

Invasive Species Early Detection Monitoring Protocol for Klamath Network Parks

Standard Operating Procedure (SOP) #3: Observer Training

Version 2025Jun09

Citation for this SOP:

Klamath Network. 2025. Standard Operating Procedure 3: Observer Training: 2025Jun09. Klamath Network Invasive Species Early Detection Monitoring Protocol. Unpublished National Park Service Standard Operating Procedure, Klamath Inventory and Monitoring Network, Ashland, Oregon.

Citation for the original protocol:

Odion DC, Sarr DA, Mohren SR, Klinger RC. 2010. Invasive Species Early Detection Monitoring Protocol for Klamath Network Parks. Natural Resource Report. NPS/KLMN/NRR—2010/227. National Park Service. Fort Collins, Colorado <https://irma.nps.gov/DataStore/Reference/Profile/2124867>

(Note that updated versions of the protocol are linked from the original IRMA record.)

To create a new version of this SOP, carefully follow the instructions for the KLMN (caves) SOP: Revising the Protocol (<https://irma.nps.gov/DataStore/Reference/Profile/2238840>). Use the Revision History Log below to describe the revisions:

- Populate the top table of the revision history log, providing the previous version date, author of the change, a specific but concise description of the changes made, the footnote number associated with change details, and a new version date.
- In the bottom table, add a footnote and as much text as needed to describe in detail the reasons for and implications of the change.
- Replace en dashes with text.

Previous Version Date	Author of Change	Changes Made	Footnote #	New Version Date
2010	LNY, AS	Continued ISED protocol update	1	4/18/2025
4/18/2025	T. Berrian	Formatted to adhere to 508 compliance standards.	–	6/09/2025
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Footnote #	Detailed Reasons for and Implications of the Changes
1	Incorporated protocol changes, mainly pertaining to changes in field data collection and safety training. Include guidance for writing park summaries.
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This SOP explains the procedures for training observers, including survey training, first aid, safety, emergency procedures, backcountry rules and ethics, data entry, and training tracking.

Survey Training

Prior to working in the field, each member of the field crew must review the entire protocol and the job hazard assessment documents. Training will include a presentation of the specifics of the protocol by the Project Lead and Data Manager. The crew will be instructed on how to identify invasive species and how to use the data entry software.

Training Observers in Navigation

Observers are expected to be able to independently navigate in the field using a map and compass. They will be provided instruction on the following (SOP #6: Data Collection and Entry):

- Using ArcGIS Field Maps and Avenza to collect data.
- Ensuring correct identification of search unit (road, trail, powerline) on the map.
- Navigation along search units.
- Understanding correspondence between map and GPS, including search units.
- Use of map, compass, and pacing in conjunction with GPS navigation.

Training Observers in Plant Identification

Crews are expected to be familiar with plant taxonomy and terminology in order to become quickly familiar with invasive exotic plants encountered in the Network parks. With the Crew Leader, observers will review how to identify invasives that have been prioritized using the outreach materials developed by the Network, and where appropriate, herbarium specimens, keys, and photographs. Crews will also review how to identify the life stage of plants observed in the field. Crews will identify the reproductive stage of a plant from a dropdown list for each infestation observed. Observers will Field botanists/crew member's training will include:

1. Review lists of priority invasives.
2. Review photographs, taxonomic keys, herbarium sheets, and other plant identification materials prepared by the Network.
 - a. Plant identification practice can occur anywhere as we have many of the invasive species in Ashland and surrounding foothills.
3. Practice plant identification, making use of herbarium specimens where possible. Calphotos is also a good resource to review images of species.
4. The Crew Lead should work with the field crew members to specifically review how to identify prioritized species in particular parks. This should include:
 - a. Which species look similar to prioritized species.
 - b. Which habitats are most likely to have infestations of particular species.

5. The Crew Lead will train field crew members on identifying the reproductive stage of a plant concurrently while conducting plant identification practice. Crew members should be able to clearly differentiate between the following reproductive stages:
 - a. Seedling/rosette
 - b. Leafing out/vegetative
 - c. Bolting
 - d. Flowering
 - e. Fruiting
 - f. Dead/skeleton

Training Observers in Data Collection Techniques

Data are collected using tablets. The data to be entered and entry methods are described in SOP #6: Data Collection and Entry. Each member of the crew will be trained on how to use the electronic equipment to collect data. It is the responsibility of the Data Manager, with the help of the Protocol Lead, to conduct the training prior to beginning field sampling.

Training Observers in Writing Park Summaries

Once surveys at a given park have been completed, crew members will work together to write a brief 1-2 page summary of notable observations at each park. Park summaries will be shared with park staff along with data products following the completion of each park's ISED surveys. Park summaries should include the following information:

- Park name and dates surveyed
- Brief description of the sample frame and additional areas surveyed (e.g., roads, trails, park boundary, special areas of interest, etc.). Include an estimate of the distance sampled if possible.
- A sentence describing the invasive species most frequently observed.
 - For example, "The most prevalent species we encountered, in approximate order from most to least abundant, were *Bromus tectorum*, *Lactuca serriola*, *Cirsium vulgare*, *Rubus armeniacus*, *Verbascum thapsus*, *Centaurea solstitialis*, *Tragopogon dubius*, *Poa bulbosa*, *Centaurea melitensis*, *Ailanthus altissima*, *Robinia pseudoacacia*, and *Taeniatherum caput-medusae*."
- A sentence describing the invasive species least frequently observed.
 - For example, "Invasive species that we encountered less frequently include *Galium aparine*, *Verbascum thapsus*, *Holosteum umbellatum*, and *Taeniatherum caput-medusae*."
- A bulleted list of any notable general or specific observations made while sampling. Notable observations may include information such as:

- Commonalities in environments associated with the most invasive species or the highest densities of specific invasive species.
- Locations with particularly high infestations.
- Notable infestations of species not on the priority species list.
- Potential non-detections of species due to mismatches between phenology and sampling times.

First Aid, Safety, and Emergency Procedures

The field crew will be working in some remote areas; it is therefore essential that everyone, to the extent possible, be prepared for emergency situations. Numerous safety issues and concerns are associated with implementing a long-term, service-wide monitoring program that includes extensive field work and sampling by network staff or other cooperators/contractors. Field work requires an awareness of potential hazards and knowledge of basic safety procedures. Field personnel routinely come in direct and indirect contact with rough terrain, potentially hazardous plants and animals, and adverse weather conditions. Advanced planning can reduce or eliminate many safety hazards.

The Klamath Network is committed to safety and will work to meet the goals and adhere to the beliefs of the NPS NPSafe program. To this end, the Klamath Network has developed a three-pronged approach to safety in the field:

1. **Job hazard assessment documents (JHAs)** were developed specifically for each park, to which crew members will strictly adhere while working at the parks (Appendix E). The safety protocol addresses known hazards (e.g., poison oak, rocky terrain, etc.), wildlife issues, communications, first aid, and an emergency response plan. Prior to going into the field, the Crew Lead shall review safety procedures and job hazard analyses (Appendix E) with all field crew personnel.
2. The **KLMN Safety Plan**. The Protocol Lead will spend a day going over the KLMN safety plan with the Crew Lead and Crew Members prior to the start of the field season.
3. A **Protocol readiness review** will be conducted prior to the start of the field season with the Protocol Lead and all Crew Lead/Members.