BUREAU OF RECLAMATION

FY 2023 Environmental Water Resources Projects

Arizona

Altar Valley Conservation Alliance, Surface Water Conservation for Drought and Climate Resilience in the Altar Valley Watershed

Reclamation Funding: $1,213,809 **Total Project Cost: $1,999,014**

The Altar Valley Conservation Alliance, in partnership with the Pima County Regional Flood Control District, will use a series of nature-based features in the Altar Wash watershed, southwest of Tucson, Arizona, to slow flows, improve groundwater infiltration, and create surface water habitat for wildlife. Under current conditions, stormwater from uplands in the Wash flows downhill quickly to the Santa Cruz River causing severe erosion. The Alliance will install low-tech Natural Infrastructure in Dryland Streams (NIDS) facilities made of rock, wood, and earth, across 8,985 acres of the wash, which will slow the runoff, reducing erosion and retaining water in the Wash for longer periods of time. The project will also enhance drought and climate change resilience, reduce downstream flood impacts, and increase the sustainability of agricultural operations. These interventions and site-locations were prioritized in the 2022 Altar Valley Watershed Plan that was developed as part of a previous WaterSMART Cooperative Watershed Management Program grant.

California

San Bernardino Valley Municipal Water District, Hidden Valley Creek Aquatic and Riparian Habitat Restoration Project

Reclamation Funding: $3,000,000 **Total Project Cost: $4,343,500**

San Bernardino Valley Municipal Water District will implement the Hidden Valley Creek Aquatic and Riparian Habitat Restoration Project within the Upper Santa Ana River Watershed, a tributary of the Santa Ana River, in southern California. The project will restore and improve the condition of 21.7 acres of degraded aquatic and riparian habitat, including habitat for the threatened Santa Ana Sucker which has lost almost 95% of its historic habitat. The district will construct 4,200 linear feet of new and restored stream channel, establish a 25-foot buffer of native riparian vegetation on each side of the stream, and enhance a 1.2-acre floodplain bench. The project will also include non-native plant removal and site revegetation efforts. This restoration will improve water quality, increase habitat connectivity, and provide crucial support for recovering endangered and sensitive species.

Colorado

American Rivers, Inc, Uncompahgre River Multi-Benefit Project
Reclamation Funding: $ 1,198,376 **Total Project Cost: $1,600,180**

American Rivers, in partnership with the Ward Water Group and local landowners, will upgrade irrigation infrastructure and enhance aquatic and riparian habitats along one mile of the Uncompahgre River in western, Colorado. The current push-up diversion dam structure has caused channel widening, reduction of aquatic habitat diversity, and a decrease in floodplain connectivity. American Rivers will improve the Ward Irrigation Ditch infrastructure by constructing 2 cross-vane weirs, installing a new concrete stoplog bypass at the headgate, and piping 5,600 linear feet of open irrigation ditches. Additionally, the project will improve aquatic and riparian habitat within the channel by constructing cross-vane weirs, J-hook vanes, rock vanes, and boulder clusters; revegetating the banks and meanders using willow pole clusters and riparian plant species plugs; and removing invasive vegetation across 31.6 acres of riparian and upland habitat. The project has support from the U.S. Bureau of Land Management, Colorado Water Conservation Board, Colorado River District, Ouray County Board of County Commissioners, Trout Unlimited, the Uncompahgre Watershed Partnership, the Ward irrigation ditch owners, and local private landowners.

Colorado Rio Grande Restoration Foundation, Farmers Union Multi-Benefit Diversion Infrastructure Improvement Project
Reclamation Funding: $1,274,625 **Total Project Cost: $2,214,625**

The Colorado Rio Grande Restoration Foundation, in partnership with the San Luis Valley Irrigation District, will upgrade the diversion infrastructure for the Farmers Union Canal and Rio Grande #1 Ditch, in southwestern Colorado, to meet agricultural, ecological, recreational, and community needs. The current diversion infrastructure creates a barrier to fish passage, is hazardous for boaters, and requires frequent maintenance. The partners will construct of a new diversion structure, incorporating fish passage that will allow fish to access an additional 1.42 river miles of habitat. The project also includes restoration of 646 linear feet of streambank through the installation of rock and root wad structures and 542 linear feet of streambed and aquatic habitat through improved sediment transport at the diversion structure. In addition, the diversion upgrade will provide safe boat passage and more efficiently deliver water to the Farmers Union Canal and Rio Grande #1 Ditch. This project was identified in the Rio Grande Stream Management Plan, a collaborative and stakeholder-driven planning effort which was funded in part by a WaterSMART Cooperative Watershed Management Program grant. Project partners include a diverse group of state and federal officials, local water managers, nonprofit organizations, private landowners, and other local stakeholders.

Mancos Conservation District, Riparian Restoration and Infrastructure Improvements to Better the Ecological Processes of the Mancos Watershed

Reclamation Funding: $2,482,686 **Total Project Cost: $3,348,446**

The Mancos Conservation District, in partnership with the Town of Mancos, will implement a multi-benefit project consisting of a suite of infrastructure improvements and nature-based solutions along the Mancos River, a tributary of the San Juan River, in southwestern, Colorado. The partners will upgrade three agricultural diversion structures, install remote metering and telemetry equipment on 10 agricultural pipeline headgates, complete fire mitigation work on 650 upland acres, and replace invasive riparian plants with native species along on approximately 75 acres adjacent to the Mancos River. The project is just downstream of Reclamation's Jackson Gulch Reservoir and will mitigate wildfire risk to the reservoir and water supplies in the Mancos River Watershed. The project is also anticipated to improve water temperatures in the Mancos River, improving fish and wildlife habitat. The upgraded diversion structures will allow agricultural producers to divert water more efficiently, while reducing bank erosion and decreasing sedimentation in the channel. The implementation of the Mancos Watershed Resiliency Project is supported by seven existing watershed plans and reports including the Mancos Stream Management Plan and the 2021 Prioritized Drought Resilience for the Mancos Watershed Report.

Middle Colorado Watershed Council, Roan Creek Fish Barrier and Diversion Infrastructure Upgrade

Reclamation Funding: $746,423 **Total Project Cost: $995,231**

The Middle Colorado Watershed Council, working in partnership with Garfield County, will install a fish barrier to prevent non-native fish migration, and upgrade a diversion structure on Roan Creek, in western Colorado. The upper portion of Roan Creek, a tributary of the Colorado River, contains a unique native fish assemblage comprised of Colorado River cutthroat trout, bluehead sucker, Paiute sculpin, and speckled dace. Non-native fish in the Roan Creek watershed harm the river system's ecology by predating on or hybridizing with the unique native species. Construction of a fish barrier will effectively eliminate the upstream movement of non-native fish to improve Roan Creek's aquatic and riparian habitat and protect the native fish. This project was identified in The Middle Colorado River Integrated Water Management Plan (IWMP) as a high priority project. The IWMP includes representation from local governments, Federal and state agencies, nonprofits, water conservancy districts, conservation districts, the energy industry, universities, and recreational outfitters and guides.

Purgatoire Watershed Partnership, Purgatoire River Fish Passage

Reclamation Funding: $2,403,748 **Total Project Cost: $3,413,946**

The Purgatoire Watershed Partnership will improve fish passage at the Baca-Picketwire diversion dam on the Purgatoire River in downtown Trinidad, Colorado. The Purgatoire River supports a robust assemblage of fish species and is of local and regional interest for conservation.

Currently, ecological function is impaired because the existing concrete diversion dam is not passable to fish. This project will restore fish habitat connectivity and enhance recreation opportunities by adding a low-gradient engineered riffle feature that mimics a natural channel. The upgrade will allow fish access to 3.3 miles of main river, wetlands, 20 miles of Raton Creek, and many stream miles within ephemeral drainages, including approximately 4 miles of Moore's Canyon and 9 miles of Colorado Canyon. The project is also expected to have flood mitigation, sediment transport, and bank stabilization co-benefits. The project was prioritized in the 2021 Purgatoire River Watershed Plan, which was developed through a collaborative planning process funded by a WaterSMART Cooperative Watershed Management Program grant. The project was developed in collaboration with the Colorado Parks & Wildlife, U.S. Fish and Wildlife Service, Trout Unlimited, the Purgatoire River Water Conservancy District, local ditch companies, the City of Trinidad, as well as local businesses and recreation interests.

Southern Ute Tribe, Nannice Canal Diversion and Fish Passage Project
Reclamation Funding: $651,920 **Total Project Cost: $869,226**

The Southern Ute Tribe, in partnership with the Bureau of Indian Affairs (BIA) and The Nature Conservancy, will implement the Nannice Canal Diversion and Fish Passage Project on the Southern Ute Indian Reservation in southwestern, Colorado. Part of the BIA-owned and operated Pine River Indian Irrigation project that receives water from Reclamation's Vallecito Dam, the Nannice Canal Diversion is a low-head dam that sweeps across the Los Pinos River and creates a significant fish barrier. Fish get entrained in the Nannice Canal during low flows and during irrigation season, when water is being diverted from the Los Pinos River into the canal. The Southern Ute Water Resources Division will upgrade the diversion structure and install a fish screen and fish ladder. The project will restore river connectivity, improve fish passage, and eliminate fish entrainment during low flows, while continuing to allow the diversion of Nannice Canal's decreed water.

Trout Unlimited, Inc, Middle Colorado River Agriculture Collaborative: 4 Fish Passage/ Irrigation Diversion Upgrade Projects on Elk Creek-a tributary to the Colorado River
Reclamation Funding: $2,999,595 **Total Project Cost: $4,285,092**

Trout Unlimited and the Middle Colorado Agriculture Collaborative will upgrade, relocate, or combine six diversion structures to remove instream barriers to fish passage in the Elk Creek west of Glenwood Springs, Colorado. These upgrades will open approximately five miles of aquatic habitat in Elk Creek to fish passage, The project is also anticipated to improve stream morphology, increase instream flows, and benefit irrigators by increasing the operational capabilities of the diversions and reducing transmission losses of vital irrigation water. This project supports the goals of the 2020 Middle Colorado Integrated Water Management Plan, which was developed in collaboration with the Colorado Water Conservation Board, Colorado Basin Roundtable, Colorado Parks and Wildlife, Bureau of Land Management, the U.S. Forest Service, the GarPit Conservation District, and the Middle Colorado Watershed Council.

Western Slope Conservation Center, Farmer's Ditch Improvement Project
Reclamation Funding: $ 1,594,799 **Total Project Cost: $2,234,999**

The Western Slope Conservation Center, in partnership with North Fork Farmer's Ditch Association, located in west-central Colorado, will modernize the Farmers ditch diversion and headgate structures to improve upstream fish passage, increase diversion efficiency, and improve safety for boaters. The project will upgrade the existing concrete headgate structure with a long-lasting alternative headgate that is equipped with remote automation technology, enabling more efficient water deliveries to irrigators while maximizing water that remains in the river. In addition, the Center will install graded riffle and small pools and drops to mimic the natural morphology of the river for approximately 200 feet below the diversion to promote upstream fish passage and allow for safe recreational boating. The project, which was prioritized as part of the Center's previous WaterSMART Cooperative Watershed Management Program grant, is supported by numerous conservation groups, government agencies, and local water users.

Hawaii

Hawaii Department of Land and Natural Resources, Protecting Forests for Water Supply Sustainability in Molokai, Hawai'i
Reclamation Funding: $936,892 **Total Project Cost: $1,355,066**

The State of Hawai'i Department of Land and Natural Resources, Division of Forestry and Wildlife, will expand protection of native landscapes in the north-eastern portion of Molokai, one of the five Hawaiian Islands. Invasive hooved animals are the main threat to Hawai'i's original forests, negatively impacting water supply, increasing flood risk and land erosion, and threatening several listed species. The project will reduce populations and associated damage to the forest due to these invasive animals through animal control and installation of fencing to exclude them from 3,340 acres within the Pelekunu Valley. The project will also remove hooved animals from an additional 12,000 acres along the north shore of Molokai in an area with steep terrain that is not possible to fence. The island of Molokai relies on ground water for all fresh water needs and is designated as a "Groundwater Management" area by the State of Hawai'I's Commission of Water Resources Management. The forest provides increased water infiltration into the aquifer and reduces soil erosion and associated water quality issues. This project is supported by the East Moloka'i Watershed Partnership, Hawai'i Nature Conservancy, as well as landowners and managers throughout the watershed.

Idaho

City of Pocatello, Rainey Park Stream Restoration and Wetland Creation

Reclamation Funding: $1,635,276 **Total Project Cost: $2,180,368**

The City of Pocatello, Idaho, will implement a river restoration project on the Portneuf River in downtown Pocatello. The health of the Portneuf River has been severely compromised by flood protection levees and the construction of a concrete channel, which removed hundreds of acres of wetlands when installed. Restoration will be accomplished by moving the river's existing rip-rapped levee, constructed in 1968 by the US Army Corps of Engineers, to an area of City-owned property. A wetland and side channel will be installed adjacent to the levee, along with ADA-accessible river access for anglers and floaters. Additionally, a stormwater pond will be installed to capture the first flush of sediment-laden waters from City streets. This project builds on the concepts developed in the 2016 Portneuf River Vision Study and addresses a wide range of environmental goals, including improving hydrologic functions by increasing floodplain, wetland, and riparian habitat areas, and improving water quality. This project is one of the critical initial phases of a multiphase project to restore the Centennial and Rainey Park areas along the Portneuf River.

Nez Perce Soil and Water Conservation District, Lower Clearwater Snake Rivers Phase I

Reclamation Funding: $367,091 **Total Project Cost: $489,454**

The Nez Perce Soil and Water Conservation District will undertake the Lower Clearwater Snake Rivers Phase I Project in Culdesac, Nez Perce, and Lewis Counties, in northwest Idaho. The project will improve watershed health within the boundaries of the Reclamation's Lewiston Orchard Project. The district will enhance anadromous fish habitat for Federally listed Steelhead Trout and improve overall water quality in the Lower Clearwater River Basin. The district will upgrade a culvert for aquatic organism passage, thin approximately 129 acres of forest to mitigate wildfire risk and install over 100 instream wood structures to enhance over 10,000 feet of stream for juvenile steelhead habitat. The project will yield ecological benefits including improved habitat function, optimized flow timing, increased groundwater recharge, and reduced sedimentation. This project is supported by the Lapwai Creek Ecological Restoration Strategy, which was developed collaboratively with the Nez Perce Tribe, National Marine Fisheries Service, Idaho Department of Transportation, Nez Perce County, City of Lapwai, City of Culdesac, Lewiston Orchards Irrigation District, a landowner advisory group, and several Idaho State Government divisions.

Nez Perce Soil and Water Conservation District, White Road Passage Project

Reclamation Funding: $367,091 **Total Project Cost: $489,454**

The Nez Perce Soil and Water Conservation District will improve anadromous fish habitat for Federally listed Steelhead Trout in the Tom Beall Creek watershed, a tributary to Lapwai Creek, located in northern Idaho. The project will improve watershed health within the boundaries of

the Reclamation's Lewiston Orchard Project. The district will replace an existing culvert with a fish-passable structure to support the migration of the Steelhead Trout and additional species including Coho and Chinook Salmon. When completed, the project will provide access to approximately two miles of habitat and reduce area flood risk. The project will also improve water quality to downstream recreational and agricultural water users. The project is supported by the Lapwai Creek Ecological Restoration Strategy, which was developed collaboratively with the Nez Perce Tribe, National Marine Fisheries Service, Idaho Department of Transportation, Nez Perce County, City of Lapwai, City of Culdesac, Lewiston Orchards Irrigation District, a landowner advisory group, and several Idaho State Government divisions.

The Nature Conservancy, Loving Creek Tributaries Restoration and Water Conservation Project

Reclamation Funding: $1,900,217 **Total Project Cost: $2,533,623**

The Nature Conservancy, in partnership with Idaho Department of Fish and Game and landowners, will complete a suite of nature-based features on four reaches of Loving Creek, located in Blaine County in south central Idaho. The four project locations span the full extent of Loving Creek, from its headwaters to the outlet at Silver Creek. Through a combination of in-stream restoration work, sediment removal, and riparian habitat creation, the project will restore 2.75 miles of active stream channel, regenerate 24 acres of riparian and wetland habitat, and remove one fish passage barrier to holistically restore connectivity to 5.72 miles of upstream habitat. The project will also revive an additional 11.5 acres of upland and agricultural buffer habitat and pipe 1,200 linear feet of open water delivery canal to conserve 9-acre feet of water, which will remain in Loving Creek as instream flow. Historic, grazing practices caused damage to riparian areas, destabilized streambanks, and widened the channels throughout the project area. Despite improvements in agricultural management and land use practices over the past several decades, water quality and habitat conditions in Silver Creek and its tributaries remain degraded. This project will restore more natural channel morphology, increase habitat complexity, and improve water quality in Loving Creek. These restoration actions were identified as high priority needs in the 2010 Silver Creek Watershed Enhancement Strategy Plan and the subsequent 2020 Silver Creek Watershed Assessment. The project is supported by Idaho Department of Fish and Game, Silver Creek Alliance, Trout Unlimited, the private landowners who own the properties where portions of the project will occur, Blaine Soil Conservation District, the U.S. Department of Agriculture's Natural Resource Conservation Service, the U.S. Fish and Wildlife Service, and the Wood River Land Trust.

Trout Unlimited, Inc, Completion of the Alta Harris Creek Boise River Side Channel and Fish Passage Project Along the Boise River

Reclamation Funding: $734,103 **Total Project Cost: $1,104,103**

Trout Unlimited, together with the City of Boise, Idaho, will improve aquatic ecology in the Boise River by restoring spawning and rearing habitat for salmonid fishes, and providing fish passage connection between the lower Boise River and Barber Pool, downstream of Reclamation's Arrowrock Dam. The project will enhance 3,800 feet of existing side channel and include

construction of 1,600 feet of new side channel, complete riparian revegetation with native plants, and construct of a fish passage facility at Barber Dam, connecting to the existing Alta Harris Creek side channel, and creating year-round access to side channel habitat for salmonids. The fishway design will better accommodate fluctuating river flows and variable water surface elevation. Completion of this project will reconnect 2.5 miles of the main-channel Boise River with 5-acres of adjacent riparian habitat and over a mile of side channel for spawning and rearing of juvenile fish. The project will also allow fish to bypass a half mile of the Boise River with a risk for fish entrainment in water delivery canals. The project is supported by the Ted Trueblood Chapter of Trout Unlimited, the City of Boise, numerous private landowners, and angling and environmental interest groups.

Wood River Land Trust, Warm Springs Preserve Stream Restoration and Irrigation Improvement Project

Reclamation Funding: $1,733,154 **Total Project Cost: $3,759,329**

Wood River Land Trust, in partnership with the City of Ketchum, Idaho, will enhance and improve the ecological function of the 65-acre Warm Spring Preserve along the Warms Springs Creek in Blaine County, in central Idaho. Warm Springs Creek in the project area has been artificially confined, concentrating flow, and creating incision and floodplain abandonment. There is virtually no floodplain connectivity within the northern half of the project reach. The project will restore 1.3 miles of Warm Springs Creek through instream earthwork to create pools, point bars, and constructed riffles, and installation of woody debris structures to promote in-channel complexity. The project will also create nine acres of adjacent floodplain habitat by lowering the floodplain. The floodplain restoration will be complemented by revegetation with low-water native plant species along the riparian zones and throughout the preserve, which will collectively aid in improvement of water quality and temperature of Warm Springs Creek. The project is supported by the Warm Spring Master Plan and Idaho Fish and Game, the Nature Conservancy, and several local stakeholders.

Next Mexico

Chama Peak Land Alliance, Increasing Resiliency in the San Juan-Chama Project Headwaters

Reclamation Funding: $3,000,000 **Total Project Cost: $4,000,000**

The Chama Peak Land Alliance will conduct ecological forest thinning on approximately 2,150 acres to protect source watersheds for Reclamation's San Juan-Chama Project, the Rio Chama Headwaters, and the Rio Brazos Headwaters from the impacts of future wildfires. Forests in these headwaters are unnaturally dense and homogenous, putting them at risk of severe wildfires and deterioration of watershed function. These watersheds supply crucial drinking water to the cities of Albuquerque and Santa Fe, and numerous Tribes, Pueblos, and rural communities throughout New Mexico. In addition to threatening water supply infrastructure, a severe wildfire could cause water quality impairments, flooding erosion, and significant degradation of habitat for fish and wildlife, including habitat for the native Rio Grande Cutthroat trout and rare San Juan Strain of

Colorado Cutthroat trout populations. The Project aligns with the Rio Chama Collaborative Forest Landscape Restoration Project, the Rio Grande Water Fund Comprehensive Plan, and the Resiliency Strategy for the Navajo-Blanco Watersheds. This Project has support from conservation groups, government agencies, and water users, highlighting its importance in preserving these vital watersheds and mitigating the threat of severe wildfires.

Pueblo of Isleta, Restoring Watershed Function and Protecting Sacred Ancestral Sites on the lower Rio Puerco, a tributary of the Rio Grande

Reclamation Funding: $2,487,942 **Total Project Cost: $3,317,256**

The Pueblo of Isleta will build resilience in the lower Rio Puerco watershed by implementing nature-based watershed restoration techniques to restore natural watershed function on approximately 30,000-acre parcel of the Comanche Ranch and neighboring lands, in central New Mexico. Forming a part of the Pueblo of Isleta lands, the Comanche Ranch comprises over 90,000 acres of public and private lands and is home to upwards of one hundred sacred ancestral sites, including an important cultural site, the Pottery Mound. The ranch forms an integral part of the Rio Puerco lower watershed, the primary source of sediment to the middle Rio Grande and Reclamation's Elephant Butte Reservoir, contributing a disproportionally large percentage of silt and debris to the system. The Pueblo and stakeholders in the region have identified that loss of vegetation and increasingly higher energy monsoonal storms have resulted in erosion and soil loss throughout the uplands in this region and threaten the cultural sites downstream. The Pueblo will utilize a series of watershed restoration practices that spread and slow runoff flows, increase groundwater infiltration, and reduce erosion, including contour plowing with native seed imprinting, contour stone line and brush weir installation to protect plantings and slow runoff, and riparian restoration and revegetation on a section of the Rio Puerco adjacent to Pottery Mound, including the planting of wild medicinal and traditionally gathered edible plants. Collectively, these project components will restore targeted natural watershed functions and protection of cultural sites. The project is supported by the New Mexico State Land Office, the U.S. Bureau of Land Management, U.S. Army Corps of Engineers, Valencia Soil and Water Conservation District, Ancestral Lands Conservation Corps, and private landowners.

Nevada

Southern Nevada Water Authority, Muddy River Riparian Corridor Improvements at Warm Springs Natural Area

Reclamation Funding: $743,329 **Total Project Cost: $911,106**

The Southern Nevada Water Authority (SNWA) will protect the Warm Springs Natural Area (WSNA), a 1,250-acre property located in southern Nevada, and downstream habitat from drought impacts. The property is regionally significant as it contains more than 20 perennial springs that form the headwaters of the Muddy River and numerous habitat types. These

resources provide habitat for several protected and sensitive species, including the endangered Moapa dace, endangered southwestern willow flycatcher, and threatened yellow-billed cuckoo. The project will widen the riparian corridors along 0.3 miles of the mainstem of the Muddy River and establish mesquite bosques along the corridor, resulting in the creation of 12 acres of new habitat. These actions will increase habitat for listed species, improve hydrologic conditions, lessen wildfire risk, and reduce erosion and sedimentation during flood events. Non-native vegetation will be removed and replaced with native vegetation to restore the area to the natural habitat that existed before the area was converted for agricultural purposes. The project is supported by SNWA's Water Resource Plan and the WSNA Stewardship Plan. The project is supported by municipal, environmental, and Recreational water users.

Oregon

Crooked River Watershed Council, Lower Crooked River Riparian, Floodplain, and Habitat Restoration Project

Reclamation Funding: $1,400,000 **Total Project Cost: $1,975,000**

The Crooked River Watershed Council, working in partnership with the Ochoco Irrigation District, will restore habitat and enhance ecological features on two project sites just downstream from Prineville, Oregon. Hydrology in the Crooked River watershed is impacted by upstream Dams, including Reclamation's Bowman Dam, leading to loss of floodplain continuity, degraded channel structures, and water quality impairments, impacting native Spring Chinook Salmon and Columbia River Steelhead populations that inhabit the watershed. To address these impairments, the Council will strategically place approximately 130 large wood structures to promote habitat complexity, stabilize eroding streambanks on 3,285 linear feet of stream channel, restore approximately 19 acres of floodplain and upland habitat, improve 0.22 acres of alcove habitat, and create 0.42 acres of wetland. These activities are prioritized in the Lower Crooked River Action Plan and have support from multiple governmental agencies, private landowners, irrigators, and conservation groups.

Deschutes Land Trust, Ochoco Preserve Restoration - Phases 2 and 3

Reclamation Funding: $3,000,000 **Total Project Cost: $4,793,665**

The Deschutes Land Trust, with support from the Oregon Department of Fish and Wildlife, will restore aquatic, floodplain, and upland habitat across 124 acres on the Ochoco Preserve, located in Crook County, Oregon, adjacent to the City of Prineville. The Crooked River and Ochoco Creek support reintroduced spring Chinook salmon and summer steelhead, as well as a host of other native aquatic species. The waterways frequently experience low flows, elevated summer stream temperatures, and poor water quality. These issues are compounded by a lack of suitable habitats for both fish and terrestrial wildlife, and the impacts to river ecology of Reclamation's Crooked River Project, including Bowman and Ochoco Dams. The Deschutes Land Trust will lead efforts to create over 2 miles of new main baseflow stream channels, 1.5 miles of side channels,

over 11 acres of wetland, and restore 37 acres of floodplain and 75 acres of upland habitat, significantly increasing available habitat for native species. The project is supported by several partners including the Confederated Tribes of the Warm Springs, Oregon Department of Fish and Wildlife, Ochoco Irrigation District, Portland General Electric, and the City of Prineville.

Texas

Menard County Water Control and Improvement District #1, Pipe a 2.5 mile section of the Menard Canal and dedicate 1,100 acre-feet instream

Reclamation Funding: $1,891,500 **Total Project Cost: $2,522,000**

Menard County Control and Improvements District #1, in central Texas, will upgrade the Menard Canal irrigation water conveyance system to reduce losses so that more water is kept in the San Saba River for fish and wildlife benefit. A water loss study conducted by U.S. Geological Survey in the summer of 2014 showed that the 6-mile long canal experiences an approximately 50% loss over the first 2.5 miles. The project involves replacing the first 4,000 feet of the unlined Menard Canal with pipe, and re-sloping, re-shaping and partially filling the next mile of unlined canal to create a narrower channel profile. Following that narrowed span of canal, the District will pipe an additional 2,000 feet of the canal and install gates to control flow. The District has committed to leaving the majority of the conserved water, 1,100 acre-feet per year instream for a 30 year term. The additional instream flows will contribute significantly to baseflow of the San Saba River and create a more reliable supply of water for downstream aquatic habitat. Sections of the San Saba River downstream from the project that will benefit from the increased flows include critical habitat for the Texas fatmucket and Texas pimpleback mussel species. The project is a result of close collaboration between the District and The Nature Conservancy with coordination and partnership from Texas Parks and Wildlife, U.S. Fish and Wildlife Service, and Texas A&M Natural Resources Institute.

Washington

The Confederated Tribes and Bands of the Yakama Nation, Lower Yakima River: Anadromous Fish Survival

Reclamation Funding: $2,248,677 **Total Project Cost: $3,033,677**

The Yakama Nation, in partnership with the Benton County Conservation District, will improve conditions for anadromous fish species in the Prosser, Snively, and Confluence reaches of the lower Yakima River, in central Washington. The project will address two key elements of the Yakima Basin Integrated Plan: fish passage and habitat protection and enhancement. The Yakima Nation will complete instream restoration work to expand a cold-water refuge within the Yakima River mainstem at the confluence of Amon Creek, including construction of 1,400 linear feet of cool water channel habitat and restoration of 20 acres of riparian zone through invasive vegetation removal and revegetation with native species. The Yakima Nation will also complete

electrofishing and install a fish trap on the Wanawish Dam to remove and prevent reintroduction of invasive predatory fish species that impede the migration of endangered fish species. These improvements will benefit the federally threatened Middle Columbia River steelhead; spring and fall/summer run Chinook, Coho, and Sockeye salmon; and the Yakima population of Pacific lamprey. The project area is downstream of Reclamation's Yakima Project, which impacts river flows, temperatures, and habitat conditions in this area. This project is a component of the Yakima Basin Integrated Plan, and has broad support from Federal, state, tribal, and local partners.

The Confederated Tribes and Bands of the Yakama Nation, Yakima River Mile 89.5 Side Channel and Floodplain Restoration

Reclamation Funding: $600,000 **Total Project Cost: $800,000**

The Confederated Tribes and Bands of the Yakama Nation will reconnect approximately 9 miles of side channel along the Yakima River within the Yakama Reservation, in south central Washington. Upstream flow regulations tied to Reclamation's Yakima Project have constricted historical floodplain processes and cut-off side channel access for native fish species, leading to degradation of riparian and wetland habitat areas. The Yakama Nation will excavate five historic side channel sections connecting to the mainstem of the Yakima River, install two constructed logjam inlet structures to ensure fish access to the mainstem of the river, and install three stream ford crossings to access the project site. The excavation of side channels will increase winter and spring off-channel habitat utilized by Middle Columbia River Steelhead and restore hydrologic connectivity to a total of 135 acres of floodplain and wetland habitat. The project is supported by the Yakima Basin Integrated 10-Year Action Plan, which was developed by water and land management stakeholders. The project has support from the Washington Department of Ecology, the Yakima Basin Fish & Wildlife Recovery Board, and the Yakima Basin Integrated Plan.

The County of Chelan, Camas Meadows Streamflow and Ecosystem Restoration Project

Reclamation Funding: $468,903 **Total Project Cost: $625,204**

The Chelan County Natural Resource Department, in coordination with the Washington Department of Natural Resources, will restore wet meadow hydrology in Camas Meadows, a unique meadow ecosystem within the steep canyon drainages of north-central Cascade Mountains in Washington. The 1,300-acre meadow flows into Camas Creek, a tributary of Peshastin Creek, in the Wenatchee Watershed. Due to widespread floodplain disconnection and irrigation withdrawals, the Peshastin sub-basin is among the top three flow-limited sub-basins in the Wenatchee Watershed, with chronic low flows and high stream temperatures limiting recovery of ESA-listed steelhead and spring Chinook that reside throughout Peshastin Creek and in the lower reaches of Camas creek. Historic land use practices have resulted in Camas Meadows being confined into ditch-like channels with incision ranging from 4-8 feet, causing

rapid and early drying of the meadow. This Department will restore the natural hydrology of the meadow by replacing the meadow outlet culvert, re-grading the channel and meadow elevations, installing channel-spanning habitat log structures, and re-planting with native shrubs and plants. The project will restore floodplain connectivity and wet meadow hydrology for a modeled additional water storage of 180 acre-feet and an anticipated year-round baseflow contribution of 0.2 cfs. The project addresses top priority actions in the Wenatchee Watershed Plan and is supported by local Tribes and water districts.

Kittitas Conservation Trust, Gold Creek Restoration Phase 2 RM 2-3 Implementation

Reclamation Funding: $2,475,000 **Total Project Cost: $3,300,000**

Kittitas Conservation Trust will implement an in-stream restoration project on river mile 2-3 of Gold Creek, in Kittitas County, Washington. Located just east of Snoqualmie Pass in Kittitas County, Washington, Gold Creek is the headwaters of the upper Yakima River and flows for approximately 8 miles from the Alpine Lakes Wilderness into Keechelus Reservoir in the Central Cascade Mountains. Upstream fish passage is blocked at Reclamation's Keechelus Dam on the downstream end of the reservoir. Prolonged dewatering conditions and a century's worth of anthropogenic channel widening have dramatically impacted the habitat and health of the creek's Federally threatened Bull Trout. The Trust will install a total of 28 large woody debris structures along the river mile. The instream wood replenishment will create habitat complexity, including deeper pools with shaded cover, provide relief from high velocity flood flows, and ensure optimal habitat for both the successful rearing of juvenile Bull Trout and migration of mature fish. The project will also provide floodplain reconnection, which will improve groundwater recharge from flood flows, and reduce the likelihood of future flood events further harming the channel morphology. Restoration of this region's Bull Trout is prioritized under the Yakima Basin Integrated Plan, and this project is supported by several state, Federal, local, and tribal partners, including Washington Department of Fish and Wildlife, Yakama Nation, and the U.S. Forest Service.

Kittitas Reclamation District, Kittitas Reclamation District - South Branch Piping
Reclamation Funding: $3,000,000 **Total Project Cost: $4,000,000**

The Kittitas Reclamation District, located in central Washington, will restore in-stream flows and provide benefits to fish and wildlife in Mantash Creek, an over-appropriated tributary of the Yakima River. The project will involve the piping of a 2,656 linear feet section of the currently unlined South Branch Canal, which is part of Reclamation's Yakima Project. Once piped, the District anticipates conserving approximately 385 acre-feet per year currently lost to seepage. The District will designate this otherwise lost water through an allocation, management, and protection agreement, that involves careful monitoring of stream flow on Mantash Creek to maintain optimal conditions for Yakima Basin fish species, including Coho and Chinook Salmon, Mid-Columbia Steelhead, and Bull Trout. The Washington State Department of Ecology is responsible for water protection and enforcement and will ensure that conserved water stays instream. The project is supported by NOAA Fisheries, the Washington Department of Ecology, Yakama Nation, and numerous local and environmental partners.

Wyoming

City of Casper, North Platte River Restoration -- Izaak Walton Reach
Reclamation Funding: $3,000,000 **Total Project Cost: $4,002,329**

The City of Casper, in collaboration with members of the Platte River Revival Committee, will complete a river and riparian restoration project on the Izaak Walton reach of the North Platte River in Natrona County, Wyoming. The North Platte River is a blue-ribbon trout fishery, but this reach suffers from significant bank erosion, tight riverbend geometry, a lack of riffle-pool complex development, poor bedform complexity, meager floodplain connectivity, and is characterized by a low-quality riparian vegetation community. These conditions have resulted in degraded habitat for trout as well as native aquatic and terrestrial species. These characteristics have also contributed to reduced ecological function, adversely affected the regional municipal water supply, degraded aesthetic values, and impaired river recreation. The City of Casper will restore over 5,150 linear feet of the North Platte River that will involve regrading of the riverbed, banks, and floodplain to create appropriate geometry and bedform complexity, reduce riverbank degradation, and improve instream and riparian habitats. This project, underpinned by the North Platte River Environmental Restoration Master Plan, has been endorsed and supported by elected officials at the local and state levels, conservation groups, government agencies, and water users.

Trout Unlimited, Inc, Sage Creek Watershed Restoration for Drought Resilience and Sediment Control

Reclamation Funding: $1,513,538 **Total Project Cost: $2,042,819**

Trout Unlimited, working in partnership with Wyoming Game and Fish, will complete a multi-part restoration project, including nature-based features, in the Sage Creek Watershed, located in southwestern Wyoming. The project will involve the installation of 50 beaver dam analogs, 160 aggradation structures, and an aquatic invasive species barrier along a 5.6 mile stretch of Sage Creek. These installations will be complemented by a robust invasive plant removal and native riparian reseeding along 7.6 miles of both the Sage and Trout Creeks. Together, these actions are estimated to restore 453 acres of valley floor habitat and protect 79.5 linear miles of aquatic habitat from invasive trout that inhabit Reclamation's Flaming Gorge Reservoir just downstream of the project site. The project is additionally expected to reduce channel incision and erosion to reduce sediment and nutrient delivery to Flaming Gorge Reservoir, protect native trout from hybridization, and increase groundwater recharge and surface water availability. The project is a key piece of the Little Mountain Watershed Restoration Plan, a collaborative plan developed in partnership with the Wyoming Department of Game and Fish, the Rock Springs Grazing Association, the Greater Little Mountain Coalition, Ramsay Ranch, the U.S. Fish and Wildlife Service, and the Wyoming Landscape Conservation Initiative.