2016

THE RAINWATER BASIN JOINT VENTURE

Annual Report

RAINWATER BASIN
JOINT VENTURE
ESTABLISHED 1992

The Rainwater Basin Joint Venture (RWBJV) works at the center of the central flyway. The geography of our administrative area is as varied as the migratory birds that rely on this region. Nebraska's Sandhills, the hemisphere's largest dune system, are a mostly-intact grassland, while the Rainwater Basin Region is dominated by irrigated row crops. Regardless of differences in these and other landscapes, the RWBJV partners find solutions to that allow quality habitat to be part of the private landowners farm and ranch operations. These solutions require a diverse and growing number of partners, including individuals and organizations comprising government agencies, agriculture associations, non-government organizations, corporations, academic institutions and others. Our respective missions and purposes may differ, but we share a common interest: the future of the waters, soils, and other resources that make this a special place.

As a result of this diverse partnership,

THE RWBJV PARTNERS WERE ABLE TO LEVERAGE $ $8.4 MILLION DOLLARS AND MADE A POSITIVE IMPACT ON 88,775 ACRES.

This is a tenfold increase in our acres, with a majority being prescribed fire and grassland enhancement activities in the Central Loess Hills and Sandhills. The partners have continued to actively pursue projects in the Rainwater Basin, with a majority of the funds being spent in this region where our work began in 1992. In the following pages you will see the diversity of projects that the partners have implemented to successfully contribute to the RWBJV Implementation Plan objectives.

Our work would not be possible without the contributions of major funding partners, including Ducks Unlimited, the National Fish and Wildlife Foundation, the Nebraska Environmental Trust, the Nebraska Game and Parks Commission, U.S. Fish and Wildlife Service, Natural Resources Conservation Service, Farm Service Agency, Pheasants Forever, the Sandhills Task Force and the North American Wetlands Conservation Council. In particular, the Nebraska Environmental Trust has been a mainstay in the funding of our on-the-ground habitat work since the partnership's earliest years. The non-federal match provided by their grants is often essential to receiving federal dollars, and is thus invaluable to the RWBJV and other conservation groups across Nebraska.

Photo: Andy Bishop
Cover Photo: Tim Smith

Photo: John Denton

DUCKS UNLIMITED: ROUNDOUT ACQUISITION AND RESTORATION

Ducks Unlimited, Inc. (DU) was founded in 1937 as a volunteer-driven, non-profit habitat conservation organization that conserves, restores, and manages wetlands and associated habitats for North America's waterfowl and other wetland-dependent wildlife. In Nebraska, DU has approximately 13,000 members. Conservation work in Nebraska by DU is conducted primarily within the landscape conservation priority areas identified by the North American Waterfowl Management Plan to provide spring migration habitat for migrating waterfowl and waterbirds. The Rainwater Basin and Platte River are primary focus areas, with additional work in the Southwest Playas, Missouri River, and Sandhills. Fee-title acquisition of "roundout" properties in the Rainwater Basin, revolving lands, and conservation easements are DU's primary habitat protection strategies in these areas. Many times these acquisitions are facilitative, since government entities cannot move as quickly as DU to purchase properties, which means that without DU's involvement, these important conservation opportunities would be missed. DU (through its Wetlands America Trust) is recognized as an important conservation landowner, since all areas acquired via fee-title are open to the public for hunting and outdoor recreation activities. At any given time DU owns multiple tracts that collectively encompass 1,000s of acres. DU also conducts wetland restoration and enhancement projects via cost-share on the aforementioned protected habitats, important private wetlands, and other lands owned by our partners such as the Nebraska Game and Parks Commission, U.S. Fish and Wildlife Service Rainwater Basin Wetland Management District, and other NGOs. Most of this would not be possible without the facilitation and assistance of the Rainwater Basin Joint Venture (RWBJV). Given that the land base of Nebraska is primarily private and agicultrually based, our goal, which we share with the RWBJV, is to always find solutions that work for both wetland conservation, agricultural producers, and ranchers. Without the RWBJV, DU's conservation impact would be mimimal.

The Heron Waterfowl Production Area (WPA) and roundout restoration was made possible through funding from the North American Wetlands Conservation Act (NAWCA), DU, Nebraska Environmental Trust, U.S. Fish and Wildlife Service, and RWBJV. DU, using NAWCA funding, purchased the 50-acre parcel containing the remainder of the wetland footprint of the large wetland basin at Heron WPA. This allowed for the removal of a road that was impedeing hydrology of the 217-acre wetland. Additionally, a pit on the WPA was filled, which will allow runoff to spread shallowly across the wetland footprint instead of concentrating in an area too deep for dabbling ducks and waterbirds to feed. A fence berm was installed to avoid additional flooding on the neighbor's land. This year, our partnership with RWBJV allowed us, along with other partners, to complete 8,661 acres of conservation within the Rainwater Basin.

DUCKS UNLIMITED

Photo: Gayle Marsh

FSA: HELPING NEBRASKA LEAD THE WAY IN CONSERVATION

The mission of the Farm Service Agency (FSA) is to serve all farmers, ranchers, and agricultural partners through the delivery of effective, efficient agricultural programs for all Americans. The Conservation Reserve Program (CRP), Conservation Reserve Enhancement Program (CREP), and State Acres for Wildlife Enhancement (SAFE) are three conservation programs administered by the FSA that have been extensively implemented by the Rainwater Basin Joint Venture partners. The CRP is a 10–15 year program that provides agriculture producers a yearly rental payment on environmentally sensitive land that has been reseeded back to plant species that will improve environmental health and quality. In Nebraska nearly all of the recently enrolled acres have been seeded to native grass and forb species. The CREP is a part of the CRP. It targets high-priority conservation concerns identified by the lead state, and through the leveraging of non-federal funds, effectively addresses these concerns. In Nebraska, CREPs have been developed to assist the state with Platte and Republican River water issues and to promote habitat for quail, pheasants, and prairie grouse. The SAFE is also part of CRP. It is focused on maximizing CRP enrollments to benefit priority wildlife species. In Nebraska SAFE enrollments have been developed to benefit Northern Bobwhite Quail, Greater Prairie-Chickens, and Ring-Necked Pheasants.

In Nebraska, the Nebraska Game and Parks Commission (NGPC) and Pheasants Forever have been very active in assisting FSA with marketing the CRP options described above. To help focus marketing and outreach to eligible producers, the Rainwater Basin Joint Venture developed several Geographic Information System (GIS) models. The first was the highly erodible lands layer, and the second identified grassland bird conservation areas or landscapes where increased enrollment in CRP would have the greatest benefit for priority grassland birds like Greater Prairie-Chickens and Sharp-Tailed Grouse. These models were used to develop a mailing to 40,000 landowners that qualified for the different CRP programs. As a result of this marketing Nebraska led the nation in Grassland CRP enrollment, has filled all of its SAFE allocations, and has enrolled 85% of their allocated acres for the Highly Erodible Land Initiative.

FSA
FARM SERVICE AGENCY

Photo: Joanna Pope, NRCS

LANDOWNERS MAKE THE DIFFERENCE IN NEBRASKA CONSERVATION

The Rainwater Basin Joint Venture (RWBJV) geography encompasses 34.7 million acres, including 20.3 million acres of grassland, 9.3 million acres of cropland, and 2.3 million acres of wetlands. With 97% of the RWBJV in private ownership, a majority of the habitat is owned and managed by farmers and ranchers. Therefore bird conservation in the RWBJV Administrative Area is directly tied to the quality of habitat on private working lands. The RWBJV geography varies greatly between regions. For example, the Sandhills are an intact grassland system interspersed with millions of acres of wetlands, while the Rainwater Basin (RWB) is dominated by row crop agriculture. Fortunately the farmers and ranchers across these geographies have a strong conservation ethic. Their willingness to enter into conservation projects is a direct reflection of their commitment to stewardship of their lands.

As part of the 2013 RWBJV Implementation Plan revision, the partnership expanded on the habitat goals established for the RWB and established new habitat objectives for the other six geographic focus areas in the RWBJV Administrative Area. The RWBJV partners have embraced these objectives and collaborated with private landowners to develop multiple conservation projects in the RWB and other focus areas in the RWBJV Administrative Area.

In the RWB, 14 landowners agreed to fill 16 abandoned irrigation reuse pits in the watersheds of public wetlands managed by Nebraska Game and Parks commission or U.S. Fish and Wildlife Service, as well as the watersheds of wetlands enrolled in the Natural Resources Conservation Service's Agricultural Conservation Easement Program. Filling these pits is expected to positively impact 160 acres of public and private wetlands. These projects cost approximately $300,000, with landowners contributing approximately $38,000. Ten landowners worked with RWBJV partners to construct infrastructure so wetlands could be grazed. Grazing promotes desired habitat conditions and allows the wetlands to be a productive part of the farm or ranch operation. To successfully implement these measures, the landowners provided $35,000 towards development of the infrastructure.

In collaboration with the Sandhills Task Force the RWBJV was able to support lake renovations, wetland restoration, and grassland enhancement in the Sandhills. With the cooperation of multiple landowners, 298 acres of Sandhills lakes were renovated through removal of common carp. Water control structures and fish passages were installed to reduce potential infestation in the future. Approximately 21,120 linear ft. or about 4 miles, of stream were restored by re-contouring the channel and constructing checks as well as grade stabilization features. Grassland enhancement activities were implemented to positively impact 7,110 total acres. In addition, over 9,920 acres of eastern red cedar were cut on private ranches in the Sandhills. Collectively landowners contributed $80,900 to these projects.

Pheasants Forever has collaborated with five adjacent landowners in the Central Loess Hills to generate a burn plan that will allow nearly 2,000 acres to be burned through the Prescribed Fire Training Exchange. As part of this training exchange wildland firefighters from across the country will come to assist with the prescribed fire. This large scale fire will help demonstrate that prescribed fire can be safely implemented on private lands and will show how neighbors can help neighbors with prescribed fire. As part of the fire preparation the landowners deferred grazing to build fuel loads and mowed fire breaks and fire lines. Prescribed burning in the Central Loess Hills will be critical to getting ahead of the region's eastern red cedar invasion.

Photo: Tim Smith

NEBRASKA ASSOCIATION OF RESOURCES DISTRICTS: PROJECTS BENEFIT IRRIGATORS AND WETLANDS

The Nebraska Association of Resources Districts (NARD) is the trade association for Nebraska's 23 Natural Resources Districts (NRDs). Our mission is to assist NRDs in a coordinated effort to accomplish collectively what they may not be able to accomplish individually to conserve, sustain, and improve our natural resources and environment. Natural resource issues frequently cross political boundaries. NARD helps the state's NRDs approach these issues in a coordinated effort. The NARD and NRDs help Nebraskans respond to natural resource challenges with local control and local solutions. Often, we build partnerships with other agencies and organizations, including the Rainwater Basin Joint Venture (RWBJV), to help address natural resource challenges.

The NARD has partnered with the RWBJV on two Nebraska Environmental Trust Grants: Divots in the Pivots and Rainwater Basin Wetland Reserve Enhancement Program (WREP) Special Initiative. The Divots in the Pivots grant focuses on maximizing irrigation inputs, restoring wetlands, and recharging the aquifer. One of the main resources the NRDs have the authority to manage is water. Water is vital to life and to Nebraskans. NRDs have local leadership responsibilities for protecting groundwater from overuse and pollution. The goals of the Divots in the Pivots grant also support work the NRDs do to protect our water resource and help enhance the partnership with the NARD and the RWBJV.

The WREP is both a protection and restoration program. Protection occurs through a conservation easement that precludes wetland drainage, tilling the uplands, or building permanent structures. Wetland restoration is accomplished by removing fill material and filling concentration pits, and/or surface drains. This program enrolled 25 tracts in the WREP program, encompassing nearly 1,000 acres, and implemented a variety of solutions to ensure the WREP enrollment would not negatively impact irrigation of adjacent upland cropland, while protecting and restoring wetlands.

Wetlands are important features in the landscape that provide numerous beneficial services for people and for fish and wildlife. Some of these services, or functions, include protecting and improving water quality, providing habitat for wildlife, storing floodwaters and maintaining surface water flow, and recharging aquifers. The groundwater recharge function of wetlands is an important consideration in developing wetland conservation policies. Recharge from wetlands may be small but it's important for sustaining groundwater resources. Because of this, the partnership between the NARD, NRDs, and the RWBJV is vital to protecting and managing our water resource. This partnership allows us to work collaboratively together with each organization, bringing a different perspective to the table while all work supports numerous goals. It's really a win-win for all partners involved.

Nebraska's Natural Resources Districts
www.nrdnet.org
Protecting Lives • Protecting Property • Protecting the Future

Photo: Tim Smith

NEBRASKA GAME AND PARKS COMMISSION: RWBJV PARTNERS HELP ACHIEVE OUR STEWARDSHIP MISSION

The Nebraska Game and Parks Commission's (NGPC) mission is the "Stewardship of the state's fish, wildlife, park and outdoor recreation resources in the best long-term interest of the people and those resources." The role of the Management Section in this mission is to manage Wildlife Management Areas (WMAs) to provide hunting, trapping and fishing opportunities, provide the public with an opportunity to experience wildlife and their habitats within a natural outdoor environment, enhance and maintain habitat for the benefit of wildlife, fish and plant species and preserve natural plant communities and native plant and wildlife species. WMAs in the Rainwater Basin (RWB) are primarily managed for waterfowl and water birds to provide the necessary habitat components such as food and water to sustain these birds during migration. Because of the uncertainty of rainfall and snow melt, the NGPC provides supplemental water (groundwater and surface water) to increase ponding frequency during spring and fall migration. Infrastructure such as wells, motors, electrical power supply lines, pipelines and water control structures are often needed to supply this supplemental water, but are costly and can strain budgets. The Rainwater Basin Joint Venture (RWBJV) partnership has been instrumental in providing funds to develop infrastructure on wetlands to provide supplemental water, as well as funding other habitat improvements.

A good example of the RWBJV partnership's contribution in this effort includes drilling new wells and installing motors and pipeline on Hidden Marsh and Flatsedge WMA's. The wetland basins on these areas have been unreliable in ponding water during waterfowl migration, but with the development of these water delivery components, ponded water is now available. The partnership also provided funding for running electrical power supply lines to a well on Sacramento-Wilcox WMA. The cost of wells and motors ranges from $40,000 to $70,000; therefore funding assistance is instrumental in developing this infrastructure in a timely manner. Funding was also provided for invasive tree removal on Pintail and Renquist WMA, reed canary grass disking on Flatsedge WMA, glyphosate spraying on 21 different WMA's in Clay, Fillmore, Hamilton, Harlan, Phelps Seward and York counties, and fence construction on Spikerush WMA to facilitate grazing of the wetland. These habitat practices establish and enhance habitat on these areas and make them more attractive to waterbirds.

Recognizing that Nebraska is 97% privately owned, the NGPC also has a Partners Section dedicated to private lands conservation in the Wildlife Division. Because these projects are on private lands, Partner Section biologists strive to find those "win-win" solutions that allow wetlands and wildlife habitat to fit into agriculture operations. The Watershed Restoration Initiative (WRI) and Working Lands Initiative (WLI) are two examples.

The focus of the WRI is to restore watershed function to maximize runoff into publicly owned wetlands or private wetlands enrolled in perpetual conservation easements. The primary strategy is to fill abandoned irrigation reuse pits in the watersheds. Pits were excavated to maximize efficiency in gravity irrigation systems by capturing excess water. A pump and pipeline moved the water to the upper end of the field to be reapplied. With the widespread adoption of pivot irrigation, most pits are no longer needed, but unfortunately they continue to capture runoff before it can reach the downstream wetland. The RWBJV has developed a model to prioritize watershed restorations by identifying irrigation reuse pits close to priority wetlands and with a large storage capacity. Following this approach the NGPC, in cooperation with RWBJV partners (Nebraska Environmental Trust, U.S. Fish and Wildlife Service, Natural Resources Conservation Service), has filled seven pits under the Pintail WMA project since 2012, including five in 2016.

The playa wetlands and mixed-grass prairie communities found in the RWB evolved under the influences of grazing by ungulates (bison, deer, pronghorn, and elk), fire, drought, and other climatic forces. Incorporation of grazing into management of RWB wetlands is the primary goal of the WLI. Grazing is a cost positive tool, meaning it generates income rather than costing to implement, and grazing replicates a natural ecological process.

Photo: Mark Hoeffer

Multiple WLI projects have been developed across the RWB. The Hawes tract in York County is one example. As part of this project, perimeter fence was installed and livestock watering features were developed. Today this tract is grazed by a local producer through an agreement with the landowner, following a Natural Resources Conservation Service grazing plan designed to enhance the wetland's function and value to migratory waterbirds and other resident wildlife. This site is adjacent to the Marsh Duck WMA, thus adding scale and habitat quality on both public and private lands.

NEBRASKA GAME PARKS

Photo: Ele Nugent

NRCS: WETLAND CONSERVATION THAT BENEFITS AGRICULTURE AND WILDLIFE

The United States Department of Agriculture's Natural Resources Conservation Service (NRCS) offers technical and financial assistance to help landowners improve and restore Rainwater Basin wetlands. This assistance helps producers plan and implement a variety of conservation practices that benefit the landscape and many wildlife species. The agency's staff and conservation partners work with producers to develop a conservation plan. Each plan focuses on implementing conservation practices to improve agricultural operations while improving and restoring wetlands. These plans provide a roadmap for how to use a suite of conservation practices to meet natural resource and production goals.

Meeting a producer's production goals while restoring wetlands is especially important in the Rainwater Basin where wetlands are often located in the middle of cropland. If wetland restoration comes at the expense of producing a crop, most farmers can't afford to make that sacrifice.

NRCS has worked with partners like the Rainwater Basin Joint Venture to develop conservation programs for an agricultural environment. The Wetlands Reserve Enhancement Partnership (WREP) is an example of a conservation program that can add value to wetland acres, reducing crop and profit losses on wetland acres, while restoring wetlands for the benefit of wildlife.

WREP provides technical and financial assistance to eligible landowners to address wetland, wildlife habitat, soil, water, and related natural resource concerns on private lands in an environmentally beneficial and cost-effective manner. The program provides an opportunity for landowners to receive financial incentives to restore, protect, and enhance wetlands in exchange for placing marginal land into a conservation easement, while maintaining irrigation flexibility on surrounding cropland.

In WREP, landowners retain their rights to pass center pivot irrigation systems through restored wetlands, thus creating a viable option for producers coping with marginal cropland production areas. Not only does the program provide an option for acres prone to drown out, but having the ability for their center pivot to cross a wetland helps to incorporate those wetland acres into an overall farm operation The number of applications received in 2016 more than doubled 2015 applications, demonstrating there is an interest, and this program is meeting the needs of landowners and providing wetland habitat for wildlife.

NRCS
Natural Resources Conservation Service

Photo: Ben Wheeler

PHEASANTS FOREVER AND QUAIL FOREVER

Pheasants Forever (PF) is dedicated to the conservation of pheasants, quail and other wildlife through habitat improvements, public awareness, education and land management policies and programs. PF and its quail division, Quail Forever (QF), have a unique grassroots system of fundraising and project development that allows members to see the direct result of their contributions. The organizations empower county and local chapters with the responsibility to determine how 100% of their locally raised conservation funds will be spent. As a result, chapter volunteers are able to see local results, while belonging to a larger national organization with a voice on federal and state conservation policy. In Nebraska, there are 60 PF and 4 QF chapters with 11,000 members. These chapters along with the 25 staff have worked with partners to enhanced over 4 million acres of habitat since inception.

PF and QF work with partners to accomplish much of the organization's goals. The development of the partnership biologist positions has been critical to getting conservation on the ground. Nebraska PF employs 12 Farm Bill Wildlife Biologists and 5 Coordinating Wildlife Biologists around the state. The Farm Bill Biologist position is a partnership position between PF, Nebraska Game and Parks Commission (NGPC), and Natural Resource Conservation Service (NRCS). These biologists are housed within NRCS offices and work to provide technical assistance to landowners through the federal Farm Bill programs such as the Conservation Reserve Program (CRP). These biologists are also instrumental at marketing CRP to eligible producers. To provide information and promote the program, these biologists hosted 56 landowner meetings to highlight the CRP sign-up process and answer landowner questions. As a result of this approach to program outreach, Nebraska had one of the most successful CRP sign-ups in the nation. The Rainwater Basin Joint Venture (RWBJV) provided the GIS expertise to identify landowners that if enrolled would have the greatest benefit for grassland birds.

Coordinating Wildlife Biologists are collaborative positions that are shared between the NGPC, PF, and in some cases the NRCS. Each Coordinating Wildlife Biologist Position is structured to match regional geography, opportunities, and goals. For example, the Central Loess Hills Coordinating Wildlife Biologist focuses largely on implementation of the goals and objectives outlined in the Nebraska's State Wildlife Action Plan, the Nebraska Natural Legacy Plan. As a result, much of the his work is dedicated to implementation of prescribed fire to maintain healthy grasslands and control invasive woody species like eastern redcedar. He oversees private land projects to assist ranchers with mechanical control eastern redcedar and oversees a nationally recognized prescribed fire training exchange program. This unique event brings together wildland firefighters from across the world to hone their prescribed fire skills. The Coordinating Wildlife Biologist works with multiple adjacent landowners to develop a single burn plan that will impact 1,000s of acres on contiguous grasslands. The results are a win-win; the firefighters gain valuable skills and experience, 1,000's of acres of grassland are rejuvenated, invasive species are controlled, habitats of grassland obligate species are restored, and the landowners see firsthand how large-scale prescribed fire can be safely implemented on the landscape. The RWBJV assisted with this project by developing greater prairie chicken models that identify core habitat. These models have been used to help focus implementation of the prescribed fires. The RWBJV also is administering a Nebraska Environmental Trust grant that provides funding for mechanical control of eastern red cedar, deferred grazing payments to ensure sufficient fuel loads, and financial assistance for firefighters assisting with the prescribed fires.

PHEASANTS forever
The Habitat Organization

Photo: John Thorburn

TRI-BASIN NATURAL RESOURCES DISTRICT AND THE CITY OF HOLDREGE, NEBRASKA LAKE SELDOM WILDLIFE REFUGE

Tri-Basin Natural Resources District is responsible for protecting the soil and water resources of Gosper, Phelps and Kearney counties. Tri-Basin Natural Resources District (NRD) has worked with the Rainwater Basin Joint Venture (RWBJV) and private landowners on many projects to protect and restore wetlands and grasslands since the Joint Venture was initiated in 1992. Our most prominent and enduring success, however, has been on public land: the Lake Seldom Wildlife Refuge, owned by the City of Holdrege.

The Lake Seldom complex consists of approximately 325 acres of wetlands and grasslands on the south edge of town. The Lake Seldom wildlife refuge would not exist without the assistance provided by the RWBJV and its partners. Most of this land was in private ownership when the project was initiated in 1997. RWBJV partners, with assistance from the Nebraska Environmental Trust and the National Fish and Wildlife Foundation, purchased two tracts and donated them to the city with deed restrictions to prevent development. The RWBJV also assisted in securing grant funds to restore the wetland footprint and fill re-use pits.

Tri-Basin NRD manages the Lake Seldom wildlife refuge on behalf of the city. The RWBJV recently worked with the city, the NRD, and Ducks Unlimited to develop a new management plan for the property. Ducks Unlimited provided engineering assistance and the Joint Venture secured grant funds to help pay for livestock fencing, earth moving and other improvements that will enhance wildlife habitat and simplify management for the NRD. Tri-Basin NRD is very appreciative of all the assistance provided by the RWBJV on this and many other wildlife habitat projects over the past two decades.

Tri Basin Natural Resources District

Photo: Chris Helzer

THE NATURE CONSERVANCY: COOPERATING WITH PARTNERS IN THE SANDHILLS

The Nature Conservancy's mission is to conserve the lands and waters on which all life depends. We are a statewide nonprofit organization with 65,000 acres of ownership and 27,000 more with easements or deed restrictions. Our goal is to use good science, innovative thinking, and on-the-ground experimentation to create solutions that work for nature and people. It's important to us to work with local partners and communities. We own and manage land to influence others and thereby advance the conservation of biodiversity at large scales.

For that reason, the Conservancy is grateful to work alongside the Rainwater Basin Joint Venture (RWBJV) and its many partner agencies. Without the pooling of resources and knowledge that is shared through the JV, none of us would be as effective. For example, as one of the last strongholds of intact, natural grassland habitat in the world, our Nebraska Sandhills are full of plant and animal life. The Nature Conservancy believes strongly that the protection of this ecoregion is crucial, and one of the smartest things we can do is collaborate with and support the ranchers who have kept these grasslands in good health. The conservation efforts of the RWBJV have resulted in larger grant dollars for private lands management, a critical goal shared by the Conservancy. This has directly resulted in improvement of the habitats upon which so many birds depend. Our own efforts at TNC-owned 56,000-acre Niobrara Valley Preserve and across the Sandhills are informed by the modeling, monitoring, and research work of the RWBJV.

The Nature Conservancy
Protecting nature. Preserving life.™

Photo: Andy Bishop

UPPER BIG BLUE NRD: INCORPORATING VARIABLE RATE IRRIGATION TECHNOLOGY

The mission of the Upper Big Blue Natural Resources District (UBB NRD) is to be a leader in conserving, protecting, developing, and managing the natural resources of this District for the health and welfare of the people of the District. The UBB NRD contains portions of Butler, Clay, Fillmore, Hamilton, Polk, and York Counties. This region contains some of the highest densities of Rainwater Basin (RWB) wetlands and irrigated cropland. The UBB NRD Board and staff recognize the opportunity to incorporate wetland restoration and precision irrigation technology to develop whole-field solutions that could provide multiple benefits including habitat for wetland-dependent species, reduction in irrigation applications, and increases in net-farm income for the producer.

As part of this approach the UBB NRD is currently working on a cost-share program focused on promoting the use of Variable Rate Irrigation (VRI) in fields that contain wetland areas. VRI is a precise control of irrigation inputs through retrofitting an existing pivot irrigation system. This technology ensures a more natural wetland hydroperiod by avoiding application of excess water, while also maximizing crop production by applying irrigation inputs to locations in the field that are in water deficit. VRI systems include modifications to the valves and sprinklers, plus GPS and specialized software at the pivot panel. Together, these upgrades allow producers to control when nozzles are turned on and off, according to their location in the field. Soil moisture probes, along with precision mapping, allow the producer to understand in real time how much moisture is needed, and where.

The UBB NRD is working in conjunction with the Rainwater Basin Joint Venture (RWBJV) in hopes of obtaining funding through the Natural Resources Conservation Service's Regional Conservation Partnership Program to implement VRI. If awarded, funds can be used to equip 5–10 center pivot systems with VRI technology in wetland areas identified in the uppermost portion of the Big Blue River Basin.

Photo: Greg Wright

U.S. FOREST SERVICE – NEBRASKA NATIONAL FORESTS AND GRASSLANDS

The mission of the U.S. Forest Service is to sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations. The Rainwater Basin Joint Venture (RWBJV) helps the Forest Service achieve these goals by providing technical expertise and funding opportunities that further the agency's mission. In the spirit of partnership, the Forest Service and RWBJV have worked collaboratively to find innovative solutions for today's conservation challenges. In Nebraska, over 200,000 acres of public land in the Sandhills are managed by the Forest Service as part of the Nebraska National Forests and Grasslands (NNFG). The vast majority of these lands are managed as a natural grassland system and are within the administrative area of the RWBJV. These grassland habitats are a cornerstone for declining grassland bird populations.

In 2016, the Forest Service, RWBJV, and Sandhills Task Force were able to achieve objectives associated with the NFWF grant "Grassland and Wetland Enhancement in Nebraska's Sandhills." Grassland enhancement and mechanical removal of eastern red cedars were the primary objectives of this grant. The goal was to ensure that grazing could be implemented in a manner that would maintain plant structure and vegetation height that is most beneficial to a variety of grassland nesting birds, pollinators, and other wildlife. Innovative livestock water modifications allowed the proper rotations to be run in five grazing allotments impacting over 49,000 acres. Additionally, eastern red cedar trees were cut, mechanically and by hand, across 5,276 acres in several allotments. These trees have been piled and will be burned when weather conditions permit. Collectively development and modification of water features and the removal of eastern red cedars have helped the USFS make significant strides in achieving the objectives outlined in the Range Allotment Management Plan (RAMP) and promote desired habitat conditions on Samuel R. McKelvie National Forest. The administration of this grant by the RWBJV was instrumental.

Photo: Andy Bishop

U.S. FISH AND WILDLIFE SERVICE: IMPROVING HABITAT ON PRIVATE AND PUBLIC LANDS

The mission of the U.S. Fish and Wildlife Service (USFWS) is working with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people. To support this mission the USFWS has two divisions that actively work to support these efforts as part of the Rainwater Basin Joint Venture (RWBJV). The Division of Migratory Birds provides base operating funds to support the RWBJV partnership. The USFWS Refuge Division has two branches that contribute to RWBJV partnership objectives. The Rainwater Basin (RWB) Wetland Management District (WMD) is part of the National Wildlife Refuge System (NWRS) and manages 60 Waterfowl Production Areas (WPAs) in the RWB. The Partners for Fish and Wildlife Program (PFW), working in partnership with the RWB WMD and other conservation organizations, strives to efficiently achieve voluntary habitat restoration on private lands, through financial and technical assistance, for the benefit of Federal Trust Species.

Public lands, or those properties owned and managed by USFWS as WPAs, or by Nebraska Game and Parks Commission (NGPC) as Wildlife Management Areas (WMAs), contain less than 1% of the historic wetland area but provide 50% of the ponded habitat available to waterfowl each spring. The 60 WPAs managed by the RWB WMD account for nearly two thirds of the public lands in the RWB. These public wetlands serve as habitat cornerstones. The RWB WMD extensively manages these properties using frequent disturbance treatments that mimic historical conditions for the benefit of waterfowl and other migratory species. Additional challenges occur because of hydrologic modifications aimed at increasing agricultural production, some of which occurred prior to acquisition by the USFWS, and others that have occurred since the surrounding lands are intensively farmed. Common hydrologic modifications include land leveling, filling wetlands, excavating storage pits, installing surface or subsurface drainage systems, and altering water conveyance patterns using dikes, roads, and culverts. All of these modifications can reduce hydrologic function and create additional management challenges such as invasive or undesirable species infestations. Recognizing the negative impacts of these modifications, the RWB WMD continues to prioritize restoration work and implement effective strategies that improve hydrologic conditions. In the meantime, the RWBJV continues to provide support to control and reduce invasive plant communities.

Over the last year the RWB WMD has worked with RWBJV partners to complete restoration and enhancement activities on multiple WPAs. A few examples include Krause and Victor Lakes WPAs. At Krause WPA nearly a mile of earthen dike was removed and a concentration pit was filled to restore hydrology. At Victor Lakes WPA the restoration included filling a ditch and a concentration pit. It is likely that when these modifications were made, excavators breached the clay pan, causing increased water loss through the soil profile. RWBJV partners, including the Natural Resources Conservation Service soil scientists developed a strategy that incorporated soil chemistry into the wetland restoration design in an attempt to reseal the clay pan after filling. Engineers and soil scientists determined that fly ash could be mixed into the fill material and would chemically react with the soil to reestablish the tight bond between soil particles similar to the natural clay soil function, thus repairing the clay pan and reducing water loss through the soil profile.

At Clark and Johnson WPAs underground pipelines were installed to efficiently deliver groundwater from high capacity irrigation wells to the wetlands. These pipelines deliver water directly to the wetland footprint rather than spilling from the pump onto non-hydric soils or at great distances from the lowest portion of the wetland.

The PFW actively works in conjunction with the RWB WMD and other RWBJV partners to implement habitat restoration and enhancement projects on private lands with willing participants. Two of the primary activities the PFW program focuses on in the RWB are watershed restoration for publicly owned wetlands and wetland restoration on priority wetlands.

The Watershed Restoration Initiative (WRI) leverages the PFW expertise to develop projects with private landowners that restore watershed hydrology for public wetlands. The focus is to increase water conveyance down to the wetland by filling irrigation resuse pits, recontouring waterways, and/or replacing culverts that are impeding flows. In 2016 PFW entered into 14 agreements with landowners to fill 16 abandoned irrigation reuse pits. Total costs associated with these projects were over $299,000, and they improved water delivery to 9 WPAs, 4 WMAs, and two privately owned wetlands enrolled in a 30-year and perpetual conservation easement. These efforts improved wetland function on 160 acres. In addition, the PFW program successfully negotiated agreements with eight private landowners to restore and enhance 297 acres of wetlands and adjacent uplands. These projects leveraged nearly $250,000 in funding and utilized common restoration practices such as pit fills, sediment removal and establishment of upland grass buffers to reduce future sediment deposition rates. At several sites, perimeter fence and livestock watering facilities were developed. These infrastructure improvements allow producers to graze the wetlands and associated uplands, thereby seamlessly integrating their wetland conservation project into their operation and promoting desired habitat conditions for migratory birds. This is important, as wetlands are now being viewed as an asset to producers rather than problem areas or waste lands.

Photo: Tim Horst

INCOME AND EXPENSES

Fiscal Year ending September 30, 2016

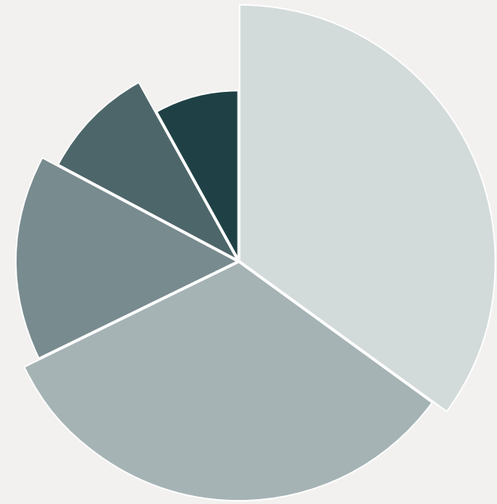
FUNDING

U.S. Fish and Wildlife Service Allocation	$449,802
Grants	
Nebraska Environmental Trust	$949,541.46
Other Grants and Funding Awards	$7,061,264.21
Total Grants and Other Funding	$8,010,805.67
Total Available Funding	**$8,460,607.67**

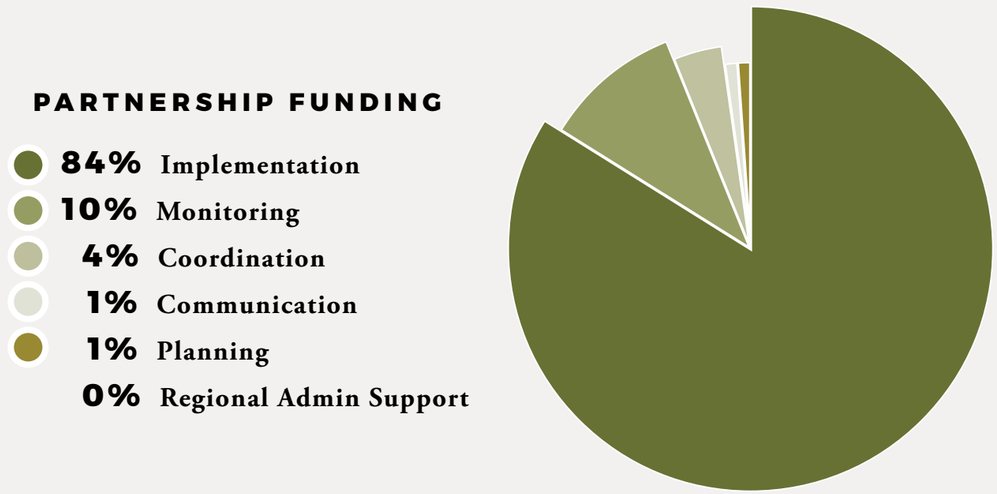
EXPENSES

Regional Overhead and Admin. Support	$34,229.16
Coordination	$329,823.80
Communication	$71,509.14
Planning	$101,985.96
Monitoring, Evaluation and Research	$826,734.70
Project Development and Implementation	$7,096,324.91
Total Expenses	**$8,460,607.67**

USFWS FUNDING ALLOCATION BY CATEGORY



PARTNERSHIP FUNDING



RAINWATER BASIN JOINT VENTURE PARTNERS INCLUDE:

RWBJV.ORG