Using Reference Sites to Create Species Lists

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Wisconsin Valley Improvement Co.

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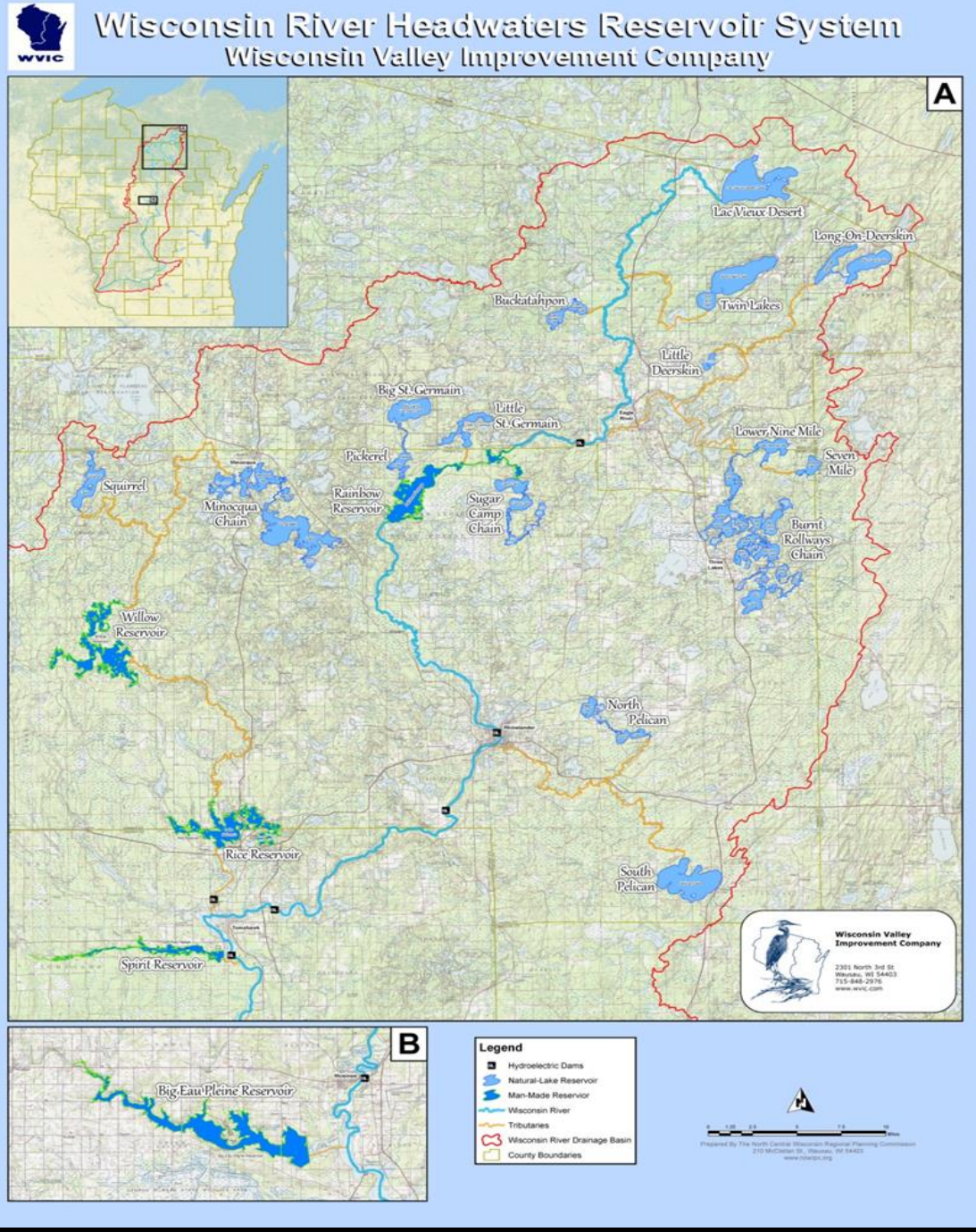
Own & Operate:

21 Storage Reservoirs
5 Man Made Res
16 Natural Lakes

- Store Water during High-Flow Periods (Spring/Fall)
- Release Water During Low-Flow Periods (Summer/Winter)
- Implement a Variety of Environmental Plans
  - Land Mgmt/Erosion Control
  - Water Quality
  - Fish & Wildlife/AIS
  - Cultural/Historic Resources
  - Recreation Mgmt



Using Reference Sites as a Basis for Creating Species Lists

Basic Site Assessment

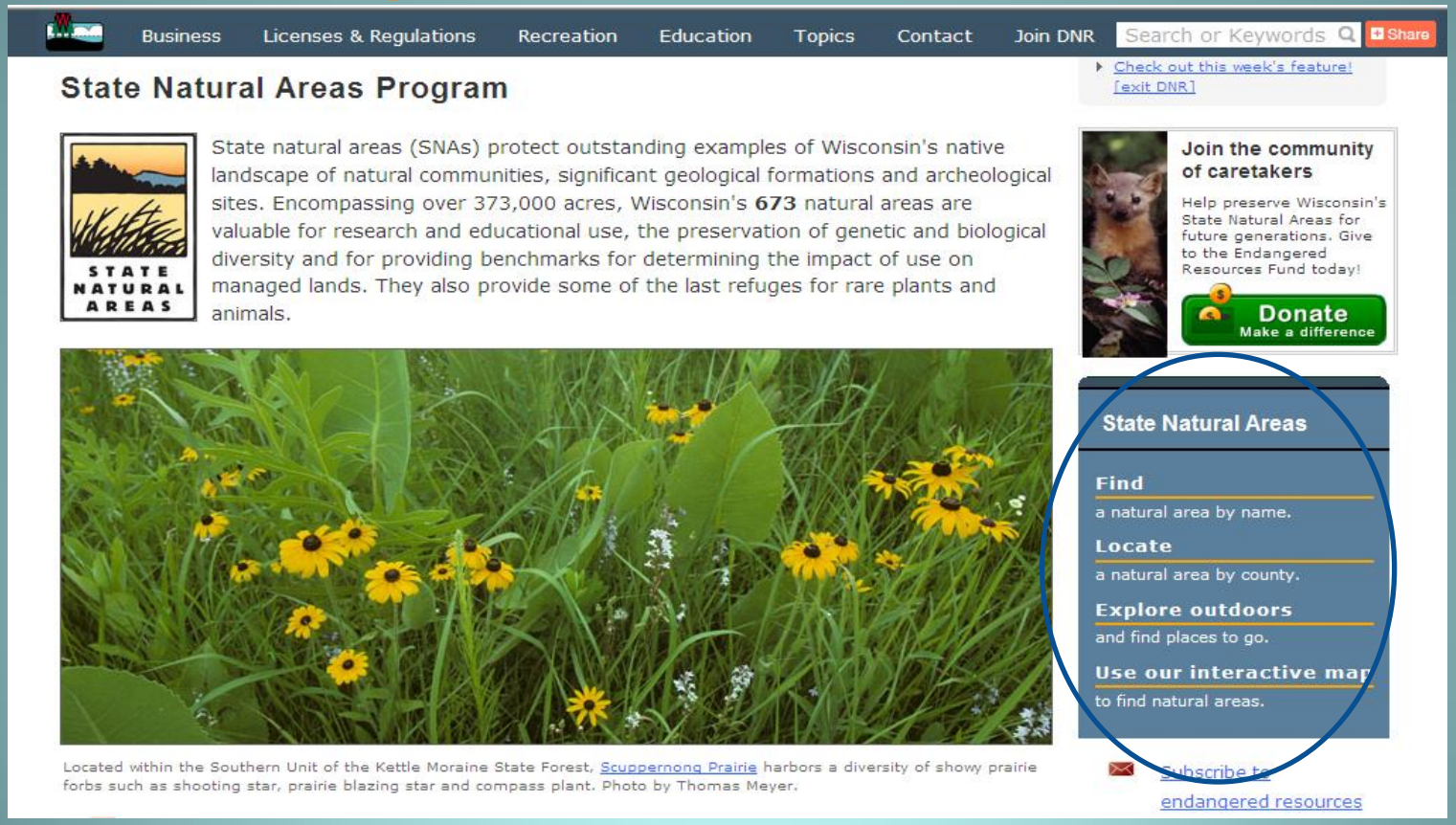
- Soil Type-
  - Loamy Sand
- Aspect-
  - NW
- Sun Exposure-
  - Shade/Part Shade & Sun
- Gradient-
  - Level Area and 1:5 slope
- Mature Canopy Trees-
  - Red & White Pine
- "Microsites" Variations in the Landscape Moist/Cool Pockets

Choosing a Reference Site

- Match Site Conditions
- Mimic Undeveloped Shorelines & Natural Areas
- Comparable Natural Communities
- Avoid disturbed areas near homes & roads where ornamentals & Invasives are prevalent

Ideal Reference Sites

- State Natural Areas
- http://dnr.wi.gov/topic/Lands/naturalareas/



State natural areas by county

Click on a county on the map or choose a county name from the list below to find a state natural area.

State Natural Areas

Find
a natural area by name.

Locate
a natural area by county.

Explore outdoors
and find places to go.

Use our interactive map
to find natural areas.

Natural areas

- Buy a guidebook
- Establishment and protection
- Natural Area Spotlight
- Natural Areas Preservation Council
- Research permit
- Site inspection report
- State Natural Areas listed by number [PDF]
- Visitation guidelines

Related links

- Endangered resources
- NHC annual report
- Rare plants, animals, natural communities
- Wisconsin Oak Savanna Alliance [exit DNR]
- Wisconsin Department of

Business | Licenses & Regulations | Recreation | Education | Topics | Contact | Join DNR

Big Island
Blomberg Lake
Brant Brook Pines and HardWoods
Crex Sand Prairie (Barrens)
Ekdall Wetlands
Fish Lake Meadow
Fish Lake Pines
Norway Point Bottomlands
Kohler-Peet Barrens
Reed Lake Meadow
St. Croix Ash Swamp
St. Croix Seeps

Calumet County
High Cliff Escarpment
Stockbridge Ledge Woods

Chippewa County
Chippewa Moraine Lakes
Deer Fly Swamp
Dorothy Lake
Jean Brunet Woods
Lawin Sedge Meadow
Marsh Miller Cedars
North of North Shattuck Lake
Ohmart Wetlands
Plagge Woods
Tealey Creek Cedars
Town Line Lake and Woods

Clark County
Arbutus Oaks
Blue Swamp
Schmidt Maple Woods

Back to Top

Columbia County
Audubon Goose Pond
Baraboo River Floodplain Forest
Dells of the Wisconsin River
French Creek Fen
Gibraltar Rock
Grassy Lake
Lost Lake

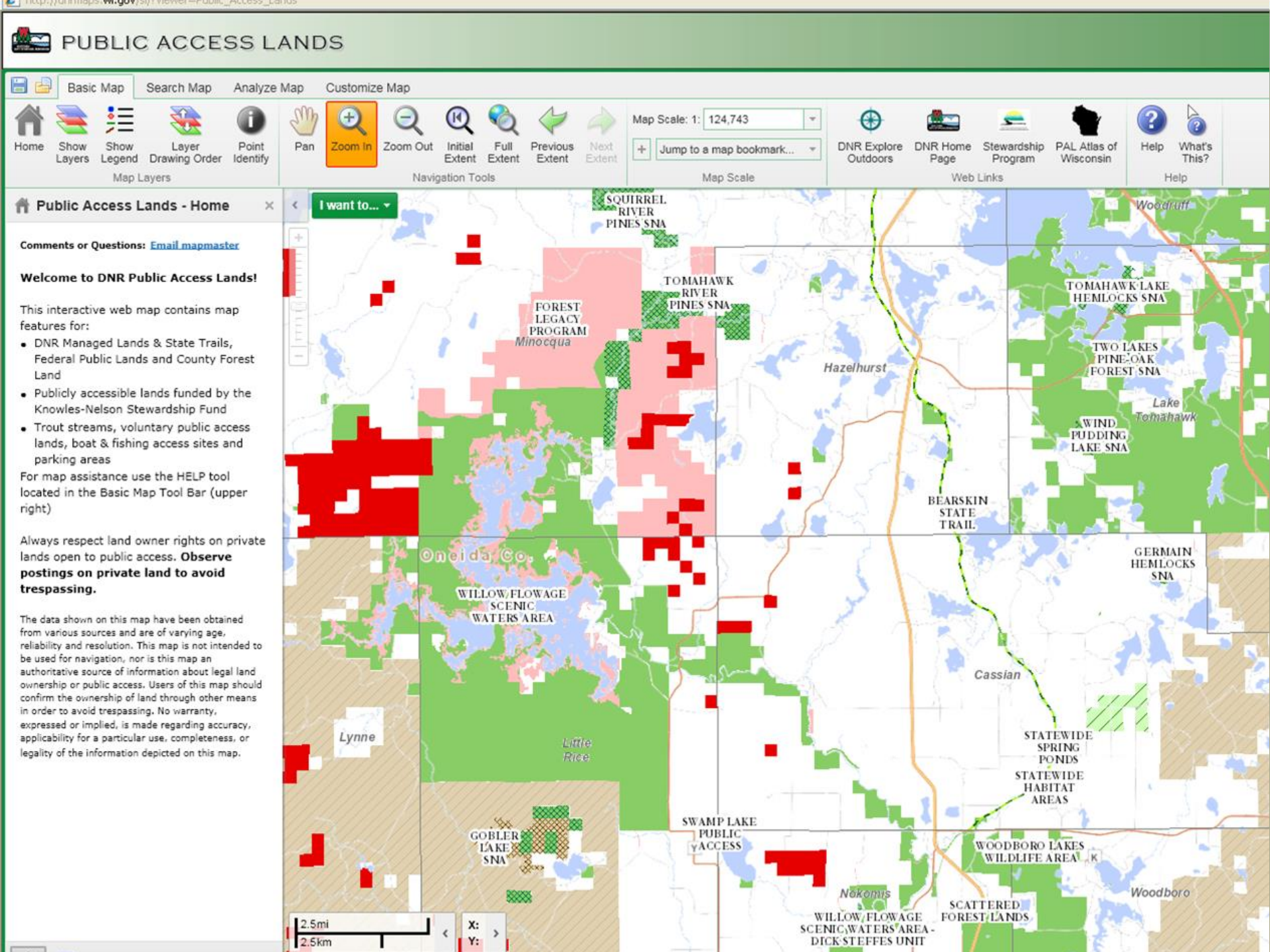
Camp Five Lake
Cathedral Pines
Battle Creek Hemlocks
South Branch Beech Grove
Lake Lackawanna
Kelly Lake Hemlocks
Peshtigo Brook Meadow and Woods

Back to Top

Oneida County
Atkins Lake
Big Swamp
Enterprise Hemlocks
Finnerud Pine Forest ★
Germain Hemlocks
Gobler Lake
Holmboe Conifer Forest
Lower Tomahawk River Pines
One Stone Lake Hemlocks
Rice Lake
Stone Lake Pines
Wind Pudding Lake
Pat Shay Lake
Patterson Hemlocks
Rainbow Wetlands
Shallow Lake
Spur Lake
Squirrel River Pines
Sugar Camp Hemlocks
Tomahawk Lake Hemlocks
Tomahawk River Pines
Two Lakes Pine-Oak Forest
Upper Kaubashine Creek

Outagamie County
Deer Creek Tamarack Bog
Hortonville Bog
LaSage Bottoms
Shaky Lake

Ozaukee County
Cedarburg Bog
Cedarburg Beech Woods
Fairy Chasm ★
Kurtz Woods
Riveredge Creek and Ephemeral Pond
Sapa Spruce Bog ★


PUBLIC ACCESS LANDS
Basic Map
Search Map
Analyze Map
Customize Map
Home
Show Layers
Show Legend
Layer Drawing Order
Point Identify
Map Layers
Pan
Zoom In
Zoom Out
Initial Extent
Full Extent
Previous Extent
Next Extent
Navigation Tools
Map Scale: 1: 124,743
Jump to a map bookmark...
Map Scale
DNR Explore Outdoors
DNR Home Page
Stewardship Program
PAL Atlas of Wisconsin
Web Links
Help
What's This?
Help
Public Access Lands - Home
I want to...
Comments or Questions: Email mapmaster
Welcome to DNR Public Access Lands!
This interactive web map contains map features for:
DNR Managed Lands & State Trails, Federal Public Lands and County Forest Land
Publicly accessible lands funded by the Knowles-Nelson Stewardship Fund
Trout streams, voluntary public access lands, boat & fishing access sites and parking areas
For map assistance use the HELP tool located in the Basic Map Tool Bar (upper right)
Always respect land owner rights on private lands open to public access. Observe postings on private land to avoid trespassing.
The data shown on this map have been obtained from various sources and are of varying age, reliability and resolution. This map is not intended to be used for navigation, nor is this map an authoritative source of information about legal land ownership or public access. Users of this map should confirm the ownership of land through other means in order to avoid trespassing. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map.
SQUIRREL RIVER PINES SNA
TOMAHAWK RIVER PINES SNA
FOREST LEGACY PROGRAM
Minocqua
Hazelhurst
Woodruff
TOMAHAWK LAKE HEMLOCKS SNA
TWO LAKES PINE-OAK FOREST SNA
Lake Tomahawk
WIND PUDDING LAKE SNA
BEARSKIN STATE TRAIL
Oneida Co.
WILLOW FLOWAGE SCENIC WATERS AREA
GERMAIN HEMLOCKS SNA
Cassian
Lynne
Little Rice
STATEWIDE SPRING PONDS
STATEWIDE HABITAT AREAS
SWAMP LAKE PUBLIC ACCESS
GOBLER LAKE SNA
WOODBORO LAKES WILDLIFE AREA
Nokomis
Woodboro
SCATTERED FOREST LANDS
WILLOW FLOWAGE SCENIC WATERS AREA - DICK STEFFES UNIT
2.5mi
2.5km
X:
Y:

Wisconsin State Natural Areas Program

Tomahawk River Pines (No. 239)

Photo by R. Eckstein

Overview | Access | Ownership | Maps | Management | Recreation

Location

Oneida County. T38N-R5E, Sections 11, 12, 14, 15, 22, 23, 27. 1,040 acres.

Description

Tomahawk River Pines features several undisturbed stands of large red pine located along a wild and undeveloped reach of the Tomahawk River. The even-aged pines originated following wildfire and are gradually succeeding to white pines, which dominate the understory. The pines are growing on elevated islands separated from the forested uplands by vast wetlands of alder shrub swamp and swamp conifers. These isolated red pine islands provide nesting sites for bald eagles and harbor a characteristic groundlayer with bracken fern, wintergreen, and barren strawberry. Alder thickets cover most of the wetlands on both sides of the Tomahawk River with a few areas of tamarack and black spruce. The meandering Tomahawk River is a slow, warm, soft water stream containing a diverse snail fauna in the muck bottom but with relatively few aquatic plants. Birds include gray jay, boreal chickadee, alder flycatcher, veery, and pine warbler. Tomahawk River Pines is owned by the DNR and was designated a State Natural Area in 1990.

If you know your plants….

- ID. Groundcover, Shrubs, and Trees
- What's growing where?
- List which species are growing in the Shade/Dappled Shade/Full Sun
- What's growing on slopes/in depressions/on ridges?
- What species are naturally grouped together?
- TAKE PHOTOS to complement notes

If you don't know your plants…

- TAKE PHOTOS to complement notes
- Many plant professionals and amateurs can assist with plant identification.
  - Botany Departments UWSP/UWGB/Madison
  - Land Conservation Depts.
  - UW Extension/DNR
  - Nurseries/Garden Centers
  - Outdoor Education/Interpretive Centers
  - Weird neighbor you never talk to that loves plants

Shrubs

Groundcover

Robert W. Freckmann Herbarium

Vascular Plant Name Search

Family:	
Taxon*:	
Genus:	
Species:	
Common Name:	Barren Strawberry

Search Clear Form

Notes on Searching:

- The search is not case sensitive.
- The contents of the search fields (family, genus, species, and common name) are combined with "and" so that the search results must match every field containing text.
- *Taxon without authors & **must use** "var.", "subsp.", "f." for variety, subspecies, and forma; " X " for named hybrid.
- The family, genus, and species fields are automatically "wildcarded" at the end of the search field; therefore, the query will select all names **beginning** with only the letters entered. For example, typing "ace" in the family field will result in a query which will select only taxa in the **Ace**raceae, and not taxa in all the other families ending in ---**ace**ae.
- The common name field is automatically "wildcarded" at the **beginning** and **end** of the search field; therefore, the query will match any name containing the **string of letters** entered. For example, typing "garlic" will match both "garlic mustard" and "cultivated garlic". All spaces, hyphens, and apostrophes are automatically removed. Lady's slipper, ladys-slipper, and ladysslipper all give the same results.

Robert W. Freckmann Herbarium

Photographer: Kitty Kohout


Emmet J. Judziewicz


Matthew L. Wagner


Matthew L. Wagner


Merel R. Black


Merel R. Black


Christopher Noll

Family Rosaceae

Waldsteinia fragarioides (Michx.) Tratt. subsp. fragarioides

barren-strawberry

***Waldsteinia*:** for German botanist, Francis Adams, Count of Waldstein-Wartenburg

***fragarioides*:** resembling strawberry or *Fragaria*

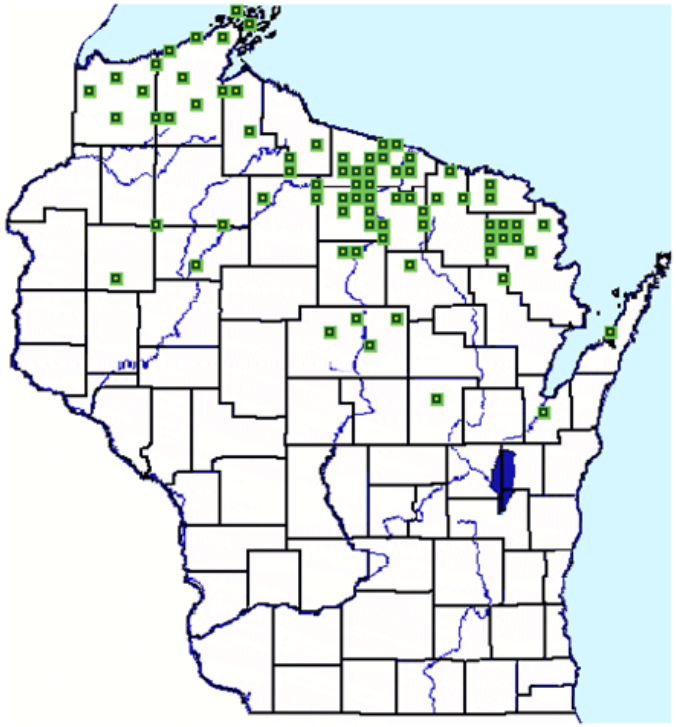
Detailed Distribution:
Town Range Maps
Google Dot Maps

Status: Native
Plant: erect, perennial, 4"-6" tall forb
Flower: **yellow**, 5-parted, 1/3"-3/4" wide; inflorescence a few to several stalked flowers; blooms April-May
Fruit: **dry seed**
Leaf: basal, wider at the top, on stalks about the same length as the leaves, 3-parted into toothed and shallow-lobed leaflets
Habitat: moist to dry; pine forests, clearings
(Glossary)

More Information	Natural Communities	Herbarium Specimens
All Waldsteinia list	Google- Images or Text	

Robert W. Freckmann Herbarium

Waldsteinia fragarioides (Michx.) Tratt. subsp. fragarioides Detailed Distribution:



To print use "Print Screen" and a picture editor

The small county map reflects information from Wisconsin Botanical Information System (including records with only county information) as well as the Wisconsin Floristic Atlas Project's hand maps. Therefore there might be county records (when available-▲) not reflected in the larger map.

Change Background map to:

Original vegetation

Counties | Soils | Bedrock | Ice Age Deposits | Land Forms | Ecological Landscapes | Early vegetation

(NEW) Change Dates: Enter a year between 1800 and the present. The resulting map will display all collection to that date. These results reflect only databased collections with valid dates.

Year: 0 Last search:

Search Clear Form

Other Maps

Google Dot Maps

USA State Distribution Map - USDA Plants Web Site (scroll down for map) (New Window)

Wisconsin Reference Maps: - Geology, Vegetation, Climate, Soils, etc.

Map with Wisconsin County Names

Detailed Distribution Map Information

This map reflects the specimen location information from the Wisconsin Botanical Information System database and attemps to line up the original Town-Range Survey map from 1833 to 1866 with a computer generated table grid over the map of Wisconsin. Because the original Town Range lines are inexact, these "dots" might be somewhat skewed. Also townships near the borders of the state might only be partial, so the "dot" might center outside the state's boundry.

Holding the mouse over the "dot" **identifies the Town-Range.**

Clicking(new window) on the "dot" will link to a list of all specimen accession numbers for this location. You can then link to the individual **specimen's label data.**

Arrange this window side-by-side with the specimen-list window so you can easily go back and forth

Robert W. Freckmann Herbarium

Photographer: Kitty Kohout


Emmet J. Judziewicz


Matthew L. Wagner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Merel R. Black


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Robert W. Freckmann Herbarium

University of Wisconsin - Stevens Point

Natural Communities
Keyword: Northern Upland Forest

Click on community name for photo gallery.

Mesic cedar forest

This is a rare upland forest community of mesic sites in northern Wisconsin, characterized by white cedar (Thuja occidentalis) and various associates including hemlock (Tsuga canadensis), white spruce (Abies balsamea), yellow birch (Betula alleghanensis), and white pine (Pinus strobus). The herb layer may contain canada mayflower (Maianthemum canadense), twinflower (Linnaea borealis), clubmosses (Lycopodium spp.), and others. More information is needed on this community type.

Northern dry forest

This forest community occurs on nutrient-poor sites with excessively drained sandy or rocky soils. The primary historic disturbance regime was catastrophic fire at intervals of decades to approximately a century. Dominant trees of mature stands include jack and red pines (Pinus banksiana and P. resinosa) and/or Hill's oak (Quercus ellipsoidalis) . Large acreages of this forest type were cut and burned during the catastrophic logging of the late 19th and early 20th century. Much of this land was then colonized by white birch (Betula papyrifera) and/or quaking aspen (Populus tremuloides, or converted to pine plantations starting in the 1920s. Common understory shrubs are hazelnuts (Corylus spp.), early blueberry (Vaccinium angustifolium and brambles(Rubus spp.); common herbs include bracken fern (Pteridium aquilinium), starflower (Trientalis borealis), barren-strawberry (Waldsteinia fragarioides), cow-wheat (Melampyrum lineare), trailing arbutus (Epigaea repens), and members of the shinleaf family (Chimaphila umbellata, Pyrola spp.). Vast acreages of open "barrens" were also planted to pine, or naturally succeeded to densely stocked “dry” forests.

Northern dry-mesic forest

In this forest community, mature stands are dominated by white and red pines (Pinus strobus and P. resinosa), sometimes mixed with red oak (Quercus rubra) and red maple (Acer rubrum). Common understory shrubs are hazelnuts (Corylus spp.), blueberries (Vaccinium angustifolium and V. myrtilloides), wintergreen (Gaultheria procumbens), partridge-berry (Mitchella repens); among the dominant herbs are wild sarsaparilla (Aralia nudicaulis), Canada mayflower (Maianthemum canadense), and cow-wheat (Melampyrum lineare). Stands usually occur on sandy loams, sands or sometimes rocky soils.

Northern mesic forest

This forest complex covered the largest acreage of any Wisconsin vegetation type prior to European settlement. Sugar maple (Acer saccharum) is dominant or co-dominant in most stands, while hemlock (Tsuga canadensis) was the second most important species, sometimes occurring in nearly pure stands with white pine (Pinus strobus). Beech (Fagus grandifolia) can be a co-dominant with sugar maple in the counties near Lake Michigan. Other important tree species were yellow birch (Betula allegheniensis), basswood (Tilia americana), and white ash (Fraxinus americana). The groundlayer varies from sparse and species poor (especially in hemlock stands) with woodferns (especially Dryopteris intermedia), bluebead lily (Clintonia borealis), clubmosses (Lycopodium spp.), and Canada mayflower (Maianthemum canadense) prevalent, to lush and species-rich with fine spring ephemeral displays. After old-growth stands were cut, trees such as quaking and bigtoothed aspens (Populus tremuloides and P. grandidentata), white birch (Betula papyrifera), and red maple (Acer rubrum) became and still are important in many second-growth Northern Mesic Forests. Several distinct associations within this complex warrant recognition as communities, and draft abstracts of these are currently undergoing review.

Robert W. Freckmann Herbarium

University of Wisconsin - Stevens Point

Natural Communities
Keyword: Pine Barrens

Click on community name for photo gallery.

Central sands pine-oak forest

This forest community is associated with the Central Sands ecoregion on dry to dry-mesic sites with acid sandy soils. The dominants are white and red pines (Pinus strobus and P. resinosa), oaks (Quercus alba, Q. rubra, and Q. velutina), and on dry-mesic sites, red maple (Acer rubrum). The understory is typically depauperate consisting primarily of huckleberry (Gaylussacia baccata), early blueberry (Vaccinium angustifolium), bracken fern (Pteridium aquilinium), wood anemone (Anemone quinquefolia) and Penn sedge (Carex pensylvanica). Jack pine (Pinus banksiana) is sometimes co-dominant on the driest sites (jack pine – black / Hills oak dominated stands maybe split out in the future).

Great Lakes barrens

In Wisconsin, this variant of pine savanna is known from only one sandy site on Lake Superior. The dominant trees in this open stand are wind- and fire-deformed trees, red pines (Pinus resinosa) with white pine (P. strobus) also present. The understory consists of dense growths of lichens with scattered thickets of common juniper (Juniperus communis), early blueberry (Vaccinium angustifolium) and huckleberry (Gaylussacia baccata). Other common plants are hairgrass (Deschampsia flexuosa), ticklegrass (Agrostis hyemalis), false-heather (Hudsonia tomentosa), and bearberry (Arctostaphylos uva-ursi).

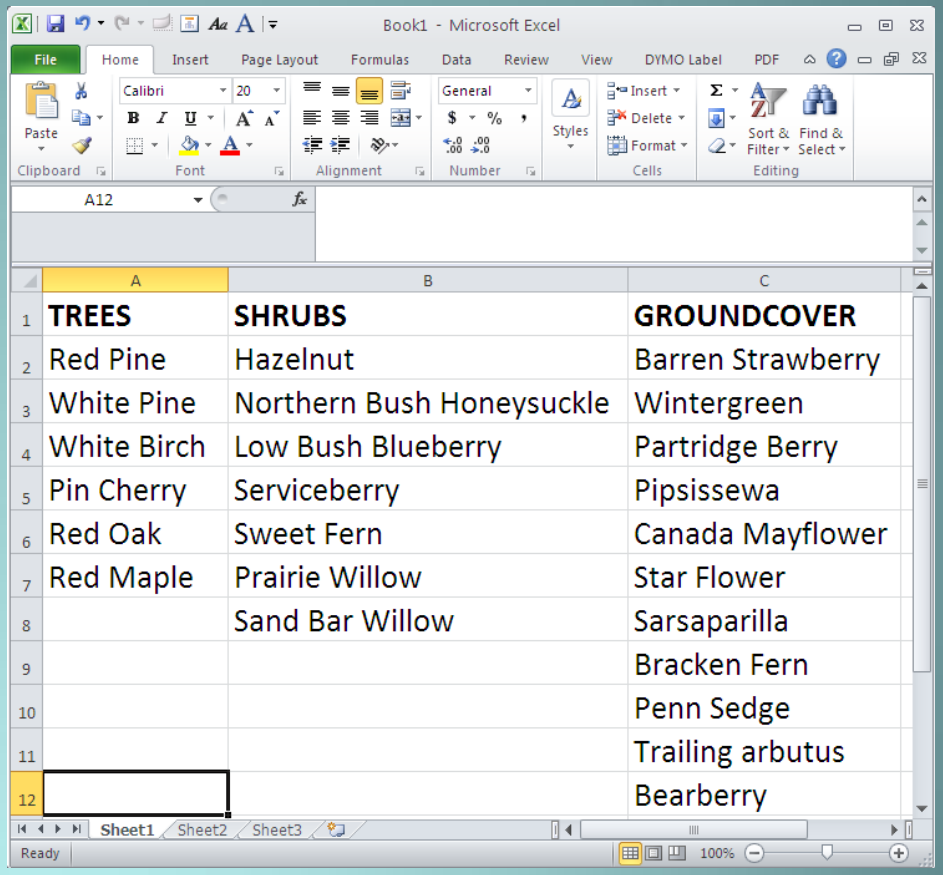
Pine barrens

This savanna community is characterized by scattered jack pines (Pinus banksiana), or less commonly red pines (P. resinosa), sometimes mixed with scrubby Hill's and bur oaks (Quercus ellipsoidalis and Q. macrocarpa), interspersed with openings in which shrubs such as hazelnuts, (Corylus spp.) and prairie willow (Salix humilis) and herbs dominate. The flora often contains species characteristic of "heaths" such as blueberries (Vaccinium angustifolium and V. myrtilloides), bearberry (Arctostaphylos uva-ursi), American hazelnut (Corylus americana), sweet fern (Comptonia peregrina), and sand cherry (Prunus pensylvanica). Also present are dry sand prairie species such as june grass (Koeleria macrantha), little bluestem (Schizachyrium scoparium), silky and sky-blue asters (Aster sericeus and A. azureus), lupine (Lupinus perennis), blazing-stars (Liatris asper and L. cylindracea), and western sunflower (Helianthus occidentalis). Pines may be infrequent, even absent, in some stands in northern Wisconsin and elsewhere because of past logging, altered fire regimes, and an absence of seed source.

Offsite resources:
Virginia Kline's collection of the Vegetation of Wisconsin
Michigan Natural Features Inventory Community descriptions

Species Lists

- Include Latin Names
- Divide Sp. Into Areas
  - Ie: Bank/Upland/ etc
- Discuss w/Stakeholders
- Do these plants meet the needs of the project?



	A	B	C
1	**TREES**	**SHRUBS**	**GROUNDCOVER**
2	Red Pine	Hazelnut	Barren Strawberry
3	White Pine	Northern Bush Honeysuckle	Wintergreen
4	White Birch	Low Bush Blueberry	Partridge Berry
5	Pin Cherry	Serviceberry	Pipsissewa
6	Red Oak	Sweet Fern	Canada Mayflower
7	Red Maple	Prairie Willow	Star Flower
8		Sand Bar Willow	Sarsaparilla
9			Bracken Fern
10			Penn Sedge
11			Trailing arbutus
12			Bearberry

Involve Stakeholders

- Discuss plant choices with plan designer, contractor, and property owners Before Purchasing…
  - Did the contractor plan on bringing in different soil that changes the appropriateness of selected plant species?
  - Is the property owner allergic to…..Sweet Fern & Red Pine?
  - Do these species reflect the overarching goal of the plan?
  - Are additional species needed for:
    - Erosion Control?
    - Wildlife Habitat?
    - Aesthetic Appeal?

Substitutions: Balancing Natural Communities with Site Specific Concerns

- Sometimes site conditions dictate a need for additional species not found in the natural community.
- Bioengineering Projects
- Wildlife Habitat Enhancements
- Disturbed Sites
- Property Owner Needs

Discussion Topics:

- Restoration Vs. Revegetation
  - Are we truly restoring shorelines?
  - Setting the stage…Time expectations
- Native vs. "Native"
  - Regional Genotypes…Not all plants are created equal!
  - Importance of Sourcing Local Plant Materials
  - Northern Nurseries: Ontario vs. Texas
- Prairie Plants in the Northwoods?
  - Ecological Appropriateness
  - Site Specific Exceptions
  - Philosophical Debates…
- Appeasing Landowners
  - Managing Expectations
  - Education

Questions?