

SURVEY PROTOCOLS

FOR

SURVEY & MANAGE STRATEGY 2

VASCULAR PLANTS

V 2.0

BY

LOU WHITEAKER

AND

JAN HENDERSON
RUSS HOLMES
LISA HOOVER
ROBIN LESHER
JENNIFER LIPPERT
EVAN OLSON
LAURA POTASH
JOAN SEEVERS
MARTY STEIN
NANCY WOGEN

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SECTION I

SURVEY PROTOCOLS for VASCULAR PLANTS

INTRODUCTION

The “Survey and Manage” standards and guidelines were developed to address those species that are considered at risk under the Northwest Forest Plan (NFP). In Table C-3 of the NFP, species listed under Survey Strategy Component 2 require that surveys will be completed prior to ground disturbing activities implemented in FY99 or later. If new sites are discovered during the surveys, they automatically become “known sites” and should be managed according to the most current recommendations that the Regional Ecosystem Office has for that particular species.

I. PROTOCOL OBJECTIVES

The survey protocol for vascular plants is designed to determine presence/absence, to describe and delineate population boundaries, and to document habitat conditions of Survey and Manage vascular plant species prior to ground disturbing activities. This information is needed to implement the Survey and Manage standards and guidelines.

II. TRIGGER FOR PROTOCOL

The survey protocol will be implemented if the proposed ground-disturbing activity will directly or indirectly impact plant populations or alter the stand or habitat conditions, *and* if any of the following 4 criteria are met:

- A known site exists in the proposed project area.
- A Survey and Manage species has been recorded within the 5th field watershed where the project is located.
- A Survey and Manage species has been recorded within the adjacent 5th field watershed.
- A proposed project area occurs within the known or suspected range of a Survey and Manage species, and there is probability of suitable habitat within the proposed project area.

III. INVENTORY METHODOLOGY

A. Sampling Procedures

1. Prefield Review

Once it is determined that the project area is within the known or suspected range of a Survey and Manage species, the objective of the prefield review is to determine if known sites or suitable habitat are present in (or in the vicinity of) the proposed ground disturbing activity area. Consult available information, such as the current Known Site Data Base (KSDB) or the Interagency Species Management System (ISMS), GIS layers or potential or current vegetation, stand age maps, stand exam data, ecology program database, Current Vegetation Survey (CVS) inventory, botany program survey records, and habitat models (if available) for the area of interest to determine if a species is known to occur in the area. Evaluate the available information to determine the location and habitat of populations of the target species. Print a map of the site from your GIS layer or mark the locations of reported sites on topographic maps such as a 7.5 minute USGS topographic map and on aerial photographs to be used in the field survey.

The prefield review will result in identification of reported sites of the target species and areas of suitable habitat for this species within the proposed project area. These are the areas where the survey will initially be conducted. Field surveys are not required if reported sites do not exist in the proposed ground disturbing activity area or in the vicinity, and if it is determined that suitable habitat for the target species is not likely to exist in the proposed project area. Documentation of the prefield review will become part of the administrative record.

A habitat review will identify general topographic and special features and determine if suitable habitat for Survey and Manage vascular plant species could occur within the proposed project area. This can be completed in either the office or the field, but should at least consist of reviewing project area maps, available aerial photographs, and agency and non-agency records detailing the habitat characteristics and distribution of the vascular plants in the vicinity.

If adequate determination cannot be made on potential habitat at the proposed activity area, a habitat reconnaissance trip to the field may be necessary. The sole purpose of this cursory site visit is to provide the surveyor with a general overview of the project area to see first-hand if any potential habitat occurs within the project area. This may occur in cases where GIS products or other habitat information is not available or it is difficult to make an adequate assessment in the prefield review. This preliminary site visit will help decide whether or not a comprehensive field survey is warranted. Habitat reconnaissance is not a thorough search of the project area, and as such does not constitute a true field survey. If no suitable habitat is encountered, relative risk to the target species is presumed to be low. It should be documented in the administrative record that no suitable habitat was encountered. The area should not be mapped as having been surveyed since floristic inventory was not conducted and other site specific information was not collected.

2. Field Survey

Field surveys will be conducted in such a way that they will ensure a high likelihood of locating occupied habitat. Depending upon the size of the proposed project area, use one of the following two survey methods.

a. Intuitive Controlled Survey

For large areas (e.g., greater than one hectare or 2.47 acres), an intuitive controlled survey should be used. This method includes a complete survey in habitats with the highest potential for locating Survey and Manage species.

The surveyor traverses through the project area enough to see a representative cross section of all the major habitats and topographic features, looking for the target species while en route between different areas. Most of the project area will have been surveyed. When the surveyor arrives at an area of high potential habitat (that was defined in the prefield review or encountered during the field visit), a complete survey for the target species should be made (Figure 1). Observations should be documented according to a standard format, which is discussed in Section I, Part III.A.2.c. of this document.

b. Complete Survey

For smaller areas (e.g., less than one hectare or 2.47 acres), conduct a complete survey. These surveys are defined as a 100 percent visual exam of the project area (Figure 1). The survey should be documented in the same manner as the intuitive controlled survey (Section I, Part III.A.2.c.).

c. Documenting Sites

If populations of Survey and Manage vascular plant species are found, precisely locate the population on 1:24,000 scale USGS quadrangle map, or equivalent GIS generated map, and optionally on aerial photos. Complete field form for documentation of known sites of the species, including location, and basic population and habitat information (Appendix A or equivalent form). Location will be recorded as UTM coordinates accurate to a minimum of 150 feet. UTM coordinates can be obtained directly from ISMS while digitizing (fields auto populated) or with a GPS unit. Submit this documentation for the administrative record and store in the ISMS database. A voucher specimen may be collected to verify the identification and to document the presence of the species but do not collect a voucher if removal of specimens will impact the population (observe the “1 in 20 rule”).

d. Documenting Surveys

Document the area surveyed and the presence or absence of Survey and Manage vascular plant species within the area surveyed using Appendix B or equivalent form. Include in this documentation a delineation of the area surveyed on a topographic map or an aerial photo. Complete all required fields on Appendix B. Submit this documentation for the administrative record, and store data in the ISMS database.

B. Extent of Surveys

For the purposes of this protocol, the survey area is defined as the area on the ground that could potentially receive direct or indirect impacts to the habitats or populations of the target species. Direct impacts are those that cause physical disturbance to any vegetation, surface, or substrate within any given area. Indirect impacts include, but are not limited to, changes in the amount of sunlight reaching the forest floor, changes in the hydrologic regime, or other changes in the microclimatic conditions (Chen et al. 1995, Harris 1984).

C. Timing of Surveys

Surveys will be conducted at a time of year when it is favorable to identify the target species, typically during the flowering period for vascular plant species. Descriptions of each of the vascular plant Survey and Manage species describes this period for each species and other characteristics that may aid in accurate identification of the species (see Section II).

D. Additional Information to Collect

Collection of presence/absence, location, and basic population and habitat information is required. However, recording detailed ecological condition and population data beyond the basic requirement is highly recommended, as it will contribute to knowledge of these species and assist in management.

IV. DATA MANAGEMENT

A. Data Quality Assurance

A data steward should be designated for each administrative unit (National Forest, BLM District) who will be responsible for the quality and completeness of the survey data. This includes adequate and accurate data collection, prompt and accurate data entry into the corporate database (ISMS) and hard copy formats. This is an important aspect to ensure

credibility of the interpretations, and analysis or management direction that are based on these data. Data quality will be assured at the local level, and adhere to any regional agency standards for data management.

B. Data Storage

Data will be stored at each administrative unit and be available in a corporate database for local and regional use according to policy developed for the ISMS database and Survey and Manage taxa. Site locations for Survey and Manage vascular plants will be available in a GIS layer that is linked to a database with supporting information. Electronic and hard copies will be maintained and accessible to agency personnel requiring this information to successfully implement the Survey and Manage standards and guidelines and other agency goals under the Northwest Forest Plan. Negative sighting data should also be entered into the ISMS structure in order to help refine species management by understanding the correlations between habitats and species presence or absence. The hard copy file will include documentation of prefield review, field survey data, field forms and field notes, voucher specimen location, and all other supporting information. This documentation should be kept as a case file.

V. SURVEYING SKILLS

A. Surveyor Background/Qualifications/Skills

The following qualifications are necessary to ensure that surveys are conducted in a safe and professional manner:

Education and/or experience in the fields of plant taxonomy and/or plant ecology, preferably with a minimum of one (1) botanical field season working within the range of the northern spotted owl (Washington, Oregon, and Northern California). In order to describe the habitat, the surveyor should be able to accurately identify associated species, including grasses, sedges, and other "difficult" taxa and be able to characterize the ecological conditions.

Demonstrated expertise with technical botanical keys appropriate for the area. Within the range of the northern spotted owl, the surveyor should be proficient with the following texts or their equivalent: Flora of North America vol 2 (Moran 1993), Flora of the Pacific Northwest (Hitchcock and Cronquist 1973), The Jepson Manual (Hickman 1993), and Vascular Plants of the Pacific Northwest, vol 1-5 (Hitchcock et al. 1955-1969).

Competence in off-trail navigation using topographic maps, compass, and aerial photos. Ability to perform surveys on steep, densely vegetated terrain.

B. Possible Training Needs

Surveyors should regularly consult field guides and photographs to acquire search images of the Survey and Manage species. It is advisable for the surveyor to visit known sites to acquire a search image for the target species and the associated habitat. It is also advisable for surveyors to visit herbaria to develop a search image and become familiar with the natural variations and key characteristics of the target species and look-a-likes. Surveyors should have a working knowledge of associated plants and habitat associations specific to each of the Survey and Manage species.

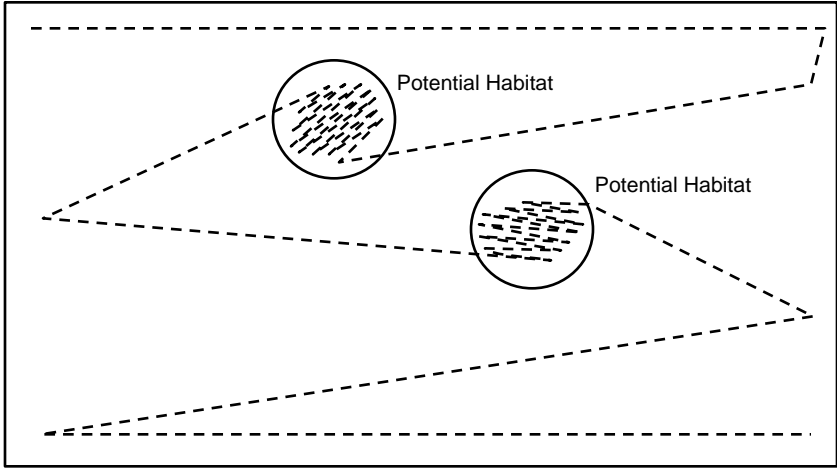
Figure 1. Diagram of Intuitive Controlled and Complete plant survey levels.

List of Appendices

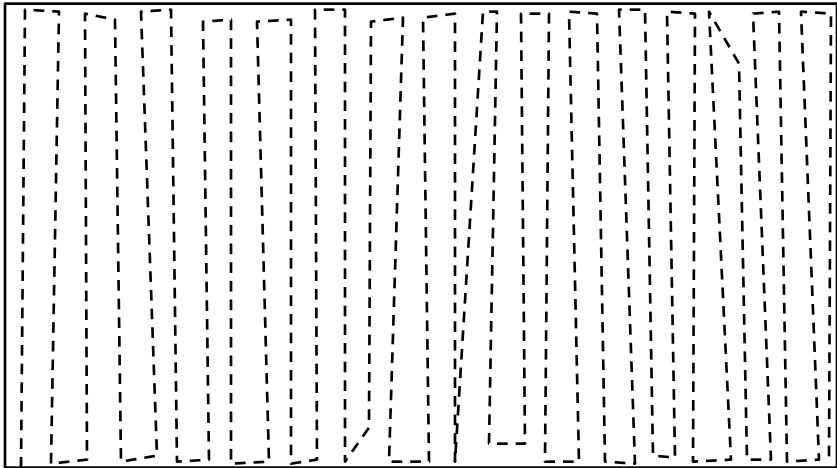
Appendix A: Sighting Form
Appendix B: Survey Form

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INTUITIVE CONTROLLED



COMPLETE

Figure 1. Diagram of Intuitive Controlled and Complete plant survey levels.

**APPENDIX A
SIGHTING FORM
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Location Data

Species Code¹: _____ Scientific Name: _____

Location ID: _____ Occurrence ID: _____

Administrative Unit: _____ Slope%: _____

Landform: _____ Area(Acres): _____ Rock: _____ Soil: _____

Aspect(°): _____ Elevation(ft): _____ Moisture: _____ Accuracy: _____

Location Note: _____ UTM East: _____

_____ UTM North: _____

Location Direction: _____ UTM Zone: _____

Survey Data

Project Name: _____ Survey ID: _____

Survey Date: _____ Date Correct: Y/N Observer: _____

Survey Method: _____

Survey Note: _____

Collection Data

Collection Type: _____ Collection Date: _____ Collection ID: _____

Collection Location Name: _____

Collector: _____ Collection Identifier: _____

**APPENDIX A
SIGHTING FORM
Page 2 of 2**

Community Observation Data

Vegetation Series Code Name: _____

Plant Association Group Code Name: _____

Plant Association Code Name: _____

Stand Age: _____ Total Community Cover(%): _____

Primary Species Total Quantity: _____

Plant Community Notes: _____

Survey Feature Observations

Species Associated to Community

Feature Type	Feature Species Code	Feature Use	Species Code	Scientific Name	%Cover	Abundance
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

Species Biology for Primary Species

Phenology	Quantity	Age Class	Species Code	Scientific Name	%Cover	Abundance
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

¹Outlined text indicates required fields, values provided with ISMS documentation.

**APPENDIX B
SURVEY FORM
Page 1 of 2**

Location Data

Location ID: _____ Occurrence ID: _____

Administrative Unit: _____ Slope%: _____

Landform: _____ Area(Acres): _____ Rock: _____ Soil: _____

Aspect(°): _____ Elevation(ft): _____ Moisture: _____ Accuracy: _____

Location Note: _____ UTM East¹: _____

_____ UTM North: _____

Location Direction: _____ UTM Zone: _____

Survey Data

Project Name: _____ Survey ID: _____

Survey Dates: _____ Date Correct: Y/N Observer: _____

Survey Name: _____ Survey Method: _____

Survey Note: _____

Community Observation Data

Vegetation Series Code Name: _____

Plant Association Group Code Name: _____

Plant Association Code Name: _____

Community Age: _____ Total Community Cover(%): _____

Plant Community Notes: _____

