



Guidelines for Conducting Rare Plant Surveys

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Purpose of a rare plant survey

Rare plant surveys are undertaken to ascertain the presence or absence of rare plant species in a particular area. A rare plant survey can confirm the presence of rare plants on a site, but unless the site is severely degraded, most rare plant surveys cannot definitively rule out the presence of rare plants on a site.

What is a rare plant?

Rare plants are species that are native to Washington and at risk of extirpation in the state due to low numbers, few occurrences, high habitat specificity, high threats, or significant downward population trends. The Washington Natural Heritage Program (WNHP) maintains lists of rare vascular plants and lichens, bryophytes, and macrofungi in Washington (<https://www.dnr.wa.gov/NHPlists>). These lists are annotated to include the Natural Heritage rank (at global and state scales), any federal status (i.e. Threatened, Endangered, or Candidate under the Endangered Species Act or Sensitive by BLM or US Forest Service), and distribution by county, ecoregion, and managed area.

Qualifications of surveyors

- Ability to identify plant species in the field or herbarium using technical manuals. If field identification is not possible, surveyors should record relevant data on growth habit, flower or fruit characters, vegetative features, or habitat and take digital photos to help with determinations later. Surveyors may need to consult with experts from WNHP, university herbaria, or local native plant society chapters with identification of pertinent specimens.
- Knowledge of the potential rare plant species and their likely habitat in the survey area.
- The ability to use maps, GPS, and other tools to adequately record rare plant populations.

Preparation for fieldwork

1. Develop a list of known or potential rare plant species for the survey area, based on range and habitat requirements. The list should include scientific name, habitat, and appropriate time for successful identification.

Some resources to help determine what rare species might occur in a specific area are available through the WNHP website (<https://www.dnr.wa.gov/NHPdata>) and include: WNHP GIS dataset, WNHP county lists, technical reports, ecological community data, web viewers, and WNHP rare plant sighting forms (in pdf and word formats).

Plant identification resources include the Washington Rare Plant Field Guide (<https://www.dnr.wa.gov/NHPfieldguide>), Consortium of Pacific Northwest Herbaria (<https://www.pnwherbaria.org>), Burke Herbarium Image Collection (<https://www.biology.burke.washington.edu/herbarium/imagecollection.php>), *Flora of the Pacific Northwest*, and other regional floras.

2. Design fieldwork so that each habitat within the survey area is visited at the appropriate time for the potential species in that habitat. Surveys may require more than one visit.
3. Choose the appropriate level of survey intensity for the project. Complete surveys attempt to cover the entire area at a high level of certainty. Other surveys can focus on most likely habitats or areas to be affected by the project. The survey intensity should be identified in the survey report.

Fieldwork

Conduct surveys at the appropriate season for each potential rare species. Multiple site visits may be necessary. Identify and list species observed, not just the target rare species. Mapping of rare plants should be as precise as possible; the use of a GPS is recommended.

Rare plant survey reports

WNHP provides a Rare Plant Sighting Form report form on its website, at the bottom of the Data Products and Requests page: <https://www.dnr.wa.gov/NHPdata>. This form has fields for the following information: species name, surveyor, date, quad name, directions to site, coordinates (Township/Range/Section, Lat-Long, UTM), population vigor, measured or estimated abundance, habitat, associated species, elevation, acreage, management or protection comments, and voucher (photo or specimen information with repository). This form can be used for absence data, too (where the species was expected, but not found). The form can also be appended with maps of survey routes, observation points, and specimen or habitat photos. Completed forms should be submitted to WNHP so that our rare plant database can be kept as current and accurate as possible.

Other resources

Nelson, J.R. 1985. Rare plant surveys: techniques for impact assessment. *Natural Areas Journal* 5: 18-30.

THE THREE MOST IMPORTANT FACTORS IN A RARE PLANT SURVEY

- The ability to recognize the target species
- Surveying at the appropriate time of year
- Providing sighting forms to the WNHP for both successful and unsuccessful surveys (absence data are useful too!)

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