The Potential of Collaborative Governance: The Platte River Recovery Implementation Program

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Introduction

The extensive system of diversion and storage developed on the Platte River during the 1940s and 1950s for power generation and irrigation has substantially impacted the natural flow of the river and the habitat on which a variety of bird, animal and fish species depend. Starting in the late 1960s, environmental concerns about these and other impacts resulted in the U.S. Fish and Wildlife Service (FWS) listing the whooping crane as an endangered species. Passage of the Endangered Species Act (ESA) in 1973 led to listing the interior least tern as endangered and the piping plover as threatened in 1986, as well as designating the "Big Bend" area of the Platte River between Lexington and Chapman, Nebraska as critical habitat for the whooping crane. The ESA resulted in major revisions to, or cancellations of, diversion/storage projects in Nebraska as well as in Colorado and Wyoming upstream of this critical habitat.

The potential for the ESA to negatively impact agricultural irrigation and hydropower production in the Platte River basin states led the governors of Nebraska, Colorado, and Wyoming to join the U.S. Department of Interior, FWS and Bureau of Reclamation (USBR), as partners in a 1994 joint study and then as signatories to a 1997 Cooperative Agreement to restore habitat for endangered species. Water users agreed to project "milestones" or defined contributions of water and land in exchange for FWS approval of a basin-wide biological opinion that would allow the three states to proceed with existing water projects during the first increment (thirteen years) of the Platte River Recovery Implementation Program (PRRIP or "The Program"). This pledge of regulatory certainty was in lieu of individual FWS consultations and subsequent requirements to protect ESA covered species for individual water projects. The Program started in January, 2007.

The Program is managed by a unique collaborative governance structure involving the FWS and USBR, the three state governments and stakeholders representing water users and environmental interests. Collaboration during the initial period of Program implementation has resulted in innovative approaches to retiming river water and generating water for irrigation, in addition to the environmental benefits of increased river flows for species habitat. The Program also calls for Nebraska to have a plan to offset new (post-1997) depletions to the river from groundwater wells. To date the impact of these projects on irrigated agriculture is minimal, because most are still in the design phase.

The purpose of this project was to answer the following three questions:

1. How did the controversy over water use on the Platte River develop over time? What were the major "trigger events" initiating negotiations? What were the incentives for stakeholders to collaborate on an agreement to manage water use on the Platte River?
2. How is the PRRIP organized? What are the structure and the function of the Program? What is the role and make-up of the Governance Committee and how is the Program staffed and financed? How do the features of the PRRIP organization compare with other collaborative arrangements?
3. How have collaborative processes influenced design and implementation of the PRRIP plan? What are the significant water conservation projects underway in the Basin? What are the major success stories (or failures) in recovery of habitat for listed bird species?

I. The History of the Platte River Recovery Implementation Program

While a complete history would require an in-depth analysis of all three states, this project focuses on the role of Nebraska. The first Program increment emphasizes the implementation of water conservation/supply projects and the use of adaptive management for decision making in the critical habitat area ("Big Bend") of the Platte River in Nebraska. The major trigger event leading the State of Nebraska to join negotiations over a basin-wide approach was the 1984 relicensing application to the Federal Energy Regulatory Commission (FERC) for Kingsley Dam. The FWS conducted a review under the ESA of the dam's potential impact on whooping crane critical habitat downstream. The Central Nebraska Public Power and Irrigation District (CNPPID), which owns and operates Kingsley Dam, and the Nebraska Public Power District (NPPD), which distributes electricity produced by CNPPID were the first water users on the Platte River in Nebraska to be affected by the Endangered Species Act.

As Freeman (2010) has recounted in his extensive history of the PRRIP, Governor Ben Nelson intervened in the FERC relicensing process, seeking to find a compromise between members of the water and environmental communities. CNPPID was fearful that FWS requirements to increase the amount and timing of water in the river would disrupt management of hydro-power and irrigation water supplies; while environmental groups insisted that relicensing be contingent on conditions that would support habitat restoration. Governor Nelson's solution was the creation of an Environmental Water Account at Lake McConaughy.

The Environmental Account set aside ten percent of the annual inflows to Lake McConaughy and stored it behind Kingsley Dam (estimated at 44,000 acre feet per year) to be overseen by the FWS and released in amounts and during times deemed necessary to help restore roosting and nesting areas for ESA protected species (hereafter referred to as "target flows"). The Environmental Account eventually became a key component of the PRRIP, and the districts (CNPPID and NPPD) became voting members of the Governance Committee. The relicensing conditions were tied to the Program. As Freeman (2010, p. 53) summarized, "The two Nebraska districts were not only caught up in a federal nexus, as they had been since the beginning of their operations, but they had now become a centerpiece in the development of a basin-side collaborative solution with water users and environmentalists in two other states."

The effect of incorporating the FERC relicensing provisions into the PRRIP was to provide CNPPID and NPPD with the regulatory certainty that they could continue to operate under negotiated conditions

for the first increment of the Program. Fear of the ESA "hammer" and the need for regulatory certainty also motivated the States of Colorado and Wyoming and their water users to join the collaborative effort. Although the Program evolved over a number of years based on a series of negotiated settlements between the three states and federal agencies, its continued existence is due primarily to a pervasive fear that the alternative to collaboration with the FWS could be much worse for water users. The specter of individual consultations with the FWS over water storage and diversion projects with more stringent conditions attached to project approval or disapproval was, and continues to be, the major incentive keeping the parties at the table.

II. Governance of the Platte River Recovery Implementation Program

The Governance Committee (GC) is an outgrowth of years of negotiation among the three basin states, USBR and FWS. Membership includes the federal agency and state signatories to the 1997 Cooperative Agreement establishing the Program, as well as a number of stakeholder representatives:

- One (1) representative from the State of Wyoming.
- One (1) representative from the State of Colorado.
- One (1) representative from the State of Nebraska.
- One (1) representative from the United States Fish and Wildlife Service (FWS).
- One (1) representative from the United States Bureau of Reclamation (BOR).
- Environmental entities in the three states have three (3) representatives with 2 votes.
- The water users in the Upper Platte River basin in Wyoming, and those water users in the North Platte River basin in Nebraska located above Lake McConaughy who have storage contracts for water in the federal reservoirs in Wyoming (Upper Platte Water Users), have one (1) representative.
- The water users on the South Platte River above the Western Canal diversion and those water users on the North Platte River in Colorado (Colorado Water Users) have one (1) representative.
- The water users downstream of Lake McConaughy and the Western Canal, and those water users upstream of Lake McConaughy who do not have federal storage contracts (Downstream Water Users), have four (4) representatives with 1 vote.

Source: *Platte River Recovery Implementation Program – Organizational Structure (Attachment 6)*

Unlike virtually all large-scale collaborative ecosystem restoration programs, the GC reports to an Oversight Committee composed of the Secretary of Interior and governors of the three states, but otherwise exercises decision-making authority for all aspects of the Program. Funds contributed by Wyoming and Colorado and by the Department of the Interior via appropriation to the USBR are deposited with a financial management entity, the Nebraska Community Foundation (NCF), under contract with the GC. The NCF collects and distributes funds, including payments to contractors. The signatories (three states and two federal agencies) retain legal authority to carry out financial and contracting responsibilities in coordination with the GC. Title to land acquired by the Program is held

by the Nebraska Community Foundation. The GC approves all projects and expenditures after voting by consensus at its quarterly meetings.

The governors of the three states select their representatives and alternates. The Secretary of Interior selects the representatives for FWS and USBR. The representatives of the environmental entities are appointed by the five organizations involved in the original negotiations: American Rivers, Audubon Society, National Wildlife Federation, Nebraska Wildlife Federation and the Platte River Whooping Crane Trust. The representatives of the Upper Platte Water Users are elected by their stakeholders in a specially convened meeting for a term of no longer than four years. The representative of the Colorado Water Users is designated by the South Platte Water Related Activities Program, Inc. The representatives of the Downstream Water Users are appointed by their respective organizations: Central Nebraska Public Power Irrigation District, Nebraska Public Power District, two Platte Basin Natural Resource Districts. (PPRIP, 2006: Attachment 6, Appendix D)

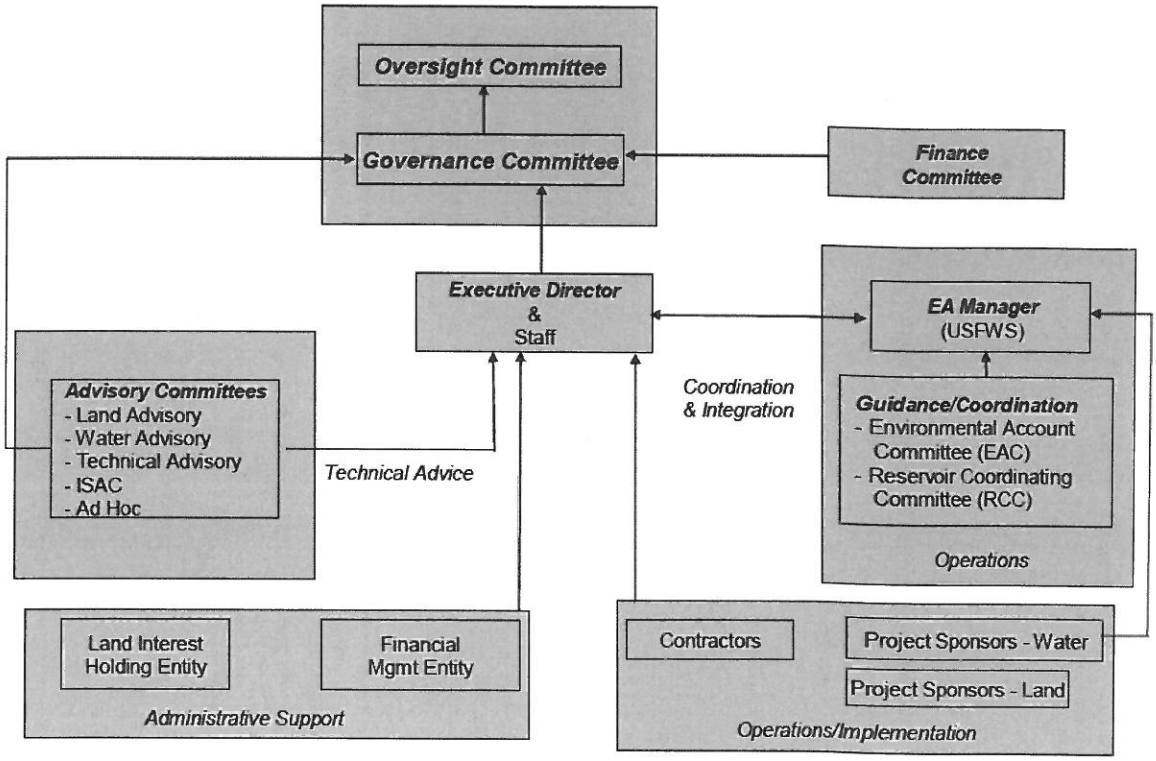

Figure 1. Organizational Structure for the Platte River Recovery Implementation Program.

The Governance Committee has standing and *ad hoc* advisory committees to deliberate and recommend actions to the GC in the areas of land, water and adaptive management[1]. In addition, an Independent Science Advisory Committee of five members from outside the Program provides scientific advice as requested by the GC. The practice has been for each member of the GC to appoint a staff member to each advisory committee. The Land Advisory Committee has additional Nebraska property owners who are selected by the Central Platte and Tri-Basin Natural Resource Districts. The Executive

[1] According to Chad Smith, Director of Natural Resources for the Headwaters Corporation, who is leading efforts to implement the Program's Adaptive Management Plan, adaptive management is a, "Rigorous approach for designing and implementing management actions to maximize learning about critical uncertainties that affect decisions, while simultaneously striving to meet multiple management objectives."

Director and a 12 member staff from the Denver-based Headwaters Corporation are responsible for the day-to-day operation of the Program, for coordinating interactions between each advisory committee and the GC, and for facilitating quarterly meetings of the GC.

The Governance Committee meets at locations that rotate across the three states. Each meeting starts at noon on Tuesday and adjourns at noon on Wednesday. This format allows the members to continue discussions informally over dinner, and to build relationships of trust. It is a tradition carried over from the lengthy negotiation process leading up to the start of the Program in 2007. The agenda for each meeting includes reports from the advisory committees, as well as action items. The decision process is by consensus. Nine out of ten votes are needed to move an action item forward, but any one of the signatories can exercise a veto. When there is an impasse the GC often sends a contentious issue back to the appropriate advisory committee for further research and discussion.

The entire Program structure was designed to manage implementation of three major objectives during the first increment in pursuit of the overall goal to improve and maintain critical habitat for whooping cranes, and nesting and foraging habitat for interior least terns and piping plovers:

1. Increase stream flows in the central Platte River during the relevant time periods through reregulation and water conservation/supply projects.
2. Enhance, restore, and protect habitat lands for the target species.
3. Accommodate new water related activities in a manner consistent with long-term Program goals.

During Program negotiations, the states and water users agreed that progress during the first increment would be measured by specific milestones. The water and land milestones associated with these milestones include the following projects:

- Implementation by CNPPID and NPPD of an Environmental Account in Lake McConaughy in the form of storing an estimated 44,000 acre feet per year to be released by the EA Manager at the FWS to improve target flows in the critical habitat area.
- Implementation of certain additional Water Action Plan projects within Nebraska, such as the water retiming initiative at the J-2 Re-Regulating Reservoir within the CNPPID distribution system, in order to further reduce shortages to target flows.

- Implementation of the Nebraska New Depletion Plan to offset reductions to target flows from groundwater irrigation projects started after signing of the Cooperative Agreement in 1997.
- Acquisition of 10,000 acres of land for habitat restoration in the area within Nebraska designated as critical habitat for roosting and nesting of endangered and threatened species of bird.

With the exception of the Nebraska New Depletion Plan, these milestone projects are funded by the Program. Land acquisition is on a willing-seller basis. Future water conservation projects that involve voluntary retirement or lease of water rights will compensate individual users. The Nebraska New Depletion Plan is funded by state appropriations and grant funds, and managed by the Department of Natural Resources in cooperation with the Platte River Natural Resource Districts. These Nebraska milestones are the result of negotiations between the FWS, which identified a basin-wide target flow shortage of 413,000 acre-feet per year for endangered species and critical habitat needs, and state water users who insisted on a smaller first increment reduction. The 10,000 land acre milestone was also reduced from the FWS original target of 29,000 acres. (Freeman, 2010, p. 34) The total amount of water contributed by the three states and capable of reducing first increment shortages to target flows is 130,000-150,000 acre-feet per year. (PRRIP, 2006, p. 11)

While Nebraska agreed to fulfill these milestones as a condition for ESA approval of existing water projects, state officials fundamentally disagreed with the underlying biological and hydrological model that led to the calculation of target flow shortages. State officials from Nebraska, Colorado, and Wyoming agreed to the concept of fulfilling specific water and land milestones; however they insisted on specific language in the Program document: "The states have not agreed that the target flows are biologically or hydrologically necessary to benefit or recover target species." (Ibid)

Furthermore, the Land Plan reflects the unwillingness of the states to commit to specific types of bird habitat as targets for the Program. In the view of the states the Program's approach to acquiring and developing habitat requires a broad range of approaches, including the use of off-channel sand pits as well as sand bars created by natural, periodic short duration high flows as recommended by the FWS. (PRRIP Attachment 4, 2006, p. 15) These differences in management strategies between the states and the FWS are reflected in the adaptive management Plan, as will be discussed later in this report. For the purposes of this section on structure and function of the Program, it is important to note that the Water

and Land Advisory Committees and the Adaptive Management Working Group function independently of each other; implementation of milestones is separate from the monitoring of adaptive management strategies being tested in the critical habitat area.

The PPRIP is unique among environmental collaborative governance arrangements because it is autonomous from federal and state agencies; controls its own budget through an independent financial management entity; and hires staff and contractors. Large-scale ecosystem restoration programs, such as the Missouri River Recovery Program, often have broad stakeholder participation; however, they are advisory to a major federal agency such as the U.S. Army Corps of Engineers. For example, the Missouri River Recovery Implementation Committee (MRRIC) is composed of state and federal agencies, as well as tribes and numerous varied interests along the upper and lower Missouri River. Recommendations for recovery projects made by MRRIC must be approved by the Chief of Programs NW Division, and then implemented through Omaha or Kansas City District office appropriations. Other large-scale ecosystem restoration programs have similar advisory structures. (Appendix C)

Smaller scale collaborative watershed councils tend to be local and "grass roots" - - initiated by citizen volunteers in order to balance environmental concerns with demands on natural resources, such as from irrigation. One example is the Henry's Fork Watershed Council (HFWC) in Idaho, formed by two local leaders and representing a variety of local area interests including irrigators, fishing and hunting interests, environmentalists, local, state and federal government. The funding for collaborative watershed councils comes from government and private contributions, and projects are often staffed through volunteer efforts. As Weber (2003) explains, "Each effort seeks to give citizens across the board a direct stake in the coordination and administration of policy using a collaborative, consensus-based decision forum. Government agencies - - state, local and federal - - are asked to share power by relinquishing a certain amount of control, but not legal authority." (62)

The PRRIP is a basin-wide habitat recovery program focused on endangered species, supported by multiple public funding streams and governed by an autonomous decision-making committee. Program implementation is carried out by staff and contractors hired by the PRRIP; however, many of the projects designed to reduce shortages to river flows are operated by irrigation and natural resource districts within each state. Compared to the advisory committees of large-scale ecosystem restoration programs and to collaborative watershed councils, membership on the Governance Committee is limited in size and scope to stakeholders that, with the exception of the three environmental entities, are directly accountable for compliance with Program milestones.

III. Design and Implementation of the Platte River Recovery Program

The design of the PRRIP fulfills the criteria of a three-state Biological Opinion approved by the FWS in 1997 covering existing water diversion and storage projects. Nebraska state and downstream water users are responsible during the first increment to meet the milestones enumerated in Part II of this report. The collaborative process resulted in the reduction of regulatory uncertainty for water users, because the Biological Opinion covers the first increment of the Program. As was discussed previously, while the states and water users agreed to fulfill specific milestones, they disagreed fundamentally with the FWS over the need to restore a natural flow regime to the Platte River as part of the recovery plan. Achieving consensus was contingent on building a "Chinese Wall" into the Program document:

> There it was the long-sought solution. It had been found by making a critical distinction – separating the outcomes of any given set of adaptive management actions on the river from the business of fulfilling program milestones that would determine program sufficiency. The negotiators disassociated the program adaptive management plan from the fulfillment of milestones by building a Chinese Wall between the two. The adaptive management plan could incorporate federal visions of river processes, along with contrary state hypotheses, while program sufficiency would not depend on attaining any particular program objective in any particular way. (Freeman, 2010, 372)

The Nebraska-specific milestones, as enumerated previously, are the following:

- Implementation by CNPPID and NPPD of an Environmental Account in Lake McConaughy in the form of storing an estimated 44,000 acre feet per year to be released by the EA Manager from the FWS to increase and improve target flows in the critical habitat area.
- Implementation of certain additional Water Action Plan projects within Nebraska, such as the water retiming initiative at the J-2 Re-Regulating Reservoir within the CNPPID distribution system, to further improve shortages to target flows.
- Implementation of the Nebraska New Depletion Plan to offset reductions to target flows after 1997 from groundwater irrigation that has a hydrological connection to target flows in the River.

- Acquisition of 10,000 acres of land for habitat restoration in the area within Nebraska designated as critical habitat for roosting and nesting of endangered and threatened species of bird.

Implementation of these milestones is the responsibility of the State of Nebraska, CNPPID and NPPD, and Platte River Natural Resource Districts working collaboratively with the GC and its land and water advisory committees. The water in the Environmental Account is set aside for use by the FWS in reducing shortages to target flows and managed by the CNPPID as a condition of its FERC license. Funding for land acquisition and water conservation/supply projects comes from the Program; while offsets to new (post-1997) depletions from pumping of groundwater are paid by the State of Nebraska through the purchase and lease of water rights on a willing seller/lessor basis.

The acquisition of new land is approximately 90% completed. Water conservation/supply projects are still in the design phase. The Program's "first tier" priority project is the J-2 Reregulating Reservoir at the top of the critical habitat area of the Platte River. Its planned completion date is 2013. (PRRIP, 2010, Water Action Plan Update, A-2) Retiming the storage and return of water from the CNPPID supply canal to the River contributes to reduction of target flow shortages, while maintaining a sufficient amount of water in the supply canal for hydropower and irrigation. The Nebraska Department of Natural Resources and the Central Platte Natural Resource District are currently negotiating to contribute funds to the J-2 project and to count a portion of retimed water as a new depletion offset. In addition, farmers will be paid to take land out of irrigation. The extent of irrigated acres withdrawn or retired is minimal at this stage of implementation.

First steps toward fulfillment of Program milestones have been taken by water users, even though they are convinced that any additional reductions to target flow shortages required by the FWS after the end of the first increment would severely damage the agricultural economy. Furthermore, members of the GC appear to have conflicting ideas about how to best manage the river for habitat restoration. FWS has taken the position that recovering endangered species depends on restoring as much of the natural flow regime as is possible through periodic releases of water in the form of "target flows" and "short duration high flows" to move sediment and create shallow sand bars. On the other hand, water users believe that, since terns and plovers are nesting on sand pits, there is no need to add water to the River in order to create additional sand bar habitat.

On the other side of the "Chinese Wall" Program staff are taking the first steps to develop an adaptive management plan. At this stage of implementation, they are taking steps to remove trees and brush along the River banks to extend the range of view for roosting cranes, and they are monitoring response to these changes as well as acquisition of new habitat. Staff members are also monitoring roosting and nesting behaviors on sand bars and nearby sand pits. At the present time, PPRIP is unable to test these competing management approaches in the form of research hypotheses, because the FWS has been unable to release water at volumes and rates needed to run experiments.

The problem is a "choke point" on the River at North Platte, where bridge construction, channel incision and invasive vegetative species create a narrow channel that amplifies flood conditions when releases approach volumes and rates needed to run experiments. Until the Governance Committee can find a solution to this problem, it will be virtually impossible to test different management strategies. Assuming that there is resolution of this problem, the GC will then face the daunting challenge of deliberating about the results of the adaptive management experiments and reaching consensus on how to proceed in the second increment of the Program. It is likely that members will view the data through different perceptual lenses: depending on whether they view the river as a riverine ecosystem or as a resource for hydropower and irrigation.

Conclusions and Implications for Irrigated Agriculture

This study of the PRRIP originally relied on two veins of academic literature relevant to the study of environmental collaborative governance: research on negotiated agreements among actors with conflicting core policy beliefs (Sabatier et al., 2005) and research on institutional rational choice and collective management of "common pool" resources. (Ostrom, 1990) During the course of this study, the project team added Ecosystem Based Management (Layzer, 2008) as a third theoretical framework in order to examine the dynamics of the adaptive management program. The purpose of using multiple theoretical perspectives was to arrive at a balanced assessment of the Program. Three major insights emerged from this approach:

- While a lengthy period of negotiations resulted in consensus on the PRRIP, there remain fundamental differences within the GC about the need for reductions in shortages to target flows and periodic short duration high flows. These differences are reflected in the construction of the "Chinese Wall" within the Program document, and are likely to result in major difficulties within the GC when it comes time to analyze and interpret data from adaptive management experiments.
- A long history of legal and policy decisions separating surface and ground water law and administration in Nebraska means that there are not shared social norms in place about water as a resource. This lack of shared beliefs, rules and sanctions has made it difficult to create a "common pool resource institution," thus necessitating some form of federal and state government intervention. Regulatory certainty has been a motivator keeping water users at the table, rather than a sense of joint welfare. Individual water users may benefit from leasing or selling their water rights to the state, but they are unwilling to voluntarily join with other users to assure a safe water yield for future generations
- Ecosystem Based Management (EBM) refers to environmental governance that moves from top-down regulation to horizontal stakeholder collaboration at a landscape scale based on flexible adaptive implementation. This theoretical approach could prove to be useful in explaining ecological outcomes of the Program, but only if the GC can resolve the technical and financial issues hampering implementation of adaptive management experiments, and use the results to make future management decisions.

The first increment of the PRRIP called for a reduction in shortage to target flows as determined by the FWS. Although each of the signatories made a contribution, the State of Nebraska was the focus of this study. Water in the Environmental Account used to be reserved for irrigation during periods of water shortage, but this water is now used for environmental purposes, especially target flows and short duration high flows. In the event of dry conditions, however, when water in Lake McConaughy drops below a certain threshold EA releases have to be determined by the FWS EA Manager in consultation with CNPPID and other districts. (PPRIP, 2005, Water Action Plan, Attachment 5, p. 12) Effects of water shortages are therefore shared among the environmental and surface water irrigators represented on the Governance Committee.

The second major contribution of water will come from the J-2 Reregulating Reservoir project to be owned and operated by CNPPID. This project involves retiming in lieu of actual reductions in water usage. As shown in Figure 4 of the PRRIP 2009 Water Action Plan Update, which compares water yields per proposed project with the annual equivalent cost per acre-foot, this retiming project has a higher yield at a lower cost than water leasing or other approaches. Water leasing, groundwater recharge and other conservation initiatives have lower costs but correspondingly lower yields. Availability of water from conservation is limited unless farmers remove substantial acreage from irrigation. Improvement in groundwater irrigation efficiencies may compensate for reductions in irrigated acreage; however, it has the possible unintended consequence of reducing return flows to the river thereby affecting both surface water irrigation and habitat for endangered species.

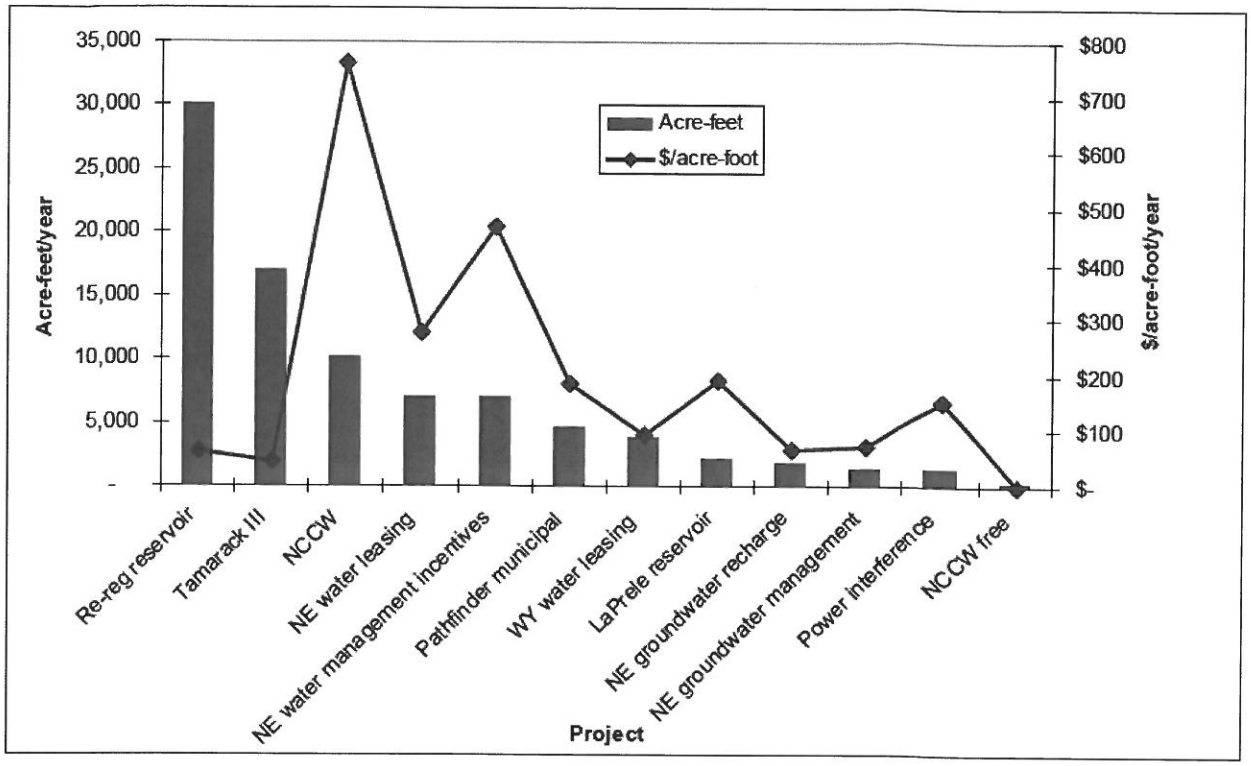

Figure 4 Comparison of Project Yields and Annual Equivalent Cost per Acre-Foot
Source: PPRIP, 2009, Water Action Plan Update, p. 28

The PRRIP is unique among environmental governance initiatives in the U.S., not only because of its governance structure, but also because it is one of the few cases of collaboration being studied while implementation is ongoing. Even though the PRRIP is in its fifth year of implementation, progress has been hampered by technical difficulties, such as the choke point problem in North Platte, and the complexities of designing a major retiming project like the J-2 Reregulating Reservoir. Underlying these technical problems is a concern expressed by all parties that second increment negotiations will expose issues that have been suppressed in deference to sustaining long-term collaborative relationships.

As the Program approaches the half-way mark of its first increment, it is essential to continue to assess its capacity to balance environmental and agricultural concerns by addressing the following:

1. Results of adaptive management experiments and water action plan projects in Nebraska.
2. Results of program implementation in the other two signatory states, Colorado and Wyoming.
3. Governance Committee decisions affecting management of the river based on those results.
4. Negotiations of a second Program increment starting in the next several years.
5. Lessons from other efforts to balance environmental and agricultural demands on water use.

APPENDIX A

Methodology

This seed grant project was a case study of the Platte River Recovery Implementation Program that examined implementation to date in Nebraska. The research design proposed to use alternative perspectives in order to arrive at a balanced assessment of the program's capacity to resolve competing uses of water in the Platte River basin. The methodology proposed a literature review, a document analysis, and in-depth interviews with federal and state officials, as well as Governance Committee members and staff who have been, or are currently, actively involved in program implementation. The project team completed ten in-depth interviews during a three-week period in March and April 2012, and they visited sites of adaptive management monitoring and a proposed water retiming project. The major research questions, sources of data, and field study guide approved by the UNMC/UNO IRB are at the end of Appendix A.

This study originally relied on two veins of academic literature relevant to the study of environmental collaborative governance: research on negotiated agreements among actors with conflicting policy core beliefs based on the work of Paul Sabatier and colleagues; and work on collective management of Common Pool Resources by Elinor Ostrom and her colleagues. After the study began, the team added a third perspective, the work of Judith Layzer on Ecosystem Based Management. Appendix B contains the specific academic references. A matrix based on the Common Pool Resource literature was used to organize field notes for water conservation projects; while a matrix from the Ecosystem Based Management framework was used to organize field notes for adaptive management experiments. (See Parts A and B of the Field Study Guide appended to major research questions and data sources at the end of Appendix A.)

The two theoretical matrices are also at the end of Appendix A. While the original purpose was to examine a single, complex case study from multiple perspectives, the project team discovered that the Program was not yet at the point of implementation where these theoretical frameworks could be helpful in understanding program dynamics. It is too soon for a fair "test" of whether the collaborative governance process has created sustainable relationships among Governance Committee members that will be necessary to successfully negotiate the continuation of the Program past the first increment. The water retiming and conservation projects are still at the design stage, and more time needs to elapse if the project team is going to assess the extent to which shared norms, rules and sanctions emerge from coordination between surface and ground water providers and users. Finally, the Ecosystem Based Management framework presumes the existence of a flexible adaptive management program, but experiments must await resolution of the choke point problem in North Platte.

Platte River Recovery Implementation Program

Major Research Questions and Data Sources*

Part I

How did the controversy over water use on the Platte River develop? Describe federal and NE state government actions leading to the Cooperative Agreement? Does the CA limit legal and financial risks for environmental regulators and NE agricultural water users? Explain.

1. Documents to be identified by Mike George and placed on BB web site by Anthony Campbell
2. Secondary sources: books and articles, in particular *Implementing the Endangered Species Act on the Platte River Commons*
3. Background interviews with (Negotiator for State of Nebraska) (NE Irrigators Association) (retired U.S. BOR) and (NE Department of Natural Resources)

Part II

How is the PRRIP organized? What is the structure and function of the Program? What is the role and make-up of the Governance Committee? How is the Program staffed and financed? How do those features compare with other environmental collaborative arrangements?

1. Appendices to the 2006 Program and Mike George's matrix of large-scale ecosystem restoration projects
2. Secondary sources: books and literature on large scale ecosystem restoration projects and watershed collaborative partnerships
3. Background interview with PRRIP staff members.

Part III

How have collaborative processes influenced design and implementation of the PRRIP? What are the significant water conservation projects under way in the basin? What are the major success stories and failures in recovery of habitat for listed bird species?

1. Background documents and analyses point to two major components of the Program: defined contributions of water to in-stream flow plus offsets to new depletions of river water AND an adaptive management program that tests two alternative approaches to water and habitat management.
2. In-depth interviews and site visits to water conservation projects, including selected members of PPRIP advisory committees. See Appendix 1 for additional questions to be used for site visits.
3. In-depth interviews and site visits to adaptive management test sites, including Headwaters Corporation staff and selected members of PRRIP advisory committees. See Appendix 1 for additional questions to be used for site visits.

*Major research questions are also the interview questions for key personnel, except for Part III where additional questions are included in Appendix 1.

APPENDIX 1

Field Study Guide

Name _____

Organization Title _____

PRRIP Advisory Committee Memberships _____

(Identifiers will be held confidential)

Part A: Water Conservation Projects

1. Let's begin with an overview of the water conservation projects being implemented and in the queue. What are the physical and hydrological boundaries of each project? What organizations or districts are involved in managing each project? How is each project financed?
2. How do water savings get measured and reported? Who receives the reports? What are the results to date in achieving Program water saving milestones?
3. Explain how water savings get returned to the River or stored for future uses? Who decides how to use stored or banked water? What have been the current and likely future impacts of this project on the # irrigated acres in the project area?

Part B: Adaptive Management Test Sites

1. Let's begin with an overall description of the AM test sites. What are the major changes to river flow and/or habitat formation at each site? Who are the people by position and organization involved in developing and managing each test site? How are the projects being financed?
2. How do you document the change in habitat for listed species? Who gets that information? Are there specific habitat recovery outcomes to be achieved and, if so, who decides if they have been achieved? What are the results to date in achieving those outcomes? How have and contributions contributed to these results?
3. How will outcomes get translated into management decisions for the River? Do you think that AM is a good tool for changing management strategies?

EBM and CPR
Frameworks

	Ecosystem Based Management	Common Pool Resource Institutions
Attributes	Landscape Scale Plan	Net benefits
	Stakeholder Collaboration	Net costs
	Flexible Adaptive Implementation	Shared norms
Outputs	Pre-diversion hydrological cycle restored?	Institutional choice situations
	Reduces intensity of river management?	Improvements in joint welfare
	Results in adjustments to management practices?	New rules restricting resource use
Outcomes	Measurable environmental improvements?	Safe/sustainable yield
PRRIP	Central Platte AM project implementation	

APPENDIX B

References

Freeman, D. M. (2010). *Implementing the Endangered Species Act on the Platte Basin water commons.* Boulder: University Press of Colorado.

Layzer, J. A. (2008). *Natural experiments: Ecosystem-based management and the environment.* Cambridge: The MIT Press.

Platte River Recovery Implementation Program. (2010). *2009 Water Action Plan Update*. Kearney, NE. http://www.platteriverprogram.org/PubsAndData/ProgramLibrary/2009%20PRRIP%20Water%20Action%20Plan%20Update.pdf.

Platte River Recovery Implementation Program. (2010). *Program document*. Kearney, NE. http://www.platteriverprogram.org/PubsAndData/ProgramLibrary/Platte%20River%20Recovery%20Implementation%20Program%20Document.pdf.

Ostrom, E. O. (1990). *Governing the commons: The evolution of institutions for collective action*. New York: Cambridge University Press.

Sabatier, P. A. (2005). *Swimming upstream: Collaborative approaches to watershed management.* Cambridge: The MIT Press.

Weber, E. P. (2003). *Bringing society back in: Grassroots ecosystem management, accountability, and sustainable communities*. Cambridge: The MIT Press.

APPENDIX C: Large Ecosystem Restoration Program Comparison and Contrast Matrix

	Platte River Recovery Implementation Program (PRRIP)	Comprehensive Everglades Restoration Program (CERP)	Missouri River Recovery Program (MRRP)	Upper Mississippi River and Illinois Waterway System - (NESP)	Chesapeake Bay
Study Area or Extent (Sq. Miles and River Miles)	North Platte & South Platte River Basins 54,000 mi^2. 1,100 river miles	South Florida Ecosystem: Kissimmee River, Lake Okeechobee, Everglades, and Estuaries, 18,000 mi^2.	Missouri River Basin and Tribes with focus on mainstem river and floodplain, 530,000 mi^2, 2,300 river miles	Upper Miss and Illinois Rivers and associated floodplain, 4,000 mi^2, 1,200 river miles	Bay estuary 2,300 mi^2. Watershed 64,000 mi^2.
States	3 states pact (CO, WY, NE) Work in 1 state (NE)	1 state(FL)	10 states (MT,WY,ND,SD, MN,CO,NE,IA,KS,MO) /2 Canadian provinces	5 states (MN,WI,IA,IL,MO)	6 states and DC (DE, VA, NY, PA, MD, WV)
Sponsor-Cost Sharing Status	DOI $157M CO&WY $30M No funding from NE	South Florida Water Management District - 50/50 cost share including O&M	100% Federal - Partnership with USFWS	100% Fed. With Nav. Tie and Fed lands; 65/35% sponsor: MN, WI, IL, IA, MO, NGOs (TNC)	No funding source identified
Funding Source	DOI; States	Corps (CG)	Corps (O&M and CG)	Corps (GI)	EPA; States
Regulatory Driver	ESA	CWA	ESA	FWCA	CWA
Authorization	ESA and 1997 Cooperative Agreement endorsed by Consolidated Resources Act of 2008 authorizing federal share of funding	Flood Control Act of 1948 & WRDA 2000; WRDA 2007 Title VI reauthorization of several projects with updated cost estimates	Bank Stabilization and Navigation Project (1912) and subsequent Mitigation authorizations in (1986 & 1999); WRDA 2007 Sec 5018 auth system study & coord	1,010 (50 yrs.) 225 (15 yrs.)	Not determined. Done on a state by state basis.
Unique Governance Structures / Approach	Program is implemented with a private, for profit corporation with the 10 member Governance Committee that is a stakeholder group including State and Federal agency members as well as water users and environmental groups	Quality Review Board - Corps/SFWMD lead; Design Coordination Team - Corps/SFWMD lead; Consultation with the South Florida Ecosystem Restoration Task Force, Including Working Group and Science Coordination Group	Missouri River Recovery Implementation Committee authorized in Sec 5018 WRDA 2007. Formal membership includes State & Federal agencies, Tribes, and various interests to advise Corps on Ecosystem Restoration Study and Recovery Program.	Relationship to existing Environmental Management Program and monitoring activities	State pacts have not been collectively funded with each State using its own sources and regulations. EPA has provided some minor grants.

Source: Mike George, U.S. Fish and Wildlife Service