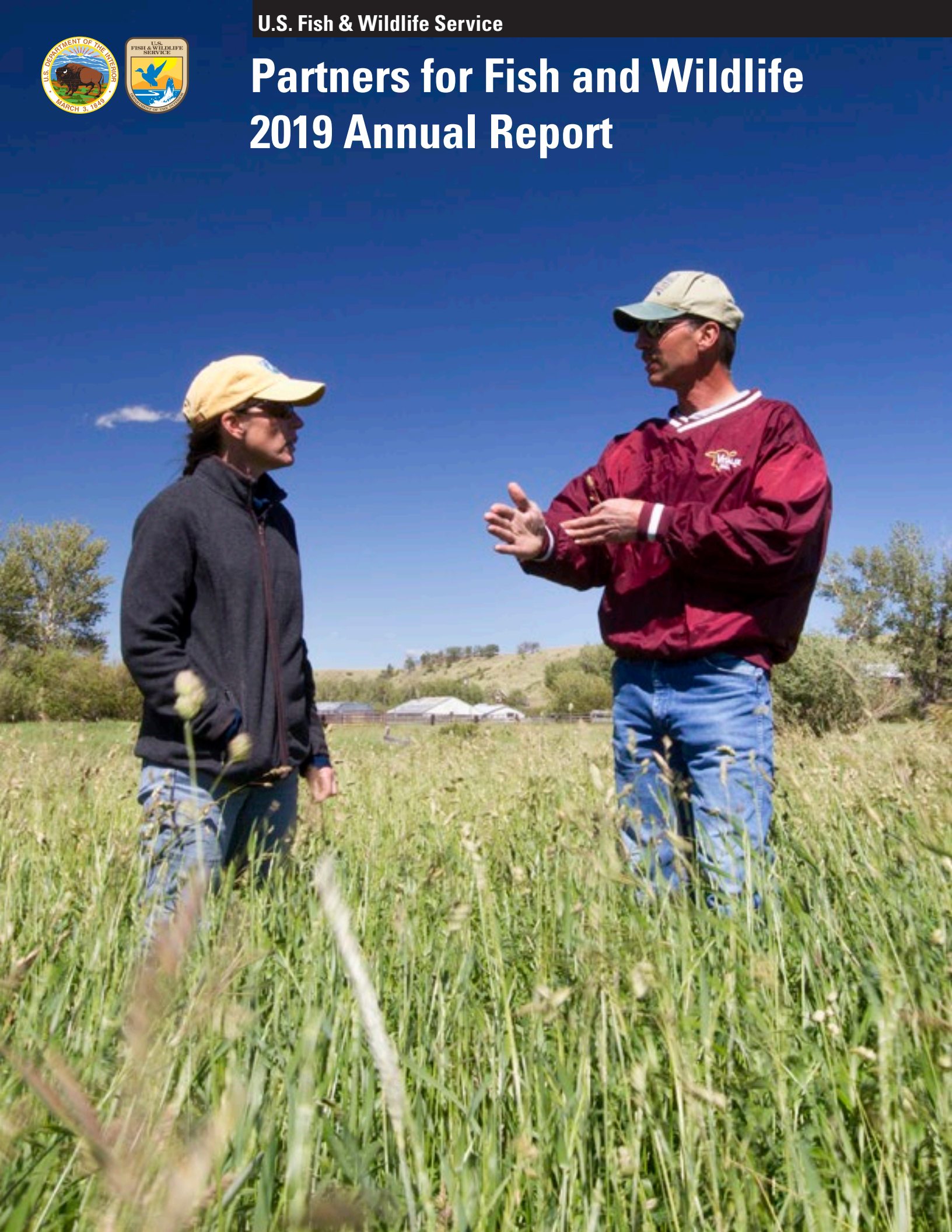
U.S. Fish & Wildlife Service

Partners for Fish and Wildlife 2019 Annual Report



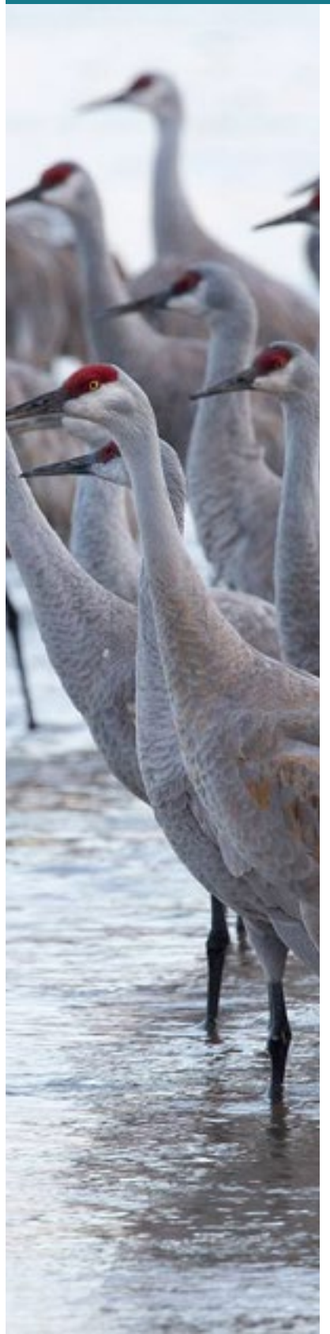
MISSION

The Partners for Fish and Wildlife Program works toward achieving the mission of the Service, working with others to conserve, protect, and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people.

Photo: 17th Annual 2019 Youth Waterfowl Hunt in South Dakota. Photo by Chuck Pyle / USFWS.

PARTNERS FOR FISH AND WILDLIFE
2019 ANNUAL REPORT

CONTENTS

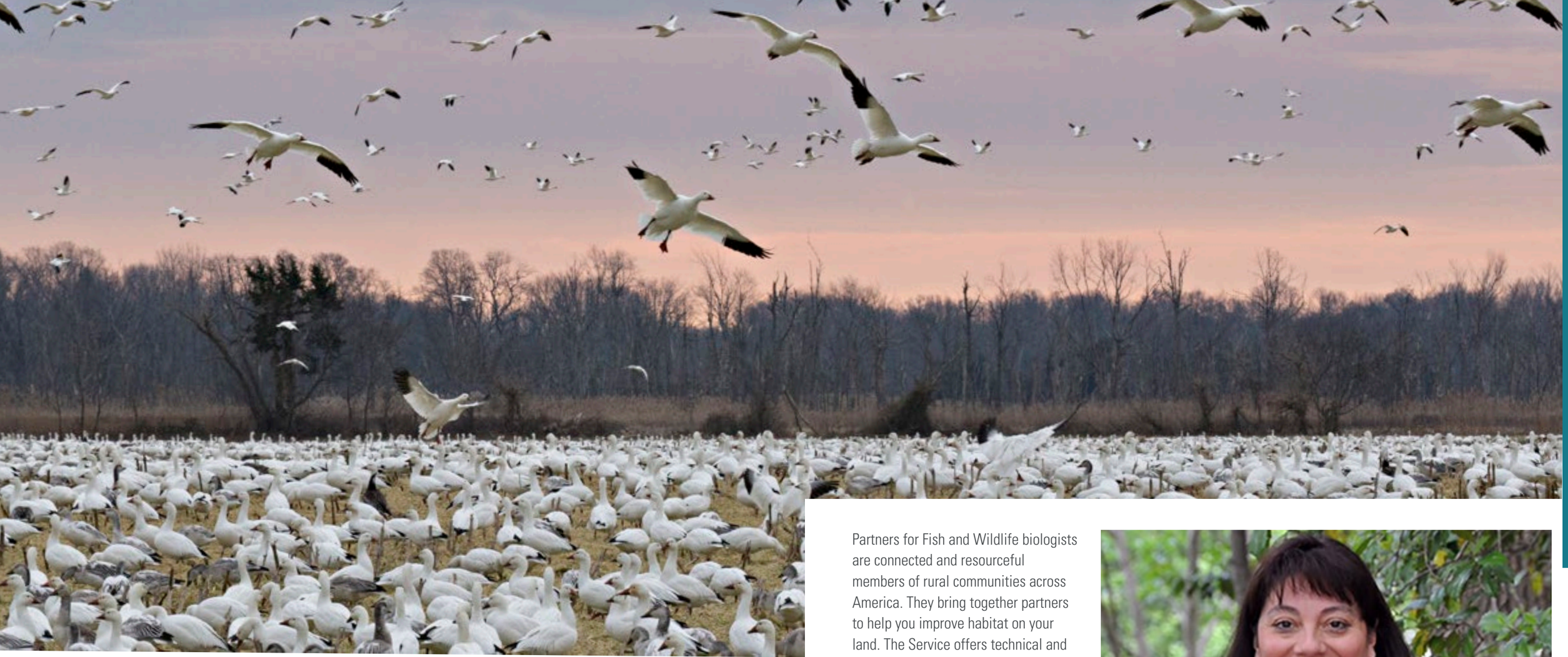


MESSAGE FROM THE CHIEF.....2-3
NATIONAL DATA 4-9
STATE DATA 10-111
CONTACT.....112-115

Partners for Fish & Wildlife

Cover Photo: Remembering biologist Sue McNeal (1959-2019). Photo by Joe Milmoe / USFWS.

Left Photo: Migrating sandhill cranes at a Partners for Fish and Wildlife restoration project site along the North Platte River in Nebraska. Photo by Joe Milmoe / USFWS.



Snow Geese on private lands bordering Prime Hook National Wildlife Refuge. Photo by Joe Milmoe / USFWS.

MESSAGE FROM THE CHIEF

Thanks to the extraordinary work of our partners and U.S. Fish and Wildlife Service staff, 2019 was another great year for the Partners for Fish and Wildlife Program and our common goal of wildlife conservation and the health of America's natural resources.

Congress reauthorized the Partners for Fish and Wildlife Program for the next five years at a level of $75 million annually. The Partners for Fish and Wildlife Act (16 U.S.C. §§3771-3774) was part of the John D. Dingell, Jr. Conservation, Management, and Recreation Act, approved by Congress and signed by the President. This historic legislation is one of the most important steps taken on behalf of conservation over the last decade.

In 2019, the Service's 240 biologists completed 2,198 wildlife habitat projects across all states and U.S. territories. In partnership with more than 2,000 landowners and 800 conservation organizations, we restored and enhanced

201,937 acres of upland habitat, 18,590 acres of wetlands and 189 miles of rivers and streams for fish, wildlife and plant species and on behalf of the American people. These voluntary conservation projects connect, enlarge and buffer national wildlife refuges and other conservation areas to create a conservation landscape for which future generations will thank us.

Partners for Fish and Wildlife biologists are connected and resourceful members of rural communities across America. They bring together partners to help you improve habitat on your land. The Service offers technical and financial assistance to design, plan and implement customized projects that meet your needs, benefitting both working lands and wildlife. If you have not yet experienced the power of conservation partnerships or visited a Partners for Fish and Wildlife project, I encourage you to contact your local biologist. All it takes is a phone call or an email to get started.

Thank you for all you do on behalf of wildlife conservation. Working together, we can achieve a yet more successful 2020.

Cynthia Martinez, Chief
National Wildlife Refuge System

USFWS National Wildlife Refuge System Chief Cynthia Martinez.

2,198
PROJECTS

$8.9M
PFW PROJECT INVESTMENT

$55.8M
PARTNER CONTRIBUTION

$64.7M
TOTAL PROJECT

$1:6.3
LEVERAGE

189
STREAM AND RIVER

201,937
UPLAND

18,590
WETLAND ACRES

84
FISH PASSAGE STRUCTURES

NATIONWIDE ACCOMPLISHMENTS

WORKING TOGETHER

With more than 2,000 landowners and 800 partnering organizations, we completed 2,198 collaborative restoration and enhancement projects in 2019.

Stream restoration project in the Big Hole focus area of Montana. Photo by Joe Milmoe / USFWS.

PFW biologist meeting with partners in central Nevada. Photo by Joe Milmoe / USFWS.

The Partners for Fish and Wildlife program provides technical and financial assistance to landowners interested in restoring and enhancing wildlife habitat on their land. Projects are custom-designed to meet landowners' needs.

Since the program's start in 1987, more than 50,000 landowners have worked with Partners for Fish and Wildlife biologists to complete 60,000 habitat restoration projects across 6 million acres.

Partners for Fish and Wildlife projects are voluntary. Participating landowners continue to own and manage their land to serve their needs while they improve conditions for fish, wildlife and plants.

The health of the country's fish and wildlife populations depends on private landowners, who manage more than two-thirds of the country's land. Many Partners for Fish and Wildlife projects take place on working landscapes such as forests, farms and ranches. Our goal is to keep lands working: increasing sustainability and yield while improving habitat for wildlife. We focus our efforts on areas of conservation concern, such as upland prairies, wetlands, rivers and streams. Projects range in size and scope and benefit federal trust species including migratory birds, endangered, threatened and at-risk species.

2,000
New Landowners Enrolled in 2019

220,527
Private Landowner Acres Restored in 2019

$1:6.3
Federal Dollars Leveraged with Partners

FARM CONSERVATION

Keeping Working Lands Working

Rural landowners are some of our most important partners in conservation. By working in the right areas and applying best available science, wildlife conservation and sustainable agriculture can fit together like hand in glove.

USFWS photo.

The Farm Conservation program serves as a liaison to the U.S. Department of Agriculture, providing technical assistance in the development, implementation and evaluation of Farm Bill conservation programs to ensure shared conservation goals are met, maximizing the benefit to Federal Trust species. By working with our nation's farmers, ranchers and forest landowners, we can implement conservation practices that will contribute to the long-term sustainability of both their agricultural operations and the wildlife populations that depend on the lands under their stewardship.

Ranchers working on a project in California. Photo copyright Conservation Media.

IN 2019, THE FARM CONSERVATION PROGRAM:

- Tracked implementation of the 2018 Farm Bill, providing information updates on program funding, rules, policies and practices.
- As directed by Congress in the 2018 Farm Bill, we worked with USDA to highlight the Working Lands for Wildlife model of conservation.
- Provided technical assistance at the national, state and local levels in support of the Natural Resources Conservation Service and Farm Service Agency efforts to target Farm Bill resources to achieve the greatest benefit for high priority wildlife and their habitats, such as grassland birds, aquatic species, monarch butterflies and other pollinators.
- Facilitated engagement by the agricultural community in monarch conservation and the reporting of monarch and other pollinator conservation efforts to reduce the likelihood that the monarch would need federal protection under the Endangered Species Act.
- Coordinated with State Fish and Wildlife agencies and other partners to maximize conservation opportunities offered by the 2018 Farm Bill.

USFWS photo.

USFWS photo.

1,835
JOBS CREATED IN 2017

$6.15
PER $1 INVESTED IN ECONOMIC RETURNS

$149M
TOTAL ECONOMIC STIMULUS

Blue crabs at Mattamuskeet National Wildlife Refuge stimulate the economy through fishing and recreational investments. Photo by Joe Milmoe / USFWS.

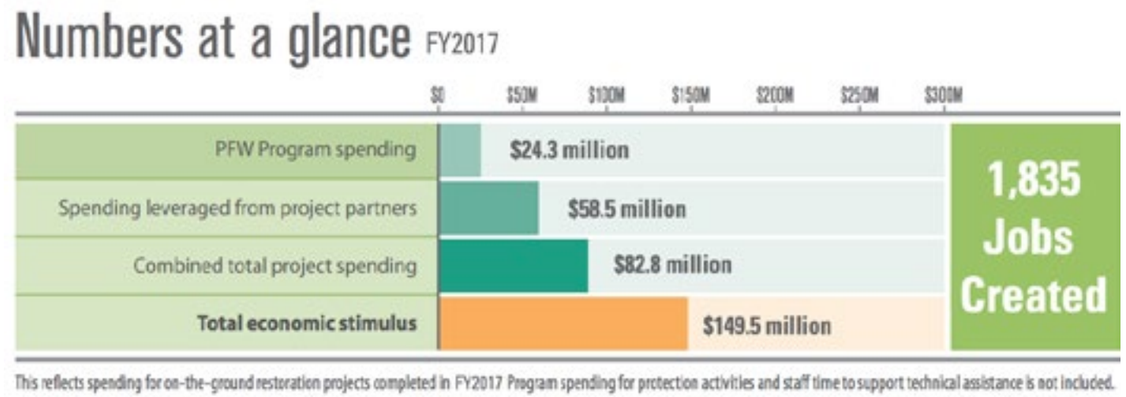
RESTORATION RETURNS

Creating Jobs and Stimulating Local Economies

WHAT WE DELIVER

High Return on Investment of Taxpayer Dollars

A 2018 supplement to U.S. Fish and Wildlife Service national economic analysis titled "Restoration Returns: The Contribution of Partners for Fish and Wildlife Program and Coastal Program Projects to Local U.S. Economies", found that the Partners for Fish and Wildlife program is an extraordinary economic engine, creating local jobs and generating dollars for the U.S. economy.



Leveraging

For every appropriated dollar invested in Partners for Fish and Wildlife habitat projects on privately owned land, Partners for Fish and Wildlife leveraged an additional $3.40 in non-federal funds with other partners. Local businesses then hire and pay employees, workers and businesses spend money in the local economy and ultimately the investment is multiplied throughout local communities.

In total, Partners for Fish and Wildlife projects deliver an impactful $6.15:1 return on investment. Most importantly, our work created 1,835 local jobs, ranging from heavy equipment operators, project supervisors, surveyors, and staff at nurseries, quarries, farm suppliers and more. Additionally, habitats that we have restored have been found to increase property values which greaty benefit the American people.

Restoration Returns report, available on FWS.gov

ALABAMA

$149,477
PFW PROJECT INVESTMENT

$269,470
PARTNER CONTRIBUTION

$418,947
TOTAL PROJECT

$1:1.8
LEVERAGE

0
STREAM AND RIVER MILES

772
UPLAND ACRES

0
WETLAND ACRES

2
FISH PASSAGE STRUCTURES

Howle and Turner Dam, before restoration. Photo by Eric Spadgenske / USFWS.

Howle and Turner Dam After Restoration. Photo by Eric Spadgenske / USFWS.

PROJECT HIGHLIGHT:

Howle and Turner Dam Removal

Persistence, consistency, dedication, and common purpose – these are some of the necessary characteristics of a successful dam removal. Removing a nearly 100-year-old, 100-foot-long concrete and steel structure from the main channel of one of Alabama's major river basins is no small undertaking. For any single agency, this may have proved to be nearly impossible. The solution may sound cliché', but in Alabama our partnerships carry the day.

Four years, 4 months, and 15 days – that is how long it took from fledgling thought to completion. Partners for Fish and Wildlife participated in the the Alabama Rivers and Streams Network, a multi-stakeholder group from across the spectrum of society who are committed to working together to restore and maintain clean, healthy water supplies.

Working together, this cross-program collaboration successfully completed the largest dam removal project in Alabama. The removal of the dam re-opened over 397 miles of mainstem river and tributaries to the Tallapoosa River for fish passage and listed and at-risk mussels. Utilizing expertise and resources of the U.S. Fish and Wildlife Service's Fisheries and Aquatic Habitat Restoration Team, we were able to save the American people over $200,000 while improving habitat for rare species, removing a safety hazard, and enhancing recreational opportunities on the river.

Howle and Turner Dam Removed. Photo by Eric Spadgenske / USFWS.

ALASKA

$426,157
PFW PROJECT INVESTMENT

$836,413
PARTNER CONTRIBUTION

$1.26M
TOTAL PROJECT

$1:2
LEVERAGE

1.09
STREAM AND RIVER

0.86
UPLAND ACRES

2.17
WETLAND ACRES

1
FISH PASSAGE STRUCTURE

Kenai riverbank restoration project. Photo by Joe Milmoe / USFWS.

Workshop participants observe the soil wrapped in coconut fiber being installed; the fiber holds the soil in place while vegetation becomes rooted and established at the site. Because Kenai River flows are driven by glacial inputs, river levels are lower in the spring when air temperatures are cool. USFWS photo.

PROJECT HIGHLIGHT:

Kenai Streambank Restoration Workshop

The Kenai River in Alaska is home to world-class salmon and trout populations!

Since 1995, Partners for Fish and Wildlife has partnered with Alaska Department of Fish and Game to provide financial and technical design assistance to landowners to rehabilitate and sustain valuable salmon habitat in Southcentral Alaska. For over 25 years, we have contributed to 718 projects on the Kenai River, removing hardened streambank material from 1.2 miles of stream, rehabilitating 4.8 miles of streambank, and protecting 13 miles of streambank.

In 2019, we partnered with a landowner to develop a bioengineering project to install as part of an annual Streambank Restoration Workshop.

The Streambank Restoration Workshop builds relationships and educates and encourages local, state, and federal agencies, non-government organizations, and private landowners to share streambank bioengineering techniques. The two-day course is comprised of one classroom learning day, followed by a hands-on learning day at the demonstration project. Our 2019 workshop incorporated the following bioengineering techniques: coir logs, trenched willow, brush layering and vegetative matting.

Post installation view of the project site showing the coir log, trenched willow, soil wrap, more trenched willow, and vegetated mat. USFWS photo.

ARIZONA

$261,848
PFW PROJECT INVESTMENT

$384,027
PARTNER CONTRIBUTION

$645,675
TOTAL PROJECT

$1:1.5
LEVERAGE

1.28
STREAM AND RIVER

1,459
UPLAND ACRES

22
WETLAND ACRES

0
FISH PASSAGE STRUCTURE

Mission Gardens completed restoration project. USFWS photo.

Restored Mission Gardens restoration site. USFWS photo.

PROJECT HIGHLIGHT:

Friends Of Tucson Birthplace Mission Gardens Naturalized Stream and Pollinator Garden

Partners for Fish and Wildlife funded a habitat development project that benefits native aquatic species as well as local pollinators. Mission Garden is a four-acre living museum located in Tucson, Arizona dedicated to educating the public about the history, culture, and ecosystems historically found in the area. Mission Garden and associated ancient agricultural sites were once located in a perennial reach of the Santa Cruz River. However, the abundant water sources and wetlands gradually dried and were eliminated by the late 19th century due to human population growth and urbanization. This resulted in the disappearance of numerous aquatic habitats and aquatic wildlife.

In an effort to recreate the ecosystems historically found in Tucson, Mission Garden constructed a 340-foot naturalized streambed and aquatic refugia pond. In conjunction with the riparian features, Mission Garden also enhanced its pollinator garden to not only improve pollinator habitat but to also act as an educational tool for visiting public.

Several pollinator and aquatic species will benefit from this development including Gila topminnow, desert pupfish, lowland leopard frog, Sonoran mud turtle, monarch butterfly, Huachuca water umbel and migratory songbirds.

340 foot naturalized streambed at Mission Gardens. USFWS photo.

ARKANSAS

$173,871
PFW PROJECT INVESTMENT

$188,622
PARTNER CONTRIBUTION

$362,493
TOTAL PROJECT

$1:1
LEVERAGE

4.83
STREAM AND RIVER

382
UPLAND ACRES

0
WETLAND ACRES

0
FISH PASSAGE STRUCTURE

Site preparation for monarch habitat restoration. Photo by Jonathan Baxter / USFWS.

Open post oak after prescribed fire, tree stand improvement and cedar removal. Photo by Jonathan Baxter / USFWS.

PROJECT HIGHLIGHT:

Unicorn Ranch

This project was a partnership with the landowner, Arkansas Game and Fish Commision, U.S. Fish & Wildlife Service and Hargrave Forestry Consultants to restore 40 acres of Monarch habitat and over 100 acres of woodlands for Northern long eared bat, and Northern bobwhite-quail, and riparian buffer protection of Mill Creek to benefit Rabbitsfoot and Purple Liliput species.

The landowner enrolled in Saline, Caddo, and Ouachita Headwaters Safe Harbor Agreement/Candidate Conservation Agreements with Assurances- to promote voluntary cooperation and participation in management and protection for five listed species (pink mucket, rabbitsfoot, spectaclecase, Arkansas fatmucket, and harperella) and 20 aquatic species of greatest conservation need on non-federal property. This project expands the conservation estate by connecting to adjacent National Forest lands.

Monarch butterfly. Photo by Joe Milmoe / USFWS.

After tree chemical injection and prescribed fire. Photo by Jonathan Baxter / USFWS.

CALIFORNIA

$1.1M
PFW PROJECT INVESTMENT

$4.6M
PARTNER CONTRIBUTION

$5.7M
TOTAL PROJECT

$1:4.1
LEVERAGE

9.02
STREAM AND RIVER

2,640
UPLAND ACRES

2,593
WETLAND ACRES

1
FISH PASSAGE STRUCTURE

Project construction. USFWS Photo.

After restoration. USFWS Photo.

PROJECT HIGHLIGHT:

Upper Scott Bioengineering Project

For this project, Partners for Fish and Wildlife staff used post and willow-weave structures to slow flows and help to limit bank erosion that had rapidly exceeded the bounds of the original riparian setback and was cutting into an active pasture. We also created a braided channel form to help reduce water velocities at the toe of the cut bank and to create slow-water winter rearing habitats for juvenile native salmonids such as Chinook Salmon.

Rather than using rootwads and other common techniques to harden the cut-bank and reduce erosion, we used post and willow-weave 'barbs' that had a minimal footprint on the existing bank and helped to maintain the existing bank swallow colony on site. In addition to being protected under the Federal Migratory Bird Treaty Act, bank swallows are a threatened species under the California Endangered Species Act.

Chinook salmon. Photo courtesy of Pacific Northwest National Laboratory

Dave Johnson installing willows. USFWS Photo.

$53,811
PFW PROJECT INVESTMENT

$39,957
PARTNER CONTRIBUTION

$93,768
TOTAL PROJECT

$1:0.7
LEVERAGE

0
STREAM AND RIVER

14
UPLAND ACRES

3.58
WETLAND ACRES

0
FISH PASSAGE STRUCTURE

CARIBBEAN

José Sustache (PRDNER) evaluating the vegetation in the area. Photo by PRDNER.

Partial view of the project from west to east. PRDNER Photo.

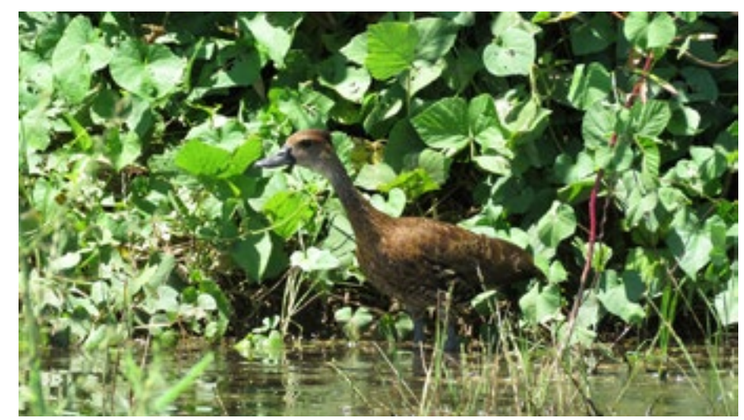
PROJECT HIGHLIGHT:

Hepperly Farm: Planning and Design of a Temporary Flooded Wildlife Shallow Lagoon (Mayagüez, Puerto Rico)

This collaborative effort between the U.S. Fish & Wildlife Service, Puerto Rico Department of Natural and Environmental Resources, Effective Environmental Restoration, Inc. and Ambienta, Inc. promotes the planning and implementation of site-specific management activities to restore and enhance habitat for state and federal trust species, and to develop Wildlife Enhancement Areas located on privately owned land.

The project's actions (e.g., design of topographic and hydrologic features, creation of lagoon, removal of invasive vegetation, planting of herbaceous species, development of monitoring plan) directly benefited migratory shorebirds, other resident and endemic birds, reptiles and amphibians by improving essential wildlife habitat. In addition, the temporary flooded shallow lagoon provides aquatic habitat for the establishment of native fish and invertebrates.

The project has been very successful since only after a month following implementation several species such as the masked ducks, Ruddy ducks, and West Indian Whistling ducks have been recorded feeding or nesting in the area.



West Indian Whistling duck in the project site. Photo by PRDNER

COLORADO

$86,381
PFW PROJECT INVESTMENT

$545,495
PARTNER CONTRIBUTION

$631,876
TOTAL PROJECT

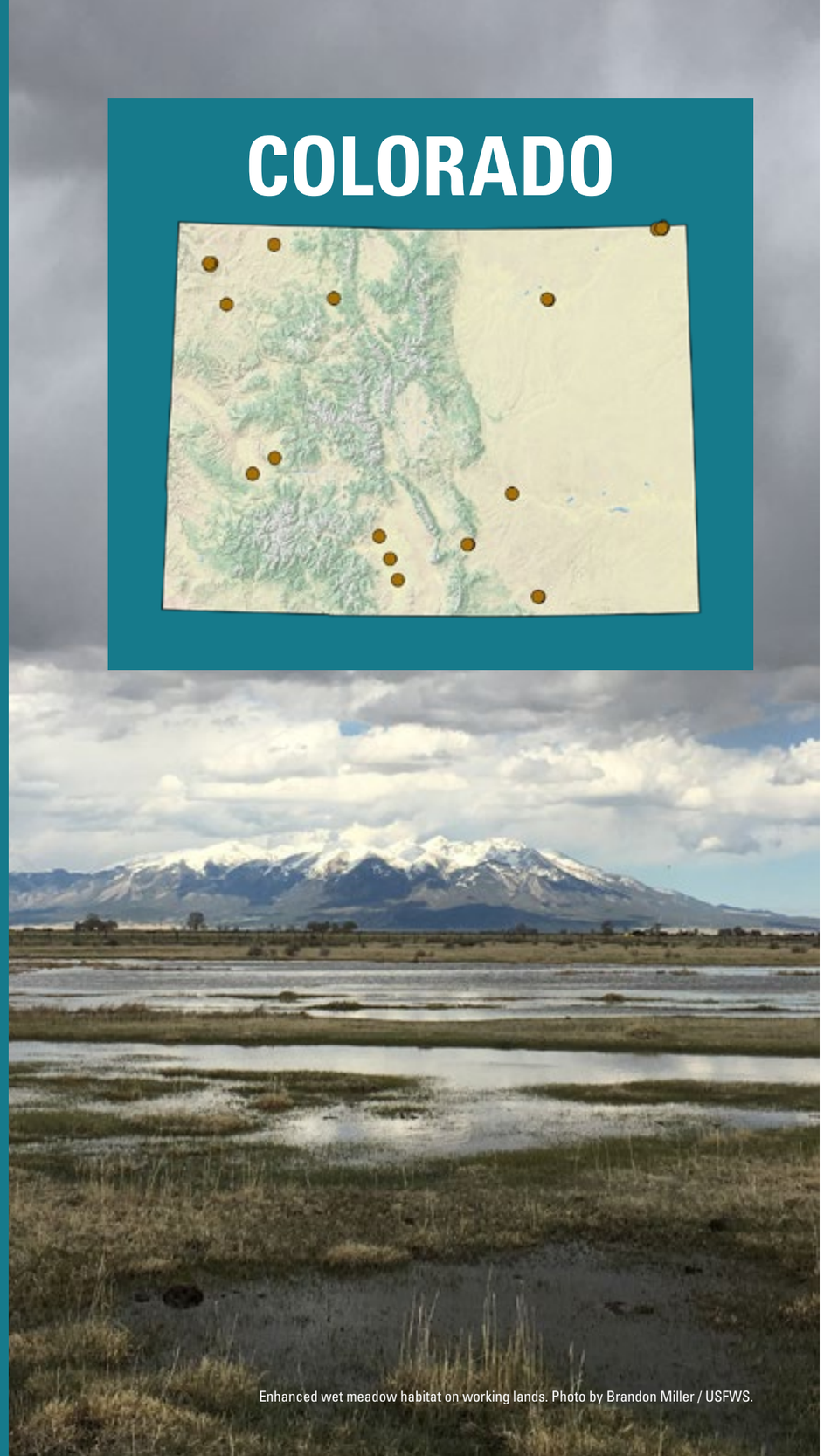
$1:6.3
LEVERAGE

3.68
STREAM AND RIVER

1,318
UPLAND ACRES

318
WETLAND ACRES

1
FISH PASSAGE STRUCTURE



Enhanced wet meadow habitat on working lands. Photo by Brandon Miller / USFWS.

Enhanced wet meadow habitat. Photo by Brandon Miller / USFWS.

PROJECT HIGHLIGHT:

Keeping Working Lands Working: Wet Meadow Restoration

Partners for Fish and Wildlife in Colorado partnered with the landowner, Colorado Parks and Wildlife Wetland Wildlife Conservation Program to enhance approximately 80 acres of working wet meadow wetland habitat by installing irrigation infrastructure.

This project improving flood irrigation infrastructure and concentrating tail water flows from a flood-irrigated agricultural field to an existing wetland complex. Undersized flood irrigation infrastructure previously created bottlenecks, ditch blowouts, and uneven and inefficient irrigation of agricultural fields.

Habitat treatments included:

- Installation of eight screw gates and one board riser on the east-west ditch on the north end of the property;
- Installation of two t-boxes where the east-west ditch intersects two north-south ditches;
- Installation of three board risers on one north-south ditch;
- Removing and replacing two undersized culverts with two 24' pipes.

The goal of the property is to promote mentoring of youth hunters in coordination with Colorado Parks and Wildlife. Beyond improving the alfalfa crop on the north half, youth hunting/wetlands was the primary goal for the southern half of the property. This project is located in the San Luis Valley, an established priority area.

Water control infrastructure installed at the project site. Photo by Brandon Miller / USFWS.

2017-2019 PROJECTS

$5,750
PFW PROJECT INVESTMENT

$25,500
PARTNER CONTRIBUTION

$31,250
TOTAL PROJECT

$1:4.
LEVERAGE

0
STREAM AND RIVER

149
UPLAND ACRES

0
WETLAND ACRES

0
FISH PASSAGE STRUCTURE

CONNECTICUT

Spring is a great time to give back to nature. The U.S. Fish & Wildlife Service relies upon volunteers to help with plantings in New England cottontail habitat. Contact your local office if you are interested. Credit: USFWS.

New England Cottontail. Creative commons photo by Brandon Keim. .

PROJECT HIGHLIGHT:

Morgan R. Chaney Preserve

Partners for Fish and Wildlife in Connecticut partnered with the Connecticut Department of Energy and Environmental Protection and Connecticut Audubon to restore forest habitat for the New England Cottontail in the Lower Connecticut River New England Cottontail Focus area.

The Morgan R. Chaney Preserve is located in Montville, CT. This 235-acre parcel is bounded by a large shrub wetland, Great Swamp, owned by the New London Water Department, and private lands. There is trail access to the property, which is open to the public. The partners worked together to identify an area of young forest/shrubland to manage because of its limited value for wildlife or timber in its current condition.

Together, partners restored the 12-acre young forest management area to clear trees greater than two inches in diameter at breast height to promote dense woody re-growth, and build three brush piles per acre to provide wildlife cover while the forest is regenerating. Cavity trees and trees of exceptional wildlife, aesthetic, mast or seed value were retained, and did not exceed 25% canopy. The invasive understory was treated by mechanical mowing in late summer, followed by at herbicide treatment. The partnership planted native grasses in an adjacent open area that will benefit cottontails and other wildlife by providing a vital food source from spring through fall and winter cover.

New England Cottontail Habitat. NH Rabbit Reports Photo.

2017-2019 PROJECTS

$19,347
PFW PROJECT INVESTMENT

$1.02M
PARTNER CONTRIBUTION

$1.046M
TOTAL PROJECT

$1:53
LEVERAGE

0.83
STREAM AND RIVER

39
UPLAND ACRES

304
WETLAND ACRES

0
FISH PASSAGE STRUCTURE

DELAWARE

Broadkill River in Delaware. Creative commons photo by Timothy Pohlhaus.

Assawoman Canal, Jefferson Creek. Creative commons photo by Timothy Pohlaus.

PROJECT HIGHLIGHT:

Delmarva Wetland Restoration

This project is part of an ongoing initiative to restore non-tidal wetlands and forests on the Delmarva Peninsula where over 50% of historic wetlands and forests have been drained or cleared. The Delmarva Peninsula lies between the Atlantic Ocean and Delaware Bay to the east and Chesapeake Bay to the west.

The rivers, streams, beaches, wetlands and forests on the Delmarva provide nesting, wintering, and stopover habitat for many bird species migrating along the Atlantic coast. The habitats are also occupied by reptiles, amphibians, mammals, pollinators, and other species.

Restoring non-tidal wetlands has a secondary benefit of improving water quality for aquatic species in tidal rivers and in the Chesapeake and Delaware Bays. Species that benefit include striped bass, shad, river herring, American eel and many others. Clean water is vitally important to healthy beds of submerged aquatic vegetation and oysters which are keystone species that nearly all estuarine aquatic life depends on.

Restoration activities included ditch plugs to restore the hydrology to palustrine forested wetlands and removal of spoil in forested wetlands. Vegetation improvements include removing the monoculture stands of loblolly pines and replanting the sites with bald cypress and hardwoods, mainly oak species.

Sunrise over the marsh at Prime Hook National Wildlife Refuge in Delaware. Creative commons photo by Timothy Pohlaus.

FLORIDA

$180,595
PFW PROJECT INVESTMENT

$436,775
PARTNER CONTRIBUTION

$617,370
TOTAL PROJECT

$1:2.4
LEVERAGE

2.23
STREAM AND RIVER

1,783
UPLAND ACRES

137
WETLAND ACRES

3
FISH PASSAGE STRUCTURE

Ephemeral wetland restoration site. Photo by Joseph Prenger / USFWS.

Osceola NF ephemeral wetland restoration tour. Photo by Joseph Prenger / USFWS.

PROJECT HIGHLIGHT:

Putnam Lakes Preserve Amphibian Breeding Pond Restoration

This project features a successful collaboration between U.S. Fish & Wildlife Service, the North Florida Land Trust, Ocala to Osceola Wildlife Corridor, Natural Resource Conservation Service's Regional Conservation Partnership Program and Florida Fish and Wildlife Conservation Commission.

Working together, our staff assisted with restoring 14 breeding ponds for Carolina gopher frogs on 49 acres of wetlands on a 691 acre preserve owned and managed by North Florida Land Trust in Putnam County, Florida.

Restoration involved removal of hardwood encroachment on wetland fringes, establishment of native ground cover, and restoration of pyrogenic communities in order to improve habitat conditions for gopher frog and other at-risk amphibian species. Habitat treatments included mechanical and herbicide treatments to remove hardwoods, direct seeding of native grasses and forbs and planting of longleaf pine seedlings.

This project establishes herbaceous vegetation on wetland fringes and pyrogenic ground cover surrounding wetlands, which encourages the long-term maintenance of amphibian breeding ponds through prescribed burning.

Preserve pond with overgrown ecotone. Photo by Joseph Prenger / USFWS.

$35,875
PFW PROJECT INVESTMENT

$36,375
PARTNER CONTRIBUTION

$72,250
TOTAL PROJECT

$1:1
LEVERAGE

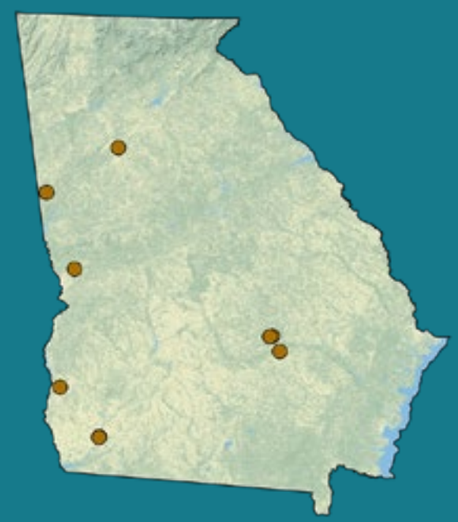
0
STREAM AND RIVER

213
UPLAND ACRES

0
WETLAND ACRES

0
FISH PASSAGE STRUCTURE

GEORGIA



Before and after restoration at Raccoon Creek project site. Photo by Anita Goetz / USFWS.

Construction phase. Photo by Anita Goetz / USFWS.

PROJECT HIGHLIGHT:

Raccoon Creek Culvert Replacement

Partners for Fish and Wildlife provided funding to improve fish passage for the federally endangered Etowah darter and the federally threatened Cherokee darter in Raccoon Creek, a tributary of the lower Etowah River in Georgia. In addition to listed species, the current Raccoon Creek aquatic community is comprised of 43 native fishes, 13 of which are endemic to the Mobile Basin or a smaller geographic area.

This project eliminated a major barrier to fish passage by replacing the undersized culvert under Raccoon Creek Road with a free-standing bridge. This culvert on Raccoon Creek was a top priority for removal among all 256 culverts assessed, because of the high probability that the culvert was a barrier and relatively large amounts of habitat that could be reconnected for target species.

The existing box culvert was removed and replaced with a properly sized crossing. Partners involved with the project include The Nature Conservancy, GA DNR, Kennesaw State University, Paulding County Government, SARP, Duke Power and private landowners.

The U.S. Fish & Service provided technical assistance and funding and was substantially involved in the project design, permitting, project construction oversight and monitoring.

Fish capture at the project site. Photo credit: Will Commins.

$373,606
PFW PROJECT INVESTMENT

$762,106
PARTNER CONTRIBUTION

$1.14M
TOTAL PROJECT

$1:2
LEVERAGE

0
STREAM AND RIVER

4,475
UPLAND ACRES

0
WETLAND ACRES

0
FISH PASSAGE STRUCTURE

HAWAII

Auwahi Partnership Volunteers on Maui. USFWS Photo.

Auwahi partnership project planting area. USFWS Photo.

PROJECT HIGHLIGHT:

Six Endangered Plant Species at Auwahi Forest

On the southwestern slopes of Haleakala on the island of Maui, surrounded by acres of kikuyu grass, three enclosures make up the Auwahi native forest. In FY17, they received funding from the Partners for Fish and Wildlife Program with the goal of reintroducing six rare and endangered species into the existing native forest.In addition, Auwahi planned to utilize their extensive volunteer base to control invasive species, monitor rare species, and collect seeds from both common and rare native plants.

During the project period, the Auwahi forest conducted 20 volunteer work days to plant seedlings of the six rare species and many other native species. 326 community members contributed 2,509 hours to plant 6,093 seedlings from 24 native species.

Community involvement has been essential to the Auwahi forest restoration project for the past two decades. Volunteers are involved in monitoring and controlling weeds, gathering seeds, and outplanting of seedlings in strategic areas. The results show that the previous 20 years of outplantings are either producing healthy fruit crops, building viable population sizes for outcrossing, or close to reaching sexual maturity. With the continued management of these areas, the success at Auwahi and the refuge it provides to these six species is promising.

Auwahi partnership project planting area. USFWS Photo.

IDAHO

$324,874
PFW PROJECT INVESTMENT

$1.4M
PARTNER CONTRIBUTION

$1.74M
TOTAL PROJECT

$1:4.4
LEVERAGE

8.65
STREAM AND RIVER

2,642
UPLAND ACRES

430
WETLAND ACRES

2
FISH PASSAGE STRUCTURE

USFWS Photo.

Restoration in action. USFWS photo.

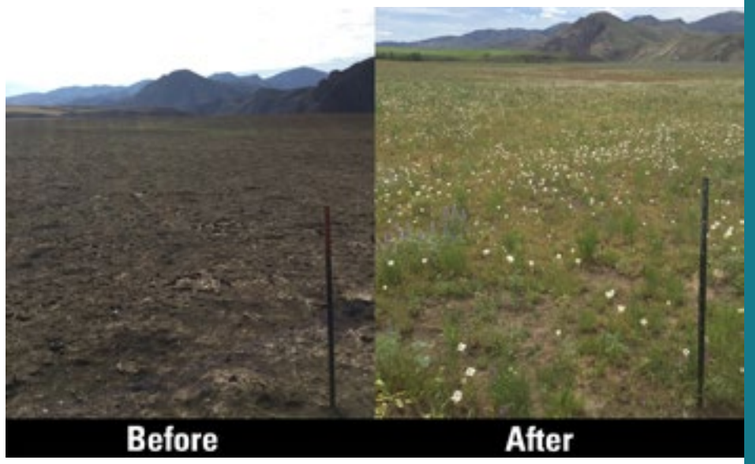
PROJECT HIGHLIGHT:

Sharps Fire Restoration

In the summer of 2018, the Sharps Fire burned approximately 64,764 acres in the Pioneer Mountains of central Idaho. Of the acres burned, approximately 20,000 were private property.

Partners for Fish and Wildlife biologists Josh White and Charles Sandford led coordination between multiple agencies including Idaho Department of Fish & Game, Office of Species Conservation, Bureau of Land Management, Idaho Department of Lands, non-governmental organizations, private landowners, and contractors to deliver a partnership that treated 2,603 acres of private land, 1,703 acres of state managed lands, and 11,000 acres of federally managed lands. Treatments included aerial and drill seeding mix of native grass/sagebrush and native forbs.

In addition to this effort, the partnership planned and implemented 139 instream structures to reduce downstream sedimentation and accelerate stream recovery within the lower Baugh Creek Watershed within 3.5 stream miles. This landscape is important habitat for sage-grouse, American beaver, cold water fisheries, elk, mule deer and pronghorn.



Before and after restoration. USFWS photo.

ILLINOIS

$89,933
PFW PROJECT INVESTMENT

$1.06M
PARTNER CONTRIBUTION

$1.15M
TOTAL PROJECT INVESTMENT

$1:11.8
LEVERAGE

0
STREAM AND RIVER MILES

1,789
UPLAND ACRES

137
WETLAND ACRES

0
FISH PASSAGE STRUCTURES

Prescribed fire application on the hills of the prairie. Photo by Mike Budd / USFWS.

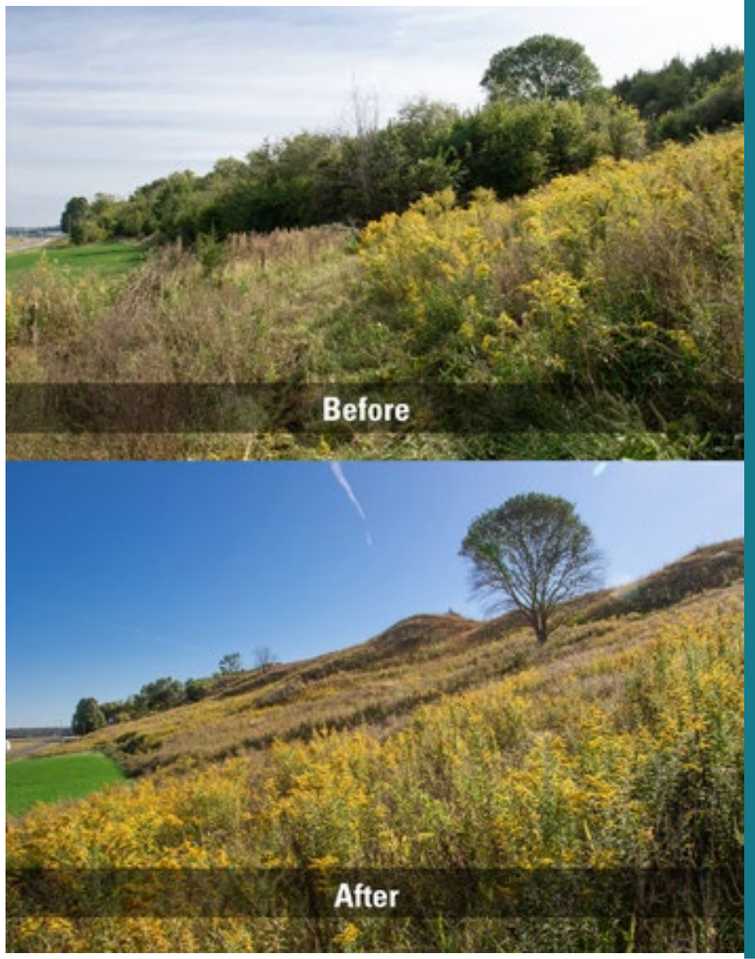
Mechanical clearing of invasive red cedar trees. Photo by Mike Budd.

PROJECT HIGHLIGHT:

Arenzeville Hill Prairie

The hills of the Arenzeville prairie were covered in eastern red cedar trees, in need of prescribed fire and clearing to open up the habitat for pollinator species, migratory songbirds, reptiles and game species. Working with Tthe Nature Conservancy and Pheasants Forever, we have restored more than 45 acres of important habitat in two phases.

Numerous monarchs and other pollinators have responded with increased abundance and diversity. We are also seeing an increase in game species such as the eastern wild turkey and northern bobwhite.



Before and after restoration. Photo by Mike Budd / USFWS.

INDIANA

$140,710
PFW PROJECT INVESTMENT

$897,446
PARTNER CONTRIBUTION

$1.04M
TOTAL PROJECT

$1:6.4
LEVERAGE

0.51
STREAM AND RIVER

213
UPLAND ACRES

391
WETLAND ACRES

0
FISH PASSAGE STRUCTURE

Winter seeding of native prairie habitat. Bob Easter/NICHES.

Winter seeding of native prairie habitat. Bob Easter/NICHES

PROJECT HIGHLIGHT:

Shawnee Bottoms South Prairie

This project restored 45.6 acres of diverse silt loam native prairie in a prairie-woodland transition area along the Wabash River corridor on private land in Fountain County, Indiana. The site is part of the 460-acre Shawnee Bottoms Nature Preserve owned and managed by NICHES Land Trust, and is under permanent protection. The prairie habitat was restored from an existing agricultural field, and is part of a large complex of existing and restored oak woodland, prairie and savanna associated with Shawnee Bottoms and several other nearby preserves. The goal of the project is to restore a diverse, high quality prairie that would be a host to priority grassland-dependent migratory birds as well as monarch butterflies and other pollinators.

The site was restored from an existing agricultural field in the dormant season following crop harvest. In addition to the 66 native species that were purchased commercially, NICHES staff hand collected up to 140 additional species. Volunteers assisted with seed collection along with planting native plugs to augment the seeding. The pollinator partnership also provided funding for seed purchase for the project. The restored prairie habitat benefits grassland and transitional woodland bird species, including dickcissel, bobolink, Eastern meadowlark, grasshopper sparrow, red-headed woodpecker, and black-billed cuckoo. Improved habitat will also be provided for game birds, such as the Northern bobwhite and ring-necked pheasant.

The high diversity planting will also greatly benefit monarch butterflies and other pollinators by establishing native milkweeds as well as a highly diverse forb community containing numerous species within all bloom periods. Bob Easter/NICHES

IOWA

$61,974
PFW PROJECT INVESTMENT

$150,628
PARTNER CONTRIBUTION

$212,602
TOTAL PROJECT

$1:2.4
LEVERAGE

0
STREAM AND RIVER

412
UPLAND ACRES

119
WETLAND ACRES

0
FISH PASSAGE STRUCTURE

Restored wetland habitat. USFWS photo.

Before restoration. USFWS photo.

PROJECT HIGHLIGHT:

This project enhanced 30 acres of wetlands located on private land in Black Hawk County, Iowa. Existing berms from previous wetland restoration projects had failed and were no longer providing hydrologic function to the restored wetland areas. Additionally, the landowner recently acquired an adjacent property with wetland enhancement potential.

This provided a unique opportunity to enhance the existing wetlands and begin working with a new wetland through one project. Borrow material from the existing berms and surrounding areas were used to construct new berms. Water control structures were installed that restored the hydrology to the existing wetlands, in addition to restoring hydrology to the newly acquired wetland.

The project provided a unique opportunity for landscape scale conservation in Iowa by connecting multiple tracts of privately owned land adjacent to The Nature Conservancy and Black Hawk County Conservation Board's Cedar Sand Hills Nature Preserve, a 96 acre sand prairie remnant and reconstruction. In total, this project compliments over 320 acres of upland-wetland complex in the Upper Cedar River watershed, a priority watershed for many partners in Iowa.

This project addresses the Secretary of Interior's priorities: by restoring trust with local communities and by supporting regional strategic plans and priorities by working in geographic focus areas. The project will provide important nectaring sources for the monarch butterfly, in addition to milkweeds required for reproduction. Numerous other pollinators will also benefit!

Restored wetland hydrology benefits a variety of target species. USFWS photo.

$345,002
PFW PROJECT INVESTMENT

$1.2M
PARTNER CONTRIBUTION

$1.54M
TOTAL PROJECT

$1:3.5
LEVERAGE

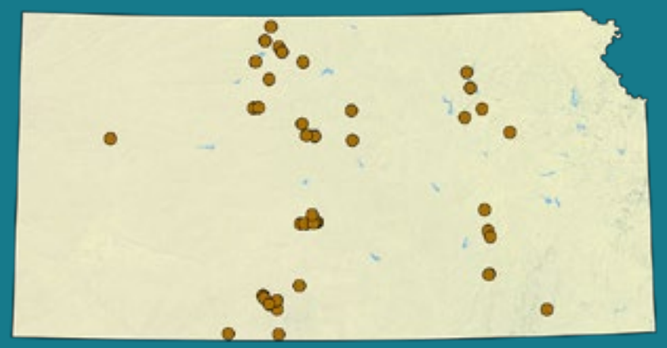
38.5
STREAM AND RIVER

32,238
UPLAND ACRES

539
WETLAND ACRES

0
FISH PASSAGE STRUCTURE

KANSAS



Partners for Fish and Wildlife biologist Tony Ifland meets with landowner. Photo by Tony Ifland / USFWS.

Site visit at the prairie restoration site. Photo by Tony Ifland / USFWS.

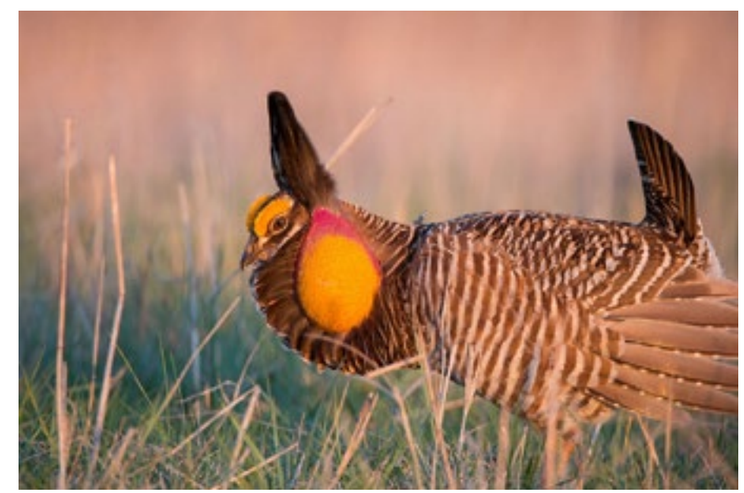
PROJECT HIGHLIGHT:

Mixed Grass Prairie Restoration

This partnership project restored mixed grass prairie in Smith County, located in the Kansas Partners for Fish and Wildlife North Central Prairies focus area. The prairie uplands had been impacted by fragmentation, seeing a gradual increase in invasive woody species over the years. Invasive eastern redcedar make up the vast majority of woody encroachment on this site. The landowner's goal was to improve the overall health of his grassland for long term benefits to their livelihood and the wildlife that utilize it. In order to accomplish this, we worked with the landowner to implement practices such as restoration through tree removal, prescribed fire, and a grazing management system.

The landowner is planning to establish a rotational grazing system through USDA's Natural Resource Conservation Service. Pending approval, the landowner will establish a six cell system utilizing cross fencing, waterline, and tanks cost shared through the Environemental Quality Incentives Program.

Bird species such as Greater prairie chicken, Grasshopper sparrow, Dickcissel, Short-eared owl, Upland sandpiper, Bobwhite quail, and Red-headed woodpecker will directly benefit in particular. Indirect benefits to migratory waterfowl and shorebirds, as well as numerous fish species will also benefit.



Greater prairie-chicken male booming on the lek. Photo by Tony Ifland / USFWS.

$35,964
PFW PROJECT INVESTMENT

$15,180
PARTNER CONTRIBUTION

$51,144
TOTAL PROJECT

$1:0.4
LEVERAGE

0
STREAM AND RIVER

41
UPLAND ACRES

111
WETLAND ACRES

0
FISH PASSAGE STRUCTURE

KENTUCKY

Buck darters. USFWS Photo.

Buck Darter habitat improvement project site. Photo by Brent Harrel / USFWS.

PROJECT HIGHLIGHT:

Buck Darter Habitat Improvement Project

Partners for Fish and Wildlife took a proactive approach to conserve the buck darter in advance of the need for federal protection in a manner that would not only benefit this fish species, but also the landowner, by working with local landowners and conservation partners such as NRCS, Pulaski County Conservation District, Eastern Kentucky University, Conservation Fisheries, and the Office of Kentucky Nature Preserves.

The buck darter (Etheostoma nebra) is an endemic species whose populations have declined so severely that they are only known from two small tributaries in the Buck Creek watershed. This project demonstrates the proactive approach the Partners for Fish and Wildlife program has to conserve rare species prior to listing.

Through the Partners for Fish and Wildlife and Farm Bill programs, the landowner has fenced livestock out of over a 2,500 feet of buck darter habitat. This has improved water quality for the fish. With the help of these partnerships, the landowner has also established innovative rotational grazing practices, installed stream crossings that allow for fish passage and provided alternate water sources for the landowner's cattle, all of which has helped conserve the Buck Darter.

Buck darter habitat improvement project site. Photo by Brent Harrel / USFWS.

2017-2019 PROJECTS

$227,362
PFW PROJECT INVESTMENT

$343,111
PARTNER CONTRIBUTION

$570,473
TOTAL PROJECT

$1:1.5
LEVERAGE

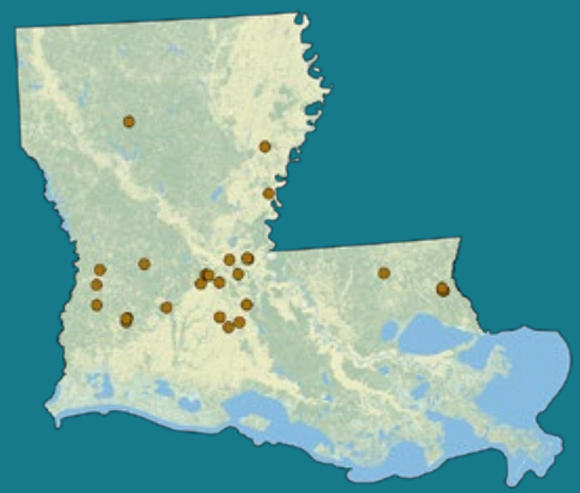
0
STREAM AND RIVER

851
UPLAND ACRES

1,392
WETLAND ACRES

0
FISH PASSAGE STRUCTURE

LOUISIANA



Rattlesnake master, blazingstars and switchgrass in project site after restoration, photo by Larry Allain

Rattlesnake master, blazingstar, and sunflowers in project site four years after restoration, photo by Larry Allain

PROJECT HIGHLIGHT:

St Landry Coastal Prairie

Coastal prairie is the most endangered ecosystem in North America and has been reduced from over 2 million acres to less than 200 acres.

This project restored one acre of diverse coastal prairie on existing pasture. Prairie seed and rootstock were collected from remnant Louisiana prairie sites and transplanted to the project site. Some plant species were grown in containers from seed and propagules prior to transplanting. Small plantings of this type serve to preserve the greatly endangered gene pool of many of the over 500 species known to have existed in this system.

Non-native Bahia grass pasture was converted to habitat for grassland birds, the most rapidly declining group of birds in North America. This planting will serve several other purposes including the creation of pollinator habitat, and creating an outdoor classroom for plant and insect identification and grassland ecology. The landowner is beginning to conduct research on planting methods, plant life history traits, and pollinator recruitment on the project site.

Prairie during restoration photo. Photo by Andy Dolan and Rob Smith.

$59,525
PFW PROJECT INVESTMENT

$230,000
PARTNER CONTRIBUTION

$289,525
TOTAL PROJECT

$1:3.9
LEVERAGE

5.61
STREAM AND RIVER

8.71
UPLAND ACRES

12
WETLAND ACRES

7
FISH PASSAGE STRUCTURE

MAINE

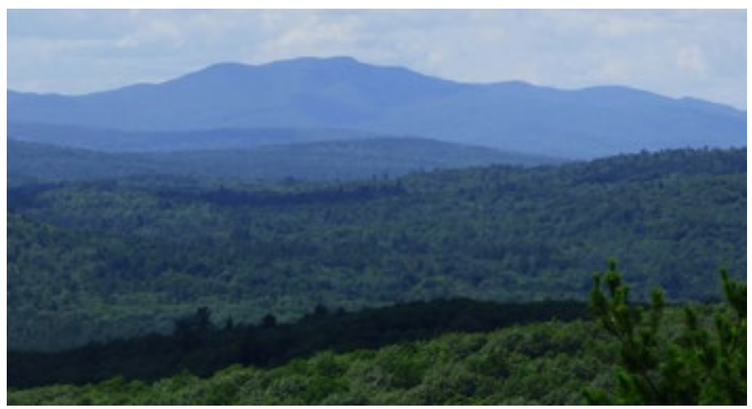


Photo by The Nature Conservancy.

Photo by The Nature Conservancy.

PROJECT HIGHLIGHT:

Shapleigh Woods Preserve Small Whorled Pogonia Enhancement Project

The Shapleigh Woods Preserve is owned and managed by The Nature Conservancy. The preserve is a mixed-deciduous/coniferous forest and it includes a colony of the small whorled pogonia (Isotria medeoloides), an orchid that is listed as threatened under the federal Endangered Species Act and as endangered under the Maine Endangered Species Act.

In the late 1980s, the Shapleigh Woods Preserve had over 200 plants in its colony, yet it has declined to between 18 and 30 plants from 2008 to 2016. Forest thinning has been found to be effective in promoting stem growth and seed development and it is one of the few treatments available to enhance small whorled pogonia habitat. This project reduced the canopy cover at the preserve by either the removal of understory trees and shrubs and through the girdling of overstory trees. The implementation of forest management prescriptions occured on nine acres of the site. The Service will provide $2,500 toward the site's vegetation management and The Nature Conservancy will provide an in-kind contribution towards the planning, assessment and reporting estimated to be $1,000.

In 2018, about 8.7 acres of the preserve was thinned at 6 sites. Recent monitoring has shown that the plant was found in one of the treated sites in 2019.

Photo by The Nature Conservancy.

$1,480
PFW PROJECT INVESTMENT

$1.6M
PARTNER CONTRIBUTION

$1.6M
TOTAL PROJECT

$1:1086
LEVERAGE

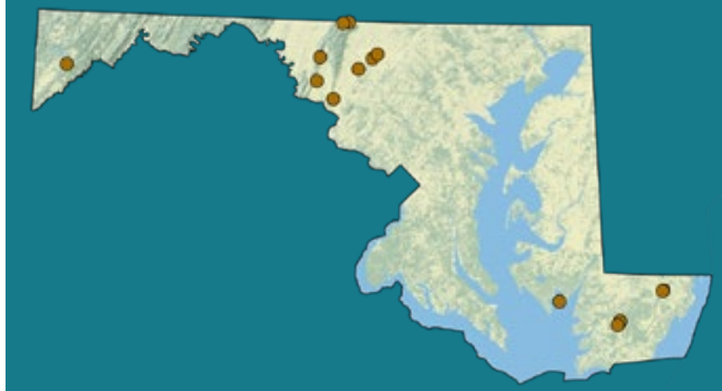
0.83
STREAM AND RIVER

484
UPLAND ACRES

387
WETLAND ACRES

0
FISH PASSAGE STRUCTURE

MARYLAND



Biologists Rich Mason and Al Rizzo explain a wetland restoration project to Chinese delegation. USFWS photo..

Creative commons photo © Timothy Pohlhaus.

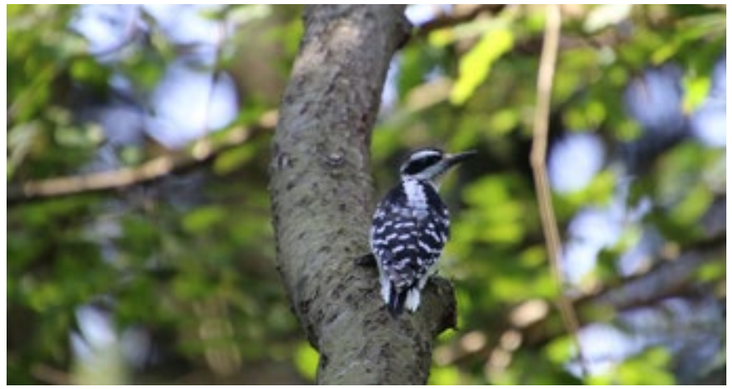
PROJECT HIGHLIGHT:

This project is part of an ongoing initiative to restore non-tidal wetlands and forests on the Delmarva Peninsula where over 50% of historic wetlands and forests have been drained or cleared. The Delmarva Peninsula lies between the Atlantic Ocean and Delaware Bay to the east and Chesapeake Bay to the west.

The rivers, streams, beaches, wetlands and forests on the Delmarva provide nesting, wintering, and stopover habitat for many bird species migrating along the Atlantic coast. The habitats are also occupied by reptiles, amphibians, mammals, pollinators, and other species.

Restoring non-tidal wetlands has a secondary benefit of improving water quality for aquatic species in tidal rivers and in the Chesapeake and Delaware Bays. Species that benefit include striped Bass, shad, river herring, American Eel, and others. Clean water is vitally important to healthy beds of submerged aquatic vegetation and oysters that are keystone species on which nearly all estuarine aquatic life depends.

The restoration activities include ditch plugs to restore the hydrology to palustrine forested wetlands, removing spoil from a levee to restore a forested floodplain and creating a shallow water emergent wetland in an agriculture field.



Hairy woodpecker. Creative commons photo © Corey Seeman

MASSACHUSETTS

$51,008
PFW PROJECT INVESTMENT

6.53M
PARTNER CONTRIBUTION

$6.65M
TOTAL PROJECT

$1:128
LEVERAGE

0.44
STREAM AND RIVER

2.89
UPLAND ACRES

4.5
WETLAND ACRES

2
FISH PASSAGE STRUCTURE

Completed restoration project. USFWS photo.

Completed fish passage project. USFWS photo.

PROJECT HIGHLIGHT:

Reopening Town Brook for Fish Passage

Town Brook in Plymouth, Massachusetts, once full of barriers blocking migrating fish from passing, has been reopened and restored. Now fish like river herring and eels can make it to and from habitats important for their survival and sustainability and they are better able to support ocean species that rely on them for food.

The 1.5-mile stream flows from the freshwater Billington Sea to the Atlantic Ocean near Plymouth Rock, Massachusetts, and serves as an important habitat for fish that migrate between the ocean and freshwater areas. For hundreds of years, dams in the stream blocked fish from passing and caused populations to decline.

U.S. Fish and Wildlife Service worked with partners to remove the Holmes Playground Dam, replacement of the Newfield Street Bridge, and completion of associated stream channel restoration actions on Town Brook in Plymouth, Massachusetts. This project eliminates barriers to fish passage by restoring connectivity upstream to the Billington Sea (a 269-acre freshwater coastal pond) and restores the ecological functions, habitat conditions and connectivity to Town Brook to benefit river herring (alewife and blueback herring), American eel, and eastern brook trout.

Restoration in progress. USFWS photo.

MICHIGAN

$132,701
PFW PROJECT INVESTMENT

$660,190
PARTNER CONTRIBUTION

$792,891
TOTAL PROJECT

$1:4.9
LEVERAGE

0
STREAM AND RIVER

536
UPLAND ACRES

391
WETLAND ACRES

3
FISH PASSAGE STRUCTURE

Highland Park restoration. Photo by Justin Heslinga.

Highland Park wetland and prairie restoration, aerial view. Photo by Justin Heslinga.

PROJECT HIGHLIGHT:

Highlands Park Restoration

This project consists of restoring six wetland basins totaling approximately six acres, establishing roughly 22 acres of native herbaceous cover, combating invasive species and establishing native flowers on 8 acres of existing prairie. The project is on newly acquired Highlands Park, a former private golf course now jointly owned and managed as a natural park by the Land Conservancy of West Michigan and Blandford Nature Center.

U.S. Fish & Wildlife Service utilized funds from the Great Lakes Restoration Initiative, funds from the Michigan DNR private lands program; and donated funds from the landowners, as well as administrative support from Ducks Unlimited, Inc., in order to complete this project.

The wetland projects involve removing several tile lines, constructing low-level earthen berms, performing shallow excavation of varying depths, placing coarse woody debris to maximize structural diversity of the wetlands and installing water control structures to provide long term management and maintenance capabilities.

Centered in an urban area, this project will not only provide significant wildlife and water quality benefits, it will also serve as a long term education and outreach tool.

Highland Park wetland restoration, aerial view. Photo by Justin Heslinga.

MINNESOTA

$516,482
PFW PROJECT INVESTMENT

$2.36M
PARTNER CONTRIBUTION

$2.87M
TOTAL PROJECT

$1:4.6
LEVERAGE

1
STREAM AND RIVER

2,689
UPLAND ACRES

1,022
WETLAND ACRES

0
FISH PASSAGE STRUCTURE

The site was seeded with high diversity of local ecotype native species including lots of wildflowers to promote pollinators. The University of MN is conducting research on a pollinator plot on this property studying the effects of pollinators and the proximity to agricultural lands. Photo by Scott Ralston / USFWS.

This is a small temporary wetland after construction and with the first rain. These Wetlands have been filled in with up to 1ft of sediment from years of erosion during farming. We remove the sediment to restore the hydrology to the basins. Photo by Scott Ralson / USFWS..

PROJECT HIGHLIGHT:

Windom Wetland Management District

This site was purchased by Pheasants Forever with state grant funds. It was drained cropland for many years. Their intention is to restore the cropland to grass and restore the wetlands then turn the land over to the U.S. Fish & Wildlife Service as public conservation land as a Waterfowl Production Area. The Partners for Fish and Wildlife program directed restoration efforts.

U.S. Fish & Wildlife Service worked to restore the wetlands with tile breaks, dikes and sediment removal and plant the uplands to native grass with diverse local ecotype grass and forb species. This benefits a diversity of prairie species including migratory, breeding and nesting waterfowl, many grassland birds, resident mammals, amphibians and insects. This restoration also improves water quality by filtering run-off and slowing surface water. Restoring the vegetation will sequester carbon sequestration.

The U.S. Fish & Wildlife Service was the lead for the survey, design, biological compliance and construction oversight. U.S. Fish & Wildlife Service supplied native harvest seed, seeded the site and will maintain the upland habitat. The Partners for Fish and Wildlife biologist used refuge equipment for completing the tile investigation to improve planning and accuracy.

Building up the dike with scrapers and solid clay core. On this site we restored 6 wetlands using dikes and breaking drain tile within them. Photo by Scott Ralston / USFWS..

MISSISSIPPI

$131,456
PFW PROJECT INVESTMENT

$231,935
PARTNER CONTRIBUTION

$363,391
TOTAL PROJECT

$1:1.8
LEVERAGE

0.25
STREAM AND RIVER

4,148
UPLAND ACRES

1.23
WETLAND ACRES

0
FISH PASSAGE STRUCTURE

USFWS Photo.

USFWS Photo.

PROJECT HIGHLIGHT:

Yazoo Darter Restoration Effort

The Yazoo Darter is a small snubnose darter endemic to the Little Tallahatchie and Yocona River Basins in North-Central Mississippi. They are found in small, clear streams with varying substrate including sand, silt, clay and gravel. The primary goal of this project was to enhance Yazoo Darter habitat by reducing soil erosion and removing fish passage issues associated with a highway box culvert.

Habitat improvement on this quarter mile section of Mill Creek includes eliminating soil erosion from defunct gullies, streambank stabilization, and the establishment of a forty foot wide riparian habitat on either side of Mill Creek.

The landowners have agreed to allow us to use their farm in the future as a demonstration area to train other landowners within the Yocona watershed on measures to conserve Yazoo Darter habitat.

Conservation practices implemented were water diversions to address gully erosion, streambank stabilization, establishing riparian habitat, and instream modifications to address fish passage obstacles.

Habitat was conserved for Yazoo darters, Yazoo crayfish, and other aquatic wildlife species.

USFWS Photo.

MISSOURI

$134,365
PFW PROJECT INVESTMENT

$287,359
PARTNER CONTRIBUTION

$421,724
TOTAL PROJECT

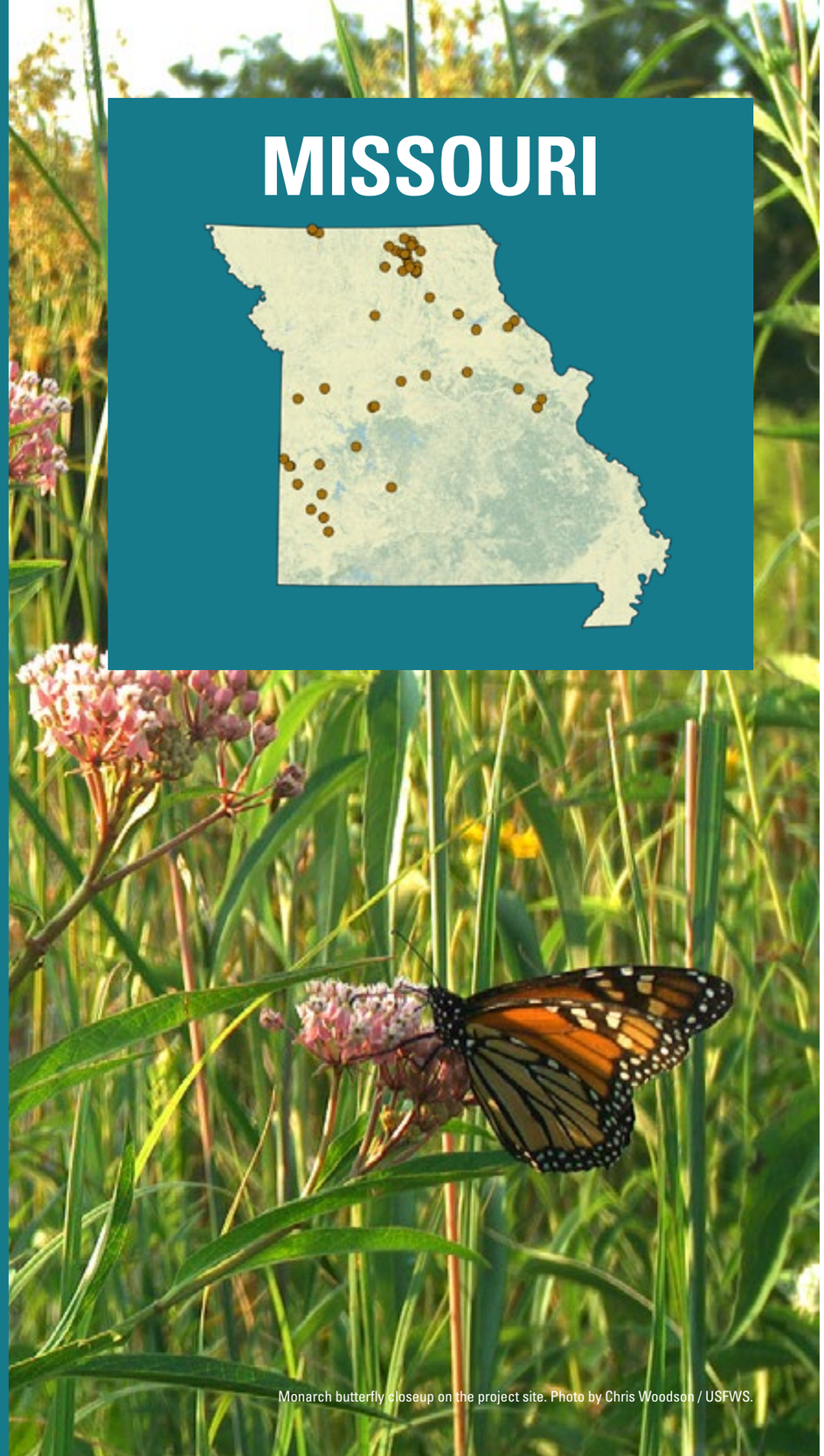
$1:2.1
LEVERAGE

0
STREAM AND RIVER

2,488
UPLAND ACRES

97
WETLAND ACRES

0
FISH PASSAGE STRUCTURE



Monarch butterfly closeup on the project site. Photo by Chris Woodson / USFWS.

Biologist Chris Woodson preparing to seed the project site. USFWS Photo.

PROJECT HIGHLIGHT:

Winter Seeding for Pollinators

This pollinator project utilized a conservation design strategy to deliver practices in concert with our conservation partners (Missouri Soil and Water Conservation District, Missouri Dept of Conservation and Pheasants Forever/Quail Forever) close to protected areas, such as public lands, easements, and on Conservation Reserve Program (CRP) lands owned by private landowners.

For this project, we restored 22.8 acres of native grassland habitat using a diverse mix of native forbs and legumes. 34 native forb species were planted at this site. A minimum of three species blooming in each season (spring, summer, and fall) was also required. Additionally, a minimum of 3% of the mix was comprised of milkweed seed and two thirds of this milkweed seed was common milkweed (Asclepias syriaca). The remaining third of the milkweed seeds was butterfly milkweed or swamp milkweed depending on soil type.

These practices contribute to a natural community once prevalent in Missouri's tallgrass ecosystems. This work will aid in adding monarch and other pollinator life cycle habitat requirements, and will provide nesting, brood rearing, and wintering habitat for declining grassland birds such as grasshopper sparrow, bobolink, and northern bobwhite.

Closeup of winter seeding. Photo by Chris Woodson / USFWS.

$427,875
PFW PROJECT INVESTMENT

$2.15M
PARTNER CONTRIBUTION

$2.58M
TOTAL PROJECT

$1:5
LEVERAGE

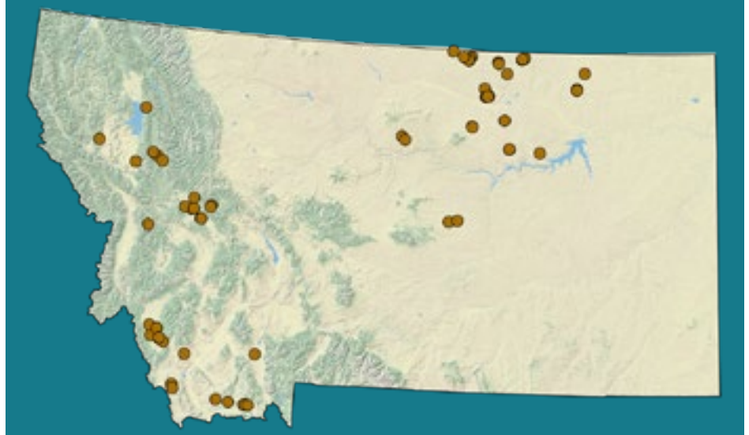
26.8
STREAM AND RIVER

19,254
UPLAND ACRES

1,078
WETLAND ACRES

7
FISH PASSAGE STRUCTURE

MONTANA



Partners for Fish and Wildlife biologist Greg Neudecker with landowner. USFWS Photo.

After Restoration. USFWS Photo.

PROJECT HIGHLIGHT:

Nevada Creek Restoration

Partners for Fish and Wildlife in Montana restored 9,300 feet of Nevada Creek, a large, third-order tributary to the Blackfoot River. This stream supports native westslope cutthroat trout and low numbers of bull trout. The stream suffers from excessive bank erosion, loss of floodplain connection and simplified habitat. This systemic erosion was not only a limiting factor for native trout living in the stream, it also meant that every year the landowners were losing a significant amount of ground to erosion. To address these impairments, restoration was designed to reconstruct a meandering stream channel with a lower width-to-depth ratio and well-defined pools, glides and runs while providing shade and bank stability using transplanted vegetation, vegetated wood and brush banks, and containerized plant stock. Past restoration projects on Nevada Creek have shown as much as 600% increase in westslope cutthroat trout populations.

This project involved multiple partners including the private landowner, Montana Fish, Wildlife & Parks, MT Department of Environmental Quality, Montana Trout Unlimited, Big Blackfoot Chapter of Trout Unlimited, Log Jam Presents and the Blackfoot Challenge.

Before Restoration. USFWS Photo.

$179,209
PFW PROJECT INVESTMENT

$1.4M
PARTNER CONTRIBUTION

$1.58M
TOTAL PROJECT

$1:7.9
LEVERAGE

8.16
STREAM AND RIVER

25,141
UPLAND ACRES

2,146
WETLAND ACRES

21
FISH PASSAGE STRUCTURE

NEBRASKA

Before and After Restoration in the Nebraska Sandhills Focus Area. USFWS Photo.

Riverine Floodplain/Lowland Grassland Habitat. USFWS Photo.

PROJECT HIGHLIGHT:

Riverine Slough Restoration

A goal of Partners for Fish and Wildlife in Nebraska is to restore important riverine floodplain habitats along biologically important riverine systems in Nebraska. Partners for Fish and Wildlife staff worked in collaboration with numerous partners including private landowners, Ducks Unlimited, Nebraska Game and Parks Commission, Platte River Basin Environments, Platte River Whooping Crane Trust, Pheasants Forever, and Audubon's Rowe Sanctuary to restore and enhance 5.2 miles of riverine, stream and riparian habitats, 3.66 miles of riverine sloughs and backwater habitat, and provided fish and aquatic passage at 21 locations.

This North Platte River Habitat Restoration Project is located along the North Platte River in Garden County and is a great example of the type of habitat projects being conducted throughout the North Platte River valley and the diverse group of partners that work together to accomplish habitat projects in Nebraska.

The overall goal of this project is to restore riverine floodplain habitat for numerous federal trust species including: migratory waterfowl (mallards, blue-winged teal, Canada geese, and Northern pintail), sandhill cranes, other migratory waterbirds, grassland nesting birds, monarch butterflies and other pollinators, bald eagles, and other native fish and wildlife species. Approximately 3,800 linear feet of riverine wetland slough and backwater habitat and over 118 acres of riverine floodplain grassland/wetland habitat were restored and enhanced as a result of this project.

Riverine Floodplain/Lowland Grassland Habitat. USFWS Photo.

$340,613
PFW PROJECT INVESTMENT

$1.07M
PARTNER CONTRIBUTION

$1.41M
TOTAL PROJECT

$1:3.2
LEVERAGE

3.95
STREAM AND RIVER

1,792
UPLAND ACRES

500
WETLAND ACRES

0
FISH PASSAGE STRUCTURE

NEVADA

Shelly Kopinski and Cheresa Taing of Get Outdoors Nevada clear the project area so that the new desert tortoise habitat can be built on Gilcrease Orchard in Las Vegas, Nevada. Photo by Christiana Manville / USFWS.

A child from Bob Price Community Center pulls weeds in the new desert tortoise habitat at Gilcrease Orchard in Las Vegas, Nevada. Photo by Christiana Manville / USFWS.

PROJECT HIGHLIGHT:

Gilcrease Orchard Desert Tortoise Habitat

In the late summer of 2018, Gilcrease Orchard partnered with Get Outdoors Nevada and Tortoise Group to expand their educational program to include two desert tortoise habitats.

Later in October, Get Outdoors Nevada, Tortoise Group and Silverado High School volunteers constructed two Desert Tortoise burrows, built cinder block fences and installed drip irrigation lines. Youth from Bob Price Community Center planted 20 one-gallon native plants of the following species: desert willow, globemallow, desert marigolds, creosote bush, wild grapes, and prickly pear cactus.

This habitat is designed to provide food and shelter for two desert tortoises. Get Outdoors Nevada created and installed an interpretive signs to educate young audiences about desert tortoises. Additionally, Gilcrease Orchard offers education field trips to student groups and the public.

In the spring of 2019, the Orchard manager adopted two desert tortoises, one for each habitat, from the Tortoise Group. On May 18, 2019, we had a celebration where children from the Bob Price Community Center pulled weeds and then got to name the two desert tortoises. The tortoises were named Doc Holliday and Jordan.

Doc Holiday, one of the new desert tortoises, at Gilcrease Orchard is enjoying his habitat that was recently built by Get Outdoors Nevada, the Tortoise Group, and their volunteers in Las Vegas, Nevada. Photo by Christiana Manville / USFWS.

$30,142
PFW PROJECT INVESTMENT

$734,000
PARTNER CONTRIBUTION

$776,642
TOTAL PROJECT

$1:24
LEVERAGE

0.11
STREAM AND RIVER

72
UPLAND ACRES

4.5
WETLAND ACRES

1
FISH PASSAGE STRUCTURE

NEW HAMPSHIRE

A timber harvest tour was held during the winter when the harvest was active and about 50 people attended. USFWS Photo.

Improved forest habitat which benefits the New England Cottontail. USFWS Photo.

PROJECT HIGHLIGHT:

Cottontail Habitat Management

Partners for Fish and Wildlife in New Hampshire worked with University of New Hampshire Cooperative Extension, Wildlife Management Institute, New Hampshire Fish and Game, consulting forester Jeremy Turner and loggers from DH Hardwick and Sons to enhance mountain laurel components of their forests.

This project was inspired by the recent discovery of New England Cottontail (endangered in NH) in NY State living in mountain laurel. In NH, these rabbits are usually confined to thickets of invasive vegetation and power line corridors near the Seacoast. If landowners could create habitat for cottontails in their woodlots and not sacrifice their ability to grow high quality timber, the project could meet multiple objectives.

The harvest took place in January – February 2019, and accomplished the research goals. A timber harvest tour was held during the winter when the harvest was active and about 50 people attended. The project team explained the research to the attendees, along with general information about the goals of the harvest and how it was accomplished. Later in the spring, a group of about 25 volunteer Land Stewards attended another tour to the property to explain timber harvesting and show them examples of different types of silvicultural treatments.

Improved forest habitat. USFWS Photo.

$69,420
PFW PROJECT INVESTMENT

$2.1M
PARTNER CONTRIBUTION

$2.17M
TOTAL PROJECT

$1:30
LEVERAGE

0.86
STREAM AND RIVER

49
UPLAND ACRES

192
WETLAND ACRES

1
FISH PASSAGE STRUCTURE

NEW JERSEY

Mating horseshoe crabs at Dyer's Cove restoration project. USFWS Photo.

Restored living shoreline habitat at Dyer's Cove. USFWS Photo.

PROJECT HIGHLIGHT:

Dyer's Cove Beach

In partnership with the American Littoral Society, the project created an oyster reef off of the community of Dyers Cove, Downe Township, Cumberland County, New Jersey as part of the National Fish and Wildlife Foundation-funded Creating Resilient Habitats and Communities on Delaware Bay Project. Partners include the U.S. Fish & Wildlife Service, the Conserve Wildlife Foundation of New Jersey, and the New Jersey Division of Fish and Wildlife.

In addition to restoring inter-tidal oyster habitat, the project will benefit upland landowners, including four beach houses, through the creation of a living shoreline that will help reduce shoreline erosion of adjacent properties. As another part of this grant, Dyers Cove Beach will also receive sand to restore horseshoe crab (Limulus polyphemus) spawning habitat. This oyster reef will help protect the beach restoration from erosion and will benefit the rufa red knot (Calidris canutus rufa), a federally threatened species that feeds on horseshoe crab eggs to fuel its northward migration to arctic breeding areas.

The reefs consist of an inner and outer row, both 200 feet long and 50 feet apart. The reef will be monitored for impacts on aquatic life, horseshoe crabs, and migratory shorebirds.

Volunteers on Gladys Beach. USFWS Photo.

$123,234
PFW PROJECT INVESTMENT

$148,697
PARTNER CONTRIBUTION

$271,931
TOTAL PROJECT

$1:1.2
LEVERAGE

7.67
STREAM AND RIVER

1,055
UPLAND ACRES

310
WETLAND ACRES

0
FISH PASSAGE STRUCTURE

NEW MEXICO

Rio Grande Bosque Restoration Project. Photo by Angel Montoya / USFWS.

Rio Grande Bosque Restoration Project. Photo by Angel Montoya / USFWS.

PROJECT HIGHLIGHT:

Rio Grande Bosque Restoration

This project re-establishes native riparian vegetation where it presently does not exist. Nestled within the Rio Grande Valley State Park, the Bosque Project is along the Albuquerque stretch of the Rio Grande ecosystem that was severely burned in 2005-2006 and presently dominated by bare soil and invasive species. The Bosque Project involves the removal of more than 50 acres of non-native vegetation followed by major revegetation campaigns using various trees, shrubs, forbs, and grasses native to this riparian ecosystem. Leading this project is a working collaboration between two local agencies, the City of Albuquerque and the Middle Rio Grande Conservancy District (representing local irrigators) and Partners for Fish and Wildlife.

A unique aspect of this restoration project is the community-based approach it employs. For example, the revegetation at this site is accomplished through coordinated hands-on workday events open to the community. In FY20, the 3rd annual community planting event will take place, which attracted roughly 200 people on average. Through leadership and instruction from the Partners for Fish and Wildlife, the vegetation planning, prepping, and post-treatment monitoring is done through student coursework focused on watershed and community restoration planning at the local University of New Mexico.

Rio Grande Bosque Restoration Project. Photo by Angel Montoya / USFWS.

$13,590
PFW PROJECT INVESTMENT

$1.38M
PARTNER CONTRIBUTION

$1.4M
TOTAL PROJECT

$1:101
LEVERAGE

0.39
STREAM AND RIVER

23
UPLAND ACRES

10.4
WETLAND ACRES

5
FISH PASSAGE STRUCTURE

NEW YORK

USFWS Photo.

Removal of low head dam on property. USFWS Photo.

PROJECT HIGHLIGHT:

Raquette River Fish Passage Restoration Project Hutchins Creek

The U.S. Fish and Wildlife Service worked with the Finger Lakes Lake Ontario Watershed Protection Alliance and several private landowners to implement the Raquette River Fish Passage Restoration projects.

There are four restoration areas:

- Hutchins A
- Hutchins B
- Plum Brook at Mill Road
- Plum Brook at Shop Road

The goal of all four projects is to remove barriers to allow for passage of target fish species. Two projects would involve the partial removal of low head dams on private property and the other two would involve replacing undersized culverts, one on private property, the other on a town road.

Before restoration. USFWS Photo.

$275,145
PFW PROJECT INVESTMENT

$581,815
PARTNER CONTRIBUTION

$856,960
TOTAL PROJECT

$1:2.1
LEVERAGE

0.09
STREAM AND RIVER

1,249
UPLAND ACRES

425
WETLAND ACRES

0
FISH PASSAGE STRUCTURE

NORTH CAROLINA

CTO Youth Hunting, photo by Tom Harrison.

CTO Youth Hunting at Sunrise, photo by Tom Harrison.

PROJECT HIGHLIGHT:

Outfall Wetland Enhancement

This project facilitates on-site retention of agricultural drainage from farmland that formerly flowed into a nearby estuary. The drainage water is now used to improve wetland habitat conditions on 185 acres, benefitting waterfowl, shorebirds, and a variety of other wildlife species including spotted turtle, an At-Risk species. The project was completed in partnership with the North Carolina Wildlife Resources Commission, Ducks Unlimited, Inc., the Natural Resource Conservation Service, and the landowners.

Habitat treatments included the installation of a new electric pump, raising the elevation of an existing levee/road, installing a water control structure and creating several small depressional wetlands. The project site is located two miles from Mattamuskeet National Wildlife Refuge and adjacent to a state game land. This area attracts the highest population of wintering waterfowl in the state and is of significant importance in the Atlantic Flyway.

The property is used routinely for hunting by the owners and by Cross Trail Outfitters, a national faith-based youth hunting and fishing organization (teamcto.org).

Restoration in progress-thinning the forest canopy. USFWS Photo.

NORTH DAKOTA

$86,743
PFW PROJECT INVESTMENT

$2.78M
PARTNER CONTRIBUTION

$2.87M
TOTAL PROJECT

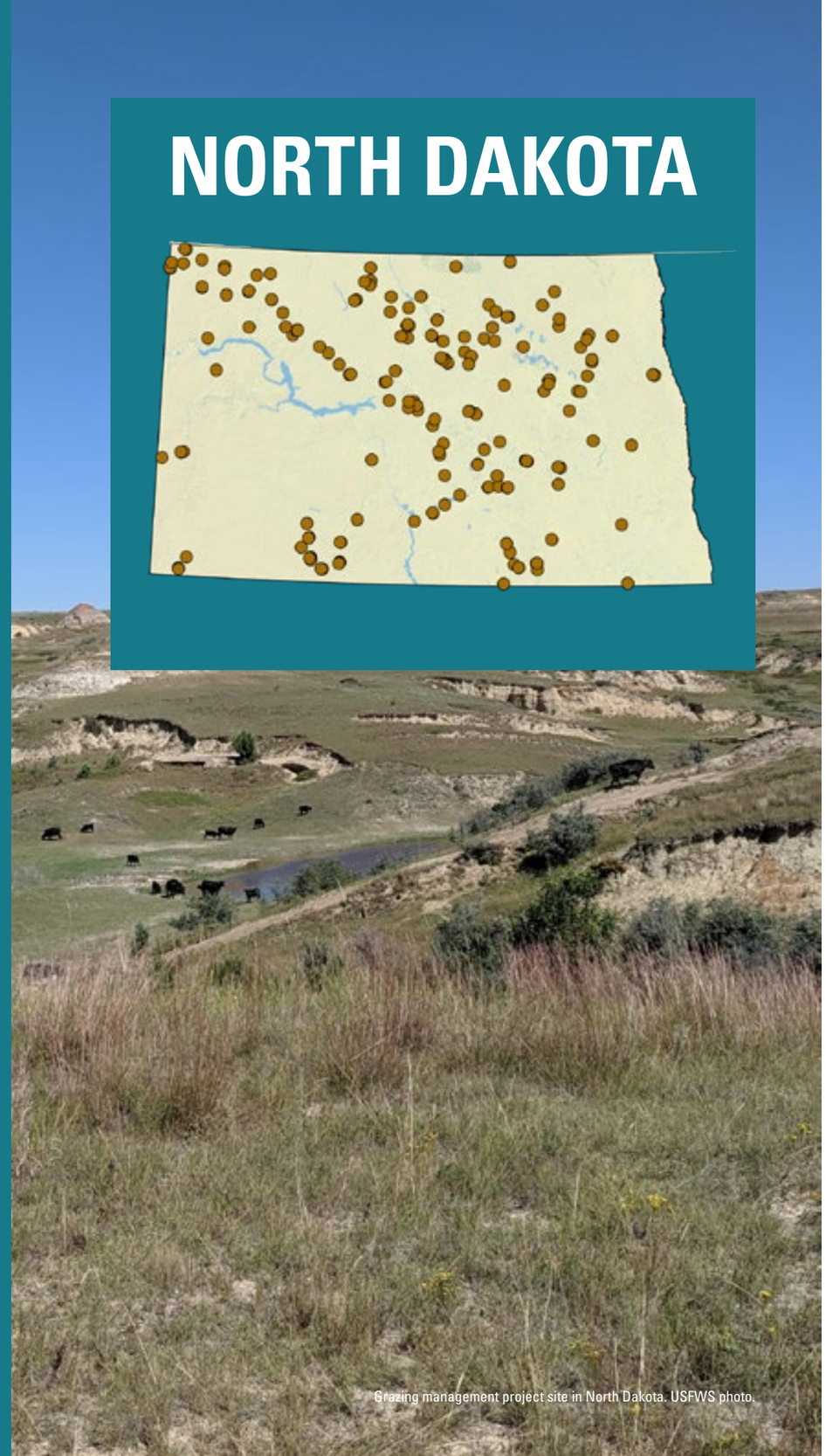
$1:32
LEVERAGE

0
STREAM AND RIVER

39,264
UPLAND ACRES

3,154
WETLAND ACRES

0
FISH PASSAGE STRUCTURE



Grazing management project site in North Dakota. USFWS photo.

Restoration in action. USFWS photo.

PROJECT HIGHLIGHT:

Grazing Management System

Partners for Fish and Wildlife designed and oversaw construction of a fencing system used to implement a multi-celled grazing system. The Partners for Fish and Wildlife biologist solely negotiated, wrote, and signed a Landowner Agreement with the private landowner which outlined every aspect of the accomplishment that took place.

The Partners for Fish and Wildlife biologist secured all necessary permits and clearances prior to project implementation. The fence and Landowner Agreement allowed the landowner to rotate an agreed amount of livestock through multiple grazing cells to increase grazing pressure on non-native cool season grasses for the benefit of native grasses and forbs including milkweeds.

The rotational grazing provided improved vegetation structure and grass/forb species composition which are beneficial to grassland dependent birds, grassland nesting waterfowl, and pollinator species such as native bees and monarch butterflies. While management of the grasses and forbs is important, a more important facet of the project is that the landowner agreed to maintain the property in a state of native grassland vegetation for at least 10 years via the Landowner Agreement. The continued maintenance and improved management of the native grass/forb community aid in carbon sequestration.

PFW biologist Chad Maier and landowner on project site visit. USFWS photo.

$51,361
PFW PROJECT INVESTMENT

$366,570
PARTNER CONTRIBUTION

$417,931
TOTAL PROJECT

$1:6.5
LEVERAGE

0
STREAM AND RIVER

195
UPLAND ACRES

421
WETLAND ACRES

0
FISH PASSAGE STRUCTURE

OHIO

Strange Road wetland restoration project site. USFWS Photo.

Restoration in action. USFWS photo.

PROJECT HIGHLIGHT:

Stange Road Wetland Restoration

This project is a joint effort between the landowner, Partners for Fish and Wildlife, U.S. Department of Agriculture, Ottawa County Soil and Water Conservation District, Ohio Division of Wildlife, and Ducks Unlimited. The project restored approximately 39 acres of wetland and 17 acres of upland from marginal cropland. The project is located immediately adjacent to Ottawa National Wildlife Refuge. The restoration took place by excavating dikes around the desired wetland areas, breaking the existing drainage tile, and installing a pump and water control structures. Ottawa Soil and Water Conservation District completed most of the survey and design work based on input from all the partners. Over 20,000 cubic yards of soil were moved to construct the dikes around the wetland areas, creating 7,800 feet of dike. The wetland areas will be managed for a variety of wetland dependent species including migratory waterfowl and shorebirds. The area will provide quality habitat for other species such as bald eagle, piping plover, indiana bat, and blanding's turtle. The project will also contribute to better water quality and fewer nutrients and sediment in the Western basin of Lake Erie through the conversion of marginal cropland to wetlands and native uplands.

Bumble bee. Photo by Mike Budd / USFWS.

OKLAHOMA

$174,767
PFW PROJECT INVESTMENT

$203,827
PARTNER CONTRIBUTION

$378,594
TOTAL PROJECT

$1:1.2
LEVERAGE

5.29
STREAM AND RIVER

3,396
UPLAND ACRES

235
WETLAND ACRES

0
FISH PASSAGE STRUCTURE

Upland habitat restoration project in Woodard, Oklahoma. USFWS photo.

Wetland restoration project site in Nowata County, Oklahoma. USFWS photo.

PROJECT HIGHLIGHT:

Wetland Restoration

The project area is located just north of Oolagah Lake in Nowata County in the Big Creek watershed drainage. The property had an existing large wetland area location which was built over 30 years ago. Over the past 30 years, sediment from several flood events filled in the project site in several locations, making it unmanageable. To enhance this wetland site, we removed silt berms and added additional dikes and drain structures to allow the landowner the opportunity to manage the wetland properly and actually increases the manageable wetland acres to 18 acres of suitable wetland habitat, with water that is 18" or less through the entire wetland. This wetland has been managed very well in the past and the landowner is planning to continue to manage it for waterfowl and other migratory birds.

The enhancement project will include the removal of some silt berms, the installation of two new dikes and water control structures inside an existing dike structured system to better manage the wetland and protecting an additional 45 acres of upland habitat. Sediment issues should be minimal in the future as the result of leaving the older dike system in place to handle the runoff and overflow flood events waters causing the siltation events. The new two wetland units were equippeded with water draw-down structures to fluctuate water level thru the growing seasons to produce native plants, such as smartweed, barnyard grasses and to expose mud-flat areas for returning migrating shore bird habitat. Water levels will be raised in the fall and winter months for waterfowl use.

Wetland restoration project site in Nowata County, Oklahoma. USFWS photo.

OREGON

$388,034
PFW PROJECT INVESTMENT

$2.75M
PARTNER CONTRIBUTION

$3.14M
TOTAL PROJECT

$1:7.1
LEVERAGE

4.27
STREAM AND RIVER

913
UPLAND ACRES

462
WETLAND ACRES

6
FISH PASSAGE STRUCTURE

Habitat restoration in action. USFWS photo.

Southwest Oregon Pollinator Collaborative Project. USFWS photo.

PROJECT HIGHLIGHT:

Southwest Oregon Pollinator Collaborative

In 2015, the U.S. Fish & Wildlife Service brought together federal, state, and private organizations interested in monarch and pollinator conservation in southwest Oregon. The response was enormous and partners joined what soon became known as the Southwest Oregon Pollinator Collaborative (SWOPC). SWOPC partners believe that working collaboratively is the most effective method for achieving science-based pollinator habitat management goals. SWOPC works across jurisdictional and geographic boundaries using strategies that combine the strengths of each partner organization to make natural areas, farms, and developed landscapes in southwest Oregon more supportive of pollinator diversity.

SWOPC has grown to now include 14 partnering agencies and organizations. SWOPC, led by the Lomakatsi Restoration Project, was awarded a $200,000 grant from the National Fish and Wildlife Foundation (NFWF) to implement the Southwest Oregon Monarch Habitat Restoration Initiative. Lomakatsi and other SWOPC partners installed nearly 40,000 native milkweed and nectar-producing wildflowers on over 300 acres of restoration sites across the monarch's range in southern Oregon.

SWOPC is now working with private landowners to install pollinator meadows and hedgerows as well as other improvements on existing farms, and integrate wildflower seeding and planting into restorative fuels reduction programs funded by the Natural Resources Conservation Service.

Monarch larvae on milkweed at project site. USFWS photo.

PENNSYLVANIA

$30,000
PFW PROJECT INVESTMENT

$1.28M
PARTNER CONTRIBUTION

$1.31M
TOTAL PROJECT

$1:42
LEVERAGE

8.37
STREAM AND RIVER

103
UPLAND ACRES

89
WETLAND ACRES

6
FISH PASSAGE STRUCTURE

Meeting with partners to review the project site. USFWS photo.

Section B THE SHOPPING NEWS of Lancaster County

Serving Over 38,000 Homes

Wednesday, August 14, 2019 · Volume LIV, No. 18

Stream Study Teaches Kids About Environmental Health

Local news story from the *Shopping News of Lancaster County* featuring the project.

PROJECT HIGHLIGHT:

Historic Poole Forge Project

This project area includes the Conestoga River starting at Historic Poole Forge. Local interest in more stream restoration work is very high and areas of the watershed are intensively grazed with little riparian buffer. The initial project will generate interest in stream restoration work as Historic Poole Forge is a highly visible location that includes a covered bridge and park with thousands of visitors annually.

At this project site, U.S. Fish and Wildlife Service staff worked with the Lancaster County Conservation District, Unique Excavating and Habitat Forever to restore nearly 900 feet of stream with vertical banks and areas that were twice the Conestoga's bankfull width. Structures included mudsills, log vanes, log cross vanes and random boulders. A pollinator plot and riparian buffer were also installed.

A focus of Historic Poole Forge is education, whether history or the environment. Following our restoration, an outdoor classroom with school kids ranging in age from 4 to 12, were instructed on stream restoration and the benefits of clean water. The kids got to witness fish shocking courtesy of the Lancaster County Conservation District and got to identify several species including brook trout, cutlips minnows and white suckers.

Surveying the project site. USFWS photo.

2017-2019
PROJECTS

$5,000
PFW PROJECT INVESTMENT

$5,000
PARTNER CONTRIBUTION

$10,000
TOTAL PROJECT

$1:1
LEVERAGE

0
STREAM AND RIVER

5.4
UPLAND ACRES

0
WETLAND ACRES

0
FISH PASSAGE STRUCTURE

RHODE ISLAND

Project sign at Norman Bird Sanctuary.

Closeup of polliinator habitat and bumble bee landing on flower.

PROJECT HIGHLIGHT:

Norman Bird Sanctuary Monarch and Pollinator Habitat

The Norman Bird Sanctuary in Rhode Island partnered with the Natural Resource Conservation Service and U.S. Fish & Wildlife Service to restore a five acre field from cool to warm season grasses, as well as removal of invasive multi-flora rose.

Partners for Fish and Wildlife provided assistance with planning, permitting, and implementation on the project. Cooperators broke ground in 2016, beginning with plowing and harrowing the field to remove the multi flora rose root masses and seeding with a winter crop. In the spring of 2017 project partners harrowed and seeded with the Monarch mix provided by the Natural Resource Conservation Service.

The landowner has begun to use the restored fields for educational programs, outreach events, youth camps, and teaching services associated with pollinators.

Restoration in action.

SOUTH CAROLINA

2017-2019 PROJECTS

$100,034
PFW PROJECT INVESTMENT

$125,678
PARTNER CONTRIBUTION

$225,812
TOTAL PROJECT

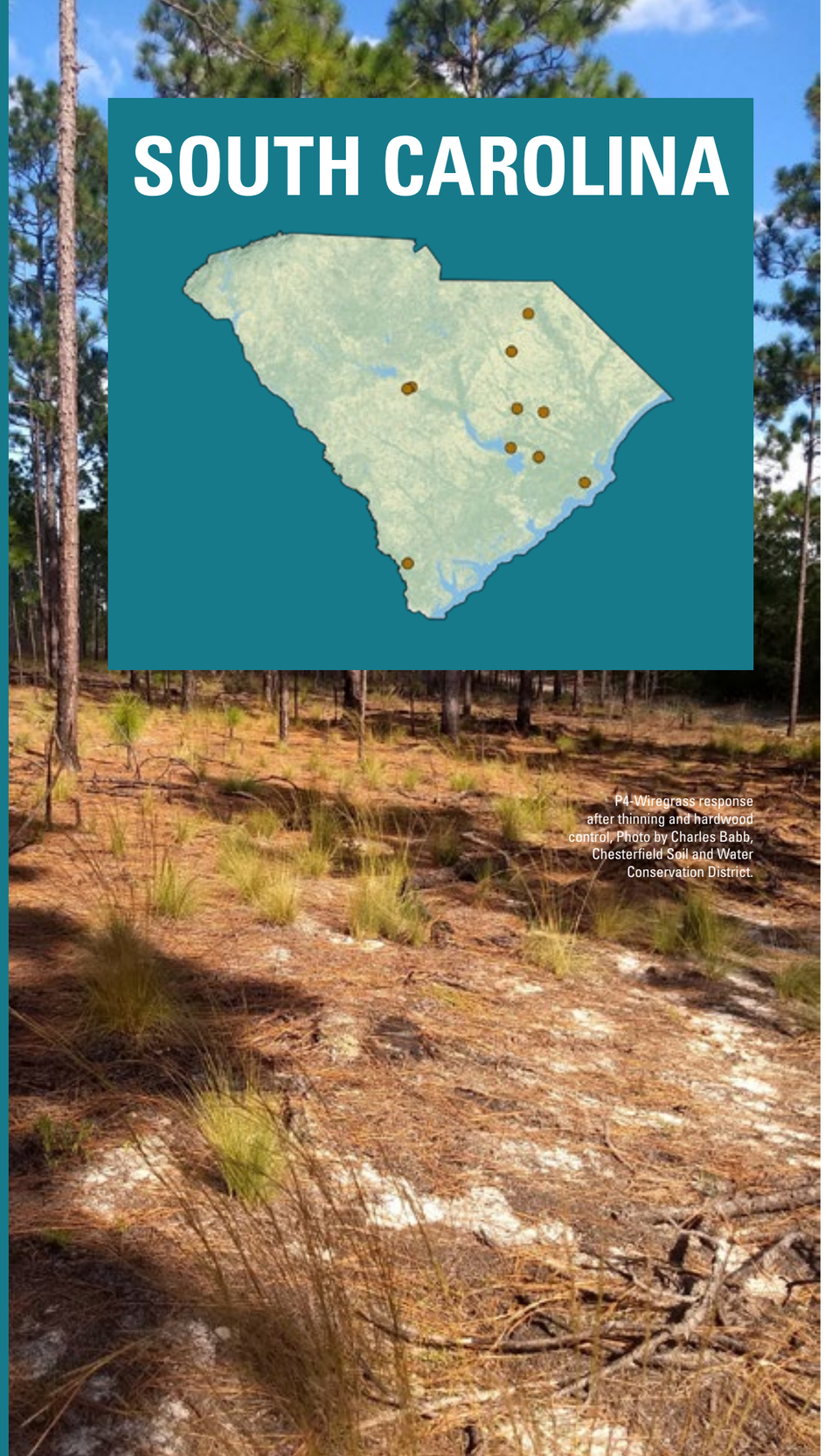
$1:1.3
LEVERAGE

0
STREAM AND RIVER

1,562
UPLAND ACRES

114
WETLAND ACRES

0
FISH PASSAGE STRUCTURE



P4-Wiregrass response after thinning and hardwood control, Photo by Charles Babb, Chesterfield Soil and Water Conservation District.

Odell and Stanley Byrd Conducting a Prescribed Burn, Photo by Charles Babb, Chesterfield Soil and Water Conservation District.

PROJECT HIGHLIGHT:

Byrd Tract, Red-Cockaded Woodpecker Habitat Enhancement Project

This project restored 23 acres of longleaf pine habitat in Chesterfield County, South Carolina to conserve wildlife and benefit federal trust species

The project site predominantly consists of mature longleaf pine trees (35-90 years-old), along with loblolly pine (roughly 120 square feet of basal area per acre). The mid-story and understory vegetation is dominated by hardwoods.

All non-longleaf merchantable timber was harvested, hardwood understory and midstory was mulched and re-sprouts were treated with herbicide. The site was burned and will be burned on a three to four year interval. Restoration efforts supported the red-cockaded woodpecker.

The property is immediately adjacent to more than 100,000 acres of public land (state and federal) which is occupied by the second largest population of red-cockaded woodpeckers in the state and 7th in the world.

Wiregrass response after thinning and hardwood control, Photo by Charles Babb, Chesterfield Soil and Water Conservation District.

SOUTH DAKOTA

$120,784
PFW PROJECT INVESTMENT

$1.04M
PARTNER CONTRIBUTION

$1.16M
TOTAL PROJECT

$1:8.6
LEVERAGE

0
STREAM AND RIVER

24,361
UPLAND ACRES

964
WETLAND ACRES

0
FISH PASSAGE STRUCTURE

Prairie restoration and enhancement in South Dakota. USFWS photo.

Aerial view of the lush prairie pothole region of South Dakota. USFWS photo.

PROJECT HIGHLIGHT:

Pollinators in the Prairie Pothole Region

Partners for Fish and Wildlife in South Dakota partnered with a landowner to restore 36 acres of cropland to a diverse mix of native prairie plants. The prairie was in full bloom during the spring of 2019 and hosted a wide variety of pollinators and passerines.

Partners for Fish and Wildlife worked closely with the landowner to design a custom seeding plan with 56 species of native grasses and forbs. The U.S. Fish & Wildlife Service also partnered with the landowner to perpetually protect the tract with a grassland conservation easement. In addition, the project is directly adjacent to a 90 acre wetland restoration previously completed by the Partners for Fish and Wildlife Program, which exemplifies the multi-species benefits resulting from upland restoration in the Prairie Pothole Region. Over the past 25 years the Partners for Fish and Wildlife Program in South Dakota has completed 769 grassland and prairie restoration projects totaling 68 square miles of habitat for pollinators, passerines and breeding waterfowl.

USFWS photo.

TENNESSEE

$30,000
PFW PROJECT INVESTMENT

$106,523
PARTNER CONTRIBUTION

$136,523
TOTAL PROJECT

$1:2.6
LEVERAGE

4.94
STREAM AND RIVER

41
UPLAND ACRES

0
WETLAND ACRES

0
FISH PASSAGE STRUCTURE

Floodplain after cattle removed. Photo by Emily Granstaff / USFWS.

Kudzu patch before. Photo by Emily Granstaff / USFWS.

PROJECT HIGHLIGHT:

From the Stream to the Mountain Tops

Partners for Fish and Wildlife staff worked with The Nature Conservancy to identify resource concerns impacting federally listed and at-risk species throughout Tennessee. Agricultural practices were found to be a primary threat to aquatic species across Tennessee. Livestock exclusion from streams has been a major objective in Tennessee for decades. Winter feeding operations can be detrimental to aquatic resources if appropriate best management practices aren't available or considered as part of a farm management plan. This project represents a prime example of how cost share programs can deliver results that landowners would otherwise have a limited opportunity to accomplish.

The previous operation consisted of winter feeding along the stream to provide a reliable water source and resulted in heavy erosion due to intense pressure on streambanks during months with a high level of precipitation and stream flow. Point source pollution was also a concern due to the confined feeding operation which occurred for more than 45 days throughout the winter months.The new farm operation consists of feeding livestock on higher elevation fields that previously had no reliable water. Pipelines and watering facilities were installed and all livestock feeding operations have been relocated to the higher level mountain top fields. The lower field along the stream will now be used as a source of hay to support the new farm management plan.

After restoration, using sheep to control invasives. Photo by Emily Granstaff / USFWS.

$566,648
PFW PROJECT INVESTMENT

$520,285
PARTNER CONTRIBUTION

$1.09M
TOTAL PROJECT

$1:0.9
LEVERAGE

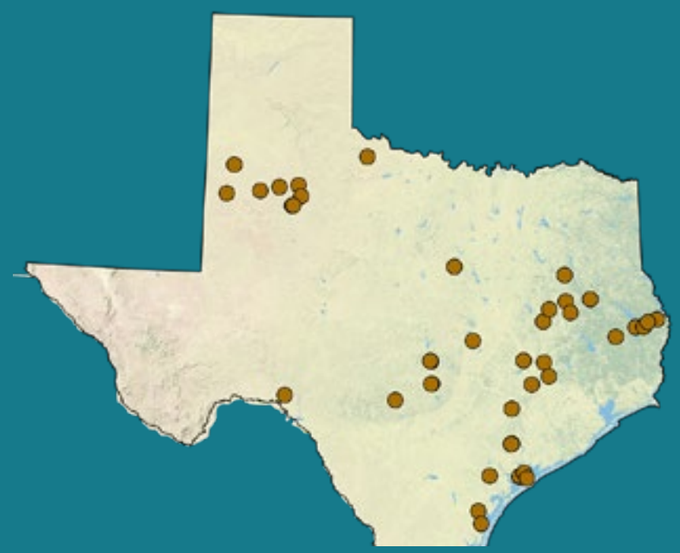
0
STREAM AND RIVER

8,317
UPLAND ACRES

401
WETLAND ACRES

0
FISH PASSAGE STRUCTURE

TEXAS



Reddish egret on wetland. Creative commons photo by Steve Miller.

Texas prairie wetlands provide early season waterfowl habitat. USFWS photo.

PROJECT HIGHLIGHT:

Texas Prairie Wetland Program

KLH wetland provides habitat for early season waterfowl. This wetland was restored through the Texas Prairie Wetland Program which is a partnership between the U.S. Fish & Wildlife Service, Natural Resources Conservation Service, Ducks Unlimited, and Texas Parks & Wildlife Department that has restored over 83,000 acres of wetland along the Texas coast since 1991. In early September just in time for the blue-wing teal migration, the 77-acre KLH farms wetland in Calhoun County was complete, providing hunting opportunities for the landowner.

This wetland is part of a privately owned coastal wetland complex of over 300 acres and is located a short distance from the 2,000-acre Whitmire wetland unit of the Aransas National Wildlife Refuge. Due to this wetlands size, design and location, it is perfectly suited to support significant numbers of waterfowl while providing wintering habitat for the endangered whooping crane.

Texas prairie wetlands provide early season waterfowl habitat. USFWS photo.

UTAH

$80,189
PFW PROJECT INVESTMENT

$1.05M
PARTNER CONTRIBUTION

$1.13M
TOTAL PROJECT

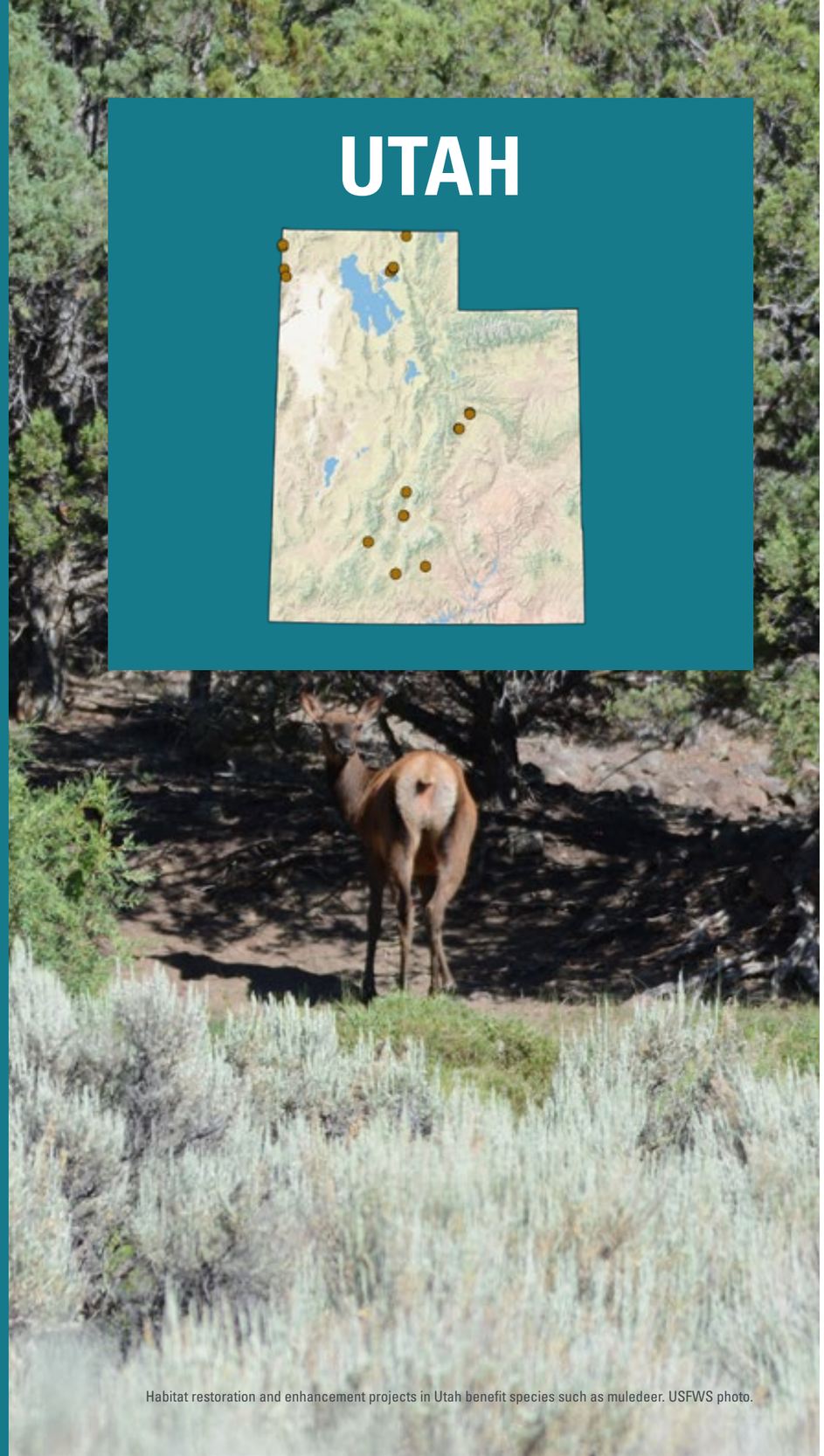
$1:11
LEVERAGE

3.19
STREAM AND RIVER

5,916
UPLAND ACRES

399
WETLAND ACRES

1
FISH PASSAGE STRUCTURE



Habitat restoration and enhancement projects in Utah benefit species such as muledeer. USFWS photo.

After Restoration. USFWS Photo.

PROJECT HIGHLIGHT:

A large upland enhancement project was done in 2019 to improve habitat conditions in a sagebrush system. The areas chosen for treatment were determined using Ecological Site Descriptions in association with soil surveys from the Natural Resources Conservation Service. These ecological sites are plant communities composed of grass, forb and shrub components. The treated areas had junipers spreading into the sagebrush habitat. The junipers were removed through the help of multiple people who cut the trees down with chainsaws. A total of 1,360 acres were treated to improve conditions for greater sage-grouse, mule deer, elk, and Bell's sage sparrow. The Partners for Fish and Wildlife biologist was responsible for being on site and directing the lop and scatter field crew and coordinating the work with the landowner and insuring the work was completed to the specifications required by all of the funding entities. The work completed in 2019 was Phase I and in FY 2020 Phase II will include fencing for 4 different springs to protect and improve water quality as well as providing wet meadow habitat for greater sage-grouse, mule deer, elk, and an endemic mollusks as well as some mastication of junipers, seeding of upland areas and chemical thinning of some sage areas to provide ecological diversity in the sagebrush habitat. This project will be accomplished because the landowner was willing to improve habitat conditions and because funding was provided by numerous agencies. Partners for Fish and Wildlife provided funding and technical assistance in conjunction with funding from the Utah Watershed Restoration Initiative and the Natural Resources Conservation Service.

Before Restoration. USFWS Photo.

VERMONT

$212,780
PFW PROJECT INVESTMENT

$1.12M
PARTNER CONTRIBUTION

$1.39M
TOTAL PROJECT

$1:5.3
LEVERAGE

4.62
STREAM AND RIVER

12
UPLAND ACRES

421
WETLAND ACRES

8
FISH PASSAGE STRUCTURE

Restored floodplain habitat completed in partnership with NRCS in Vermont. USFWS photo.

Wood turtle habitat restoration team. USFWS photo.

PROJECT HIGHLIGHT:

Wood Turtle Project Targeting At-Risk Species Conservation

This project is the result of a partnership between the Winooski Natural Resources Conservation District (WNRCD) and the U.S. Fish and Wildlife Service. The WNRCD conducted outreach and identified the project site as a potential restoration area to meet their goals of reducing pollution, improving habitat, and increasing river stability within the Winooski River watershed.

The site is located within the Partners for Fish and Wildlife in Vermont's Lake Champlain focus area and is an important component of the U.S. Fish and Wildlife Service's goal of restoring wildlife habitat to benefit federal trust species in Vermont. In addition, the project provides an opportunity to establish a forested riparian buffer in an important wood turtle habitat area. Preliminary field assessments by a Partners for Fish and Wildlife biologist indicate that there is suitable nesting habitat on site, and a male and female wood turtle were found within the restoration area in May 2019. Wood turtles are a Tier 1 At-Risk species in northeast region; the occurrence of both a male and female wood turtle within the project area make this site a very high priority for continued monitoring and restoration efforts, if needed.

U.S. Fish & Wildlife Service provided technical and financial assistance to this project, including: site assessments, habitat surveys, development of a habitat restoration plan, coordination of habitat restoration activities, maintenance activities, and long-term monitoring of restoration success.

Wood turtle utilizing restored habitat. USFWS photo.

VIRGINIA

$500
PFW PROJECT INVESTMENT

$211,852
PARTNER CONTRIBUTION

$212,352
TOTAL PROJECT

$1:423
LEVERAGE

1.96
STREAM AND RIVER

7.7
UPLAND ACRES

0
WETLAND ACRES

1
FISH PASSAGE STRUCTURE

Eroded streambank at Chilhowie Town Park (before restoration). USFWS photo.

Restored streambank habitat. Inset: closeup photo of streambank stabilization with riparian plants. USFWS Photos.

PROJECT HIGHLIGHT:

Chilhowie Town Park

This project restored 3,200 feet of the Middle Fork Holston River. The streambanks had experienced accelerated bank erosion along segments throughout the town park reach. This project curbed erosion via bank stabilization and riparian vegetation establishment; improved river access and instream habitat for aquatic species; and provided various educational and recreational opportunities for the community of Chilhowie. U.S. Fish & Wildlife Service provided technical assistance for project planning and design; permitting and compliance; project implementation coordination and oversight and guidance throughout the term of this agreement.

Middle photo: restoration in action, placing stones instream. Below photo: heavily eroded streambanks, before restoration. USFWS photos.

$286,785
PFW PROJECT INVESTMENT

$5.2M
PARTNER CONTRIBUTION

$5.5M
TOTAL PROJECT

$1:18
LEVERAGE

1.23
STREAM AND RIVER

217
UPLAND ACRES

300
WETLAND ACRES

1
FISH PASSAGE STRUCTURE

WASHINGTON

Before and after restoration at the Hancock Springs restoration site. USFWS photo.

Before and after restoration at Hancock Springs, downstream view. USFWS photo.

PROJECT HIGHLIGHT:

Hancock Springs Phase II

Hancock Springs is a unique, true spring- and groundwater-fed channel. A historic dairy operation existed on the property through the 1950s where unrestricted livestock access severely degraded the spring source, soils and vegetation along the channel. The stream quickly widened to over 80 feet, beaver dams precluded vegetation regrowth, and the gravel-cobble substrate was buried beneath a thick layer of sediment and organic "muck" leaving little opportunity for salmonids of any life stage.

The channel remained static and in very poor condition for many decades. No native salmonid use was documented at the site until 2008 when a Yakama Nation project constructed numerous weirs to induce localized scour of the fine sediment. However, the full potential of the site to support abundant spawning, rearing, and overwintering conditions wasn't realized until 2011 when U.S. Fish & Wildlife Service undertook a collaborative project with the Tribe and the Methow Conservancy to fully reconstruct the historic conditions in the upper 1/4-mile of the spring. In 2019, the remaining 1/2-mile of stream was completely restored using specialized equipment and wetland vegetation custom-grown from site-derived seed. Six weeks later, the once-sterile backwater had a new channel 8-10 feet wide with very deep pools and a lush, diverse, emergent wetland to support a huge variety of native bird, amphibian, and mammal species.

Putting the dirt to work! Katy Pfannenstein (left), Robes Parrish (center), and Kristen Kirkby (right, CCFEG Project Manager) on the first day of construction in the channel..

WEST VIRGINIA

$5,575
PFW PROJECT INVESTMENT

$484,341
PARTNER CONTRIBUTION

$489,916
TOTAL PROJECT

$1:86
LEVERAGE

15.4
STREAM AND RIVER

1,898
UPLAND ACRES

6
WETLAND ACRES

1
FISH PASSAGE STRUCTURE

Conservation fencing project. USFWS photo.

Conservation fencing project. USFWS photo.

PROJECT HIGHLIGHT:

This Partners for Fish and Wildlifet project was a very successful venture between the landowner, the Natural Resources Conservation Service, the Farm Service Agency, Trout Unlimited, and the U.S. Fish and Wildlife Service. The project enhanced and protected 5.12 miles of streambank, 32.32 acres of riparian upland, 214.75 acres of upland forest, and improved pasture management on 83.2 acres.

The Partners for Fish and Wildlife biologist assessed the site in cooperation with the FSA and NRCS who developed the conservation plan and provided cost share funding through Environmental Quality Incentives Program and Conservation Reserve Enhacement Program. These conservation efforts will reduce sediment leaving the farm. Sediment reduces stream channel capacity which can lead to increased flooding. Water temperatures will decrease as shade from riparian vegetation increases. The farmer will benefit from improved pasture management which improves grazing efficiency and farm profitability.

Migratory birds, pollinators, interjurisdictional fish, and bats will benefit from improved foraging, nesting, and spawning habitat along with improved water quality draining from the farm into the North Fork of Lunace Creek, a tributary to the South Branch of the Potomac River and the Chesapeake Bay watershed.

Conservation fencing project. USFWS photo.

WISCONSIN

$305,834
PFW PROJECT INVESTMENT

$1.02M
PARTNER CONTRIBUTION

$1.33M
TOTAL PROJECT

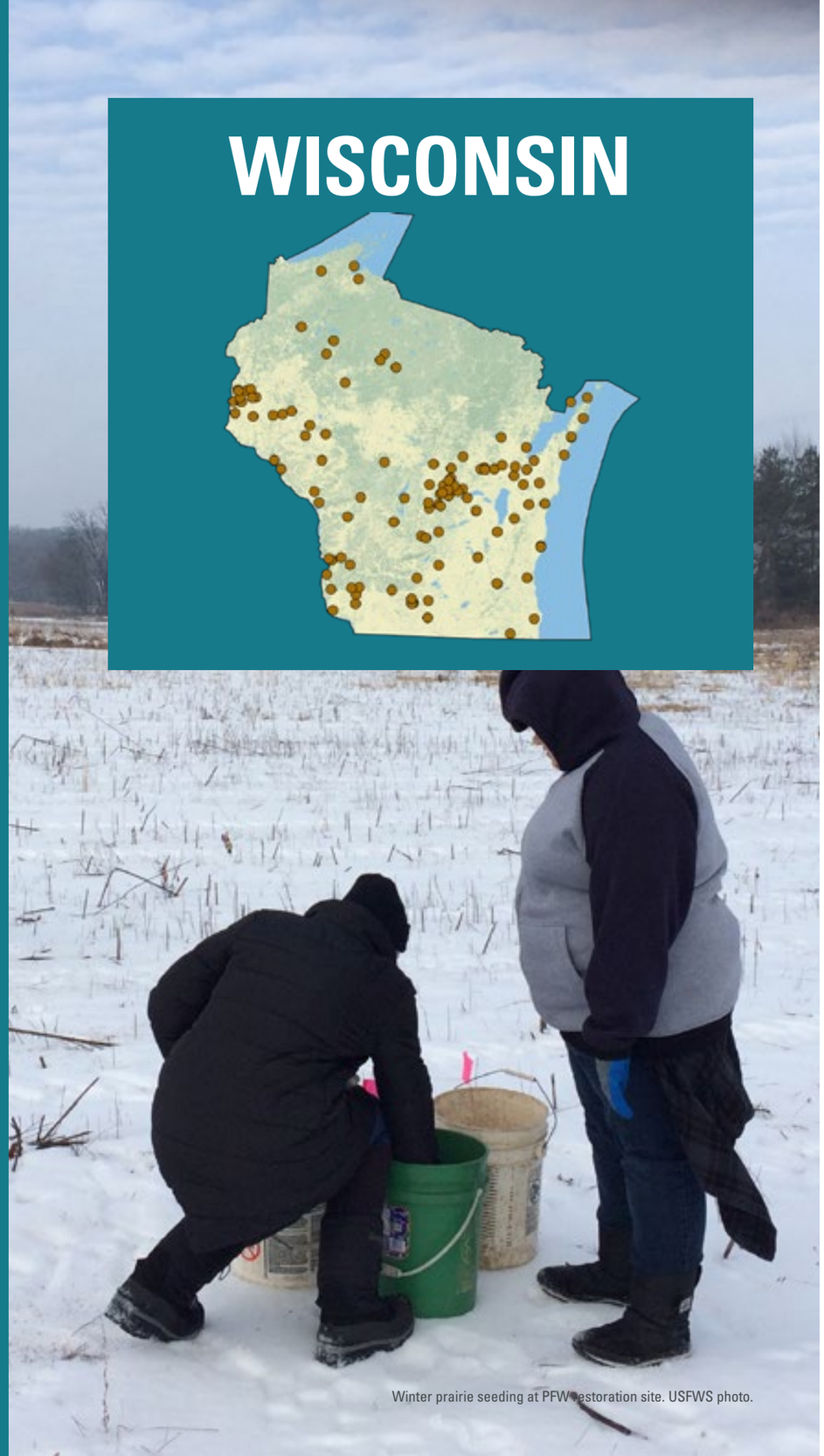
$1:3.3
LEVERAGE

0
STREAM AND RIVER

1,182
UPLAND ACRES

221
WETLAND ACRES

1
FISH PASSAGE STRUCTURE



Winter prairie seeding at PFW restoration site. USFWS photo.

Restoration in action. USFWS photo.

PROJECT HIGHLIGHT:

This project restored red pine/oak savanna on private property in northwest Wisconsin. Treatments included: firebreak installation, tree and brush removal, brush-pile burning, prescribed fire, seed collection from the property, and broadcast hand seeding. A diverse mix of forbs and milkweed were seeded at the site to provide nectar sources for a wide variety of pollinator species. Site management also allows for native forbs to establish from the seed bank. The results of this project helps restore red pine/oak savanna and expand the diverse, high quality wildlife habitat on the property and the surrounding landscape.

Pine / oak savannah restoration in northwest Wisconsin. Landowner observes a snapping turtle on site. USFWS Photo.

WYOMING

$154,182
PFW PROJECT INVESTMENT

$3.08M
PARTNER CONTRIBUTION

$3.23M
TOTAL PROJECT

$1:20
LEVERAGE

13.8
STREAM AND RIVER

6,175
UPLAND ACRES

51
WETLAND ACRES

9
FISH PASSAGE STRUCTURE

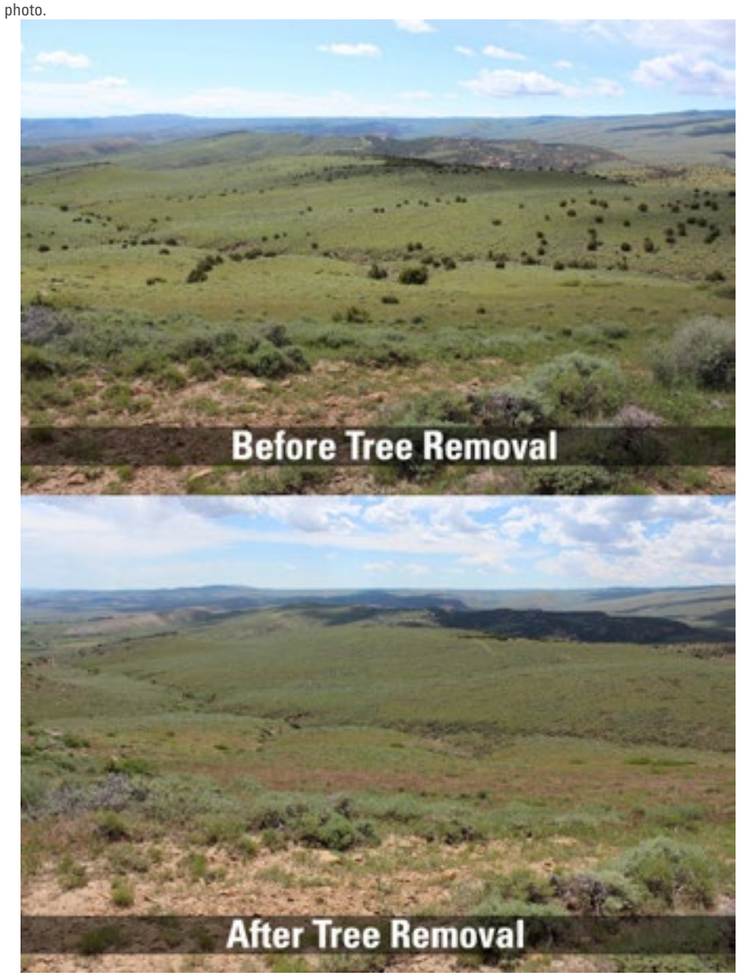
Sage habitat in the Wind River area of Wyoming. USFWS photo.

Chainsaw crew removing invasive juniper trees. USFWS photo.

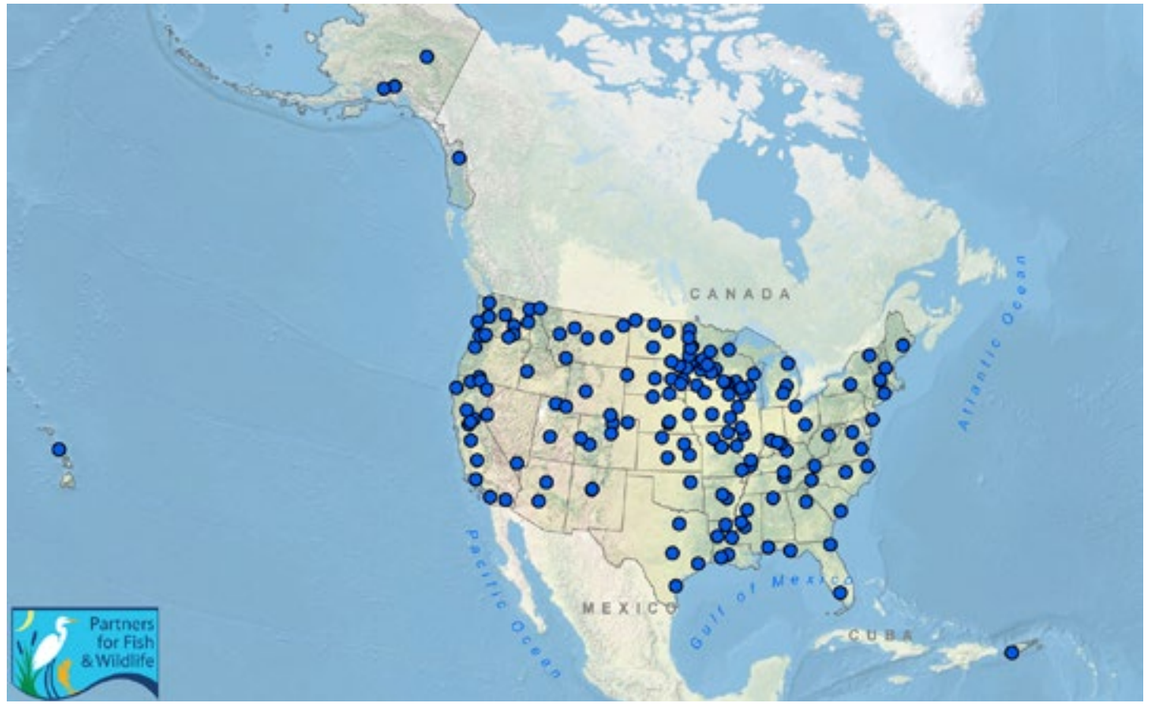
PROJECT HIGHLIGHT:

Wind River Restoration

Sage grouse have a variety of habitat requirements, shared by many local big game populations. The Table Mountain area of Wyoming provides important nesting, brood rearing and migration habitat. Invasive juniper trees across 370 acres were identified by the Wind River/Sweetwater River Sage Grouse Working Group as one of several threats to local sage grouse populations. Our 12-person crew conducted operations on the entire 370 acres, keeping shrub trunks to less than 6" from the surface and chunked the shrubs into less than 2-foot sections.



STATE CONTACTS



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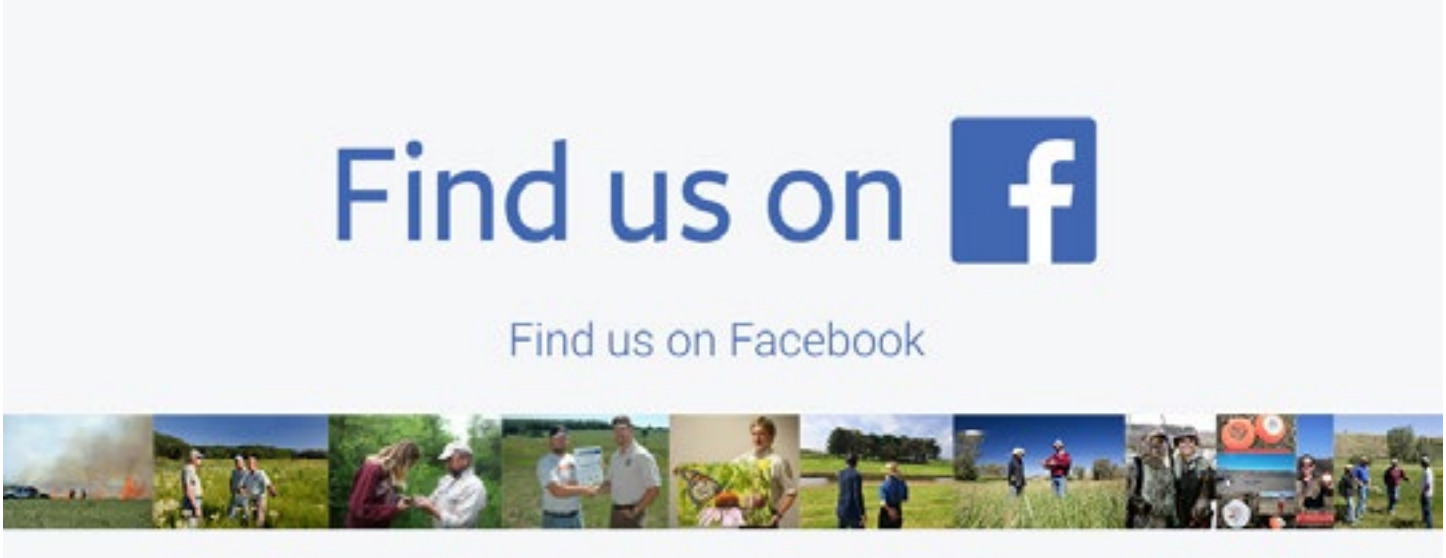
RFA biologist Linda Montoya meets with a property manager in New Mexico. USFWS photo.

Biologist Christiana Manville meets with landowner to monitor progress of Amargosa Toad breeding ponds in Beatty, Nevada. Photo by Joe Milmoe / USFWS.



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