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Plant Identification Resources

VSP iNaturalist Project:
http://inaturalist.ca/projects/vegetation-sampling-protocol-vsp-d963662a-8166-4da3-90a6-88c2f7ce8788

You can seek assistance and advice on plant identification by joining the VSP iNaturalist Project. First, you need to sign up for an iNaturalist account by going to *iNaturalist.ca*. Then click on "Follow" at the top right of the above URL. The project page is now stored in your "Projects" folder on your iNaturalist account. You will be added as users by the admin, and then you can post plant photos on the VSP iNaturalist Project page.

- Members post photos of unknown and/or known plants:
  - Overall growth form
  - Close-up of fine features
  - Flower or flowering head if present
  - Any additional features which might be helpful to assist in identification (e.g. fuzzy stem, presence of cilia, texture of leaf, etc.
  - Site conditions / habitat description (e.g. cedar swamp)
  - Other mandatory information – Project Area, Plot ID , Specimen ID, Date, Location, Species = Lowest taxonomic level known (even if "Flora")
- Make sure that description contains information on Project Area (e.g. City Name), Plot ID (e.g. 1108), Unknown sp. # (e.g. 1108-Carex1 or 1108-Plant1), and habitat (e.g. Cedar swamp)
- Only VSP crew members added as users by the admin have their photos visible
- Reference online resources or literature to confirm ID

For more information about how to set up the iNaturalist App, and how to use the VSP Project in iNaturalist for plant identification, please refer to "The VSP Field Inventory and Monitoring Tech Pocket Guide (GPS / GIS / Apps)."

Trusted Online Resources:

Websites:

1. Go Botany - New England Wild Flower Society
https://gobotany.newenglandwild.org/full/

- Online dichotomous key for plant ID
- Use full key to select general growth form (e.g. grass-like plants > sedges)
- Use the questions/prompts on the left hand side to narrow down potential matches
- Once options are narrowed down, click on the matching species to view photos and additional information
- If you find a potential match, use other resources to confirm identity
- If you cannot find a match, clear all the filters that you set for the questions and return to viewing all species in this subgroup

2. Ontario Wildflowers
http://www.ontariowildflowers.com/

- Online plant photo and description database for Southern Ontario
- You can search by general growth form (e.g. trees, shrubs, woody vines, etc.), family, specific species, leaf type, flower colour, etc.

3. Ontario Ferns
http://ontarioferns.com/main/index.php

- You can search the species list (by common name), and look up ferns by family, fern groups, leaf divisions, etc.

4. Minnesota Wildflowers
https://www.minnesotawildflowers.info/page/search

- You can search by general growth form (e.g. wildflower, tree, shrub, vine), primary flower color, flower shape, leaf type, etc.

5. Michigan Flora Online - University of Michigan Herbarium
https://michiganflora.net/

- Plant Images and distributions in Michigan and the Great Lakes region

Unknown Plants

Sample Collection for Identification

- Make sure you have the proper equipment, e.g. plastic bags, masking tape for marking unknown plants, hand lens, a plant press, etc.
- When collecting samples: capture the flowering parts, fruiting heads, leaves, stems and roots if possible. Make sure you have each plant sample as complete as possible.
- Label plants with masking tape, and include the date of collection, plot ID and specimen ID.
- Record any other important information such as habitat, flower colour, growth habit (e.g. upright, prostrate, branching, rosette, etc.), and any feature that might not be apparent from the sample.
- Make sure to bunch together grass and sedge specimens with masking tape so blades are not loose. Always label them to avoid confusion.
- Take care as to not damage fruiting heads of grasses and sedges as sometimes a photo is not enough to guarantee proper identification.
- Always take note of the habitat the samples were collected from (i.e. wetland vs. upland) as this may help narrow down species.
- Be aware of species at risk and do not collect these samples if you are unsure.

Plant Sample Preservation

- Before trying to collect a specimen, always photograph the plant before any part is cut.
- If the plant sample is collected for identification purpose and this will take place within a couple of days, refrigerate plant samples right away to maintain freshness.
- If there is a period between collection and identification (i.e. over the 2-week time frame), press the sample shortly after picking them, and use a plant press to preserve it properly.
- Lay the plant specimen in a few sheets of fresh newspaper to absorb the moisture, using additional paper for larger specimens. Re-using newspaper may cause samples to mold faster.
- If blotting paper is available, fold that outside of the newspaper.
- Start layering – from a layer of wood frame on the bottom, alternating cardboard, blotting paper, and then to a specimen in newspaper, followed by another layer of blotter paper.
- If the sample is not fit into a plant press, you can bend the stem into a zig-zag.
- For large plants that have stems too thick to be pressed as a whole, you can have them sectioned both crosswise and lengthwise. Try to show at least one section with the point of attachment of a flower or fruit.
- Spread out samples (leaves, flowers, roots) as best possible and remove dirt from roots.
- Materials: Newspapers, weight or load strap/bungee cord (to apply force on sample).

Plant Photos

- Photos are especially important for sedges and grasses, as transport in plastic bag can damage fruiting heads needed for identification.
- If no fruiting heads can be found, make sure to collect a good root sample. You can also look for samples outside of the plot but make sure they are the same species.
- Use the back of a clipboard or other solid colour in background to get the clearest picture.
- If taking picture using phone, label picture right away. Some applications such as 'Snap Chat' which label photos right away have proved useful (Figures 1 -2 below).
- Upload photos onto VSP iNaturalist Project – make sure to specify the type of habitat they were present in (i.e. wetland vs. upland).

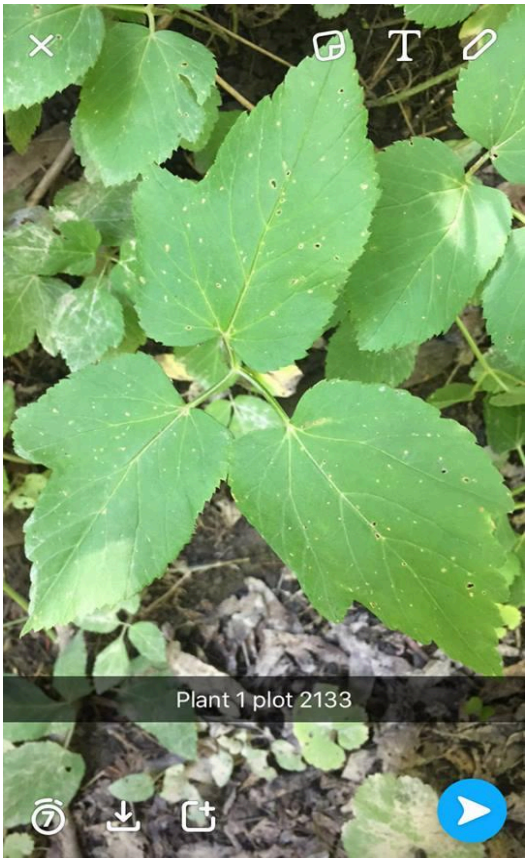

Figure 1. Example of unknown plant label using 'Snapchat' application. Later identified as Goutweed (*Aegopodium podagraria)* (Williams, Charlene August 2016).

Figure 2. Example of unknown plant label using 'Snapchat' application. Later identified as Turtlehead (*Chelone glabra*) (Williams, Charlene August 2016).