

CONIFER AND HARDWOOD  
SWAMPS:  
SURVEYING FOR SPECIES IN THE  
BAD RIVER WATERSHED

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## PRINTING INSTRUCTIONS

To print these materials at home and form them into a booklet, save this document as a PDF to your personal device. In your print settings, select "Two-Sided" and "Short-Edge Binding". You can choose to print in color or black-and-white. Once printed, stack all pages together and staple, hole-punch, or bind the center to create your own booklet! You may want to keep your booklet in a plastic bag if you're taking it with you to survey in wet areas.

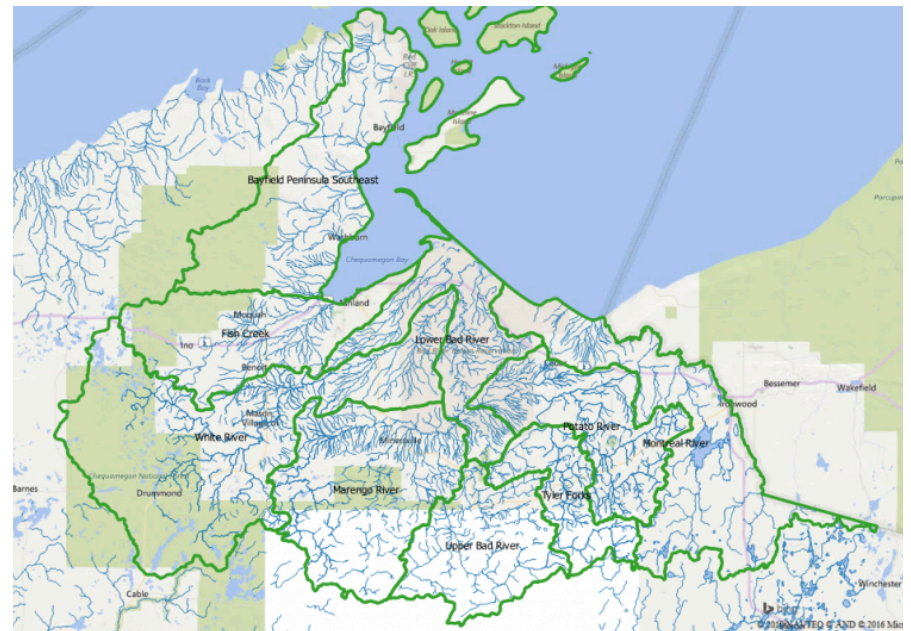
## OTHER MATERIALS IN THIS PROJECT

This booklet is part of a larger list of endangered and threatened species in the Bad River Watershed. To check out our other booklets or to view the full species list, with links to other resources for species identification, follow the QR code here:



## ENDANGERED RELATIVES IN THE WATERSHED

The watersheds of northern Wisconsin hold an incredible diversity of species thanks to their variety of wetland habitats. These wetlands are home to a number of rare, threatened, and endangered species, legally protected at both the state and federal levels. These species and the ecosystems where they live face numerous threats to their livelihoods. Private construction projects, the introduction of non-local beings or invasive species, and changing climate patterns can all contribute to the potential loss of these relatives.



## HOW YOU CAN HELP

Local conservation agencies do tremendous work monitoring for threats to these species, but often need to service large regions with limited staff. **By volunteering to survey for threatened and endangered species and potential threats to them**, you can help increase the capacity of local conservation agencies to protect these species and the overall health of the watersheds of Northern Wisconsin.

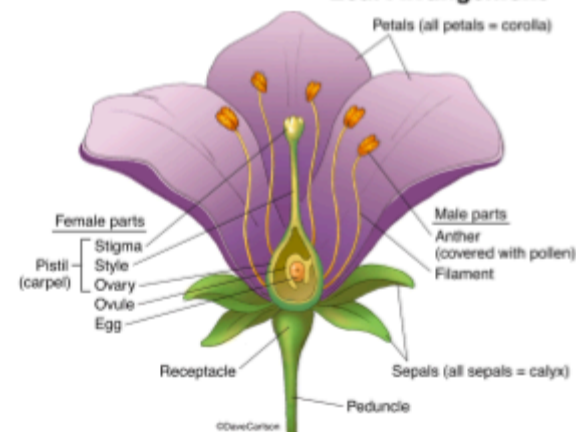
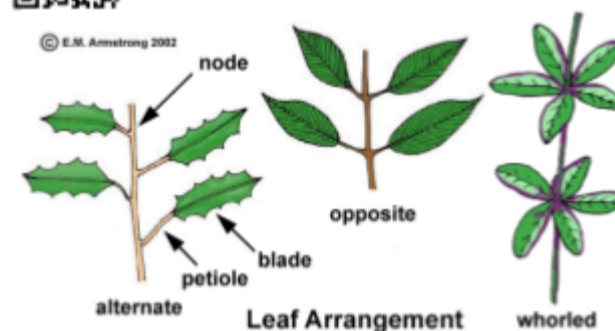


Leaf ID

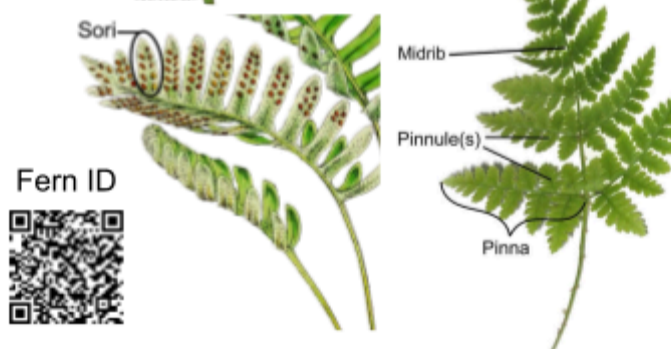


## VEGETATION

ID Tips / Guide



Flower ID



Fern ID





# New World Moonwort<sup>T</sup>

(*Botrychium neolunaria*)



July-September

1-7 in. tall

Up to 9 pairs of  
fan-shaped  
pinnae

Occurs in open  
areas of woods,  
fields, utility  
corridors

**State:** END  
**Federal:** N/A



**More Info**



## GOALS OF THIS PROJECT

Building from earlier work by CLEAN WI and in collaboration with the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) and the Superior Rivers Watershed Association (SRWA), we have compiled information on **59 threatened and endangered species** that have been documented to live within the Bad River Watershed. We are also interested in monitoring for **non-local beings (introduced/invasive species)** in the watershed; information on these species can be found on the Wisconsin DNR website.

We encourage community members to **survey downstream of major construction projects** and **report sightings of these species** via the two platforms provided. This information will then be relayed to local conservation agencies to aid in the ongoing protection of these species.

## REPORTING: iNATURALIST

iNaturalist is a free platform for documenting and identifying species all over the world. You can upload photos via a desktop computer or via a mobile app.

To add observations to the Biota of the Bad River Watershed project, make sure you are logged in to iNaturalist and click "Join" on the project page.

To report observations of species via iNaturalist:

1. Take a photo/record evidence of the species (tracks, scat, audio of song/call)
2. Upload the photo/evidence to iNaturalist (make sure you're logged in!)
3. Use the interface to add information about the **species name**, **date observed**, **location**, and any other notes
4. Submit your observation

If you are logged in, a member of the project, and your photo was taken within the watershed, your observation should automatically update on the project page!

Link to the Biota of the Bad River Watershed Project:



## Braun's Holly-fern (*Polystichum braunii*)

T



Identifiable  
year-round

-Grey-black sori  
on backsides of  
leaves

-Rachis covered  
in tan scales

-Grows in  
circular clumps

**State:** END  
**Federal:** N/A



**More Info**



# Lesser Wintergreen<sup>T</sup>

(*Pyrola minor*)



**Blooms:**  
May-June

**Fruits:** July-Sept

-White flowers on  
one side of stalk

-Style doesn't  
extend beyond  
flower petals

**State:** END  
**Federal:** N/A



**More Info**



## REPORTING: EMAIL

For reporting directly to the project team, email [tne.search2@proton.me](mailto:tne.search2@proton.me). Reports to this address will be regularly forwarded to GLIFWC and SRWA. You can report both **endangered/threatened species** and **introduced/invasive species (non-local beings)**.

Information you should provide (**bold required**):

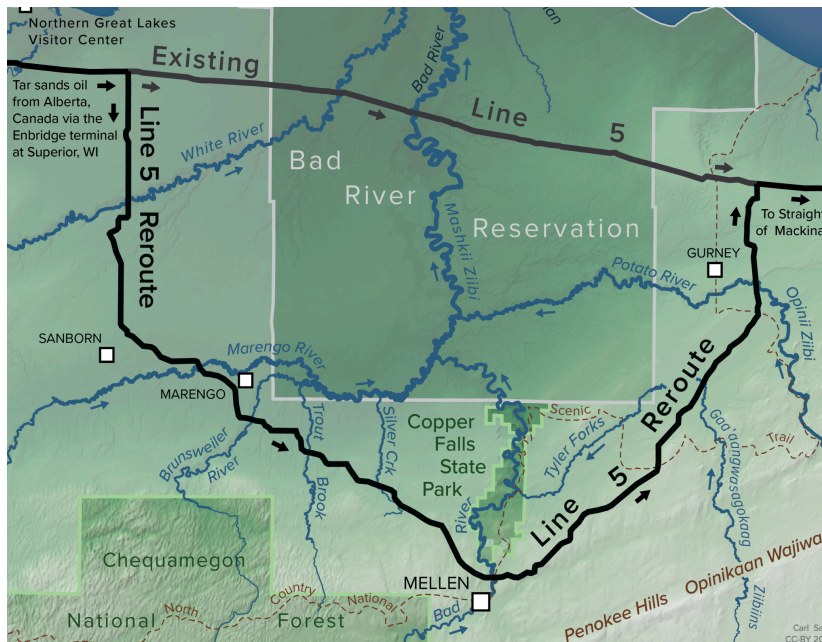
- **Scientific or common name**
- **Date observed**
- **Latitude/Longitude**
- **Number of individuals**
- Estimated area of population (for plants)
- Location/habitat description
- Link to iNaturalist observation

Try to capture close-up, high-quality photos of your species. Some species have very specific characteristics that differentiate them from more common species. If you believe you've seen a species on the list but did not capture a photo, you can still submit the coordinates of where you observed the species.



## TARGET SURVEY AREAS

- **Next to and downstream** of construction areas
- Western area of reroute
- Public access lands
- County roads acting as access roads for construction (often conifer and hardwood swamp)
- Areas **off-reservation** only



## Fly Honeysuckle (*Lonicera involucrata*)

ID: June-Aug



More Info

State: END

- Base of yellow flower is reddish w/ oval leafy coverings
- Fruits are 1/2-1 1/2 cm (1/4-1/2 in) and black; in pairs with bright red bracts behind them
- Opposite leaves



# Mountain Cranberry<sup>T</sup> (*Vaccinium vitis-idaea*)



**Blooms:**  
May-June

**Fruits:**  
July-Sept

-Red fruit, 1 cm  
(.4 in) in  
diameter  
-Leathery,  
evergreen, and  
rounded leaves

**State:** END

**Federal:** N/A



**More Info**



## PUBLIC AND PRIVATE PROPERTIES

**Check who owns the property where you're surveying.** While anyone can survey on public lands, along public roads, and along public waterways, much of the Watershed exists on private property. **Do not trespass on private property or on the Bad River Reservation for species surveying.**

Certain applications and websites provide information on public and private lands near you, including showing your location in relation to these parcels. The free trial of onX Hunt is one useful example.

When surveying by river, make sure you **enter and exit the river via public lands** (for example, off of roads). According to the Wisconsin Public Trust Doctrine, the public has a right to transportation along all navigable waterways.

The following QR code links to watchline5.com, which contains a useful Google Map for knowing where you are in relation to construction, roads, and public access sites.



## SURVEYING TIPS

**Choose one species or kind of species to survey at a time.** It's easier to keep a "search image" if you are specific on who you're searching for.

**Check the season** for which each species is most active/most easily identifiable.

**Survey quietly**, especially for mobile species – don't scare them away!

**Survey in small groups** to minimize disturbances and keep each other safe.

**Wear adequate protection** to avoid sunburn, wild parsnip burns, poison ivy, and/or tick bites. Read up on common outdoor hazards and prepare accordingly.

On public lands, check **open edges** and **difficult-to-traverse** areas (within reason). Edges and difficult-to-traverse areas tend to be under-surveyed.

**Do not collect or damage species**, especially endangered or threatened species.

## Lapland Buttercup W (*Ranunculus lapponicus*)



More Info



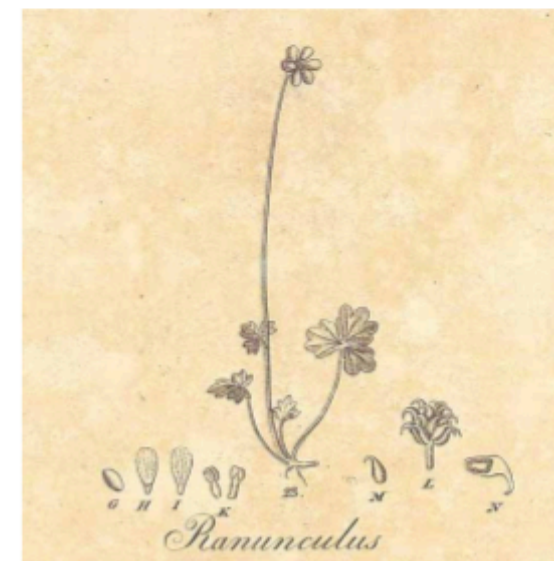
State: END  
Federal: N/A

**Blooms:**  
June

-Likes wet, cold  
pockets

**Fruits:**  
July

-Deeply  
3-parted  
leaves  
-Yellow  
flowers





# Sweet Colt's-foot (*Petasites sagittatus*)

W



More Info



**State:** THR  
**Federal:** N/A



**ID:** May-Aug  
**Blooms:** Early  
Spring  
-Toothed basal  
leaves  
-Woolly white  
underside  
-Reddish-purple  
base of flowers into  
white

## USEFUL EQUIPMENT

Polarized sunglasses (fish, aquatic organisms)

Binoculars (birds, basking turtles)

Hand lens/magnifying glass (seeing small characters on plants, insects)

Charged smartphone (photos, recordings, identification apps like iNaturalist or Merlin)

Drybag and/or waterproof case for electronic devices

Camera with zoom lens for photographing far-away species like birds

Water shoes, hiking sandals, or waders for walking in shallow water

Sunscreen, bug spray (do not handle amphibians/reptiles if using DEET), permethrin-treated clothing for tick prevention

Aquatic and wetland species guides – or our printable booklet series (p. 30)

## NEXT UP: OUR SPECIES

## Wood Turtle (*Glyptemys insculpta*)



**ID:** Mar-Oct

-Ridged  
schutes  
(scales) unlike  
box or painted  
turtles

-Remain within 300m  
of water

-Forage in open  
wet meadows  
and shrubby  
lands  
dominated by  
speckled alder

**State:** THR  
**Federal:** SOC



More Info



## Round-leaved Orchis (*Amerorchis rotundifolia*)



**ID:** June-July

-Showy flower;  
white and light  
magenta with  
magenta spots  
on the middle  
petal  
-Broad basal  
leaf

**State:** THR  
**Federal:** N/A

More Info



# Extra-striped Snaketail (*Ophiogomphus anomalus*)



**ID:** May-June

-Bright green  
and black

**State:** END

**Federal:** N/A



**More Info**

-Cobra-like clubtail,  
-4.3 cm (1.6 in) long  
-Yellow dorsal spots



## Wood Turtle Surveying

From Andrew Badje, Wisconsin DNR (adapted from CLEAN WI species survey materials):

**By canoe:** Float down the river with binoculars, scanning for wood turtles basking in the sun. Generally, they are seen basking in the **late morning into the early afternoon**, and then again as the sun begins to set. For this type of survey, air temps should be 60-80F.

**Combination land and canoe survey:** While conducting a basking survey by canoe, occasionally pull off (legally) in quality habitat, such as **alder thickets, forest openings, and willow thickets**, to search for land-bound wood turtles. This tends to be more effective because wood turtles sometimes choose open areas near alder or willow thickets to warm up. When getting out of the canoe, focus on areas with southern and western exposure. Ideal temps for land surveys are water temps above 50F, and air temps between 55-75F.

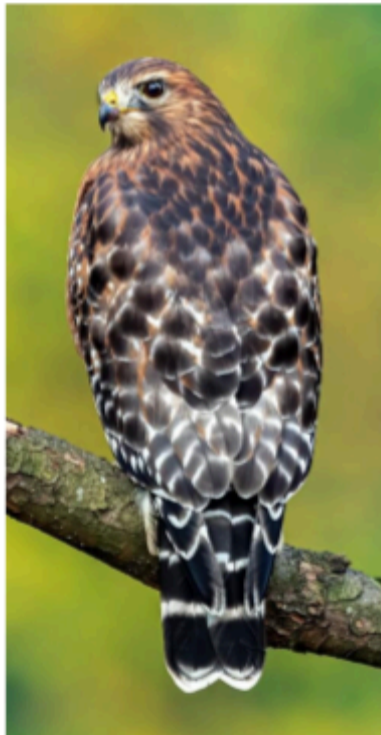
Speckled alder (*Alnus incana*) is an abundant riverside species, growing 15-25 feet tall. It is easily identified by its corrugated leaves and small "cones" that grow on the branches year-round.

Leaves and "cones" of speckled alder





# Red-Shouldered Hawk (*Buteo lineatus*)



**Nesting:** Apr-July

- Warm-reddish barring on chest
- ID in flight from narrow, pale crescents near wingtips;
- fan-shaped tail
- In-flight, wingtips seem to “reach” forward

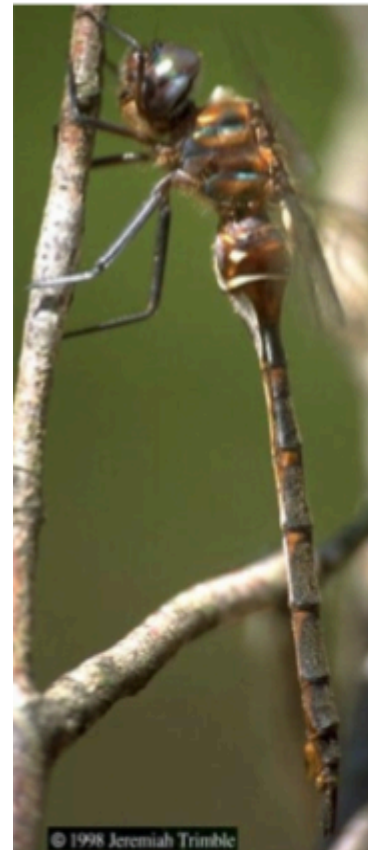
**State:** THR



**More Info**  
(including calls  
& sightings)



# Incurvate Emerald (*Somatochlora incurvata*)



**ID:** July-Aug

**State:** END  
**Federal:** N/A



**More Info**

- 6.3 cm (2 in) long
- Yellow-brown face
- Metallic greenish markings; green eyes
- Brown upper body



## Pine Marten (*Martes americana*)



**ID:** All year

-Prefers  
hardwood  
forest

-Yellow chest  
and golden  
brown fur  
(can vary to  
be darker)

-Rounded  
ears  
-60 cm  
(24 in) w/  
tail



**State:** END  
**Federal:** N/A



**More Info**



## Yellow Rail (*Coturnicops noveboracensis*)

-Only call at night  
-Robin-sized and  
chicken-like; rarely flies  
-Brownish-yellow, mottled  
with dark streaks and thin  
white bars on top; face and  
breast are paler yellow with  
dark smudge on cheek



**More Info**  
(including  
calls &  
sightings)

-Yellowish  
bill; white  
underwings;  
white on  
trailing edge  
of wing



**Nesting:**  
May-July

**State:** THR  
**Federal:** N/A





## Upland Sandpiper (*Bartramia longicauda*)



**ID:** July-Sept

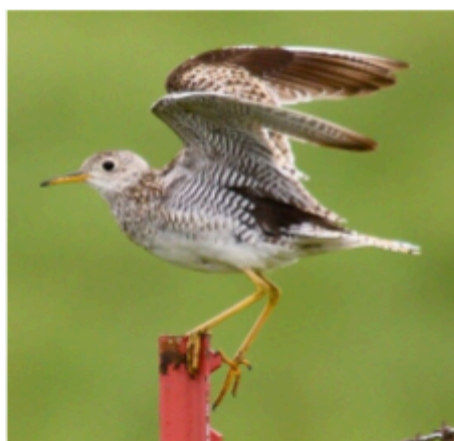
-Often perches on fence posts  
-Favors grasslands, agricultural fields, etc.

-Terrestrial shorebird, often perches on fence posts, slender with a short, thin bill and long neck; mottled brown with spotting on flanks and neck and large eyes

**State:** THR  
**Federal:** N/A



**More Info**  
(including calls & sightings)



## Black Tern (*Chlidonias niger*)

**State:** END

**Federal:** SOC

**Nesting:**

May-July

-Often form colonies in same place yearly  
-Black head/underside and gray upper



**More Info**  
(including calls & sightings)

