

Interim Survey Requirements for Ute Ladies'-tresses Orchid (*Spiranthes Diluvialis*)

November 23, 1992

The U. S. Fish and Wildlife Service (Service) has established the following interim requirements and guidelines for surveys to determine the presence or absence of the Federally threatened plant species *Spiranthes diluvialis*, Ute ladies'-tresses orchid. These guidelines were developed by the Service in consultation with biologists and ecologists knowledgeable about the species. These guidelines and recommendations are designed to supplement, not substitute for, professional methods, expertise, and judgment typically used to conduct rare plant surveys.

Because the species is so rare, very little is known about its habitat preferences and population ecology. These interim survey requirements have been developed in order to gain more information about the species, identify potential habitat, streamline and standardize survey procedures. As more information becomes available through these surveys, the interim requirements will be revised and simplified as appropriate.

Documentation of compliance with these requirements and recommendations is accomplished through submission to the Service of a survey report. The Service will respond with a letter indicating acceptance of the report.

All Federal agencies have a responsibility under Section 7(a)(1) of the Endangered Species Act to conserve Federally listed threatened and endangered species. The Service encourages all Federal agencies to review their properties and projects and make funds available to conduct surveys in all appropriate potential habitat, including habitat outside the areas specified in these guidelines.

1. Introduction

Spiranthes diluvialis occurs in seasonally moist soils and wet meadows near springs, lakes, or perennial streams and their associated flood plains below 6,500 feet elevation in Utah, Colorado, and Nevada. Typical sites include old stream channels and alluvial terraces, sub-irrigated meadows, and other sites where the soil is saturated to within 18 inches of the surface at least temporarily during the spring or summer growing seasons. Associated vegetation typically falls into the Facultative Wet wetland vegetation classification category (from the National List of Plant Species that Occur in Wetlands developed by the Service). The species occurs primarily in areas where the vegetation is relatively open and not overly dense, overgrown, or over grazed. Although very rare now, it is estimated that it was once common in low elevation riparian areas in Colorado, Utah and Nevada.

The moist soil conditions and vegetation composition of known *Spiranthes diluvialis* sites suggest that wetlands regulated under the Clean Water Act qualify as potential *Spiranthes diluvialis* habitat. Therefore, jurisdictional wetlands, as well as other drier sites matching the description above, should be surveyed.

2. Qualification of Surveyor

Spiranthes diluvialis is difficult to identify in the field, and since the orchid is rare and flowers for such a short time, few people have had the opportunity to become acquainted with the species. The Service does not want to exclude any person from conducting surveys. Therefore, the Service has developed a minimum set of qualification criteria that demonstrate whether a surveyor is sufficiently acquainted with *Spiranthes diluvialis* to collect consistent and accurate information for the survey report. Documentation that these criteria have been met is accomplished by submitting a statement of surveyor qualifications as part of the survey report.

The survey report shall contain a statement of qualifications of the individual conducting the survey, including:

- a. Description of botanical expertise and training (e.g, graduate degree in botany, ecology, or other appropriate discipline).
- b. Experience in conducting rare plant surveys (list dates, locations, and plants included in previously conducted surveys).
- c. Actions taken to become acquainted with the known locations and appearance of *Spiranthes diluvialis* (such as visiting herbaria to look at specimens, conversations or site visits with others familiar with the species for a description of ecology and likely occurrences).
- d. Documentation of correct identification of *Spiranthes diluvialis* in the field. The surveyor is required to enclose a photograph of the species taken at a known site and a statement certifying when and where the photograph was taken.
- e. References, particularly documenting contact with known *Spiranthes diluvialis* experts.

3. Areas Requiring a Survey

The following areas in Colorado have been determined to have a high probability of occurrence of *Spiranthes diluvialis* based on current and historical records of the species. Surveys are required for appropriate sites below 6,500 feet elevation within these areas:

- a. Boulder and Jefferson counties.
- b. The South Platte River 100 year flood plain and perennial tributaries from the Front Range as far east as Brush, Morgan county.
- c. The Fountain Creek 100 year flood plain and perennial tributaries from the Front Range to the southern boundary of El Paso county.

- d. The Yampa River 100 year flood plain and its perennial tributaries from Steamboat Springs west to the Utah border.

A perennial stream is usually represented by a solid blue line on a USGS 7 ½ minute quad map.

4. Habitat Description and Sites Requiring a Survey

Spiranthes diluvialis is typically found associated with alluvial deposits of silty, sandy, gravelly, or cobbly soil. The species may occasionally also be found in highly organic soils or peat. The species seems to prefer well drained soils with fairly high moisture content (soil around the roots will form a soft ball). Soils may exhibit some gleying or mottling but are generally not strongly anaerobic. *Spiranthes diluvialis* is found in some heavily disturbed sites, for example, old gravel mines that have since been developed into wetlands, and along well traveled footpaths built on old berms. The species is also found in grazed pastures with introduced pasture grasses.

Spiranthes diluvialis is found with grasses, sedges, and rushes, in shrubs, and riparian trees such as willow species. It rarely occurs in deeply shaded sites and prefers partially shaded open glades or pastures and meadows in full sunlight. Common associated species on the Front Range include:

- Horsetail (*Equisetum spp.*)
- Milkweed (*Asclepias incarnate*)
- Verbena (*Verbena hastate*)
- Agalinis (*Agalinis tenuifolia*)
- Lobelia (*Lobelia siphilitica*)
- Blue-eyed grass (*Sisyrinchium spp.*)
- Triglochin (*Triglochin spp.*)
- Carpet bentgrass (*Agrostis stolonifera*)
- Reedgrass (*Calamagrostis*)
- Goldenrod (*Solidago spp.*)

Sites below 6,500 feet elevation occurring within the areas described in Section 3 exhibiting the following features shall be surveyed for *Spiranthes diluvialis*:

- a. Seasonally high water table (within 18 inches of the soil surface for at least one week sometime during the growing season, growing season defined as when soil temperatures are above 41 degrees Fahrenheit).
- b. In or near wet meadows, stream channels, or flood plains.
- c. Vegetation falling into the Facultative Wet or Obligate Wet classification, including introduced pasture grasses.
- d. Jurisdictional wetlands as specified under the Clean Water Act.

Heavily grazed and weedy sites shall be surveyed for the orchid if they otherwise meet the criteria indicating potential suitability as *Spiranthes* habitat as listed above.

5. Sites Not Requiring a Survey

Some sites are either clearly not appropriate *Spiranthes diluvialis* habitat or have very low potential to be *Spiranthes diluvialis* habitat. A survey for *Spiranthes diluvialis* is not required for such sites. Sites below 6,500 feet elevation occurring within the areas described in Section 3 **not** requiring a survey for *Spiranthes* include:

- a. Highly disturbed or modified sites such as:
 1. Highway right-of-ways built on filled and compacted soil material.
 2. Highway right-of-ways build on rock fills, either revegetated or not revegetated.
 3. Rock or soil fills with steep back slopes (may or may not be associated with a road).
 4. Active construction sites where all vegetation has been stripped exposing bare soil.
 5. Construction sites where construction has been completed within the last five years, but the area has not been revegetated.
 6. Landscaped and maintained (mowed) bluegrass lawns.
- b. Upland sites, including, for example:
 1. Prairie dog towns.
 2. Short grass prairie.
 3. Sagebrush or shadscale rangeland.
- c. Sites entirely inundated by standing water, including, for example, monocultures of cattails (*Typha latifolia*) or Olney's three-square (*Scirpus americanus*). Note that although inundated areas need not be surveyed, mesic slopes surrounding or adjacent to standing water must be surveyed if they otherwise meet the criteria indicating potential suitability as *Spiranthes diluvialis* habitat.
- d. Sites composed entirely of heavy clay soils. However, *Spiranthes diluvialis* is found in areas where more well-drained soils or peat overlay a clay layer.

- e. Very saline sites. *Spiranthes diluvialis* occurs in alkaline conditions and is somewhat tolerant of saline conditions. However, it has not been found in highly saline sites as indicated by dense monospecific stands of saltgrass (*Distichlis spicata stricta*).
- f. Sites entirely composed of dense strands of:
 - 1. Reed canary grass (*Phalaris arundinacea*)
 - 2. Tamarisk or Salt-cedar (*Tamarix ramosissima*)
 - 3. Greasewood (*Sarcobatus vermiculatus*)
 - 4. Teasel (*Dipsacus sylvestris*)
 - 5. Common reed (*Phragmites australis*)

6. Timing of Survey

Because *Spiranthes diluvialis* is very difficult to locate unless it is flowering, because timing of flowering varies, and because the species may not flower every year, the following requirements must be met:

- a. Reconnaissance may be conducted at any time of year to determine whether a site exhibits the characteristics described in Section 5 and therefore does not require a survey. If potential habitat is found to exist on the site, then a survey must be conducted at the appropriate time.
- b. Surveys shall be conducted during the blooming season, which is normally between July 20 and August 31. However, surveys may be conducted earlier or later if flowering is occurring in a nearby known population comparable to the site being surveyed. Surveyors shall verify that a nearby population is flowering at the time the survey is conducted either by calling a Service representative or including a dated photograph of the flower population. The date of the survey shall be noted in the survey report.
- c. *Spiranthes diluvialis* does not necessarily flower every year. Therefore, in drainages where *Spiranthes diluvialis* is known to occur, the Service recommends that surveys be conducted annually for three consecutive years. Also, for any site within required survey areas where habitat alteration has not yet occurred following an initial approved survey. Surveys shall be conducted annually for three consecutive years or until habitat alteration commences.

Under very special circumstances, earlier surveys may be possible for sites small enough to allow a complete “hands and knees” search for vegetative parts of *Spiranthes diluvialis*. The Service shall be contacted for prior approval and procedural requirements for such early surveys.

Surveys will be considered final for three years. If habitat alteration has not begun within three years, the Service must be contacted regarding the need for a survey update.

7. Maps

The Service recommends that, where available, Soil Conservation Service (S. C. S.) maps (for location of wetland soils) and National Wetland Inventory maps be consulted prior to site surveys to help identify likely potential habitat. Surveyors should be aware that *Spiranthes diluvialis* is not limited to mapped wetlands. In order to avoid duplication of effort and gain more information about the ecology and distribution of *Spiranthes diluvialis*, a USGS 7 ½ minute quad map must be submitted with the survey report showing routes taken for all search sites regardless of whether a population of the species was located during the search.

For survey sites too small to be adequately represented on a USGS 7 ½ minute quad map, an engineering drawing or more detailed map showing the area that has been surveyed must be included in the report. The site(s) should be indicated and labeled on the accompanying USGS 7 ½ minute quad map.

8. Ecological and Site Features

In order to gain more information about the ecology and site characteristics of *Spiranthes diluvialis*, so that better predictions about its location and distribution can be marked, the following information must be collected and reported for each site surveyed:

- a. For sites disqualified as potential *Spiranthes diluvialis* habitat, describe the basis on which the site was disqualified.
- b. For sites requiring a survey, the following information must be collected. This information can be brief and qualitative for sites where *Spiranthes diluvialis* is not found (a few words, a phrase, or a descriptive sentence is sufficient).
 1. List the most frequent or dominant associated plant species of both the over story and under story vegetation (e.g., over story of mature cottonwood trees with an under story of orchard grass and smooth brome).
 2. Describe the plant community, including a qualitative assessment of dominance (e.g., riparian willow community, willows dominant, with native grasses *Deschampsia caespitose* and sedges).
 3. Describe the ecological condition/management history of the site (such as cultivated field, old gravel mine, good condition native grassland with winter cattle grazing, recently flooded stream edge).

4. Describe the geomorphology of the site, including, for example, the nature of the material (e.g., alluvium), the landscape position (e.g., bench above old stream bed).
5. Describe the soils including, for example, texture, whether moist, presence of mottling or other hydric soil indicators, and list the map unit from the S. C. S. county soil survey if available.
6. Describe the hydro logic characteristics, for example, depth to water table (if possible to determine without major excavation), inferences about frequency, duration, and season of flooding, presence of standing water, high water mark of a stream or water body in relation to location of surveyed site.
7. Describe any other site characteristics that appear relevant to understanding the ecology, population biology, or distribution of *Spiranthes diluvialis*.

In addition, for **each** site where a population of *Spiranthes diluvialis* is found, the following information must be collected and included in the survey report:

- a. Map the population on a USGS 7 ½ minute quad map and on a finer scaled map or engineering drawing if appropriate.
- b. Count the number of individuals if fewer than 500.
- c. Estimate the number of individuals if more than 500. Include a description of the method used for population estimation.
- d. Note the phenological stage of the plants (e.g., proportion of plants that are flowering, proportion of flowers that have set seed).
- e. Note the specific geomorphologic, hydro logic, and soil conditions where the population occurs if it varies from the site description above.
- f. Note any other possibly relevant ecological information.
- g. Include a photograph of the population that illustrates its setting and habitat.

9. Survey Report

The survey report submitted to the Service should follow the outline below:

- a. Name and qualifications of surveyor.
- b. Brief project description indicating proposed impact to the site.
- c. Site location (address and legal description).
- d. Dates surveys were conducted.
- e. Ecological and site features as described above.
- f. Appendices.
 1. Maps
 2. Photographs

10. Notification

The Service shall be notified immediately if a new population of *Spiranthes diluvialis* is discovered. For sites located in Colorado, the surveyor shall notify either:

Bernardo Garza, U.S. Fish and Wildlife Service, P.O. Box 25486 – DFC, Denver, Colorado 80225, telephone 303-236-4377 or

Larry England, U.S. Fish and Wildlife Service, 2369 West Orton Circle, West Valley City, Utah 84119, telephone 801-975-3330

11. Service Approval

Survey reports for sites in Colorado shall be submitted to either of the two Colorado addresses above. The Service will review submitted reports and reply with a written letter of acceptance within 30 days of receipt of the report. If the survey report is judged insufficient for any reason, the Service will notify the author within 30 days and discuss revisions. If the report is judged insufficient due to an inadequate survey, the Service will make every effort to notify the author promptly so that a satisfactory survey may be completed during the allowed survey time. However, given the narrow survey time frame, it may not be possible to rectify an inadequate survey effort during the current field season.

Surveys will be considered final for three years. If habitat alteration has not begun within three years, the Service must be contacted regarding the need for a survey update.

12. Service Follow-up

Survey reports and maps will be retained by the Service. Ecological information will be summarized and used to improve our understanding of *Spiranthes diluvialis* habitat and help predict actual and potential habitat. The Service will prepare periodic reports to keep the public informed about the distribution and ecology of *Spiranthes diluvialis*. The reports will include recommendations for protection strategies and habitat management practices and will identify additional research needs.

Survey requirements will be revised as appropriate based upon the most current available information.