

Fish and Wildlife Management Merit Badge

Study Materials

Materials:

- **Program binder** with materials for reference
 - There are multiple information sheets and resources, so they can share and discover the answers on their own and pick different topics to learn about. The options also provide for multiple ages and learning styles.
 - Tabs indicate sections of information: Invasive Species, Management/Prevention & Endangered Species
 - *Pages may be removed from the binder, but please make sure they are returned to the correct section.*
 - **Aquatic Invaders Classroom Guide** - a great resource for leaders and a good summary of most of the materials. Has useful images and maps.
 - **What Is Wrong With This Picture?** - a quick and simple activity for scouts to identify ways aquatic invasive are spread. *(The lesson plan on the back is not required.)*
- **Invasive Species Binder** contains information on the most common invasive species in Wisconsin.
- **Activities/Games:**
 - **Can I See Some ID, Please? How to Identify Fish** Activity
 - **Invader Species of the Great Lakes** - card-matching activity
 - **Beat the Barriers** - board game about stopping the spread of sea lamprey
- **Wisconsin Wildcards** for local fish and native and invasive species for something different to read for informational purposes.
- **Books:** The Field Guides and Invaders book may be taken along on a hike to identify things you may see along the way. The Invaders guides have lots of information too. Please return all books at the end of your visit.
 - *Fish of Wisconsin Field Guide*
 - *Birds of Wisconsin Field Guide*
 - *Mammals of Wisconsin Field Guide*
 - *Invaders of the Great Lakes (6)*
 - *The Life of the Lakes* (tabs indicate useful information - please keep in the kit)
- **Brochures, pamphlets, guides**
- **Career Cards** (for #8)
- **Merit Badge Worksheet** to help record your answers and observations.

Merit Badge Requirements Covered: 1, 2, 3, 4, 6a or 6b,7a, 8

The scout will have to do #5 on their own.

Prior to visiting, a real-time view of the harbor area can be seen any time through the Manitowoc Marina Harbor Camera, at the marina website: <https://www.manitowoc-marina.com/harbor-cam/>

For steps 1-4:

Use the resources in the tote to research and learn about these issues - Check out the program binder, invasive species binder, brochures, and books.

For an activity, play the **Invader Species of the Great Lakes** card-matching activity and/or **Beat the Barriers** board game.

- **Example for #3:** Local organizations, state parks, and national organizations offer a variety of activities, such as habitat improvement projects or litter cleanup.
- **Example for #4:** Fond du Lac the Snow Owl

Tracking bird migration is critical to conserving habitats that are necessary for their survival, and alerts us to other potential problems within the ecosystem. Fond du Lac (which means far end of the lake) is a female snowy owl tagged in Wisconsin, part of project SNOWstorm. She is fitted with a cell phone transmitter that includes a GPS tracking system. While Fond du Lac travels far and wide, she visits Chambers Island, home to Door County Land Trust's largest nature preserve. The island offers a much-needed rest stop that is free of common hazards to birds and offers a diverse forest and wetland habitat necessary for birds to forage and nest. The travels of Fond du Lac and other owls are found at www.projectsnowstorm.org.

- **Example for #4:** Fishery Facilities and Zoo Rearing Ponds

Hatching, raising fish, and managing their release to streams, lakes, or ponds, keeps fish populations and bodies of water environmentally balanced, as well as maintaining recreational fishing. The Wisconsin DNR uses a variety of technologies to track fish in their natural environment, such as tagging them with a code wire tag, implanting a radio transmitter, or implanting an antenna on the fish.

Choose one for #6

6a. *Do the following: Observe and record 25 species of wildlife.*

From the museum, take a short walk (or drive) along the river and marina, to the harbor area and pier. As you walk from the museum to the harbor and pier, record, or photograph mammals, birds, and fish sighted, at least 25 total. Use the field guides in the kit to identify the species you see. Amphibians (frogs, etc.) and reptiles (snakes, etc.) that are sighted may also be included. You can also visit the Little Manistowic Prairie (near the Marina) or take a short drive to Lincoln Park and Zoo.

The worksheet packet has a page to record the wildlife you observe and a prompt to learn more about one of them.

6b. *Do the following: List the wildlife species in your state that are classified as endangered, threatened, exotic, non-native, game species, furbearers, or migratory birds.*

If you'd prefer to stay at the museum (or the weather forces you to), the program binder has background information on endangered species, lists, and information on Wisconsin wildlife.

7a. (optional) Determine the age of five species of fish from scale samples and identify various age classes of one species in a lake and record the results. There is an activity pack in the kit. *You may choose another option to do on your own.*

8. *Learn about three different positions that are held by those working in fish and wildlife management, and with your counselor discuss the education and training path needed for these positions.*

Read through the career cards. Choose three people and answer the questions on your worksheet.

Optional: The twenty-eight submarines built in Manitowoc and USS *Cobia* were named after sea creatures; pick one and describe the characteristics and habitat of that fish, turtle, or shark. For fun, what about the lore of the Kraken?