

BOGS, FENS, AND SEDGE
MEADOWS:
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.

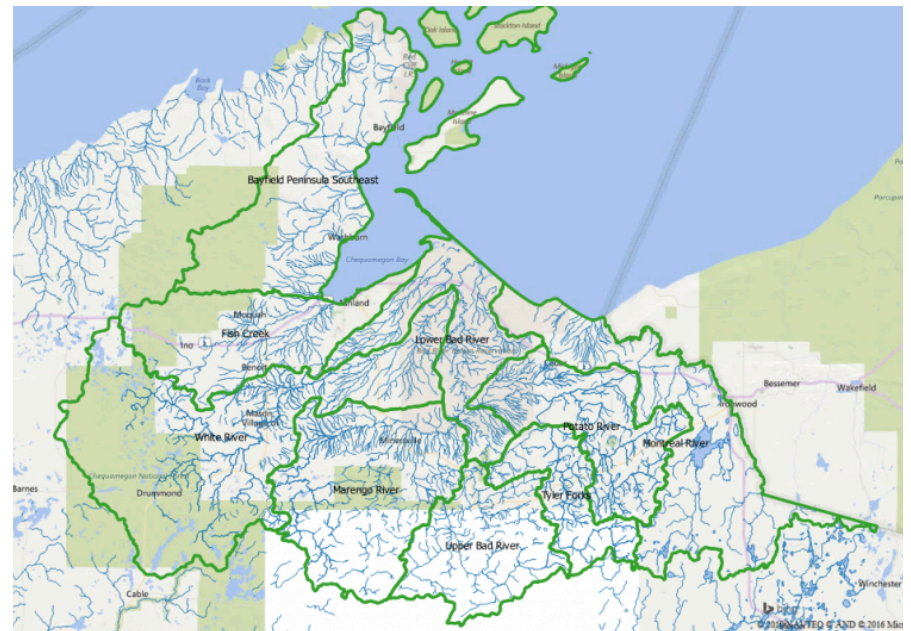
OTHER MATERIALS IN THIS PROJECT

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.

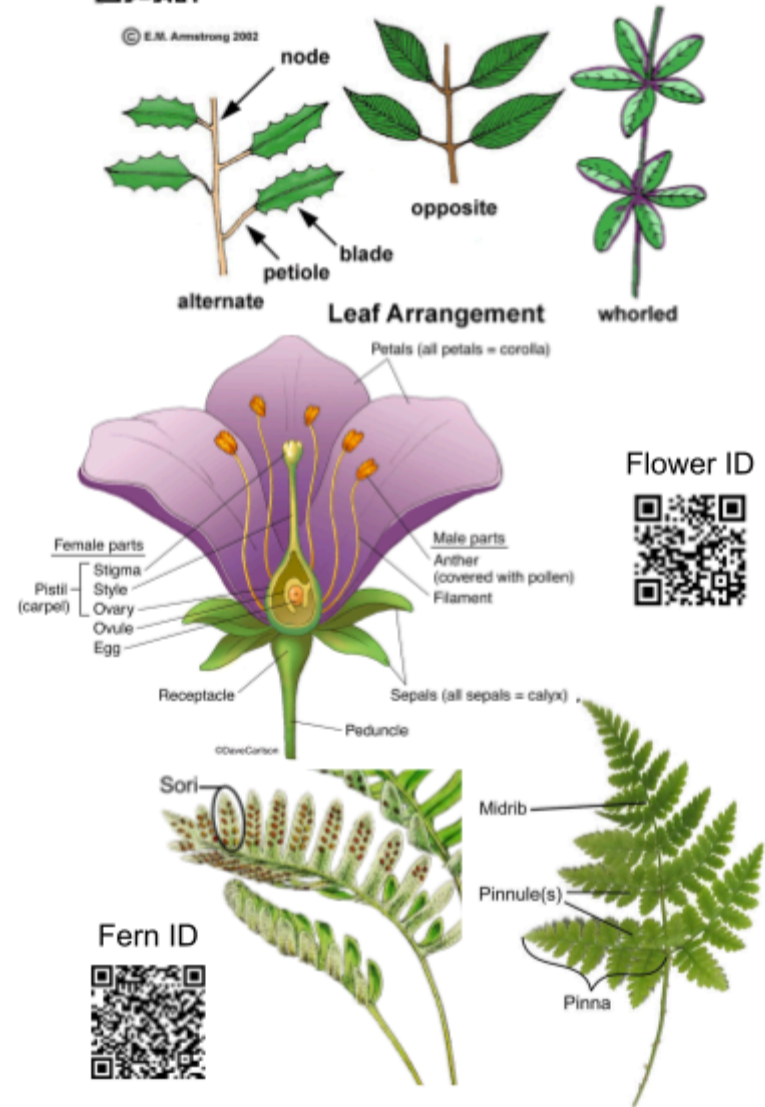


Leaf ID



VEGETATION

ID Tips / Guide



Clustered Bur-reed **W** (*Sparganium glomeratum*)

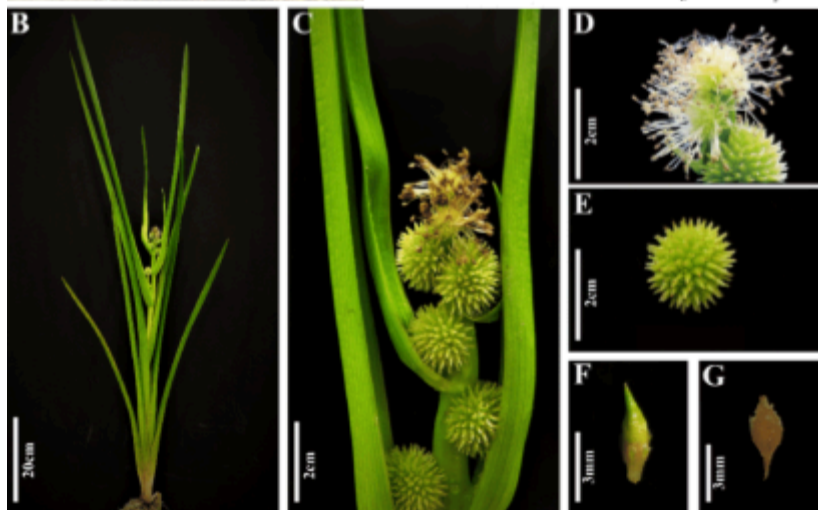
ID: June-Sept

State: THR

- Cold ditches in sedge meadows
- Shiny achenes
- 1-2 staminate heads right up on the pistillate head
- Flowers are green and spherical



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:



Marsh Grass-of-Parnassus **W** (*Parnassia palustris*)

ID: Aug

State: THR

-Clay bluffs along Lake Superior, gravel pits, fens
-Cauline leaves as large as basal leaves

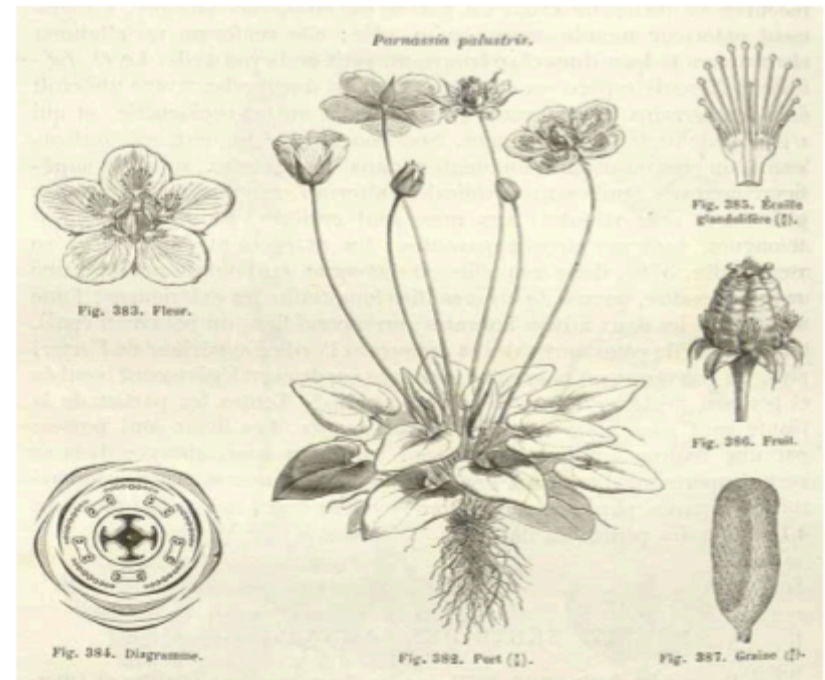
-Will be lookalikes (other

Parnassia)

-White flower with greenish to yellow stamen



More Info
(including notes to compare with other *Parnassia*)



Linear-leaved Sundew **W**

(*Drosera linearis*)

ID: June-Aug

State: THR

-Bog and fen mats

-Carnivorous sundew

-Green leaves with red hairs are longer than wide by 7-20x; white flowers



More Info



REPORTING: EMAIL

For reporting directly to the project team, email 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)**.

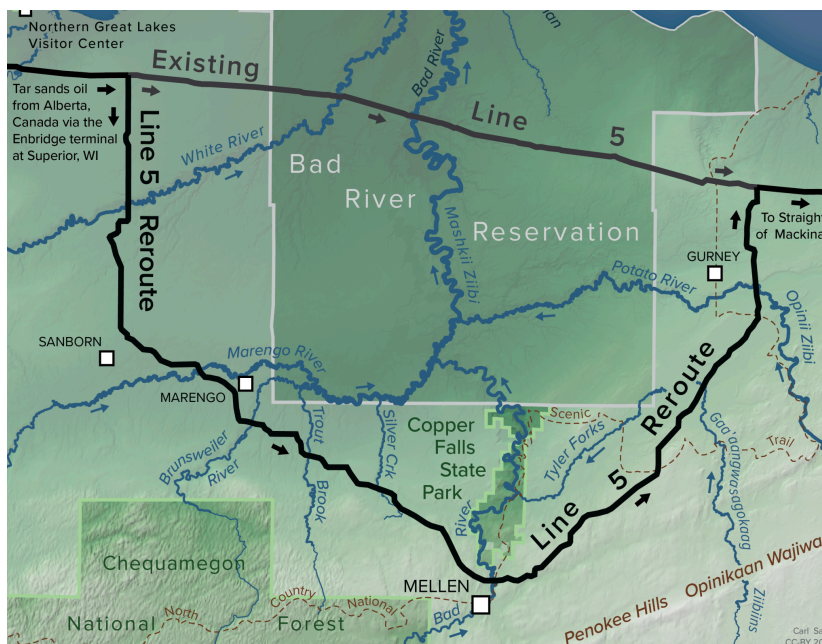
Information you should provide (**bold required**):

- **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
- Bogs, fens, and sedge meadows: rare and diverse species
- Public access lands
- County roads acting as access roads for construction
- Areas **off-reservation** only



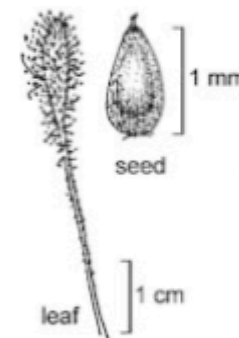
English Sundew (*Drosera anglica*)

W

ID: June-Aug

State: THR

- Cold, open peat bogs, on old flogs
- Carnivorous sundew
- Scape arising from center of basal rosette and erect rather than flopping
- Green leaves with red hairs; white flowers



Drosera anglica

More Info



Pale Green Orchid W

(*Platanthera flava* var. *herbiola*)

ID: June-Aug

State: THR

- Moist prairies, riverbanks, sedge meadows
- Leafy stem with many small, green flowers
- May be tough to ID



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.

Loggerhead Shrike (*Lanius ludovicianus*)

Nesting: Apr-Aug

State: END
Federal: SOC

- Rough grassland with scattered shrubs and trees
- Thick bill with a small hook
- Gray with black mask and white flashes in black wings



More Info
(including calls & sightings)

- Tend to hover, rapid wingbeats



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)



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. 28)

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



Extra-striped Snaketail (*Ophiogomphus anomalus*)



ID: May-June

-Bright green
and black

State: END
Federal: N/A



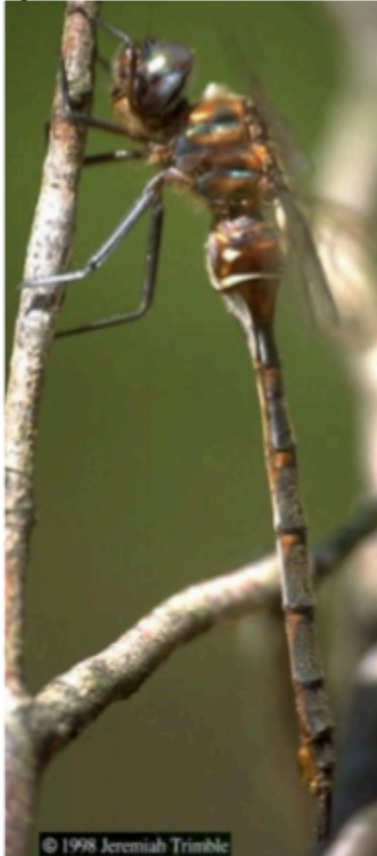
More Info

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



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



Wood Turtle Surveying

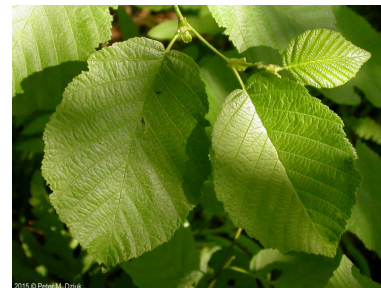
From Andrew Badje, Wisconsin DNR (adapted from CLEAN WI species survey materials):

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



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

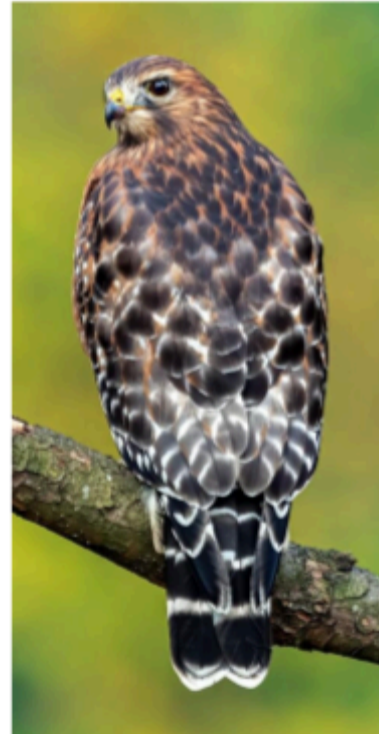
State: THR
Federal: N/A



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)



Mountain Cranberry^T (*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



Common Butterwort^W (*Pinguicula vulgaris*)



ID: June-July

- Mossy boulders and moist ledges, mostly Apostle Islands
- Carnivorous butterwort
- Single tubular violet flower on a slender stem
- Basal leaves are light green, form a rosette, with curled sides and sticky hairs



More Info



State: END

