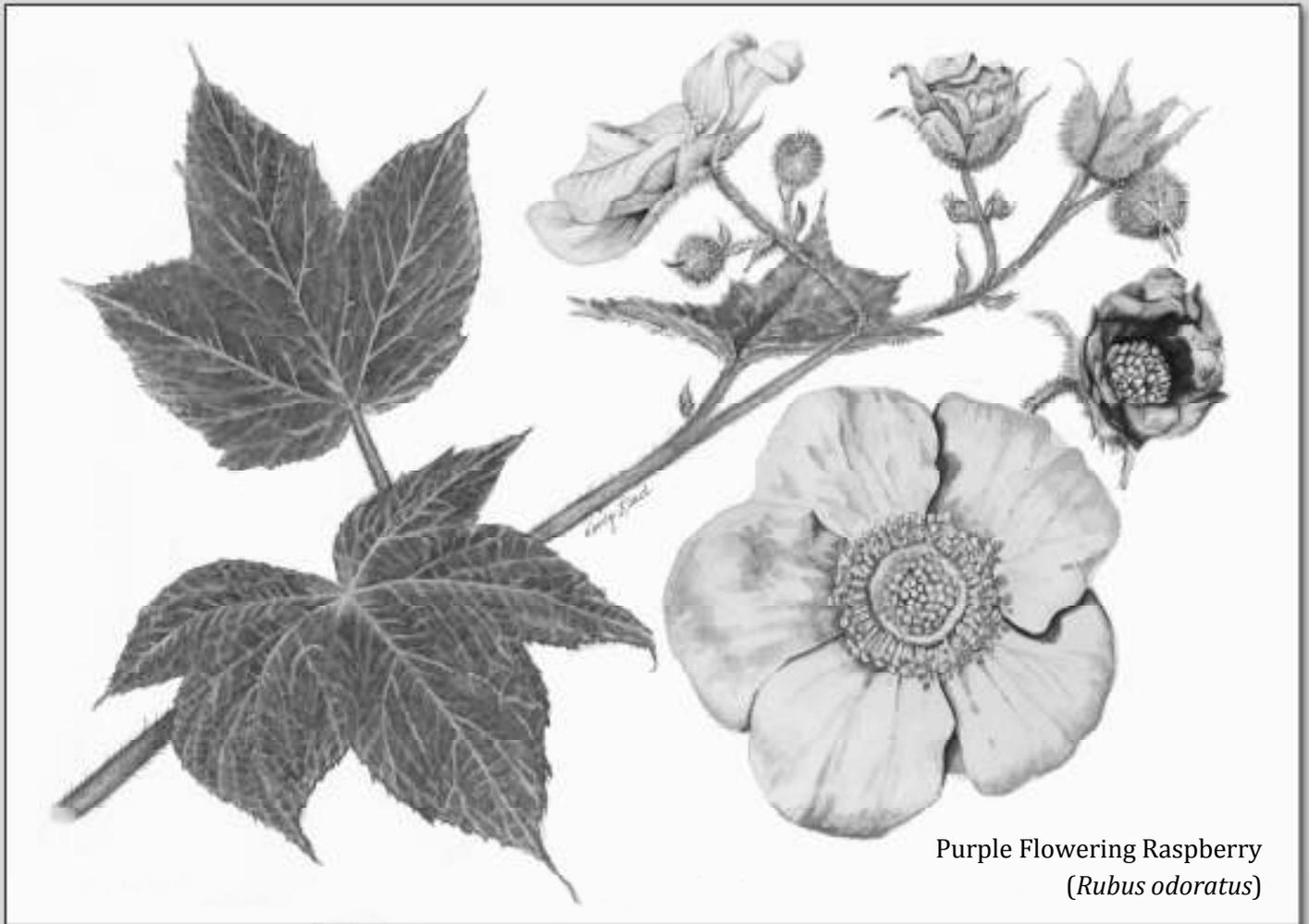




# Plants of Concern

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## Volunteer Manual 2016



Purple Flowering Raspberry  
(*Rubus odoratus*)

Artwork by Nancy Klaud

Chicago Botanic Garden

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## TABLE OF CONTENTS

<b>POC INFORMATION .....</b>	<b>1</b>
<b>PLANTS OF CONCERN: GUIDELINES FOR LEVEL 1 MONITORING FORM, 2016.....</b>	<b>3</b>
General Information.....	3
In The Field .....	3
Safety.....	4
<b>COMPLETING THE PAPER MONITORING FORM.....</b>	<b>5</b>
Section 1: Species and Site Information.....	5
Section 2: GPS Information and Subpopulation Dimensions.....	6
Section 3: Subpopulation Information.....	6
Section 4: Native Associate Species Information.....	8
Section 5: Invasive Plant Species.....	8
Section 6: Threats to the Population .....	9
Section 7: Management Within the Subpopulation in the Past Year.....	9
Section 8: Directions to the Population and Notes.....	9
How and When to Submit Your Forms (Lead Monitors Only) .....	10
<b>BASIC INSTRUCTIONS FOR TAKING A GPS READING WITH A GARMIN ETREX UNIT .....</b>	<b>12</b>
<b>ADVANCED INSTRUCTIONS FOR USING A GARMIN ETREX.....</b>	<b>13</b>
<b>PACING EXERCISE.....</b>	<b>16</b>
<b>ESTIMATING SUBPOPULATION SIZE AND.....</b>	<b>17</b>
<b>GUIDELINES FOR THE POC LAND MANAGEMENT FORM.....</b>	<b>19</b>
Part 1: Management in the past year - Subpopulations.....	19
Part 2: Management in the past year - Site .....	20
Part 3: History.....	20
<b>CURRENTLY MONITORED BY PLANTS OF CONCERN, 2001-2015 .....</b>	<b>21</b>
<b>MOST COMMON AND/OR AGGRESSIVE INVASIVE SPECIES DOCUMENTED BY POC .....</b>	<b>25</b>
<b>CONTACTS .....</b>	<b>26</b>
POC Staff.....	26
Land Management Agencies: Permits, Equipment Loans, Field Assistance .....	26
<b>EQUIPMENT LOANS .....</b>	<b>28</b>
<b>POC VOLUNTEERS AS CHICAGO BOTANIC GARDEN VOLUNTEERS.....</b>	<b>29</b>
<b>VOLUNTEER APPLICATIONS AND PERMITS .....</b>	<b>29</b>
<b>RESOURCES .....</b>	<b>30</b>
<b>CONFIDENTIALITY FORM.....</b>	<b>32</b>
<b>ACKNOWLEDGEMENTS .....</b>	<b>33</b>



# Plants of Concern

## Chicago Botanic Garden



*Plants of Concern (POC), launched in 2001, is a rare plant monitoring program designed to gather standardized, regional monitoring data over time to detect population trends.*

*This long-term program is a collaboration of trained citizen scientists, land managers, and researchers working toward regional goals<sup>1</sup> for research, protection, and recovery of rare plants.*

### The POC program:

- Partners with local, state, federal and non-profit agencies, as well as private landowners
- Trains volunteer citizen scientists
- Maintains a centralized database of rare plant information
- Feeds adaptive management processes, with data that helps land managers set goals and evaluate practices
- Contributes to state Threatened and Endangered listing processes
- Analyzes data to detect population trends
- Partners with scientists to conduct research



### Accomplishments through 2015

- >850 trained volunteers
- >24,000 hours donated by volunteers in the field
- 130 cooperating landowners at >300 sites in Illinois, Indiana and Wisconsin
- 235 species (125 listed and 110 rare but not listed)
- 1266 populations monitored

### What does monitoring entail?

- ✓ Submit application and confidentiality form to ensure protection of sensitive species locations
- ✓ Census population – number of plants, area covered
- ✓ Record management activities and threats
- ✓ Record associated native species
- ✓ Record locations with GPS and written directions
- ✓ Complete forms and submit data



*Monitors search for rare plants in a diverse prairie*

<sup>1</sup> Chicago Region Biodiversity Council 1999. Biodiversity Recovery Plan. Chicago Region Biodiversity Council, Chicago, IL

POC has conducted in-depth monitoring and research in response to landowner needs and the goals of partner scientists.

**Region-wide, in-depth demographic monitoring** was conducted in order to learn more about the life history and ecology of four target species (below). This data collection effort wrapped up in 2013 and scientists are now analyzing these valuable long-term datasets.

Left to Right: *Cypripedium candidum* (white lady slipper orchid), *Cirsium hillii* (hill's thistle) *Tomanthera auriculata* (eared false foxglove) and *Viola conspersa* (dog violet)



**Specialized monitoring programs** are conducted with a number of partners in order to provide detailed monitoring data at a given location while addressing landowner needs and concerns. These projects involve volunteer outreach and coordination, rare and invasive plant monitoring and mapping, and transect-based monitoring of the vegetation community. These partners include:

- |  |                                  |
|--|----------------------------------|
| Midewin National Tallgrass Prairie (US Forest Service) | Cook County Forest Preserves     |
| Openlands  | Waukegan Citizens Advisory Group |

**POC has been generously supported by:**

Illinois Department of Natural Resources · USDA Forest Service · Openlands · Cook County Forest Preserves · Sustain Our Great Lakes · National Fish & Wildlife Foundation · Great Lakes Restoration Initiative · Sally Mead Hands Foundation · Garden Club of America · Chicago Wilderness · Gaylord and Dorothy Donnelly Foundation · Conservation 2000 (IDNR) · CorLands · The Nature Conservancy · Carol Freeman Photography

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Plants of Concern at the Chicago Botanic Garden  
1000 Lake Cook Road, Glencoe, IL 60022  
**plantsofconcern.org**

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## PLANTS OF CONCERN: GUIDELINES FOR LEVEL 1 MONITORING FORM, 2016

### GENERAL INFORMATION

**Confidentiality Form:** Due to sensitivity of rare plant location information, all monitors must sign this form to ensure the confidentiality and security of plant locations. Collection of plants or plant parts (including seeds) is prohibited unless approved by POC and the landowner.

**The POC monitoring form provides a “snapshot in time”**, taken in one or possibly two visits when the plants are reproductive. If the population has previously been monitored, try to visit the population within 10 days of the former visit date to ensure consistency. However, if the previous monitoring date was not during a reproductive time, it may be advisable to change the date. Discuss this with POC staff.

**Lead monitors fill out the Monitoring Form.** Monitors are responsible for completing the Monitoring Form, while land managers or site stewards complete the Land Management Form. Both forms are available for download from our website. See submission instructions on page 10. In advance of monitoring, monitors should log-in to the POC website and print out the most recent reports for field reference. You can also view and print a map. See box at right for details.

*Maps are now available for all monitoring forms that have GPS information!*

When viewing a form, you will see a map in Section 2 that indicates the center point of the subpopulation and the area covered. You may zoom in and out, re-center the map, and print it. See page 11 for more details.

### IN THE FIELD

**Items you will need in the field** (\* = may be borrowed from POC or one of our partners):

- Most recent monitoring report with any available maps
- Blank Monitoring Form for **each** subpopulation
- Clipboard and pencils\*
- Compass\*
- 50m tape\*
- Flags and/or flagging\*
- GPS unit\*
- Permits are required for Nature Preserves and many publicly owned sites. These are usually provided by POC, but see Volunteer Applications and Permits section.

**Photos:** We encourage you to take a close-up and a full plant-view photo of your plant, and send them to POC via email. Good photos are added to our web species gallery, with photographer attribution.

**Trampling:** The more times you visit a site, the more you may impact the population. Although a small amount of trampling should not harm most populations, follow these simple guidelines to minimize impact:

- When returning from a population, take a different route so as not to create a new trail.
- If you visit the site with others, each person should access the population via a slightly different route rather than walking in a line.
- Avoid walking in sensitive areas during rainfall or when the area is wet after recent rains.
- Try to remain as stationary as possible when collecting data, moving carefully among the plants when you need to.

**Preventing the spread of invasives:** Before leaving or entering a site, check shoes, clothing, and bags for any seeds that might be ‘hitch-hiking’ and remove them. While on site, take care not to move invasives from place to place. This precaution can help stem the spread of invasive plants. A hand-held boot brush is an indispensable tool that can be stored in your vehicle and used to clean your shoes before and after entering a site.

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## **SAFETY**

Never go into the field alone, and move out of the field when thunderstorms threaten. Here are some items we strongly recommend for safety reasons: cell phone, plenty of water, hat, long pants, sturdy shoes or boots, insect repellent, Pre-Ivy, and sunscreen.

**In Case of an Emergency**, use common sense and judgment to ensure your personal safety. Remind those you are with to keep safety in mind, and report potentially unsafe conditions or practices to avoid accidents and injuries. Site-specific emergency protocols are listed below, however:

\*\*\*\*\*FOR SEVERE, IMMEDIATE EMERGENCIES AT ANY SITE CALL 911\*\*\*\*\*

**Chicago Botanic Garden:** Report all accidents, injuries, or emergencies to security personnel. If you are within the Garden and need emergency help, call Security at 847-835-6812 (ext. 6812 from a Garden telephone) or the information desk at ext. 8208. Security can also be contacted by radio from the information desk, toll booth, or tram. If you are working off-site on an approved POC assignment, contact Garden security within 24 hours after handling the immediate emergency.

**Chicago Park District:** Contact Chicago Park District Security, 312-747-2193 for any incident ASAP. Also report incidents to Forrest Cortes (see Contacts) by phone or email.

**Cook County:** Provide emergency dispatcher Preserve with your name, nearest intersection, and location within the preserve (e.g. grove #, parking lot #, landmarks, etc.). For non-emergency situations, call FPCC Police, 708-771-1001.

**DuPage:** For a **non-medical** emergency, call FPD Law Enforcement 630-933-7240. For non-emergency law enforcement dial: 630-933-7230. Please see Contacts page for information on whom to notify of an accident or injury.

**Illinois Beach State Park:** For any incidents or non-urgent situations, contact Brad Semel at 630-399-3242. Call Debbie at main office to provide a heads up about off-trail work: 847-662-4811.

**Kane County:** Call 911 and state that you are in a Kane County Forest Preserve. Dispatch will send the Forest Preserve police along with an ambulance or whatever else is required. For non-emergency situations, call 630-232-8400.

**Lake County:** Give dispatcher name of preserve and two streets at intersection nearest entrance. Ranger Dispatch: 847-549-5200. Also report incidents or injuries to Tom Smith (see Contacts).

**Midewin:** If you are a Midewin volunteer, you will be given emergency and safety guidelines during your first visit.

**McHenry County:** For emergency assistance on weekdays (8:00 a.m. – 4:30 p.m.), contact District Police: 815-338-6223 ext. 1210. Over the weekend and weekdays after 4:30 p.m., contact the McHenry County Sheriff's Dispatch: 815-338-2144 and ask them to notify the MCCD Police. Give dispatcher the name of the conservation area and two streets at intersection nearest entrance. Afterwards, report injuries or accidents to Laurie Ryan or Denice Beck (see Contacts).

**Moraine Hills:** Main office: 815-385-1624. For any incidents or non-urgent situations, contact Brad Semel (see Contacts).

**Indiana land trust sites:** If on Save the Dunes property, first call Sarah Weaver: 219-879-3564. If on Shirley Heinze property, first call Danny Robertson: 219-242-8558, Cell: 574-360-6361. In either case, also call INDNR Conservation Police District 10: 219-879-5710.

**Will County:** Call FPD Officers: Cindy Cain, Public Information Officer, 815-298-5554; Lt. Tracy Chapman (weekdays), 815-791-7816.

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## COMPLETING THE PAPER MONITORING FORM

*Paper monitoring forms are required for all reports. Online submission is helpful, but not required. Instructions are found on page 10.*

**Use the most current monitoring form, downloadable from [plantsofconcern.org](http://plantsofconcern.org).**

**Respond to every question.** Write 'unknown' or use provided fields for NA or 'Don't Know' if you do not know.

**Refer to previous monitoring reports for each subpopulation.** This is especially important for how plants are counted (e.g., stems or clumps), GPS coordinates, associates, threats, invasive species, and directions. Check each item to ensure all data are updated for the current year. If the information has not changed for GPS coordinates, associate species, or directions, write "same as previous report" in the appropriate section. For GPS we encourage updating coordinates at least every 2-3 years, but see Section 2 below for more details. For associates, if you indicate "same as previous report," check species off on your copy of the previous report that you take in the field and add any new species. Submit this marked copy with your monitoring form if you don't wish to recopy the list.

**The lead monitor** is the person on the monitoring team designated to submit forms. Other members of the team may take leadership roles in coordinating site visits, following the protocols, etc. All approved monitors for a site and species are given that assignment and can check the previous reports online, but only the lead monitor should enter data.

### **SECTION 1: SPECIES AND SITE INFORMATION**

**Genus, Species, and Variety:** Use the species name assigned to you for monitoring. If there are multiple plant groupings (subpopulations) spread over a wide area at a site, with the closest plants further apart than 50 meters, record each on a separate monitoring form as Subpopulation 1, 2, etc. Use the same EOR# and site name. Use the same subpopulation number as established in previous years, or indicate 'new'.

**EOR#:** The Element Occurrence Record number (EOR) is the unique identifier used by POC to track locations of monitored species. Multiple subpopulations can have the same EOR. This number will be provided on your previous report or will be filled in later by staff. If it is a new population, write "new".

**Landowner/Land Manager:** Is the site on FPD, park district, or private land? Be as specific as you can. The land manager may differ from the owner (e.g. CFC manages Baker's Lake, which is owned by the Barrington Park District). The land manager is typically an agency or organization rather than an individual.

**Plants in Subpop Found:** Please fill out a report even if plants are not found as these data are important. If you were able to search the previously known population area, please provide GPS reading(s) for area searched, as well as associate species, threats, invasive species, and management for the searched area (all but section 3). If your search was not based on a specific, known location, fill out just **sections 1 and 8**. Your notes should explain things such as the habitat searched, the information you used to search, and when the species was last seen, if known.

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## SECTION 2: GPS INFORMATION AND SUBPOPULATION DIMENSIONS

Before you fill out this section, you'll need to determine where plants are located. Search the area where plants were located in the past, as well as any adjacent areas that seem suitable. Place flags around the perimeter of the population. Use as many flags as needed to see the shape of the population. Flagging plants inside the boundary may help in counting plants or clusters of plants. Then collect GPS and distance information. See Figure 1.

**GPS:** Coordinates are required for new POC subpopulations or annual species, and for existing populations at least every 2-3 years. If plants have not moved, you may select 'GPS is the same as before', and the previous reading will be carried over.

Indicate the coordinate system and datum your GPS unit uses. We prefer coordinates collected in the coordinate system **decimal degrees**, using the datum **WGS 84**. (The readout will look something like N42.06229° W088.14495°.) If your GPS unit is using different settings, indicate them on the form (under Other: ) and we will convert. If known, record accuracy in meters. You can review GPS instructions on page 12.

For populations smaller than 13 m x 13 m: take only one reading in the center of the population. For larger populations: take readings at the plants that are furthest North, South, East, and West (Fig. 1). A center reading can be taken for larger populations but is not critical. If a population is long but less than 13 m wide, take a reading at the beginning, center and end (e.g., you would record readings for North, Center, and South).

**Distance Covered by Population:** Measure the population at its widest points E-W and N-S. Visualize the population enclosed in a box that contains all the edges. Either stand at, or line up with, the farthest plants at every direction point (Fig. 1). Use a meter tape to measure the population's area or calculate the area of the population by pacing (see Pacing Exercise on page 16). Your paces should remain even - walk naturally, in a comfortable gait. Use a compass to keep in a straight line.

If the population covers an area too large to measure by tape or pacing, POC staff can calculate distances between points based on the GPS coordinates. This should only be done very large populations. Hand drawn maps are not required, but they can be useful.

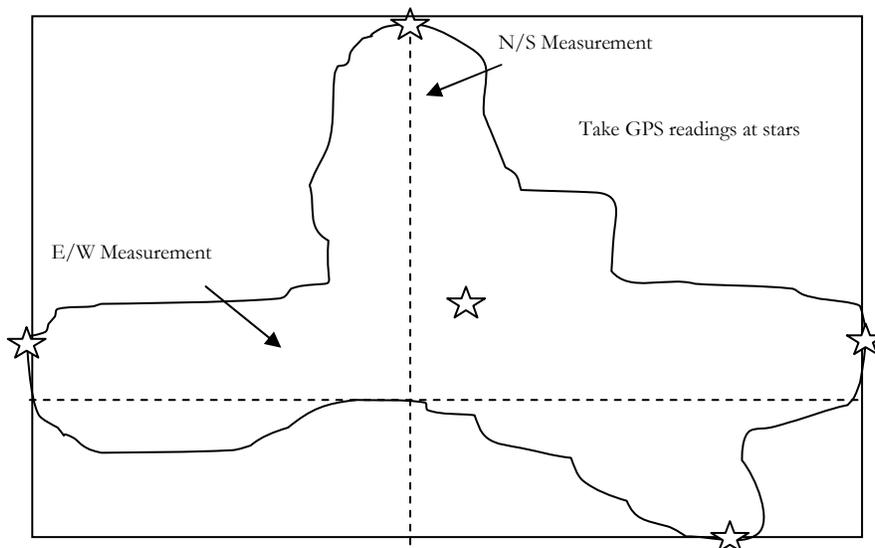


Figure 1. Diagram showing a hypothetical population greater than 13 meters in diameter. GPS readings are collected at farthest plants found in all cardinal directions, and distance is measured at the widest points of the population on a North-South, East-West axis. If the population were smaller than 13 meters, only a center GPS reading would be taken. N/S and E/W measurements would be done the same way.

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### SECTION 3: SUBPOPULATION INFORMATION

**Today's Soil Condition:** Is the soil flooded, saturated, moist, well drained, or dry? The physical condition of the soil can have a large impact on plants. Mark the option that reflects the soil condition at the time you are monitoring.

**Growth Form:** Check the POC website for the growth form designation (e.g., stems, clumps, rosettes) of the species you will be counting, or use the same unit from previous reports. If the growth form on the website differs from what was used in the past, indicate in the notes section whether that creates a discrepancy with past counts. Contact POC staff with questions. See Figure 2 for examples of how plants are counted.

**STEM:** a stalk emerging directly from the ground or from the base of the plant, with at least some space between stems (Examples: trees). Even if the stem branches above its point of emergence from the ground, it is still considered a single stem.

**CLUMP:** a cluster of two or more stems arising from the ground at the same point (Examples: some grasses, sedges and shrubs). Clumped plants may have more than one stem, but the clump should be counted as a single plant. Distinguishing clumps can be challenging in some species. Discuss with POC staff if you are unsure.

**ROSETTE:** a circular-shaped vegetative plant form, usually a dense cluster of basal leaves (Examples: dandelions, thistles, violets). A flowering stem bolts from the center of the rosette when the plant matures and flowers. Regardless of whether you find a vegetative rosette or a rosette with a flowering stem, mark "rosette". If the plant you are monitoring does not fit any of these categories, mark "Other" and describe how the plant is growing and what unit was counted.

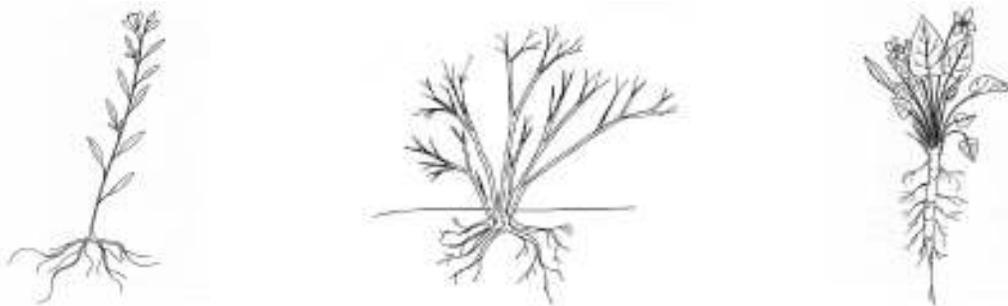


Figure 2. Stems (left), clumps (center), and rosettes (right) are three distinct ways of counting plants.

**Plant Count Range & Total Number:** Count the exact numbers of stems, clumps or rosettes if there are 100 or less. We encourage exact counts even for larger populations. However, you may estimate a range of plants if more than 100 stems are present. If there are significantly more than 800 plants, give your best estimate of the number of plants. You can estimate the total size of large populations using the **Estimating population size** protocol on page 17. Whenever you estimate, note how this was done (e.g., transect method) on the last page of the monitoring form. Include a drawing if it clarifies your method.

**Reproductive State:** Monitoring during flowering (or spore-producing) time is the norm. However, your species may have flowering and fruiting individuals at the same time and sometimes there may be both flowers and fruits on the same plant. Indicate the state you found plants in. As you count plants, keep track of how many have flowers and/or fruits. These are reproductive individuals. Divide the number of reproductive plants by the total number of plants counted.

*Example:* 32 flowering, 2 fruiting, & 66 vegetative plants counted.  $34 \text{ reproductive} / 100 \text{ total} = 34\% \text{ reproductive}$

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If you are estimating the number of plants, use the percentage of reproductive individuals derived from the sample you counted. If you are counting only flowering/fruited plants because you are unable to identify juveniles, note that 100% of the counted plants are in the reproductive state.

*On occasion your plants may be totally vegetative. If there are no fruits or flowers, indicate vegetative. If in the rare instance that monitoring is done after flowering and fruiting, when no reproductive parts are visible, answer "Don't Know" because in this case, it is unclear whether the plants were reproductive.*

**Juveniles Present:** Are there seedlings or immature vegetative plants with the same leaf characteristics as the adult individuals within the population area? It may take time and close inspection to determine this. You may need to move other vegetation aside to look near the ground. If you are not sure whether you've found a juvenile, it is best to check "Don't Know How to Identify" and to exclude them from your count. Annual plants do not have juveniles even when some individuals in the population are reproductive. If you are able, take a photo of a seedling or immature plant. Include juveniles in your total count if you know how to identify them and can determine their number.

#### **SECTION 4: NATIVE ASSOCIATE SPECIES INFORMATION**

Refer to the most recent monitoring report for comparison. Record at least the **dominant** native plants, those most numerous within and 1-2 meters around the population. At a minimum, enter the three most abundant trees, three most abundant shrubs, and five most abundant herbaceous species. Scientific names are preferred, but you can use common plant names if necessary. On your first visit, the land manager/steward/POC staff can help if you are not familiar with all the plants. If you don't know a plant species, don't guess; just write down the names of the plants of which you are confident. If the associate species are the same as those that are listed on the last monitoring report, you may write "Same as previous report." You can check species off on your copy of the previous report that you take with you in the field and add any new species.

#### **SECTION 5: INVASIVE PLANT SPECIES**

*Invasive species can be exotic or native, but are characterized by their negative effect on native plant species. See the Invasive Species List in this manual and reference past reports for your population to see which species could be considered an invasive threat.*

**Total Brush Encroachment:** These are woody plants that may be impacting the population. Estimate the percent of the population area affected by their stems or the shade that they cast. Look for small woody stems as well as larger shrubs. An example of a native woody that can be invasive is grey dogwood (*Cornus racemosa*).

**Invasive woody brush encroachment less than (<) 1 meter tall:** The impact of any invasive woody brush less than one meter tall is estimated here.

**Invasive brush/tree encroachment greater than (>) 1 meter tall:** The impact of any invasive woody brush greater than one meter tall is estimated here.

**Degree of Threat of Invasive Plants:** First estimate the total impact of each woody species you considered invasive in 'Total Brush Encroachment' above, regardless of height. Then list all other herbaceous species that may be invading the population, estimating the percent of the population area affected. If confirming the absence of an invader, select 'None'. This data is use for research projects when monitors are asked to report on a specific subset of species, but can also be used to report notable absences (e.g., honeysuckle present for many years has disappeared). Otherwise, monitors should only report on the invasive species present.

**New Invaders Watch Program (NIWP):** Monitors can report invasive plants new to an area through NIWP. Those who take the training for this optional program, separate from POC, are given a set of ID cards with images and descriptions of new invaders. Reports are submitted on-line. Visit [www.newinvaders.org](http://www.newinvaders.org) or reference NIIPP contacts listed on page 28.

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## **SECTION 6: THREATS TO THE POPULATION**

**Degree of Threats:** Evaluate all threat categories, evaluating the percent of the population affected by each one. If there is no impact, select 0%.

**Deer browse:** Estimate the percentage of individuals of the species you are monitoring (% of study plants) that have been browsed. Next, estimate the percent of all individuals, including the monitored species, in the population area and in the immediate vicinity that have been browsed. Look for jagged and chewed off stems. You can note other evidence of deer – deer beds, droppings or bark rubbings – under ‘Threat Notes’.

**Erosion:** Estimate the percent of the population area impacted by erosion.

**Authorized/unauthorized trails:** Does either type of trail threaten the plant population under study? Unauthorized trails can include deer paths and ATV trails. Authorized trails are purposefully constructed by a land owner, and include signed trails, roads and railroads. Estimate the percent of area impacted.

**Other:** If you notice additional threats write them down in the “Other” section and record their degree of impact. Other types of threats include: insect damage, drought stress, human trampling, human theft/damage, trail mowing, ATV’s, nearby development and other land uses that would negatively impact the population.

**Threat notes:** Include any notes here that clarify threats you observed.

## **SECTION 7: MANAGEMENT WITHIN THE SUBPOPULATION IN THE PAST YEAR**

Record management that has occurred within the past year that directly impacts the population (i.e., occurred immediately adjacent to or within the population). Record the percent of the population affected if known. Only record management that you can observe or know about from a steward, land manager, or from personal experience. If you’re not sure, indicate ‘Don’t Know’.

**Brush or invasive tree removal:** Look for freshly-cut stumps within and immediately surrounding the population, as well as recently piled brush in the vicinity. Although fire is also a brush management tool, manual/mechanical brush removal is what is being referred to here. Indicate which species were removed if known.

**Herbaceous invasive removal:** Look for piles of invasives that have been pulled (e.g., sweet clover, garlic mustard), or brown stems that have been treated with herbicide. Indicate which species were removed if known.

**Burning:** Look for ash on the ground, which would indicate recent burning, or an absence of leaf litter (woodland) or duff (dried matted prairie vegetation).

**Mowing:** Look for evidence of evenly cut stems and fresh clippings within the population. Only include mowing that has clearly been done as management. Inadvertent mowing (i.e. trail mowing accidentally affecting a POC population) is a threat to the population and should be noted in the “Threats” section.

**Other management:** Note any other management that affects the population, and indicate the percent of the population affected. Examples might include hydrological remediation or deer culling.

## **SECTION 8: DIRECTIONS TO THE POPULATION AND NOTES**

**Directions are required** for first time visits, new subpopulations, or annual plants whose location may change. Be as specific as possible. This information will be used for many years by other monitors and/or researchers. Use as many permanent landmarks as possible in your description (large boulders, roads, buildings, etc.). Start by providing a general location and then get more specific. Refer to the nearest town, route, and parking area. Use local landmarks to create a “trail” for the person to follow, for example: ‘take main trail east for 100 m to large

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boulder on right and go south for 50m.” If previous directions are effective and no edits are needed, write ‘Same as last report’. Amend or edit previous directions if needed.

**Notes:** Insert any additional observations you think are relevant, such as reasons for observed changes to population metrics. If you estimated the number of plants in your population, detail your methods here.

**Monitor names and roles:** Include names of all monitors and whether they are volunteers, volunteer stewards, interns or staff. If a new, unassigned volunteer participates, please notify POC and ask that person to complete a Confidentiality Form and CBG application. Provide contact information for that person so that POC can follow up.

### ***HOW AND WHEN TO SUBMIT YOUR FORMS (LEAD MONITORS ONLY)***

Submit your monitoring report within three weeks of the monitoring date, but no later than October 1.

### **POC requires you to submit an original field form, so be sure to take legible and complete notes in the field!**

The original data are very important to the scientific value of the program, allowing us to confirm online entry and maintain an archive of original submissions. If you have taken notes on a past report and these notes are readable, you may submit these as your original field form. Send the original monitoring form(s) and any maps to POC. You can do this via mail or email (a scanned image or pdf of your form). See mailing address on page 2. You can keep a copy of each monitoring form with maps for your own records.

If you are also able to enter data online, we greatly appreciate it. To submit online, you must create a user account, be approved by POC, and have a designated assignment. Directions for online submission are incorporated in the website’s submission process. If you encounter any issues with submitting data online, please contact POC.

### **Accessing POC Data Online:**

1. Go to [plantsofconcern.org](http://plantsofconcern.org) and log in to **My POC Account**.
  - a. If you have an existing account, you may need to re-set your password the first time you log-in. If you need a new account, create the account online and wait for it to be approved by POC staff.
  - b. If you forget your password, you can reset it at any time by clicking **Request New Password**.
2. Once logged in, visit the **My Contact Info** on the left-hand menu to check that we have your correct information on file.
3. Click on **Forms** in the menu at left to access and submit data.
  - a. All sites and species assigned to you will appear in the drop-down menus. You may select your assignment by site or by species name. Contact POC if you do not see the correct assignments.
4. After you have selected an assignment, scroll down and choose a subpopulation. From here, you may view a previous year’s form or enter a new monitoring form.
  - a. View a previous year’s form by selecting a date from the drop-down menu and clicking **View Form**
    - i. Print a report you’re viewing by selecting **Print Report** at the top of the page
  - b. Submit new data for a subpopulation by clicking **Enter New Monitoring Form**

★ *If you use Internet Explorer, using the back button on our page may cause it to expire. If this occurs, click “refresh”, or avoid using the back button by navigating using the links within the website. You can also use a different browser to avoid this issue. We recommend Google Chrome, which is free to download.*

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#### New for GPS data

- A map is created for each monitoring report that has GPS data. You can view a larger version by clicking **View Full Page Google Map**. Zoom in or out and re-center the map to suit your needs.
- You can print the map by clicking the print button at top left, but it will not show the population location. To print the map showing the population location, take a screen shot (alt-print scrn) and paste into a word document.
- GPS data are now shown in **Original coordinates** and **Converted coordinates**. POC converts all coordinates to WGS-84, decimal degrees (our preferred format), but we list both on the report.

#### Submitting POC Data Online:

1. After navigating to the **Enter New Monitoring Form** button for an assignment (see above), enter Section 1 information. When you click on the date field, choose the date when you monitored from the calendar. After all fields in this section are filled out, click **Save**. This creates your new monitoring report.
2. You now can choose **Back to Main Form** or **Continue to Next Section**.
  - a. The Main Form is where you will see all of the sections of your monitoring form. You will also see whether each section is marked as **complete**, **empty**, or **incomplete**. Empty sections are not required to be completed before submitting the form. Incomplete fields must be completed.
  - b. **Continue to Next Section** takes you to the next section for data entry in the monitoring form.
3. Continue through all the sections, entering data from your monitoring report and saving each section.

*You may log out of your account at any point. All data that were entered and saved will be available by clicking **Incomplete Forms** on the menu at the left, or navigating back to the subpopulation through the **Forms** menu at left.*

4. After entering the last section (**Monitor Information**), you will be taken back to the Main Form. Check that all of your data has been entered correctly and click **Submit**. Once you submit, your form is sent to POC for review and you will no longer be able to make edits. If you need to make any changes to your report after submitting it, contact POC.

## BASIC INSTRUCTIONS FOR TAKING A GPS READING WITH A GARMIN ETREX UNIT

See **ADVANCED INSTRUCTIONS** below for a more in-depth walk through. Review these instructions prior to monitoring. Take readings for annual populations, new populations, and populations that have changed in size. Take new GPS readings of stable, perennial plant populations every 2-3 years.

### Buttons:

- **POWER** allows you to turn the unit on or off.
- **PAGE** allows you to move through the four different GPS screens
- **UP/DOWN** allows you to move thru menus, increase or decrease settings, flip through options
- **ENTER** allows you to select an option or open a menu

### To Turn the GPS Unit On/Off:

- Press the **POWER** button. (Please do not forget to turn the unit off whenever it is not in use as the batteries run down quickly.)
- You will get a message, **“Wait...tracking satellites”**(A good signal needs 4 satellites—takes up to 5 minutes)
- Getting a good signal:
  - **Moving around**, especially in a straight line, helps the satellites locate you faster
  - **If you are under a dense canopy**, it helps to track satellites in a nearby open area first, then bring unit (with the power still on) back to the plant population
- **Accuracy:** GPS unit will show accuracy at the top of the screen when you first turn on the unit
- **Try to get about 3-8m accuracy** in open areas (if the error is a very large number at first, keep the unit on and wait a few minutes for the error to reduce as you walk around)

### To Take a Reading (see Figure 1 for where to take readings in the population):

- Press **PAGE** button until you return to the **MENU** screen
- Highlight **MARK** using the **UP/DOWN** buttons
- **Hold GPS unit at a place you want to take a reading**, press **ENTER**
- **Record the reading** on the Monitoring Form—**°N is the top line** (7 digit number) and **°W is the bottom line** (7 digit number). The northerly reading corresponds to latitude and the westerly reading corresponds to longitude. POC GPS units are set up to read in the coordinate system **Decimal Degrees** with datum **WGS84** (if you don't know the current settings on your unit view the “Check/Adjust Settings” section below in the Advanced Instructions).
- If you press **ENTER** when “OK” is selected, the GPS unit will automatically create a Waypoint and give it a title such as 001, 002, 003, etc. It may be helpful to write down this waypoint title, in order to be able to access it later on. This way, you can see the coordinates again if you didn't record them immediately.



Figure 3: The buttons as they appear on the GPS Etrex unit.

## ADVANCED INSTRUCTIONS FOR USING A GARMIN ETREX

### Things to Know about the Garmin eTrex Unit:

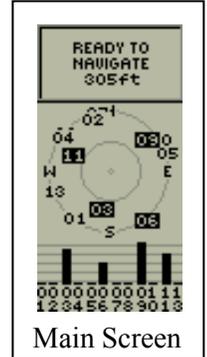
- Screens: The Etrex has four main screens, and you can flip between them with the PAGE button.

- **First Screen – Main screen**

- Shows signal accuracy, the number of satellites to which the receiver is connected, and the signal strength of each satellite connection

- **Second Screen – Map**

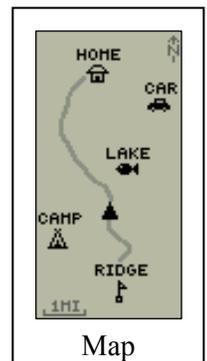
- Shows your current position on a map with an arrow pointing north
- Tracks your movements with a trail
- Can view the location of waypoints and shows the direction you need to travel to reach a point
- Options:
  - UP button will allow you to zoom out
  - DOWN button will allow you to zoom in



Main Screen

- **Third Screen – Compass**

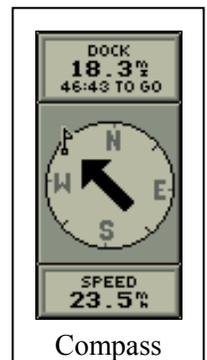
- Top of the compass shows your direction of travel (when moving)
- Can show the direction of a waypoint and the distance to that point
- UP/DOWN buttons will allow you to flip through display options at the bottom of the screen
  - Location
  - Sunrise
  - Sunset
  - Trip time
  - Trip odometer
  - Speed
  - Average speed
  - Max speed
  - Heading
  - Bearing
  - Elevation



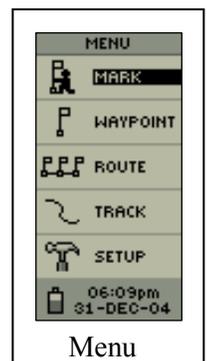
Map

- **Fourth Screen – Menu**

- Scroll through the menu with UP/DOWN buttons and push ENTER to open an option
- **Mark**
  - Mark a waypoint
  - See current fixed location for recording purposes
  - Enter a GPS coordinate to find
- **Waypoints**
  - View, delete or navigate to a waypoint
  - Think of waypoints as you would a visual marker on a landscape; you can navigate to them or use them as a position reference
- **Route**
  - Make a route of travel with waypoints
- **Tracks**
  - Clear, save, or open previous paths of travel
  - Tracks are continually logged while a GPS unit is on and has an accurate reading



Compass



Menu

- **Setup**
    - Change the **Time** format
    - Change the **Display** contrast to make the screen easier to view
    - Change the **GPS Units** of measurements (see below in “Types of data”)
      - **Position format** (aka coordinate system)
      - **Map datum**
      - **Units**
      - **North reference**
    - **Interface** allows you to change the GPS data exchange formats if you are using cables to connect your GPS with another unit (e.g. computer)
    - **System** allows you to see the unit’s software
- Types of data: POC has preferred ways for you to collect this data (see below), but if you have collected GPS using one of the other coordinate systems or datums, indicate this on your monitoring form and we will convert.
  - **Coordinate systems** are different formats used for recording a location (aka POSITION FRMT)
    - **Decimal degrees (e.g. hddd.ddddd)** (POC’s preferred coordinate system)
    - Degree Minute Second (e.g. hddd°mm'ss.s")
    - UTM (e.g. ddddd)
    - Minute Decimal (e.g. hddd°mm.mmm)
  - **Datum** is the way the data are projected onto the earth (aka MAP DATUM)
    - **WGS-84** (POC’s preferred datum)
    - NAD-27 (Conus)
    - NAD-83
- Batteries
  - GPS units use a great deal of power and can drain batteries very quickly
  - Turn off the unit when you no longer need it
  - POC units may come with rechargeable batteries, so don’t throw batteries away
  - POC provides an extra set of batteries with each unit. Just in case!

**To Check/Adjust Settings before Taking a Reading** (crucial before recording coordinates):

- Press **PAGE** button until you reach the **MENU** screen
- Using the **UP/DOWN** buttons, highlight “**SETUP**” and then press the **ENTER** button (see Figure 1); again using the **UP/DOWN** buttons, highlight “**UNITS**” and then press the **ENTER** button.
- There are three settings: “**POSITION FRMT,**” “**MAP DATUM,**” “**UNITS**” and “**NORTH REF**”
- Select “**POSITION FRMT,**” and using the **UP/DOWN** buttons highlight “**hddd.ddddd**”
- Press **ENTER** to select this option (this is Decimal Degrees and the requested format for POC)
- Select “**MAP DATUM**”, and using the **UP/DOWN** buttons highlight “**WGS 84**” (requested format for POC) press **ENTER**
- Select “**UNITS,**” and using the **UP/DOWN** buttons highlight “**METRIC,**” press **ENTER**
- Select “**NORTH REF,**” and using the **UP/DOWN** buttons highlight “**TRUE,**” press **ENTER**

## Use GPS to Locate a Population from Previously Collected GPS Points or Create a Waypoint:

In order to relocate your population using GPS, you will need to enter the coordinates from a previous monitoring form into the GPS unit which you will bring into the field.

*POC transforms all GPS data into WGS-84, decimal degrees, which should minimize the need to re-set your unit. However, you may wish to locate populations using readings in a different datum, in which case you must ensure that your GPS unit is set up for the correct datum of the coordinates you enter. Follow directions below.*

### To enter coordinates written on the monitoring form into the GPS unit:

- Check the unit's setup menu to see what coordinate system and datum the GPS unit is currently set to.
- Adjust the coordinate system (aka POSITION FRMT) and datum (aka MAP DATUM) so they match the coordinate system and datum of readings you are using. See "Check/Adjust Settings" and "Types of Data" above.
- From the MENU screen highlight "**MARK**" and press the **ENTER** button
- Scroll down **DOWN** until the reading at the bottom is highlighted, press **ENTER**
- Highlight subsequent digits in the coordinate number by using the **UP/DOWN** button
- Press **ENTER** at the number you wish to change.
- Scroll up or down to the number you want to replace it with and press **ENTER** to change the number.
- Scroll to the next number you want to change, repeat. Go through all the numbers until the reading is correct.
- Once finished, scroll down to highlight **OK** and press **ENTER**. When back at the Mark Waypoint screen, scroll up to select **OK** again. This will save your waypoint. Write down the title of the waypoint you created (the number next to the flag), so you can go back to it.



*When entering UTM/UPS coordinates, the first two digits are "1" and "6". **Do not change this** as this represents "16", the standard UTM zone for Illinois. The actual coordinates starts after the "T".*

### Tracking Back to an Existing Waypoint (i.e. a waypoint you created):

- Press **PAGE** button to bring up **MENU** page
- Highlight **WAYPOINTS** and press **ENTER** (you are now in Waypoint Page)
- Select a tab (using **UP/DOWN**) containing the number (or first letter) of the waypoint you are looking for and press **ENTER**
- Select the waypoint that you are looking for and press **ENTER**
- Press **UP/DOWN** button to select "**GOTO**" and press **ENTER**
- The Compass Page appears and you are now ready to be guided back to your starting location. The number of meters shown above is the distance to your waypoint.

**The GPS Compass does not function in the same way as a conventional compass.** It is not sensitive enough to detect which direction you are facing initially though it will provide a helpful direction once you are moving across the landscape. For this reason, **use an actual compass to tell you which direction to go before you begin.**

**Example:** Looking at the compass screen on the GPS unit, I see that the arrow is pointing straight to "N" with a distance of 6.66 m, indicating that I need to walk 6.66 m North to find my plant. However, when I look at my own compass, I realize that I am facing South. Therefore, first I adjust my direction by referring to my actual compass and turn to face North. Then I begin moving North while watching my GPS compass screen. I begin to see that my 'distance to population' is decreasing, so I know I'm moving in the correct direction.

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## PACING EXERCISE

**We need to calculate distances for a variety of reasons while monitoring plant populations:**

- Writing directions to the population, e.g., “Plant population begins 12 meters south of the southwest corner of the long plank bridge.”
- Measuring the population’s size when it is not possible to use a measuring tape.

**Using a measuring tape to get an exact distance measurement is the preferred method. However, sometimes this option is unavailable because:**

- Measuring tape is not available
- Distance to measure is so long that it would be too time-consuming or cumbersome to use a tape
- Measuring distance along a windy path (impossible with a tape)

**Pacing is a back-up method of calculating distances, although it has drawbacks:**

- Potential error due to inconsistency of step size
- Different walking speeds can make one’s pace larger or smaller
- Terrain affects how big our steps are

**You can minimize error with the following tips:**

- Try to use the same pace every time - you’ll get used to your own pace length
- Use this pacing exercise to calculate your personal, standard pace size, e.g. 1 “pace” = 0.9 meters. One pace combines both left and right footfalls.

## PACING PROTOCOLS

**How to calculate your pace:**

- Take the # of paces it took to walk a known distance and back (let’s say 40 meters)
- Divide # of known meters by the # of your paces to get # of meters/pace
- See example and calculate your pace below:

*Example: 40 meters paced ÷ 36 paces taken = 0.9 meters per pace*

\_\_\_\_\_ meters paced ÷ \_\_\_\_\_ paces taken = \_\_\_\_\_ meters per pace

**How to determine an unknown distance:**

- Pace the distance to your target
- Multiply the # of paces by the # of meters per pace

*Example: If 30 paces were taken to the target, then 30 paces x 0.9 meters per pace = 27 meters*

\_\_\_\_\_ paces taken x \_\_\_\_\_ meters per pace = \_\_\_\_\_ meters paced

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**ESTIMATING SUBPOPULATION SIZE AND  
CALCULATING PERCENT OF REPRODUCTIVE PLANTS**

*Use this protocol to estimate the total size of a large population. If plants are found in distinct groupings, you may repeat the protocol in each section to arrive at two or more estimates that can be added for the total. See Figures 4 and 5 on the following page.*

**CALCULATE TOTAL AREA**

1. Flag the perimeter (outside edge) of the population.
2. Measure N-S extent of the subpopulation at its widest: \_\_\_\_\_ meters (m)\*
3. Measure E-W extent of the subpopulation at its widest: \_\_\_\_\_ meters (m)\*
4. Calculate the total area by multiplying the N-S and E-W extents: \_\_\_\_\_ meters squared (m<sup>2</sup>)

**SET UP TRANSECTS**

5. Imagine a box around your subpopulation, and use this imaginary box when setting up transects (Figs. 4 & 5).
6. Set a baseline along the short edge of the population, then parallel transect lines of 30 - 50 meters each, at right angles to the baseline, through the population. Transects should start at random points along the baseline. For this example, we run three transects. You may have more or fewer depending on the size of the population you are estimating. Record the total length of each transect:

Transect 1 length: \_\_\_\_\_ m; Transect 2 length: \_\_\_\_\_ m; Transect 3 length: \_\_\_\_\_ m

**COUNT PLANTS**

7. Count all plants within one meter (or another standard distance<sup>+</sup>) on one side of the tape. Tally flowering/fruited (Fl/Fr), and non-flowering vegetative (V) plants separately.
8. Add the plants counted from all the transects

\_\_\_\_\_ Fl/Fr plants + \_\_\_\_\_ V plants = \_\_\_\_\_ total plants counted in transects

9. Calculate the estimated percent of plants that are reproductive (flowering or fruited)

\_\_\_\_\_ Fl/Fr plants ÷ \_\_\_\_\_ total plants = \_\_\_\_\_ % of plants that are reproductive

**CALCULATE ESTIMATE**

10. Calculate the total area sampled with transects by adding transect lengths, and multiplying by width sampled (e.g., 1 meter, 2 meters, ½ meter. See #7 above).

( \_\_\_\_\_ m Transect 1 + \_\_\_\_\_ m Transect 2 + \_\_\_\_\_ m Transect 3 ) × \_\_\_\_\_ m width = \_\_\_\_\_ m<sup>2</sup> sampled

11. Calculate the average number of plants per meter squared, based on your sample.

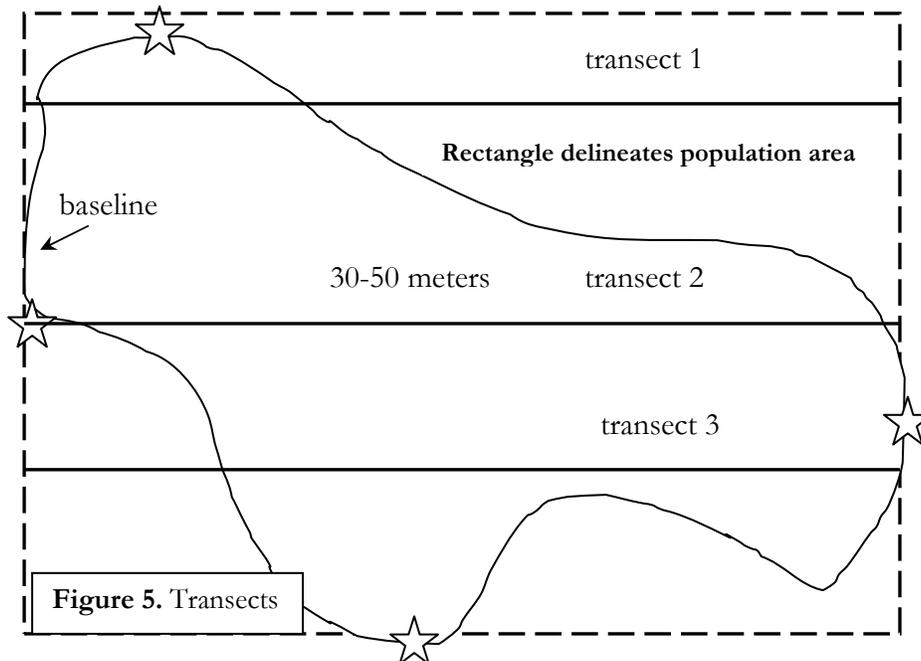
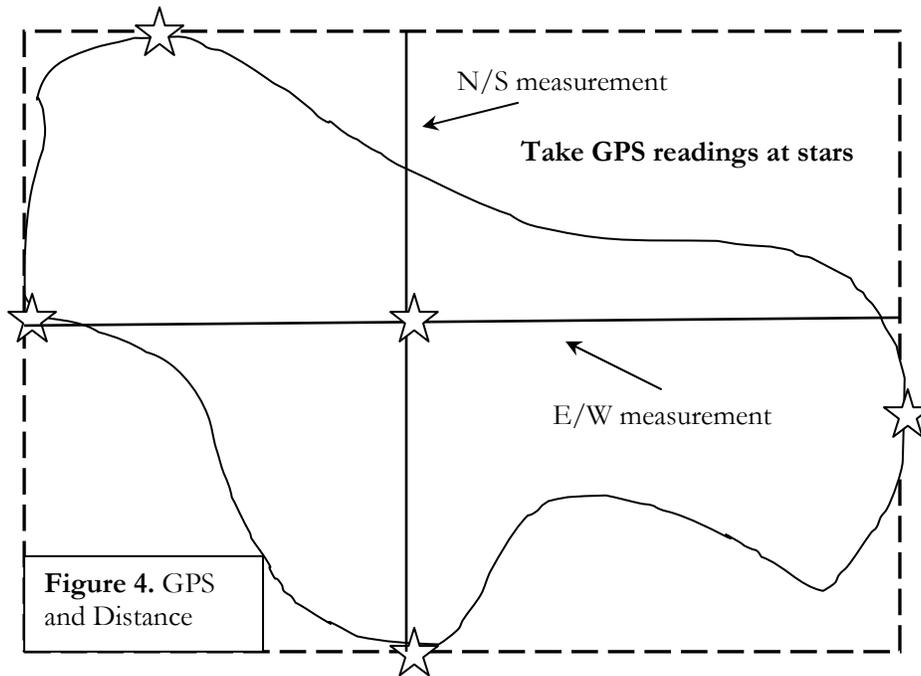
\_\_\_\_\_ plants counted (from #8) ÷ \_\_\_\_\_ m<sup>2</sup> sampled (from #10) = \_\_\_\_\_ plants per m<sup>2</sup>

12. Estimate the total number of plants in the subpopulation and enter on monitoring form. Be sure to indicate that population was estimated, and to detail your estimation method in the Notes section on page 3

\_\_\_\_\_ plants per m<sup>2</sup> (from #11) × \_\_\_\_\_ m<sup>2</sup> (from #4) = \_\_\_\_\_ estimated total plants

*\*For very large subpopulations, population area can be measured from GPS readings. Contact POC for assistance.*

*<sup>+</sup>If plants are large, count all plants within 2 meters of the tape. If plants are very small, you may count within ½ meter. You must take this width into account when calculating your total estimate in step 10.*



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## GUIDELINES FOR THE POC LAND MANAGEMENT FORM

The Land Management Form collects more precise information about management in relation to monitored populations than a typical volunteer may be able to provide. Complete management reports may help reveal correlations between management activities and population trends. Agency land managers or site stewards may complete these forms. A few important details:

- Parts 1 and 2 of the form should be updated every year. Part 3 only needs to be submitted once.
- Land Management reports can be reviewed and submitted online by land managers and stewards with this access.
- You may still submit using paper forms, if preferred. Use a single form to report on multiple species or subpopulations when management is the same for all species in the same location or management unit. Indicate all species and subpopulations on the form.

### ***PART 1: MANAGEMENT IN THE PAST YEAR - SUBPOPULATIONS***

The management data recorded on Part 1 of the Land Management form should reflect all management that has occurred in the past year for a subpopulation. Information reported for any other time period should be indicated explicitly using date, month, and year, but ideally would encompass fall to summer (September to August) for any given year. This eliminates gaps in management data. Please fill out forms for all years even if subpopulation was not monitored.

#### **SECTION 1: GENERAL SITE AND SPECIES IDENTIFICATION**

**Site name:** We aim to be consistent with site names on record with the Natural Heritage Database. If site names have changed significantly, let us know so that we can inform the Natural Heritage Database.

**Landowner:** Indicate the owner of the site where monitoring occurred. If the land manager differs from the owner of the site, indicate the manager as well. Excepting privately owned sites, the land manager is typically an agency.

**Species (genus, species and variety) site name, county, subpop # and EOR #:** This information should match that on the monitoring form. For listed species, the EOR # corresponds to the number assigned by the Natural Heritage Database. For non-listed species, the number is assigned by the POC database.

#### **SECTION 2: MANAGEMENT WITHIN THE MONITORED SUBPOPULATION(S)**

**Management conducted in the past year within the population or immediately adjacent to the population:** Maps are available on our website for species and locations that have GPS data. When you are logged in to your POC account, you can view maps of monitored locations from each monitoring report from each year. You may also wish to visit the area with the monitor to confirm the management activities that have been reported.

**Burning or Mowing:** Mowing refers specifically to clearing of herbaceous material and small brush in an open or prairie area, but not to the use of large machinery to clear a primarily wooded area (brush removed this way should be listed under invasive species management). Additionally, mowing for trail maintenance should not be listed as mowing for management. The first time you complete Part 1, please list as many past dates as possible for burn or mow history. At least indicate the month or season, in addition to the year in which the area was burned or mown.

**Percent of Area Affected (burning and mowing):** We use a range for the percent of the area affected by the activity: 1-33%, 34-66%, 67-100%

**Intensity (burning only):** We also use a range for intensity: 1-33% being low, 34-66% moderate, 67-100% high

- **Low:** low temperature, low flame height, consumed < 50% of fuel in its path
- **Moderate:** average/moderate temperature, average flame height, consumed good amount of fuel
- **High:** high temperature, high flame height, large coverage area, consumed most available fuel in path

**Invasive Species Management:** List the dates (or season and year) of the removal or herbicide application, the species that were removed and/or treated with herbicide, and percent of the area within the monitored subpopulation that was managed. The first time you complete Part 1, please list as many past dates as possible for these activities. Although burning can be used for invasives control, please only indicate mechanical or chemical removal for this question.

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**Other management being conducted within the population:** If other types of management are being conducted within this population, list them here with their dates, using the percent ranges where applicable (e.g. hydrological activities, seeding of native species, etc).

SECTION 3: ADJACENT LAND USE NOTES

Note any **pertinent information regarding any land use adjacent to the site** that might have an impact, negative or positive, on the monitored population.

**PART 2: MANAGEMENT IN THE PAST YEAR - SITE**

**The management data recorded on Part 2 of the Land Management form should reflect all management that has occurred at a site in the past year.** Information reported for a time period other than this should be indicated by date, and would ideally encompass fall to summer (September to August) for any given year. Please fill out forms for all years even if sites are not monitored every year. Part 2 Land Management data will be listed under every species at a site when viewing and entering forms online.

SECTION 1: GENERAL SITE AND SPECIES SITE IDENTIFICATION

Same as for Part 1, Section 1.

SECTION 2: MOST CURRENT GENERAL SITE MANAGEMENT

**General Management conducted in the past year at this site:** Management may be in place for this site but may not directly affect the monitored population. The main information we need here about general site management are the management practices in place. We do not require a detailed history of these activities outside the population monitored.

**Deer Removal:** List season and year of removal, number of deer removed, and the number of acres involved.

**Other Management on Site:** Note any other information relevant to management of the site.

SECTION 3: ADDITIONAL COMMENTS

**PART 3: HISTORY**

History needs to be completed one time only, and is required to be filled out for each subpopulation.

SECTION 1: GENERAL SITE AND SPECIES IDENTIFICATION : Same as for Part 1, Section 1.

SECTION 2: POPULATION INFORMATION

**Habitat/Community Type:** We use the classification system found on pages 148-161 of the *Chicago Wilderness Biodiversity Recovery Plan*. In some cases you may wish to indicate more than one habitat associated with a population. A link to the classification is available at [www.plantsofconcern.org](http://www.plantsofconcern.org).

**Was this population naturally occurring, introduced through restoration, or is the origin unknown?** Indicate to the best of your knowledge the origin of this population. If it was introduced through restoration, provide the year of introduction. Provide the source of the plants or seed, if known.

SECTION 3: LAND USE HISTORY OF THE SITE, AS IT MAY AFFECT THE SUBPOPULATIONS

If you are aware of **any historical uses** of the site before it was managed that may have affected the subpopulations, check off and fill out the appropriate fields.

SECTION 4: HISTORY OF GENERAL SITE MANAGEMENT

**General Management conducted in the past within this site:** The primary information needed is the year active management was initiated and any management practices in place since that time. A detailed history of management outside monitored populations is not needed.

**Please return Land Management on-line or send forms to POC by October 31.**  
Agencies may submit all forms in conjunction with their internal reporting schedule.

**CURRENTLY MONITORED BY PLANTS OF CONCERN, 2001-2015**

<b>Species</b>	<b>Common name</b>	<b>Status*</b>
<i>Actaea rubra</i>	Red Baneberry	R
<i>Adiantum pedatum</i>	Maidenhair Fern	R
<i>Agalinis skinneriana</i>	Pale False Foxglove	T
<i>Alnus rugosa</i>	Speckled alder	E
<i>Amelanchier interior</i>	Inland Serviceberry	T
<i>Amelanchier sanguinea</i>	Roundleaf Serviceberry	E
<i>Ammophila breviligulata</i>	American Beach Grass	T
<i>Andromeda glaucophylla</i>	Bog Rosemary	E
<i>Arabis hirsuta</i>	Hairy Rock Cross	R
<i>Aralia racemosa</i>	Spikenard	R
<i>Arctostaphylos uva-ursi</i>	Common Bearberry	E
<i>Aristolochia serpentaria</i>	Virginia Snakeroot	R
<i>Artemisia serrata</i>	Saw-toothed Sagebrush	R
<i>Asclepias amplexicaulis</i>	Sand Milkweed	R
<i>Asclepias exaltata</i>	Poke Milkweed	R
<i>Asclepias hirtella</i>	Tall Green Milkweed	R
<i>Asclepias lanuginosa</i>	Woolly Milkweed	E
<i>Asclepias ovalifolia</i>	Oval Milkweed	E
<i>Asclepias viridiflora</i>	Green Milkweed	R
<i>Aster furcatus</i>	Forked Aster	T
<i>Baptisia leucophaea</i>	Cream Wild Indigo	R
<i>Baptisia tinctoria var. crebra</i>	Yellow Wild Indigo	E
<i>Beckmannia syzigachne</i>	American Sloughgrass	E
<i>Besseyia bullii</i>	Kitten Tails	T
<i>Betula alleghaniensis</i>	Yellow Birch	E
<i>Betula papyrifera</i>	Paperbark Birch	R
<i>Bidens discolor</i>	Swamp Beggar's Ticks	R
<i>Botrychium campestre</i>	Iowa Moonwort	E
<i>Buchnera americana</i>	American bluehearts	T
<i>Cakile edentula</i>	Sea Rocket	T
<i>Calla palustris</i>	Water arum	E
<i>Callitriche heterophylla</i>	Large Water Starwort	R

<b>Species</b>	<b>Common name</b>	<b>Status*</b>
<i>Callitriche palustris</i>	Common Water Starwort	R
<i>Calopogon oklahomensis</i>	Oklahoma grasspink	E
<i>Calopogon tuberosus</i>	Grasspink Orchid	E
<i>Carex aurea</i>	Golden Sedge	T
<i>Carex bromoides</i>	Brome Hummock Sedge	T
<i>Carex brunnescens</i>	Green Bog Sedge	E
<i>Carex canescens</i>	Gray Bog Sedge	E
<i>Carex chordorrhiza</i>	Cordroot Sedge	E
<i>Carex conoidea</i>	Prairie Gray Sedge	R
<i>Carex crawei</i>	Early Fen Sedge	R
<i>Carex crawfordii</i>	Crawford's oval sedge	E
<i>Carex crus-corvi</i>	Crowfoot Fox Sedge	R
<i>Carex cryptolepis</i>	Small Yellow Sedge	T
<i>Carex cumulata</i>	Clustered sedge	E
<i>Carex disperma</i>	Shortleaf Sedge	E
<i>Carex echinata</i>	Prickly Sedge	E
<i>Carex formosa</i>	Awnless Graceful Sedge	E
<i>Carex frankii</i>	Bristly Cattail Sedge	R
<i>Carex garberi</i>	False Golden Sedge	E
<i>Carex graciliscens</i>	Slender Wood Sedge	R
<i>Carex intumescens</i>	Shining Bur Sedge	E
<i>Carex leptalea</i>	Slender Sedge	R
<i>Carex oligosperma</i>	Running Bog Sedge	E
<i>Carex pedunculata</i>	Long-stalked Hummock Sedge	R
<i>Carex trisperma</i>	Three-seeded Bog Sege	E
<i>Carex tuckermanii</i>	Bent-Seeded Hop Sedge	E
<i>Carex umbellata</i>	Early Oak Sedge	R
<i>Carex viridula</i>	Green Yellow Sedge	T
<i>Carex woodii</i>	Wood's Stiff Sedge	R
<i>Cassia hebecarpa</i>	American Senna	R
<i>Castilleja sessiliflora</i>	Downy Painted Cup	E
<i>Ceanothus herbaceus</i>	Red Root	E

Species	Common name	Status*
<i>Chamaedaphne calyculata</i>	Leatherleaf	T
<i>Chamaesyce polygonifolia</i>	Seaside Spurge	E
<i>Cimicifuga racemosa</i>	Black Cohosh	E
<i>Cirsium hillii</i>	Hill's Thistle	R
<i>Cirsium pitcheri</i>	Dune thistle	T
<i>Collinsia verna</i>	Blue-Eyed Mary	R
<i>Comptonia peregrina</i>	Sweet Fern	E
<i>Conopholis americana</i>	American cancer-root	R
<i>Corallorhiza maculata</i>	Spotted Coral Root	E
<i>Corallorhiza wisteriana</i>	Spring coralroot	R
<i>Corydalis aurea</i>	Scrambled Eggs Corydalis	E
<i>Cypripedium calceolus</i> var.		
<i>parviflorum</i>	Small Yellow Lady's Slipper	R
<i>Cypripedium calceolus</i> var.		
<i>pubescens</i>	Large Yellow Lady's Slipper	R
<i>Cypripedium candidum</i>	White Lady's-Slipper	R
<i>Cypripedium parviflorum</i>		
var. <i>makasin</i>	Small Yellow Lady's Slipper	E
<i>Cypripedium reginae</i>	Showy Lady's Slipper	E
<i>Cypripedium x andrewsii</i>	Hybrid Lady's Slipper	R
<i>Dalea foliosa</i>	Leafy Prairie Clover	E
<i>Delphinium tricornis</i>	Dwarf Larkspur	R
<i>Desmodium canescens</i>	Hoary Ticktrefoil	R
<i>Desmodium cuspidatum</i>	Bracted Tick Trefoil	R
<i>Diarrhena americana</i>	Beak Grass	R
<i>Dichanthelium boreale</i>	Northern Panic Grass	E
<i>Diervilla lonicera</i>	Dwarf Bush Honeysuckle	R
<i>Dirca palustris</i>	Leatherwood	R
<i>Drosera intermedia</i>	Narrow-leaved Sundew	T
<i>Drosera rotundifolia</i>	Round-Leaved Sundew	E
<i>Eleocharis rostellata</i>	Wicket Spike Rush	T
<i>Eleocharis wolfii</i>	Wolf's Spike Rush	R
<i>Elymus trachycaulus</i>	Bearded Wheat Grass	E
<i>Epiobium strictum</i>	Downy Willow Herb	T

Species	Common name	Status*
<i>Equisetum variegatum</i>	Variiegated scouringrush	R
<i>Erigenia bulbosa</i>	Harbinger of Spring	R
<i>Erigeron pulchellus</i>	Robin's Plantain	R
<i>Eriophorum angustifolium</i>	Cotton Grass	R
<i>Eriophorum virginicum</i>	Rusty Cotton Grass	E
<i>Erythronium americanum</i>	Yellow Trout Lily	R
<i>Eupatorium sessilifolium</i>		
var. <i>brittonianum</i>	Upland Boneset	R
<i>Festuca paradoxa</i>	Clustered fescue	R
<i>Filipendula rubra</i>	Queen-of-the-Prairie	T
<i>Fimbristylis puberula</i>	Hairy Fimbray	R
<i>Galium labradoricum</i>	Bog Bedstraw	R
<i>Gentiana flavida</i>	Yellowish Gentian	R
<i>Gentianopsis crinita</i>	Fringed Gentian	R
<i>Geranium bicknellii</i>	Northern Cranesbill	E
<i>Goodyera pubescens</i>	Rattlesnake Plantain	R
<i>Gratiola quartermaniae</i>	Limestone Hedge-hyssop	E
<i>Helianthus giganteus</i>	Tall Sunflower	E
<i>Hepatica nobilis</i> var. <i>obtusata</i>	Round-lobed Hepatica	R
<i>Hybanthus concolor</i>	Green Violet	R
<i>Hydrastis canadensis</i>	Golden Seal	R
<i>Hymenopappus scabiosaeus</i>	Old Plainsman	T
<i>Hypericum adpressum</i>	Shore St. John's Wort	E
<i>Hypericum kalmianum</i>	Kalm St. Johnswort	E
<i>Hypericum swinkianum</i>	Swink's St. Johnswort	R
<i>Ilex verticillata</i>	Winterberry	R
<i>Iliamna remota</i>	Kankakee Mallow	E
<i>Iodanthus pinnatifidus</i>	Violet Cress	R
<i>Isoetes butleri</i>	Glade Quillwort	E
<i>Jeffersonia diphylla</i>	Twinleaf	R
<i>Juglans cinerea</i>	Butternut	R
<i>Juncus alpinoarticulatus</i>	Alpine Rush	T
<i>Juncus articulatus</i>	Jointed Rush	R
<i>Juniperus communis</i>	Common Juniper	T

Species	Common name	Status*
<i>Juniperus horizontalis</i>	Creeping Juniper	E
<i>Larix laricina</i>	American Larch	T
<i>Lathyrus japonicus</i>	Beach pea	R
<i>Lathyrus ochroleucus</i>	Pale Vetchling	T
<i>Lechea intermedia</i>	Savanna Pinweed	E
<i>Lespedeza leptostachya</i>	Prairie Bush Clover	E
<i>Lespedeza violacea</i>	Violet Bush Clover	R
<i>Liatris scariosa</i> var. <i>nieuwlandii</i>	Savanna Blazing Star	R
<i>Lonicera dioica</i>	Red Honeysuckle	E
<i>Lupinus perennis</i>	Wild Lupine	R
<i>Lycopodium clavatum</i>	Ground Pine	E
<i>Lycopodium complanatum</i> var. <i>flabelliforme</i>	Trailing Ground Pine	R
<i>Lycopus rubellus</i>	Stalked Water Horehound	R
<i>Lycopus virginicus</i>	Virginia Water Horehound	R
<i>Lysimachia hybrida</i>	Lowland Yellow Loosestrife	R
<i>Malvastrum hispidum</i>	False Mallow	E
<i>Medeola virginiana</i>	Indian Cucumber-root	E
<i>Megaladonta beckii</i>	Water Beggar Tick	E
<i>Melanthium virginicum</i>	Bunch Flower	T
<i>Menyanthes trifoliata</i>	Buckbean, Bogbean	T
<i>Minuartia patula</i>	Slender Sandwort	T
<i>Mitella diphylla</i>	Bishop's Cap, Miterwort	R
<i>Monarda bradburiana</i>	Eastern beebealm	R
<i>Monotropa hypopithys</i>	Pine Sap	R
<i>Monotropa uniflora</i>	Indian Pipe	R
<i>Oenothera perennis</i>	Small Sundrops	R
<i>Ophioglossum pusillum</i>	Adder's Tongue Fern	R
<i>Orchis spectabilis</i>	Showy Orchis	R
<i>Orobanche uniflora</i>	One-flowered Cancer Root	R
<i>Oryzopsis racemosa</i>	Black-Seeded Rice Grass	R
<i>Panax quinquefolius</i>	Wild Ginseng	R
<i>Pilea fontana</i>	Clearweed	R
<i>Pinus banksiana</i>	Jack Pine	E

Species	Common name	Status*
<i>Plantago cordata</i>	Heart-leaved Plantain	E
<i>Platanthera aquilonis</i>	Northern Green Orchid	R
<i>Platanthera ciliaris</i>	Orange Fringed Orchid	E
<i>Platanthera clavellata</i>	Club-spur Orchid	E
<i>Platanthera flava</i> var. <i>herbiola</i>	Tubercled Orchid	T
<i>Platanthera hyperborea</i> var. <i>huronensis</i>	Northern Bog Orchid	R
<i>Platanthera psycodes</i>	Purple Fringed Orchid	E
<i>Poa sylvestris</i>	Woodland Blue Grass	R
<i>Poa wolfii</i>	Wolf's bluegrass	E
<i>Pogonia ophioglossoides</i>	Snake-mouth Orchid	E
<i>Polygonatum pubescens</i>	Downy Solomon's Seal	T
<i>Polygonum careyi</i>	Carey's Hearsese	E
<i>Polystichum acrostichoides</i>	Christmas Fern	R
<i>Populus balsamifera</i>	Balsam Poplar	E
<i>Potamogeton robbinsii</i>	Fern Pondweed	E
<i>Potentilla palustris</i>	Marsh Cinquefoil	R
<i>Prenanthes aspera</i>	Rough White Lettuce	R
<i>Psoralea tenuiflora</i>	Scurfy Pea	R
<i>Pycnanthemum pilosum</i>	Hairy Mountain Mint	R
<i>Pyrola elliptica</i>	Shinleaf	R
<i>Ranunculus rhomboideus</i>	Prairie Buttercup	T
<i>Rhus vernix</i>	Poison Sumac	R
<i>Rhynchospora alba</i>	White Beak Rush	E
<i>Rubus odoratus</i>	Purple Flowering Raspberry	T
<i>Rubus pubescens</i>	Dwarf Raspberry	T
<i>Sagittaria calycina</i>	Hooded Arrowhead	R
<i>Salix candida</i>	Hoary Willow	R
<i>Salix serissima</i>	Autumn Willow	E
<i>Salix syrticola</i>	Dune willow	E
<i>Sanguisorba canadensis</i>	Canada Burnet	E
<i>Sarracenia purpurea</i>	Pitcher Plant	E
<i>Saxifraga pensylvanica</i>	Swamp Saxifrage	R
<i>Scirpus hattorianus</i>	Early Dark Green Rush	E

Species	Common name	Status*
<i>Scirpus microcarpus</i>	Reddish Bulrush	E
<i>Scleria pauciflora</i> var. <i>pauciflora</i>	Few-flowered Nut Rush	E
<i>Scutellaria ovata</i> var. <i>versicolor</i>	Heart-leaved Skullcap	R
<i>Shepherdia canadensis</i>	Buffalo Berry	E
<i>Silene regia</i>	Royal Catchfly	E
<i>Silene virginica</i>	Fire Pink	R
<i>Sisyrinchium montanum</i>	Mountain Blue-eyed Grass	E
<i>Sparganium emersum</i>	Green-fruited Bur Reed	E
<i>Spiranthes lacera</i> var. <i>gracilis</i>	Slender Lady's Tresses	R
<i>Spiranthes lucida</i>	Early Ladies' Tresses	E
<i>Spiranthes ovalis</i>	October Lady's Tresses	R
<i>Spiranthes romanzoffiana</i>	Hooded lady's tresses	R
<i>Stellaria pubera</i>	Great Chickweed	E
<i>Swertia carolinensis</i>	American Columbo	R
<i>Symphoricarpos albus</i> var. <i>albus</i>	Snowberry	E
<i>Talinum rugospermum</i>	Fame Flower	R
<i>Tetranneuris herbacea</i>	Lakeside Daisy	E
<i>Tofieldia glutinosa</i>	False Asphodel	T
<i>Tomanthera auriculata</i>	Eared False Foxglove	R
<i>Trichophorum cespitosum</i>	Tufted bullrush	E
<i>Trientalis borealis</i>	Starflower	E
<i>Trifolium reflexum</i>	Buffalo Clover	T
<i>Triglochin maritima</i>	Common Bog Arrow Grass	T
<i>Triglochin palustris</i>	Slender Bog Arrow Grass	T

Species	Common name	Status*
<i>Trillium cernuum</i>	Nodding Trillium	E
<i>Trillium erectum</i>	Purple Trillium	E
<i>Trillium sessile</i>	Toad Trillium	R
<i>Ulmus thomasii</i>	Rock Elm	E
<i>Utricularia cornuta</i>	Horned Bladderwort	E
<i>Utricularia gibba</i>	Humped Bladderwort	R
<i>Utricularia intermedia</i>	Flat-leaved Bladderwort	T
<i>Utricularia minor</i>	Small Bladderwort	E
<i>Utricularia subulata</i>	zigzag bladderwort	E
<i>Vaccinium corymbosum</i>	Highbush Blueberry	E
<i>Vaccinium oxycoccos</i>	Small Cranberry	E
<i>Valeriana uliginosa</i>	Bog Valerian	E
<i>Valerianella umbilicata</i>	Northern Corn Salad	E
<i>Veronica americana</i>	American Speedwell	E
<i>Veronica comosa</i>	Water Speedwell	R
<i>Veronica scutellata</i>	Marsh Speedwell	T
<i>Viola blanda</i>	Hairy White Violet	E
<i>Viola canadensis</i>	Canada Violet	E
<i>Viola conspersa</i>	Dog Violet	R
<i>Viola pallens</i>	Smooth White Violet	R
<i>Viola primulifolia</i>	Primrose Violet	E
<i>Viola striata</i>	Cream Violet	R
<i>Zizania aquatica</i>	Wild Rice	R

See POC website for updates

\*E=Endangered, T=Threatened, R=Locally Rare (not an official status)

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**MOST COMMON AND/OR AGGRESSIVE INVASIVE SPECIES DOCUMENTED BY POC**

<i>Acer platanoides</i>	Norway maple	<i>Poa spp.</i>	Blue grass
<i>Achillea millefolium</i>	Yarrow, Milfoil	<i>Populus deltoides</i>	Eastern cottonwood*
<i>Agropyron repens</i>	Quack grass	<i>Populus tremuloides</i>	Quaking aspen*
<i>Ailanthus altissima</i>	Tree of heaven	<i>Pyrus calleryana</i>	Callery pear
<i>Alliaria petiolata</i>	Garlic mustard	<i>Ranunculus ficaria</i>	Lesser celandine
<i>Alnus glutinosa</i>	European alder	<i>Rhamnus cathartica</i>	Common buckthorn
<i>Ambrosia artemisiifolia var. elaitor</i>	Common ragweed*	<i>Rhamnus frangula</i>	Glossy buckthorn
<i>Apocynum androsaemifolium</i>	Spreading dogbane*	<i>Rhus spp.</i>	Smooth sumac*
<i>Arctium spp.</i>	Burdock	<i>Robinia pseudoacacia</i>	Black locust
<i>Artemisia absinthium</i>	Absinthium	<i>Rosa multiflora</i>	Multiflora rose
<i>Barbarea vulgaris</i>	Yellow rocket	<i>Rubus spp.</i>	Black/raspberry*
<i>Berberis thunbergii</i>	Japanese barberry	<i>Rumex crispus</i>	Curly dock
<i>Bromus inermis</i>	Smooth brome	<i>Salix spp.</i>	Willow+
<i>Carduus nutans</i>	Nodding thistle	<i>Saponaria officinalis</i>	Bouncing bet
<i>Celastrus orbiculatus</i>	Oriental bittersweet	<i>Solanum dulcamara</i>	Bittersweet nightshade
<i>Centaurea maculosa</i>	Spotted knapweed	<i>Solidago spp.</i>	Goldenrod+
<i>Chrysanthemum leucanthemum</i>		<i>Sonchus uliginosus</i>	Sow thistle
<i>var. pinnatifidum</i>	Oxeye daisy	<i>Taraxacum officinale</i>	Common dandelion
<i>Cirsium arvense</i>	Field or Canada thistle	<i>Torilis japonica</i>	Japanese hedge parsley
<i>Cirsium vulgare</i>	Bull thistle	<i>Toxicodendron radicans</i>	Eastern poison ivy*
<i>Convallaria majalis</i>	European lily of the valley	<i>Trifolium spp.</i>	Clover
<i>Cornus spp.</i>	Dogwood*	<i>Typha spp.</i>	Cattail
<i>Coronilla varia</i>	Crown vetch	<i>Ulmus pumila</i>	Siberian elm
<i>Daucus carota</i>	Queen Anne's lace	<i>Verbascum thapsus</i>	Common mullein
<i>Dipsacus spp.</i>	Teasel	<i>Viburnum opulus</i>	European cranberry
<i>Duchesnea indica</i>	Indian strawberry	<i>Vinca minor</i>	Periwinkle
<i>Elaeagnus spp.</i>	Russian/Autumn olive	<i>Vitis riparia</i>	Riverbank grape*
<i>Elymus arenarius</i>	Lyme grass	<i>Xanthium strumarium</i>	Cocklebur*
<i>Euonymus spp.</i>	Burning bush		
<i>Fraxinus spp.</i>	Ash*		
<i>Hackelia virginiana</i>	Stickseed*		
<i>Hesperis matronalis</i>	Dame's rocket		
<i>Hieracium caespitosum</i>	Field hawkweed		
<i>Hypericum perforatum</i>	St. Johnswort		
<i>Iris pseudacorus</i>	Tall yellow iris		
<i>Laportea canadensis</i>	Wood nettle*		
<i>Linaria vulgaris</i>	Butter and eggs		
<i>Lonicera spp.</i>	Honeysuckle		
<i>Lotus corniculatus</i>	Bird's-foot trefoil		
<i>Lysimachia nummularia</i>	Moneywort		
<i>Lythrum salicaria</i>	Purple loosestrife		
<i>Maclura pomifera</i>	Osage orange*		
<i>Medicago lupulina</i>	Black medick		
<i>Melilotus spp.</i>	Sweet clover		
<i>Miscanthus sacchariflorus</i>	Amur silvergrass		
<i>Morus alba</i>	White mulberry		
<i>Myosotis scorpioides</i>	Forget-me-not		
<i>Myriophyllum spicatum</i>	European water milfoil		
<i>Pastinaca sativa</i>	Wild parsnip		
<i>Phalaris arundinacea</i>	Reed canary grass+		
<i>Phragmites australis</i>	Common reed+		

\* = Native invasive species

+ = Native and non-native invasive species are in this genus

The New Invaders Watch Program's target list  
of new and spreading invasive species can be  
viewed at:

[www.newinvaders.org/target-spp.cfm](http://www.newinvaders.org/target-spp.cfm)

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Shirley Heinze Land Trust  
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Stewardship and Development Coordinator  
Save the Dunes  
Phone: 219-879-3564  
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Midewin National Tallgrass Prairie

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POC Midewin Research Assistant  
*Starts May 1*  
*Contact Rachel Goad for more info*

Allison Cisneros  
Midewin Volunteer Coordinator  
Office: 815-423-6370  
[amcisneros@fs.fed.us](mailto:amcisneros@fs.fed.us)

New Invaders Watch Program (NIWP)

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Lake County Forest Preserve District  
[dmaurer@LCFPD.org](mailto:dmaurer@LCFPD.org)

Mia Spaid, Special Projects Manager  
Northeast Illinois Invasive Plant Partnership  
[niipp.miaspaid@gmail.com](mailto:niipp.miaspaid@gmail.com)

### EQUIPMENT LOANS

**The POC office** in the Plant Science Center at the Chicago Botanic Garden can loan tapes, GPS units, flagging, compasses, etc. Contact the POC Research Assistant to sign out any of these items.

**Chicago Park District:** Site stewards can contact Forrest Cortes for equipment loans.

**FPD Cook County:** Monitoring kits can be picked-up at Cook County Nature Centers (check FPCC website for locations) and the Volunteer Resource Center for short-term loans. Backpack kits include GPS unit, measuring tape, flags, flagging, compass and clipboard. Approved monitors will receive the URL for reservations for the kit which must be made online.

**FPD DuPage County** (Cindy Hedges), **FPD Kane County** (Robb Cleave), and **McHenry County Conservation District** (Laurie Ryan) can loan similar monitoring equipment, GPS units, and maps for monitoring on their sites.

**FPD Lake County:** Ken Klick can loan meter tapes and flagging and can provide site maps and limited GPS units.

**FPD Will County:** Juanita Armstrong can loan flags, compass, tape and GPS unit. Ability to loan is based on availability and requires prompt return. Contact Juanita in advance.

**Illinois Beach State Park:** For GPS unit loan, contact Don Wilson.

## POC VOLUNTEERS AS CHICAGO BOTANIC GARDEN VOLUNTEERS

POC volunteers are also considered Chicago Botanic Garden volunteers. Although volunteers may not be monitoring specifically at the Garden, there are many benefits to this relationship including:

- Receive the volunteer newsletter “Grounds Cover” with news about the Garden and volunteer activities
- Emergency notification of Garden closings
- Free Garden membership if you contribute 150 hours in the previous calendar year (membership admits you to the Garden free of the parking fee). Volunteer hours can be a combination of POC hours and other CBG volunteer hours
- Admission to the Railroad Garden (with 30 volunteer hours\* in the previous year)
- Free tram tours of the Garden (with 30 volunteer hours\* in the previous year)
- Invitations to free lectures, volunteer meetings and volunteer recognition events

If you have not yet done so, **please complete the Chicago Botanic Garden volunteer application form** available from POC or at one of our training workshops. Once the application form is received you will be sent a document to sign for the required background check.

For more information regarding the Chicago Botanic Garden volunteer program, contact:  
Judy Cashen, Director of Volunteer Services, phone (847) 835-6800 or e-mail [jcashen@chicagobotanic.org](mailto:jcashen@chicagobotanic.org)

## VOLUNTEER APPLICATIONS AND PERMITS

*Some applications involve background checks. Permits should be carried during monitoring visits.*

**Nature Preserve Sites and IDNR Sites** Permits required. POC submits permit applications with individual monitor names. Permits are distributed to monitors by mail or email. Additional county permits described below.

**Cook County FP** To facilitate new volunteer application, permit distribution, monitor recognition, and improve communication, FPCC requires POC monitors working on FPCC land to create a basic volunteer profile through the FPCC's Online Volunteer System (OVS). Recording monitoring hours through OVS is optional. Setting up a basic profile is fast and easy. You can get started at: [fpdcc.com/volunteer/](http://fpdcc.com/volunteer/)

**DuPage County FPD** One-time application for monitoring and other volunteer activities at any site required; includes application form, volunteer waiver form, and background check form. Forms available from Cindy Hedges.

**Kane County FPD** One-time volunteer application, background check form and agreement and medical release form are required for plant monitoring. Volunteer will be given an access permission placard to be placed in the windshield/driver's side while at the site. New Kane County FPD volunteers must attend volunteer orientation which are offered every other month (these can wait until later in the season after monitoring begins). Forms available from Robb Cleave.

**Lake County FPD** A one-time contract/waiver form is required for all POC monitors which should be submitted to Tom Smith. Any additional Lake County permits will be sent to monitors by POC staff.

**McHenry County Conservation District** Annual permit process. Laurie Ryan applies for research permit and provides volunteer monitor names. MCCD will mail site access/parking permit to volunteer monitors.

**Chicago Park District** Submit an Adult Volunteer Application form and a liability waiver.

**Midewin National Tallgrass Prairie** At first visit each year, volunteers sign a Job Hazard Analysis form.

**Will County FPD** Annual Waiver and Release form needs to be signed and Activity Description form completed. Submit to Renee Gauchat, who will distribute permits to be placed in vehicle.

**NW Indiana** Contact Rachel Goad for details.

**Other Sites** Contact Rachel Goad for details.

## RESOURCES

### Program information

[plantsofconcern.org](http://plantsofconcern.org) – See what's new with the program, download forms and protocols, see species monitored and their bloom times, a photo gallery, download the training manual, and login to our database to see your old reports, assignments and enter data.

### Plant identification, photos, and information websites

[www.plants.usda.gov](http://www.plants.usda.gov) – Useful for species information, naming, distribution, and images.

[ill-inps.org](http://ill-inps.org) – The Illinois Native Plant Society's webpage has many resources, including photos and links to many identification resources.

[sciencecollections.org](http://sciencecollections.org) – Search for and view specimens in the Chicago Botanic Garden's herbarium.

[www.illinoiswildflowers.info](http://www.illinoiswildflowers.info) - Information about and pictures of Illinois native plants.

[gobotany.newenglandwild.org](http://gobotany.newenglandwild.org) – This site hosts an interactive key and informative pages about many species found in New England as well as the Midwest.

[dnr.wi.gov/topic/endangeredresources/plants.asp](http://dnr.wi.gov/topic/endangeredresources/plants.asp) – Informative fact sheets for rare plants in Wisconsin.

[www.dnr.illinois.gov/ESPB/Documents/ETChecklist2011.pdf](http://www.dnr.illinois.gov/ESPB/Documents/ETChecklist2011.pdf) – List of endangered and threatened species in Illinois. Maintained by the Illinois Endangered Species Protection Board.

[www.carolfreemanphotography.com](http://www.carolfreemanphotography.com) – Photographer Carol Freeman is working with POC to photograph all of Illinois's endangered and threatened species. You can view many images on her website.

### Invasive species information and identification

[www.niipp.net](http://www.niipp.net) – This site for the Northeast Illinois Invasive Plant Partnership, a cooperative weed management area, provides resources and links about invasive species in our region.

[www.newinvaders.org](http://www.newinvaders.org) - New Invaders Watch Program (NIWP). See page 7.

[www.invasive.org](http://www.invasive.org) - The source for information and images of invasive & exotic species. Maintained by a consortium of universities and the USDA Forest Service.

[www.invasivespeciesinfo.gov](http://www.invasivespeciesinfo.gov) - A great site for invasive species information.

### Books

*A Field Guide to Wildflowers: Northeastern and North-Central North America (Peterson Field Guides).*

Margaret McKenny and Roger Tory Peterson. Houghton Mifflin, 1998. Grouped by color and by plant characteristics; species are described and illustrated.

*Illinois Wildflowers.* Don Kurz. Cloudland.net Publishing, 2004. Grouped by color, then season.

*Kane County Wild Plants & Natural Areas.* Dick Young. Kane County Forest Preserve District, 2007. This book contains information and illustrations of the wild plants that grow in Kane County, Illinois. Maps and plant lists of natural areas are featured. Available from Kane County FPD.

*Newcomb's Wildflower Guide.* Lawrence Newcomb. Little, Brown and Company, 1989. This is probably the best easy to use wildflower identification guide. The system of identification is based on natural structural features that are easily visible even to the untrained eye.

*Plants of the Chicago Region, 4<sup>th</sup> Edition.* Floyd Swink and Gerould Wilhelm. Indiana Academy of Science, 1994. Probably the most authoritative guide to plants that grow in and around Chicago. The entry for each plant contains a map showing the county where it was found and lists plant communities.

*Tallgrass Prairie Wildflowers. A Field Guide.* Doug Ladd and Frank Oberle. The Globe Pequot Press, 1995. Grouped by color, then season.





**CONFIDENTIALITY FORM**  
**Regarding Locations of Rare Species**

Rare species are endangered for many reasons. One of the threats to many rare plants is that of theft or poaching of plants and/or their fruits. This unfortunately occurs all too frequently. Even those who only wish to view rare plants may damage their habitat by excessive trampling. In order to preserve our rarest species and their habitats, it is important to maintain the confidentiality of their locations. Plants of Concern monitors are privileged to work directly with these plants, but this privilege brings with it the responsibility to keep the information confidential.

As a Plants of Concern monitor, I understand that all information must be kept secure. I agree not to reveal the location of any rare species to others who are not involved in the monitoring, ownership, or legitimate management of the site(s) where I monitor. Any person who assists me with my monitoring assignment will have pre-approval from the Plants of Concern staff, the landowner/land manager, and the Nature Preserve Commission in the case of a Nature Preserve. Any person who assists me will also sign this confidentiality agreement.

I also agree not to remove or destroy any plant material, such as but not limited to seeds, propagules, flowers, stems, leaves, and roots, from the preserves where I monitor except with an official written permit to do so.

**As a rare plant monitor, if you become aware of any immediate threat to the population, notify, without delay, your Forest Preserve District (FPD) land manager if it is a FPD site, or Plants of Concern (Rachel Goad) if your site is not on FPD land (see Manual for contact information).**

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

PRINT NAME: \_\_\_\_\_

*This document is permanent. It only needs to be signed once regardless of the number of years or sites you monitor for Plants of Concern. This agreement remains in place even if you terminate your monitoring for Plants of Concern.*

*A copy of this form will be kept on file with Plants of Concern at the Chicago Botanic Garden.*

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- Conservation 2000 (IDNR), 2006-2007
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