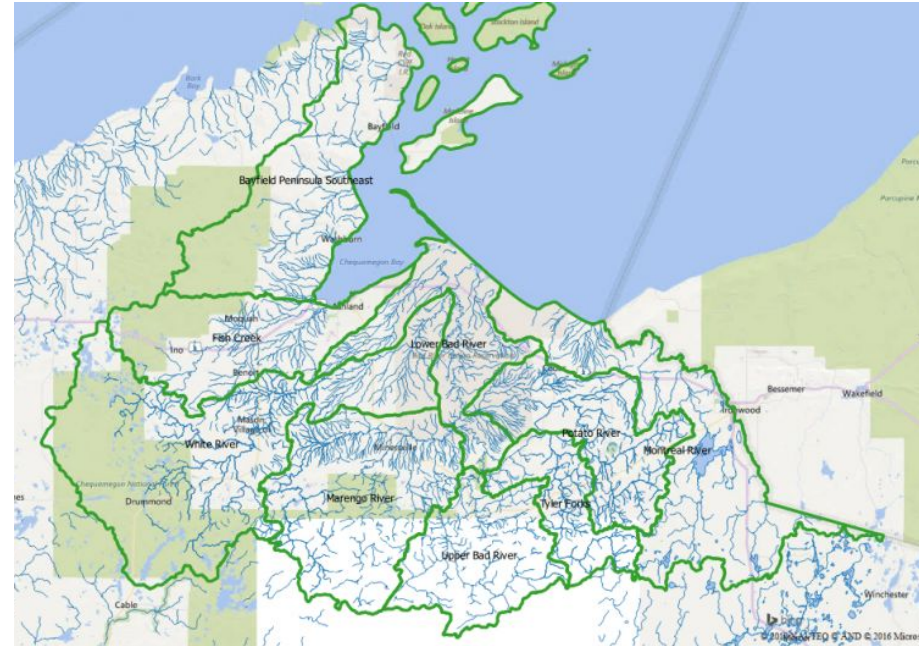


Northern Wisconsin Endangered/Threatened Species

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.



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 [here](#) and [here](#).

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. 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!

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

REPORTING: EMAIL

For reporting directly to the project team, email tne.search2@proton.me with images of your observed species and the information below. You can report both **endangered/threatened species** and **introduced/invasive species (non-local beings)**.

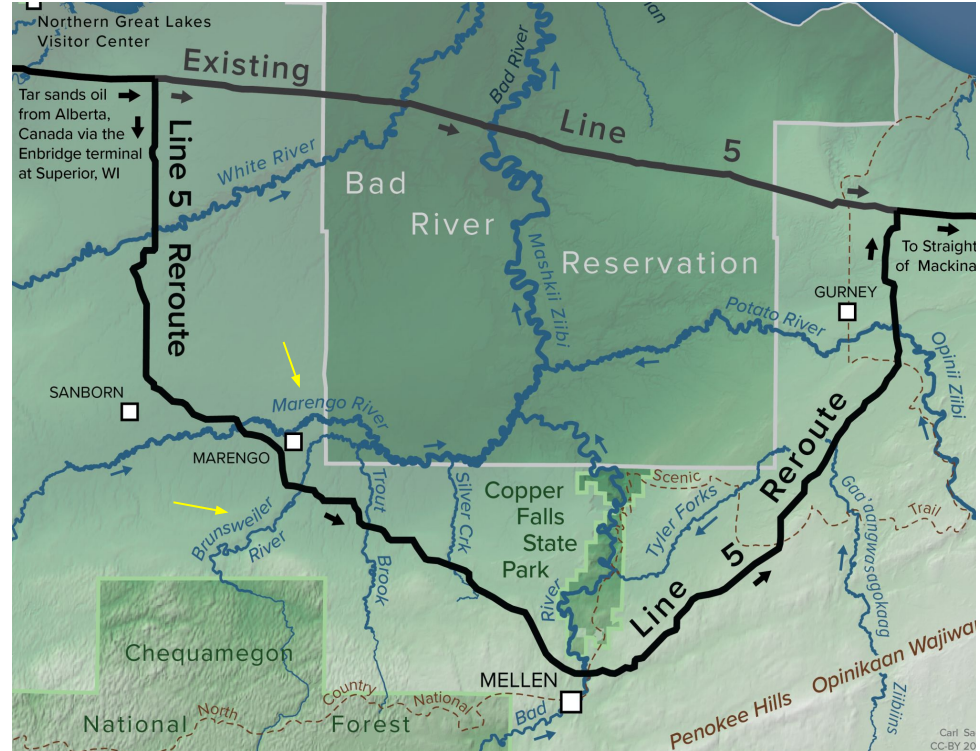


Information you should provide (**bold required**):

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

TARGET SURVEY AREAS

- Next to and downstream of construction areas
- Western area of reroute
- Public access lands
- Float surveys for aquatic/riparian species
Access points for [Marengo](#), [Brunsweller](#) rivers
- [County roads](#) acting as access roads for construction
- Areas **off-reservation** only



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](#) and the [watchline5.com](#) website are both useful.
- 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.

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.

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)
- 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](#)

PLANTS

32 species

Organized chronologically by best time to find each species.

Codes for top right corner:

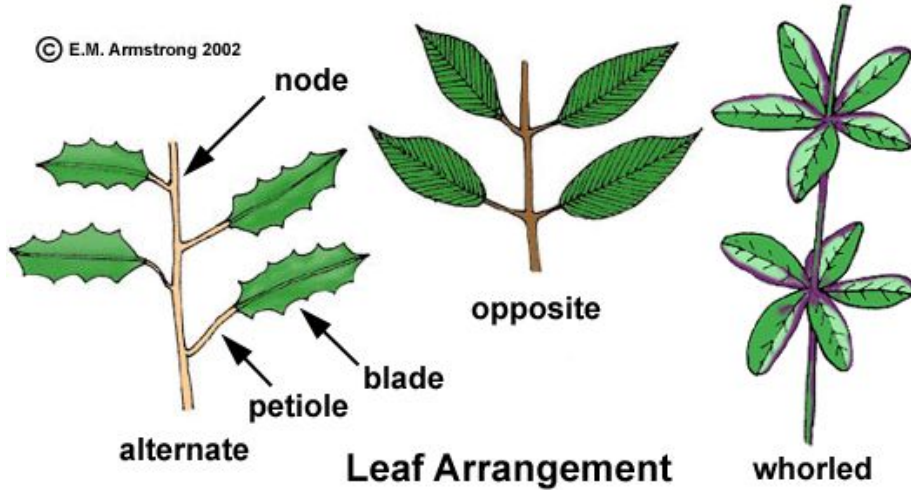
T: Terrestrial. Grows in soil

W: Wetland. Grows in wet soils

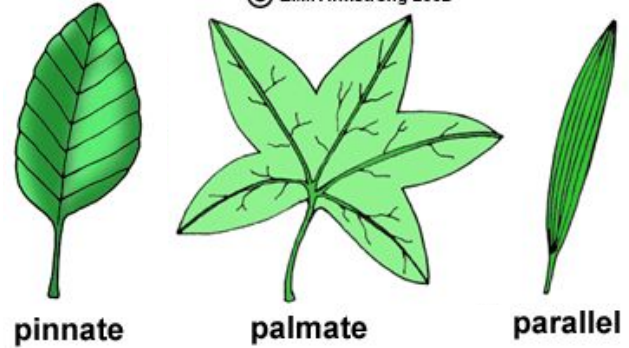
A: Aquatic. Grows in water

Some helpful terms for leaf ID

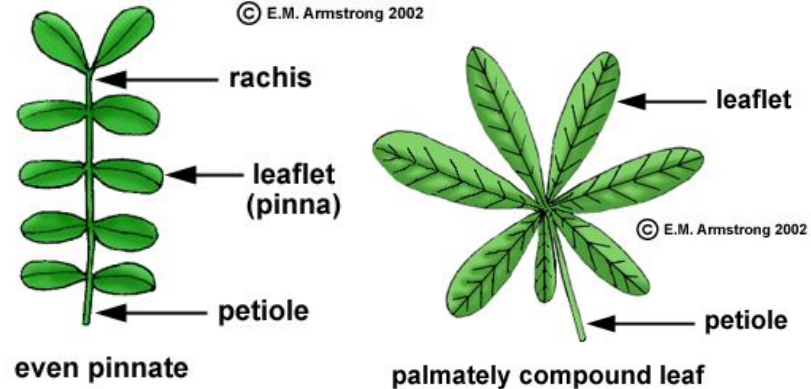
© E.M. Armstrong 2002



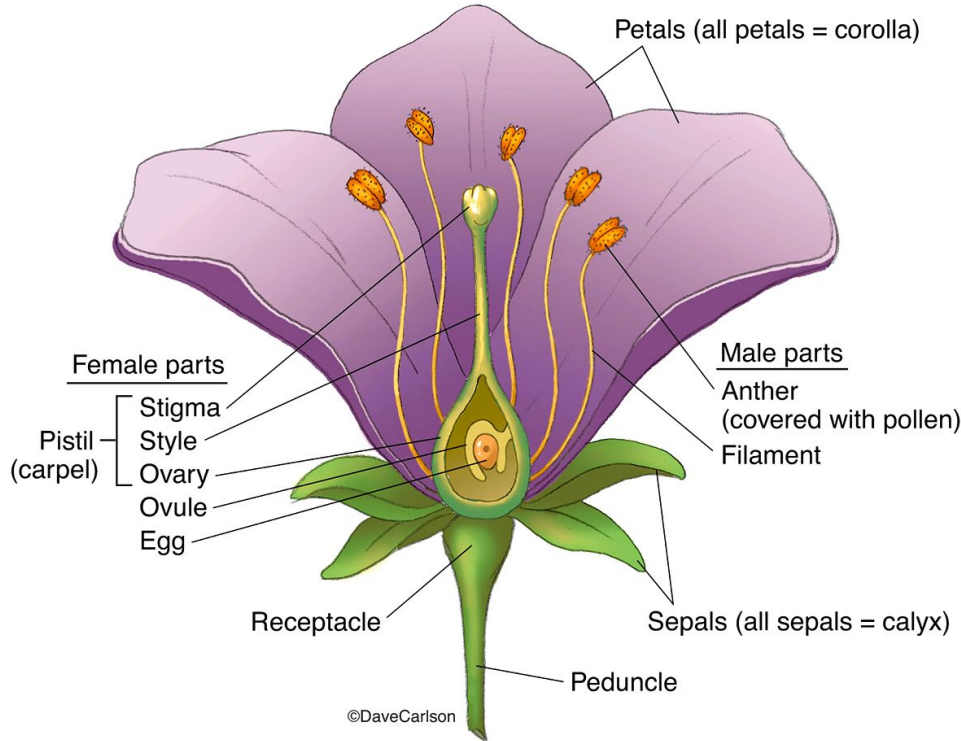
© E.M. Armstrong 2002



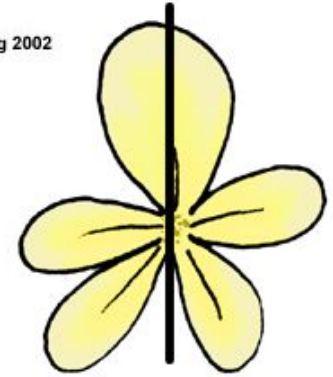
© E.M. Armstrong 2002



Some helpful terms for flower ID

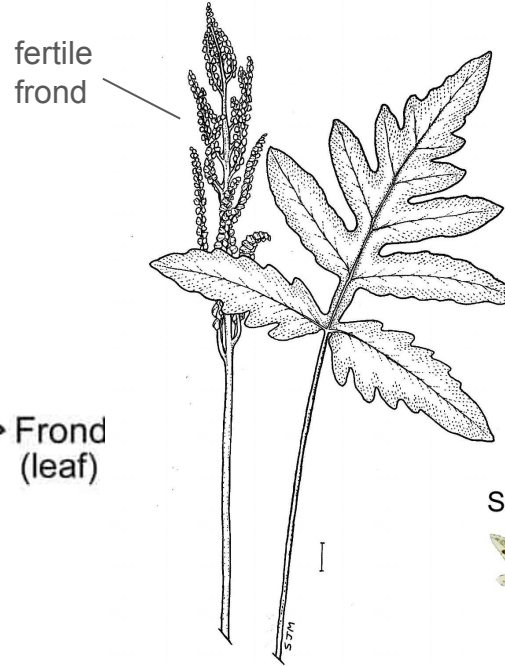
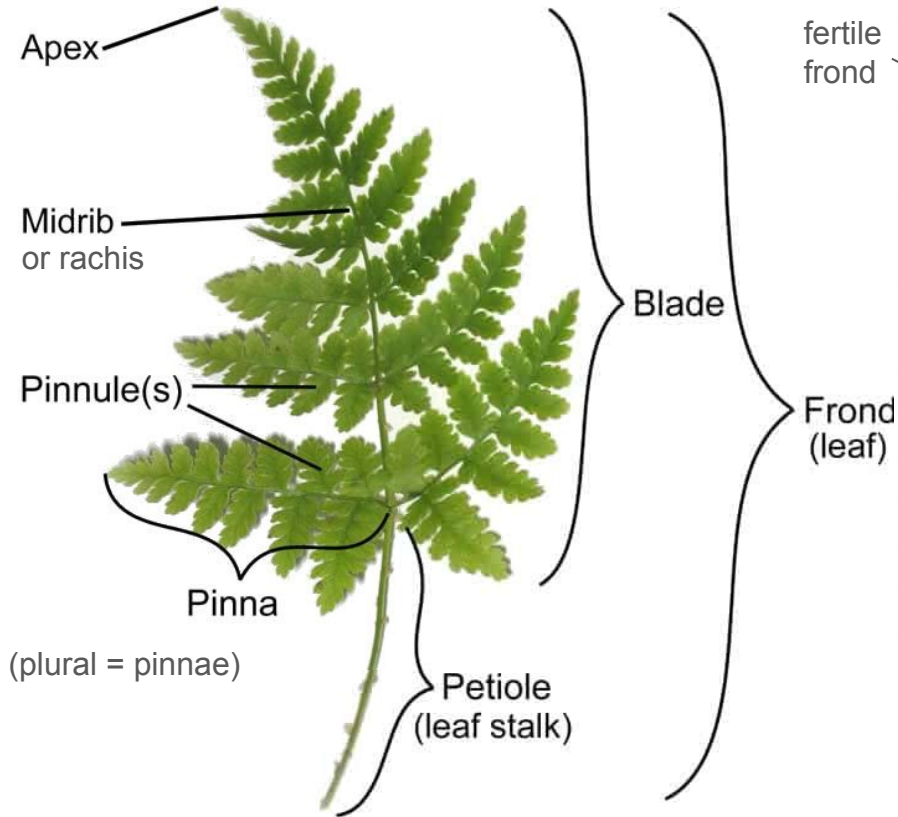


actinomorphic (regular)
(more than one dividing plane)

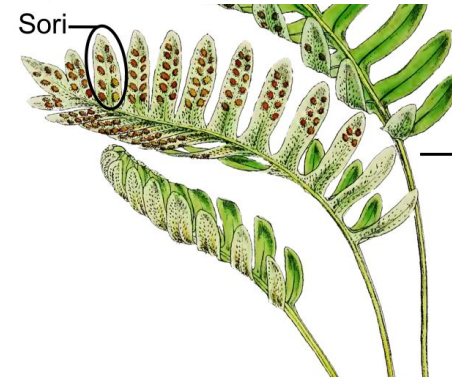


zygomorphic (irregular)
(one bilateral dividing plane)

Some helpful terms for fern ID



ferns reproduce from spores, which can appear in different kinds of structures



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

Mixed conifer-hardwood forests, ravine bottoms

Larger pinnae with 9 or more pairs of pinnules (DNR)

Pinnae (branches) gradually taper in size nearly all the way to the ground, lowest pinnae very short



grey-black sori
on backsides
of leaves



rachis (stems)
covered in tan
scales →



MAY

JUNE

JULY

AUGUST

SEPTEMBER

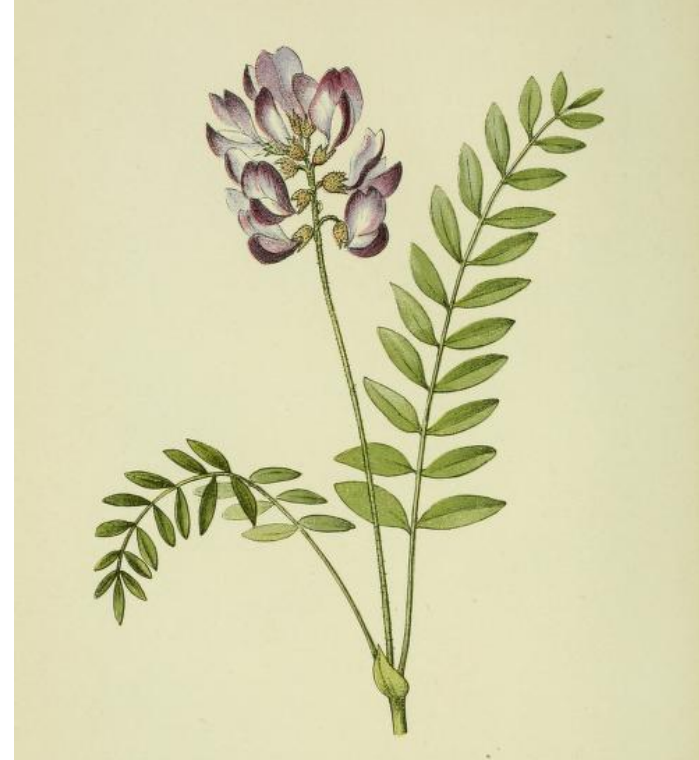
Alpine Milkvetch (*Astragalus alpinus*)

Sandy or gravelly inland lakeshores

Early May - Late Sept



Flowers like a pea, 15-25
narrow leaflets, hairy on one or
both sides (sometimes smooth
above); brown or blackish hairs
on calyx



MAY

JUNE

JULY

AUGUST

SEPTEMBER

Mountain Cranberry (*Vaccinium vitis-idaea*)

Mossy cliffs along Lake Superior and inland conifer swamps

Blooms early May - late June, fruits late July - early Sept;
identifiable year-round

Small shrub with bell-shaped flowers, 4-lobed petals nearly to middle

Fruits are red, about 1cm, leaves are leathery, evergreen, and rounded



MAY

JUNE

JULY

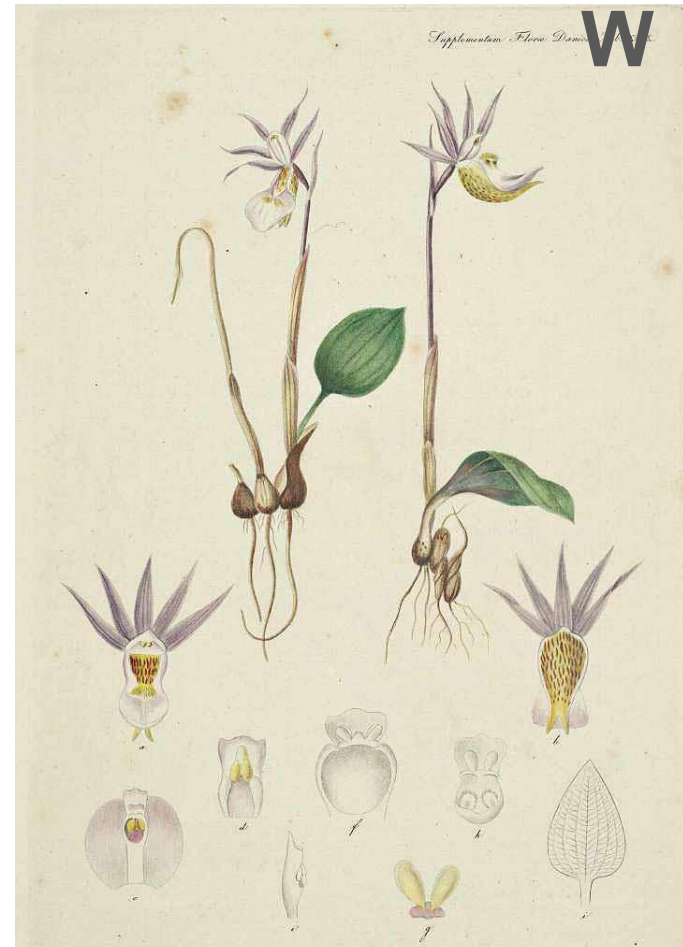
AUGUST

SEPTEMBER

Calypso Orchid (*Calypso bulbosa*)



Conifer swamps
Late May - Early June
Unmistakable in flower, but
very small; single small leaf
at base, pleated. -- Looks
like a lot of other things in
the forest though, so ID will
be difficult with only leaves



MAY

JUNE

JULY

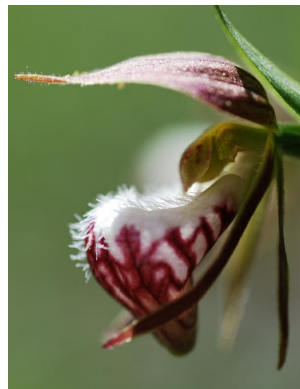
AUGUST

SEPTEMBER

Ram's head Lady's slipper (*Cypripedium arietinum*)



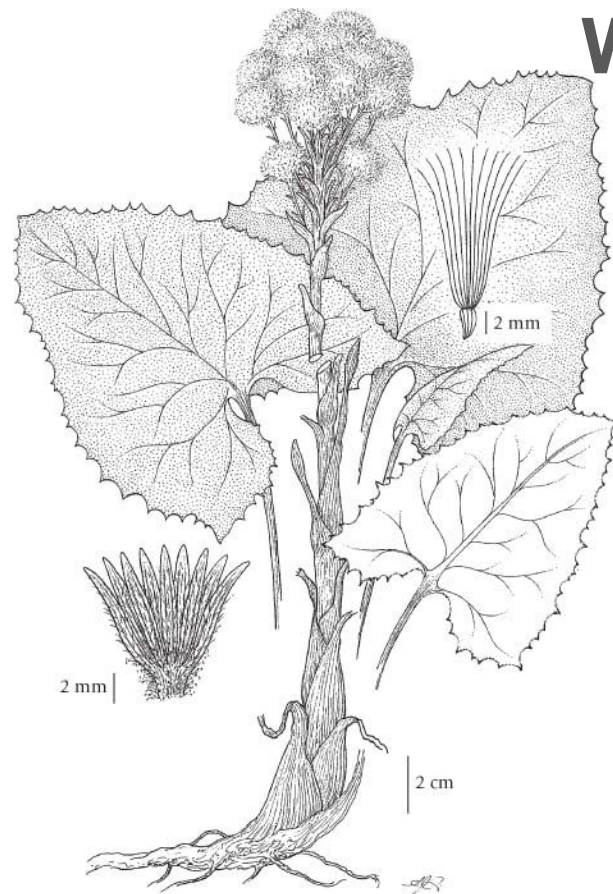
Conifer swamps; sandy margins of boreal forests or dune swales
Late May - Early June
spiralling, pleated leaves
(unlike other lady's slippers which are 2-ranked).
Flower distinct



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



Swamp openings and cold marshes, large clones
Late May - Late Aug
Toothed basal leaves,
woolly white underside.
Flowers early spring



Petasites sagittatus



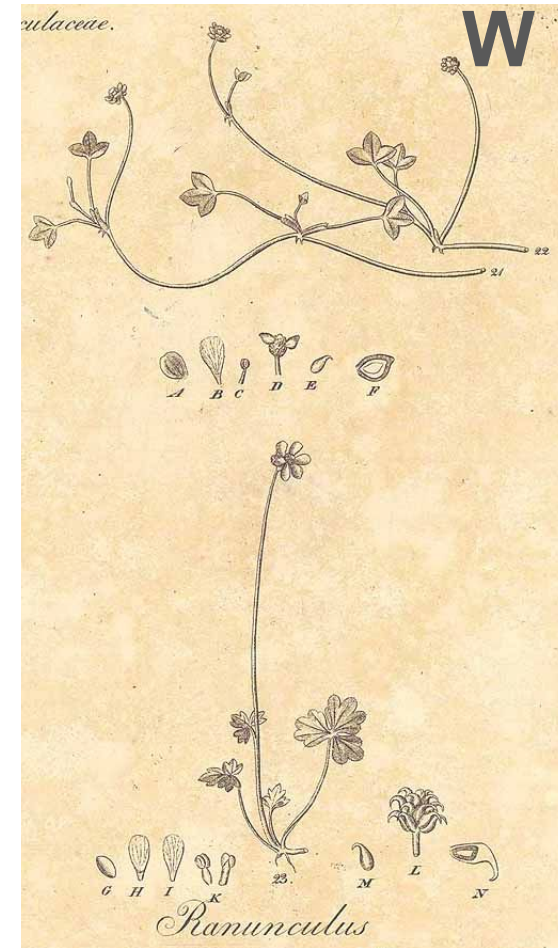
Lapland Buttercup

(*Ranunculus lapponicus*)

Conifer swamps in wet, cold pockets

June

Deeply 3-parted leaves



MAY

JUNE

JULY

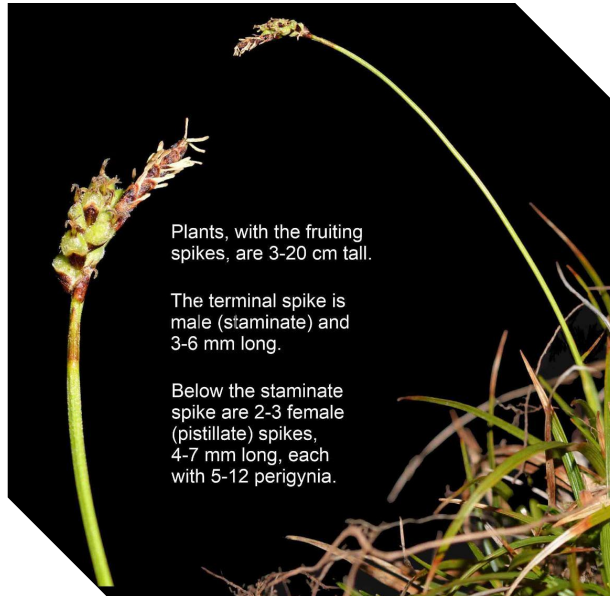
AUGUST

SEPTEMBER

Beautiful Sedge (*Carex concinna*)

Swampy swales and cedar thickets

June

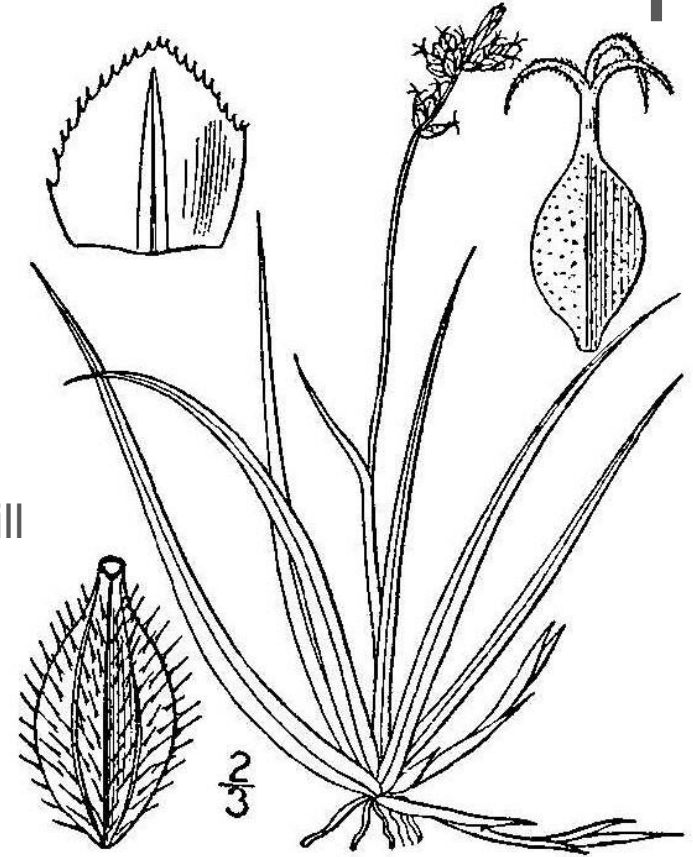


Plants, with the fruiting spikes, are 3-20 cm tall.

The terminal spike is male (staminate) and 3-6 mm long.

Below the staminate spike are 2-3 female (pistillate) spikes, 4-7 mm long, each with 5-12 perigynia.

Cespitose flower with strongly sheathy and short-bladed bracts; perigynia pubescent. Will be challenging to ID



MAY

JUNE

JULY

AUGUST

SEPTEMBER

Auricled Twayblade (*Listera auriculata*)

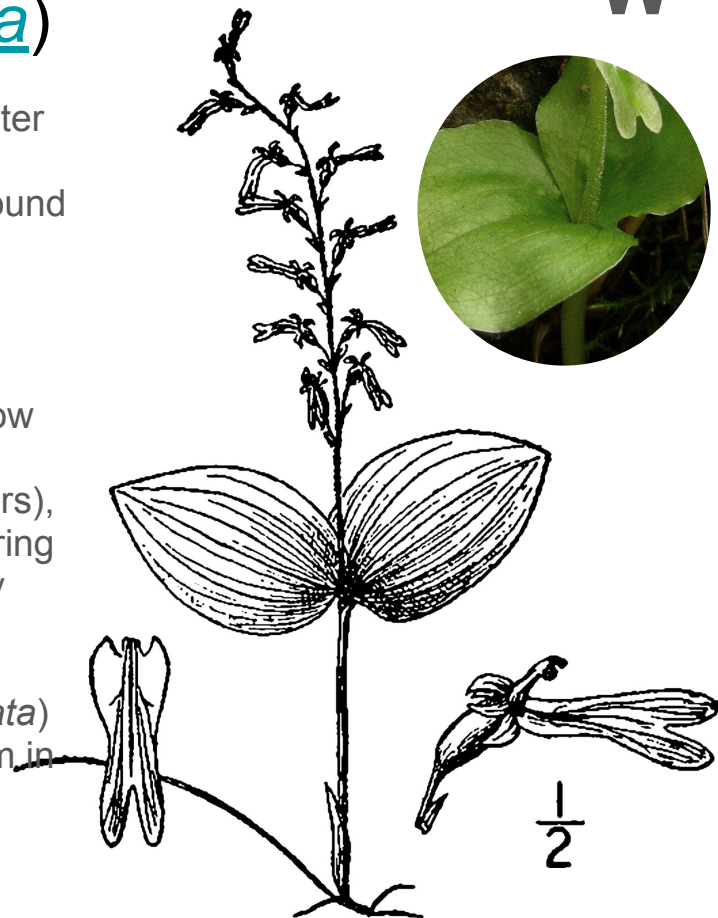
W



Mouths of streams, above high water line, often under alder thickets
Early June - Early July, flowers around July 4

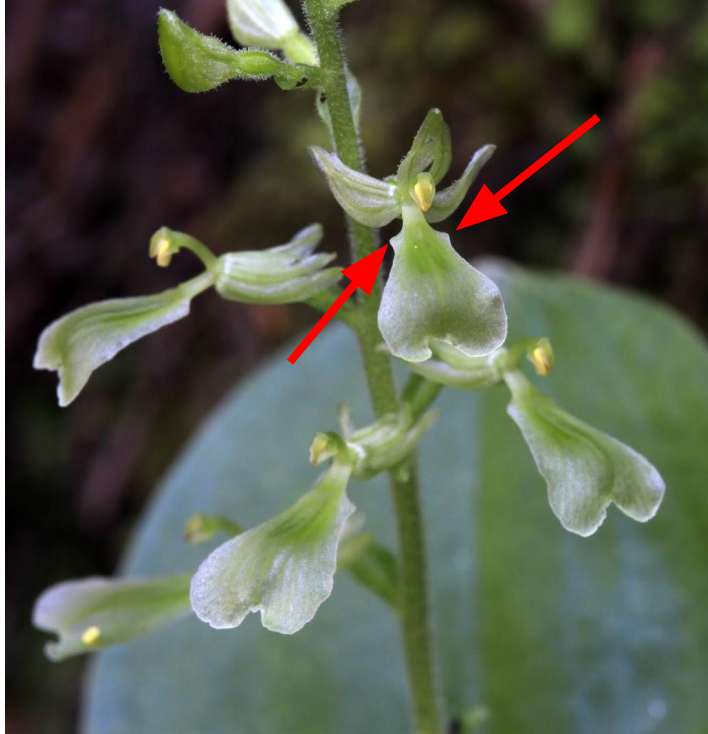
Generally very small populations

Flowers: broad based lip (vs. narrow at base as in *L. convallarioides*), pedicels glabrous (vs. with fine hairs), though the main stem of the flowering stalk may have hairs. Lip shallowly cleft into 2 rounded lobes (vs. cleft halfway to its base into two sharp-pointed lobes, as in *L. cordata*) and has longer leaves (over 2.5 cm in *L. auriculata* vs. under 2.5 cm in *L. cordata*)."



Broad-leaved Twayblade

(*Listera convallarioides*)



Ravine bottoms in mixed forests
Early June - Late July
from DNR: "Distinguished from *L. auriculata* by its flower, which has a narrow-based lip (vs. broad at base with auricles) and pedicels, which are finely glandular pubescent (vs. glabrous). Distinguished from *L. cordata* by the lip, which is shallowly cleft into 2 rounded lobes (vs. cleft halfway to its base into two sharp-pointed lobes) and leaves, which are longer (over 2.5 cm vs. under 2.5 cm)."



MAY

JUNE

JULY

AUGUST

SEPTEMBER

Coast Sedge (*Carex exilis*)

Coastal bog and fen mats

Early June - Late July

Densely cespitose, single terminal spike with spreading, flattened perigynia. ID will be difficult



Large-leaved Sandwort (*Moehringia macrophylla*)

Dry, shaded cliffs



Early June -
Late July
leaves opposite,
lanceolate to
elliptic, acute
tips. Might be
tough to Id



MAY

JUNE

JULY

AUGUST

SEPTEMBER

Fly Honeysuckle (*Lonicera involucrata*)

Tamarack swamps, alder thickets

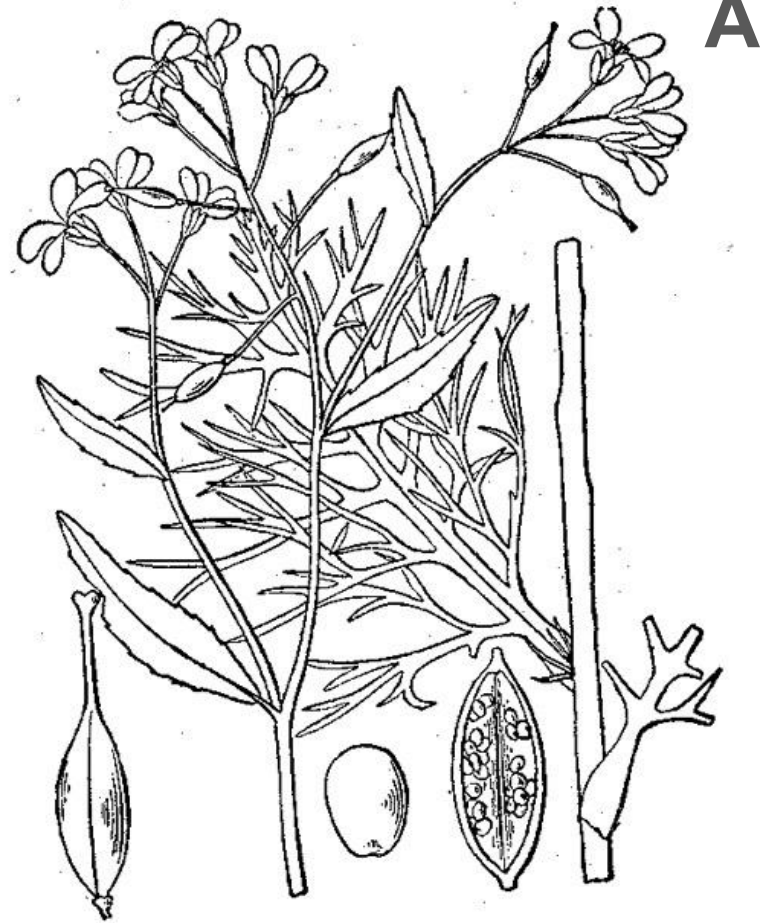
Early June - Late Aug

base of flower reddish with oval-leafy bracts; opposite leaves



Lake Cress (*Armoracia lacustris*)

Slow-moving rivers and river mouths
Early June - Late Aug, flrs starting late June
4-parted flower, thread-like underwater leaves
and lance-shaped above-water leaves



MAY

JUNE

JULY

AUGUST

SEPTEMBER

Satiny Willow (*Salix pellita*)

W

Sandy and gravelly shores.
Early June - Early Sept
Waxy-white twigs. Underside
of leaves covered in long silky
hairs.



MAY

JUNE

JULY

AUGUST

SEPTEMBER

Tea-leaved Willow

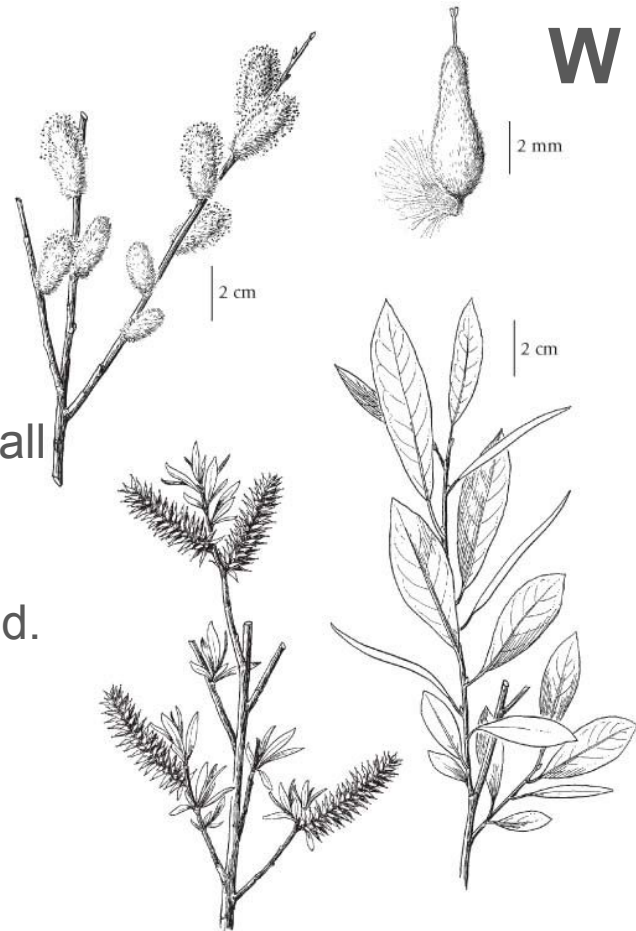
(*Salix planifolia* ssp. *planifolia*)



Bedrock shores, esp. Apostle Islands



Early June -
Early Sept
fruit on very small
twigs, leaves
smooth and
diamond-shaped.
Genus is quite
hard and
technical to ID



W

Salix planifolia

MAY

JUNE

JULY

AUGUST

SEPTEMBER

Clustered Bur-reed (*Sparganium glomeratum*)

Cold ditches in sedge meadows

Early June - Early Sept

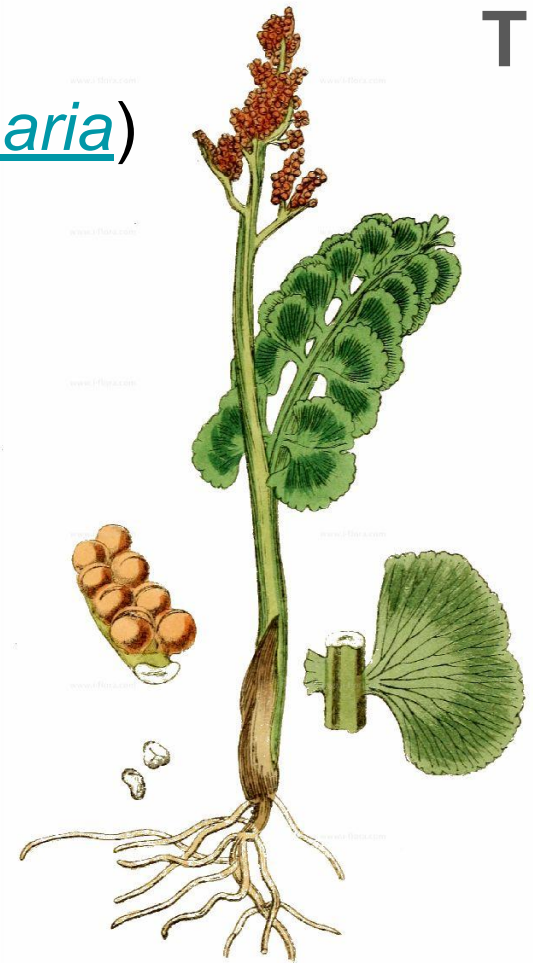
shiny achenes, 1-2 staminate heads right up on the pistillate head



New World Moonwort (*Botrychium neolunaria*)



Open areas of woods; gaps,
fields, utility corridors
Early July - Late Sept
Small, erect; sporophore up to 14
cm long; leaves fan-shaped, like
a Ginkgo



MAY

JUNE

JULY

AUGUST

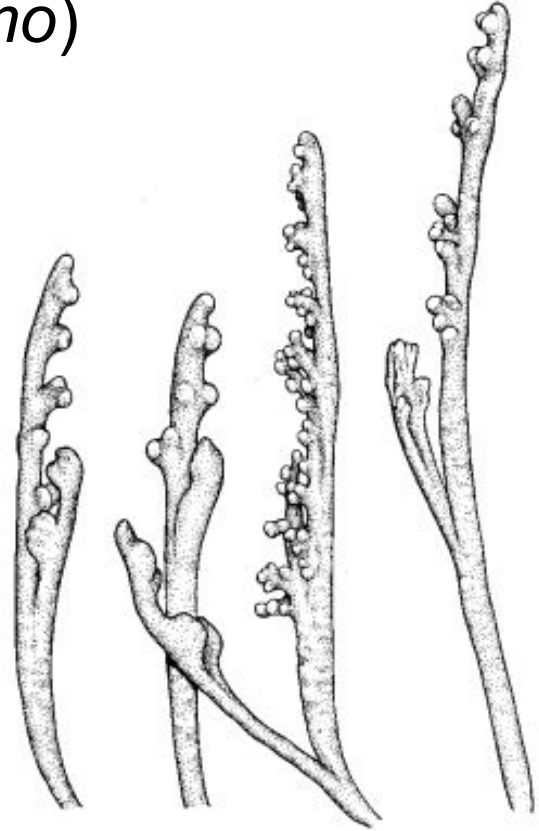
SEPTEMBER

Little Goblin Moonwort (*Botrychium mormo*)

Mature hardwood forests, esp. drumlins

Mid July - Mid Aug

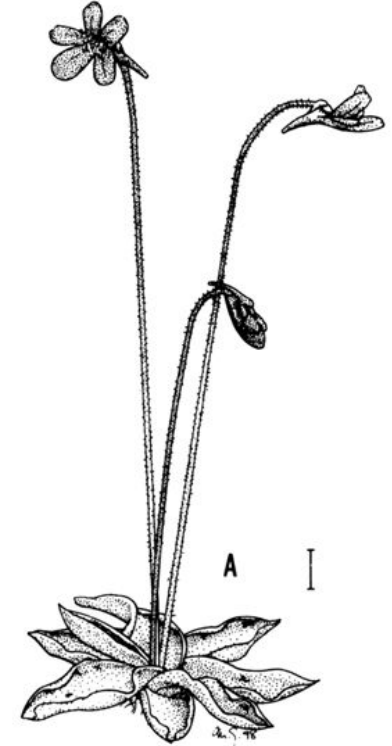
Extremely small, yellow-green in color, succulent



Common Butterwort (*Pinguicula vulgaris*)



Mossy boulders and moist
ledges, mostly Apostle Islands
Late June - Late July
carnivorous butterwort



Pinguicula vulgaris

W

MAY

JUNE

JULY

AUGUST

SEPTEMBER

Lesser Wintergreen (*Pyrola minor*)



Conifer swamps
Late June - Late July
raceme on one side of
flowering axis, style not
extending beyond flower

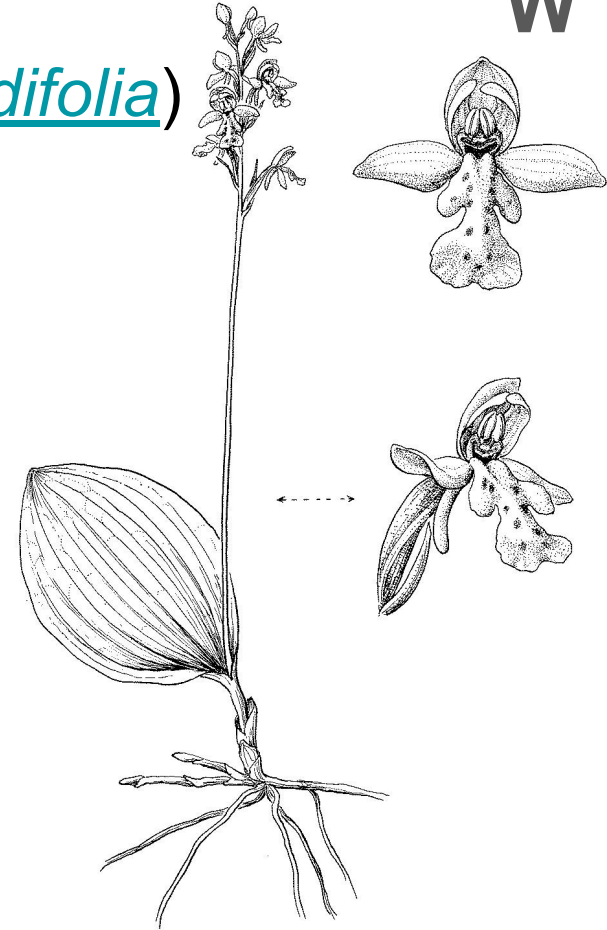


Round-leaved Orchis (*Amerorchis rotundifolia*)

Conifer swamps

Late June - Late July

Easiest to ID with the showy flower; broad basal leaf

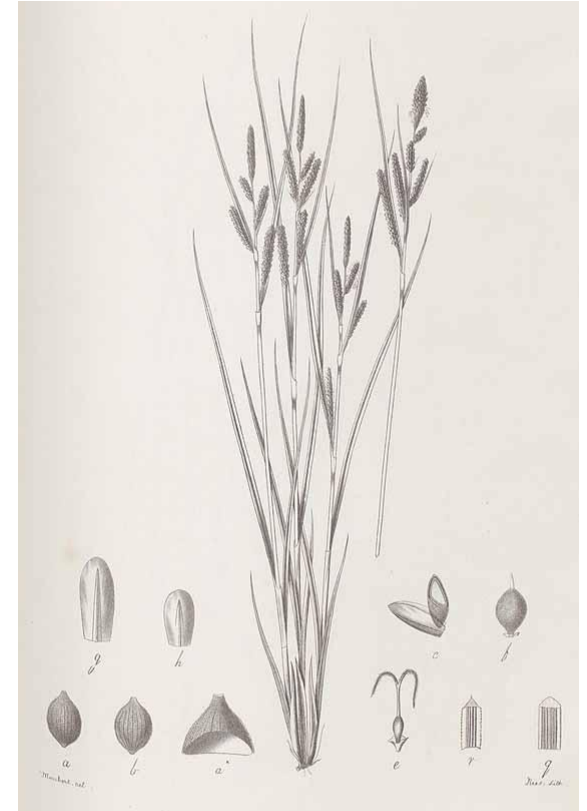


Shore Sedge (*Carex lenticularis*)

Rock pools along Lake Superior

Late June - Late July

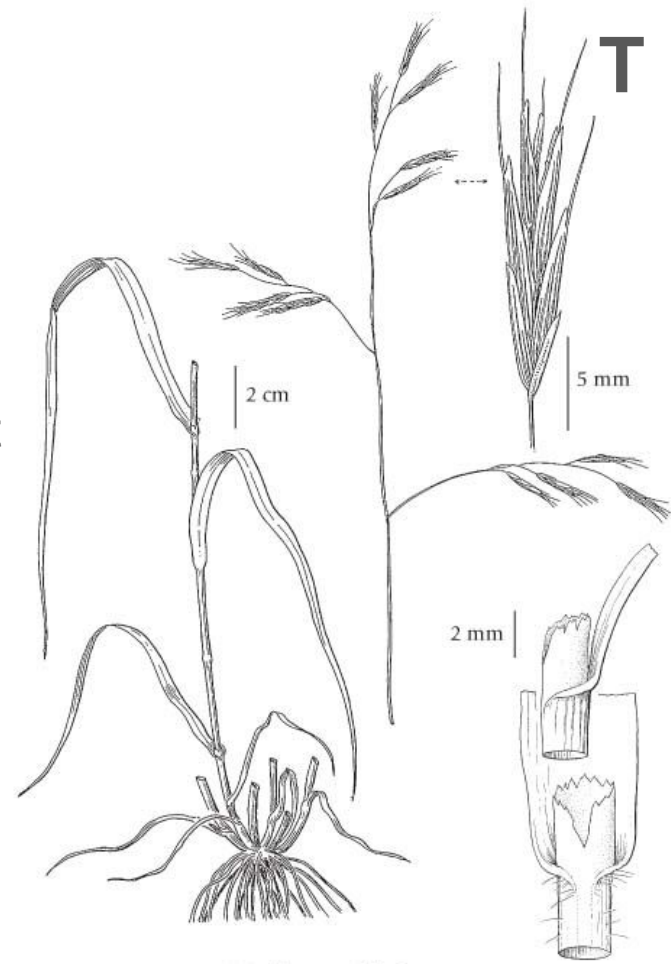
Green perigynia, similar to *C. aquatilis*. ID will be somewhat difficult



Smith's Melic Grass (*Melica smithii*)



Hardwood forests
Late June - Early Aug
panicle branches reflexed at
maturity, enlarged base
stem. Sheaths with stiff
hairs. Will be very difficult to
ID



Melica smithii



Spike Trisetum (*Trisetum spicatum*)

Moist, shaded mossy sandstone ledges on Lake Superior

Late June - Early August

Dense, spike-like panicles that are pale or dark purple



Fig. 102: *Trisetum spicatum*: plant, X $\frac{1}{2}$; spikelet and floret, X 5. (From Hitchcock & Chase).



Pale Green Orchid

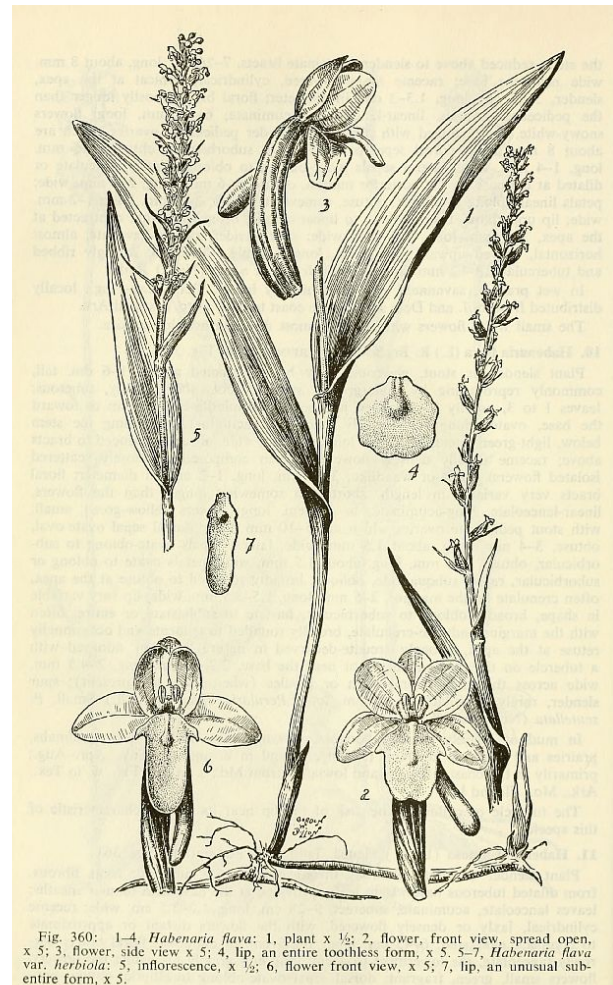
(*Platanthera flava* var. *herbiola*)



Moist prairies, riverbanks, sedge meadows

Late June - Early Aug

Leafy stem with many small, green flowers. Distinctive orchid appearance but might be tough if you aren't familiar with the orchid gestalt



MAY

JUNE

JULY

AUGUST

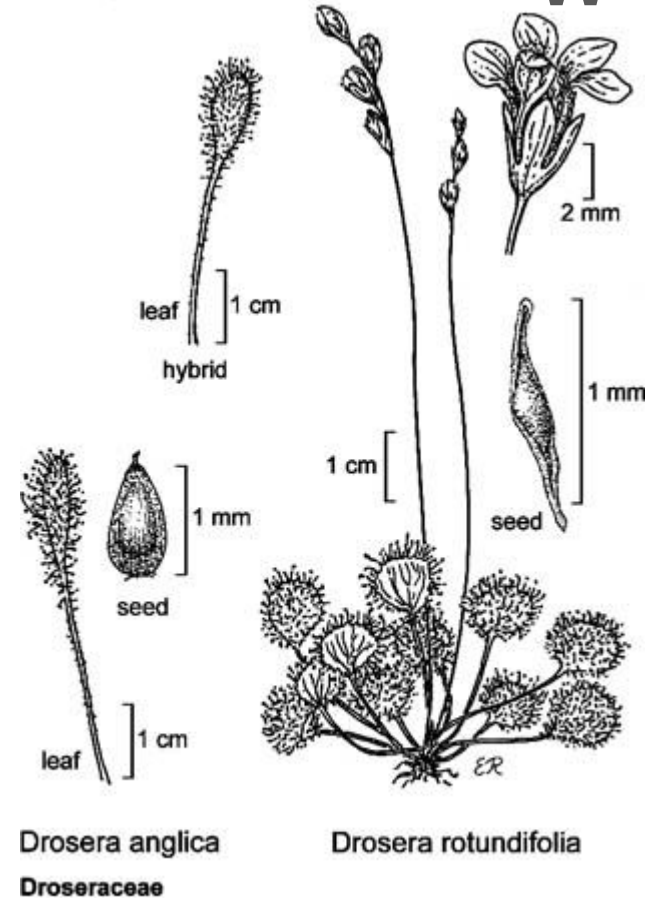
SEPTEMBER

English Sundew (*Drosera anglica*)



Cold, open peat bogs, on old fogs

Late June - Late Aug
carnivorous sundew; scape arising from center of basal rosette and erect rather than flopping



MAY

JUNE

JULY

AUGUST

SEPTEMBER

Linear-leaved Sundew (*Drosera linearis*)



Bog and fen mats
Late June - Late Aug
carnivorous sundew;
leaves longer than
wide by 7-20x



Small Yellow Water Crowfoot (*Ranunculus gmelinii*)

Cold brooks and springs

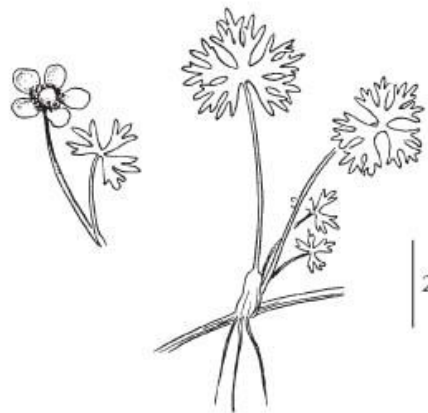
Late June - Early Sept

margins of achenes rounded, not swollen.

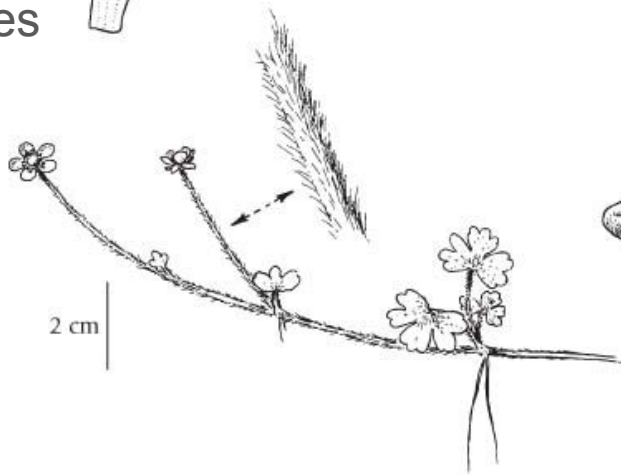
Might be tough to ID from related species



1 mm



2 cm



2 cm



1 mm



Ranunculus gmelinii

MAY

JUNE

JULY

AUGUST

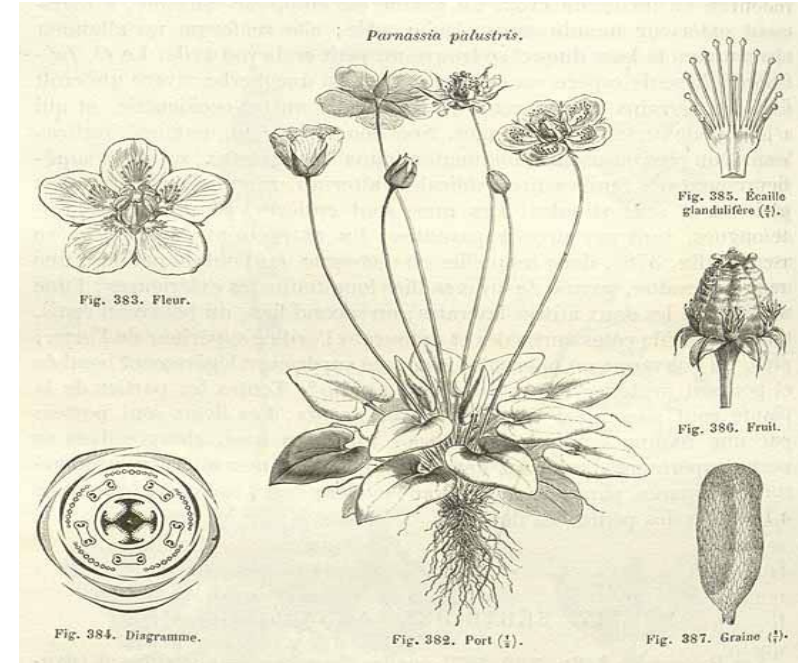
SEPTEMBER

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

Clay bluffs along Lake Superior, gravel pits,
fens

August

Cauline leaves
as large as basal
leaves -- will be a
lot of lookalikes
(other *Parnassia*)



Algae-leaved Pondweed

(*Potamogeton confervoides*)

Shallow acidic inland lakes

August

Peduncles elongate, leaves slender and one-veined.

Might be tough to access



A

MAY

JUNE

JULY

AUGUST

SEPTEMBER

Large Water-starwort (*Callitriche heterophylla*)

Muddy shores, pools in swift streams, wet sand

Early Aug - Early Sept



Linear submerged leaves, emergent leaves are spatula shaped. Smaller fruit than related species, lacking wings on fruit

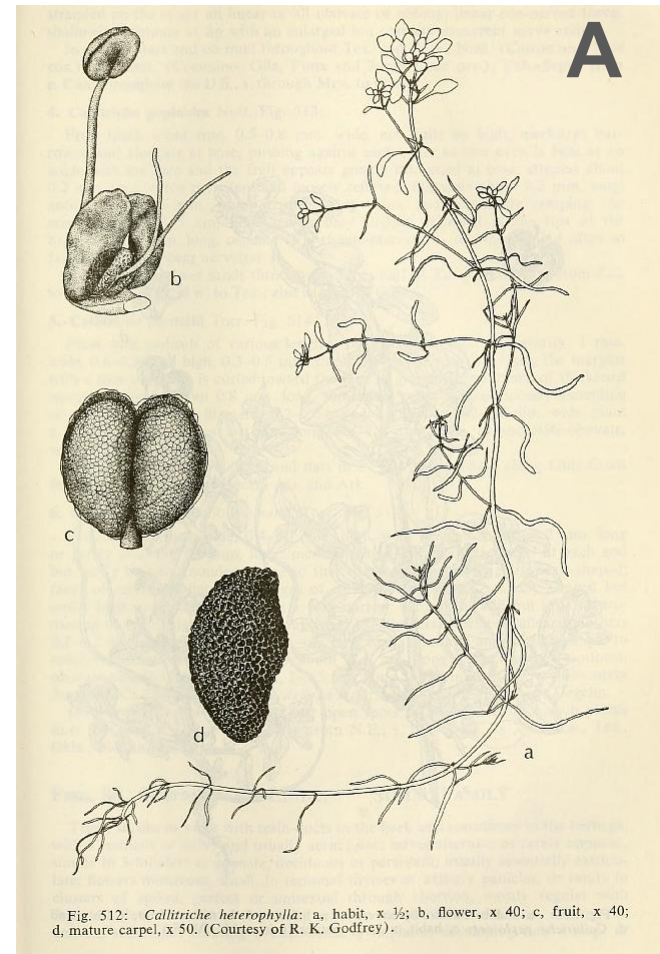


Fig. 512: *Callitriche heterophylla*: a, habit, x 1/5; b, flower, x 40; c, fruit, x 40; d, mature carpel, x 50. (Courtesy of R. K. Godfrey).

MAY

JUNE

JULY

AUGUST

SEPTEMBER

INSECTS

3 species

Considerations for surveying:

- Nets for catching insects
- Handlens/magnifying glass for observing small characters

Extra-striped Snaketail (*Ophiogomphus anomalus*)

Medium to large clean, warm streams

Flight periods late May - late June

Bright green and black dragonfly with a **cobra-like clubtail**, body ~4.3 cm (1.6 in) long with yellow dorsal spots

Adults will patrol rivers and forage in nearby wetlands, lowland forests, and mature upland forests with closed canopies and low understories; prefer streams up to 1 m deep (3.3 ft), with substrate of gravel, sand, and cobble



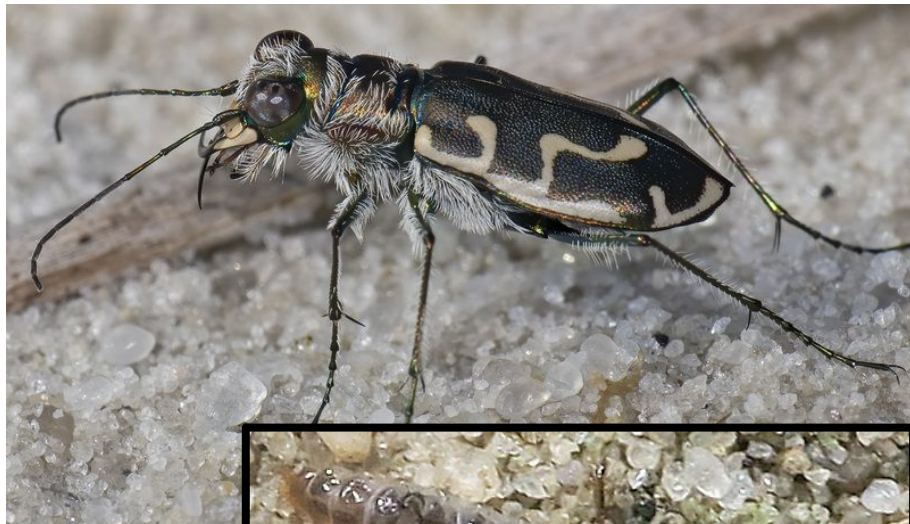
Hairy-necked Tiger Beetle (*Cicindela hirticollis rhodensis*)

Sand beaches along Lakes Superior and Michigan

Adults active mid May - Sept, but most abundant June - Aug

Larvae burrow into sands that are moist, but not swamp, very picky and will leave if too wet or dry; adults may move to vegetated stabilized upper beach to forage

10-15 mm long, dull to reddish brown, freshly emerged adults have large tuft of white “hairs”



Larvae - head covers top of burrow



Incurvate Emerald (*Somatochlora incurvata*)

Spring-fed bogs, poor fens, and heaths; Larvae prefer central poor fens with sphagnum moss

Flight periods mid July - late Aug

Average around 6.3 cm (2 in.) long, with a yellow-brown face with dark, metallic greenish markings and green eyes; upper body is brown with metallic blue-green reflections and yellow-brown spots on each side; lower body is black with a dull greenish sheen, with dorsal pale areas and yellow spots



© 1998 Jeremiah Trimble



AQUATIC ANIMALS

5 species

Considerations for surveying:

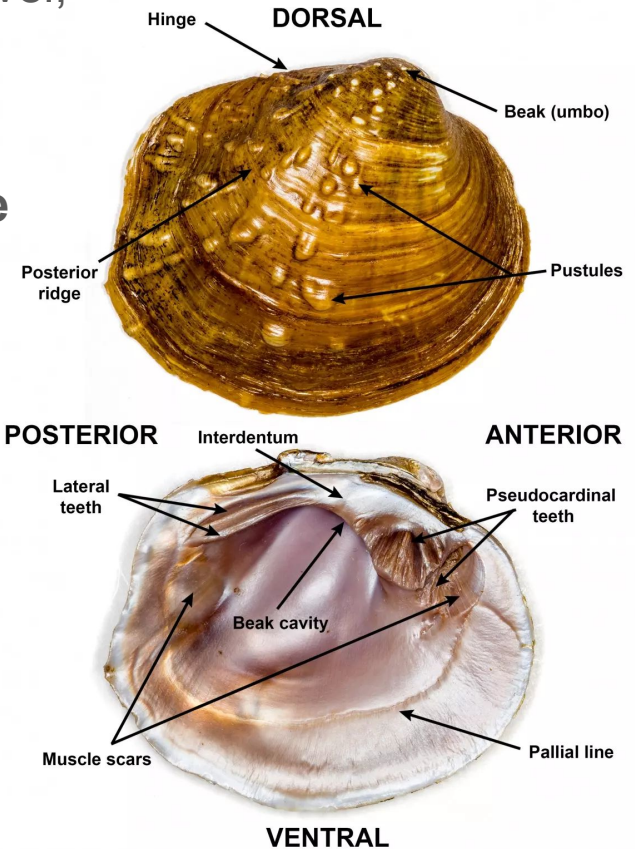
- Slow-moving streams are easier to see into
- Polarized sunglasses may help reduce glare
- Nets for catching and observing fish
- Binoculars for sighting wood turtles

Purple Wartyback Mussel (*Cyclonaias tuberculata*)

Large rivers with stable substrate containing rock, gravel, and sand in swift current

Known hosts: bullhead and catfish species

Shell can be up to 13 cm (5 in) long, rounded, compressed, and thick; **has many bumps across the posterior $\frac{2}{3}$** ; outside of shell is yellowish or greenish-brown, **inside is purple**; has a deep and compressed beak cavity and heavy teeth



Cherrystone Drop Snail (*Hendersonia occulta*)

Algific or cool, moist, shaded sites of cliffs without substantial talus or ice; wooded alluvial-soil banks and bluffs

Early April - Late Sept; easiest to find just after rain

Small (5-8mm / 0.2-0.3in) in diameter and height with a reddish-brown helicoid shell (low, flattened spiral); 4.5-6.5 whorls, curve to right, increase in diameter; shell has crescent shaped opening with **no central opening at the base**



Pugnose Shiner

(*Notropis anogenus*)

Weedy shoals of glacial lakes and low-gradient streams over bottoms of mud, sand, cobble, silt, and clay

Spawning mid May - July

Small and slender with large eyes and **near vertical mouth**; silvery with dark lateral band across snout, eye, and to a dark wedge-shaped spot on the base of their tail; averages 4.6 cm (1.8 in) long; 8-ray dorsal fins distinguish them from *Opsopoeodus emiliae*; similar to many other species, but **distinctively has the superior, strongly slanted to nearly vertical mouth**
Will be very difficult to find without capture



P. Schmidt



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Konrad P. Schmidt



Longear Sunfish (*Lepomis megalotis*)

Clear, shallow, moderately warm, still waters in streams and sometimes lakes; in or near vegetation

Spawning late May - mid July, sometimes into Aug

Long opercular flap, appears as a “long ear,” relatively small sunfish (<12 cm / 4.7 in), 2 dorsal fins broadly joined and appear as 1

May be difficult to identify from above the water, males easier to spot if brighter turquoise color.



Wood Turtle ([*Glyptemys insculpta*](#))

Rivers and streams with adjacent riparian wetlands and upland deciduous forests

Active when temperatures reach 50 F (mid March - late Oct)

Forage in open wet meadows or in shrub-carrs dominated by speckled alder; typically remain within 300m of water

See [Wood Turtle Survey Tips](#) for finding them



BIRDS

14 species

All species links have a lot of
useful ID info

Considerations for surveying:

- Look for nests in suitable habitat
- Binoculars for sighting flying birds
- App Merlin for recording and identifying bird calls

Upland Sandpiper ([*Bartramia longicauda*](#))

Grasslands with low to moderate forb cover, <5% woody cover, moderate grass cover, moderate litter cover, and little bare ground

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

Breeding habitats are commonly lightly grazed pastures, old fields, idle upland grasslands, barrens, and hayfields for nesting
Foraging occurs on heavily grazed pasture, hayfields, fallow fields, and row crops

[CALLS](#)

[SIGHTINGS](#)



Red-shouldered Hawk (*Buteo lineatus*)



Larger stands of older-aged to mature bottomland hardwoods along riparian areas, deciduous swamps, and northern hardwoods or mixed deciduous-coniferous upland forests with wetland pockets or ephemeral ponds within or nearby

Medium sized, broad, rounded wings, fan-shaped tails; in-flight wingtips seem to “reach” forward

Adults are colorful with dark-and-white checkered wings and warm reddish barring on breast; **narrow, pale crescents near wingtips in flight**

[CALLS](#)

[SIGHTINGS](#)



Juvenile

Spruce Grouse

(*Canachites canadensis*)

Evergreen forests of mountains, prefers spruce, jack pine, an lodgepole pine; use younger, regenerating forests with a dense understory more than old growth

Chicken-like with a small bill, short but thick legs, and medium-length tail that fans out into a semicircle; females are mottled brown, gray, gold, black, and white; males are similar, but with more black and variable white feathering below

Forage on ground; almost always walking rather than in flight

[CALLS](#)

[SIGHTINGS](#)



Henslow's Sparrow (*Centronyx henslowii*)

Wet meadows, weedy pastures, and lowland prairie; have moved into cultivated hayfields; large fields of tall, dense grass away from woody vegetation and trees; frequently found in fire-maintained pine savannas

Small with a large, flat head, large bill, and short, spiky tail; tan and buff marked with sharp black streaks; **greenish-olive wash on cheek**, with a yellow spot between the eye and beak; **neat black streaks on breast** with whitish belly

Extremely secretive and will be very difficult to spot; sing most actively at dawn/dusk

[CALLS](#) [SIGHTINGS](#)



Piping Plover (*Charadrius melodus*)

Along lakeshores, rivers, and alkali wetlands; nest above the high water line in sandy areas with sparse vegetation

Round and stocky with round heads and large dark eyes; short, stubby bill; **sandy grayish brown** with white underparts and a black, often broken, broken collar; orange bill with a black tip, black line on forehead

Nests and eggs blend in extremely well with sand, so exercise extreme caution



[CALLS](#) [SIGHTINGS](#)



Black Tern (*Chlidonias niger*)

Freshwater wetlands, dense marshes at edges of shallow lakes of open prairies or northern forests; normally choose marshes >50 acres for nesting

Small seabird with a thin, pointed bill, long pointed wings, shallowly forked tail, and short legs; **dark gray above with black heads and undersides**; pale underwings and undertail coverts; non-breeding adults are gray above and whitish below, with dusky crown, ear-patch, and mark at side of breast; juveniles look similar



Juvenile



Build **floating nests** in still water where the surface is half-covered in emergent vegetation; often use areas with floating, dead vegetation

[CALLS](#) [SIGHTINGS](#)



Yellow Rail (*Coturnicops noveboracensis*)

Shallow marshes with fairly short vegetation; nest in shallower water and shorter vegetation

Vegetation in nesting areas: *Carex*, *Scirpus*, *Juncus*

Birds in nesting areas: Le Conte's and Nelson's Sparrows, Sedge Wrens, and Wilson's Snipe

Very small (robin sized), chickenlike, long legs, short neck, small head, short, blunt bill; brownish-yellow, mottled with dark streaks and thin white bars on top; face and breast are paler yellow with dark smudge on cheek; yellowish bill; white underwings and white patches on trailing edge of upperwing



Juvenile

Calls from males usually heard on spring nights, often mistaken for insects; **rarely flies**

[CALLS](#) [SIGHTINGS](#)



Acadian Flycatcher

(*Empidonax virescens*)

Undisturbed mature forest; streams, wooded ravines, and river bottoms; sensitive to forest fragmentation

Nests are placed in a horizontal fork near the end of a slightly drooping branch of a small tree or shrub (10-30 m / 33-100 ft off the ground); small hammocks made of spiderwebs/silk with strips of bark, twigs, and grasses; **nests often have “streamers” hanging below them**

Small with a long tail, large, peaked head and a broad, flat bill; **sits in a distinct upright posture; long wings for a flycatcher;** olive-green above with whitish eyering and underparts, dark wings with two distinct white bars, dark bill above and orange-yellow below

Rarely seen in northern Wisconsin



Nest



CALLS

SIGHTINGS

Peregrine Falcon

(*Falco peregrinus*)

Breed in **open landscapes with cliffs** (including skyscrapers) for nest sites, up to 12,000 ft, and along rivers and coastlines or in cities

Large falcons, long, pointed wings and long tail; blue-gray above with barred whitish and black underwings and flank, **dark head with thick “sideburns”**; bright legs, eyering, and beak

Juveniles have buffy underparts with dense dark brown streaks, brown mask, and paler eyebrows

Differs from similar species in their **distinct barred patterning**

Juvenile



[CALLS](#)

[SIGHTINGS](#)



Caspian Tern ([Hydroprogne caspia](#))

Breed on ocean coasts, barrier islands, and interior lakes and rivers; **gather in nesting colonies** on flat, open areas with little vegetation, often sandy or pebbly and near other colonial shorebirds

Largest of all terns, heavy-bodied, large head; **thick, straight, pointed bill**; shallowly forked tail; long, pointed wings are broad for a tern; white overall, pale gray upper wings; from below, outer primaries are dark gray; **breeding adults have black crown**; juveniles have partially black crown with grayish speckling; **bright red bill** with a dusky tip; blackish feet and legs



Juvenile

[CALLS](#)
[SIGHTINGS](#)



Loggerhead Shrike (*Lanius ludovicianus*)

Open country with short vegetation and well-spaced shrubs/low trees, prefers those with spines or thorns; frequent agricultural fields, pastures, old orchards, riparian areas, savannas, prairies, golf courses, and cemeteries

Smaller than a robin; large, blocky heads, **thick bill with a small hook**; long, rounded tail; gray with black mask and **white flashes** in **black wings**; wide mask, black bill, and white throat; black tail with white corners; black wings with white at base of primaries, creates “handkerchief” spot when at rest

Sit on low, exposed perches; **tend to hover**; rapid wingbeats



CALLS

SIGHTINGS

Distinct white flashes on underwings and outer tail feathers



Cerulean Warbler (*Setophaga cerulea*)

Older deciduous forests with tall trees; prefer white oak, cucumber magnolia, bitternut hickory, and sugar maple for nesting and foraging; **avoid red oak and red maple**

Small, perches horizontally; small, round bill and shorter tail than other warblers; **males are sky-blue above** with 2 white wing bars, dark streaking on back, thin blue neck band, and blue streaking on sides of white belly; **females are bluish green above** with slight yellow wash below, lack streaked sides and neck band, have whitish eyebrow and 2 white wing bars

Found **hopping along branches** in **high canopy**, foraging near gaps

Rarely seen in northern Wisconsin

[CALLS](#)

[SIGHTINGS](#)



Kirtland's Warbler

([*Setophaga kirtlandii*](#))

Young, dense jack pine scrublands **exclusively**; trees 5-15 years old and 1.5-4.5 m / 5-15 ft tall

Fairly large warbler, short tail; males are **steel gray** with black streaks on upper parts and **lemon yellow underparts**; gray head with black mask and incomplete white eyering; females/immatures are similar but more washed out/brownish, extensive streaking on breast, no mask

Move quickly between trees, **constantly pump tails**

[**CALLS**](#)

[**SIGHTINGS**](#)



Common Tern (*Sterna hirundo*)

Nest on rocky islands, barrier beaches, and saltmarshes; gather over warmer waters with high densities of American sand lance in the spring, and tuna in the fall

Long, narrow, angular wings, pointed wingtips; straight, slender bill; **forked tail**; short legs; smaller than a Caspian Tern; pale gray with a **black cap that extends to back of neck**; gray belly; orange bill with black tip; orange legs; outer primaries are dark

Vocal and **not shy**, rest out in the open

[CALLS](#)

[SIGHTINGS](#)



MAMMALS

4 species

Considerations for surveying:

- *Be careful of getting near wild bats! Rabies risk*
- Surveying at night: red light headlamps, stronger flashlights when necessary

Little Brown Bat (*Myotis lucifugus*)

Roosts in warm microclimates (tree snags, bat houses, and buildings) where females can form large colonies; **forages over open water and along edge habitat**

Medium-sized, average 8.3-9.1 cm (3.3-3.6 in); dark brown to olive brown glossy dorsal fur; **lighter hue ventral fur**; dark brown wing membranes, ears, and snout; short ears with blunt and rounded tragus (skin in front of ear canal)

Most active a few hours after dusk and before dawn

Can be difficult to distinguish from Big Brown Bat



Big Brown Bat (*Eptesicus fuscus*)

Mixed landscapes: deciduous woodlands, farmlands, edges near water and urban areas; females can form large colonies in bat houses and buildings

Dark brown dorsal fur coat; can have light brown ventral fur; large head, broad nose, fleshy lips, and larger eyes; thick, short, furred at base ears; blackish-brown membranes on ears, wings, and snout; average 8.7-13.8 cm (3.4-5.4 in) in length

Foraging occurs at night in forest corridors, clearing, and near open water; most active the first few hours after dusk; **can be seen in daytime during summer**

Can be difficult to distinguish from Little Brown Bat



Northern Long-eared Bat (*Myotis septentrionalis*)

Forested habitats (fire-dependent forests, mesic hardwoods, and floodplain forests); roost near water sources and foraging grounds

Medium-sized, **relatively long ears with long sharply pointed tragus**; dull brown back fur, pale grayish brown underside; dark membranes; **calcar** (growth from ankle that helps support tail membrane for flight) **is slightly keeled**; average length of 7.8-9.5 cm (3.1-3.7 in)

Forage over water, in forest clearings, and under tree canopies; takes place throughout the night, **peaks before midnight and just before sunrise**



American Marten (*Martes americana*)

Mature, dense conifer forests, mixed conifer-hardwood, and hardwood dominate forests

Young are born late March - April

Yellow chest and golden brown fur, but can vary to be darker brown to almost black; long body and rounded ears; around 60 cm (24 in) in length including tail; head is usually lighter, while legs and tails are darker than rest of body

Activity varies throughout day, but depends mostly on prey species, temperatures, etc.



References

- [Wisconsin DNR](#)
- [Minnesota DNR](#)
- [Cornell Lab](#)
- [USFWS](#)
- [Botanical Illustrations](#)