

2019

Tribal Wildlife & Habitat Accomplishments

*Circle of Flight, Endangered Species, Invasive Species,
Noxious Weeds and Tribal Youth Initiative*



Midwest Region





Tribal youth have hands on education with the fish hatchery personnel – Match-E-Be-Nash-She-Wish Band



Tribal youth engagement in electrofishing for fish surveys – Sokaogon Chippewa Community



Wild rice seeding – Lac Courte Oreilles Band



Hooded merganser checking out nest box – Leech Lake Band



Piping plover monitoring on Long Island – Bad River Band



Trawling survey for invasive fish species – 1854 Treaty Authority

Welcome Readers

Dear Reader,

In the Midwest Region, more than 35 tribes and tribal organizations manage a land base greater than 62 million acres comprised of reservations and treaty ceded territories. Tribal restoration management activities highlighted in the pages to follow contribute to the sustainability of wildlife populations and local ecosystems within the Great Lakes, Mississippi, and Rainy River watersheds within the states of Iowa, Michigan, Minnesota, and Wisconsin.

Tribes are leading significant on the ground wildlife and habitat restoration and enhancement efforts, often in close coordination with numerous local, state, federal and non-governmental partners. This includes restoring critical wetland habitat for wild rice and waterfowl; protecting culturally important endangered species; controlling non-native and invasive species threatening the integrity of local ecosystems; and engaging the next generation of native youth to foster life-long interest and careers in the field of natural resource management to serve their communities and beyond.



*Traditional wild rice harvest for restoration seed –
Match-E-Be-Nash-She-Wish Band*



Eastern meadowlark on the Ho-Chunk Reservation

I invite you to take a glimpse into the many tribal wildlife and habitat accomplishments throughout the Midwest Region. The success stories to follow highlight accomplishments under the following Bureau of Indian Affairs programs during fiscal year 2018: Circle of Flight, Endangered Species, Invasive Species, Noxious Weeds Management, and the Tribal Youth Initiative. In fiscal year 2019, tribes in the Midwest Region identified over \$4 million in combined funding needed from these five annual competitive programs.

The Circle of Flight Program is a long-standing successful regional restoration program that delivers more than \$700,000 annually to tribes in the Midwest Region to support projects that restore wetlands, enhance waterfowl habitat, and manage wild rice on tribal lands and ceded territories. Additional Bureau of Indian Affairs programs provide support for tribal conservation, habitat restoration, and fishery management. An overview of these programs are included on pages 26 through 29 and include Conservation Law Enforcement Officer funding, Fish Hatchery Programs, and the Great Lakes Restoration Initiative.

Jessica L. Koski
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Midwest Region Reservation Map

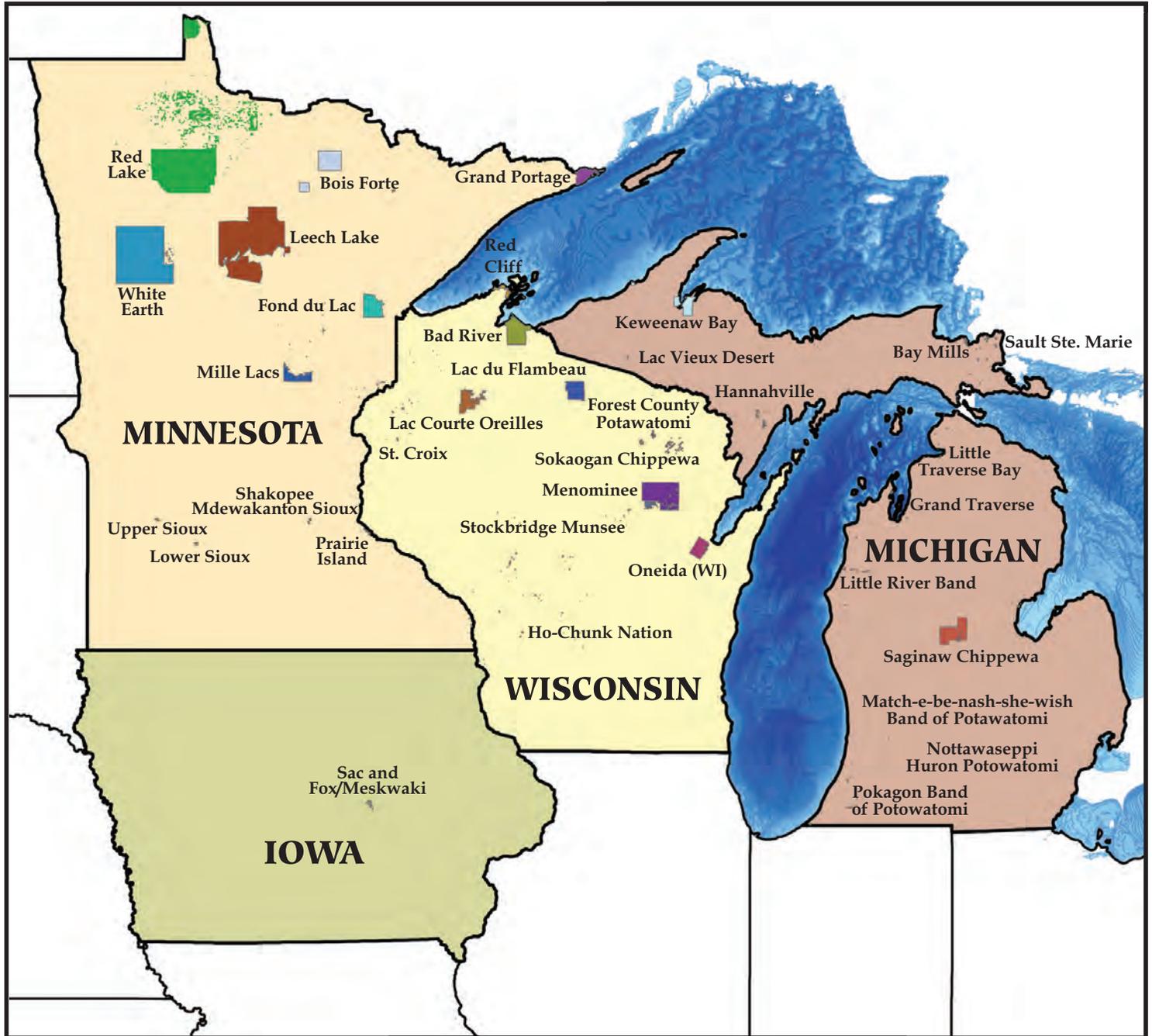
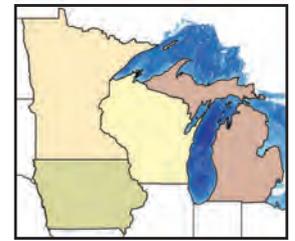


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1854 Treaty Authority

Wolf Collaring and Tracking, Invasive Species Management, Summer Youth Camp Planning



The 1854 Treaty Authority is an inter-tribal resource management agency governed by the Bois Forte of Lake Superior Band of Chippewa Indians and Grand Portage Band of Lake Superior Chippewa Indians. The organization is accountable for the preservation, protection, and enhancement of treaty rights and related resources in the 1854 Ceded Territory. This ceded territory encompasses approximately 5.5 million acres of present-day northeastern Minnesota. BIA Natural Resources funding has supported many projects and programs in an effort to protect resources in the 1854 Ceded Territory.

Endangered Species Program

The 1854 Treaty Authority completed activities to capture and collar wolves within the 1854 Ceded Territory, focusing on the rural/urban interface. Information obtained will help estimate pack size and territory, identify mortality causes, and determine pup litter sizes and survival. This information is crucial to calculate population estimates for resource management decisions. In 2018, the agency purchased equipment (collars, receiver and antenna), managed service for GPS collars, conducted telemetry flights, and collared additional wolves.



Collaring a captured wolf

Invasive Species Program

Two Invasive Species Technician positions (supported by Invasive Species Program funding) completed a wide variety of invasive species detection, monitoring, and control actions within the 1854 Ceded Territory. Activities in 2018 included: boat inspections and decontaminations; Rusty Crayfish trapping; Spiny Waterflea surveys; trawling surveys for invasive fish species; Bloody Red Shrimp surveys; aquatic vegetation surveys; Zebra Mussel detection; Emerald Ash Borer surveys; and terrestrial plant detection and control. With cooperation of other partners; education and outreach occurred at powwows, schools, fairs, trade shows, and other community events.



Trawling survey for invasive fish species



Completing a boat inspection

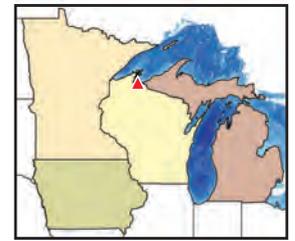
Tribal Youth Initiative

A summer youth camp was planned for 2018 including program location, activities, schedule, presenters, and cooperators. Information was distributed across the region to encourage youth applicants. Unfortunately, due to a low number of applicants, the camp was postponed and will occur in 2019 after further recruitment of potential attendees.



Bad River Band of the Lake Superior Chippewa Indians

*Invasive Species Inventory and Control, Ma'iingan Research
and Plan Updates, Piping Plover Monitoring,
Contaminant Research, Education and Outreach*



The Bad River Reservation is comprised of 125,000 acres in northern Wisconsin. It is a water-rich environment where naturally-meandering streams support expansive, intact wetlands and diverse communities of native flora and fauna. Circle of Flight, Endangered Species, and Noxious Weeds Management Program have provided critical support to help protect the fish, wildlife, and plants on the Bad River Reservation.

Circle of Flight

The Bad River Natural Resources Department (BRNRD) is assessing toxin accumulation at multiple trophic levels in wetlands on the reservation in order to protect tribally important species like bald eagles and wild rice. The BRNRD has been collecting contaminant samples from a variety of media (air, water, sediment, macroinvertebrates, amphibians, fish, and eaglets) since 2012. BRNRD is currently working with the USGS on synthesizing all the data and project completion is anticipated in the winter of 2019. The results of this work will provide a better understanding of contaminant fate and transport on the reservation, helping to understand risks to natural resources and subsistence consumption.



Noxious weeds management

Noxious Weeds Management Program

In 2018, with support of the Noxious Weeds Program and additional funding from other agencies and sources, the tribe's invasive species program was able to survey 17.4 river miles for garlic mustard, control 3.1 acres of buckthorn, control 3.8 acres of wild parsnip, remove 3.43 acres of hybrid cattails from the Kakagon Sloughs and reseed 0.8 acres with green wild rice seed that was purchased from harvesters. The Invasive Species Coordinator also inspected 214 pieces of machinery for invasive species before they started any work on the reservation.

Endangered Species

The tribe continued to monitor the movements of four wolf packs, whose ranges include parts of the reservation, throughout 2018. Wolves (Ma'iingan) were monitored using telemetry, track, and howling surveys. Only two packs were detected during winter track surveys, indicating only nine to twelve wolves that were commonly using the reservation before pups were born spring 2018. This is half of what has been typically observed in the past, which could be due to pack territory boundaries shifting and certain packs spending more time off reservation. Two adult gray wolves were radiocollared. One died shortly after collaring and the other remains on air. Endangered species funding will continue to be used to improve our winter surveying methods and transportation for surveying. A research associate at UW-Madison will assist the Bad River Wildlife Program with more extensive research working with landowners and Ma'iingan. In addition to Ma'iingan work, productivity surveys for piping plover were conducted on Long Island from May 24, 2018 to August 02, 2018. There were three breeding pairs that produced a total of six chicks, of which two fledged. That is the lowest productivity for this site since 2004.

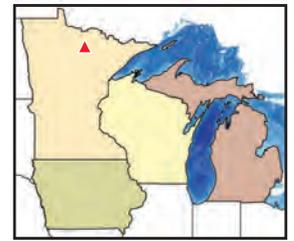


Ma'iingan on reservation



Bois Forte Band of Chippewa

Nett Lake Basin Wild Rice Restoration Program



The Bois Forte Tribe resides on a peninsula of land surrounded by Nett Lake. Nett Lake is an imposing, central feature of this 107,000 acre-tribal reservation in northeastern Minnesota. At 7,369 acres, Nett Lake annual wild rice production potential is substantial. However, beginning in the mid 1990's, production was noted to be in decline, in a manner similar to that seen in other rice lakes in this region. Multiple compounding factors each contribute to the decline and remain a focus of study. Concurrently, efforts are also being made to stimulate and encourage existing wild rice plant communities to spread throughout the basin.



Nett Lake on the Bois Forte Reservation

Circle of Flight

Beginning in 1994 and continuing to date, Bois Forte has actively employed mechanical aquatic plant harvesting equipment to release surface area acreage from aggressive aquatic plant overgrowth and provide opportunity space for wild rice plant colonization. To date, aquatic plant removal has been accomplished on over 400 basin surface acres. In 2018, Bois Forte operator teams removed over 10 acres of competing cattail bog in one historically productive area of the basin. Following competing vegetation removal, Nett Lake wild rice seed is dispersed in the cleared areas manually and through natural distribution processes.



Fond du Lac Band of Lake Superior Chippewa

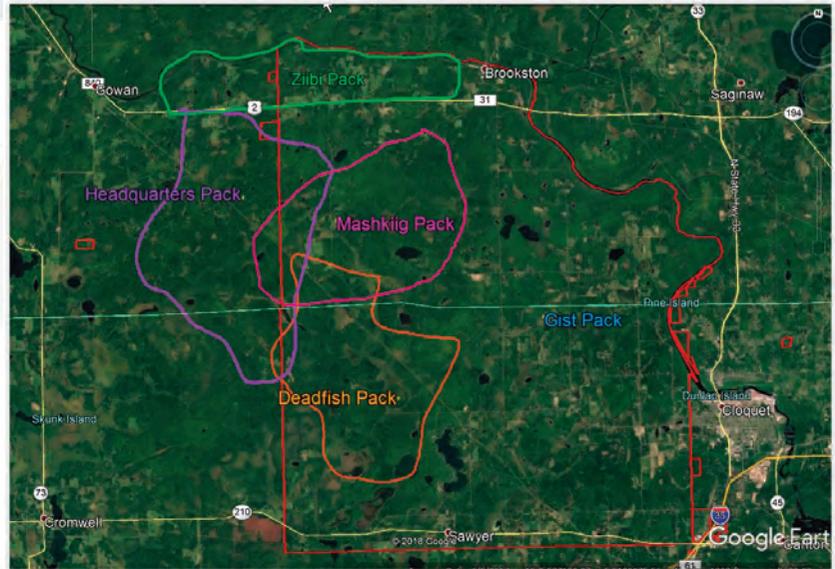
*Niganawaabamaanaanig ingiw Ma'iinganag
(Wolf Monitoring) on the Fond du Lac Reservation*



The Fond du Lac Resource Management Division (FDLRMD) is responsible for managing and protecting the natural resources of the Fond du Lac Band of Lake Superior Chippewa. In 2018 the FDLRMD used Endangered Species Program funding to continue monitoring efforts of wolf populations on the Fond du Lac Reservation.

Endangered Species Program

The FDLRMD, in cooperation with the Minnesota Department of Natural Resources (DNR) and the Cloquet Public Schools, has been able to continue its ongoing efforts to monitor wolf numbers; movements; reproduction and causes; and rates of mortality on the Fond du Lac Reservation. Wolves are captured and fitted with Global Positioning System (GPS) tracking collars. Data from this study helps the FDLRMD assess and avoid any negative impacts to wolves from planned pipeline maintenance and construction projects. The Minnesota DNR has provided technical assistance, and data from this study helps the DNR estimate statewide wolf populations and trends on an annual basis. Wolf location data has been used by Cloquet High School students for their annual science fair competitions. Information will be used for continued protection and restoration of wolf populations



Map of wolf pack ranges



Trail camera picture of a wolf on reservation

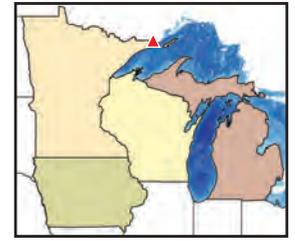


Wolf pup



Grand Portage Band of Lake Superior Chippewa

Moose Research, Education and Outreach



The Grand Portage Reservation is located in the northeastern Minnesota, along Lake Superior. The reservation land base encompasses approximately 47,500 acres. The Grand Portage Band members rely on subsistence species, and value culturally important species such as: moose, white-tailed deer, gray wolves, beaver, and black bear. With funding provided by the Endangered Species Program and Tribal Youth Initiative, the tribe has been performing long-term moose and wolf research and encouraging tribal youth to develop careers in natural resources management through primary education programs, mentor programs, and employment opportunities for high school and college students.

Endangered Species Program

The Grand Portage Band used BIA Endangered Species Program funds to establish a Tribal Moose Research Collaborative in the Lake Superior region. This is a joint project between the Grand Portage Band and Bois Forte Band of Chippewa, the Keweenaw Bay Indian Community, and the 1854 Treaty Authority. Wildlife helicopter survey flights are conducted on each reservation, and within the 1842 and 1854 Ceded Territories to assess moose populations and determine best management practices to aid in the recovery of moose. This work is further supported through Great Lakes Restoration Initiative (GLRI) support.



Helicopter survey flights conducted in the winter to estimate moose populations



Tribal youth interns assist with capturing and GPS collaring a wolf

Tribal Youth Initiative

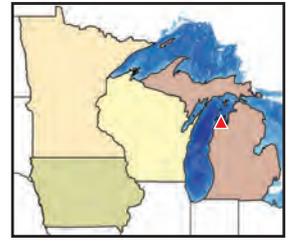
Grand Portage Natural Resources Management developed and taught a year-round environmental curriculum at Oshki Ogiimag, the Grand Portage K-6th grade charter school. The curriculum included: weekly classes and field activities in tree planting, maple tree tapping for syrup, stocking fish, gill netting and subsistence fishing, wild rice seeding and harvesting, and collecting water and invertebrate samples. The band hosted a youth mentorship program (ages 12-14) for six weeks in the summer of 2018, where mentor students assisted with natural resources field work for twenty hours a week.

Additionally, four Grand Portage high school students were employed as summer interns to conduct field and office work alongside Grand Portage Biology and Environmental staff. Projects included fisheries population assessments (brook trout, walleye, lake trout, yellow perch, lake sturgeon) using multiple gears (backpack electro-fisher, 26' electro fishing boat, gill nets, fyke nets); fish propagation techniques at the Grand Portage Native Fish Hatchery; native fish stocking in Lake Superior and inland waters; wolf trapping, capture, and collaring; and white-tailed deer and moose pellet collection. This work is further supported through GLRI support.



Grand Traverse Band of Ottawa and Chippewa Indians

Wild Rice Restoration and Monitoring



Manoomin has been found in very limited quantities in the Grand Traverse Band of Ottawa and Chippewa Indians' (GTB) Service Area in recent decades. In 2016, the GTB Natural Resources Department planted 11,000 pounds of manoomin seed in 10 local water bodies with the goal of establishing manoomin beds at these locations.



Predation on wild rice is one of many things GTB-NRD staff are monitoring

Circle of Flight

In 2018, Grand Traverse Band-Natural Resources Department staff conducted monitoring and evaluated 10 locations at which manoomin was planted in 2016, as well as two other locations where manoomin is already present. Surveys measured area and relative density of manoomin beds, as well as water quality parameters. Waterfowl surveys were also conducted at a subset of sites. Unfortunately, due to a bad crop yield throughout the Midwest, Grand Traverse Band-Natural Resources Department was not able to purchase manoomin seed for planting in 2018 or 2019. Grand Traverse Band-Natural Resources Department staff hope to acquire seed for planting in 2020, along with the continued monitoring and evaluation of manoomin restoration. A small amount of seed was also gathered from a local manoomin bed and planted in waterbodies within Sleeping Bear Dunes National Lakeshore in coordination with the National Park Service.

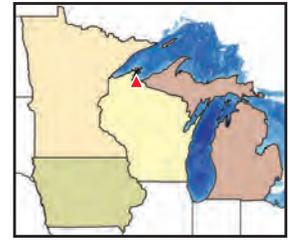


Invasive narrowleaf cattail infringes on a wild rice bed in northern Lower Michigan



Great Lakes Indian Fish and Wildlife Commission

Circle of Flight; Invasive Species Program Planning, Prevention, and Implementation; Noxious Weeds Management



Little Round Lake wild rice

The Great Lakes Indian Fish and Wildlife Commission (GLIFWC) is a natural resources management agency of eleven member Chippewa Tribes with resource management responsibilities over their ceded territory (off-reservation) hunting, fishing, and gathering rights. These ceded territories extend over a 60,000 square mile area in Michigan, Minnesota, and Wisconsin. BIA funding for Circle of Flight, Invasive Species Program, and Noxious Weeds Management has helped GLIFWC work collaboratively to protect and enhance treaty resources throughout the ceded territory.

Circle of Flight

One of the accomplishments made possible by Circle of Flight funding was the annual air survey of wild rice waters in the treaty-ceded territories. In

2018, over 800 images of over 200 waters were captured, identified and added to GLIFWC's long-term wild rice aerial survey data base. This included 3 previously undocumented sites in Polk County, Wisconsin that included Little Round Lake. These surveys provide an index to the health and abundance of wild rice on individual and regional waters; identify problem areas; help evaluate stewardship efforts; and assist with harvest regulation. The 2018 images join a library of aerial imagery that now includes over 14,000 pictures taken over 25 years.

Invasive Species Program

GLIFWC has continued to engage intertribal co-management with state and federal agencies to protect treaty-reserved resources from the negative impacts of invasive plants and animals across the full range of aquatic and terrestrial ecosystems where they are found. In 2018, GLIFWC worked toward preventing the spread of invasive species by publishing several articles in their quarterly publication, known as the Mazina'igan. GLIFWC staff also worked with tribal youth from the Mashkisibi Boys and Girls Club on an event aimed at raising awareness of garlic mustard infestations that threaten native plant species along the Bad River floodplain, several miles upstream from the Bad River Reservation. Upon request, GLIFWC staff also worked with natural resources staff from both the Red Cliff Band and the Bad River Band to conduct non-native phragmites identification and control.



Use of backpack sprayer to control noxious weeds

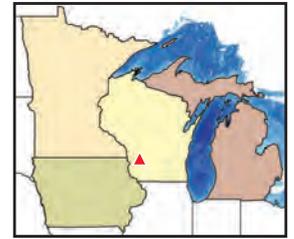
Noxious Weeds Management

In 2018, the GLIFWC invasive species control crew had a productive and successful year working toward protecting treaty resources for future generations. The control crew continued to use mechanical, biological, and chemical methods to reduce pioneer populations of invasive species that threaten to reduce the biodiversity, ecosystem integrity; and the future of resources that tribal members regularly harvest for sustenance. Noxious weed management is conducted using a strategy that includes prioritizing species based on their level of impact on native resources; relative abundance; and degree of invasiveness. The program prioritizes areas for surveillance based on identifying points of introduction, dispersal vectors, and high quality areas. These areas include habitat supporting populations of treaty resources such as Manoomin (wild rice) and Ogaa (walleye) and ecosystem integrity.



Ho-Chunk Nation

Resource Management to Promote Natural Communities



Ho-Chunk Nation land includes approximately 15,000 acres spread over 23 counties in Wisconsin, Minnesota and Illinois. These lands provide for everyday needs including recreation, cultural practices, and food source. Management of these resources focuses on the preservation of natural communities and restoration. Circle of Flight and Invasive Species Program funding are being used to support these efforts by restoring wetlands, adjacent upland habitat and checking the spread of invasive plants on tribal lands.

Circle of Flight

In 2018, the Ho-Chunk Nation focused Circle of Flight efforts on 425 acres located in Jackson County, Wisconsin. Wetland and adjacent upland habitats were managed for terrestrial invasive species including: Bell's Honeysuckle (*Lonicera x bella*), Tartarian Honeysuckle (*Lonicera tatarica*) and Glossy Buckthorn (*Rhamnus frangula*). The tribe was able to treat 85% of the study area that had been previously inventoried, mapped, and prioritized for management actions. Prioritization was based on the presence of intact natural communities, treatability, and likelihood of success.



Invasive species treatment in Jackson County, WI



Eastern meadowlark

Invasive Species Program

Invasive Species Program funding supported restoration program activities on the Sacred Earth Reservation trust parcel. The 1,550 acre Sacred Earth parcel is part of the former 7,400 acre Badger Army Ammunition Plant (BAAP) located near Baraboo, WI. The Ho-Chunk historically used, and continue to use, this area and the adjacent Devil's Lake State Park for cultural purposes including: ceremonies, hunting, and gathering of culturally significant plants. The site is also one of the most important nesting sites for grassland and Savanna birds in the Midwest region, and is formally recognized as such by its status as an Important Bird Area.

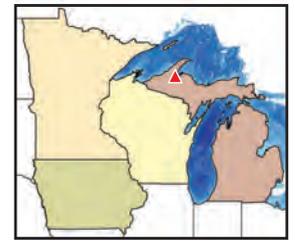
In 2018, Invasive Species Program funding supported terrestrial invasive plant management activities including forestry mowing, prescribed burning, and spot treatments. Invasive work targeted 925 acres that have been managed since 2015, and was completed by a contractor, tribal staff, and an AmeriCorps crew. Transect data from the BAAP facility indicates that shrub land and shrub-infested woodland occupies about 42% of the former 7,400 acre plant, agriculture 25%, and open grassland only 15%. Almost all of the open grassland is on the Ho-Chunk land as a result of this aggressive management for invasive plants. Line-transect data from 2017 also supports that although Ho-Chunk land comprises only 21% of the former BAAP, this land contains the majority of grassland breeding-birds including: upland sandpiper (100%), dickcissel (56%), bobolink (78%), eastern meadowlark (53%), grasshopper sparrow (52%) and Henslow's sparrow (54%).

The Ho-Chunk's efforts with the Sacred Earth parcel will continue with the goal of restoring approximately 1,300 acres of prairie and woodland lands transition into the Baraboo Hills.



Keweenaw Bay Indian Community

*Terrestrial Invasive Species Management Plan,
Japanese Barberry Removal, Tribal Youth Initiative,
and Northern Long-Eared Bat Monitoring*



Removal of Japanese barberry

The Keweenaw Bay Indian Community (KBIC) is located on the L'Anse Indian Reservation on Michigan's Upper Peninsula on Lake Superior. The entire reservation includes 59,027 acres and is the oldest and largest reservation in the state of Michigan. Habitats consist of coastal wetlands, hardwood forests, expanses of conifers and 80 miles of rivers and streams within 5 watersheds. With the help of program funding from Invasive Species; Noxious Weeds Management; Tribal Youth Initiative; and Endangered Species, the tribe has managed and protected its natural resources. This includes curtailing the spread of Japanese barberry, engaging youth in outdoor survival skills, and monitoring bats threatened by white-nose syndrome.

Noxious Weeds Management

The spread of Japanese barberry was significantly controlled by the teamwork of dedicated KBIC Natural Resource Division (NRD) Plant Techs, Superior Watershed Youth, and KBIC youth who worked diligently to get this woodland intruder removed from the landscape. Armed with shovels, gloves, and rubber boots; they dug out and bagged over 1,000 pounds of plants across 35 acres that gave the woodlands a sigh of relief. Plantings of native species, as requested by KBIC elders, followed Japanese barberry removal. Evidence suggests that barberry plants provide a good niche for ticks that are vectors of Lyme disease, giving extra motivation to remove these plants from the landscape.

Tribal Youth Initiative

After several years of collaborating and building upon meaningful exchanges between KBIC-NRD, the Ford Center, and Forest of Michigan Tech's School of Forest Resources and Environmental Science; staff from each entity created new summer programs for youth utilizing Tribal Youth Initiative funding. A skilled team of educators gave workshops on Forest Navigation. Twenty students and fifteen NRD staff participants learned to read the landscape by advancing map-reading skills; learning to use a sighting compass and operating a GPS unit; coupled with the sharing of Chippewa constellation stories. The course concluded with a journey in the forest using only a topographic map and a compass. By engaging youth in the natural environment and building valuable traditions, the tribe continues to strengthen positive interactions within wild places and foster lessons that youth will retain into the future.



Medicine teachings in the Ford Center Garden

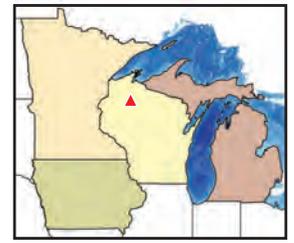
Endangered Species

Northern long-eared bat populations have dropped by more than 90% across North America, following the spread of the deadly white nose syndrome. Northern long-eared bats often stay under loose bark and in tree cavities during the summer, and hibernate from October-April, most often in caves or abandoned mines. The syndrome affects bats by disrupting their hibernation cycle and using up body fat supplies prior to spring. The KBIC Wildlife Program assessed bat populations using both mobile acoustic monitoring and 12 stationary recorder stations that were set up to detect the presence of bats. Information obtained from KBIC bat monitoring surveys will compliment MDNR winter bat counts/hibernacula checks.



Lac Courte Oreilles Band of Lake Superior Chippewa Indians

*Wild Rice Seeding, Exotic Species Diver-Assisted Suction
Harvester Program, Conservation Law Enforcement*



The Lac Courte Oreilles Reservation (LCO) includes 76,500 acres in northern Wisconsin with a number of diverse habitats within its exterior boundaries, including a large number of wetlands. This important habitat is home to Manoomin (wild rice), which the tribe considers of great importance for its nutritional value, as well as its cultural and spiritual significance. With the help of the Circle of Flight and Invasive Species programs, the tribe has been able to monitor and assess current and potential wild rice beds for seeding efforts, trend analysis, and educational opportunities.



Wild rice seeding

Circle of Flight

For the past 15 years under the Circle of Flight Program, the Lac Courte Oreilles Tribe has restored multiple wild rice beds within reservation boundaries. There are currently only a few wild rice areas on the reservation large enough to be considered for harvesting, forcing tribal members that want to practice traditional harvesting to do so primarily off-reservation lands. Wild rice is an important direct food source to tribal members and as a food source for reservation wildlife. In addition to being an important food source for tribal members and wildlife, wild rice is also important for harvesting as a seed source for re-seeding beds on the reservation. The LCO Conservation Department (LCOCD) is currently in their second year of a 3-year seeding effort to establish wild rice on the Pike and Green Lakes, and portions of the West Fork of the Chippewa River.

Invasive Species Program

Seeking a chemical-free method to control aquatic exotic and invasive species, LCOCD will be constructing a Diver-Assisted Suction Harvesting (DASH) dredge. The dredge uses pumps mounted on a pontoon boat with a unique bagging and filtration system to extract plants from the lake substrate. The DASH dredge will be used mainly to control smaller infestations recently found on the LCO Reservation. The LCOCD will work closely with lake associations to help supplement on-going local invasive species efforts.

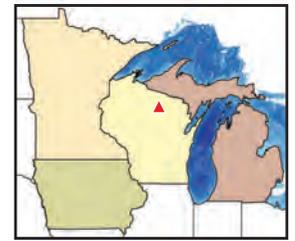


*Diver-Assisted Suction Harvesting Dredge
(photo courtesy of Aquatic Plant & Habitat Services LLC)*

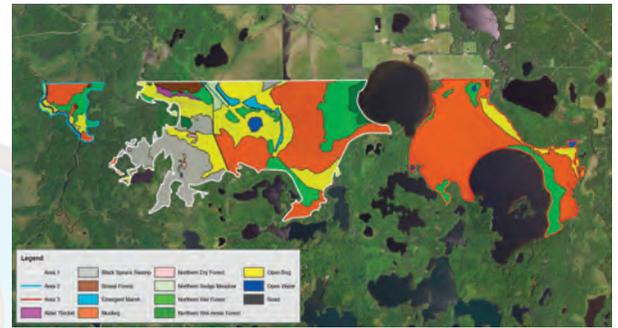


Lac du Flambeau Band of Lake Superior Chippewa Indians

Habitat assessment & Wildlife Monitoring



The Lac du Flambeau Reservation (LDF) covers approximately 86,500 acres which includes: 41,733 acres of forested uplands, 24,000 acres of wetlands, and 17,897 acres of lakes and rivers. Nearly one-half (48.4%) of the reservation's overall surface is comprised of water. Through the help of Circle of Flight funding, the Lac du Flambeau Natural Resources Department is able to protect delicate wetlands, maintain wetland ecology, and prevent any negative impacts to our major wetlands for all wildlife and birds.



Vegetation assessment of the Powell Marsh and Bear River wetlands

Circle of Flight

Utilizing Circle of Flight funding, the Lac du Flambeau Wildlife Program was able to continue monitoring non-wetland wildlife and rare birds such as yellow rail and LeConte's sparrow. In 2018 the tribe was able to contract with a company while working with tribal elders in the community to conduct a vegetation survey of tribal wetlands. Lac du Flambeau was able to meet our goal of gathering vegetation data on 100 acres of wetlands. With Circle of Flight funding, the tribe has also been able to hold public education events such as bird banding with Lac du Flambeau youth and other youth from the surrounding communities. The tribe has also been able to continue to support interns with Circle of Flight funds. Program staff have taught the interns how to conduct wolf, bat, and deer surveys while emphasizing the importance of conducting those surveys. Program staff have also shown youth how they can help manage, not just natural resources, but treaty resources as well.



Bat surveys with Lac du Flambeau youth

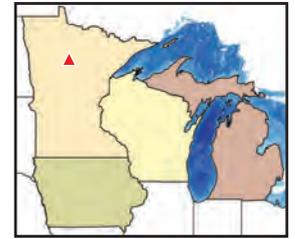


Bird banding with youth from the Lac du Flambeau Band and surrounding communities



Leech Lake Band of Ojibwe

*FY18 Wildlife Accomplishments on
the Leech Lake Reservation*



The Leech Lake Band of Ojibwe is located in northern Minnesota. The Leech Lake Reservation Division of Resource Management, Fish and Wildlife Program works to protect and enhance fish and wildlife populations on the reservation for current and future generations of tribal members. Approximately half of the reservation is covered by lakes, streams, and wetlands. The Leech Lake Band is also located near the junction of three major biomes; including the boreal forest, northern hardwoods forest, and tall grass prairie. Circle of Flight funding has supported tribal goals to protect and enhance fish and wildlife populations for future generations.



Beaver Baffle sometimes used to control water level in impoundments

Circle of Flight

Impoundment Management

Throughout the reservation, impoundments (covering about 375 acres) were managed to promote better waterfowl production. This primarily involved water level control, beaver management, and vegetation management. Some of these locations have also had nest boxes installed to promote the reproduction of cavity nesters like wood ducks and hooded mergansers. The tribe worked closely with the US Forest Service on these impoundments and met on several occasions to plan management activities. In 2018, maintenance was conducted on four of the impoundments and a drawdown on one of them. The drawdowns are used to promote revegetation of the sites with desirable vegetation for waterfowl and other species that utilize these wetlands.

Nest Boxes

Development and extensive timber harvest on the reservation has resulted in a lack of large trees that would normally provide cavities for wood ducks, common goldeneyes and hooded mergansers. Nest boxes are a way of mitigating this shortage until such time as timber management can be improved to accommodate cavity nesting species. Timing of funds disrupted construction and installation of nest boxes earlier in 2018, but funding was used to construct 150 boxes in the fall and early winter of 2018 for installation in spring 2019. In some situations, Natural Resources Conservation Service (NRCS) funds are used to match Circle of Flight funds to construct and install additional boxes.

Snowshoe Hare Study

The Leech Lake Band has been studying snowshoe hare in relation to forest structure on the reservation for multiple years. Snowshoe hare numbers have declined on the reservation and their population no longer appears to be cyclic as they historically were. This study will determine habitat selection of hare and offer management recommendations for how to provide better habitats for them. There are a number of agencies including the Chippewa National Forest, MN DNR, and US Fish and Wildlife Service who are cooperators on this project. Circle of Flight has helped to support portions of this study. The study will be completed in 2019. Results are anticipated to be published and recommendations implemented shortly thereafter.

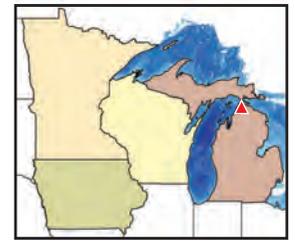


Snowshoe hare tracked down using radio telemetry equipment



Little Traverse Bay Bands of Odawa

Circle of Flight, Endangered, Threatened, Invasive & Culturally Significant Species Monitoring, Migratory Waterfowl Monitoring and Herpetological Monitoring



The Little Traverse Bay Bands of Odawa Indians (LTBB) Natural Resource Department (NRD) has utilized Circle of Flight funding as a catalyst to fund projects for baseline wetland and waterfowl monitoring within the 1855 LTBB Reservation and 1836 Ceded Territory since 2002. Funds enable LTBB to assess, monitor, and develop tribal management capacity for species of cultural and traditional significance on the reservation. Funding has been used to continue the following Circle of Flight goals: (1) culturally significant species monitoring and enhancement, (2) threatened and endangered species monitoring, (3) migratory waterfowl monitoring, (4) herpetological monitoring, and (5) habitat restoration.

Circle of Flight Program

Culturally significant species monitoring occurred during 2018 through aerial bald eagle nest monitoring flights (occupancy and productivity) during the 1st and 2nd quarters of 2018. Migratory waterfowl monitoring occurred through aerial waterfowl flights over the Beaver Island Archipelago of Lake Michigan during the 4th quarter of 2018. Threatened and endangered species monitoring occurred through common loon brood surveys during the 2nd quarter as part of the waterfowl brood surveys conducted on inland lakes within the 1836 Ceded Territory. Herpetological monitoring occurred through frog and toad surveys and the wood turtle telemetry project. The wood turtle telemetry project monitors the movements of adult wood turtles in relation to their nesting areas through the use of radio transmitters along the Upper Black River within the Cheboygan River Watershed.



Golden Eagle observed at French Farm Lake during April 2018

Invasive Species

LTBB has begun to work on restoring piping plover habitats on High Island by removing invasive species, particularly spotted knapweed, which dominates much of the habitat where plovers have historically nested. In 2018, LTBB and staff from the local cooperative invasive species management area completed invasive species surveys along the entire shoreline of High Island. This provided a comprehensive look at the size, density, and location of spotted knapweed infestations. There were 23 patches of knapweed under 0.02 acres, and 19 of those were treated by hand pulling in August. There were two mid-sized patches between 0.02 acres and 0.5 acres in size, and five larger patches ranging from 0.5 acres to 10 acres. The High Island split where the plovers nested in 2018 is included in this last category. No knapweed patches more than 0.02 acres were treated in 2018 due to the presence of nesting plovers during the spring treatment window and poor weather during the fall treatment window. In coming years, LTBB will use a combination of hand pulling, herbicides, and flame weeders to treat spotted knapweed and other invasive plants on the island.

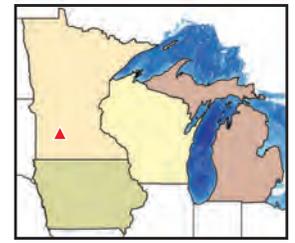


Scouting for spotted knapweed on High Island during August 2018



Lower Sioux Indian Community

Wild Rice Seeding, Native and Cultural Plant Restoration, Education and Outreach

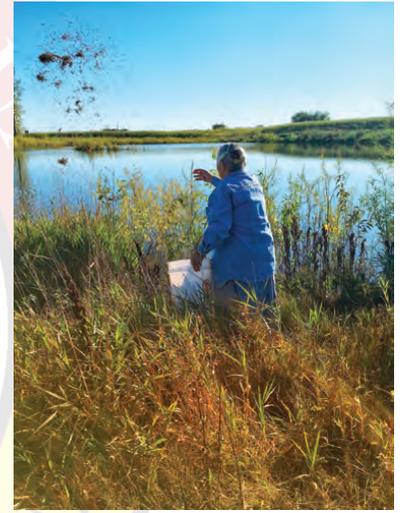


The Lower Sioux Indian Community is comprised of 1,743 acres along the Minnesota River Valley. This includes different types of habitats important to waterfowl such as floodplain forests, riverine wetlands, depressional wetlands, and remnant native prairies. With the help of Circle of Flight funds, the tribe has begun working on restoring habitats along the Minnesota River to reduce runoff pollution. This work also provides beneficial cover, feeding, and breeding habitats important to waterfowl and other wildlife.

Circle of Flight

Restoring Wild Rice

For the past four years, the Lower Sioux Community's Office of the Environment (OE) made efforts toward wild rice restoration at several sites within the community. Unfortunately in 2018, wild rice seed was not available for purchase. Efforts will continue in future years as funding allows. Circle of Flight funding has provided the tribe the opportunity to build community interest, education, and excitement associated with the restoration of historical wild rice beds.



Lower Sioux community elder seeding wild rice

Native and Cultural Plant Restoration

Land previously used for agriculture is being restored to native plants. This land is directly adjacent to the Minnesota River and the restoration of this land to wet, mesic prairie will play a significant role in reducing pollution to the Minnesota River as well as providing habitats for waterfowl and other wildlife. The change in land use will eliminate herbicide, pesticide, and runoff pollution from that field. The wet, mesic prairie will instead act as a significant buffer zone between upland sites and the Minnesota River. It will also provide wildlife along the river direct access to increased cover, feeding and nesting habitats. The initial phase, completed in the fall of 2016, involved extensive site preparation. In 2017, frequent flooding events greatly impacted restoration work, limiting site preparation and planting due to saturated soils. Therefore, only a small



Clinic Wellness Garden

area (less than 10 acres) was dry enough for equipment to maneuver and complete seeding in the field. The frequent flooding of the last couple of years underscores the importance of restoring this area to native vegetation to help reduce runoff. No additional work was completed in 2018 due to frequent flooding. The Office of the Environment collaborates with the Redwood County Farm Service Agency, Soil and Water Conservation District, and Natural Resources Conservation Service office to provide technical expertise. The OE also have a farming consultant for equipment, site preparation, and seeding.

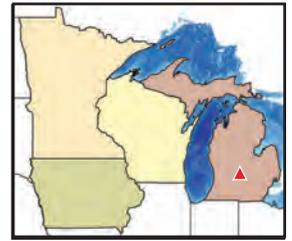
Education and Outreach

The OE continues to provide quality outreach opportunities to community members. The Lower Sioux Community Summer Work Program joined OE staff in the upkeep of a community wellness garden. Staff provided instructions to youth on the various plants that are now available at the Lower Sioux Health Care Clinic. Native habitat educational events will be held at the Clinic Wellness Garden to engage both community youth and Elders through identification and collection of plants for cultural and medicinal uses.



Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians

*Terrestrial Invasive Species Removal,
Land Restoration, Youth Outreach*



The Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians (Gun Lake Tribe) is located in southwest Michigan. The Environmental Department serves the tribe with the protection, conservation and stewardship of environmental and natural resources. A long term goal of the Environmental Department is to recruit tribal youth into the natural resources field.

Invasive Species

Through the Gun Lake Tribe's Invasive Species Program, two strike team members were hired to assist with prevention and eradication of invasive species on forested tribal parcels. Over 36 acres of invasive species were treated with over 1,500 trees and shrubs planted during restoration efforts. The Gun Lake Tribe Public Safety and Public Works Departments were educated on the identification and impact of terrestrial invasive species and a Forest Pest Ordinance was drafted.



Gun Lake Tribe's Stewardship Specialist led efforts to restore areas cleared of invasive species with native trees and shrubs

Tribal Youth Initiative

The Tribal Youth Initiative incorporated traditional environmental knowledge and teachings into natural resource management lessons in order to preserve and strengthen traditional cultural knowledge and engage youth in natural resources. Thirty targeted youth participated in programs ranging from natural resource management and cultural activities to college and career exploration. A six day "U.P. College Tour" was held with twelve youth participating; including five college tours, a visit to the Keweenaw Bay Indian Community Natural Resource Department, a mine tour, and a tour of two separate fish hatcheries.



Tribal youth have hands on education with the fish hatchery personnel

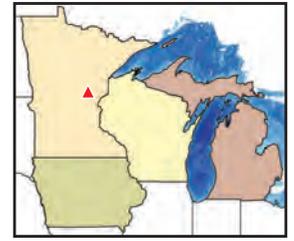


Michigan Tech visit for the tribal youth on their UP College Tour



Mille Lacs Band of Ojibwe

Protection and Restoration of Common Tern



The Mille Lacs Band of Ojibwe is located in east-central Minnesota. The Mille Lacs Band Department of Natural Resources develops and implements wildlife, fish, and forestry improvement activities. They regulate hunting, fishing, and gathering on the reservation while also preserving cultural knowledge and practices, such as on natural resources. Other services include: conservation enforcement, environmental protection, natural resource permits, historical preservation and tribal enrollment.

Circle of Flight

There are only six known common tern nesting colonies in Minnesota and the largest colony in the state is in Mille Lacs. The Mille Lacs colony currently uses Hennepin Island, located on Lake Mille Lacs approximately 2 miles off the southeastern shore. Data collected at the Mille Lacs colony has shown that survival is low due to predation, nest area competition by other species (gulls & cormorants); and wave actions that wash eggs and chicks away. As a conservation effort, the Mille Lacs Band Department of Natural Resources was awarded Circle of Flight funding to create two floating nesting platforms. Department of Natural Resources staff consulted with staff at the Michigan Department of Natural Resources on the development of the platforms, due to their successful use of these artificial floating nest structures for several years. These platforms, which were fabricated from old pontoons, were originally launched in 2016. They were modified to include an aluminum deck, guard rails, and filled with expanded foam to ensure that they would not sink. Department of Natural Resources staff then placed some pea gravel filled decoys as a nesting substrate. It can take several years for terns to notice and begin acclimating to the new nesting structures, so there is hope they may begin nesting on the platforms in the 2019 season.

In addition to the floating nesting platform support, the Circle of Flight program has been very helpful in providing funding for other scientific studies. These include assessments of bird species present on tribal lands, whether migrating or nesting. These studies allow the Mille Lacs Band Department of Natural Resources to track population trends over time, which is very important in an era of climate change and degradation of habitats.

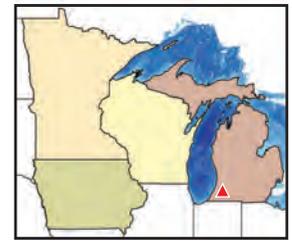


Floating nesting platforms on Mille Lacs Lake



Pokagon Band of Potawatomi Indians

Bird Monitoring and Invasive Species Efforts



The Pokagon Band of Potawatomi Indians own approximately 6,500 acres of land, scattered throughout a 10-county service area in Michigan and Indiana. The Pokagon Band's Department of Natural Resources (PBDNR) is responsible for managing habitat and wildlife populations on these lands, which include surveying for the presence or absence of a number of species. Beginning in 2011, the PBDNR initiated an inventory and monitoring effort for wildlife resources on these properties.

Circle of Flight

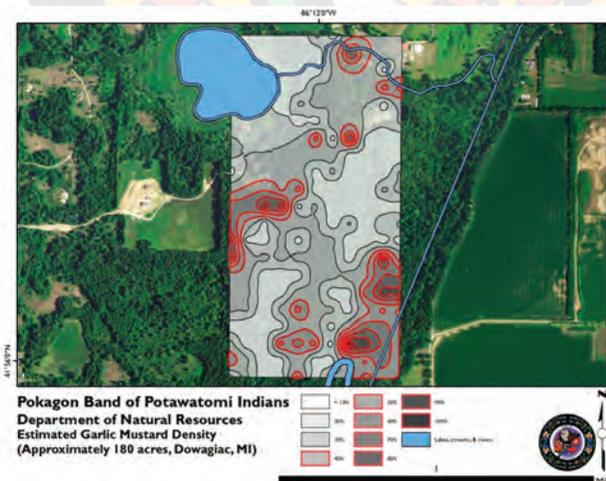
The PBDNR relies upon bird communities as an indicator of habitat condition as many species require a specific habitat type for some portion of their life cycle, making their presence an indicator of habitat quality. While birds are generally easy to survey and identify, there are a great number of survey methods available, each with their own level of individual effort, equipment costs (e.g., wildlife cameras or acoustic monitoring devices), and species-specific accuracy trade-offs. One trade off being non-calling individuals will not be detected by acoustic meters, and secretive calling individuals or nocturnal birds may not be detected by point-count surveys. A key consideration for PBDNR wildlife monitoring is the amount of effort required for accurate assessments. To help with future inventory and monitoring efforts, PBDNR utilized Circle of Flight funds to compare the overall detection of different bird species in tribal wetlands using two methods: point-count estimates and acoustic meter monitoring. Results indicated benefits and drawbacks for each of the methods, with no clear method being more beneficial than the other. With this in mind, PBDNR will rely on multiple survey methods to obtain quality data in future efforts.



Bird species have various ways of detection by different survey methods. Juvenile bald eagle (A), a species detected by point count surveys, but not by acoustic monitoring, and American woodcock (B), a species detected by acoustic monitoring, but not by point count surveys

Invasive Species

Management of the lands owned by the Pokagon Band, through the PBDNR, include invasive species management activities. In recent decades, the needs of tribal citizens on these lands from cultural and spiritual to economic and material, have been impacted due to many factors including competition with invasive species. During 2016 and 2017 field seasons, tribal lands were inventoried for the presence of invasive species. During 2018, the data was used to determine the location of invasive species removal that will occur in 2019. Figure 2 is an example of survey data mapping.

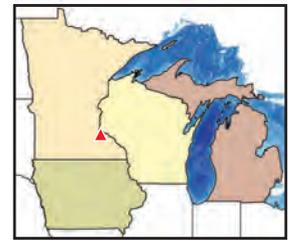


Estimated garlic mustard density from invasive species surveys, 2016-2017



Prairie Island Indian Community

Wild Rice Restoration and Outreach, Dredge Pond Wetland Enhancement, Prairie Maintenance, and Artificial Nest Boxes



Prairie Island Indian Community is comprised of approximately 3,050 acres of land and water within the floodplain of the Mississippi River in southeast Minnesota. It includes: backwater lakes, floodplain forests, deciduous woodlands, prairie, and agriculture as its primary land covers. Tribal lands provide nesting for a variety of waterfowl as well as an important migratory route and stopover site; averaging over 100,000 ducks, geese, and swans utilizing tribal backwaters. Prairie Island has also served tribal nations as a historically important site for cultural food and medicine production including wild rice.

Circle of Flight

In 2018, the tribe monitored wild rice productivity on tribal lands. However, flooding impacts resulted in 100% loss of wild rice production. No rice was able to be planted in 2018 due to poor rice seed production from suppliers. The tribe also coordinated three wild-rice related community outreach events: rice knocking sticks workshop (12 attendees); a wild rice camp (six participants) in Fond du Lac; and presented wild rice restoration at the Wild Rice Festival in Roseville, Minnesota.

In addition, a recreational habitat strategy was developed for the conversion of a surficial, groundwater-filled dredge pit into a functional wetland/pond habitat. Wetland and pond habitat shoreline alterations, native seeding, and plant plugs resulted in reduced runoff, bio-filtration, and increased fish and wildlife habitats. They included waterfowl nesting cover as part of the larger effort to ameliorate the existing shoreline. Prairie restoration sites and dry woodlands were maintained in 2018 through a variety of methods that included: 20 acres mowed; prescribed burning on 138 acres; cutting 73 acres for bison hay, mechanical treatment on 63 acres for tribe-priority invasive woody plant management; and chemical treatment of 17 acres for tribe-priority invasive grass and forb management. The tribe also established multiple species of cultural and medicinal plants throughout tribal habitats.

Community volunteers were engaged in protection and restoration efforts. Planting efforts provided educational opportunities for outreach events, including Earth Day and youth summer camps. In 2018, the tribe was able to monitor and conduct maintenance on multiple nest boxes including: 43 wood duck boxes, 39 eastern bluebird boxes, 2 purple martin condos (28 cavities), two chimney swift towers, and two kestrel boxes.



Restored wild rice on Prairie Island lands

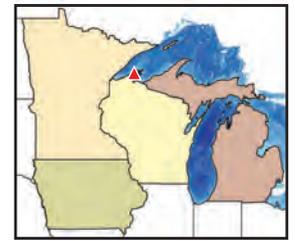


Hooded merganser nest at Prairie Island



Red Cliff Band of Lake Superior Chippewa

Gray Wolf Research on the Red Cliff Reservation
and Bayfield Peninsula



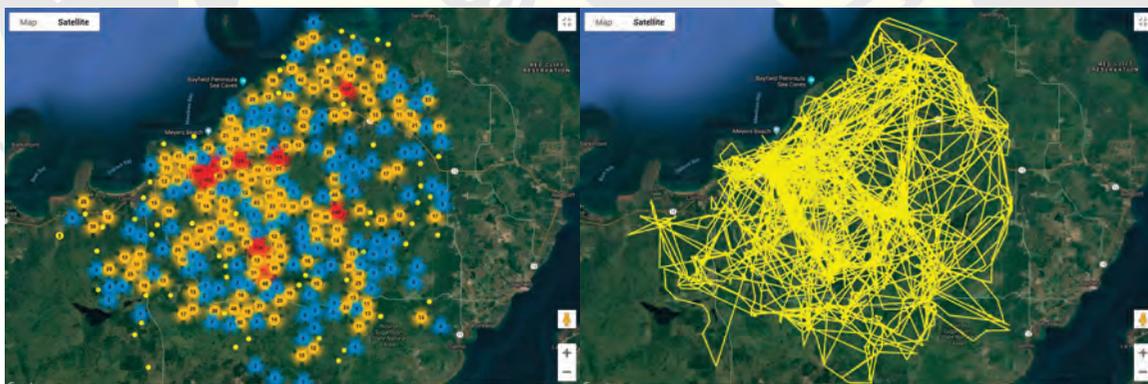
The Red Cliff Reservation sits at the tip of the Bayfield Peninsula, which juts into Lake Superior and represents the most northern part of the mainland in Wisconsin. The reservation and the peninsula are home to several packs of gray wolves (Ma'iinganag) which hold a special place in tribal culture. With assistance from the Endangered Species Program, Red Cliff is applying cutting edge technology to study gray wolf diet and home range.

Endangered Species

In 2018, Red Cliff Wildlife & Forestry deployed a satellite gps collar on a 2 year-old, male gray wolf from the Echo Valley Pack. The collar transmits a GPS location via iridium satellite network every 30 minutes, which can then be accessed by computer or smartphone using a GIS web interface. Red Cliff Wildlife & Forestry staff have been investigating 4 clusters of consecutive locations within 200 meters to determine diet and sites of interests (i.e. dens, rendezvous sites, resting sites). In the first 6 months of deployment over 6,000 locations have been logged by the collar. Over 300 clusters have been investigated, classified, and logged by staff. Information collected will fill critical data gaps that can be used to assist with tribal and state resource management decisions for the protection and restoration of the gray wolf.



2-year-old male, EV-2 of the Echo Valley Pack. Collared on 6/9/2018



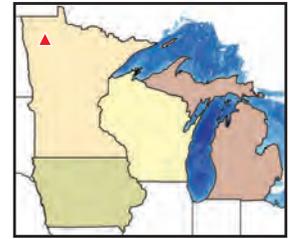
EV-2's locations 6/9/18 to 12/9/18

EV-2's travel path 6/9/18 to 12/9/18



Red Lake Band of Chippewa Indians

Wetland Wildlife Research, Impoundment Maintenance, Wetland Habitat Enhancement and Wild Rice Restoration Project



The present-day Red Lake Indian Reservation is located in north-central Minnesota, comprised of over 837,000 acres of land. It is the largest reservation in the U. S. Bureau of Indian Affairs' Midwest Region, accounting for 55% of all Indian land. Holdings are distributed across more than 10,000 square miles and eight counties. It includes 342,000 acres of forest, 240,000 acres of lakes, 466,000 acres of wetlands, and 371 miles of rivers and streams. With Circle of Flight and Noxious Weed Management Program funds in 2018 the tribe enhanced wetland habitats, improved public access, surveyed wildlife populations, and controlled noxious weeds at several important project sites.



Waterfowl on rice paddies

Circle of Flight

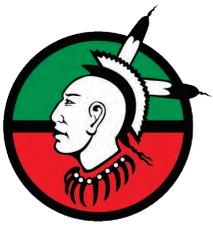
Waterfowl migration surveys were conducted with promising results. Results included 28 species of waterfowl observed and a peak of 16,700 birds on 900 acres of paddies in early May. Nest searching occurred on over 700 acres of managed nesting cover, finding 26 duck nests that were monitored for success. Maintenance was completed on: nesting structures, water control structures, moist soil management dikes, boat landings and parking areas, roadways, and trails. A total of 2,000 pounds of wild rice seed was hand seeded to supplement past rice restoration efforts. The "Young Forest Initiative" project (started in 2015) continued in 2018 with an additional 850 acres restored.

Noxious Weeds Management Program

In 2018, Noxious Weeds funding was used for the aggressive treatment of infestations of spotted knapweed, common tansy, and Canada thistle. A total of 273 miles of roadside ditches were mowed, and 220 acres of managed grasslands were chemically treated with an ATV mounted sprayer unit. In addition, 107.5 acres of tansy infestation were aeri ally sprayed. Red Lake firefighters burned 10,200 acres of roadside ditches and adjacent habitats that contained heavy infestations of canary grass, cattail and thistle. Treatment maps were updated and maintained to help guide future control efforts.

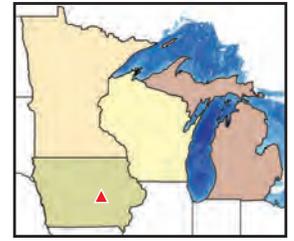


Helicopter use for aerial spraying



Sac and Fox Tribe of the Mississippi in Iowa

*Assessment of Invasive Palmer Amaranth in the
Conservation Reserve Program Fields of the Sac and
Fox Tribe of the Mississippi in Iowa*



The Sac and Fox Tribe of the Mississippi in Iowa is comprised of 8,382 acres along the Iowa River Valley in Tama, Iowa. This includes various types of habitats such as oak/hickory forest, tallgrass prairie, wetlands and riparian habitat. With the help of multiple grants, the tribe has begun working on multiple restoration projects. Many of the current projects involve protecting native plant and animal communities from non-native, invasive plant species.

Invasive Species Program

The Sac and Fox Tribe of the Mississippi in Iowa own multiple acres of land that are enrolled in the Conservation Reserve Program (CRP). These lands are environmentally sensitive areas that have been converted from agricultural use and restored to native habitats in an effort to reduce harmful environmental impacts. In the summer of 2018, CRP plantings were surveyed for the non-native, invasive Palmer amaranth (*Amaranthus palmeri*). This species suddenly became a concern to the tribe due to a potentially contaminated seed mix. Palmer amaranth has the potential to quickly overtake both native and agricultural landscapes, so the tribe took action as soon as possible. Staff surveyed 614 acres of CRP and luckily no Palmer amaranth was found on the settlement. As a result of this project, the tribe created a Palmer amaranth adaptive management plan which includes maps of areas surveyed, which will be useful as the tribe continues to monitor for Palmer amaranth.



Conservation Reserve Program plantings

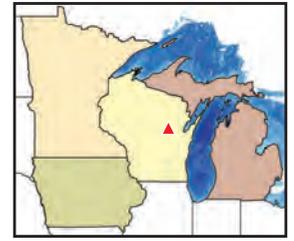


Staff Surveying Conservation Reserve Program plantings



Sokaogon Chippewa Community

Tribal Youth Mentorship for Biological Careers



The Sokaogon Chippewa Tribe settled in northeast Wisconsin because of abundant natural resources including numerous wild rice beds and lakes full of fish. These natural resources are very important to the tribe both culturally and for providing a subsistence living to tribal members. The tribe has been proactively involved in the long-term management of these resources in the region; unfortunately, few tribal members are directly involved or have working careers related to this activity.

Tribal Youth Initiative

Thanks to the Tribal Youth Initiative Program, Sokaogon Chippewa youth have been introduced to a career in fisheries biology. Several youth were mentored by tribal fisheries professionals during the 2018 summer field season, working on a variety of projects.

Youth participated in boat and stream electrofishing; netting techniques to assess fish population levels; habitat surveys, and various fish hatchery activities. This included fish stocking in local lakes. Furthermore, they were exposed to projects that involved partnerships and interaction with other agencies and groups. Through this experience, youth gained a better understanding of how and why fisheries are managed and the importance of the fisheries to the tribal community.

The tribe will continue to make youth development a priority. The long-term goals for the project are to increase the number of tribal members with jobs in natural resource management and fisheries. This will take many years of investment and professional mentoring to achieve. The short-term goals are to provide a summer working and learning environment where youth are engaged and their interest in natural resources is fostered. Once engaged, the hope is that youth will seek out the necessary education and ultimately return to the tribal community to work.



Harvest of walleye from rearing ponds



Smallmouth bass caught from boat electrofishing survey



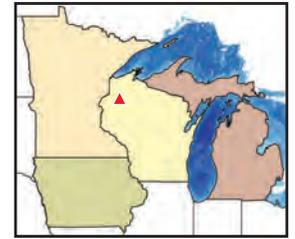
Tribal youth engagement in electrofishing for fish surveys

Shawn Rachal, PhD



St. Croix Chippewa Indians of Wisconsin

Wild Rice Restoration and Tallgrass Prairie Restoration



The St. Croix Chippewa Indians of Wisconsin have several small communities over a three-county area in northwest Wisconsin. All communities are found near lakes or rivers, as well as several other types of habitats such as forests, wetlands, Pine Barrens and some small patches of tall grass prairie. With the help of the Circle of Flight Program, the tribe has been working to restore wild rice habitats. The tribe has also used the Noxious Weeds Management Program to control noxious weeds and restore native plant habitat.



2018 wild rice map of Clam Lake

Circle of Flight

Clam Lake had been the premier wild rice gathering waterbody in the state up until 2007, when the common carp population flourished and severely reduced the wild rice crop. 656,358 pounds of carp were removed prior to 2018 to allow for wild rice restoration. During 2018, the carp were monitored by radio frequency transmitters, electrofishing, and mini-fyke netting. Lonestar Bay was chosen to have 10 acres seeded to re-establish the rice bed in that location and to increase overall wild rice acreage on Clam Lake. Just over 260 acres of wild rice was mapped in 2018, which is the most recorded in over 10 years.

Noxious Weeds Management Program

As part of the Noxious Weeds Management Program, a prescribed burn was completed on the Gaslyn Tallgrass Prairie site in spring 2018 with the assistance of the Bureau of Indian Affairs, Great Lakes Agency Wildland Fire Crew. Invasive spotted knapweed dominated the southern portion of this management unit. A tractor and seed drill was used post-burn to seed big bluestem and a monarch butterfly mix to expedite restoration of this site.



Wild rice seeding in Lonestar Bay



Prescribed burn on the Gaslyn Tallgrass Prairie

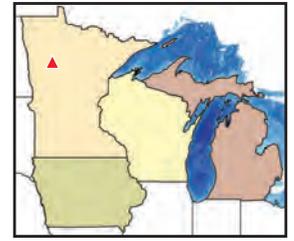


Results after seeding the Gaslyn Tallgrass Prairie



White Earth Band of Chippewa Indians

*Waterfowl, Wild Rice, and Wetland
Protection and Restoration*



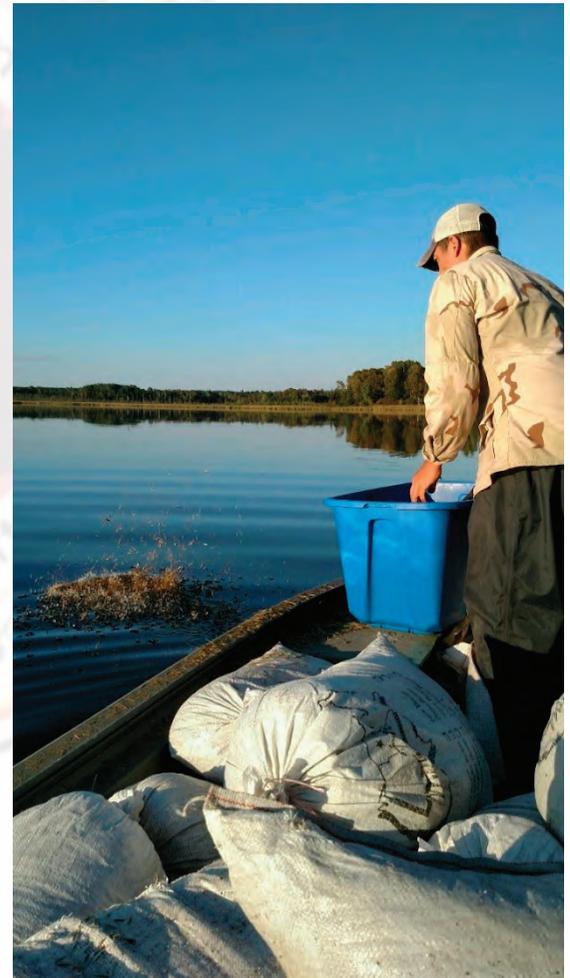
The White Earth Reservation, located in northwestern Minnesota, is situated within three distinct biomes. The eastern third of the reservation is part of the coniferous forest biome; the central part of the reservation is a transitional zone that consists of rolling hills, and hardwood forests that are dotted with several waterways; while the western area was once part of the huge prairie called the Great Plains. The White Earth Band's Wildlife department plans and maintains the prairie and wetland habitats for both water quality and wildlife habitat benefits. Activities include the surveying and mapping of existing and potential prairie and wetland restoration sites.

Circle of Flight Program

In 2018, the White Earth Band implemented multiple waterfowl, wild rice, and wetland projects. The Wildlife Department banded 213 ducks in July and August. Mallards, ring-necked ducks, canvasbacks, wood ducks, blue-winged teal and hooded mergansers were the most captured waterfowl species during the banding. White Earth maintains 117 Wood Duck nesting boxes. Nest box success is around 48% and boxes are cleaned and evaluated each spring before nesting season.

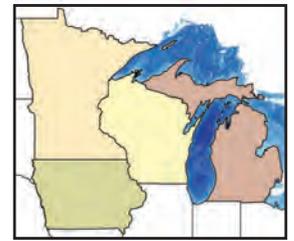
In addition to waterfowl protection and restoration, there were 13 acres of upland prairie (CP 42) planted in Mahnomen and Clearwater counties in 2018. Existing prairie habitat received some much needed mowing of willow and dogwood encroachment. Several test sites in these mowed areas received a hand-select spray treatment of herbicide that is effective for brush/broadleaf species. These sites will be evaluated again in 2019 for effectiveness of post-herbicide control. Herbicide treatment in heavy brush infested areas may relieve mowing/burning efforts and increase upland grasses and forbs. Brush and tree removal of around nine spring breeding ponds in upland prairie complexes will increase pond attractiveness to waterfowl.

Utilizing Circle of Flight funding, the White Earth Band were able to seed 3,000 pounds of wild rice in five bodies of water in 2018.



Wild rice seeding

Circle of Flight Program



The Circle of Flight program is a long-standing regional wetland/waterfowl restoration program that delivers more than \$700,000 annually to tribes in the Midwest Region. In FY 2019, the Midwest Region received nineteen funding requests exceeding \$1,000,000 in identified funding need under the program.

Circle of Flight supports projects to restore wetlands, enhance waterfowl habitat, and manage wild rice on tribal lands and ceded territories in the states of Iowa, Michigan, Minnesota, and Wisconsin. Tribes in the Midwest steward 5 million acres of water and wetlands, and effectively manage over 200,000 acres of natural wild rice beds and, in the process, provide significant waterfowl feeding and nesting areas.

Since it began in 1991, the program has emphasized collaborations, cooperation and partnerships to achieve on-the-ground results. Funding has supported large-scale enhancement efforts across tribal lands while building strong working relationships among tribes, federal, state, and local natural resource management agencies.



Lower Sioux community elder seeding wild rice

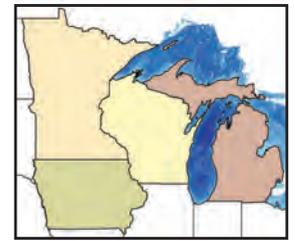
The Circle of Flight program supports enhanced wild rice gathering opportunities for tribal communities that are essential for maintaining and revitalizing traditional lifeways. Wild rice is a cornerstone resource that strengthens tribal culture and wildlife habitat. These habitats support vital biodiversity within major watersheds of the Midwest, including the Rainy River, Upper Mississippi River, and Great Lakes.



Waterfowl on rice paddies - Red Lake Band

Improved tribal wetland habitats enhance native species populations, increase habitat availability for tens of thousands of additional ducks and geese in spring and fall migrations, expand hunting opportunities for tribal members and the public, and increase economic development possibilities for tribes. Moreover, the benefits from these conservation projects support tribal nations' ability to exercise and revitalize traditional lifeways and cultural practices.

Great Lakes Restoration Initiative Program



The Great Lakes Restoration Initiative (GLRI) was established in 2010 to accelerate efforts to protect and restore the world's largest surface freshwater system – the Laurentian Great Lakes. More than 30 tribal nations' steward the Great Lakes ecosystem including the exercise of management authorities on reservation lands as well as co-management authorities for the protection and enhancement of off-reservation ceded territory trust resources. GLRI has substantially increased the capacity of Great Lakes tribes to participate in intergovernmental resource management activities alongside federal, state and other partners to address some of the most pressing challenges facing the Great Lakes.

As of fall 2019, with support from the U.S. Environmental Protection Agency, the Bureau of Indian Affairs has provided approximately \$60 million in GLRI funding to more than 30 tribes and tribal organizations to implement over 500 Great Lakes protection and restoration projects since 2010. These projects have protected and restored over 190,000 acres of habitat land and approximately 550 miles of Great Lakes tributaries, and include over 40 distinct projects to protect and restore native species.

Many GLRI tribal projects work to assess, monitor, protect and restore local waterways, habitats, and species such as lake sturgeon, moose, and wild rice essential for tribal life-ways and cultural continuity. In this way, the GLRI has been a catalyst not only for the restoration of the natural environment of the Great Lakes, but for strengthening and revitalizing tribal cultures and traditions interconnected to the health of the Great Lakes and its ecosystems.



Conversion of row crops to permanent pasture for grazing and expansion of grazing operations by the Oneida Nation has resulted in the annual reduction of over 425 pounds of phosphorus to local creeks, ultimately destined for Lake Michigan. These operations also benefit wildlife by creating habitat for threatened species such as the bobolink on the Oneida Nation Reservation.

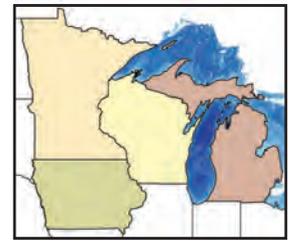


Mnomen (wild rice) restoration by the Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians has included the restoration of nine acres of wild rice, harvesting of over 500 pounds of seed, and transplantation of over 100 wild rice bundles to local lakes in Michigan waters.



The Grand Traverse Band of Ottawa and Chippewa Indians contributed to the removal of the Sabin Dam in the Boardman River Watershed, part of a decades-long effort and tens of millions of collaboratively sourced funds to remove multiple dams and restore stream function in the Boardman River.

Tribal Fish Hatchery Programs



Tribal fish hatcheries play an important role in co-managing inter-jurisdictional fishery resources, and are vital to the support of commercial, subsistence, cultural, and recreational fishing. Midwest tribes lead and support multi-jurisdictional fishery resource management on over 900,000 acres of reservation inland lakes, treaty ceded territories and the Great Lakes.

In 2019, Midwest tribes released over 53 million fish into both on and off-reservation waters. There are currently seventeen tribal fish hatcheries and/or rearing facilities in the Midwest Region. The Red Lake and Lac du Flambeau hatcheries are the oldest in the Midwest Region, established in 1929 and 1936, respectively.

Maintenance is a necessary component of fish hatchery operations to ensure adequate and safe operations while extending the life of hatcheries and rearing facilities. To support facility maintenance of tribal hatcheries, the Bureau of Indian Affairs provides annual competitive funding under the Fish Hatchery Maintenance Program. Typical projects include re-lining raceways, replacing water pumps, upgrading alarm systems, and rearing tank installation. In FY 2019, over \$1 million was provided to 15 tribes in the Midwest Region to support 30 Fish Hatchery Maintenance projects.



Brown trout reared at the Lac du Flambeau hatchery

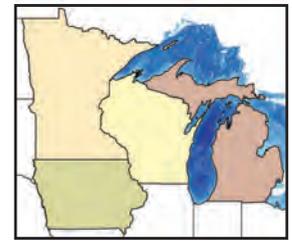
In addition, the Fish Hatchery Operations Program provides funding to original fish producing tribes to support hatching, rearing, and stocking programs to help achieve mandated fish recovery efforts throughout the Pacific Northwest and Great Lakes states. The program enables cost share/in-kind cooperative work with neighboring tribes, federal agencies, and state fishery managers. In FY2019, approximately \$1.2M in Fish Hatchery Operations funding was provided to six tribal fish hatcheries in the Midwest Region.



Ashland High School students visiting the Bad River hatchery

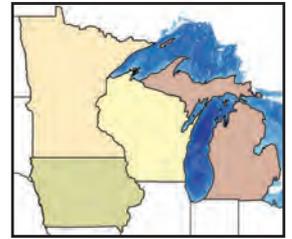
The benefits of tribal fish hatcheries are far reaching. Tribal fishery management supports ecosystems, tribal subsistence, nutrition of tribal families, cultural preservation within communities, employment, and commercial and recreational fishing and tourism that support economies on reservations and larger inter-dependent markets. The U.S. Fish & Wildlife Service and state Departments of Natural Resources also play an active role in stocking fish as a management tool in reservation waters.

2019 Tribal Fish Hatchery Production



Tribal Hatchery/Rearing Component	Walleye		Muskellunge	Lake Sturgeon	Whitefish	Cisco	Coater Brook Trout	Brook Trout	Lake Trout	Total
	Fry	Finglerling								
Bad River	10,315,190	853,670								11,168,860
Grand Portage								91,780		91,780
Keweenaw Bay	500,000	39,147					7,298	34,324	17,260	598,029
Lac Courte Oreilles	2,000,000	53,957								2,053,957
Lac du Flambeau	14,000,000	128,226	1,000		4,000,000				5,060	18,134,286
Lac Vieux Desert		6,400								6,400
Leech Lake	11,723,000	77,043			23,194					11,823,237
Little River Band				145						145
Little Traverse				1,092	40,112	54,784				95,988
Menominee		12,806								12,806
Mille Lacs	1,000,000	21,681	1,000							1,022,681
Red Cliff		3,100					8,000			11,100
Red Lake	6,000,000									6,000,000
Sault Ste. Marie	1,000,000	891,075			1,100					1,892,175
Sokaogon/Mole Lake		86,359								86,359
St. Croix	237,076	115,759								352,835
White Earth	96,486	108,581		12,000						217,067
Total	46,871,752	2,397,804	2,000	13,237	4,064,406	54,784	15,298	126,104	22,320	53,567,705

Conservation Law Enforcement Officer Funding



Conservation Law Enforcement Officer (CLEO) funding competitively provides up to five years of base funding to support a tribal conservation law enforcement officer position. The goal of this funding is to increase the presence of CLEO's on Indian lands for the protection, conservation, and enhancement of fish and wildlife species; including habitat protection and larger ecosystem integrity, Indian treaty rights protection, cooperative management, emergency response in rural areas, cultural resource protection, and other forest, water and agriculture resource protection.

The development and enforcement of conservation codes is a cornerstone of fish and wildlife management. Tribal reservation lands and ceded territory in the Midwest Region comprise more than 62 million acres and support numerous fish and wildlife habitats across the landscape. Tribal conservation enforcement responsibility is demonstrated through the exercise of established treaty rights and tribal fish and wildlife codes that are enforceable through tribal court systems.

In FY 2019, the CLEO funding provided by the BIA entered its sixth year and a new 5-year nation-wide application was open to all Tribes. The BIA Midwest Region received a total of 16 funding requests for CLEO positions totaling a request of more than \$750,000 in FY 2019. Through a highly competitive process, six Tribes were selected in the Midwest Region in FY 2019. This increased the regional allocation from \$188,000 in FY 2018 to \$282,000 in FY 2019. In addition, the Midwest Region Branch of Wildlife & Parks annually prioritizes year-end funding as available to support critical CLEO training opportunities attended by Tribes throughout the region.



Regional Tribal CLEO Training. New Buffalo, MI 2018

FY 2019 Funding Requests for Circle of Flight Projects

TRIBAL ENTITY	CIRCLE OF FLIGHT PROJECTS	REQUESTED AMOUNT
MICHIGAN		
Grand Traverse Band	Grand Traverse Band Natural Resources Department Circle of Flight	\$60,614
Little Traverse Bay Bands	Little Traverse Bay Bands Circle of Flight 2019	\$46,000
Pokagon Band	Bird Monitoring on Tribal Wetlands	\$14,326
Saginaw Chippewa	Saginaw Chippewa Indian Tribe Manoomin Sustainability Project	\$71,184
Sault Ste. Marie Tribe	Manoomin (Wild Rice) Restoration in the Eastern Upper Peninsula of Michigan	\$10,000
MINNESOTA		
Bois Forte Band	Nett Lake Wild Rice Restoration Program	\$100,000
Leech Lake Band	Waterfowl Impoundment Management and Maintenance	\$25,000
	Wild Rice (<i>Apamea apamiformis</i>) Monitoring on the Leech Lake Reservation, Minnesota	\$25,000
Lower Sioux Indian Community	Undercut Shoreline Stabilization and Waterfowl Nesting Enhancement	\$53,000
Prairie Island Indian Community	Prairie Island: 2019 Wild Rice and Waterfowl Investment Project	\$67,788
Red Lake Band	Red Lake Band of Chippewa Indians' Wetland Wildlife Research, Impoundment Maintenance, Habitat Enhancement and Wild Rice Restoration Project	\$139,966
WISCONSIN		
Bad River Band	Understanding Accumulating Toxin Concentrations among Trophic Cascades on the Bad River Reservation	\$51,500
Great Lakes Indian Fish & Wildlife Commission	FY 2019 Wild Rice Implementation Program	\$36,828
Ho-Chunk Nation	Maa Waakacak Phase I Wetland Project	\$52,000
Oneida Nation of Wisconsin	Reducing erosion and restoring spring-fed wetlands	\$31,380
Red Cliff Band	Wild Rice Genetic Study and Education/Outreach Events	\$32,830
Stockbridge-Munsee	Cemetery Scrape Wetland Enhancement	\$22,400
St. Croix Chippewa	Spring Lake Wild Rice Restoration-Vegetation Management-Phase 2 Equipment	\$149,500
		\$989,316

FY 2019 Funding Requests for Endangered Species Projects

TRIBAL ENTITY	ENDANGERED SPECIES PROJECTS	REQUESTED AMOUNT
IOWA		
Sac and Fox Tribe	Assessment of Indiana Bat (<i>Myotis sodalis</i>) Populations on the Meskwaki Settlement	\$55,303
MICHIGAN		
Sault Ste. Marie Tribe	Bizhiw (Canada lynx) Habitat Assessment on St. Marys River Islands	\$77,027
MINNESOTA		
Grand Portage Band	Assessing brook trout and walleye restoration efforts and management in three inland lakes on the Grand Portage Indian Reservation	\$84,750
Red Lake Band	Red Lake Band of Chippewa Gray Wolf Capture, Monitoring and Education Project	\$116,120
WISCONSIN		
Bad River Band	Building the Bad River Natural Resources Department Capacity to Protect and Monitor Threatened and Endangered Species on the Bad River Reservation, with a Focus on Ma'iingan and Piping Plovers	\$56,500
Red Cliff Band	Biological Monitoring and Visitor Engagement of Frog Bay Tribal National Park and the Red Cliff Reservation	\$120,000
St. Croix Chippewa	Determining Population and Distribution of the Culturally Significant Lake Sturgeon in the Clam River System	\$119,906
		\$629,606

FY 2019 Funding Requests for Invasive Species Projects

TRIBAL ENTITY	INVASIVE SPECIES PROJECTS	REQUESTED AMOUNT
IOWA		
Sac and Fox Tribe	Assessment of Domesticated Animals on the Meskwaki Settlement	\$71,200
MICHIGAN		
Grand Traverse Band	Students Against Invasive Species	\$25,121
Lac Vieux Desert Band	Simpson Property Barberry Removal	\$25,000
Little Traverse Bay Bands	Invasive Species Management Plan Implementation FY 2019	\$25,365
Pokagon Band	Insect Pest Early Detection and Rapid Response Preparedness on Tribal Lands	\$21,470
Saginaw Chippewa	Building tribal capacity to manage invasive species and protect culturally significant resources within the Saginaw Chippewa Historical Territories	\$250,000
Sault Ste. Marie Tribe	Coastal Marsh Restoration in the St. Marys River	\$98,781
MINNESOTA		
1854 Treaty Authority	Aquatic and Terrestrial Invasive Species Management in the 1854 Ceded Territory	\$243,312
Leech Lake Band	Control and prevention of terrestrial and aquatic invasive species on the Leech Lake Reservation	\$190,315
Lower Sioux	Terrestrial Invasive Plant Control Activities	\$44,000
Red Lake Band	Red Lake Band of Chippewa Indians' Multi-discipline Aquatic Invasive Species, Monitoring and Public Education Project	\$181,500
Shakopee Mdewakanton Sioux	Pike Lake Watershed Habitat Restoration Project- Carp Removal	\$108,560
Shakopee Mdewakanton Sioux	Pike Lake Watershed Habitat Restoration Project: Buckthorn Removal	\$47,400
WISCONSIN		
Bad River Band	Invasive Species Management on the Bad River Reservation	\$90,000
Great Lakes Indian Fish & Wildlife Commission	GLIFWC Comprehensive Invasive Species Program	\$76,997
Ho-Chunk Nation	Invasive Species Planning, Prevention and Implementation Ho-Chunk Nation Maa Waakacak Reservation Land	\$116,974
Menominee Indian Tribe	Menominee Indian Tribe Invasive Species Team Management and Planning Collaborative	\$173,388
Menominee Tribal Enterprises	Menominee Tribal Enterprises Invasive Species Management	\$137,511
Red Cliff Band	Invasive Species Prevention and Management on the Red Cliff Band of Lake Superior Chippewa Reservation	\$62,890
Stockbridge-Munsee	2019 Non-Native Invasive Species (NNIS) Initiative	\$4,750
St. Croix Chippewa	Clam Lake Invasive Species Control	\$187,421
		\$2,181,955

FY 2019 Funding Requests for Noxious Weeds Projects

TRIBAL ENTITY	NOXIOUS WEEDS PROJECTS	REQUESTED AMOUNT
MICHIGAN		
Keweenaw Bay	Invasive Species Management on the L'Anse Indian Reservation	\$49,000
Pokagon Band	Pokagon Invasives	\$4,350
	Grand Traverse Band of Ottawa and Chippewa Indians Tribal Youth Initiative	\$22,725
MINNESOTA		
Leech Lake Band	Control and prevention of terrestrial and aquatic invasive species on the Leech Lake Reservation BIA	\$156,283
Red Lake Band	Wild Parsnip (<i>Pastinaca sativa</i>), Spotted Knapweed (<i>Centaurea maculosa</i>), Common Tansy (<i>Tanacetum vulgare</i>) and Invasive Monoculture Control Project	\$26,450
	Student Mentorship Program	\$42,233
WISCONSIN		
Great Lakes Indian Fish & Wildlife Commission	Great Lakes Indian Fish and Wildlife Commission FY 2019 BIA Noxious Weed Proposal	\$42,136
		\$278,219

FY 2019 Funding Requests for Tribal Youth Initiative Projects

TRIBAL ENTITY	TRIBAL YOUTH INITIATIVE PROJECTS	REQUESTED AMOUNT
IOWA		
Sac and Fox Tribe	Interpretive Native Landscaping at Meskwaki Natural Resources	\$13,657
MICHIGAN		
Grand Traverse Band	Grand Traverse Band of Ottawa and Chippewa Indians Tribal Youth Initiative	\$22,725
Keweenaw Bay	Keweenaw Bay Indian Community Youth Stewardship Project	\$50,000
Lac Vieux Desert Band	Lac Vieux Desert Tribal Youth Immersion	\$49,575
Little Traverse Bay Bands	Youth Conservation Corps - 2019	\$50,000
Saginaw Chippewa	Student Mentorship Program	\$42,233
MINNESOTA		
Grand Portage Band	Engaging Tribal Youth through Internship and Natural Resources Education Programs in the Grand Portage Reservation	\$50,000
WISCONSIN		
Great Lakes Indian Fish & Wildlife Commission	Camp Onji-Akiing (From the Earth)	\$40,432
Sokaogon Chippewa	BIA - Tribal Youth Initiative Program	\$20,000
St. Croix Chippewa	Natural Resource Restoration Through St. Croix Tribal Youth Stewards - Phase 1	\$38,474
		\$377,096



Tribal youth interns assist with capturing and GPS collaring a wolf – Grand Portage Band



Wild rice seeding - White Earth Band



Use of backpack sprayer to control noxious weeds – Great Lakes Indian Fish and Wildlife Commission



Wolf pup - Fond du Lac Band



Golden Eagle observed at French Farm Lake – Little Traverse Bay Bands



Waterfowl on rice paddies – Red Lake Band

