

# Consultation, Administration, and Database Management – Fiscal Year 2023



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We collectively acknowledge that Michigan State University occupies the ancestral, traditional, and contemporary Lands of the Anishinaabeg – Three Fires Confederacy of Ojibwe, Odawa, and Potawatomi peoples. In particular, the University resides on Land ceded in the 1819 Treaty of Saginaw. We recognize, support, and advocate for the sovereignty of Michigan’s twelve federally-recognized Indian nations, for historic Indigenous communities in Michigan, for Indigenous individuals and communities who live here now, and for those who were forcibly removed from their Homelands. By offering this Land Acknowledgement, we affirm Indigenous sovereignty and will work to hold Michigan State University more accountable to the needs of American Indian and Indigenous peoples.

Cover: Great Lakes marsh, Epoufette Bay Ecological Reference Area. Photo by M.J. Monfils.

## ACKNOWLEDGEMENTS

Funding for the project described in this report was provided by the Wildlife Division (WLD) of the Michigan Department of Natural Resources (DNR). Partial funding was provided through the Michigan State Wildlife Grants program in cooperation with the U.S. Fish and Wildlife Service, Wildlife and Sport Fish Restoration Program. The Michigan Natural Features Inventory (MNFI) values the consistent support and collaboration we have received from WLD for over 40 years to build and maintain Michigan's most comprehensive database of rare species and natural communities. This Natural Heritage Database (NHD) supports the conservation work of not only DNR, but numerous state, federal, and local government agencies, nongovernmental organizations, and private companies and landowners. We appreciate the long-term cooperation of Mike Donovan, who served as the liaison with MNFI for the State of Michigan for many years and retired from DNR in October 2022. Amy Derosier and Keith Kintigh of the DNR have since filled the liaison role, and we thank them for their assistance. We thank the many DNR employees in the field and Lansing who are our partners in working to conserve Michigan's natural resources. The entire MNFI staff contributed to the work of this project in some form, whether through the collection and entry of data, maintenance of existing information, development of new products based on the data, communicating expertise on Michigan's biodiversity to our partners and the public, or providing administrative support for the organization. Lastly, we want to thank Liam Daniels, Nicolette Sexton, and Chloe Smith, Huron Pines AmeriCorps Members hosted by MNFI, for their hard work collecting and entering data into the NHD.



## **INTRODUCTION**

Wildlife Division (WLD) of the Michigan Department of Natural Resources (DNR) provides funding to the Michigan Natural Features Inventory (MNFI) annually for several purposes: 1) conducting activities that contribute to the maintenance and augmentation of the Natural Heritage Database (NHD) maintained by the MNFI, which is the most comprehensive database available on the distribution and condition of rare species and high quality natural communities in the State; 2) making information products based on the NHD available to WLD to facilitate their programs, management activities, and meeting statutory responsibilities; 3) providing technical assistance to DNR WLD staff in interpreting information in the NHD and in understanding the limits of the NHD; 4) carrying out MNFI administrative and programmatic activities to maintain MNFI as Constituent Member in good standing of the NatureServe Network, thus meeting Program Standards established by the Network and serving as an effective member of the MSU community; and 5) conducting MNFI programmatic activities that support dissemination of the information in the NHD to state and federal agencies, researchers, commercial interests, and the public to the extent practicable, on a fee-for-service basis to generate additional program support. Accomplishments from fiscal year 2023 are provided below by objective from the project work plan.

## ACCOMPLISHMENTS

### **Objective 1: Continue to maintain and add to the NHD.**

Our staff contributed to the maintenance and growth of the NHD in the following ways:

- Added 570 new records to the database in fiscal year 2023.
- Updated 1,224 existing element occurrences with new information.
- Assisted our partners by supporting several community science and engagement efforts. Funding from the CAD project allows our staff to develop and manage webpages and GIS tools, build connections to the NHD, and enter new data into the database.
  - *Loons*: Coordinated data sharing for Michigan Loon Preservation Association (MLPA) to contribute loon productivity data to range-wide study being conducted in Canada. Building data collection capacity for Michigan Loon Watch to streamline community contributions and enhance MLPA's abilities to engage in collaborative data management with ArcGIS Online tools hosted by MNFI.
  - *Michigan Bumble Bee Inventory*: A community science project collecting bumble bee occurrence data and associated habitat data to inform bumble bee conservation across the state; MNFI hosts a webpage with background and training information and the Bumble Bee Explorer that displays spatial information collected through this and other projects.
  - *Osprey Adopt-a-nest Program*: A collaboration with DNR, Audubon Great Lakes, and MIBirds to assess the status and success of osprey nests across the state. MNFI provides a webpage for participants and displays detailed information about ospreys and results via a Story Map.
  - *Vernal Pool Patrol*: MNFI hosts a GIS hub that serves as a central location for participants to obtain background and training information, submit data, and view locations of vernal pools sampled.
  - *Wild rice*: Attended the Michigan Wild Rice Initiative Manoomin/Mnomen Workshop in August. Listened to partners, engaged with discussions about data. Asked questions regarding data sharing and continued to host, maintain, and protect the Wild Rice Database as a unique dataset.

### **Objective 2: Assist agencies and organizations with the use of the NHD to support land management planning.**

- Encouraged use of the NHD by state and federal agencies and private organizations via our web database, with a total of 11,565 queries during the fiscal year (Table 1).
- Facilitated access to spatial data from the NHD through an ArcGIS feature service for 207 users within government agencies and private companies (Table 1).

- Provided information derived from the NHD to the public through responses to information requests, reviews of sites for rare species data, and field assessments as part of in-depth rare species reviews.
  - *Information requests*: These are one-time requests for data about a specific location, species, or natural community type. For example, a consulting firm may ask if any rare species are known from a site proposed for development, or an academic might request data for species to assist with their research project. In the last year, MNFI responded to 51 information requests.
  - *Rare species reviews*: MNFI is sometimes asked review proposed development projects at locations where rare species have been recorded at the sites or nearby. In these cases, our staff reviews the proposed activities at the site and evaluates the potential for impact to the rare species. We conducted 281 rare species reviews in FY23.
  - *Field assessments*: For some rare species reviews, MNFI is asked to conduct a field assessment to evaluate if a rare species previously detected at or near the site occurs at the location. Our scientists also assess the suitability of the habitat at the site and likelihood of impacts to the species if the project moves forward. In the last year, our staff conducted four field assessments.
- MNFI’s scientists served on an array of committees and working groups, often in leadership positions, that contributed to conservation planning at international, national, regional, state, and local levels (Table 2).

Table 1. Number of users and queries of MNFI’s database by organization in fiscal year 2023.

Organization	GIS Feature Service Users	Web Database Queries
Federal Agencies		
US Army Corps of Engineers	0	101
USDA – Natural Resources Conservation Service	0	5,486
USDA – Forest Service	20	1,168
US Fish and Wildlife Service	33	1,134
State of Michigan		
Department of Natural Resources	4 + all staff applications	284
Department of Transportation	26 + all staff applications	0
Department of Environment, Great Lakes, and Energy	11 + all staff applications	538
Private Companies	83	2,854
<b>Total</b>	<b>207</b>	<b>11,565</b>

Table 2. Selected initiatives, committees, and working groups on which MNFI staff served in fiscal year 2023.

Name	Int./ National	Regional	State	Local
Aquatic Plant Early Detection Response Initiative Team			X	
Asylum Lake Policy and Management Council				X
Beal Garden and Campus Arboretum Strategic Planning Committee				X
European Frog-bit Collaborative		X		
Great Lakes Coastal Assembly		X		
Great Lakes Heritage Botanist Working Group		X		
Kalamazoo Natural Features Board				X
Karner Blue Recovery Team	X			
Karner Blue Michigan Working Group			X	
Little Traverse Conservancy Stewardship Committee				X
MIBirds			X	
Michigan Chapter of The Wildlife Society			X	
Michigan Eastern Massasauga Work Group			X	
Michigan Freshwater Mussel Committee			X	
Michigan Invasive Species Coalition			X	
Michigan Native Seed Team			X	
Michigan Partners in Amphibian and Reptile Conservation			X	
Michigan Vernal Pools Partnership			X	
Michigan Wetlands Association, Board				
Michigan Wild Rice Initiative			X	
Midwest Blanchard's Cricket Frog Work Group		X		
Midwest Landscape Initiative, Biodiversity Working Group		X		
Midwest Marsh Bird Working Group		X		
Midwest Wood Turtle Working Group		X		
Mitchell's Satyr Working Group			X	
Native Bee Monitoring Conservation Network	X			
NatureServe U.S. Section Council	X			
Poweshiek Skipperling International Partnership, Steering Committee, Ex Situ Work Group, and Science Team	X			
Rusty Patched Bumble Bee Recovery Team	X			
Society for the Preservation of Natural History Collections, Biodiversity Crisis Committee	X			
Upper Mississippi / Great Lakes Joint Venture, Waterbird Committee		X		

**Objective 3: Assure that high-level scientific expertise is available for consultation by DNR staff regarding Michigan’s flora, fauna, and ecosystems.**

- Responded to 389 requests for information about natural communities and rare species, of which 85 (26%) came from DNR and other state agency staff. Overall, 34% of the requests came from the general public, 36% from governmental units, 12% from conservation organizations, 13% from universities, and 5% from businesses or members of the media.
- Provided 86 presentations to a variety of audiences, such as state, federal, tribal, and local government agencies, universities, schools, and conservation organizations. These presentations included professional talks, field trips, guest lectures, and field trips, and over 3,700 people participated.

**Objective 4: Clarify for DNR staff the nature and limits of Element Occurrences as represented in the NHD.**

MNFI’s GIS staff regularly work with DNR personnel to assist them in their use and understanding of the NHD, which may range from informal communications by phone, email, and in-person meetings, to more formal training. Below are highlights of these efforts in the last year.

- Provided biodiversity training for Forest Resources Division (FRD) and WLD staff that regularly use NHD information.
- Assisted DNR personnel from the Minerals Management Section in how to use the NHD.
- Provided basic training to several WLD staff on NatureServe’s natural heritage methodology and the Biotics software used to manage the NHD.
- Met with WLD staff to discuss the mechanisms and limitations of using element occurrences in the review of permit applications.

**Objective 5: Provide access to NHD information products that facilitate DNR in carrying-out its responsibilities.**

MNFI generates a variety of products that use information from the NHD and then provides them to the DNR and other partners to inform decisions about natural resources. We provide several examples of these products below.

- Packaged and shared the NHD in the form of shapefiles with the GIS Support Unit of FRD. The information is then used in multiple applications, such as the Michigan Forest Inventory.



- Shared the [MI Prescribed Fire Needs App v.1.1 \(arcgis.com\)](https://arcgis.com) with DNR via ArcGIS Online. Continuing to collect feedback from staff to develop the Prescribed Fire Model application. Working to incorporate the invasive species model layer into the application and an additional layer that highlights natural community EOs that intersect MiFI stands with fire scores.
- Added 40 reports to the MNFI website during FY23. Our website provides access to all MNFI reports and we had an average of 19,120 website users per month and 50,564 page views per month.
- Regularly posted content on MNFI's Facebook and Instagram pages. During FY23 we reached 26,477 users on Facebook and 4,259 users on Instagram. We have 3,418 followers on Facebook and 1,620 followers on Instagram.
- Development of the Conservation and Environmental Review Tool continues to move forward in collaboration with NatureServe, DNR WLD, and DTMB staff. NatureServe is building out the core code repository for the MI ERT core site and has begun to create templates for customization for pages and reports to fit MI needs. Data security screening continues to be addressed by DTMB. Communication is going smoothly, and progress continues to be made.

**Objective 6: Provide the means for MNFI to continue as a Constituent Member in good standing of the NatureServe Network.**

MNFI staff networked with NatureServe to maintain and enhance our working relationships with NatureServe and member programs within in the US and Canada. Below are several significant developments and accomplishments with respect to MNFI's interaction with the NatureServe Network in the last year:

- MNFI's former Director continued serving on NatureServe's Board of Directors until his retirement on June 30, 2023, which included assignments on the Membership and Finance committees and serving as Treasurer.
- MNFI's Science Coordinator/Interim Director was elected as a Midwest Representative on NatureServe's U.S. Section Council and participated in monthly meetings.
- MNFI's Interim Director participated in bimonthly meetings of coordinators of natural heritage programs in the Midwest.
- Botanical staff regularly participated in meetings with other botanists working for natural heritage programs in the Great Lakes region.

- MNFI's Ecology Heritage Lead served as a facilitator and presenter for NatureServe's Core Methodology Training Ecology session.
- MNFI's Ecology Heritage Lead spent a week in the field working in peatland ecosystems with a Senior Ecologist from the Washington Natural Heritage Program.

## **SUMMARY**

Support for this project from DNR WLD continued a longstanding partnership between DNR and MNFI to expand, sustain, and use the NHD to help guide the conservation of Michigan's biodiversity. This continued funding supports MNFI's efforts to build and maintain the NHD, assist agencies and organizations in the use of the NHD for conservation planning, help DNR personnel understand NHD records and their limitations, provide expertise to agencies, organizations, and the public about Michigan's species and ecosystems, provide numerous agencies and organizations access to the NHD, and maintain membership in and connections with the NatureServe Network. In the last year, MNFI added 570 new element occurrences and updated 1,224 known occurrences with new data. We also assisted our partners by supporting web portals for several community science efforts. MNFI provided access to the NHD to a diversity of partners through our GIS feature service and web database; our web database alone had 11,565 queries. Numerous organizations and businesses received data and assessments for particular sites as we responded to 51 information requests, completed 281 rare species reviews, and conducted four field assessments. MNFI's website and social media outlets provide information to thousands of people every month. Our staff members shared their expertise with our partners and the public by responding to 389 requests for information about natural communities and rare species, providing 86 presentations that reached more than 3,700 people, and serving on dozens of committees/working groups addressing conservation issues at the international, national, regional, state, and local scales. DNR support allowed MNFI to maintain its membership in the NatureServe Network and facilitated MNFI service on the NatureServe Board and U.S. Section Council and numerous interactions with staff members from NatureServe and other member programs.