water as it makes a journey of roughly 900 river miles through the Platte River Basin. Unfortunately, over the past two years, the permanent cameras on the Elm Creek and Plum Creek complexes were lost to high flows. Given that the central Platte River is covered by other camera locations, the decision was made to not replace those cameras, but to install a camera on Cottonwood Ranch. This camera will capture the construction of the broad scale recharge project and other habitat restoration at that location. The PBT website also has an educational component with Science Technology Engineering Mathematics (STEM) based educational curriculum for middle and high school science students. The curriculum includes lesson plans, learning objectives and handouts on subjects such as Platte River prairies, habitats and ecosystems. The website is [www.plattebasintimelapse.com](http://www.plattebasintimelapse.com).

### Iain Nicolson Audubon Center at Rowe Sanctuary

The Program provides funds for the educational programs at the Iain Nicolson Audubon Center at Rowe Sanctuary in Nebraska. Rowe Sanctuary's outdoor, experienced-based education programs provide children, families and adults with opportunities to experience the Platte Valley ecosystem and its wildlife by utilizing indoor and outdoor classrooms, viewing blinds, and trails that meander along the Platte River, through wetlands, wooded areas and prairie remnants. Platte River Safari Camp, formerly Summer Orientation About Rivers (SOAR), is for children in 2nd through 5th grades. Campers take part in a variety of activities focused on the Platte River and surrounding areas that include natural and physical science, language arts, history, agriculture, music and art. Flying Higher Camp (grades 6th through 8th) is a hands-on, ecology camp that takes campers into the realm of scientific surveys and identification. In addition to these camps, Rowe Sanctuary also offers outdoor classroom education and Rowe Adventures. In 2015, 166 campers experienced nature first-hand at a camp and 1,113 family members attended an educational program. In 2016, 137 campers experienced nature first-hand at a camp and 1,513 family members attended an educational program.



### South Platte River Environmental Education (SPREE)

The Program continued funding in 2015 and 2016 for The Greenway Foundation's South Platte River Environmental Education (SPREE) program in Colorado. Over the course of its 42-year history, The Greenway Foundation has introduced tens of thousands of children to the South Platte River through SPREE. On SPREE excursions children learn about the river, its role in Denver's history, and that the South Platte River was, and still is, Denver's most valuable natural resource. In 2015, SPREE educators guided over 5,000 learners on environmental education field trips along the most urban stretches of the South Platte River and taught over 900 children at two summer camp locations. In 2016, SPREE educators guided over 6,000 learners on environmental education field trips along the most urban stretches of the South Platte River and taught over 1,100 children at three summer camp locations. The program's largest impact is on the 5,000 students attending the thirteen designated SPREE schools that bring each kindergarten through 5th grade student on a field trip every year. These 13 Denver public schools represent a highly diverse and underserved population of students that often do not have the information or resources to participate in outdoor environmental activities. The field trips help these children build a connection to the River as well as the knowledge and skills that they will need to be active and engaged decision makers.

### Prairie Loft

The Program provides funds for the educational programs of the Prairie Loft Center for Outdoor and Agricultural Learning in Nebraska. Prairie Loft's mission is to teach agriculture appreciation, outdoor education, cultural traditions, and the wise use of natural resources. Prairie Loft is helping to create systemic change in the wider Nebraska community by introducing teachers, students, families, and groups to the cognitive and physical benefits of spending time together in active outdoor learning. Education programs involve preschool, elementary and middle school students and their families through hands-on, place-based learning programs. Prairie Loft lessons use scientific inquiry, develop problem-solving skills, encourage social interactions, teach leadership skills, and engage creative thinking. Subjects include plant science, soils, water, food origins, and wildlife and habitat. Prairie Loft had 8,025 visitors in 2015 and 10,240 visitors in 2016. In 2015 attendance at Prairie Loft field trips and lessons was 1,926 students and 585 teachers/parents, in 2016 attendance was 2,165 students and 836 teachers/parents.

# PROGRAM EXHIBITS & SPONSORSHIPS

## 2015 Exhibits

	State	Contacts
4States Irrigation Council – January	Colorado	101
Colorado Water Congress – January	Colorado	408
Nebraska Weed Management Area Coalition – January	Nebraska	63
Rainwater Basin Joint Venture – February	Nebraska	93
Audubon’s Nebraska Crane Festival– March	Nebraska	213
Kearney Children’s Museum - May	Nebraska	N/A
Husker Harvest Days – September	Nebraska	2,152
South Platte Forum – October	Colorado	288
Kearney Children’s Museum – October	Nebraska	N/A
NE Water Resources Association/NE State Irrigators Association Conference – November	Nebraska	98

## 2015 Sponsorships

	State
Nebraska Environthon – April	Nebraska
South Platte Forum – October	Colorado
E. N. Thompson Forum on World Issues – Bill McKibben Lecture – October	Nebraska

## 2016 Exhibits

	State	Contacts
4States Irrigation Council & Ditch & Reservoir Company Alliance - January	Colorado	201
Colorado Water Congress – January	Colorado	428
Rainwater Basin Joint Venture – February	Nebraska	127
Audubon’s Nebraska Crane Festival – March	Nebraska	284
Nebraska State Fair – September	Nebraska	N/A
Husker Harvest Days – September	Nebraska	2,080
Natural Resources Districts Conference – September	Nebraska	224
South Platte Forum – October	Colorado	192
Kearney Children’s Museum – October	Nebraska	N/A
Prairie Loft Harvest Celebration – October	Nebraska	N/A
NE Water Resources Association/NE State Irrigators Association Conference – November	Nebraska	60

## 2016 Sponsorships

	State
4States Irrigation Council – January	Colorado
Nebraska Environthon – May	Nebraska
NE Water Resources Association/NE State Irrigators Association Conference – November	Nebraska

Staff Public Presentations		
Audience	2015	2016
Irrigators	1	3
Professional Associations	6	1
Natural Resource Districts	1	3
Academic	2	1
Water Conference/Symposium	5	5
Environmental Groups	1	2
General Public	4	4
<b>TOTAL</b>	<b>20</b>	<b>19</b>

One of the key benefits provided by the Program is a streamlined Section 7 Consultation process. During the first increment, the U.S. Fish and Wildlife Service have provided 180 streamlined Section 7 consultations through calendar year 2016.

## Streamlined Section 7 Consultations by USFWS

	Colorado	Wyoming	Nebraska	Federal	Total by Year
2007	11	6	1	0	17
2008	14	4	6	1	24
2009	18	4	2	3	24
2010	14	4	1	2	19
2011	15	1	3	6	19
2012	21	1	1	5	28
2013	14	2	2	5	18
2014	9	0	0	3	9
2015	8	0	0	3	8
2016	17	1	1	2	19
<b>Total by Entity</b>	<b>141</b>	<b>23</b>	<b>17</b>	<b>*</b>	<b>180**</b>

*Note: Biennial report 2013/2014 Table numbers were corrected by USFWS in 2015.*

*\*Federal numbers are not additive, they are already included in the state totals.*

*\*\*One project in 2007 occurred in both Colorado and Wyoming. It is included in both state totals but should not be included twice in the overall count. Therefore, by adding Colorado (141), Wyoming (23), and Nebraska (17), the total is one more (181) than the actual total through 2016 (180).*

# Numeric Milestones Progress Checklist

PROGRESS THROUGH 2015

COMPLETED

INCOMPLETE



*The First Increment water objective (Milestone #4) is not achievable by the end of 2019, and due to reliance on water projects being developed by the Governance Committee (GC), the Nebraska Depletions Plan (Milestone #9) is also not achievable by 2019. All State water projects and the Colorado, Wyoming, and Federal depletions plans are operational.*

1 The Pathfinder Modification Project will be operational and physically and legally capable of providing water to the Program by no later than the end of Year 4 of the First Increment.

6 The Integrated Monitoring and Research Plan, as may be amended by the Governance Committee, will be implemented beginning Year 1 of the Program.

2 Colorado will complete construction of the Tamarack I and commence full operations by the end of Year 4 of the First Increment.

7 The Wyoming Depletions Plan, as may be amended with the approval of the Governance Committee, will be operated during the First Increment of the Program.

3 CNPPID and NPPD will implement an Environmental Account for Storage Reservoirs on the Platte System in Nebraska as provided in FERC licenses 1417 and 1835.

8 The Colorado Depletions Plan, as may be amended with the approval of the Governance Committee, will be operated during the First Increment of the Program.

4 The Reconnaissance-Level Water Action Plan, as may be amended by the Governance Committee, will be implemented and capable of providing at least an average of 50,000 acre-feet per year of shortage reduction to target flows, or for other Program purposes, by no later than the end of the First Increment.

9 The Nebraska Depletions Plan, as may be amended with the approval of the Governance Committee, will be operated during the First Increment of the Program.

5 The Land Plan, as may be amended by the Governance Committee, will be implemented to protect and, where appropriate, restore 10,000 acres of habitat by no later than the end of the First Increment.

10 The Federal Depletions Plan, as may be amended with the approval of the Governance Committee, will be operated during the First Increment of the Program.



# Headwaters Corporation

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Report designed by Kaylie Sirek



**PLATTE RIVER**  
RECOVERY IMPLEMENTATION PROGRAM

**Serving the threatened and endangered species of the  
Platte River Basin as well as the people who live here.**

[platteriverprogram.org](http://platteriverprogram.org)