

LEPA Survey Standards/ Guidelines

Slickspot peppergrass

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Bureau of Land Management
Slickspot Peppergrass Inventory and Clearance Standards
May 13, 2010

These guidelines describe standard procedures for conducting inventories and clearances for slick spots and slickspot peppergrass (*Lepidium papilliferum*) and are based on U.S. Fish and Wildlife Service Rare Plant Inventory Guidelines (Attachment 1) developed by the Idaho Fish and Wildlife Office of the U.S. Fish and Wildlife Service (Service), Boise, Idaho. The Bureau of Land Management (BLM) developed the methods outlined below, with technical assistance from the Service, that the BLM will use to determine whether potential habitat contains slick spots (slickspot peppergrass habitat), slickspot peppergrass (occupied habitat), or non-habitat (Figure 1, Attachment 2). The inventory standards in section B and C describe requirements for inventory of potential habitat, and section E describes requirements for project clearances.

The inventory guidelines referenced below address BLM conservation measures 1a and 1b as described in the 2009 Conservation Agreement between the Idaho Fish and Wildlife Office and Idaho BLM for slickspot peppergrass.

A. Surveyor Requirements

The following qualifications would be required for potential habitat inventory or project clearances in slickspot peppergrass potential habitat:

- 1) BLM journey-level botanist.
- 2) Technician, para-botanist, or apprentice botanist under the direct supervision of a BLM journey-level botanist.
- 3) Experienced contracted botanist familiar with slickspot peppergrass and local southwest Idaho flora as demonstrated by a resume or other supporting documentation. All technicians, para-botanists, or apprentice botanists working under the contracted botanist must meet qualifications approved by the BLM journey-level botanist.

All BLM inventory personnel would be trained by the field office botanist prior to field inventory implementation. Contractors are required to coordinate with the local field office botanist.

B. Stage 1 Inventory

1. Stage 1 inventories are performed to determine if slick spots and slickspot peppergrass plants are present. The recommended time period for Stage 1 inventory to detect slick spots and plants is April 1-October 15. If the objective of the inventory is detection of slickspot habitat presence or absence, surveys may be completed any time of the year when soils are not snow-covered or saturated. If slick spots are located and Stage 1 inventory is completed outside of this recommended time period, 3 years of Stage 2 and 3 inventory would be required

- to determine presence or absence of slickspot peppergrass plants (see section C below).
2. Inventories will be performed in all areas containing potential habitat as defined by suitable soils and elevation and contained within the BLM 2003 potential habitat GIS layer, as updated.
 3. Linear transects that span the width or length of an individual section (legal) or polygon (if less than 1 mile in length or width) will be established on northing or easting coordinates and located between 100 and 400 meters apart. The actual distance between transects will be contingent upon vegetative density within each section (e.g., visual distance where slick spots could be detected) and will be determined by the field office botanist. Surveyors will walk transects in a meandering fashion such that transect width consists of a minimum of 10 meters (~ 33 feet) along either side of the transect center line, resulting in a total transect width of 20 meters (~ 66 feet).
 4. Slick spots observed on or adjacent to each transect will be recorded on topographic maps or remote imagery (e.g. aerial photos, NAIP) with a minimum scale of 1:12,000 or a using a standard BLM GPS data dictionary. Slick spot complexes can be recorded as a single GPS point taken in the center of the cluster with an approximation of the complex size (<0.1 acre, 0.1-0.5 acre, 0.5-1 acre, >1 acre). If slick spots occur in very low density, single slick spots would be recorded separately. Slick spot density can be estimated upon completion of inventory for the section or polygon (e.g. X slick spots/acre). All GPS data will be collected in NAD83 per BLM and Service standards.
 5. General transect physical and biological characteristics (topography, soil type, plant community) will be noted for each transect upon completion of that transect. These observations should be compiled for groups of transects to describe the broader inventory area.
 6. If slick spots are observed in an area, a 0.5 mile habitat integrity zone surrounding the slick spots shall be established. This habitat integrity zone allows for potential conservation or restoration of native habitat to provide for insect pollinators. Both the 0.5 mile habitat integrity zone and the ¼ sections documented as containing slick spots shall be re-classified as slickspot peppergrass habitat and outlined in blocks to minimize fragments. This will be done to avoid re-classification of potential habitat into isolated islands of non-habitat or slickspot peppergrass habitat.
 7. Areas with documented slick spots will be required to undergo Stage 2 and, if necessary, Stage 3 inventory to determine the presence or absence of the species, if not detected during Stage 1 inventory.

8. If no slick spots are observed within a ¼ section of potential habitat or within 0.5 mile of that ¼ section, then that ¼ section will be re-classified as non-habitat. Otherwise stated, areas lacking slick spots can be redefined as non-habitat unless they are part of a habitat buffer.
9. Areas identified as non-habitat will be removed from the current potential habitat GIS layer under the supervision of the field office botanist, who will serve as the data steward for this layer. GIS layers for potential habitat, slickspot peppergrass habitat (lacking Stage 2 and 3 inventory or unoccupied), and occupied habitat will be updated to reflect these changes on an annual basis.
10. Ground-truthed image analysis of fine-scale remote imagery can be used to determine areas with the highest potential for slickspot peppergrass habitat. Image analysis should not be used for determining slick spot absence.

C. Stage 2 and 3 Inventory

Stage 2 and 3 inventories are performed to determine the presence or absence of slickspot peppergrass in known slick spots, as identified through Stage 1 inventory.

Stage 2 Inventory

1. Areas identified as containing slick spots would be inventoried using the methods and transect lines described for Stage 1, if slickspot peppergrass plants were not detected during Stage 1 inventory. Transect physical and biological characteristics do not need to be recorded again unless significant ecological changes due to disturbances such as fire have occurred or 12 or more years have passed since the previous inventory. The recommended time period for Stage 2 and Stage 3 inventories is May 1 – September 30 to maximize potential for detection of slickspot peppergrass plants.
2. If slickspot peppergrass plants are detected, occupied slick spots or clusters of occupied slick spots will be documented using a standard GPS data dictionary. Attribute data collected for occupied slick spots will be consistent with the most recent version of the Idaho Natural Heritage Program Rare Plant Observation Report form (<http://fishandgame.idaho.gov/cms/tech/CDC/report.cfm>).
3. If a slick spot or slick spot complex is determined to be occupied, a habitat integrity zone will be established around the occupied area as described in Step 6 for Stage 1 inventory above and the area will be reclassified from potential habitat (if no previous Stage 1 inventory) or slickspot peppergrass habitat (if there was previous Stage 1 inventory) to occupied habitat.
4. If a slick spot is determined through Stage 2 inventory to be unoccupied, then Stage 3 inventory is required.

Stage 3 Additional Plant Inventory

1. Repeat Stage 2 plant inventory as often as necessary to determine if slickspot peppergrass plants were or were not found at least once in three years of inventory where spring rainfall is at least 60 percent of "average" spring precipitation (March-May) within the current range of the species. For the Boise area, this would be approximately 2.4 inches (NOAA precipitation data, 1971-2009); for the Three Creek area, this would be approximately 2.5 inches (NOAA precipitation data, 1940-1987); for the Glenns Ferry area this would be about 1.4 inches (NOAA precipitation data, 1948-2006).

See <http://www.wrcc.dri.edu/summary/climsmid.html> for Idaho climate summaries.

2. An area containing slick spots may be determined not to contain slickspot peppergrass after three years of inventory where spring rainfall is at least 60 percent of "average" spring precipitation (March-May; about 2.5 inches) within the current range of the species. These areas will continue to be classified as slickspot peppergrass habitat, but will be reclassified as unoccupied. The 0.5 mile habitat integrity zone can be dropped for unoccupied slickspot peppergrass habitat.

D. Inventory Reporting Requirements:

A report that contains the results of Stage 1, Stage 2, and Stage 3 inventories will be submitted annually to the Idaho Fish and Wildlife Office. This report should include the following components:

1. A general description of the physical and biological setting of the inventoried areas, including topography, soils, and plant communities.
2. A description of current and historic land uses of the inventoried areas.
3. A discussion of inventory results.
4. A table summarizing transects inventoried, inventory dates for each transect, name of person performing the inventory, and presence or absence of slick spots and slickspot peppergrass for each transect.
5. A list of people performing the inventories and their qualifications.
6. GIS data for inventoried areas, including locations of unoccupied and occupied slick spots or slick spot complexes should be included as shapefiles. The attribute table for the slick spot shapefile should contain information on surrounding vegetation and presence or absence of slickspot peppergrass. Metadata must satisfy FDGC requirements.

7. A copy of the GIS data and Rare Plant Report Forms for occupied slick spots would be submitted to the Idaho Natural Heritage Program for inclusion in their databases.

E. Project Clearances

Clearances for slick spot habitat will be conducted using intuitive-controlled surveys using Fish and Wildlife Service Rare Plant Inventory Guidelines. For large projects, the inventory methods described above in section B may be used at the discretion of the BLM botanist. In addition to mapping slickspot peppergrass plant populations, surveyors are also required to map locations of slick spot habitat. If slick spots are found, section 7 consultation will be required unless 3 years of inventory determine that the slick spots are unoccupied.

See Section D above for reporting requirements. In addition, project clearances will include a full botanical inventory, consistent with the Service's Rare Plant Inventory Guidelines. All plants observed within the inventory area will be identified to a taxonomic level which allows rarity to be determined. The average percent cover of biological soil crust for slick spots within the project area will be estimated. Rare non-vascular plants should also be recorded. A comprehensive list of plants by plant community will be compiled for the project.

Attachment 1

RARE PLANT INVENTORY GUIDELINES **U.S. Fish and Wildlife Service** **Idaho Fish and Wildlife Office**

(March 2001, with minor edits on 5/12/10)

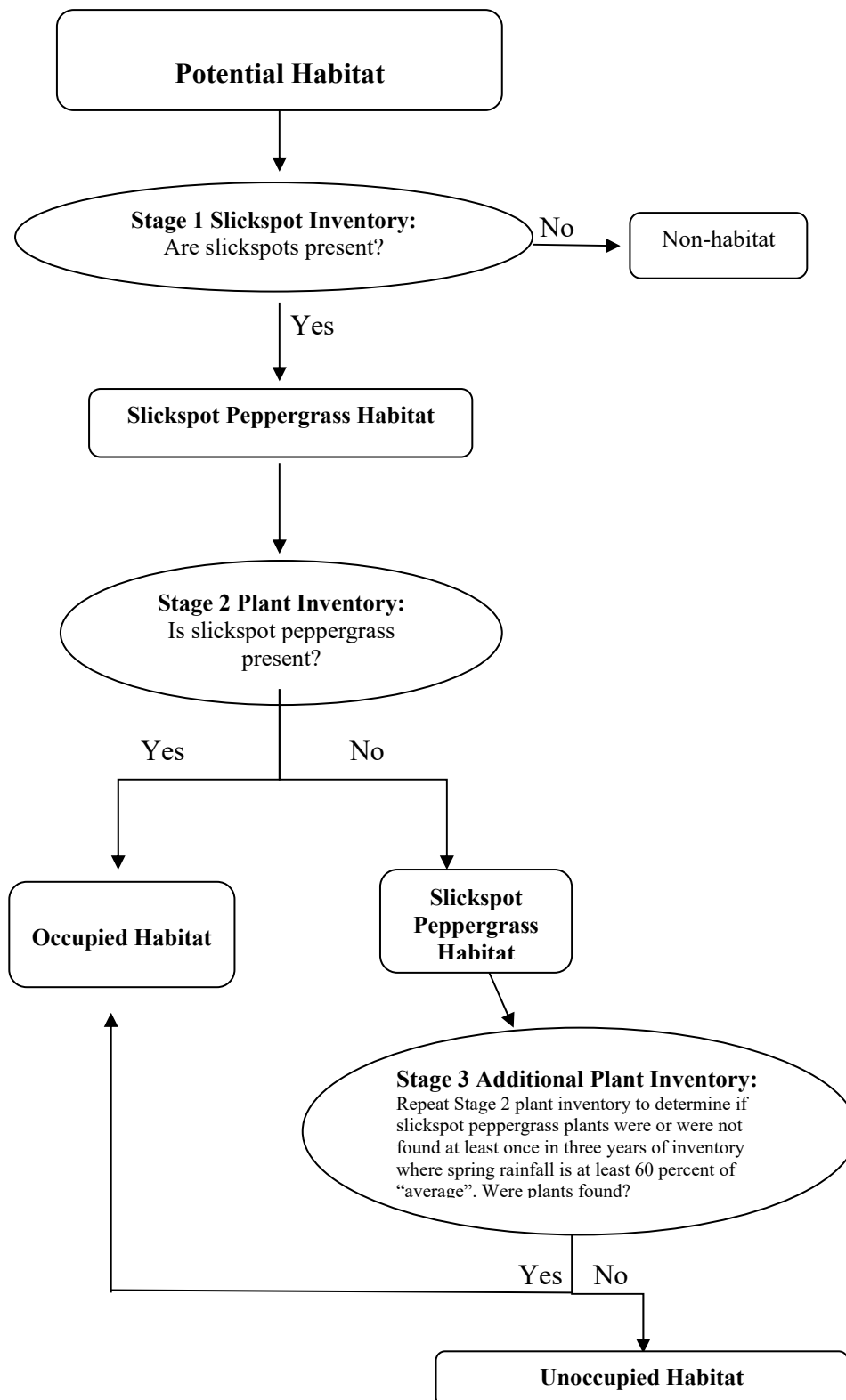
These guidelines describe protocols for conducting botanical inventories for Federally listed, proposed and candidate plants, and describe minimum standards for reporting results. The Service will use the information outlined below: 1) to assist in determining whether proposed project(s) may affect any listed, proposed, or candidate plants, and 2) to evaluate the direct, indirect, and cumulative effects associated with the project(s) under consideration.

Field inventories should be conducted in a manner that will locate listed, proposed, or candidate species (i.e., target species) that may be present. Field inventories should be conducted by qualified botanist(s) familiar with the target species. The entire project area requires a botanical inventory, except developed agricultural lands. The field investigator(s) should:

- I. Conduct inventories at the appropriate time of year when target species are present and identifiable. Inventories will include all potential habitats. Multiple site visits during a field season may be necessary to make observations during the appropriate phenological stage of all target species.
2. If available, use a regional or local reference population to obtain a visual image of the target species and associated habitat(s). If access to reference populations(s) is not available, investigators should study specimens from local herbaria.
3. List every plant species observed and compile a comprehensive list of plants for the entire project site. Vascular plants need to be identified to a taxonomic level which allows rarity to be determined. Nonvascular plants (e.g., cryptogams) can also be included if rarity and/or ecosystem function is a concern.
4. A report that contains the results of botanical field inventories should be submitted to the Idaho Fish and Wildlife Office (IFWO). This report should include:
 - a. a description of the biological setting, including plant community, topography, soils, potential habitat of target species, and an evaluation of environmental conditions, such as timing or quantity of rainfall, which may influence the performance and expression of target species
 - b. a map of the project location with a legal description of the site (showing scale, orientation, project boundaries, parcel size, and quadrangle name)
 - c. survey dates and survey methodology(ies)
 - d. maps showing the specific route(s) traveled through the survey area
 - e. if a reference population is available, provide a written narrative describing the target species reference population(s) used, and date(s) when observations were made
 - f. a comprehensive list of all vascular plants occurring on the project site for each habitat type

- g. current and historic land uses of the habitat(s) and degree of site alteration
 - h. presence of target species off-site on adjacent parcels, if known
 - i. an assessment of the biological significance or ecological quality of the project site in a local and regional context
 - j. names and qualifications of all surveyors
5. If target species is (are) found, the following information should also be included in the report:
- a. a map showing Federally listed, proposed and candidate species distribution as they relate to the proposed project.
 - b. if target species are associated with wetlands, a description of the direction and integrity of flow of surface hydrology. If target species are affected by adjacent off-site hydrological influences, describe these factors.
 - c. the target species phenology and microhabitat, an estimate of the number of individuals of each target species per unit area; identify areas of high, medium and low density of target species over the project site, and provide acres of occupied habitat of target species. Investigators could provide color slides or photos of target species or representative habitats to support information or descriptions contained in reports.
 - d. the degree of impact(s), if any, of the proposed project as it relates to the occupied (or potential unoccupied) habitat of target species.
6. Document findings of target species by completing a Rare Plant Observation Report and submitting copies to the Idaho Conservation Data Center or Oregon Natural Heritage Program, as appropriate. Documentation of determinations and/or voucher specimens may be useful in cases of taxonomic ambiguities, habitat or range extensions.
7. Report as an addendum to the original survey, any change in abundance and distribution of target plants in subsequent years. Project sites with inventories older than 1 year from the current date will likely need additional surveys. Investigators should consult with the Service to assess whether additional surveys are needed.
8. Adverse or unforeseen conditions may prevent investigator(s) from determining the presence of and/or identifying target species. Disease, drought, predation, or herbivory may influence the presence or identification of target species in any year. In some cases, additional botanical inventories in subsequent years may be required. Investigator(s) should discuss such conditions, if applicable, for specific target species and/or project sites.
9. For listed plant species, consult the IFWO's Section 7 guidelines for additional species specific information on phenology, threats, potential habitat, etc.

Figure 1. Inventory flowchart for slickspot peppergrass. See text for detailed descriptions of individual steps and Attachment 1 for habitat definitions.



Attachment 2. Habitat definitions for slickspot peppergrass¹

Potential habitat: Areas within the known range of slickspot peppergrass with general soil and elevation characteristics that indicate the potential for the area to support the species, although the presence of slick spots or slickspot peppergrass plants is unknown. Areas identified as potential habitat meet the following criteria:

- 1) Soils contain natric and natric-like soils which form “slick spots.” These occur within Loamy 7- to 10-inch and 10- to 13-inch Wyoming big sagebrush ecological sites on the Snake River Plains and Owyhee High Plateau. The soil moisture regime is aridic bordering on xeric.
- 2) The areas occur at about 2,200 to 5,400 feet elevation.

The use of the term “potential habitat” acknowledges the potential for an area to support slickspot peppergrass based on general characteristics, even though uncertainty remains because of the lack of site-specific habitat information. In the absence of Stage 1 inventory, areas that contain potential habitat should be treated as though they contain slickspot peppergrass or its habitat (slick spots).

Slickspot Peppergrass Habitat: Areas that meet the criteria for potential habitat and contain slick spots. Slickspot peppergrass habitat can be classified as occupied or unoccupied:

Occupied Habitat: Areas where slickspot peppergrass populations occur; occupied habitat includes a 0.5 mile habitat integrity zone buffering populations.

Unoccupied Habitat: Slickspot peppergrass habitat where the presence of slickspot peppergrass plants has not been detected through Stage 2 and 3 inventory (see section C).

Non-habitat: Areas that do not contain slick spots, or slick spots do not have the proper soil characteristics to support slickspot peppergrass.

¹Adapted from: U.S. Bureau of Land Management. 2009. Biological Assessment for Slickspot Peppergrass (*Lepidium papilliferum*): Jarbidge and Four Rivers Field Offices, Land Use Plans and Ongoing Actions.