

2022

Tribal Wildlife & Habitat Accomplishments

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



Midwest Region





Welcome Readers

Dear Reader,

The Bureau of Indian Affairs (BIA) Midwest Region's Branch of Fish, Wildlife and Parks provides funding and support to 36 federally recognized Tribes and 3 Inter-Tribal treaty resource organizations. Tribes in the Midwest Region encompass and steward approximately 62 million acres including treaty ceded territories representing millions of acres of forests, lakes, streams, and wetlands. Tribal natural resource management activities highlighted in the following pages 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.



Red Lake Band: Hatched Blue-Winged Teal Nest

Tribes are leaders in on-the-ground wildlife and habitat restoration and enhancement efforts in the Midwest, often working in close coordination with numerous local, state, federal and non-governmental partners. Efforts include 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.

We invite you to learn about the many tribal wildlife and habitat accomplishments throughout the Midwest Region. The following success stories highlight accomplishments under the following BIA programs during the 2020 – 2022 field seasons: Circle of Flight, Endangered Species, Invasive Species, Noxious Weeds Management, and the Tribal Youth Initiative. In fiscal year 2022 alone, tribes in the Midwest Region identified almost \$5 million in combined funding needed from these five annual competitive programs.

Other BIA Wildlife & Parks programs provide additional support for tribal conservation, habitat restoration, and fishery management.

An overview of these programs is included on pages 4 through 7

and include Conservation Law Enforcement Officer funding, Fish Hatchery programs, and the Great Lakes Restoration Initiative. Further information on the Circle of Flight program, specific to the Midwest Region, is also found on page 4. The Circle of Flight program is a long-standing successful regional restoration program that delivers around \$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.

Zachary Jorgenson

GLRI Program Manager
Bureau of Indian Affairs Midwest Region



Midwest Tribal Reservations Map

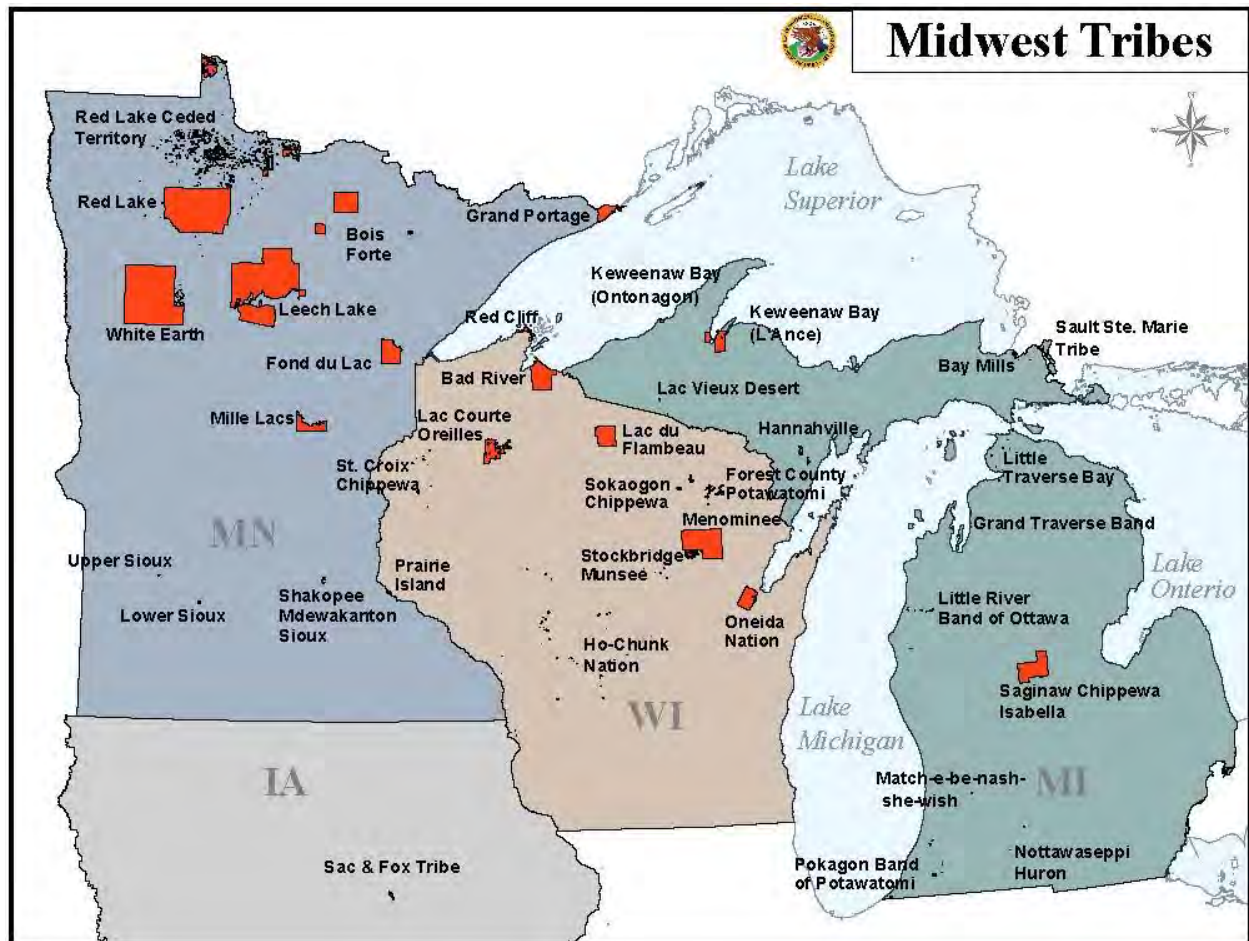


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Circle of Flight Program



Upper Sioux Community Wild Rice Collection

The Circle of Flight program is a long-standing regional wetland/waterfowl restoration program that delivers around \$700,000 annually to tribes in the Midwest Region. In FY 2022, the Midwest Region received nineteen funding requests exceeding \$1.4 million 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. Of the approximately 62 million acres of land base that Midwest Region Tribes steward, almost five million of these acres are wetland habitats. This includes over 200,000 acres of natural wild rice beds that provide significant waterfowl feeding and nesting areas that are unique to the Midwest Region.

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. Tribal management activities under this program increase habitat availability and utility to waterfowl that often have immediate and quantifiable affects. Circle of Flight funding has been used to complete several important habitat enhancement projects that support large numbers of wetland dependent species used by Tribal members for culturally important activities.

The Circle of Flight program also 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.

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.



Lower Sioux Indian Community Floating Wetland Island with Cardinal Flowers

Conservation Law Enforcement Officer Program



Regional Tribal CLEO Training. Hayward, WI 2022

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. This includes habitat and larger ecosystem integrity protection, 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 2022, the CLEO funding provided by the BIA entered its ninth year; the fourth out of five years of the second application cycle open to all Tribes. In FY 2019, the first year of the second cycle, the BIA Midwest Region received a total of 16 funding requests for CLEO positions totaling a request of more than \$750,000. Through a highly competitive process, six Tribes were selected in the Midwest Region for this second cycle. 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. Hayward, WI 2022

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. Indian country, comprised of reservation land bases and ceded territories where Tribes retain rights, represent millions of acres within the Great Lakes Basin. The GLRI has substantially increased the capacity of Tribes to participate in intergovernmental resource management for the Great Lakes and has been a significant source of funding for Tribes to implement projects that simultaneously advance Great Lakes protection and restoration under GLRI Action Plans and bolster the protection and restoration of culturally important native species and treaty-reserved resources that support tribal lifeways.



Keweenaw Bay Indian Community – Wolf pups on a trail camera

Since 2010, the Bureau of Indian Affairs (BIA), with support from the U.S. Environmental Protection Agency (US EPA), has provided GLRI funding to more than 30 Tribes and tribal organizations in the Midwest and Eastern Regions for Great Lakes protection and restoration efforts. The GLRI Distinct Tribal Program (DTP) was initiated in 2020 to provide annual support to Tribal priority efforts that are consistent with GLRI goals and objectives, while greatly enhancing flexibility and self-determination for Tribes.

As of January 2023, BIA, with support from the US EPA, has provided over \$113 million in GLRI funding to more than 30 Tribes and Tribal organizations to implement almost 800 Tribally led restoration projects and capacity awards. These projects have protected and restored over 150,000 acres of habitats and approximately 225 miles of Great Lakes tributaries, treated over 41,000 acres for invasive species, and include over 130 distinct projects to protect and restore native species.

The majority of Tribal GLRI projects work to assess, monitor, protect and restore local waterways, habitats, and species such as lake sturgeon, moose, and wild rice for tribal lifeways and cultural continuity. In this way, the GLRI has been a catalyst for not only 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. As the original caretakers of the Great Lakes, Tribes have critical place-based insight and traditional ecological perspectives for understanding and protecting the Great Lakes for generations to come.



Pokagon Band – Dowagiac River Re-Meander Project

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.

Midwest tribes rear over 50 million fish into both on and off-reservation waters on a given year. In 2022, numbers were reduced due to complications at a couple hatcheries, including drought conditions limiting water supplies and equipment limitations. 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 grow out ponds, replacing water pumps, upgrading alarm systems, and rearing tank installation. In FY 2022, over \$1.1 million was provided to 14 tribes in the Midwest Region to support 30 Fish Hatchery Maintenance projects.



Walleye fingerlings trapped for lake stocking by the White Earth Nation



St Croix Chippewa Indians scooping oga (walleye) for lake stocking

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 FY2022, approximately \$1.2M in Fish Hatchery Operations funding was provided to six tribal fish hatcheries in the Midwest Region.

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.



Whitefish fingerling at the Sault Ste Marie Tribal Hatchery



1854 Treaty Authority

Treaty Rights Implementation, Resource Stewardship, Cultural Preservation, Conservation Enforcement

The 1854 Treaty Authority is an inter-tribal resource management agency governed by the Bois Forte Band of Chippewa and Grand Portage Band of Lake Superior Chippewa. The organization is charged to preserve, protect, and enhance treaty rights and related resources in the 1854 Ceded Territory. This ceded territory encompasses approximately 5.5 million acres of present-day northeastern Minnesota. Rights Protection implementation (RPI) funding is provided under contract with the Bureau of Indian Affairs to support implementation of treaty rights.

Rights Protection Implementation

Treaty Rights Implementation

The 1854 Treaty Authority manages seasons to hunt, fish, and gather in the 1854 Ceded Territory. A conservation code is in place to guide Bois Forte and Grand Portage band members exercising treaty rights in the 1854 Ceded Territory. Activities include setting seasons and limits in accordance with the agreement with the state of Minnesota and other applicable regulations, managing tagging and registration requirements, and completing the necessary reporting.

Resource Stewardship

The meaningful exercise of treaty rights is dependent on healthy and available resources. The 1854 Treaty Authority maintains active programs to preserve and protect resources within the ceded territory.

- *Wildlife* – Moose surveys and habitat projects, wolf research, chronic wasting disease monitoring, waterfowl surveys and habitat, other wildlife surveys and projects
- *Fisheries* – Walleye electrofishing assessments, bottom trawling surveys for native and invasive species, lake sturgeon assessments
- *Wild Rice* – Inventory and monitoring of wild rice waters, restoration, stewardship projects, harvester information, research
- *Environmental* – Environmental review, water quality monitoring, coordination with site remediation and restoration
- *Invasive Species* – Boat inspections, monitoring and surveys, control projects, education and outreach
- *Climate* – Climate change vulnerability assessment and adaptation plan, monitoring projects (water temperature, snow depth, temperature, humidity, precipitation, specific resources)



Moose aerial survey



Sturgeon assessment

Additional time is spent coordinating with other agencies, workgroups, etc. on projects and policies impacting the ceded territory.



Wild rice camp

Cultural Preservation

Staff work on activities to promote tribal culture and the exercise of treaty rights, often with youth as a focus. A variety of gatherings and trainings occur such as wild rice camps, workshops (ex. rice knockers and poles), fishing days, firearm safety, ATV and snowmobile certification, etc. Education and outreach about treaty rights and resources occurs through our website, newsletter, social media, workshops, and presentations.

Conservation Enforcement

Conservation officers are employed to enforce the 1854 Treaty Authority conservation code for Bois Forte and Grand Portage members exercising treaty rights. A tribal judicial system is in place to properly handle any violations. Officers can also enforce Minnesota rules on state members who are hunting or fishing. Officers cooperate with other enforcement agencies, assist with training and education activities, and work wildfire details across the country.



Bad River Band of Lake Superior Chippewa Indians

Invasive Species Control, Piping Plover, Conservation Law Enforcement

The Bad River Reservation is home to the Bad River Band of Lake Superior Chippewa, or *Mashkiizibii*, located on the southern shore of *Gichigami* (Lake Superior). The reservation is 124,000 acres of terrestrial and aquatic habitat where tribal members thrive and exercise treaty rights. It also consists of a historical, spiritual, and critical 16,000-acre coastal estuary, the Bad River, and Kakagon Sloughs, where *manoomin* (wild rice) is harvested.

Invasive Species

Invasive Species Control

From 2018 through 2020 the Bad River was able to accomplish the following: 74.32 acres of buckthorn species surveyed and controlled through cutting; 45.11 acres of giant hogweed surveyed and controlled; 0.86 acres of purple loosestrife sprayed; 19.43 acres of wild parsnip surveyed and controlled; 42.43 acres and 31.6 miles surveyed and controlled for garlic mustard (when present); 4.66 acres of cattail controlled; and 0.11 acres of non-native *Phragmites* controlled. Additionally in 2019 a new method for controlling purple loosestrife was implemented in which the *Hylobius transversovittatus* beetle was collected with GLIFWC staff and released within the Kakagon Sloughs. This beetle feeds on the purple loosestrife root tissue, destroying the plant's nutrient source for leaf development, which in turn kills the plants. Initial results of this control method suggest it is an effective method for control within the sloughs.



Endangered Species

Piping Plover

The Mashkiizibii Natural Resources Division (MNRD), in cooperation with multiple partners, has been a leader in the monitoring and protection of piping plovers in Gichigami. In 2022, two piping plover monitors were hired to observe and document any nesting pairs on Chequamegon Point. Monitors documented six (6) nests with 22 total young that made it to fledging stage. This was the most successful year for the plovers on Chequamegon Point since the MNRD first started monitoring.

Conservation Law Enforcement Officer

In 2022, Mashkiizibii's Conservation Law Enforcement Officer (CLEO) led or assisted with responding to numerous calls, ranging from trespassing to illegal dumping. The CLEO, new to the department, proved to be an asset to the department immediately.

They studied the job description, tribal codes, and ordinances, and familiarized themselves with the job responsibilities. Over the course of the year, the CLEO issued citations for fishing or hunting violations, assisted with investigations into illegal activities, assisted with the release of a snared eagle, and worked jointly with Wisconsin DNR State Wardens and Red Cliff Tribal Wardens on multiple issues. Mashkiizibii's CLEO also patrolled Lake Superior to monitor tribal commercial fisherman. FY22 was a busy year with the CLEO spending a lot of time on patrol via truck, ATV, and boat.



Bay Mills Indian Community

Invasive Species and Noxious Weeds Management

The Bay Mills Indian Community (BMIC) is in Michigan's Eastern Upper Peninsula. The natural resources contained in the tribe's lands and surface waters, both on and adjacent to these lands, play a key role in the economic and cultural life of the community. These resources support commercial and subsistence fishing, hunting, and gathering, along with recreational activities (such as sport fishing, canoeing, hiking, and bird watching). The Bay Mills Indian Community relies heavily on commercial fishing, trade, tourism, and local forests for hunting and gathering. The Tribe recognizes the need to foster healthy ecosystems that will sustain the fisheries and wildlife that are integral to its culture and view invasive species and noxious weeds management as vital to nurturing these ecosystems.



Spotted knapweed removal at the Bay Mills Community College dune erosion

Noxious Weeds

Invasive Species, Noxious Weeds Management and Native Plant Restoration Within the Bay Mills Indian Community Reservation

The BMIC's Invasive Species Program was created in 2010 to address invasive species and noxious weed issues on the Bay Mills Reservation. In that time, the Invasive Species Program has completed assessments, education/outreach, and control for fourteen invasive species: including giant knotweed, Japanese knotweed, garlic mustard, narrowleaf cattail, purple loosestrife, bittersweet nightshade, scotch pine, and spotted knapweed. The Tribe is also a partner of the

Three Shores Cooperative Invasive Species Management Area (Three Shores CISMA) and has participated in control efforts and education/outreach with the CISMA multiple times over the last decade. BMIC also holds a seat on the CISMA's steering committee that meets monthly to discuss and coordinate invasive species management efforts among the partners.

Beginning in 2020, the BMIC received funding support from the Bureau of Indian Affairs' Noxious Weeds program to increase invasive species and noxious weed management activities. Using the recently updated Tribal Invasive Species Management Plan, the Tribe has conducted early detection surveillance and plant surveys to identify and map current infestation levels, employed intensive control efforts on known areas of infestation, implemented native plant restoration efforts, and managed a boat wash station at the Tribe's boat launch.

In 2021, the BMIC surveyed over 30 acres within the BMIC Reservation. The information was used to update maps to show the location and size of invasive species and noxious weed infestation areas. Intensive control efforts were carried out in 2021 and 2022, which resulted in the removal of over 330 contractor bags of Japanese knotweed, spotted knapweed, purple loosestrife, and sweet clover. To restore the native habitats impacted by the destruction caused by invasive species, the BMIC assisted partners in planting of over 700 trees in 2021 across the Reservation. These restoration efforts assist with suppressing invasive species on the landscape within the management areas. Due to the increased efforts for managing spotted knapweed, many of the management areas are now experiencing natural regeneration of culturally important native species such as wild blueberries and native wildflowers that were previously displaced by the spotted knapweed.



Wild blueberries naturally regenerating at a spotted knapweed removal site

Lastly, to promote the education/outreach for aquatic invasive species, a boat wash station was employed at the BMIC boat launch. The BMIC continues to work collaboratively with the Three Shores CISMA during multiple events. In 2021, the Tribe took part in events over 32 days that resulted in over 250 people being reached and 73 boats decontaminated. This region has numerous boat launches in which local boaters and tourists utilize, making it important to use proactive measures for preventing the movement of invasive species from boaters entering and exiting the water bodies.



Bois Forte Band of Chippewa

Nett Lake Basin Wild Rice Restoration

The Bois Forte Tribe resides on a peninsula of land surrounded by Nett Lake. Nett Lake is an imposing, central feature of the 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, similar to what was being recorded in other wild 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.



Bois Forte Operators use the Swamp Devil to remove beaver dams for water level management

Circle of Flight

Nett Lake Wild Rice Restoration Program

In 1995, the Bois Forte Division of Natural Resources (DNR) Water Resources Division produced an assessment report of wild rice production in Nett Lake. The report indicated that production was significantly reduced as compared to previous generations. The Bois Forte Tribal Council initiated the Nett Lake Wild Rice Restoration Program as a result of the report. In 2002, a decision was made to initiate a long-term wild rice restoration program involving, among other aspects, physical removal of competing aquatic vegetation. Removal of aggressive aquatic plant overgrowth provides opportunity space for wild rice plant colonization. Competition with other aquatic vegetation was considered as a major limiting factor in Nett Lake for wild rice restoration when the program began and continues to be a central focus of restoration efforts. Over time, other related projects and tasks associated with wild rice restoration in Nett Lake have

become apparent and have been integrated accordingly. The work continues to follow objectives originally outlined in the 2002 "Aquatic Resources Management Plan" created by Bois Forte DNR Water Resources Division, and the BIA-Bois Forte Integrated Resources Management Plan.

Mechanical removal of competing vegetation was initiated in July 2003. Since that time, over 600 acres of impacted surface area have been treated with mechanical control and other mechanical processes to encourage wild rice growth. In 2020, Bois Forte deployed equipment to remove beaver dams and treat vegetation on about 12 miles of tributary rivers to encourage water inflow to Nett Lake. Following competing vegetation removal, Nett Lake wild rice seed is dispersed in the cleared areas manually and through natural distribution processes. Building upon substantive rice production in 2019, wild rice acreage increased in 2020. Due to low water levels in 2021, in which most of the State of Minnesota was seeing extreme drought conditions, aquatic plant treatment was severely reduced as compared to previous years; with less than 3 acres being treated during the season. The low water levels also impacted Bois Forte's ability to access the wild rice beds for production estimates. However, based on data that was available, it was concluded that wild rice production on Nett Lake was similar, albeit slightly reduced, from production observed in 2021. Extreme environmental conditions in 2022 significantly impacted wild rice production and Bois Forte's ability to conduct restoration efforts. High levels of precipitation, rain on snow hydrologic events, and late season snowpack melt led to 100-year flood level events. Extended periods of elevated water, strong circulatory flow conditions, and cold air temperatures led to rice seed germination failure in Nett Lake. In July, when water levels had receded, rice attempted germination and growth, but the shortened growth season prevented any substantial rebound in plant growth. After considerable discussion, the Bois Forte Tribal Council reluctantly cancelled harvest season for wild rice on Nett Lake due to the reduced plant levels, opting instead to allow the remaining rice time to "rest and recover". There is hope that 2023 will bring better conditions to support wild rice recovery efforts.



Spring 2022 flooding on the Bois Forte Reservation contribution to low wild rice production



Fond du Lac Band of Lake Superior Chippewa

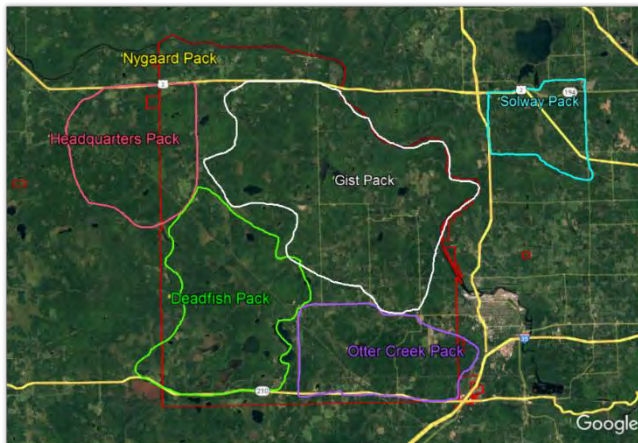
Niganawaabamaanaing ingiw Ma'iinganag (Wolf Monitoring) on the Fond du Lac Reservation.

The Fond du Lac Resource Management Division (FDLRMD) is charged with managing and protecting the natural resources of the Fond du Lac Band of Lake Superior Chippewa. The Band's reservation in northeast Minnesota is 100,000 acres in size and is occupied by 4-5 wolf packs. From 2020-22 the FDLRMD used Endangered Species Program funding to continue their monitoring efforts of federally protected and culturally significant wolves on the Fond du Lac Reservation.

Endangered Species Program

Wolf Monitoring

The FDLRMD, in cooperation with the Minnesota Department of Natural Resources (DNR) and Cloquet Public Schools, has continued its 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 helped the FDLRMD assess impacts to wolves from a recent oil pipeline construction project. 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 area students for their annual science fair competitions and 4H projects. Two presentations resulting from this project were given at the 2022 International Wolf Symposium.



Winter 2021-22 wolf packs using the Fond du Lac Reservation.



Cloquet students collecting pup measurements.



Estimating local pack sizes using baited camera traps.



Great Lakes Indian Fish and Wildlife Commission

Manoomin Aerial Survey Database; Noxious Weeds and Invasive Species Control; Tribal Youth Natural Resource Engagement

The Great Lakes Indian Fish and Wildlife Commission (GLIFWC) is a natural resources management agency of eleven member Ojibwe 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 Minnesota, Wisconsin, and Michigan. Bureau of Indian Affairs (BIA) funding for Circle of Flight, Invasive Species, and Noxious Weeds Management has helped GLIFWC work collaboratively to protect and enhance treaty resources throughout the ceded territory.

Circle of Flight

Manoomin Aerial Surveys for Protection and Restoration

Utilizing Circle of Flight support, the GLIFWC manoomin monitoring program added valuable data to their photo library. Annual aerial surveys are conducted of manidoo gitigaan (spirits garden) water bodies throughout ceded territories. In 2021 and 2022, more than 700 images were collected from 200 wild rice beds and added to the long-term wild rice aerial survey database. This information will be used to identify and prioritize wild rice protection and restoration efforts in ceded territories.



Spur Lake restoration efforts, 2022.

Noxious Weeds Management

Control of Priority Noxious Weeds and Invasive Species to Protect Native Species and Habitats

GLIFWC's control crew continued their important work to protect native ecosystems and treaty resources by focusing on the control and prevention of several priority noxious weeds and invasive species. The crew used a combination of manual, biological, and chemical methods to control invasives (including purple loosestrife, leafy spurge, wild parsnip, garlic mustard, teasel, yellow flag iris, dalmatian toadflax, and Eurasian marsh thistle). These species have been prioritized based on their relative abundance and potential to invade and degrade native ecosystems. Much of the control crew's work is focused on pathways of spread, such as road rights-of-way and trails.



Weed warriors, garlic mustard hand pulling group.

Tribal Youth Initiative

Cultural Traditions and Natural Resource Careers for Tribal Youth

Forty tribal youth entering grades 5-8 and six Junior Counselors (i.e., tribal high school students) attended the five-day cultural Camp Onji-Akiing at Camp Nesbit in the Ottawa National Forest during August 2022. Campers came from tribes in Michigan, Wisconsin, and Minnesota, representing 15 tribes. Youth participated in cultural activities like traditional games, beading and drumstick making, and elder storytelling. Youth also participated in a Natural Resource Career Fair where they interacted with tribal, college, and natural resource organizations to help foster interest in pursuing a career in natural resources.



Campers Planting Burr Oak with USFS Staff.



Grand Portage Band of Lake Superior Chippewa

Wetland Surveys and Tribal Youth Programs

The Grand Portage Reservation is in northeastern Minnesota, along Lake Superior. The reservation land base encompasses approximately 47,500 acres of southern boreal forest. Grand Portage Tribal 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 Bureau of Indian Affairs (BIA) Circle of Flight and Tribal Youth Initiative programs, the tribe has protected and restored vital wetlands for wildlife and wild rice harvest while also encouraging tribal youth in natural resources management activities.

Circle of Flight

Wetland Monitoring in the 1854 Ceded Territory

The Grand Portage Band of Lake Superior Chippewa, with support from the Minnesota Chippewa Tribe and 1854 Treaty Authority, established standardized monitoring protocols for wetlands across the 1854 Ceded Territory. This data will be used to inform managers of the health, quality, and function of wetlands. To date, 23 wetlands have been surveyed across the arrowhead region. Wetlands were surveyed for wild rice, floristic quality, waterfowl and invertebrate diversity, and the presence/phenology of herptiles. A combination of active surveys and acoustic monitors were used for information collection.



Wood frog: a common amphibian of the Northwoods



Tribal youth learning how to harvest wild rice

Tribal Youth Initiative

Youth

An Environmental Education Program Coordinator was hired at the Grand Portage Oshki Ogimaag Charter School (K-6) to develop programs that will engage tribal youth in natural resources. Activities at the school included harvesting resources like high bush cranberries, wild rice, maple syrup, fiddle heads, cedar, red osier dogwood, snowshoe hares and many different fish species. Students also learned about fish, birds, small mammals, animal furs and tracks in snow, lake ecology, animal trapping, phenology, recycling, gardening, and environmental stewardship. The Raptor Center, Wolf Ridge Environmental Learning Center, and 1854 Treaty Authority provided hands on activities in the classroom over the school year. The Grand Portage Band also hosted summer camps for teenage students where they harvested birch bark, made crafts, set gill nets, and angled for fish in Lake Superior, assisted in building a birch bark canoe, made wild rice harvesting knockers, learned about native foods and medicines, learned about firearm safety and target shooting, went ruffed grouse hunting, kayaking, and camped at Isle Royale National Park.



Ho-Chunk Nation

Resource Management to Promote Natural Communities

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

Circle of Flight

Stream and Wetland Restoration Planning

In 2022, the Nation focused Circle of Flight efforts on a 165-acre project area located on the Mą Wakąçąk (Sacred Earth) parcel in Sauk County, WI. The Nation continues to work with the Army Corps of Engineers St. Paul District on a watershed feasibility study that is evaluating current watershed services and developing alternatives for stream and wetland restoration. The key goals of the project are to attenuate flood waters in the Otter Creek Watershed during snowmelt and extreme precipitation events; improve wetland and upland habitat; and re-meander portions of Pine Glen Creek which was straightened and ditched in the early 1900s. Pine Glen Creek is a cold-water system that has the potential to support Native Brook Trout and other cold-water species if habitat is restored.



Existing Seasonal Wetland Basin

Invasive Species Program

Invasive Species Control and Habitat Restoration at Mą Wakąçąk

Invasive Species Program funding supported ongoing restoration program activities at Mą Wakąçąk. The 1,550-acre parcel is part of the former 7,400-acre Badger Army Ammunition Plant (BAAP) located near Baraboo, WI. The Ho-Chunk People 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 2022, Invasive Species Program funding supported terrestrial invasive plant management activities on approximately 1,000 acres with treatments including forestry mowing, prescribed burning and spot treatments. Invasive work was completed by a contracted invasive species management crew and tribal land managers.

The Nation has been managing invasive plants on this parcel since 2015. Transect data from the Badger facility indicates that shrubland and shrub-infested woodland occupies about 42% of the former 7,400-acre plant, agriculture 25%, and open grassland only 15%, almost all of which is on the Ho-Chunk land because 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 most grassland breeding-birds including Upland Sandpiper, Dickcissel, Bobolink, Eastern Meadowlark, Grasshopper Sparrow, and Henslow's Sparrow.

In addition, the Nation has restored 185 acres of pollinator habitat at Mą Wakąçąk since 2015 through cooperative projects with the BIA, USDA-Natural Resource Conservation Service, Sauk County Parks, and area non-profits. These areas are currently being monitored for pollinators, grassland birds and small mammals with the data serving to guide land management decisions in the future. The Nation's efforts at the Mą Wakąçąk parcel will continue with the goal of restoring approximately 1,300 acres of prairie and woodland transition into the Baraboo Hills. This landscape scale restoration will complement the thousands of adjacent acres managed by The Nature Conservancy, Fish and Wildlife Service, USDA, and WI Dept. of Natural Resource



Monarch on Stiff Goldenrod



Keweenaw Bay Indian Community

Ma'iingan Monitoring, Noxious Weed Management, and Tribal Youth Initiative

The Keweenaw Bay Indian Community (KBIC) is located on the L'Anse Indian Reservation in Baraga, Marquette, and Ontonagon Counties in Michigan's Upper Peninsula on Lake Superior. The Reservation consists of approximately 59,000 acres, which is heavily forested and rich in water resources. These diverse habitats sustain a healthy population of fish, wildlife, and plant species. Funding through the BIA Wildlife and Parks Branch has supported several projects lead by the Natural Resources Department, including, but not limited to wolf and bat monitoring, hatchery maintenance, noxious weed monitoring and control, year-round and summer youth programs, and creation of the Great Lakes Tribal Conservation Corps in partnership with Superior Watershed Partnership & Land Conservancy.



One of five ma'iingan caught on trail camera.

Endangered Species

Ma'iingan Monitoring

KBIC has used BIA Endangered Species funding for the past several years to monitor ma'iingan through remote camera detections and winter track surveys. A collaring program is currently in the works to expand their monitoring capabilities. While there are a number of active packs within and/or near the Reservation, efforts have focused on a pack that maintains a territory within the Reservation. This pack was more elusive in 2022, but in 2021 KBIC was able to confirm the birth of five pups (pictured). Education and outreach remain a key component of the KBIC wolf program, which includes newsletter articles, posts on the NRD Facebook page, Wolf Awareness Week information sharing (October), and wolf related activities during annual outreach events in the community.

Noxious Weeds

Noxious Weed Management

KBIC, in collaboration with several key partners, continues to target noxious weeds within and near the L'Anse Indian Reservation. Of the invasive species found within the KBIC reservation, Japanese Barberry is highly prioritized as it is known for its aggressive growing habits. Minimizing the impact of all noxious weeds will ensure survival and restoration of the native plant species found within KBIC reservation lands and surrounding areas. Manual control is still the preferred method to address this species. One focal area for removal is known as the Forest Recovery Site, located behind our Community Garden. As Japanese barberry is removed, native species are planted with the hopes of establishing wild medicinal plants requested through the Cultural Committee.

Tribal Youth Initiative & Great Lakes

Tribal Conservation Corps

In 2022, KBIC and SWP teamed up to mentor a group of KBIC youth, ages 14-16. While the season was short for the crew, they were able to pack in many great experiences and assist with some important work at the KBIC Community Garden (DIGs). This includes:

- Planted and cared for a plot of asemaa (tobacco) and received teachings from a tribal elder.
- Harvested plantain and yarrow and made salve.
- Harvested and dried sage to create bundles for ceremonial use and gifting
- Harvested strawberries and made jam
- Addressed issues of invasive species and insect pests
- Collected trash along the Lake Superior shoreline in honor of Lake Superior Day
- Assisted hatchery and fisheries crews with cleaning of the stocking trailer and filling with 1,000 lake trout for release in local waters.
- Participated in the 9th annual Water Walk (17 miles from Pequaming to Sand Point)
- Visited Eagle Rock near Eagle Mine to learn about the cultural significance of the location and a berry study that is part of the Community environmental monitoring program.



Tribal youth at community garden



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 diverse habitats within its exterior boundaries including numerous 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 Bureau of Indian Affairs (BIA) support, the tribe has been able to monitor and assess current and potential wild rice beds for seeding efforts, trend analysis, and educational opportunities.



Melissa Lewis, seeding wild rice on the Chippewa River.

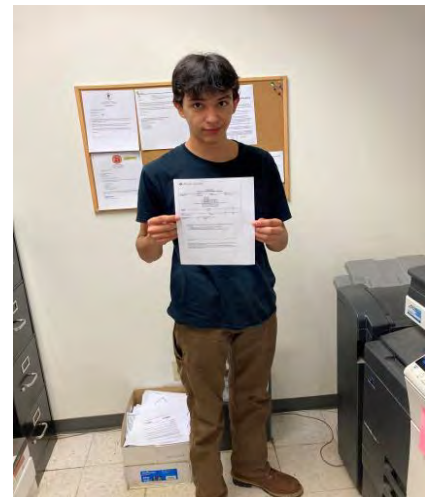
Circle of Flight

According to the Tribe's Integrated Resource Management Plan (IRMP), in addition to being a food source for wildlife and tribal members, wild rice is harvested as a seed source for reseeding beds on the reservation. There are currently only a handful of areas on the reservation where wild rice grows in quantities large enough for harvesting. Therefore, tribal members that practice traditional harvesting are forced to do so off-reservation. Because the Chippewa River was once the primary source for rice, the creation of the Chippewa Flowage has been cited as the major contributor of wild rice habitat loss. Wisconsin Department of Natural Resources (WDNR) ricing regulations and purple loosestrife invasion have been listed as other contributing factors to the severe decline in natural rice populations both on and off the reservation. In 2005 work began to convert commercial cranberry beds on the Reservation to Manoomin beds in order to restore Manoomin habitat to the Reservation. With the completion of transitioning

cranberry beds to Manoomin beds in the late 2000's Manoomin habitat expanded. However, in the last few years Manoomin beds have struggled do to out-competition and degrading conditions in the pumps and dikes that feed the Manoomin beds. Circle of Flight funding continues to support Manoomin restoration efforts.

Tribal Youth Initiative

Recruitment of the next generation of Natural Resources professionals has become a focus for the LCOCD in the last few years, as their professionals have started to transition to elderhood. This transition has made apparent the need for transfer of knowledge and support in the natural resource field. In 2021, BIA's Tribal Youth Initiative program provided the means to initiate this work, and as a result the Tribal Youth Apprenticeship (TYA) program was created. In 2022, the TYA program was able to hire three tribal youth apprentices and was able to successfully certify two apprentices in boater and ATV safety, provided youth with work gear, and hands on experience out in the field doing Natural Resource projects. Tribal youth apprentices work with all LCOCD professionals and then begin focusing in on their desired career choice. The Tribe received 2022 Great Lakes Restoration Initiative support to continue this successful program.



Tribal Youth Apprentice Ray TwoBulls with one of his two safety certificates.



Lac du Flambeau Band of Lake Superior Chippewa Indians of Wisconsin

Fish Hatchery Operations, Circle of Flight

Lac du Flambeau Reservation (LDF) is in North-Central Wisconsin and falls within three counties (Vilas, Iron & Oneida). The Reservation covers approximately 86,500 acres that includes 41,733 acres of forested uplands, 24,000 acres of wetlands and 17,897 acres of lakes and rivers. Approximately 49% of the reservation is covered by lakes, rivers, and wetlands. Wetland habitats on the Reservation include open water marshes, beaver ponds, bog/muskeg marshes, riverine bottomlands and areas of swamp conifer and lowland hardwoods.

Fish Hatchery Operations

The Lac du Flambeau Tribe provides qualified personnel to operate and maintain the William J. Poupart, Sr. Tribal Fish Hatchery. The hatchery has both rearing ponds and raceways for fish grow out. Walleye, muskellunge, white sucker, fathead minnow, brown trout and rainbow trout fry are all raised at the hatchery. Fish are raised for stocking reservation waters and for forage.

The walleye and muskellunge are the major species raised in the spring and summer to fingerling sizes. Hatchery crews collect brood stock from reservation waters, spawn the fish, incubate the eggs, fertilize ponds, and harvest those fish for stocking. Each year LDF can collect over 14 million walleye eggs and stock 6.275 million walleye fry. In FY19 the number of fry produced and stocked in lakes or ponds was over 6 million. The fish stocked in off reservation waters helps support LDF's treaty fishery. LDF typically stocks Fence, Flambeau, Big Crawling Stone, White Sand, Little Trout and Pokegama lakes with fry.

Brown Trout are also raised at the hatchery on an annual basis. Eggs are obtained from the USFWS and incubated on station. These fish are incubated in the hatchery, raised in the 5-foot diameter rearing tanks, and stocked into Fence Lake for a biological control on smelt. Typically, 15,000 4–5-inch fingerlings are stocked in the spring.



Spring Walleye Spawning



Bird observed during survey

White suckers and fathead minnows are produced or purchased to raise the extended growth walleye and muskie fingerlings. Over 6 million white sucker eggs were collected and hatched for forage this year. Over 6,000 pounds of fathead minnows were purchased this year for walleye and muskie fingerling production.

Circle of Flight

During FY19, LDF hired a contractor, to assist in conducting a bird survey. The results of the bird surveys indicated 86 different bird species and had over 1,000 individuals observed.

LDF also hired a contractor to put on a frog/salamander workshop on. These are fantastic indicator species for impaired waters that can affect the habitats that our waterfowl are using. March on frogs and salamanders then multiple bird monitoring outings out on the Powell Marsh, a day of bird banding and a few sites for frogs and salamanders to be monitored.



Leech Lake Band of Ojibwe

FY22 Wildlife and Plants Accomplishments on the Leech Lake Reservation

The Leech Lake Band of Ojibwe is approximately 864,00 acres located in northern Minnesota. The Leech Lake Reservation Division of Resource Management works to protect and enhance landscape scale habitat for current and future generations of tribal members and all our relatives. 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, Endangered Species, Invasive Species, and Noxious Weed funding have provided critical support to conduct this work.

Circle of Flight

Impoundment Management

Throughout the Reservation, impoundments (covering about 375 acres) are managed to promote better waterfowl production. This primarily involves 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 works closely with the Chippewa National Forest on these impoundments and has met on several occasions to plan management activities. In 2022, maintenance was conducted on four of the impoundments and a drawdown on two of them. The drawdowns are used to promote revegetation of the sites with desirable vegetation for waterfowl and other species that utilize these wetlands. Next year they hope to conduct a prescribed burn on one of the impoundments to further improve waterfowl habitat.



Waterfowl nest box on the Leech Lake Reservation

Endangered Species

Threatened, Endangered, and Sensitive Species Monitoring

The Fish, Wildlife, and Plants Program protects and enhances habitat for Threatened, Endangered, and Sensitive species (TES), as well as cultural keystone species. Funding from this program allowed the Tribe to accomplish several projects/tasks to further their knowledge and protection of several TES species on the Reservation. The Wildlife Program collaborated with the Chippewa National Forest and conducted aerial surveys on eagle nests – 162 nests have been surveyed and more surveys are expected to occur during into 2023. The Wildlife Program also monitored a waterbird colony with several TES species. This data contributed to their long-term monitoring of the waterbird colony and allowed the Tribe to document the impacts of avian flu.



Tribal youth visiting IWC.

Tribal Youth Initiative

Ma'iingan in the Moonlight Youth Education

Teaching and inspiring youth to be actively involved in conservation is a priority to the Tribe because they are the next stewards of the lands. This year Leech Lake Band hosted Ma'iingan in the Moonlight where staff took a group of youth to Ely, Minnesota to learn and explore more about wildlife. They visited the International Wolf Center (IWC) and North American Bear Center (NABC). The youth learned about wolves, their behavior, how biologists monitor them, and enjoyed watching the ambassador wolves at IWC. At the NABC, the kids explored exhibits and learned more about bears and the Northwoods, met a couple of the ambassador bears, and got some hands-on experience with reptiles!



Little River Band of Ottawa Indians *Invasive Species Management*

The Little River Band of Ottawa Indians (LRBOI) is in the Lower Peninsula of Michigan along the lower portion of the Manistee River. The Tribe is committed to protection and restoration of important cultural and ecological natural resources through the implementation and development of Native Species Stewardship plans. LRBOI has continued working on the restoration of the Manistee River Nmé (Lake Sturgeon) population, performed research and community outreach for the re-introduction of Nmégos (Arctic Grayling), and performed Manoomin (Wild Rice) monitoring and restoration.

Invasive Species

Management Through Collaboration and Creating an Invasive Species Spread Prevention Plan

The Little River Band of Ottawa Indians (LRBOI) is committed to the protection and restoration of cultural and ecological resources. Part of the commitment to native species includes the eradication, reduction, and prevention of invasive species. In the past, LRBOI has supported the Northwest Michigan Invasive Species Network (ISN) in the treatment of invasive species within the 1836 Ceded Territories and on Tribal lands. LRBOI has found that the most effective way to combat invasive species is through collaboration with the regional invasive networks and their partners. LRBOI utilized Invasive Species funds to treat at least 60 acres of invasive species on Tribal lands and within the 1836 ceded territories where LRBOI holds hunting, fishing and gathering rights. They also develop an invasive species spread prevention plan to be utilized by the LRBOI Natural Resources Department (NRD) for decreasing the risk of introducing invasive species to project areas.



LRBOI staff performing invasive treatment



LRBOI Invasive Treatment

In 2022, LRBOI contracted ISN to treat invasive species near the 1836 reservation as well as public lands containing important wild rice beds. LRBOI and ISN staff met on-site prior to these treatments to ensure no wild rice would be impacted. Through this partnership, LRBOI surpassed its goal of treating 100 acres of invasives. Also in 2022, LRBOI completed development of the *LRBOI Invasive Species Prevention Protocols*. This prevention plan includes SOPs that NRD staff will follow to reduce the spread of invasives during fieldwork. In 2023, LRBOI will expand on implementation by training all NRD staff in the new protocols. LRBOI also plans to utilize this plan in future contracts and require adherence by outside entities working on LRBOI properties to prevent the introduction of new invasives to Tribal parcels.

LRBOI further used these Invasive Species funds to perform education and outreach to Tribal membership and youth about the impacts of invasive species and ways to prevent their spread. Outreach materials, including handheld boot brushes, will be distributed at the LRBOI 2023 Spring Membership Meeting.



Lower Sioux Indian Community

Wetland Restoration and Invasive Species Control

The Lower Sioux Indian Community is comprised of 1,923 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

Floating Wetland Islands

For the past few years, the Lower Sioux Community's Office of the Environment (LCIS-OE) has worked to restore decommissioned settling ponds into wetlands for the benefit of waterfowl species. When the settling ponds were decommissioned, it was noted that the ponds were attracting a large diversity of waterfowl. Instead of removing these ponds, the Tribe recognized them as an important habitat area for waterfowl and other wildlife and have been dedicated to turning them into wetlands. In 2021, eight (8) floating wetland islands were installed into 20 acres of newly created wetlands as part of this effort. The islands included 2,800 native wetland plants locally sourced in Minnesota. The islands provide additional habitat for waterfowl as well as muskrats, macroinvertebrates, and many other wildlife, improve the quality of the water, and reduce windfetch that will in turn reduce turbidity levels. Waterfowl, muskrats, and other wildlife were observed utilizing the floating islands immediately after installation. The islands were maintained and updated as needed in 2022.



Floating wetland island with cardinal flower

Invasive Species

Control of Invasive Species on Tribal Lands

In 2015, the Lower Sioux Indian Community prioritized the need to build its capacity to provide vital protective measures to ensure the security of ecologically important natural resources on tribal trust lands. This resulted in the LSIC-OE conducting a thorough survey of Tribal lands and resulted in GIS mapping of areas with infestations and the development of an Invasive Species Management Plan (ISMP). Utilizing the ISMP and GIS maps, the Tribe has been conducting on-the-ground projects to immediately target pioneering species, high priority species, as well as control efforts to preserve high quality native habitats such as remnant prairie and sun ceremony sites present on Tribal lands. In 2022, LSIC-OE spot sprayed six (6) pioneer invasive species in the late-summer and fall for thorough treatment. Control efforts were implemented on approximately 150 acres of high-quality habitat, including remnant prairie, recent prairie restoration areas, a wetland restoration site, and Conservation Reserve Program (CRP) land to target four (4) high priority invasive species: black locust, buckthorn, crown vetch, and Siberian elm. In addition, 40 acres of conservation land along the Minnesota River was aerial mapped to track the natural regeneration process from row crop to natural habitat. Plant community surveys were conducted at the same time to ground truth the aerial mapping process in order to make GIS coverage maps. This will allow for a more targeted and economical method for field crews to focus on specific areas for management efforts and to track progress over time.



Before and after invasive species treatment on Tribal lands



Little Traverse Bay Bands of Odawa Indians

Endangered, Threatened & Culturally Significant Species

The Little Traverse Bay Band's (LTBB) Natural Resource Department (NRD) is in the northwest corner of Michigan's Lower Peninsula on and around Little Traverse Bay. LTBB has utilized Bureau of Indian Affairs 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 1855 LTBB 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

Monitoring of Wood Turtle Populations

LTBB has conducted wood turtle research on the Upper Black River, Milligan Creek and Pigeon River since 2017. The wood turtle is listed as a Special Concern species in Michigan. Radiotelemetry transmitters were placed on nine female wood turtles in 2020 and 2021 for the purpose of tracking turtle movement and possible discovery of nesting locations. LTBB has also engaged in dog detection training to aid in the discovery of wood turtles and nesting sites within these riverine systems. Hatchling turtle traps were also installed below a nesting bank along the river starting in 2020 in order to estimate hatchling success rates of wood turtles for the river system. LTBB partnered with the Little Traverse Conservancy and Diamond Dog Detections for this wood turtle research



Wood turtle hatchlings, Upper Black River, 2020.

Endangered Species Program and Invasive Species Program

Piping Plover Monitoring and Habitat Protection

LTBB has been monitoring the critically endangered piping plovers on High Island since 2002. Since 2020, a total of six nests have been discovered and protected through the use of enclosures and signs alerting the public to the sensitive nesting area. These nests produced 27 eggs, 14 hatchlings and three known fledglings. LTBB also eradicated over an acre of spotted knapweed (*Centaurea stoebe*) and Bouncing-bet (*Saponaria officinalis*) from this critical nesting habitat during this time period. LTBB partnered with the U.S. Fish and Wildlife Service and University of Minnesota on this piping plover monitoring project.



Banded plover chicks being released on High Island.



Lac Vieux Desert Band of Lake Superior Chippewa Indians

Eco-Harvester and Tribal Youth Education

The Ketekitegaaning Band of Lake Superior Chippewa Indians, also known as the Lac Vieux Desert Band of Lake Superior Indians (Tribe), has cultural ties to the water and other natural resources within the Great Lakes Basin and the Mississippi River Watershed. The traditional homeland is at the crossroads of three watersheds: the Lake Superior watershed, the Lake Michigan Watershed, and the Mississippi River Watershed. The name of the Tribe comes from their historical presence on Lake Lac Vieux Desert (LVD Lake) where they maintained a subsistence lifestyle.

Circle of Flight

Controlling Invasive Species for Manoomin Protection

The level of aquatic invasive species (AIS) in LVD Lake is of great concern to the Tribe due to the threat they impose to the continued cultivation and harvesting of manoomin (wild rice). While there have been efforts to combat AIS and restore the once vast wild rice bed, AIS continues to thwart those efforts. Despite annual planting efforts, data collected from past plantings indicate there will be little success of establishing thriving manoomin stands without AIS control. LVD is in the process of purchasing an Eco-Harvester. This Eco-Harvester will aid in the removal of the AIS and native plants within the rice bed to remove competition during critical growth periods. Once this is under control in LVD Lake, the Tribe will use the boat on other rice beds within the Tribe's territorial homelands.



Eco-Harvester



Map of manoomin beds on Lake Lac Vieux Desert

Tribal Youth Initiative

Tribal Youth Opportunities

Each year, LVD seeks to promote summer employment opportunities, for its tribal youth. In the summers between 2020 – 2022, LVD successfully operated the "Youth Initiative Program". LVD dovetailed several Tribal Department's ongoing efforts to involve and employ tribal youth, enhancing the collaboration of each department involved. LVD hopes to inspire tribal youth through education regarding the value of LVD's many existing natural resources both within the LVD community itself and in the surrounding area. The program aims to develop and strengthen work ethic, pique interest, build a solid knowledge base, and provides cultural educational components with each task performed.



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

Terrestrial Invasive Species

The Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians (Gun Lake Tribe) located in southwest Michigan. The Environmental Department serves the Tribe with protection, conservation, and stewardship of environmental and natural resources. Invasive species are impacting Michigan as well as Grandmother Earth; the time is now to reduce the effects of invasive species. The BIA Invasive Species funding allowed the Tribe to conduct invasive species management on Tribal lands.

Invasive Species

Control of Invasive Species and Planting of Native Species

The Gun Lake Tribe's Invasive Species Program hired two Invasive Species Strike Team Members each field season in 2021 and 2022 to assist in the prevention, detection, and eradication of terrestrial invasive species on Tribal land. Ninety-five acres of invasive species were treated with approximately 3,475 tree and shrub seedlings planted as well as native grasses and forbs to assist in the restoration of treatment areas. Environmental Department staff also conducted plant surveys on Tribal lands including monitoring the presence of invasive species. Using GIS, treatment was targeted more effectively with this survey data. Over 500 wisgak (black ash) trees have been treated to protect against emerald ash borer reinfestation as part of the wisgak swamp regeneration. The Wisgak (Black Ash) Conservation Plan and the Vegetation and Invasive Species Ordinance were adopted to support the protection and management of Tribal lands. Over 150 individuals received invasive species education at events through sugarbush activities, Jijak Youth Camp and Connect & Play.



Invasive Species Strike Team Member cutting invasive black locust.



Environmental Technician collecting ash seeds.



Prairie art at Jijak Youth Camp after a prairie walk highlighting invasive species.



Mille Lacs Band of Ojibwe

Successful Rearing and Propagation of Otigwag (eggs) and Giigoonh (fish)

The Mille Lacs Band of Ojibwe is a sovereign, federally recognized American Indian tribal government whose members have lived for many generations in the east-central Minnesota region. The Department of Natural Resources develops and implements wildlife, fish, and forestry improvement activities and regulates hunting, fishing, and gathering on the Reservation. The Fisheries Department is charged with the restoration, protection, stocking, and maintenance of fisheries for Mille Lacs Band members use to subsistence harvest. In addition, the Fisheries Department provides educational opportunities to youth as well as protects Treaty Rights, culture, and sovereignty.



Tribal speared walleye eggs close to hatching in incubation jar

Fish Hatchery Maintenance

Rearing and Propagation of Tribally Important Fish

It has always been a dream of Mille Lacs Band of Ojibwe (MLBO) to raise fish, a dream inspired by the Manidoo and MLBO's desire to be caretakers of sacred lands. In 2015, the Tribe constructed a fish hatchery (or the Misi-zaaga'igani Anishinaabeg giigoonyensi-baashkaawe'okaan) to raise and stock fish as part of fish management efforts. The hatchery is built on the side of Nesawegamaag (Shakopee Lake), a sacred remote lake, on a piece of our property closest to lake front water to allow the pumping of the water for giigoonh raising. At first, the hatchery had a low budget with few funds for upgrades. This led to significant loss of otigwag (eggs) and giigoonh (fish). Through the support of the Bureau of Indian Affairs (BIA) Fish Hatchery Maintenance Program, the MLBO was able to implement multiple upgrades to the hatchery. This has included new advanced bag filtration systems, new stocking tanks, a truck that can haul tons of giigoonh, side by sides which allow for remote lake stocking, safety equipment, and more.

The fish hatchery updates have supported the MLBO Fisheries Department to increase giigoonh production and recovery efforts. To date, the MLBO Fisheries Department has raised and stocked over 7.4 million ogaa (walleye) fry, 64,000 ogaa fingerlings, 55,000 asaawe (yellow perch) fingerlings, 50,000 namebin (White Sucker) fingerlings, and 200,000 giigoozens (Fathead Minnow) into their giigoonh (fish) ponds and into 13 lakes in the 1837 Treaty Ceded Territory. The stocking efforts have restored the ogaa population in a tribal lake and has improved fishing opportunities for both natives and non-natives across central Minnesota.

In addition to supporting rearing and stocking efforts, the hatchery has also been used as an education tool. The Nay-Ah-Shing, St. Cloud State, Central Lakes College, and Onamia schools have all visited the hatchery to learn about raising giigoonh. In addition, the hatchery has also had a positive regional impact on views towards the MLBO Fisheries Department and Tribal members. The Tribally stocked ogaa have been well received by the non-native public and the Tribe hopes to continue these collaborative efforts to make positive fishery impacts for everyone in the area and community.

While the hatchery maintenance funds have helped MLBO successfully upgrade and implement their facility, there are challenges that maintenance funds can't support. Fish Hatchery Maintenance funds are unable to support some of the Tribe's biggest needs, including operation costs. These costs include staffing, building construction, and electrical and utilities. It would be very helpful to the MLBO fisheries if funding opportunities were available to support these operating costs. There is a need for increased funding to the MLBO and other Tribes so that they can complete their vision of stocking giigoonh and enhancing Tribal sovereignty.



Walleye stocking in the spring by "shooting" them out a pipe connected to transport tank



Menominee Tribal Enterprises

Forest Health Department Insect, Disease, and Invasive Weed Management

The Menominee Tribal Enterprises (MTE) Forest Health Department was established in 2011 and has been tasked primarily with managing organisms that are not native to Wisconsin, and which are or will cause significant environmental, economic, and/or cultural harm on the 204,937-acre Reservation. This includes management of invasive species on sustained yield forestlands of the Menominee Indian Tribe of Wisconsin. The Forest Health Department is one of the few Tribally operated forest pest management programs in Indian Country.

Invasive Species and Noxious Weeds

Invasive Species Management on Tribal Forested Lands

The MTE Forest Health Department consists of three (3) full-time staff who have developed a detailed integrated pest management handbook. The handbook guides all current and anticipated invasive species and noxious weeds management activities. Management activities include survey of Tribal forested lands for known infestations, GIS mapping of identified infestations, prevention efforts to limit introduction and spread of noxious weeds, as well as eradication and control efforts. Some target species require several years of management to control, while other chronic pests require annual management (e.g., oak wilt, beech bark disease, emerald ash borer (EAB), and conifer plantation root rots).

Multiple prevention efforts are employed by MTE to prevent and reduce the spread of noxious weeds. A vehicle washing station, which includes an automated truck undercarriage wash, has been installed at the sawmill located in Neopit, WI. Operators are required to utilize the vehicle wash station when moving between contracted operations. Vehicle washing removes mud and vegetative debris off of the logging machinery, drags, and other heavy equipment. In addition to vehicle washing, MTE limits the access of motorized vehicles along roads that are known to be heavily infested with noxious weeds. To prevent the spread of EAB and preserve the genetic variability of ash on the reservation, 20 black ash trees were injected with a systemic insecticide (TreeAzin) in 2021.

In addition to these prevention measures, MTE Forest Health Department implement extensive annual monitoring and surveys to identify early detections of invasive species and noxious weeds and allow for rapid responses to new infestations. Once infestations are identified and mapped, Tribal staff prioritize control efforts to reduce the spread of these species. In 2021, control measures included the treatment of 178 miles of garlic mustard infested roads, 28 acres of forested lands for black locust infestations, and 18 miles of roads and 158 acres of forested lands for honeysuckle infestations.

For garlic mustard, control efforts have included spot-spraying in the spring and summer and hand pulling of missed plants in the summer prior to seed development. Additional efforts have also included moving away from spraying and instead employing prescribed burns. Controlled burns are one of the many ways that MTE Forest Health Department staff control invasive species and noxious weeds. For instance, in 2021 and 2022, operational control burns were utilized to reduce beech regeneration in favor of greater tree diversity and control of beech bark disease.

Tribal staff continue to evaluate eradication and control efforts to ensure the most effective and safe policies are used. In 2023, MTE Forest Health Department staff will employ a new garlic mustard control strategy. The new strategy that will be employed has been studied for several years by Dr. Bernd Blossey, Professor at Cornell University. This new strategy involves allowing the forest ecosystem to stabilize through natural processes in highly infested areas, where a seed bank has been established. As this approach is implemented, Tribal staff will monitor and evaluate results to determine future management efforts.



Garlic Mustard mortality and resprouting after a prescribed oak understory burn.



Pokagon Band of Potawatomi Indians

Bird, Mammal, and Insect Surveys; and Invasive Species Control

The Pokagon Band of Potawatomi Indians, located in Southwest Michigan and Northwest Indiana has tribal properties consisting of 6,720 acres within a ten-county service area. Habitat types include prairie, upland and lowland forests, wetland complexes, rivers, streams, lakes, and agricultural fields. The Pokagon Band’s Department of Natural Resources (PBDNR) is responsible for managing habitat and wildlife populations on these lands.

Circle of Flight

Bird Surveys

The PBDNR initiated a study to evaluate the presence of bird species at Tribally important locations. During sampling seasons in 2020 and 2021, the Tribe detected a total of 139 species during 774 visits. Larger sites had higher species richness, probably due to a greater number of survey points, but also potentially due to habitat patch size. Additionally, the PBDNR conducted annual sandhill crane count surveys on tribal property in Indiana. Annual high counts were between 3,155 to 4,227. Using acoustic recorders, the Tribe recorded 2,522 hours of acoustic data. Preliminary results suggest this method can be used to survey birds successfully, but more species are observed by point-count survey methods. Acoustic surveys are ongoing on tribal properties.

Mammal and Insect

Surveys:

In addition to bird surveys, the PBDNR also initiated mammal and insect surveys to better understand species use at priority habitats. During small mammal trapping, the Tribe captured 207 individuals of six (6) species. For bat surveys, ultrasonic recorders were used to detect all nine (9) species expected to be found in southwest Michigan. Two federally endangered species were detected a total of 48 times.

Bat presence and locations may be influenced by insect abundance on Tribal properties; therefore, insect light traps were set where ultrasonic recorders were placed. Insect traps were set out on 96 occasions during this trapping season. Insect identification is ongoing.



White-throated sparrow recorded during point-count surveys. Sandhill cranes recorded on a trail camera on tribal property.



Captured meadow vole and insect light trap.

Invasive Species Program and Noxious Weeds

Control of Invasive Species

To protect and restore priority Tribal habitats, the PBDNR uses multiple methods for invasive species control. The PBDNR mowed 110 acres of giant ragweed over multiple seasons and planted 68 acres of native prairie forbs and grasses to compete with non-native species growth. An aerial applicator treated 15 acres of reed canary grass on tribal properties. PBDNR mowed, treated, or used backpack torches to reduce poison hemlock on 123 acres of tribal properties. The Tribe will continue monitoring to ensure treatments are effective, and where needed, re-treat regrowth.



Prairie Island Indian Community

Wild Rice and Other Cultural Plant Management, Pollinator Enhancement, and Displaced Plant Relative Management

The Prairie Island Indian Community (PIIC) is comprised of approximately 5,200 acres of land and water mainly along the Mississippi River valley, with some properties scattered in four counties of southeastern Minnesota. Habitats include large river floodplain forest and riverine backwater wetlands, mesic deciduous hardwood forest, restored (some remnant) native prairies as well as various agricultural uses (hay, row crop and pasturelands). With the support of BIA funding, including Circle of Flight, Invasive Species and Endangered Species, the tribe has continually facilitated work to restore and improve habitats on Tribal lands. This work also provides beneficial cover, feeding, and breeding habitats important to waterfowl and a diversity of native wildlife.

Circle of Flight

Cultural Plant Restoration, Artificial Nest Boxes, and Wild Rice Monitoring and Outreach

Circle of Flight, in addition to other funding, has allowed PIIC to successfully establish over 110 new acres of native grassland, predominately wet meadow, on tribal lands. It also empowered the Tribe to continue maintaining those grasslands and an additional ~200 acres via maintenance mowing and weed/non-native plant management. The PIIC also managed native and prairie with prescribed fire on over 146 acres between 2020 – 2022. Prairie Island lies along the Mississippi River, one of the most important bird migration routes on the continent; the work supported under Circle of Flight provides valuable cover and nesting habitat for both migratory and breeding waterfowl and grassland birds. This funding is central for maintaining the wood duck and other bird nestbox programs. Wild rice (Psin) establishment in Tribal wetlands has been a focus of this funding for over a decade. Unfortunately, seeding Psin has been challenging the last few years as seed has been difficult to acquire, however the Tribe has found that approximately 5-10 acres of wild rice has been self-sustaining. The PIIC has partnered with a sister tribe and implemented remote surveys to facilitate monitoring more efficiently. Wild rice outreach during COVID was challenging, but the Tribe was able to facilitate canoe outreach events in 2022 to showcase Psin to community and youth, as well as past project work.

Invasive Species

Displaced Plant Relative Management

Prairie Island has worked diligently over the last 15 years to address invasive plants (displaced plant relatives) where they compete with native and culturally important plants. Targeted species have included spotted knapweed, garlic mustard, wild parsnip, Canada thistle, Siberian elm and many others. During the past 3 years, the Tribe has directed manpower and provided resources and contracting work towards annual population monitoring, control efforts (over 300 independent acres treated between 2020-2022), development/update species-specific management plans, and provided outreach to the community. In 2021 the PIIC also added a waterless boat cleaning station at the Tribe's marina. While successes in addressing invasive species has been observed, the Tribe often identifies new species invading tribal lands which demands continuing commitment to this effort.



Spotted knapweed infestation.



Entomology outreach during pollinator planting day.

Endangered Species

Pollinator Surveys, Habitat Enhancement, and Outreach

Through Endangered Species support, the Tribe has initiated native pollinator surveys to determine the presence of rusty patched bumble bee (*Bombus affinis*), a Federally listed species that has been verified to occur within proximity to Prairie Island lands. As the Tribe currently boasts over 400 acres of restored and remnant grassland habitat, it anticipated this bee species presence is probable. The Tribe has also initiated work to enhance their prairie restoration units by increasing pollinator plant diversity in addition to prairie acreage expansion efforts (additional ~100 acres have been added since 2020). In 2022, Prairie Island hosted a community engagement event to provide outreach on pollinator survey efforts and to assist in planting over 500 native pollinator/cultural prairie plant plugs in seven planting plots on a 17-acre established, restored prairie with anticipation for an additional 41 acres to receive enhancement by spring 2023.



Red Cliff Band of Lake Superior Chippewa

Manoomin Restoration and Waabizheshi Research.

The Red Cliff Band of Lake Superior Chippewa reservation is in far northern Wisconsin on the Bayfield Peninsula on the shores of Lake Superior and the Apostle Islands. The 14,500-acre Red Cliff Reservation stretches for 22 miles along the Lake Superior shoreline at the tip of the Bayfield Peninsula – the most northern part of mainland in what is now known as Wisconsin.

Circle of Flight

Manoomin Reseeding and Processing

Circle of Flight has supported several years of manoomin (wild rice) seeding efforts in the lower reaches of the Raspberry River on the Red Cliff Reservation to help establish and restore wild rice populations. Students have participated in these efforts and took part in the winnowing process using birch bark baskets made by Red Cliff Tribal members. Natural Resources staff assisted these events and provided tips and tricks to the trade. Red Cliff also holds an annual Manoomin Seeding and Processing event that has been supported by Circle of Flight for the past few years. This event has which has been successful in providing education opportunities for community members.



Students winnowing using birch bark baskets as Chief Warden Mark Duffy observes.

Endangered Species

Waabizheshi Residency and Movement

Waabizheshi (marten) are listed as a state endangered species in Wisconsin, yet there is a known population on the Apostle Islands adjacent to the Red Cliff Reservation. Previous trail camera work and snow tracking has confirmed at least one, if not two, marten that regularly occupy reservation lands. In March 2022, staff successfully captured, GPS collared, and released a male marten on the Red Cliff Reservation. This trial attempt at collaring marten has already proved information on marten residency in the reservation as well as information on movement to and from the islands over the ice during winter.



Collared marten being released.



Collared marten just prior to release



Red Lake Band of Chippewa Indians

Wolf Research and Aquatic Invasive Species Management

The present-day Red Lake Indian Reservation, located in north-central Minnesota, has total landholdings encompassing over 837,000 acres. It is the largest reservation in the U.S. Bureau of Indian Affairs' Midwest Region, accounting for 55 percent of all Indian Trust lands in the Region. Holdings are distributed across more than 10,000 square miles, in eight counties and includes 342,000 acres of forest, 240,000 acres of lakes, 466,000 acres of wetlands and 371 miles of rivers and streams. In 2022, with the help of Endangered Species and Invasive Species support, the Tribe enhanced wetland habitats, improved public access, surveyed wildlife populations, and controlled noxious weeds at several important project sites.



Hands-on educational opportunities for youth

Endangered Species

Wolf Management on the Red Lake Reservation

In 2010, the Red Lake Band published its Gray Wolf Management Plan (GWMP), designating all its land holdings as a wolf sanctuary. Information gathered through wolf abundance and distribution surveys informs the GWMP and associated Tribal ordinances and resolutions. Between 2020 – 2022, the Red Lake Band continued their wolf monitoring efforts, building on an extensive data set from multiple years of data collection. During spring and summer 2022, two wolves were captured and equipped with satellite radio collars to evaluate habitat use, movement patterns, and survival. Since 2020, thirty-six wolves have been equipped with transmitters and monitored. Additional information is collected from remote cameras, scent-post surveys, and winter track surveys. Red Lake is an active member on the Minnesota Wolf Management Committee, contributing to wolf management policy decisions across the state. Tribal involvement in these decision-making processes is important to ensure Tribal perspectives are considered in resource management efforts. Research efforts have also supported several important educational opportunities through Red Lake's High School Job-Shadowing Program, Summer Internship Programs through local Universities, and Graduate Student Research opportunities.

Invasive Species Program

Aquatic Invasive Species Prevention and Monitoring

Aquatic invasive species (AIS) are organisms that invade ecosystems beyond their historic range. Their presence can harm native ecosystems and have negative impacts on commercial, agricultural, or recreational activities. AIS are often spread unintentionally by human activity but may be transported by other natural means. The Red Lake Band's economy and traditions are extremely dependent on harvest of fish and other native species from Tribal waters, therefore early detection, prevention, and treatment of AIS is of utmost importance. In 2022, the Red Lake Band installed two boat decontamination facilities on the Red Lake Reservation and implemented extensive monitoring for invasive species in lakes, streams, and wetlands. Additionally, a pilot research project was initiated that explores the potential for freshwater drum and yellow perch to act as biological controls to inhibit establishment of zebra mussels in Upper and Lower Red Lakes.



A boat decontamination station to prevent the spread of invasive species.



Sac and Fox Tribe of the Mississippi in Iowa

Protection of Endangered Bats and Stream and Riparian Health

The Sac and Fox Tribe of the Mississippi in Iowa comprises 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.

Endangered Species

Indiana Bat Populations on the Meskwaki Settlement

The Sac and Fox Tribe of the Mississippi in Iowa holds dear to their forests and all the plant and animal species that reside within them. The Indiana bat (*Myotis sodalists*) is a Federally listed species that utilizes forests for habitat. Two main causes to the decline of Indiana bat include habitat fragmentation and pesticides and other contaminant impacts. The Tribe's Meskwaki Settlement includes 3,200 acres of forest that may act as a refuge in the highly agricultural focused state of Iowa. The Meskwaki Natural Resources (MNR) department conducted bat surveys in 2019 and 2020 to determine the presence and distribution of bats on Tribal lands. The surveys found that both the Indiana bat and the northern long eared bat (*Myotis septentrionalis*) were found on Tribal lands, indicating that protection efforts should be considered in future management efforts. The results from this study will be incorporated into the Meskwaki Forest Management Plan and the Tribe's Threatened and Endangered Species Management Plan.



Raven Creek, a tributary that runs through Tribal Lands that has turbidity and seasonal nitrogen spike issues.

Fish, Wildlife & Parks

Stream and Riparian Inventory

The Meskwaki Natural Resources (MNR) department conducted a detailed assessment of aquatic biological, habitat, and physical resource conditions and community health threats of waters flowing into Tribal lands. The purpose of this study was to determine the safety of waters entering Tribal lands and the health of fish and wildlife resources. Fish were surveyed to determine the Fish Index of Biotic Integrity (FIBI), non-lethal fish tissue assessments were collected for mercury accumulation assessments, and a benthic macroinvertebrate (BMI) survey was completed for benthic health. The FIBI and BMI surveys are common methods utilized by the Tribe and other partners, such as the Iowa Department of Natural Resources, and provide comparably quantitative estimates of aquatic bio-integrity and habitat quality. The FIBI score indicated that the fish assemblage is considered "Fair". The BMI score had not been completed as of publication date. The mercury concentrations averaged 0.2645 mg of Hg/kg, which would lead to a recommendation of one meal per week of fish from these systems. The results will help inform future management efforts and fish consumption advice for Tribal members.



Saginaw Chippewa Indian Tribe of Michigan

Tribal Youth River Cleanup

The Saginaw Chippewa Indian Tribe of Michigan (SCIT) is a federally recognized Indian Tribe established by Treaty on August 2, 1855. SCIT is spread across two locations. The Isabella Reservation is in Central Michigan's Isabella County approximately 67 miles north of the state's capital of Lansing. It is approximately 219 square miles encompassing Isabella County Townships of Wise, Denver, Isabella, Nottawa, Deerfield and the northern halves of Union and Chippewa Townships. The Saganing District of the Isabella Reservation is located 70 miles east in Arenac County's Standish and Lincoln Townships. Additionally, SCIT has 30 acres of trust land in Iosco County and approximately 942 acres of property along Lake Tawas also in Iosco County.

Tribal Youth Initiative

River Cleanup and Invasive Species Outreach

The Saginaw Chippewa Tribe's Environmental Team has partnered with the Saginaw Chippewa Tribal College (SCTC) to host yearly cleanups of popular routes on the Chippewa River with community and Tribal members. Tribal elders were able to bless and give thanks to *nibi* (the water) while also asking for protection when being carried down the river in a water ceremony. After the water ceremony, trash and recycling bags were provided and passed around to each watercraft while participants were briefly instructed on which was trash and what items could be recycled while also giving instruction on some invasive species that are present in the area so that our group did not contribute to the spread. Trash collects and piles along the riverbanks, often becoming stuck in limbs or fallen trees; thus, by removing trash and debris from the water participants are not only making it safer for community members, as recreational users, but for the overall health of the river system and all the wildlife that call the river and surrounding areas home.



2022 Chippewa River Cleanup SCTC Student and Tribal Elder.



Sault Ste. Marie Tribe of Chippewa Indians

Fish Hatchery Maintenance and Rehab

The Sault Ste. Marie Tribe of Chippewa Indians (Sault Tribe) maintains a relatively small land base (<4,000 acres), while serving the largest membership of the Tribes east of the Mississippi River (>40,000 members). Annually, the Sault Tribe's approximately 5,000 license holders exercise treaty rights across 36 Michigan counties within the 1836 Treaty Area. The Natural Resources Department is charged with managing, protecting, and enhancing treaty hunting, fishing, and gathering rights and opportunities across the treaty area. Operating two hatcheries in Michigan's Upper Peninsula, the Sault Tribe has stocked millions of fish into public waters for people to be able to catch for recreational, subsistence, and commercial means.

Fish Hatchery Maintenance

The Sault Tribe has utilized funding from the Fish Hatchery Maintenance Program (FHM) to complete remodeling and upgrading efforts at the Nunns Creek Fisheries Enhancement Facility to address significant needs. The building was originally designed to only incubate eggs and lacked tank space for the rearing of fish past the fry stage. A completed remodel has provided the Sault Tribe the capacity to both rear fish once they hatched and conduct various experiments to further their whitefish knowledge.

Along with the additional capacity to raise fish, the remodel provided the Nunns Creek Fisheries Enhancement Facility the ability to recirculate water during the incubation setup as well as chill the water to near freezing in order to rear cold adapted species such as lake whitefish (atikameg). Atikameg are tied to the Tribe's very existence and their traditional stories.

FHM funds have also supported the purchase of essential equipment needed to keep facilities operating efficiently, which is a huge boost to the limited funds the hatcheries must operate with. At 360 acres, the Barbeau Fish Culture Facility is a fairly large facility. The property has three rearing ponds and close to two miles of access roads around the ponds that need to be maintained. Without a large tractor, purchased with FHM support, a considerable portion of the pond complex would be inaccessible for much of the year. Having access during the winter months allows the Sault Tribe to utilize the hatchery building as office space, thereby optimizing Tribal office spaces, and spreading staff out; a priority for the Tribe since the onset of Covid-19. The tractor has been used throughout the year for other maintenance activities such as moving equipment, landscaping needs, along with shaping and maintenance needs on impoundments and launches within earthen ponds.



Tractor purchased using FHM funds to support facility needs throughout the year.

With the impacts of invasive species and climate changes posing extreme threats to traditional fish populations, hatcheries will become more important moving forward. Along with current funding to help Tribes maintain their facilities, an increase in funds will be needed to meet increased demands of future rearing and stocking to maintain traditional fish populations for recreational, subsistence, and commercial needs. Fish hatchery support will help Tribes keep traditional foods and culture for the future seven generations.



*Left. Nunns Creek Fisheries Enhancement Facility before remodel.
Right. Post-remodel of the Nunns Creek Fisheries Enhancement Facility.*



Shakopee Mdewakanton Sioux Community

Invasive Species Management and Tribal Youth Education

The Shakopee Mdewakanton Sioux Community (SMSC) is a sovereign tribe of Mdewakanton Dakota people located within the Minnesota River Valley, southwest of the Twin Cities. The Dakota people have long considered their relationship with Unci Maka (Grandmother Earth) as a kinship and hold her in the highest regard. Natural resource management follows the philosophy to plan seven generations ahead, which further supports the tribe's dedication to protecting and preserving the environment. Through the assistance of the Bureau of Indian Affairs' Invasive Species program, the SMSC has been able to control non-native species and protect and restore native species important to the tribe.

Invasive Species

Invasive Buckthorn Control

Characterized by rich mesic hardwood forests growing on loamy soils, the Sugar Maple-Basswood forest is synonymous with the hardwood cover of Southern Minnesota and SMSC tribal lands in particular. Only scattered remnants remain of what was once an expansive tract east of central Minnesota. One of the remaining areas is Pike Lake, which is under stress from invasive plant species. The tribe's Natural Resources Department initiated buckthorn removal efforts starting in 2020 on the northern shore of Pike Lake. During the first quarter of 2020, buckthorn was mechanically removed and the cut stems were chemically treated on 14 acres of target property. Additional treatments were completed to address new sprouts that emerged following the initial treatment. SMSC staff also engaged the tribe's adults and youth at the treatment sites to teach them about invasive species prevention and control efforts, and the implications for water quality and wildlife diversity due to invasive species.



Before Buckthorn Cut



After Buckthorn Cut

Tribal Youth Initiative

Ina Maka Yuonihanppi (Honoring Mother Earth)

With the rapidly increasing population in Scott County, MN, where the SMSC is located, the conversion of lands from agriculture, woodland and wetland to urban is putting significant pressure on natural resources and the biota that resides in them. With support from the Tribal Youth Initiative, SMSC Natural Resource staff developed an Ina Maka Yuonihanppi (Honoring Mother Earth) program for youth 5-17 years old to engage and educate them through hands-on outdoor activities and events. Through this program, more than 50 young people were educated across multiple community events. In addition, multiple articles have been written for the tribe's local newsletter and online groups. The SMSC Natural Resource Department staff will continue to participate in community events to engage youth in natural resource management activities and opportunities in the future.



Summer event takes a closer look at water ecosystems



St. Croix Chippewa Indians of WI *Walleye Stocking and Lake Sturgeon Study*

Both ogaa (walleye, *Sander vitreus*) and name (lake sturgeon, *Acipenser fulvescens*) are species of cultural significance to the St. Croix Tribe. The sturgeon is a recognized clan, or totem, within St. Croix Tribal membership. This species is still traditionally harvested as a food source for subsistence and is gathered through fishing and spearing. The commencement of this harvesting is marked by honoring the sturgeon during spring ceremonies. The long-term sustainability of these species is a primary objective for the St. Croix EPA/Natural Resources Department.

Tribal Management and Development (TMD) *Ogaa Stocking for Sustainable Populations*

Today, waterbodies that contain naturally reproducing ogaa (walleye) are changing due to environmental stressors and human activity, which in turn may decrease the ability of ogaa to sustain natural populations on its own. The St. Croix Tribe has had a walleye stocking program, supported through the TMD program, since the mid 1980's. The TMD program supports Tribal self-determination of fish and game management on Indian reservations. The stocking program has 4 man-made ponds which can annually produce up to 120,000 small fingerlings or 40,000 large fingerlings. The St. Croix Tribe has stocked over 4.9 million walleye fingerlings into public lakes of the St. Croix Tribe, used by tribal and non-tribal fisherman.

Table 1. Walleye stocking mid 1980's to 2022.

County	Number of Lakes	Total Walleye Stocked
Barron	10	897,389
Burnett	10	1,708,350
Douglas	1	6,245
Polk	8	1,510,151
Washburn	9	804,081
Total	38	4,926,216



Small walleye fingerlings at harvest time.

Endangered Species Program

Culturally Significant Lake Sturgeon in the Clam River System

The St. Croix Tribe initiated a study to determine the population and distribution of name (lake sturgeon) in the Clam River system, a culturally significant sturgeon harvest river. St. Croix staff captured 12 sturgeon in 2022 using electrofishing, hook and line, and dip netting. Once captured, length, weight and gender were recorded. Each sturgeon was given two types of tags. One tag, a Passive Integrated Transponder (PIT), is inserted into the muscle of the left pectoral fin. The other is a dangler tag that goes through the base of the dorsal fin. A fin spine sample was also taken from each fish to determine age. After all the necessary data was collected, the fish were released back into the river. The Tribe will continue sampling and tagging efforts to fully understand the lake sturgeon population and distribution in the Clam River System.



Close up of a dangler tag.



Upper Sioux Community

Wetland Restoration and Invasive Species Management

The Upper Sioux Community is located near the city of Granite Falls in southwestern Minnesota's prairie pothole region and consists of approximately 2,166 acres. The Community has over 375 acres of depressional wetlands and numerous remnant native prairies. These prairies both surround the Community's wetlands and can be found throughout the Community's fee and trust lands. The landscape consists of mixed floodplain forests and lowland hardwoods, wetlands, grasslands, prairies, and agricultural lands.

Circle of Flight

Wetland Habitat Restoration and Enhancement

Heavy farming that dominates southwestern Minnesota has reduced native prairies and depressional wetlands to a fraction of what they once were. The remaining prairies and wetlands continue to be under pressure from non-point source pollution from surrounding farming practices and additional reduced acres from land use changes. These native prairies and wetlands are important for multiple wildlife species and the community, with the wetlands acting as the only remaining habitat left for resident and migratory wildlife. The Upper Sioux Community initiated a project, utilizing Circle of Flight support, that re-introduced wild rice to wetlands adjacent to the Minnesota River, planted native grasses, forbs, shrubs, and trees, and developed education and outreach materials in the Dakota language. Roughly 1.2 acres were planted with a variety of three (3) seed mixes containing forb, grass, and sedge species. In addition, 151 trees and shrubs were planted to provide gathering opportunities for community members and restore native species. Two kiosks and a booklet were developed depicting plants species included in the 2022 plantings. Nearly 3,000 pounds of wild rice seed were purchased for 2023 seeding efforts. A total of 9,000 sage plants were purchased, with 5,000 plants distributed to 300 Community members and 4,000 sage plants hand planted by USC staff in remnant prairies and near Wacipi grounds.



Sage Plants in USC Prairies



Invasive Species

Terrestrial Invasive Plant Mapping and Control

The Upper Sioux Community (USC) has been actively working on projects to preserve, enhance, and restore the native habitats on Tribal Lands. In 2015, the Tribe completed an Invasive Species Management Plan (ISMP) for the tribal community. The ISMP is used to direct invasive species management efforts for the USC. Using Invasive Species support, the USC surveyed Tribal lands for the presence and distribution of invasive species to update their invasive species database. This information was then used to create maps, which were provided in both PDF and GIS formats for future Tribal uses. The interactive maps will allow staff to efficiently target specific species for treatment. The survey results and maps were used to update the ISMP and direct control efforts. A total of 20 acres of buckthorn were treated through spot-spraying with the funds provided. Future control efforts will be directed by the ISMP and through use of the newly created maps. These maps will be updated as new information is collected.



Additional Wildlife and Habitat Photos



Leech Lake Band – Bear Center group



Additional Wildlife and Habitat Photos



Bois Forte Band – Spring Flood Event



Pokagon Band – Coho Salmon Sampling



Additional Wildlife and Habitat Photos



Bay Mills – Blue Spotted Salamanders



Saginaw Chippewa – Invasive Species Removal and Native Tree Planting



Additional Wildlife and Habitat Photos



Match-E-Be-Nash-She-Wish Band – Site Visit August 2022

