U.S. Fish and Wildlife Service
FY 2021 Tribal Wildlife Grants Awards Summaries

ALASKA

Orutsararmiut Native Council ($99,221)

Bethel In-season Subsistence Harvest Surveys and Chinook Age-Sex-Length Sampling Program

The overarching goal of this project is to provide state and federal managers and stakeholders with relevant subsistence harvest effort, catch, and composition information collected from a representative subset of families who harvest salmon for subsistence purposes along the Kuskokwim River in the Bethel area of Alaska.

The specified objectives of the project are as follows: 1) determine Bethel area subsistence users' relative change in salmon harvest goals for Chinook, chum, and sockeye salmon compared to the prior year, and monitor weekly progress towards achieving annual salmon harvest goals; 2) document subsistence fishing activity in the Bethel area, including when families begin subsistence fishing, weekly participation, catch per unit effort by gear type, and catch composition to provide reliable quantitative estimates of salmon harvests, and utilize this data collected to produce in-season harvest estimates in collaboration with the Kuskokwim River Inter-Tribal Fish Commission; and 3) estimate the annual age-sex-length (ASL) composition of Chinook salmon harvested in the Bethel area subsistence fishery. 4) Improve information sharing between stakeholders and agencies concerning salmon conservation in the Kuskokwim River drainage.

Hoonah Indian Association ($199,817)

Strategic Stream Restoration through Hoonah Native Forest Partnership

This project will provide benefits to Tribal fish and fish habitat and increase the Hoonah Indian Association's capacity to assist with fisheries management of culturally important anadromous species. The Anadromous Waters Catalog (AWC) for the local Hoonah area contains data gaps and inconsistencies that could be significantly improved through collaboration with the Hoonah Native Forest Partnership (HNFP). The increased capacity resulting from the project will assist in the growth of a fisheries program and pursuit in management and monitoring of local salmon resources for subsistence. Therefore, allowing better-informed fisheries models that affect land management decisions that directly affect anadromous fish passages, enhancement, and stream restoration.

Data will be the gathered from at least 50 streams and will be integrated into the statewide AWC database for the use of anyone in the state of Alaska and by land managers of the HNFP. In addition, the project will create a better-informed model for end of fish (EOF) modeling. An increase of community awareness will result from the project's outreach via community meetings focused on fisheries issues and digital outreach through Hoonah Indian Association's social media and website platforms.

Sun'aq Tribe of Kodiak ($180,922)

Monitoring, management, and community involvement with research of invasive signal crayfish in the Buskin Watershed, Kodiak Island, Alaska

The Sun'aq Tribe of Kodiak (Sun'aq) remains gravely concerned about the presence of signal crayfish in the Buskin River Watershed and their potential impact on wild salmon stocks vital to the subsistence culture and lifestyle of Sun'aq Tribal Citizens as well as non-Tribal members of the Kodiak community. Since the initial reports two decades ago, these crayfish have subsequently invaded Buskin Lake and areas of the Buskin River.

This two-year project will enable monitoring, management, and community involvement with research efforts to better understand fundamental population dynamics of the signal crayfish in the Buskin Watershed through three primary elements: 1) environmental DNA monitoring throughout the watershed to determine the extent of signal crayfish propagation; 2) acoustic tagging to determine movement patterns, seasonality, diurnal/nocturnal activity patterns, and behavior around crayfishing traps to better inform understanding of crayfish behavior to refine eradication efforts; and 3) a mark-recapture study to be held in conjunction with a season-long "fishing derby" to create a large dataset, remove as many crayfish as possible, and increase education and public outreach of the threats of this invasive species.

Knik Tribe ($200,000)
Data Synthesis and Modeling of Endangered Cook Inlet Beluga Whale Population Dynamics: Building on the Basics

Alaska's endangered Cook Inlet beluga whale population is an important cultural resource for Alaska Natives, including the Knik Tribe, who have traditionally hunted, utilized, and traded them. This subsistence tradition is no longer permitted due to the drastic decline in this endangered population. The Knik Tribe is actively involved in helping to understand and reverse this decline and seeks financial assistance to continue to do so.

The Tribe will: 1) fill data gaps in a long-term (2005-2021) CIBW photo-identification catalog; 2) use these data to refine recently developed population models to reduce bias and increase precision in estimates of demographic rates, population viability, and extinction risks; 3) analyze beluga social structure and how it may affect recovery; 4) increase engagement of Knik Tribe members in sharing beluga sightings and information; and 5) increase representation of the Knik Tribe and other Cook Inlet Tribes in conservation efforts for the beluga.

ARIZONA

Navajo Nation ($199,240)
The Navajo Nation Black-footed Ferret Pre-reintroduction Program

The Navajo Nation Black-footed Ferret Pre-reintroduction Program will help the Nation build capacity in the Natural Heritage Program and lay the foundation for the conservation of ferrets on Navajo Tribal Trust lands. The Navajo Nation expects the funding of this work to jump start a sustained effort to create a permanent black-footed ferret program on Navajo Nation administered by the Navajo Natural Heritage Program.

White Mountain Apache Tribe ($200,000)

Squaw Creek Barrier Replacement to Aid Apache Trout Recovery

This project will directly support Apache Trout recovery by eliminating non-native trout impacts to a relict population of Apache Trout in Squaw Creek. The project will separate an Apache Trout recovery population from managed sportfish downstream and increase the availability of high-quality, protected, Apache Trout recovery habitat by 13.7 km. Specifically, the project will replace an existing gabion structure which no longer functions as a barrier to upstream movement of non-native trout under all streamflow conditions with a barrier designed for a 50-year performance life. This protected habitat would benefit several native fish species, including Apache trout, speckled dace, and desert sucker. Other native species, including frogs and snakes, are also expected to benefit.

Yavapai Apache Tribe ($72,208)
Verde River Riparian Corridor Habitat Enhancement Project

This project will enhance/restore approximately 207 acres of native riparian and upland vegetation along the Verde River riparian corridor within the Yavapai-Apache Nation (YAN) Reservation. Restoration work will be conducted in four specific reaches along the Verde River on the Yavapai-Apache Nation Reservation. The four reaches are: Upper Cloverleaf/Cherry Wash; Middle Verde; Lower Verde; and Reeves Property. This project is an integral piece to the restoration of the Verde River to increase habitat for wildlife by providing greater connectivity to native habitats as well as offering recreational, educational, and cultural opportunities for the YAN and the public.

Tohono O'odham Nation ($200,000)
Distributional ecology of medium and large mammals on the Tohono O'odham Nation and implications for management and conservation: A collaborative training proposal

Given its vast land area and location in the heart of the Sonoran Desert and western edge of the Madrean Sky Islands region, the Tohono O'odham Nation (TON) supports important wildlife and habitat resources of continental significance. Despite high cultural, ecological, and conservation values, information on wildlife communities, wildlife-habitat relationships, and threats to wildlife are limited across the TON, but needed to help guide management and conservation and to understand the status of threatened and endangered species.

These information gaps are noteworthy given major threats to wildlife posed by drought and warming linked to climate change and development of security infrastructure and activities associated with illegal immigration along the U.S.-Mexico border that spans the entire southern boundary of the TON. This project will help close these knowledge gaps by addressing critical needs linked to wildlife and habitat management in ways that synergistically promote collaborations and training opportunities and build tribal capacity and self-sufficiency in wildlife management.

Kaibab Band of Paiute Indians ($153,643)
Bighorn Sheep Management

The project will conduct field surveys and population monitoring in performance of a migration study to determine the residency of the desert bighorn sheep herd on the Reservation. These surveys are needed to better manage wildlife resources deemed a priority by the Tribe as stated in the wildlife

management plan. Furthermore, the project will evaluate the habitat for these populations to determine if herds can be sustained on tribal lands, thereby making conservation decisions possible. The knowledge gained from this project will serve as an action plan for the future and outline a pathway to department financial sustainability.

CALIFORNIA

Pechanga Band of Luiseno Mission Indians ($193,989)
Audie Murphy Management

The Pechanga Band of Luiseno Indians will implement a wildlife management project for the biologically and culturally sensitive southwestern pond turtle and burrowing owl. The goal of the project is to restore and manage sensitive species and ecosystems in a way that honors and preserves the rich and vulnerable cultural resources of the Audie Murphy preserve (project area).

Hoopa Valley Tribe ($200,000)
Hoopa Pacific Lamprey Passage Project

The Hoopa Pacific Lamprey Passage Project will specifically address passage issues in the Trinity River Basin and provide valuable information applicable to regional lamprey conservation efforts by local Tribes and other stakeholders. The project includes a) field tests using locally caught adult lampreys at actual passage impediments in the Trinity drainage; b) construction of a small regional testing facility; c) critical assessment of lamprey passage potential at principal culverts and other impediments in the Trinity Basin; d) field and lab testing of potential retrofits to existing impediments; and e) educational outreach to tribal membership, local stakeholders and managers, including the Service, California Department of Transportation, County Public Works Departments, U.S. Forest Service, National Oceanic and Atmospheric Administration and California Department of Fish and Wildlife.

Yurok Tribe ($199,676)
Determining Baseline Occupancy of Humboldt Marten During the Critical Dispersal Season

The Humboldt marten is culturally significant species to the Yurok Tribe. It is also listed as threatened and endangered respectively under the federal Endangered Species Act and California Endangered Species Act. There are only two known populations remaining in California, including the Northern Coastal California extant population area, which falls in part within Yurok Tribal lands. Yurok Tribal lands are considered a secondary population area and have the potential to host Humboldt marten population expansion from adjacent core population areas on National Park Service and U.S. Forest Service lands, as well as provide connectivity between them. The Tribe has limited data on Humboldt marten occupancy, critical to inform effective species conservation action.

Robinson Rancheria - Band of Pomo Indians ($197,759)
The Robinson Rancheria Clover Creek Hitch Passage Improvement and Vegetation Restoration

The objective of the project is to work collaboratively with local Tribes, water agencies, and nonprofits to improve Clear Lake hitch (CLH) spawning and nursery habitats in Clover Creek by removing non-

native vegetation and replanting with native riparian vegetation that is of cultural significance to local Tribes. CLH habitat has been severely lost or degraded due to anthropogenic activity, including introduction of non-native fish, gravel mining, native vegetation removal, water extraction from wells for agriculture, barriers, bridge abutments, and introduction of non-native and invasive plants.

Twenty-Nine Palms Band of Mission Indians ($168,300)
Update and Implement the Tribal Historic Conservation Plan & Improve Habitat for Desert Tortoise on the Twenty-Nine Palms of Mission Indians' Reservation Land

Twenty-Nine Palms Band of Mission Indians' (Tribe) will update the Tribal Habitat Conservation Plan (THCP) in response to an economic development project by incorporating comprehensive mitigation strategies for the protection of federally threatened Agassiz's desert tortoise, and subsequently implementing construction, operational, and conservation measures. The Tribal Environmental Protection Agency (Tribal EPA) is the branch of the Tribal Government responsible for implementing wildlife and natural resource protection ordinances on the Reservation. The Tribal EPA sees the need to update the THCP to address construction project and an opportunity to expand its capacity to implement the THCP and other conservation and habitat improvement measures on an ongoing basis.

FLORIDA

Seminole Tribe of Florida ($200,000)
Implementation and Advancement of Wildlife Conservation Plan

The Seminole Tribe of Florida lands span across 88,143 acres of the Florida Everglades and contain a diversity of habitats and sensitive wildlife species. In 2012, the Seminole Tribal Council worked with multiple federal agencies to develop and approve a Tribal Wildlife Conservation Plan (WCP) that balances tribal and federal natural resource management objectives. Funds from this grant award will be used for continued implementation of the WCP, which includes monitoring of threatened and endangered species, early detection of non-native species, collation of species and habitat data in a GIS geodatabase, and community-based education regarding natural and cultural resource management. Tribal execution of the WCP ensures conformity to federal regulations without placing an undue burden of resource protection measures on the Tribe, and provides an effective tool for protecting federally listed and culturally significant species that reside within tribal lands.

MASSACHUSETTS

Wampanoag Tribe of Gay Head (Aquinnah) ($197,911)
The Study and Restoration of Aquatic Culturally Significant Populations in the Menemsha Pond Complex, Aquinnah, MA

The Tribe has inhabited the coastal island of Martha's Vineyard (Noepe) for over thirteen thousand years. As hunters, agriculturalists, whalers, and fishermen, an integral part of the Tribe's subsistence has been forms of sea life, such as turtles, whales, seals, fin-fish, and shellfish, which is a significant aspect of Tribal culture and tradition. Funding will be used to study blueback herring, alewife, and American eel populations in the Menemsha Pond Complex and create scientific data of importance to the fisheries managers by conducting a habitat study assessing the health of the ecosystem and its

ability to support an anadromous species fishery, establish long-term benefits to water quality in the pond complex, identify spawning grounds in Squibnocket Pond while mapping Squibnocket Pond for depth and sediment composition.

This will allow for recommendation for habitat improvements to restore a functioning herring and eel fishery and food supplies for shore birds and other species and provide data to develop long-term monitoring and management activities that increase the viability of a sustainable fishery and plan for climate change. Funding will increase Tribal capacity by training and educating staff, interns, and volunteers on the methods for protecting Tribal Trust Species, hiring Tribal interns/graduate students to count and track species, and educating the community about the importance of protecting these species. This project will also increase the ability to partner with multiple federal, state, local, and academic institutions on tribal priorities.

MICHIGAN

Little Traverse Bay Bands of Odawa Indians ($200,000)
Little Traverse Bay Bands of Odawa Indians Migizi Aviary/Rehabilitation Facility

The Little Traverse Bay Bands of Odawa Indians Natural Resource Department (LTBB NRD) is committed to and experienced in protecting the bald eagle population. This is a culturally significant species to LTBB. Currently, the Tribe has limited resources to provide the necessary level of species management and rehabilitation. The purpose of this project is to provide enhanced eagle management consistent with the LTBB Bald Eagle Management Plan through the development of an Eagle Aviary/Rehabilitation Facility.

The following goals will be accomplished throughout the 12-month project period:

- Provide permanent housing for eagles that are no longer capable of surviving in the wild.
- Rehabilitate injured eagles and release them back into the wild.
- Create educational outreach opportunities about the biology, natural history, and cultural significance of eagles to LTBB.

This project will result in the construction of a Tribal Eagle Aviary/Rehabilitation Facility. The facility will be operated by professionally trained staff that will be able to care for, heal and release injured eagles and other raptors while also providing a source for wildlife rehabilitation, educational opportunities and outreach to LTBB and the local community. Project objectives include constructing an Eagle Aviary/Rehabilitation Facility; staff training to properly handle, feed, house, rehabilitate, release, and/or euthanize eagles as appropriate; provide outreach and education to the community; and provide eagle feathers and parts to LTBB Eagle Repository for cultural use by Tribal Members. This project aligns with the Department of Interior's priorities to: 1) create a conservation stewardship legacy; 2) utilize tribal natural resources; 3) restore trust with local communities; and 4) ensure sovereignty has meaning.

MINNESOTA

Mille Lacs Band of Ojibwe ($199,612)

Investigating the effects of environmental change on the movements, behavior, swimming performance, and tolerance of fishes in Mille Lacs Lake

The Mille Lacs Band of Ojibwe (MLBO) will conduct research that will aid in restoring walleye stocks to Mille Lacs Lake in northern Minnesota. Recruitment of young walleye to the adult population has been limited in recent years. To address this problem, the Minnesota Department of Natural Resources conducted a diet study on top predators in Mille Lacs Lake that indicated cannibalism and predation of young walleye were high during the warmest part of the year but did not indicate the mechanisms behind elevated mortality. Furthermore, there is little information on the habitat that predatory fish use throughout the year, as well as prey fish species which walleye rely upon. Expanding on previous research, the MLBO along with the Great Lakes Indian Fish and Wildlife Commission and University of Illinois are proposing a telemetry study to track predator and prey fish species in Mille Lacs Lake paired with wet lab experiments at the MLBO Fish Hatchery.

Specifically, this project aims to: 1) Identify overlap in habitat of predators (northern pike, smallmouth bass, muskellunge, walleye) and prey (juvenile walleye, yellow perch, tullibee) throughout the year; 2) quantify physiological responses and performance metrics of these species under historical, present, and future water temperature and clarity conditions; and 3) assess survival of prey when exposed to predators under historical, present, and future water temperature and clarity conditions.

Red Lake Band of Chippewa Indians ($199,770)
Red Lake Band of Chippewa Indians golden-winged warbler and American woodcock monitoring, critical habit restoration, and young forest education project, Phase II

The Red Lake Band of Chippewa Indians project is part of a multi-agency effort designed to address large-scale declines in several important bird species that require multiple age class forest habitats to thrive. The golden-winged warbler is on the verge of being listed under the federal Endangered Species Act, and Minnesota has the largest remaining breeding population in the United States. Surveys conducted at Red Lake suggest unusually high spring numbers of golden winged warblers, so this project has great potential to enhance and create habitats that will have immediate and long-term benefits to this species and other species that require landscapes with diverse vegetation age structure, such as American woodcock.

Leech Lake Band of Ojibwe ($181,680)
Ma'iingan (Gray Wolf) Monitoring on the Leech Lake Reservation, MN

Gray wolves are of great cultural and spiritual importance to the Leech Lake Band of Ojibwe. They were once extirpated from most of their range, but have recovered once they were listed under the federal Endangered Species Act. During that time, gray wolves have been delisted and relisted multiple times, but have remained a threatened/endangered species for the Leech Lake Band. Wolves were again delisted in January 2021 giving management back to the Tribes and states. As the Tribe collaborates with the Minnesota Department of Natural Resources (MNDNR) and other Tribes, they have found more information in necessary on wolves to make the best management decisions for their protection and continued existence on Tribal lands. The project will initiate a wolf study for the Leech Lake Band.

This project will provide baseline information that is current and specific to management needs by determining wolf population density, spatial use, and territories. Results from this project will be used to update the Tribe's wolf management plan, collaborate more effectively with the MNDNR and other stakeholders, and ensure the long term survival of wolves on the Leech Lake Reservation. This project will take place over a three year period and will involve partnerships between the Leech Lake Band of Ojibwe – Division of Resource Management, Minnesota Department of Natural Resources, and USDA Wildlife Services. Collaboration among these agencies will allow us to develop a long term wolf monitoring project that will be carried out by the DRM Wildlife Program after the grant period has ended.

MONTANA

Blackfeet Nation ($200,000)

Identifying Migration Routes, Stop-Over Sites, Habitat Use, and Potential Barrier to ELK Movement on the BF Reservation

Blackfeet Nation will identify migration routes, stop-over sites, habitat use, and potential barriers to elk movement on the Blackfeet Nation Indian Reservation and the surrounding landscape. Migration is a highly visible and widespread phenomenon that many species exhibit around the world, including birds, insects, fish, and mammals – most notably ungulates (Wilcove and Wikelski 2008).

Migrants differ from resident individuals if they regularly move from one distinct seasonal range to another, often to track resources that are variable but spatially and temporally predictable (Berg et al. 2019). Migration can have significant impacts on ecological processes such as the transfer of nutrients like phosphorus and nitrogen (Wilcove and Wikelski 2008) and the maintenance of population viability in ecosystems with harsh climatic conditions (Bolger et al. 2008). However, increasing human activities have affected migration behaviors and travel routes via habitat loss, over-exploitation, anthropogenic barriers to movement, and climate change (Bolger et al. 2008, Wilcove and Wikelski 2008).

NEBRASKA

Santee Sioux Nation ($141,988)

Diversity and Abundance of Rare Representative Amphibians and Reptiles

The Tribe will conduct a study of amphibians/reptiles and identify baseline and ecological information for management on the reservation. The results of these studies will greatly enhance management capabilities in conserving, protecting, managing, and enhancing representative amphibians found on the reservation with insights into their ecological baseline given current land use characteristics. Santee Sioux Nation will conduct an amphibian and reptile survey of reservation lands for determination of the status of all amphibians and reptiles found in remaining habitats.

The Tribe will provide a baseline effort to secure scientific information related to the population status of amphibian/reptiles located on reservation lands to assist future management of these important fauna, commercially, traditionally, and ecologically. The purpose of this project is to evaluate, protect, and conserve amphibians and reptiles, along with their respective wetland habitats located within the

boundaries of the Santee Sioux Indian Reservation. This will be accomplished by conducting an in-depth study of amphibians and reptiles in highly conducive wetland habitats found on the reservation. The overall purpose will be to develop a plan relating to the current and baseline population of these aquatic animals and correlate to existing land use and available habitat conditions.

NEVADA

Pyramid Lake Paiute Tribe ($197,718)
Aquatic Invasive Species Prevention and Management

Project objectives are focused on the continuation of aquatic invasive species prevention, early-detection monitoring, eradication and control, and education efforts for the Pyramid Lake Paiute Tribe. The objectives of this proposal concentrate on the preservation of the federally endangered cui-ui and threatened Lahontan cutthroat trout and the natural, cultural, recreational, and economic resources of the Pyramid Lake Paiute Tribe through increased capacity to continue aquatic invasive species prevention and management on the Pyramid Lake Paiute Reservation.

Walker River Paiute Tribe ($200,000)
Riparian Enhancement Planning and Implementation

The Walker River Paiute Tribe will continue implementation and monitoring of riparian restoration activities and to re-invigorate the Tribe's members' connection to the wildlife and ecosystem of the lower Walker River. The strategies and associated goals for the project include: 1) direct habitat management with restoration of 20 acres along the lower Walker River by December 2023; 2) outreach to the Tribe’s members through organization and sponsorship of 2 Walker River Bird Days by July 2023 and website promotions; and 3) wildlife data acquisition and analysis via 4 avian point count surveys by August 2022. These goals align with the needs identified in the 2018 Walker River Paiute Tribe Climate Adaptation Plan, the goals of partners, including the Walker Basin Conservancy and U.S. Fish and Wildlife Service, and the need of the Tribe’s members to be reconnected to the lower Walker River and their tribal heritage.

NEW MEXICO

Pueblo of Santa Ana ($198,308)
A Tribal Link in the Chain—the Pueblo of Santa Ana’s Commitment to Wildlife Connectivity and Safe Passage

This project in partnership with the New Mexico Department of Game and Fish, New Mexico Department of Transportation, National Wildlife Federation, and the New Mexico Wildlife Corridors Action Plan Team involves building the Pueblo’s capacity to 1) provide for the benefit and protection of wildlife; and 2) educate the community about wildlife connectivity. Lastly, the project will contribute to improving local and regional wildlife connectivity by adding a Tribal link into the wildlife connectivity chain that stretches across the western United States.

Pueblo of Sandia ($166,548)
Pueblo of Sandia Grassland Rehabilitation Project

This project will rehabilitate 500 acres of grassland that is overgrown with Cylindropuntia imbricata, the cane cholla (aka walking stick cholla, tree cholla, and chainlink cactus). The proliferation of the cholla is so extreme, that the acres to be treated are nearly a monoculture of the cactus. The grassland ecosystem that underlies the cholla has become stunted and barren over a large percentage of the treatment area. The project will mechanically remove cholla cactus following a New Mexico State University (NMSU) prescription to facilitate restoration of the grassland ecosystem. The objective of the treatment is to dramatically improve the grass forage for wildlife, improve plant diversity for pollinator habitat, facilitate the return of natural and prescribed fire to the landscape, and restore grass conditions on one portion of the treatment area for the Pueblo's bison herd, a species of cultural importance to the Pueblo.

NEW YORK

Shinnecock Indian Nation ($200,000)
Shinnecock Sustainable Shellfish Project

The project will provide support for Shinnecock Indian Nation to engage in fish and wildlife conservation efforts on their historic lands. It will rebuild and enhance the Tribe's native shellfish populations for cultural, economic, and ecological purposes. This work is guided by existing climate change and environmental management documents previously developed by the Tribe and will additionally enhance the capacity for the Tribe to produce and grow shellfish. The project will also engage community shellfish harvesters in the process, with the hope of fostering increased stewardship values and a general interest in shellfish management.

The project consists of three major activities: installing 150 linear feet of oyster reef to protect the reservations vulnerable shoreline and serve as a spawning sanctuary for oysters, upgrading the Shinnecock Shellfish Hatchery to increase output capacity, and free planting of quahog (hard shell clam) and oysters in the Shinnecock Bay adjacent to the reservation. The project goals are greater shellfish populations, improved water quality and an enhanced capacity for the Tribe to produce shellfish.

Seneca Nation of Indians ($14,957)
Eastern Hellbender Field Study and Population Monitoring Program

The Seneca Nation Conservation-Fish and Wildlife Department is requesting assistance to purchase the equipment and supplies required to continue necessary conservation management actions on behalf of the Eastern Hellbender and its habitat located within the Seneca Nation's Allegany Territory. The Tribe will conduct surveys in known habitat locations of Eastern Hellbender populations to locate and monitor previously tagged and released Eastern Hellbenders and complete a comprehensive survey throughout the entire 30 miles of Allegany River drainages located on the Seneca Nation's Allegany Territory, to identify and monitor previously unknown Eastern Hellbender populations/habitats.

OKLAHOMA

Muscogee (Creek) Nation ($199,597)

Wild Turkey Restoration Effort

The objective of this study is to create a suitable habitat for wild turkey that are currently declining in the area. MCN DANR hopes that through this study the Department will be able to better understand the species use of lands and optimize a habitat for their benefit. Using drop nets and using rocket nets to capture birds from the population that currently reside on the property. Once these birds have been caught, a battery powered GPS trackers will be placed on them to provide telemetry data on habitat selection.

Tonkawa Tribe ($159,643)
Tonkawa Tribe Pollinator Enhancement Project

This project will preserve and enhance a habitat for bees, butterflies, and other pollinators. Activities will include creating a walking trail lined with pollinator plants, as well as features added to this walking trail in the pollinator habitat that will provide food and water sources. The project will also include a 16' x 20' gazebo for shelter that will provide for activities related to the Tribal habitat as well as shade for visitors. The Tribe will build bee houses for protection, bee, and butterfly watches, as well as do surveys identifying bee and butterfly species and sponsor a butterfly education and awareness day. This project will include beekeeping supplies so the Tribe can not only help build the bee population but garner honey in the process. The Tribe will continue bat auditory monitoring, and doing education and outreach activities for adults and children to teach about the benefits of bees and butterflies to farming, plants, pollination, and how pollinators and pollinator plants were important to Native American culture in the past.

OREGON

Confederated Tribes of Grand Ronde ($195,579)
Chahalpam Floodplain Reforestation

The Confederated Tribes of Grand Ronde have been the historical caretakers of the Willamette Valley. The North Santiam River holds significant historical and cultural importance, once being the home of the Santiam band of the Kalapuya. Conversion of floodplain forest to agricultural production and the construction of two major dams led to devastating impacts on natural river processes.

This project will re-establish 40 acres of floodplain forest within the 462-acre Chahalpam Wildlife Area by planting native riparian hardwood trees and shrubs and controlling non-native species. It will help meet a collective call for floodplain habitats in the valley and will contribute to restoration efforts and partnership cost-sharing in a landscape context by adding funds to existing Oregon Watershed Enhancement Board, Natural Resources Conservation Service, Marion Soil and Water Conservation District, Bonneville Environmental Foundation, and Bonneville Power Administration awards.

UTAH

Shivwits Band of Paiutes ($175,000)
Paiute Fish and Wildlife Climate Adaptation Strategy with Habit Restoration Planning and Related Management

This project would result in the development of a Shivwits Band of Paiutes Fish and Wildlife climate adaptation strategy focused on indigenous (Paiute) habitat restoration; development of an aquatic, riparian, and upland habitat restoration plan; and subsequent pilot management habitat restoration activities on locations within the 28,000 acre Shivwits Reservation land in Washington County, Utah. This project will be led by the Shivwits Band of the Paiutes, founded in traditional ecological knowledge and based on existing climate and landscape planning science and tools. The project is intended to serve as a pilot for fish and wildlife habitat restoration and management activities on the Shivwits Reservation and to serve as a model for future climate adaptation planning by the Shivwits for other critical Tribal resources (human health, education, community services, etc.).

VIRGINIA

Upper Mattaponi Indian Tribe ($200,000)
Mattaponi River Cultural Species Assessment and Fisheries Training Project

A wide variety of native and culturally significant aquatic species live in the Mattaponi River and are a staple of the Upper Mattaponi Indian Tribe (UMIT) diet and cultural tradition. This project will allow the Tribe to complete the planning and training phase of a long term Mattaponi Tribal goal of building a Mattaponi River hatchery that meets their aquatic species recovery objectives. Tribal citizens will train with the Harrison Lake National Fish Hatchery in hatchery operations and fish, and mussel culture, assessing barriers to fish migration, surveying and monitoring species and collecting water samples for eDNA analyses of river herring species of fish. With this training the Tribe will conduct baseline fish and freshwater mussel surveys and complete habitat assessments along the Mattaponi River allowing the Tribe's participation in the restoration of aquatic resources in their homelands.

WASHINGTON

Jamestown S'Klallam Tribe ($119,626)
Quantifying marine macroalgal habitat resources and planning for resilience in a changing world

Like many habitats globally, kelps in the Salish Sea in Washington State are experiencing a variety of stressors, including ocean temperature change, nonpoint source pollution, ocean acidification, and alteration of shoreline. The Jamestown S'Klallam Tribe, in collaboration with Puget Sound Restoration Fund, will build resiliency in nearshore marine macroalgae habitat in the eastern Strait of Juan de Fuca through a two-prong approach: (1) quantifying ecological and cultural macroalgal resources; and (2) preserving key resources for future restoration needs.

The first goal is to identify macroalgae of importance to tribal citizens by engaging citizens in multiple knowledge exchange activities and create a baseline of these species using scientific monitoring methods. This monitoring work will include two field seasons of data collection, providing a reference point for any future activities in macroalgal habitat restoration. The second goal is to preserve macroalgal resources through implementation of a kelp gametophyte seed bank. The gametophyte seed bank of three different kelp species will act as an insurance policy to prepare for changes in critical nearshore habitat, offering restoration options for future generations.

Port Gamble S'Klallam Tribe ($200,000)
Quantifying abundance, food sources and dispersal patterns for cougars through deployment of GPS collars for the Point No Point Treaty traditional use area for adaptive management of cougars and elk

This project will build upon more than two decades of research on wildlife populations within the lands ceded by the 1855 Treaty of Point No Point. The short-term goal is to support a coalition of Tribes with overlapping co-management responsibilities in collaring up to 60 cougars on the northern and eastern flanks of the Olympic Peninsula to understand cougar population size and dynamics, the dispersal patterns of sub-adults and how this relates to genetic diversity, and then quantify what cougars are eating and, for the local cougars, if predation may impact the distribution or size of elk herds on the Olympic Peninsula.

This data will provide a baseline of cougar data, inform management and conservation decisions, and allow us to develop a species management plan. The long-term goal of this project is to combine all cougar datasets (demographic data, spatial data, and prey selection data) from across the Olympic Peninsula to begin filling a massive information gap on the area's only remaining top predator. The data will inform adaptive management actions for cougars, the habitats they live in, and the species upon which they prey.

Stillaguamish Tribe of Indians of Washington ($200,000)
Spatial distribution and haul-out and foraging behavior of harbor seals in north Puget Sound.

The Stillaguamish Tribe has a deep cultural and economic stake in viable salmon populations. Identifying and understanding all threats to Chinook recovery is essential for effective management, planning, and mitigation. This project will focus on the impact of harbor seal predation on salmonids and address the concept of sustainable pinniped populations that will allow for salmon recovery. Tribal leadership has requested more information on whether this impact is significant enough to invest in long-term monitoring and management of harbor seals in Port Susan and the Stillaguamish River.

To address this issue, the Tribe's Wildlife Program is partnering with the Washington Department of Fish and Wildlife to tag and monitor seals to investigate movement patterns and spatial distribution in relation to salmon migrations in northwest Washington State. This work will focus on Chinook salmon, but will also identify if other salmonids are at risk and which species are most vulnerable to predation by seals. The project will increase the Tribe's and its partners' capacity to recover critical salmon stocks and target the most meaningful management strategies to protect treaty rights and freshwater and marine ecosystems.

Swinomish Indian Tribal Community ($199,120)
Characterizing population connectivity of Dungeness crab in Puget Sound, Washington

The Dungeness crab is one of the most iconic and intensively harvested marine species on the west coast of North America. For many treaty Tribes, including the Swinomish Indian Tribal Community, this crab fishery is now more monetarily valuable than salmon. Several lines of evidence suggest that the Puget Sound Dungeness crab fishery may be composed of multiple genetically-differentiated populations. This project will address the first of several information gaps by determining if Dungeness crab larvae in Puget Sound constitute genetically differentiated populations and by

describing how these populations are connected. Genomic analyses of larval crabs from throughout the region will evaluate the sources and sinks of gene flow.

Through this project, the Tribe will actively partner with other Tribes for data collection and an academic partner at Western Washington University to accomplish the genomic analyses. Furthermore, they will engage the established regional monitoring efforts of the Pacific Northwest Crab Research Group. This work contributes to the Tribe's goal of strengthening the existing fishery to benefit Swinomish and other tribal communities by using the best available science to work towards an alternative sustainable management framework that maximizes fishery yields.