Guidance document drafted by FNPS Conservation and Land Management Partners committees
Chairs: Juliet Rynear (Conservation) and Daniel Young (Land Management Partners)
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FNPS Floristic Inventory and Plant Survey Guidance For Members

Plant Surveys. From time to time, Chapters are asked to conduct plant surveys and/or Floristic Inventories on public or private properties. Members can learn much from accompanying experts as they perform this service; and it is not unusual for such activities to be included in the field trip roster. Chapters should ensure, however, that those conducting the surveys/inventories have sufficient expertise to meet scientific standards for the activity. FNPS has many members with extensive experience in this area. For further guidance is available in FNPS Floristic Inventory and Plant Survey Guidance for Members.

Purpose of this guidance document: This document compiles advice from FNPS committees Conservation and Land Management Partners to guide FNPS members and chapters in conducting floristic inventories and/or plant surveys during field trips.

Background: Chapters may be asked to conduct floristic inventories and/or plant surveys on public or private properties. Or, members may want to develop plant identification, survey and monitoring skills for use on their own or family property, or they may have interest in developing their own plant lists for favorite places.

Need: To show how floristic inventories and rare/exotic plant surveys are important and to provide guidance to FNPS members. Floristic inventories are needed to have baseline data, and are often utilized to determine rarity or invasiveness of species not already listed at a particular location or within a county. Plant surveys can be used to identify new populations of rare/exotic species or to track species populations over time.

Definitions:
Florida native plant - This definition was approved by the FNPS Board of Directors in 1994:
For most purposes, the phrase "Florida native plant" refers to those species occurring within the state boundaries prior to European contact, according to the best available scientific and historical documentation. More specifically, it includes those species understood as indigenous, occurring in natural associations in habitats that existed prior to significant human impacts and alterations of the landscape.

When communicating about Florida's native plant species, the Society adopts the taxonomy represented in the most recent edition of Wunderlin and Hansen's *Guide to the Vascular Plants of Florida* published by the University Press of Florida. Plant identification shall include scientific names

in addition to any common names used in written materials or correspondence.

Non-native plant – any plant introduced outside of its native range, usually by human activity. Other commonly used descriptors include: exotic, exotic pest, invasive, introduced, alien, non-indigenous, non-native, and non-native invasive.

Floristic Inventory – lists all species present at a given site. These can also be used to gauge ranges of taxa, as well as occurrences of non-native/exotic plants.

Plant Survey – seeks out a set of species, generally rare or non-native/exotic in nature. Rare and non-native/exotic plant survey goals are to track occurrences and populations within a site.

Precautions:
On public lands. When surveying or otherwise working on public lands, FNPS should not supplant existing staff, but rather provide assistance to staff, researchers, graduate students, and private scientists/consultants when invited to do so. In this way, FNPS will support important and necessary botanical work without replacing jobs in the fields of botany, natural resource management, science, and conservation.

On private lands. When performing inventories/surveys at the request of private landowners (especially for properties without conservation easements), good communication with the land owner is a must. Because plants do not receive the same legal protections as animals, the potential exists for a landowner to destroy or remove plant populations (especially of rare species) once they know what is present on their property. For this reason, FNPS recommends that when performing inventories/surveys on private properties without conservation easements, FNPS members should have an established relationship with the landowner and clearly understand the intended goal of the inventory/survey.

Survey Protocol: This refers to the how/when/what of the inventory/survey. How should the inventory/survey be conducted? What method(s) will be used? What time of year, or what frequency for multiple visits?

For public lands. The public agency, researcher, or consultant should have a protocol for the type of inventory/survey they would like performed and which species should be monitored more intensely than others.

For private lands. Check with FNPS members experienced in performing plant inventories/surveys. A rule of thumb is that field visits should be frequent enough to catch species in bloom that will otherwise go unnoticed or be impossible to identify. Try to visit sites in different seasons so that you don't miss species. Also try visiting after stochastic events such as fires, floods, and hurricanes.

Preparation for Field Work: Using whatever references and existing data are available, make a thorough list of all known plant species on the property (scientific and common names). Plant lists are often found in management plans. The FNPS Land Management Partners web site has convenient links to public lands management plans at fnps.org/committee/partners. The agency staff or property owner you are working with may be able to provide a list. Be aware, that in many cases Land Management Plans have "wish lists" and some species found in their plant list may not have been documented for the site, but are potentially located there. Do not assume anything.

For private properties that do not have existing data, you can print a list of plants found in the County where the property is located. This may be used as a check-off list, but also help determine whether a species is new to the county. County lists may be obtained from the Atlas of Florida Vascular Plants (http://www.florida.plantatlas.usf.edu/Default.aspx). In addition, the Florida Natural Areas Inventory (FNAI) has tools that can help narrow down the possibilities of what may occur on the site. FNAI has a searchable tracking list by county for rare species and natural communities. Their Biodiversity Matrix Map Server is a geographic information system-based screening tool that allows you to zoom to your site of interest and create a report that lists documented, likely, and potential occurrences of rare species and natural communities (fnai.org/species.cfm).

Web sites that have searchable data by location:

- The PanFlora database created by Gil Nelson (www.gilnelson.com/PanFlora/)
- The Institute for Regional Conservation for south Florida (http://www.regionalconservation.org/)
- FNAI Biodiversity Matrix Map Server (http://www.fnai.org/biointro.cfm)

And herbarium databases such as:

- Florida State University (http://herbarium.bio.fsu.edu/search-specimens.php),
- University of Florida (www.flmnh.ufl.edu/herbarium/cat/catsearch.htm),
- University of South Florida (http://florida.plantatlas.usf.edu/Specimen.aspx).

It is best to obtain habitat maps (if they exist) and aerials for the site being inventoried or surveyed. When conducting an inventory, an attempt should be made to visit all types of habitats within the site. Critically Imperiled habitat should be identified and mapped on the site if it hasn't already been done (within reason), and as often is the case, rare plants often occupy this type of natural community.

Field Work: Items you should have are your consolidated plant list, additional note paper, pen/pencil, field guides, camera, GPS, plus water and usual field supplies. A clipboard is handy, as are field notebooks. If you have a smart phone with the "I'veGot1" app downloaded, you will be able to make use of it. Bring along FNPS members who have excellent identification skills as well as those who have experience with plant inventories/surveys. Be sure to include the date of your observations and the names of everyone who helped on the survey/inventory. If you have trouble with identification, take a lot of very good photos that show both the entire plant as well as fine details. Place something in the photo to illustrate the scale and size of the plant itself (a pencil, coin, your hand) and then take photos of fine details - flower parts, stems, tops and bottoms of leaves. If you can't key something out in the field, the photos can be a real help later on. For species that are rare or not very common, try to estimate the actual number of plants. Plan to take notes either on your list, or in your data book. Additional data that are useful to include in your notes: habitat, phenology (fruiting or flowering), associated plant taxa, soil type, and condition of the plants.

For the rare species, it's a good idea to get GPS data but **please protect this sensitive information** as we need to protect these populations from poachers and illegal seed collection. This is a very real concern! Prior to any field work, all members should be informed about the adverse impact that unpermitted collection of plants and seeds has had on our plant populations throughout the state. Please note that cell phone cameras will record the location where a photo was taken unless the "GPS Location Tag" is turned off. Photos of rare species with GPS Location Tags should not be posted on

social media and the internet. Also get GPS data for invasive non-native/exotic species and record on I'veGot1 or send the location to FNAI and your local CISMA (see Reporting section below).

Collection of plants, seeds, and plant parts: FNPS recommends that plants, seeds, and plant parts not be collected while on field trips, as they often occur on conservation lands. The general public could get the "wrong" idea about whether it is okay to harvest plants on public and/or private lands. In some cases, such as a specialized field trip focusing on edible plants, there should be written permission from the land manager/owner beforehand, a clear protocol in place that will protect plant populations from overharvesting, and participants should clearly understand that it is a special case.

On public lands. If the field trip is an activity specifically to assist the public land manager, scientist or consultant, a protocol should be in place so as not to adversely impact a species' population. For example: *Do not collect more than 5% of a population of herbaceous plants, or 5% of the vegetation for any woody species.* The public land manager, scientist, or consultant should have all permits and permissions in place prior to the field trip.

On private lands. For species new to the county, invasive plant taxa, or species of special interest, if possible, plan to prepare an herbarium specimen. Written permission from the landowner is needed before any collections are made. Please note, that for any plants listed as endangered, threatened, or commercially exploited, a permit from the state of Florida is required in addition to landowner permission. For a list of plants that are regulated by the state of Florida see: https://www.flrules.org/gateway/ruleno.asp?id=5B-40.0055.

Data compilation: Add any new species found to an existing plant list. The list needs to be maintained electronically for easy sharing and updating. Spreadsheets such as Microsoft Excel work well for this because of the sort and filter features, but other software can be used as well. There should be one record per species. Fields or columns should include scientific name, common name, family, native status, Florida Exotic Pest Plant Council (FLEPPC) status, rarity status (be sure to indicate which system you are using - federal, state, FNAI), the natural community(ies) where a plant was observed, comments, and a separate table containing latitude and longitude for rare and non-native/exotic species (**please protect the location data for rare species**).

Reporting: Before providing the list to anyone who may rely upon it, do basic quality control including checking species names and their spellings, looking for obvious potential problems such as reporting species outside of their known ranges or habitats without obtaining expert verification, and checking dubious identifications with taxonomic experts, or at a minimum, marking them on the list as not being verified. Cite the flora for which plant names have been selected from, such as published books by Wunderlin and Hansen, rather than internet sources, which can change quite a bit in a short period of time. Be sure and include observer's names, dates for which species were observed, and the final date of the completed list. Once clean, provide the new plant list with geolocation data to the property owner/manager. Provide the FNPS chapter with the list minus the geolocation data to protect rare species because once a list is posted to a web site there is no way to control distribution. Also, ensure that any photos of rare species that will be posted on the web do not contain geolocation data. For any rare species found, if the occurrence was previously unknown, provide full information to FNAI (Amy Jenkins, ajenkins@fnai.fsu.edu or Ann Johnson, ajohnson@fnai.fsu.edu). If non-native/exotic plants are found, report to the property owner, and if invasive report also to FNAI (Gregg Walker, gwalker@fnai.fsu.edu), and your local Cooperative Invasive Species Management Area (CISMA) representative (to find your local CISMA see www.floridainvasives.org/cismas.cfm).

A note to FNPS Chapters: Chapters should consider creating a policy guideline of their own when recording plant data on field trips. For example, the Dade Chapter's primary goal of field trips was to educate the public, rather than collect lists of data. However, one person was assigned to record those vascular plants which were flowering and fruiting (reproducing). The lists were then published in the Chapter newsletter, and could serve as a valuable record for outside agencies that could then use the data to augment their existing data set. It also provided a record for when plants were reproducing. Field trips are not the equivalent of exhaustive inventories, as their purpose usually focuses on public education, rather than science. However, data collected on field trips could be used to augment an inventory that is being conducted.