

Standard Operating Procedure #7:

Procedures for Handling Unknown Species

Version 2.1 (1/26/2024)

Prepared by

Suzanne Sanders and Jessica Kirschbaum

National Park Service
Great Lakes Network Office
2800 Lakeshore Drive East
Ashland, Wisconsin 54806

Revision History Log

Date	Previous version	New version	Authors
2014	1.0	2.0	Suzanne Sanders and Jessica Grochowski
Details of plant collection slips and pictures were added.			
2024	2.0	2.1	Suzanne Sanders and Jessica Kirschbaum
Revised to: • reflect the fact that we now use tablets, rather than paper datasheets, and stand-alone cameras; • note that we no longer send out unknown specimens to a contractor for identification; • improve wording and flow of text.			

Contents

	Page
7.0 Introduction.....	1
7.1 Collection of Herbaceous Plants.....	1
7.1.1 Filling Out the Unknown Plants Data Collection Form	1
7.2 Collection of Woody Plants	2
7.3. Identification	3

7.0 Introduction

Occasions will arise when the field crew is unable to identify species on-site. Before collecting any plants or insects from the field, attempts should first be made to identify it on-site using reference books and guides. When this is not possible, follow the guidelines in this standard operating procedure for collecting and preserving specimens.

7.1 Collection of Herbaceous Plants

To collect groundlayer plants, an attempt must first be made to locate individuals of the questioned species outside of the outer boundary of the plot. There must be at least five individuals (hereafter, this also refers to ramets if the unknown species is, or appears to be, clonal) present for one to be removed. If ten individuals are present, two may be collected. No more than two individuals of a given species should be collected at any given plot. If no individuals can be located outside of the outer plot boundary, one or two may be collected from within the boundary, provided they are not within the quadrats.

Photograph the plant to show characteristics that will facilitate identification at a later time. This includes taking multiple close-up photographs of the flowers, fruits, and leaves, as well as whole plant pictures in which the plant size is placed in context with that of other plants. Always get a picture of the plant. It is *incredibly* useful to have pictures of all the unknown plants post-season, so please take the time to do this.

Exercise caution when selecting which plant(s) to collect. While it may be tempting to collect the largest plant(s) meeting the criteria above, this practice should be avoided. Larger plants may be making proportionately greater contributions to species recruitment than smaller plants. Collection of plants should tend toward smaller individuals, provided there is sufficient material present for identification.

Try to remove the root along with the aboveground portion of the plant. All field crews will carry a trowel with them for this purpose. Soil should be knocked free from the roots to the extent possible without damaging them. Name the unknown with the site number and a dash, followed by sequentially increasing integers. For example, the first unknown species collected at plot 7012 would be labeled 7012-1 while the second would be 7012-2. Fill out the unknown plant slip with the correct unknown plant ID (e.g., 7012-1), associated species, and habitat. Complete the unknown plant data collection form in the tablet with this same information. Once the form and the slip are filled out, take at least one picture with the completed unknown plant slip next to the plant. The specimen is then placed in a plastic bag with the unknown plant slip. Keep the specimen in as cool and dark of a place as possible, and do not allow it to be crushed.

7.1.1 Filling Out the Unknown Plants Data Collection Form

If you reference an unknown from a plot you previously sampled, still give it an unknown number for the site you are currently sampling. Then, in the description section of the unknown plant in the tablet, write the unknown identifier that you are referring to. For example, if you are on plot 6008

and you have an unknown that you documented the previous day at a different plot, call your current unknown 6008-1, and in the description section of the unknown plant datasheet for 6008-1, write “same as 6012-3, *Carex* sp., additional sample not collected.” Only do this if you know the **exact unknown ID** of the plant you are referring to. If you cannot remember the exact unknown ID, **collect the plant again**. In addition, take good photos of the plant, even if you don’t re-collect a specimen, to confirm that it is indeed the same plant as a previous unknown. If you don’t actually collect an unknown plant because you are referring to another plot’s unknown, write “additional sample not collected” on the Unknown data collection form. Make sure all your notes are complete **while you are still at the plot**, and collect a plant specimen if you have any doubt on the identification.

When more than one person is collecting data on herbs at one plot, both people will potentially collect unknown plants. To avoid overlapping unknown ID numbers, add an initial after the plot number on each unknown. For example, if Suzy and Jess are both collecting herb data at site 6015, Suzy’s first unknown will be 6015-S1 and Jess’s will be 6015-J1.

If there are no plants of the given species outside of groundlayer quadrats, or if there are less than five individuals present, do not remove voucher specimens from the area. In these instances, later identification will be based entirely on the photographs and notes collected at the site. Good quality photographs are very important in these instances. Take detailed photographs of the entire plant, the leaves, and the stems, some with a ruler in the background for reference. Take close-up photographs of all leaves (upper and lower surfaces) and reproductive structures; take these close-ups from more than one angle for good perspective. You should have at least 10–15 photographs of an unknown plant if you cannot collect a specimen.

7.2 Collection of Woody Plants

In the event that woody plant species cannot be identified in the field after consulting reference manuals, portions of these plants may be cut and removed from the field for later identification. All crews carry pruning shears for this purpose. When collecting plants, an attempt must first be made to locate individuals of the same species outside of the outer boundary of the plot. To collect a stem containing reproductive structures, assure that at least five reproductive stems are present in total. This can include one plant with five reproductive stems; five plants, each with one reproductive stem; or some combination of the two. If at least 10 reproductive stems are present, then two may be collected for later identification. If leaves are not present on the reproductive stem, or if the judgment is made that additional stems with leaves may aid identification, up to two stems containing leaves may be collected, provided there are at least 10 present near the plot.

If there are no individuals present outside of the outer plot area, an attempt should be made to sample within the plot area but from trees rooted outside of the six-meter-wide belt transects and from shrubs located outside of the browse circles. The same rules about the number of stems required for collection apply here. As a last resort, collection of woody tree material may be made within the belt transects. Follow the directions for photographing and documenting as described for herbaceous plants. As detailed in the herbaceous section above, collection of smaller specimens, rather than

larger ones, is the priority. Keep the specimen in as cool and dark of a place as possible, and do not allow it to be crushed.

Reproductive material (i.e., viable seeds, non-viable seed husks, decaying acorns) may be collected at the discretion of the field crew. However, caution must be exercised so that only a small portion is collected.

7.3. Identification

Specimens will be identified in-house by GLKN vegetation team staff.