Dated: December 27, 2024.

Kimberlee Trzeciak,

Deputy Commissioner for Policy, Legislation, and International Affairs.

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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R6–ES–2024–0115; FXES1113090FEDR–256–FF09E22000]

RIN 1018–BH97

Endangered and Threatened Wildlife and Plants; Removal of Ute Ladies'-Tresses From the List of Endangered and Threatened Plants

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), propose to remove Ute ladies'-tresses (*Spiranthes diluvialis*) from the Federal List of Endangered and Threatened Plants. This determination also serves as our 12-month finding on a petition to delist Ute ladies'-tresses. After a review of the best available scientific and commercial information, we find that delisting the species is warranted. Our review indicates that the threats to Ute ladies'-tresses have been eliminated or reduced to the point that the species no longer meets the definition of an endangered or threatened species under the Endangered Species Act of 1973, as amended (Act). Accordingly, we propose to delist Ute ladies'-tresses. If we finalize this rule as proposed, the prohibitions and conservation measures provided by the Act, particularly through sections 7 and 9, would no longer apply to Ute ladies'-tresses. We request information and comments from the public regarding this proposed rule and the draft post-delisting monitoring (PDM) plan for Ute ladies'-tresses.

DATES: We will accept comments received or postmarked on or before March 10, 2025. Comments submitted electronically using the Federal eRulemaking Portal (see **ADDRESSES**, below) must be received by 11:59 p.m. eastern time on the closing date. We must receive requests for public hearings, in writing, at the address shown in **FOR FURTHER INFORMATION CONTACT** by February 21, 2025.

ADDRESSES: You may submit comments by one of the following methods:

(1) *Electronically:* Go to the Federal eRulemaking Portal: *https://www.regulations.gov.* In the Search box, enter FWS–R6–ES–2024–0115, which is the docket number for this rulemaking. Then, click on the Search button. On the resulting page, in the Search panel on the left side of the screen, under the Document Type heading, check the Proposed Rule box to locate this document. You may submit a comment by clicking on ''Comment.''

(2) *By hard copy:* Submit by U.S. mail to: Public Comments Processing, Attn: FWS–R6–ES–2024–0115, U.S. Fish and Wildlife Service, MS: PRB/3W, 5275 Leesburg Pike, Falls Church, VA 22041–3803.

We request that you send comments only by the methods described above. We will post all comments on *https://www.regulations.gov.* This generally means that we will post any personal information you provide us (see Information Requested, below, for more information).

Availability of supporting materials: This proposed rule and supporting documents, including the 5-year review, draft recovery plan, draft post-delisting monitoring plan (PDM), and the species status assessment (SSA) report, are available at *https://www.regulations.gov* under Docket No. FWS–R6–ES–2024–0115 and on the Service's website at *https://ecos.fws.gov/ecp/species/2159.*

FOR FURTHER INFORMATION CONTACT: George Weekley, Field Office Supervisor, U.S. Fish and Wildlife Service, Utah Ecological Services Field Office, 2369 West Orton Circle, Suite 50, West Valley City, UT 84119; telephone 801–239–0561. Individuals in the United States who are deaf, deafblind, hard of hearing, or have a speech disability may dial 711 (TTY, TDD, or TeleBraille) to access telecommunications relay services. Individuals outside the United States should use the relay services offered within their country to make international calls to the point-of-contact in the United States. Please see Docket No. FWS–R6–ES–2024–0115 on *https://www.regulations.gov* for a document that summarizes this proposed rule.

SUPPLEMENTARY INFORMATION:

Executive Summary

Why we need to publish a rule. Under the Act, a species warrants delisting if it no longer meets the definition of an endangered species (in danger of extinction throughout all or a significant portion of its range) or a threatened species (likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range). Ute ladies'-tresses is listed as threatened, and we are proposing to delist it. We have determined Ute ladies'-tresses does not meet the Act's definition of an endangered or threatened species. Delisting a species can be completed only by issuing a rule through the Administrative Procedure Act rulemaking process (5 U.S.C. 551 *et seq.*).

What this document does. This action proposes to remove Ute ladies'-tresses from the List of Endangered and Threatened Plants (*i.e.,* ''delist'' the species) based on its recovery.

The basis for our action. Under the Act, we may determine that a species is an endangered species or a threatened species because of any of five factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. The determination to delist a species must be based on an analysis of the same factors.

Under the Act, we must review the status of all listed species at least once every 5 years. We must delist a species if we determine, based on the best available scientific and commercial data, that the species is neither an endangered species nor a threatened species. Our regulations at 50 CFR 424.11(e) identify four reasons why we might determine a species shall be delisted: (1) The species is extinct; (2) the species has recovered to the point at which it no longer meets the definition of an endangered species or a threatened species; (3) new information that has become available since the original listing decision shows the listed entity does not meet the definition of an endangered species or a threatened species; or (4) new information that has become available since the original listing decision shows the listed entity does not meet the definition of a species. We have determined that Ute ladies'-tresses has recovered to the point at which it no longer meets the definition of an endangered species or a threatened species; therefore, we are proposing to delist it.

Information Requested

We intend that any final action resulting from this proposed rule will be based on the best scientific and commercial data available and be as accurate and as effective as possible. Therefore, we request comments or

information from other concerned governmental agencies, Native American Tribes, the scientific community, industry, or any other interested parties concerning this proposed rule.

We particularly seek comments concerning:

(1) Reasons we should or should not remove Ute ladies'-tresses from the List of Endangered and Threatened Plants;

(2) Relevant data concerning any threats (or lack thereof) to Ute ladies'-tresses, particularly any data on the possible effects of climate change as it relates to habitat, as well as the extent of State protection and management that would be provided to this plant as a delisted species;

(3) Current or planned activities within the geographic range of Ute ladies'-tresses that may have either a negative or positive impact on the species; and

(4) Considerations for post-delisting monitoring, including monitoring protocols and length of time monitoring is needed, as well as triggers for reevaluation.

Please include sufficient information with your submission (such as scientific journal articles or other publications) to allow us to verify any scientific or commercial information you include.

Please note that submissions merely stating support for, or opposition to, the action under consideration without providing supporting information, although noted, do not provide substantial information necessary to support a determination. Section 4(b)(1)(A) of the Act directs that determinations as to whether any species is an endangered species or a threatened species must be made solely on the basis of the best scientific and commercial data available.

You may submit your comments and materials concerning this proposed rule by one of the methods listed in **ADDRESSES**. We request that you send comments only by the methods described in **ADDRESSES**.

If you submit information via *https://www.regulations.gov,* your entire submission—including any personal identifying information—will be posted on the website. If your submission is made via a hardcopy that includes personal identifying information, you may request at the top of your document that we withhold this information from public review. However, we cannot guarantee that we will be able to do so. We will post all hardcopy submissions on *https://www.regulations.gov.*

Comments and materials we receive, as well as supporting documentation we used in preparing this proposed rule, will be available for public inspection on *https://www.regulations.gov.*

Our final determination may differ from this proposal because we will consider all comments we receive during the comment period as well as any information that may become available after this proposal. For example, based on the new information we receive (and if relevant, any comments on that new information), we may conclude that the species should remain listed as threatened, or we may conclude that the species should be reclassified from threatened to endangered. We will clearly explain our rationale and the basis for our final decision, including why we made changes, if any, that differ from this proposal.

Public Hearing

Section 4(b)(5) of the Act provides for a public hearing on this proposal, if requested. Requests must be received by the date specified in **DATES**. Such requests must be sent to the address shown in **FOR FURTHER INFORMATION CONTACT**. We will schedule a public hearing on this proposal, if requested, and announce the date, time, and place of the hearing, as well as how to obtain reasonable accommodations, in the **Federal Register** and local newspapers at least 15 days before the hearing. We may hold the public hearing in person or virtually via webinar. We will announce any public hearing on our website, in addition to the **Federal Register**. The use of these virtual public hearings is consistent with our regulation at 50 CFR 424.16(c)(3).

Peer Review

A species status assessment (SSA) team prepared an SSA report for Ute ladies'-tresses. The SSA team was composed of Service biologists, in consultation with other species experts from Federal agencies, State wildlife and heritage programs, and local conservation groups. The SSA report represents a compilation of the best scientific and commercial data available concerning the status of the species, including the impacts of past, present, and future factors (both negative and beneficial) affecting the species.

In accordance with our joint policy on peer review published in the **Federal Register** on July 1, 1994 (59 FR 34270), and our August 22, 2016, memorandum updating and clarifying the role of peer review of listing and recovery actions under the Act, we solicited independent scientific review of the information contained in the Ute ladies'-tresses SSA report. The Service sent the SSA report to seven independent peer reviewers and received three responses. Results of this structured peer review process can be found at *https://www.regulations.gov* at Docket No. FWS–R6–ES–2024–0115. In preparing this proposed rule, we incorporated the results of these reviews, as appropriate, into the final SSA report, which is the foundation for this proposed rule.

Summary of Peer Reviewer Comments

As discussed in Peer Review above, we received comments from three peer reviewers on the draft SSA report. We reviewed all comments we received from the peer reviewers for substantive issues and new information regarding the contents of the SSA report. As discussed above, because we conducted this peer review prior to this proposed rule, we have already incorporated all applicable peer review comments in version 1.1 of the SSA report, which is the foundation for this proposed rule.

The peer reviewers provided additional information, clarifications, and recommendations pertaining to our analysis of Ute ladies'-tresses' current and future condition. We either incorporated or clarified substantial comments in the SSA report or address them below. In addition to substantive comments on the SSA report, we received several comments requesting the inclusion of additional biological information about orchids, more detail on the methods used in the suitable habitat model, and suggestions for climate change models to consider. Those comments were incorporated in the SSA report where applicable and are not summarized here.

(1) Comment: One reviewer was concerned with how we scored the overall current resiliency of analytical units (AUs). The reviewer stated that our scoring does not necessarily identify truly high resiliency conditions but rather provides a relative evaluation of AU resiliency, noting that an overall high resiliency score can be achieved even if one metric, such as vegetative habitat, is in low condition.

Our response: We developed our current condition evaluation in coordination with species experts, and our scoring reflects the relative contribution of each metric (*e.g.,* hydrological condition, vegetative habitat) to overall AU resiliency as discussed below in *Current Condition.* Ute ladies'-tresses is adapted to disturbance and changing hydrological and habitat conditions, and AUs may maintain high resiliency even when some of the species' needs are not being optimally met at individual occurrences or portions of those occurrences.

Therefore, our scoring of overall AU resiliency is appropriate.

(2) Comment: One reviewer commented that the comparisons of AU resiliency using the suitable habitat and connectivity metrics is problematic because different modeling approaches were used to generate suitable habitat in each AU based on the opinions of different biologists across the species' range. Therefore, the suitable habitat models were much more conservative, and therefore limited, for some AUs compared to others, resulting in inconsistencies in how AUs were evaluated for resiliency. The reviewer recommended that we use a standardized, rangewide method for the suitable habitat model.

Our response: We initially considered using a draft suitable habitat model using consistent methods recommended by the reviewer; however, input from species experts indicated that this model and other draft models overpredicted, rather than reasonably predicted, suitable habitat across the species' range. The modeling approach used in the SSA reflects local conditions and the variation across the range based on occurrence data within each AU, which would not be reflected using a standardized, rangewide method as recommended by the reviewer. When developing the final suitable habitat model, we incorporated recommendations from Service biologists in every State within the species' range to evaluate whether model predictions were a good reflection of suitable habitat for their respective AUs. The final model we relied on for our evaluation of suitable habitat in the SSA report is a combination of AU-level hydrologic unit code (HUC) 6 models and expert opinion, and we consider that model to provide the best representation of potentially suitable habitat for Ute ladies'-tresses given the species' life-history traits, occurrence data, and variation across its range.

Previous Federal Actions

On September 27, 1985, we published a notice of review in the **Federal Register** (50 FR 39526) issuing a list of plant taxa being considered for listing as endangered or threatened. Ute ladies'-tresses was included on this list as a Category 2 species. Category 2 species were taxa for which information in possession of the Service indicated that proposing to list them as endangered or threatened species was possibly appropriate, but we lacked conclusive data on biological vulnerability and threats to support the immediate preparation of a proposed rule.

On February 21, 1990, we published a notice of review in the **Federal Register** (55 FR 6184) reclassifying Ute ladies'-tresses from a Category 2 species to a Category 1 species based on a review of information collected since 1985. Category 1 species were taxa for which we had on file enough substantial information on biological vulnerability and threat(s) to support proposed rules to list them as endangered or threatened species. However, a proposed rule to list Ute ladies'-tresses was not issued because the action was precluded at the time by other listing activity. In the 1990 notice of review, we used the common name ''plateau lady's tresses'' for *Spiranthes diluvialis.*

On November 13, 1990, we published in the **Federal Register** (55 FR 47347) a proposed rule to list Ute ladies'-tresses as a threatened species due to the primary threat of water development and urbanization in its riparian habitat. At that time, the species was known to be comprised of fewer than 3,000 plants in 7 populations. Our proposed rule used ''Ute ladies'-tresses'' as the common name for *Spiranthes diluvialis* in recognition of the fact that the species' known historical range was used largely by the Ute Indian Tribe. We determined that it would not be prudent to designate critical habitat because the publication of critical habitat descriptions and maps would make this orchid species more vulnerable to collection.

Three additional populations were identified in Utah and Nevada prior to the final listing rule, for a total of 10 known populations with an estimated population size of fewer than 6,000 plants. On January 17, 1992, we published in the **Federal Register** (57 FR 2048) a final rule to list Ute ladies'-tresses as a threatened species. The final rule included a determination that the designation of critical habitat for Ute ladies'-tresses was not prudent.

When we listed Ute ladies'-tresses as a threatened species (see 57 FR 2048, January 17, 1992), we identified habitat loss and modification due to water development and urbanization (Factor A) as the primary threat to the species. We considered collection (Factor B) to be a threat because it is an orchid species. Disease and predation (Factor C) were not considered threats. Regulatory mechanisms (Factor D) included a limited degree of protection for the species' wetland habitat under the Clean Water Act (33 U.S.C. 1251 *et seq.*), and international trade for all orchids is regulated by the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES; 27 U.S.T. 1087, March 3, 1973). Finally, we identified the species' small and scattered populations, variable demographic structure of populations, and a presumed slow reproductive rate (Factor E) as making the species more vulnerable to other threats and stressors.

In 1995, we completed a draft recovery plan for the species (Service 1995, entire). To date, this plan has not been finalized.

On May 10, 1996, we received a petition from the Central Utah Water Conservancy District (CUWCD) to delist Ute ladies'-tresses pursuant to the Act (Christiansen 1996, entire). A ''Special Status Species Update'' for Ute ladies'-tresses, dated April 1996, accompanied the petition as supporting information (CUWCD 1996, entire). In response to the petitioner's request to delist Ute ladies'-tresses, we sent a letter to the petitioner on June 10, 1996, explaining our inability to act upon the petition due to the low priority assigned to delisting petitions in our 1996 Listing Priority Guidance (61 FR 24722, May 16, 1996).

On October 12, 2004, we published in the **Federal Register** (69 FR 60605) a 90-day finding that the 1996 petition contained substantial information indicating that delisting Ute ladies'-tresses may be warranted. However, higher priority work continued to preclude our ability to take further action on this petition. This proposed rule constitutes our 12-month finding on the May 10, 1996, petition to delist Ute ladies'-tresses under the Act.

In 2023, we completed an SSA report to evaluate the species' rangewide status and inform a 5-year status review. On August 8, 2023, we completed a 5-year review that recommended delisting Ute ladies'-tresses due to recovery.

Background

Species Description and Habitat Information

A thorough review of the taxonomy, life history, and ecology of Ute ladies'-tresses is presented in the SSA report, version 1.1 (Service 2024, entire). Ute ladies'-tresses is an herbaceous (not woody), perennial plant in the orchid family (*Orchidaceae*) found in the western United States and Canada. It is a terrestrial orchid (grows in the ground) and inhabits naturally occurring and human-created wetland habitats. When it was first described as a species in 1984, Ute ladies'-tresses was known to occur only in Utah and Colorado (Sheviak 1984, entire). Today, the species is found in eight U.S. States (Colorado, Idaho, Montana, Nebraska, Nevada, Utah, Washington, and

Wyoming) and southern British Columbia, Canada (Service 2024, p. 4).

Ute ladies'-tresses is a naturally occurring allopolyploid species, meaning it has more than one pair of chromosomes derived from the hybridization of two genetically distinct species (Szalanski et al. 2001, pp. 178–179). Ute ladies'-tresses is fertile (produces fertile offspring) but is not cross-compatible with either of its parent species, hooded lady's tresses (*Spiranthes romanzoffiana*) and Great Plains lady's tresses (*S. magnicamporum*) (Szalanski et al. 2001, pp. 178–179; Fertig et al. 2005, pp. 7–8). The ranges of hooded lady's tresses and Great Plains lady's tresses do not currently overlap with each other, but may have overlapped during the Pleistocene, a geological epoch that ended approximately 11,700 years ago (Sheviak 1984, p. 9). The hooded lady's tresses is present within the range of Ute ladies'-tresses but generally occupies higher elevations than Ute ladies'-tresses (above 7,000 feet (ft) (2,133 meters (m))), so the two species are mostly spatially separate within their overlapping ranges. Where they co-occur in Idaho, hooded lady's tresses flowers earlier than Ute ladies'-tresses (Moseley 2000, pp. 1–2).

A genetic study of Ute ladies'-tresses identified an unusually high degree of genetic variability within samples from several occurrences in Colorado and Utah, which suggests the species may have evolved from two or more separate hybridization events between hooded lady's tresses and Great Plains lady's tresses (Arft and Ranker 1998, p. 119). However, little genetic differentiation was found between samples from various occurrences in Colorado, Idaho, Montana, Nebraska, Utah, and Wyoming, suggesting that there may be a high degree of gene flow between Ute ladies'-tresses in those areas. No genetic studies have been conducted on Ute ladies'-tresses in the Upper Columbia basin of Washington and British Columbia, which is highly disjunct without any known connectivity to other occupied basins, or in the Lower Colorado-Lake Mead basin of Nevada, which contains a single isolated occurrence.

Ute ladies'-tresses plants are approximately 4.7 to 23.6 inches (in) (12 to 60 centimeters (cm)) tall and grow from tuberous-thickened roots (enlarged fleshy roots that store starch and nutrients). Basal leaves are grass-like, up to 11 in (28 cm) long, and leaves become progressively smaller up the stem (Sheviak 1984, entire). Flowers are small (0.3 to 0.6 in (7.5–15 millimeters (mm) long)), white or ivory-colored, and arranged in a gradual spiral along the flowering stalks (inflorescences) that inspired the ladies'-tresses part of the common name (Service 2024, p. 30). One diagnostic feature that distinguishes Ute ladies'-tresses from hooded lady's tresses is how fused the sepals (lower part of the flower that supports the petals) are to each other; the sepals of Ute ladies'-tresses are separate or fused only at the base, whereas the sepals of hooded lady's tresses are fused into a hood-like structure. Fruits are cylindric capsules with numerous seeds (Sheviak 1984, entire; Fertig et al. 2005, p. 7).

Ute ladies'-tresses has five life stages: seeds, seedlings, dormant plants, vegetative plants, and reproductive plants (Fertig 2020, p. 67; Service 2024, p. 31). Plants are perennial, appear to be long-lived, and likely depend on a specific symbiotic mycorrhizal (fungal) association during all life stages based on studies of other terrestrial orchids (Batty et al. 2002, pp. 196–197). Many terrestrial orchids have lifespans of 20 to 30 years or more, with at least one *Spiranthes* species having a lifespan of more than 60 years (Willems and Dorland 2010, p. 346; Shefferson et al. 2020, pp. 318–319).

Ute ladies'-tresses can likely reproduce asexually through root splitting (Fertig et al. 2005, p. 67), but the species primarily reproduces sexually through seed production. Plants cannot produce seeds without pollinators. The primary pollinators of Ute ladies'-tresses are bumblebees (*Bombus* spp.), solitary bees of the *Anthophora* genus, and honeybees (*Apis mellifera*) (Sipes and Tepedino 1995, entire; Sipes et al. 1995, pp. 1–3, 15–17; Pierson and Tepedino 2000, pp. 8, 16, 27–28). Plants typically flower in August and September (Fertig et al. 2005, p. 54), but the timing varies by location and local environmental conditions. Flowering has been documented as early as the beginning of July in Nevada, a hotter and drier part of the range, and as late as October in cooler, higher elevation occurrences (Great Basin Institute (GBI) 2009, p. 3; Ute ladies'-tresses Technical Team (ULT Tech) 2021, entire).

Orchid seeds are extremely small (the size of dust particles), are easily dispersed by wind and water, and do not provide much nourishment for the embryo (undeveloped plant) after germination (Sipes et al. 1995, p. 23). If the embryo can quickly form a mycorrhizal association, it is able to obtain nutrients directly from the soil fungi without relying on photosynthesis (Hildebrand 1998, p. 4; McGonigle and Sheridan 2004, p. 11; Yeung 2017, pp. 8–9). Seedlings persist underground and rely on the mycorrhizal association to develop shoots and leaves. It is unknown how long seedlings remain underground before transitioning to other life stages (vegetative or adult plants). We assume that Ute ladies'-tresses persist as a seedling for at least 1 year.

Ute ladies'-tresses may transition from being vegetative to reproductive or from reproductive to vegetative in subsequent aboveground years, and periods of dormancy below ground may occur throughout a plant's life (Yeung 2017, entire; ULT Tech 2021, entire; Service 2024, pp. 31–32). Plants can survive unfavorable conditions in a state of dormancy for multiple years (11 consecutive years or longer), either as a germinated seedling in a symbiotic mycorrhizal (fungal) association, known as a protocorm, or as an adult root mass (Fertig et al. 2005, p. 61). Adult plants do not emerge above ground or flower every year; flowering likely depends on environmental conditions and when the plant last flowered—a plant that flowered in the previous year may be more likely to remain vegetative or become dormant the following year (Willems and Dorland 2010, p. 345). It is difficult to track these cycles because humans can only reliably detect flowering plants, not other life stages (seeds, seedlings, dormant or vegetative plants), in the field (ULT Tech 2021, entire).

Ute ladies'-tresses has a ruderal (early colonizer of disturbed habitats) life-history strategy in which it can disperse within watersheds and quickly establish and produce seeds in favorable habitat conditions that may only be available for short periods of time (Gadgil and Solbrig 1972, entire). Ruderal plants are also able to persist in place and wait for favorable habitat conditions to return following disturbance events. The species disperses along connected waterways (river corridors, perennial streams, canals, lakeshores, wet meadows, and agricultural ditches), and plants appear in newly created or disturbed features (such as islands, point bars, shorelines) within the watershed. The species also persists in unsuitable habitat conditions that were previously suitable. Dormant Ute ladies'-tresses plants or seedlings can survive in late-seral successional habitats or unsuitable habitats below ground for years and then emerge above ground after disturbance reestablishes early- to mid-seral successional habitat conditions or adequate moisture is restored (Heidel 2001, entire). As mentioned above, we can only reliably detect flowering plants, and the species

does not necessarily flower every year. Therefore, Ute ladies'-tresses may appear to be extirpated from an area when in fact dormant or non-reproductive individuals are still present.

Range, Distribution, Abundance, and Trends of Ute Ladies'-Tresses

The current range of Ute ladies'-tresses spans eight States in the western United States (Colorado, Idaho, Montana, Nebraska, Nevada, Utah, Washington, and Wyoming) and the Canadian province of British Columbia (Service 2024, pp. 39–40). There are 62 extant Ute ladies'-tresses element occurrences (occurrences) distributed across 18 watershed basins, referred to as analytical units (AUs) and defined as populations in the SSA report. An AU may contain one or more element occurrences. The current range is much larger than the three States (Colorado, Nevada, and Utah) known to be occupied at the time of listing in 1992. Ute ladies'-tresses has not been found in Arizona, even though that State is considered to be part of two AUs (Lower Colorado-Lake Mead and Upper Colorado-Dirty Devil), because the species occurs in other States within those watersheds. Across its wide range, Ute ladies'-tresses is found in 3 different ecological classifications (Great Plains, North American Deserts, and Western Forested Mountains), 12 level-III ecoregions, and 7 habitat types (Fertig et al. 2005, pp. 21–33; U.S. Environmental Protection Agency 2013, entire; Service 2024, pp. 123–125).

At the time of listing in 1992, we reported 10 extant occurrences (defined as populations in the listing rule) with fewer than 6,000 plants and occurring on approximately 170 acres (ac) (69 hectares (ha)) of habitat (see 57 FR 2048, January 17, 1992). By 2005, there were known to be 52 extant occurrences with at least 83,316 flowering plants on 674 to 783 ac (273 to 317 ha) of habitat (Fertig et al. 2005, pp. 34–62). The 2005 flowering plant estimate was based on the maximum number of flowering plants reported over a multi-year period for each occurrence, since most surveys underestimate the number of dormant, vegetative, and fruiting plants in an occurrence (Fertig et al. 2005, p. 62). The current number of known extant occurrences has increased to 62. The number of flowering plants detected has likely also increased, but we do not provide an estimate of flowering plants in the SSA report for the following reasons: (1) there is a lack of consistent monitoring methods; (2) monitoring does not account for the geographic shifts in occupied habitat; and (3) monitoring does not account for four of the five life stages (seeds, seedlings, dormant plants, and vegetative plants) (ULT Tech 2021, entire). When a plant population contains dormant individuals, population size and trend can be accurately determined if we know the average number of years a plant is dormant and we can account for at least three life stages (dormant, vegetative, and flowering plants) (Lesica and Steele 1994, entire; Heidel 2001, p. 8; Fertig et al. 2005, pp. 61–62). However, this information is not available for Ute ladies'-tresses.

Ute ladies'-tresses occurrences demonstrate metapopulation structure within watersheds (AUs) where persistence is governed by the processes of patch colonization, extirpation (local extinction), and recolonization (Sipes et al. 1995, p. 26; Freckleton and Watkinson 2002, p. 419). These metapopulations are important to the viability of the species, as long-term persistence is generally higher in metapopulations than in small, isolated occurrences (Lesica 1992, p. 420). Consequently, identification of metapopulations and the availability of potentially suitable habitat is important for assessing the status of Ute ladies'-tresses (Freckleton and Watkinson 2002, p. 432; Service 2024, pp. 89–91).

In the SSA report, we delineated occurrences based on NatureServe criteria for water and land dispersal distances, which are grouped by plant locations connected by suitable habitat and generally less than 6.2 miles (mi) (10 kilometers (km)) and 1.2 mi (2 km) from each other along waterways and over land, respectively (NatureServe 2020, p. 6; Service 2024, p. 26). We know of 75 Ute ladies'-tresses occurrences, and we consider 62 of those occurrences to be currently occupied. We considered the 62 currently occupied occurrences in our analysis of current conditions if suitable habitat was still present, even if we had some negative observation data for a location. This assumption is consistent with field observations, expert opinion, and long-term monitoring data of occurrences in Nevada, Washington, and Utah (ULT Tech 2021, entire; Service 2024, pp. 31–32). In the SSA report, we also considered 13 historical occurrences, one of which was the only known occurrence in its AU (Upper Arkansas), to be extirpated based on the loss of occupied or suitable habitat due to development, change in hydrology, or imprecise historical records (Service 2024, pp. 100–110). We considered 11 of these historical occurrences, located in or near densely populated areas of Utah, Colorado, and Montana, to be extirpated because of urban development. Despite these losses, the current distribution of the species appears to be stable.

We refer to the watershed basins as AUs in the SSA report and consider them to be a surrogate for populations to better account for the species' widespread, dynamic distribution and complex life history. Given the detectability and monitoring limitations mentioned above, we consider the metapopulation structure—the number of occupied occurrences within a watershed (AU)—to be a better measure of population size rather than abundance counts of flowering plants. Considerably more occurrences have been discovered since listing in 1992, and new occurrences have been located every year for at least the past 10 years within known AUs. The most recent occurrence was discovered in 2023, after the species' 5-year status review was finalized, and in 2020, one occurrence was discovered in an AU previously considered extirpated (Atkin 2020, pers. comm.; Billings and Wheeler 2021, entire; Heidel 2023, entire; Service 2024, p. 77). However, this does not necessarily indicate an increasing population size or positive population trend for the species; it could be the result of an increased survey effort and awareness. Based on our measure of population size (*i.e.,* the number of occupied occurrences within an AU), the population trend for the species appears to be stable.

Our evaluation of population trend is based on our assessment of the availability of potentially suitable habitat within AUs. The suitable habitat model provides a relative estimate of the species' potential abundance within an AU to evaluate whether a watershed would continue to support metapopulation dynamics and the species' population needs (see *Current Condition,* below for more information).

Roughly 95 percent of the species' range occurs in the United States, with the remaining 5 percent of its range occurring in the province of British Columbia, Canada. In the United States, approximately 37 percent of land where the species occurs is federally owned or managed by the Bureau of Land Management (BLM), the U.S. Bureau of Reclamation (USBR), the U.S. Forest Service (USFS), the Service, the National Park Service (NPS), and the Department of Defense (DOD). Almost half of the land, approximately 47 percent, is under private ownership. There is a small amount (approximately 3 percent) of Ute ladies'-tresses habitat where the land ownership is not known. The remaining 13 percent of the species'

range is on State and Tribal lands (Service 2024, p. 39).

Recovery Criteria

Section 4(f) of the Act directs us to develop and implement recovery plans for the conservation and survival of endangered and threatened species unless we determine that such a plan will not promote the conservation of the species. Under section 4(f)(1)(B)(ii), recovery plans must, to the maximum extent practicable, include objective, measurable criteria which, when met, would result in a determination, in accordance with the provisions of section 4 of the Act, that the species be removed from the Lists of Endangered and Threatened Wildlife and Plants.

Recovery plans provide a roadmap for us and our partners on methods of enhancing conservation and minimizing threats to listed species, as well as measurable criteria against which to evaluate progress towards recovery and assess the species' likely future condition. However, they are not regulatory documents and do not substitute for the determinations and promulgation of regulations required under section 4(a)(1) of the Act. A decision to revise the status of a species or to delist a species is ultimately based on an analysis of the best scientific and commercial data available to determine whether a species is no longer an endangered species or a threatened species, regardless of whether that information differs from the recovery plan.

There are many paths to accomplishing recovery of a species, and recovery may be achieved without all of the criteria in a recovery plan being fully met. For example, one or more criteria may be exceeded while other criteria may not yet be accomplished. In that instance, we may determine that the threats are minimized sufficiently and that the species is robust enough that it no longer meets the definition of an endangered species or a threatened species. In other cases, we may discover new recovery opportunities after having finalized the recovery plan. Parties seeking to conserve the species may use these opportunities instead of methods identified in the recovery plan. Likewise, we may learn new information about the species after we finalize the recovery plan. The new information may change the extent to which existing criteria are appropriate for identifying recovery of the species. The recovery of a species is a dynamic process requiring adaptive management that may, or may not, follow all of the guidance provided in a recovery plan.

Here, we provide a summary of progress made toward achieving the draft recovery criteria for Ute ladies'-tresses. More detailed information related to conservation efforts can be found below under Summary of Biological Status and Threats. We completed a draft recovery plan for Ute ladies'-tresses in 1995 that has not been finalized (Service 1995, entire); however, the draft plan is nearly 3 decades old and no longer reflects the best scientific information available for Ute ladies'-tresses.

The draft plan describes a process for watershed-level planning and management to maintain and restore watershed conditions (*i.e.,* natural flows and hydrography, stream gradients, and soils) for the long-term persistence of the species (Service 1995, p. 15). The draft plan attempts to interpret and define ''ecosystem management'' and apply it to the recovery of Ute ladies'-tresses. The draft plan also states the expectation that population levels (occurrences in this case) and the amount of suitable habitat will fluctuate over time within a watershed (Service 1995, p. 15).

The draft plan states that specific population metrics were not identified because population viability is determined by habitat conditions and the maintenance of natural watershed processes. Therefore, the significance of population size and distribution can only be assessed in the ability of the watershed to support the species, and those linkages between watershed processes, habitat conditions, and population response are complex and not completely understood (Service 1995, p. 15).

Below, we identify the two delisting criteria described in the 1995 Ute ladies'-tresses draft recovery plan (Service 1995, p. 15), and the progress made to date in achieving the criteria. However, we acknowledge that because of advances in our understanding of Ute ladies'-tresses, the delisting criteria are not measurable, no longer reflect the best available science about the species, and may no longer be relevant.

Criteria for Delisting

Recovery Criterion 1: Viable populations throughout Ute ladies'-tresses' historical range and representative of its genetic endowment are maintained in riparian habitats of streams in a state of dynamic equilibrium.

Progress: We have a much better understanding of Ute ladies'-tresses current range since the time of listing in 1992. The known current range of Ute ladies'-tresses has expanded from three U.S. States (Utah, Colorado, and Nevada) to eight U.S. States (Colorado, Idaho, Montana, Nebraska, Nevada, Utah, Washington, and Wyoming) and the Canadian province of British Columbia (Service 2024, pp. 39–40). Based on information through 2023, there are a total of 62 extant occurrences of Ute ladies'-tresses distributed across 18 watershed basins (AUs defined as populations in the SSA report). The species' current range includes 14 more AUs than known at the time of listing when we apply the AU-scale to the known populations in 1992. We consider AUs to be synonymous with the criterion's use of ''populations,'' and the criterion does not specify the number of AUs needed to achieve recovery.

We note that the criterion references Ute ladies'-tresses' historical range. However, it is more appropriate to define recovery based on Ute ladies'-tresses' current range, because endangered and threatened species and their recovery are defined and evaluated based on their current range under the Act (see the definitions of ''endangered species'' and ''threatened species'' at 16 U.S.C. 1532(6) and (20), respectively). There is much uncertainty about Ute ladies'-tresses' historical range, and we may never know its true extent. Regarding the species' genetic endowment, preliminary genetic information indicates high genetic diversity in Ute ladies'-tresses occurrences assessed in six of the eight U.S. States within the current range (see Summary of Biological Status and Threats, below). We now consider morphological and ecological diversity in addition to genetic diversity in our evaluation of representation. While Ute ladies'-tresses does not exhibit morphological diversity, it has a high level of ecological diversity across its wide range, occupying 12 ecoregions and 7 habitat types (Service 2024, pp. 123–127).

Given what we now know about Ute ladies'-tresses ecological diversity, we consider all habitat types important for recovery, not just the riparian and stream habitats mentioned in the criterion. Therefore, we evaluated the viability of AUs in our SSA report for those AUs in riparian and perennial stream habitats as well as in the five other habitat types where it occurs (canals, wet meadows, springs, lakeshores, and artificial/depressional wetlands) (for more information, see *Current Condition* and *Future Scenarios and Future Condition,* below).

Recovery Criterion 2: Wet meadow, seep, and spring habitats are protected

and managed so as to sustain viable populations.

Progress: At the time of the draft recovery plan (1995), we thought that it was important to distinguish Ute ladies'-tresses' wet meadow, seep, and spring habitats that are groundwater-fed from other types of habitats. These habitat types require land management practices such as grazing or mowing to provide the regular disturbance needed to support the species, whereas the riparian and stream habitats referenced in criterion 1 are surface water-fed and receive regular or periodic flooding disturbance. In the SSA report, we consider seeps and springs together and refer to them as spring habitats (Service 2024, p. 125). These habitats can be isolated from other water features or occur in combination with riparian, stream, or lakeshore habitats. We have better information now about Ute ladies'-tresses' current range and the habitat types the species occupies than we did at the time of the draft recovery plan.

Given what we know about Ute ladies'-tresses' resiliency, redundancy, and representation, we no longer consider it necessary to provide a separate criterion for wet meadow, seep, and spring habitats. As we state above for criterion one, we consider all habitat types in the SSA report and in our evaluation of Ute ladies'-tresses' viability (for more information, see *Current Condition* and *Future Scenarios* and *Future Condition,* below).

The majority (roughly 95 percent) of Ute ladies'-tresses' current range occurs in the United States, with the remaining 5 percent of its range occurring in British Columbia, Canada. In the United States, approximately 37 percent of the land where the species occurs is federally owned or managed (by the BLM, USBR, USFS, the Service, NPS, or DOD) with management plans in place to protect the species' habitat from habitat loss associated with urban development. For Ute ladies'-tresses and its habitat, Federal land management adequately supports the needs and viability of the species, and we expect that will continue in the future (see *Conservation Efforts and Regulatory Mechanisms,* below).

Approximately 60 percent of the land where Ute ladies'-tresses occurs in the United States is under non-Federal ownership (private, State, or Tribal lands). Some occurrences in three AUs (Jordan, Bear River, and South Platte) have management plans in place to protect the species and its habitat on non-Federal lands. However, little to no protection exists for Ute ladies'-tresses on the remaining non-Federal lands other than habitat protections afforded by the Clean Water Act for occurrences along riparian, stream, and some lakeshore habitats, or habitat protections afforded to federally listed fish species (see *Conservation Efforts and Regulatory Mechanisms,* below).

Despite the lack of protections on many non-Federal lands for Ute ladies'-tresses, current and projected future AU-level threats are adequately addressed or managed on these lands for at least 10 AUs to maintain high or moderate resilience to stochastic events now and into the future. In addition, at least 16 AUs are projected to remain extant and provide additional redundancy and representation in the 12 ecoregions and 7 habitat types across Ute ladies'-tresses' range (see *Future Scenarios and Future Condition,* below). Thus, although not all 18 extant AUs are considered protected, we conclude that the intent of recovery criteria 1 and 2 to ensure that sufficient AUs are protected from threats into the future has been met for at least 10 AUs. While the 1995 recovery criteria are not measurable, and do not reflect the best available scientific information, as we describe below, we find that the Ute ladies'-tresses has sufficient resiliency, redundancy, and representation given what we now know about the species.

Regulatory and Analytical Framework

Regulatory Framework

Section 4 of the Act (16 U.S.C. 1533) and the implementing regulations in title 50 of the Code of Federal Regulations set forth the procedures for determining whether a species is an endangered species or a threatened species, issuing protective regulations for threatened species, and designating critical habitat for endangered and threatened species.

The Act defines an ''endangered species'' as a species that is in danger of extinction throughout all or a significant portion of its range, and a ''threatened species'' as a species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. The Act requires that we determine whether any species is an endangered species or a threatened species because of any of the following factors:

(A) The present or threatened destruction, modification, or curtailment of its habitat or range;

(B) Overutilization for commercial, recreational, scientific, or educational purposes;

(C) Disease or predation;

(D) The inadequacy of existing regulatory mechanisms; or

(E) Other natural or manmade factors affecting its continued existence.

These factors represent broad categories of natural or human-caused actions or conditions that could have an effect on a species' continued existence. In evaluating these actions and conditions, we look for those that may have a negative effect on individuals of the species, as well as other actions or conditions that may ameliorate any negative effects or may have positive effects. The determination to delist a species must be based on an analysis of the same five factors.

We use the term ''threat'' to refer in general to actions or conditions that are known to or are reasonably likely to negatively affect individuals of a species. The term ''threat'' includes actions or conditions that have a direct impact on individuals (direct impacts), as well as those that affect individuals through alteration of their habitat or required resources (stressors). The term ''threat'' may encompass—either together or separately—the source of the action or condition or the action or condition itself.

However, the mere identification of any threat(s) does not necessarily mean that the species meets the statutory definition of an ''endangered species'' or a ''threatened species.'' In determining whether a species meets either definition, we must evaluate all identified threats by considering the species' expected response and the effects of the threats—in light of those actions and conditions that will ameliorate the threats—on an individual, population, and species level. We evaluate each threat and its expected effects on the species, then analyze the cumulative effect of all of the threats on the species as a whole. We also consider the cumulative effect of the threats in light of those actions and conditions that will have positive effects on the species—such as any existing regulatory mechanisms or conservation efforts. The Secretary determines whether the species meets the definition of an ''endangered species'' or a ''threatened species'' only after conducting this cumulative analysis and describing the expected effect on the species now and in the foreseeable future.

The Act does not define the term ''foreseeable future,'' which appears in the statutory definition of ''threatened species.'' Our implementing regulations at 50 CFR 424.11(d) set forth a framework for evaluating the foreseeable future on a case-by-case basis which is further described in the 2009 Memorandum Opinion on the foreseeable future from the Department

of the Interior, Office of the Solicitor (M–37021, January 16, 2009; ''M-Opinion,'' available online at *https://www.doi.gov/sites/doi.opengov.ibmcloud.com/files/uploads/M-37021.pdf*). The foreseeable future extends as far into the future as the U.S. Fish and Wildlife Service and National Marine Fisheries Service (hereafter, the Services) can make reasonably reliable predictions about the threats to the species and the species' responses to those threats. We need not identify the foreseeable future in terms of a specific period of time. We will describe the foreseeable future on a case-by-case basis, using the best available data and taking into account considerations such as the species' life-history characteristics, threat-projection timeframes, and environmental variability. In other words, the foreseeable future is the period of time over which we can make reasonably reliable predictions. ''Reliable'' does not mean ''certain''; it means sufficient to provide a reasonable degree of confidence in the prediction, in light of the conservation purposes of the Act.

Analytical Framework

The SSA report documents the results of our comprehensive biological review of the best scientific and commercial data regarding the status of the species, including an assessment of the potential threats to the species. The SSA report does not represent our decision on whether the species should be proposed for delisting. However, it does provide the scientific basis that informs our regulatory decisions, which involve the further application of standards within the Act and its implementing regulations and policies.

To assess the viability of Ute ladies'-tresses, we used the three conservation biology principles of resiliency, redundancy, and representation (Shaffer and Stein 2000, pp. 306–310). Briefly, resiliency is the ability of the species to withstand environmental and demographic stochasticity (for example, wet or dry, warm or cold years); redundancy is the ability of the species to withstand catastrophic events (for example, droughts, large pollution events), and representation is the ability of the species to adapt to both near-term and long-term changes in its physical and biological environment (for example, climate conditions, pathogen). In general, species viability will increase with increases in resiliency, redundancy, and representation (Smith et al. 2018, p. 306). Using these principles, we identified the species' ecological requirements for survival and reproduction at the individual, population, and species levels, and described the beneficial and risk factors influencing the species' viability.

The SSA process can be categorized into three sequential stages. During the first stage, we evaluated individual species' life-history needs. The next stage involved an assessment of the historical and current condition of the species' demographics and habitat characteristics, including an explanation of how the species arrived at its current condition. The final stage of the SSA involved making predictions about the species' responses to positive and negative environmental and anthropogenic influences. Throughout all of these stages, we used the best available information to characterize viability as the ability of a species to sustain populations in the wild over time, which we then used to inform our regulatory decision.

The following is a summary of the key results and conclusions from the SSA report; the full SSA report can be found at Docket No. FWS–R6–ES–2024–0115 on *https://www.regulations.gov.*

Summary of Biological Status and Threats

In this discussion, we review the biological condition of the species and its resources, and the threats that influence the species' current and future condition, in order to assess the species' overall viability and the risks to that viability. In addition, the SSA report (Service 2024, entire) documents our comprehensive biological status review for the species, including an assessment of the potential threats to the species.

The following is a summary of this status review and the best available information gathered since that time that have informed this decision.

Individual Needs

Individuals of Ute ladies'-tresses need adequate soil moisture during the growing season, access to full or partial sunlight, and suitable soil mycorrhizae to establish, grow, and flower (Service 2024, pp. 31–34). While we do not know the species' surface or subsurface moisture requirements, soil moisture is generally provided by surface or subsurface water within 2 ft (0.6 m) of the ground surface (ULT Tech 2021, entire). An open canopy (little to no shade from plants above) is needed to provide full or partial sunlight to plants (Fertig et al. 2005, p. 34).

While we do not know the specific mycorrhizal fungi needed by Ute ladies'-tresses, their presence in the habitat is likely a limiting factor for the establishment and reproduction of Ute ladies'-tresses (Fertig et al. 2005, p. 67; ULT Tech 2021, entire). Bumblebees and other appropriate pollinators are needed for seed production (Sipes and Tepedino 1995, entire).

Individuals need certain habitat factors, including: a low- to mid-elevation climate (elevations ranging between 0 to 7,000 ft (0 to 2,133 m); early- to mid-seral stage successional wetland habitats; and some kind of periodic disturbance (flooding or scouring events, livestock grazing, agricultural mowing, fire, etc.) to maintain the habitat's seral stage (see Background, above).

Population Needs

To be resilient, populations require recruitment, survivorship, and reproduction at rates able to sustain populations, in addition to pollinator connectivity between individuals within populations. We consider the significant determinants of population (AU) resiliency to be a healthy demography and sufficient quality habitat to support this demography (Service 2024, pp. 93–96). Resilient populations also contain enough individuals in multiple habitat areas to bounce back after experiencing environmental stressors such as drought, livestock grazing, habitat disturbance, and demographic stochasticity (births, deaths, and reproductive events that fluctuate over time). While we do not know the number of individuals or amount of habitat needed for Ute ladies'-tresses populations to be resilient, we assume that Ute ladies'-tresses populations are most resilient if they contain multiple occurrences connected by potentially suitable habitat and if they occur within habitats that maintain adequate hydrology and the appropriate seral successional stage (Service 2024, pp. 95–98).

Species Needs

The number of populations (AUs) across the landscape influences the redundancy of Ute ladies'-tresses. More populations across the range increase the species' ability to withstand catastrophic events. Individuals and populations inhabiting diverse ecological settings and exhibiting genetic or phenological variation add to the level of representation across the species' range. The greater diversity observed in Ute ladies'-tresses' habitats, genetics, and morphology, the more likely the species is to be able to adapt to change over time. Ute ladies'-tresses exhibits a high level of ecological diversity, occupying 12 ecoregions and 7 habitat types (Service 2024, pp. 123–125). Additionally, the species showed

high genetic variability within some occurrences and low variability between occurrences, which suggests a high level of genetic exchange between populations historically and possibly currently (Arft and Ranker 1998, p. 119; Service 2024, p. 91).

In summary, the species needs (1) a sufficient number and distribution of resilient populations to withstand catastrophic events (redundancy) and (2) a range of variation that allows the species to adapt to changing environmental conditions (representation) (Service 2024, pp. 88–89). The SSA report provides additional detail on the species' individual-, population-, and species-level needs (Service 2024, pp. 29–38, 86–89).

Threats (Stressors/Risk Factors/Etc.)

In the SSA report, we evaluated stressors and other actions that can positively or negatively affect Ute ladies'-tresses at the individual, population, or species levels, either currently or into the future (Service 2024, pp. 89–95, 128–137). In this proposed rule, we will discuss only those factors in detail that could meaningfully impact the status of the species. The main stressors are anthropogenic activities (urban development, water management, agriculture, livestock grazing, recreation, and invasive plants) and environmental conditions (vegetative succession, drought, and climate change) that influence or could influence the species' viability (Service 2024, pp. 89–95, 128–137). We grouped the various anthropogenic activities together and the environmental conditions together to consider their synergistic and cumulative effect on Ute ladies'-tresses at the population and species levels, because none of the individual stressors alone act intensely or broadly enough to alter Ute ladies'-tresses' status across its range (ULT Tech 2021, entire). Those stressors that are not known to have negative or long-term effects on Ute ladies'-tresses populations, such as loss of pollinators and flooding, are not discussed here but are evaluated in the SSA report (Service 2024, p. 95).

Urban Development

Urban development has the potential to result in plant mortality and loss or degradation of Ute ladies'-tresses habitat (Service 2024, p. 90). We assessed the urban development stressor to Ute ladies'-tresses based on our evaluation of disturbance, as well as roads and other infrastructure, in and near known populations. Urban development has resulted in the loss of eight occurrences in or near densely populated areas—in Utah, six occurrences were lost in the Jordan and Weber AUs along the Wasatch Front, and in Colorado, two occurrences were lost in the South Platte and Upper Arkansas AUs along the Front Range, resulting in the extirpation of the Upper Arkansas AU (Service 2024, pp. 100–109). One occurrence in Utah (in the Upper Colorado-Dirty Devil AU) is likely extirpated due to change in the hydrology and habitat loss because of road construction (Fertig et al. 2005, p. 54; Service 2024, p. 67). Two occurrences in Montana (in the Upper Missouri AU) occur in borrow pits created to support road construction projects; however, Montana Department of Transportation has prioritized their protection and long-term monitoring (Service 2024, p. 73).

We incorporated this stressor in our evaluation of current resiliency by assessing the land use, habitat condition, and hydrological condition of occurrences (Service 2024, pp. 96–135). We incorporated this stressor in our evaluation of future resiliency by evaluating projected changes in land use and the human population (Service 2024, pp. 129–196).

Water Management

Water management has the potential to result in hydrologic changes that impact the amount of suitable habitat, soil moisture, and the successional stage of Ute ladies'-tresses habitat (Service 2024, p. 91). Water flow is managed for irrigation and flood control along many of the river corridors occupied by Ute ladies'-tresses, which may lead to additional suitable habitat in some areas and the loss of suitable habitat in other areas (Grams et al. 2002, entire; Fertig et al. 2005, p. 82, Service 2024, pp. 129–136). Water management has the potential to benefit Ute ladies'-tresses by maintaining flows in low water years, but negative impacts may occur if water releases are unpredictable and not consistent with the natural hydrologic regime. We discuss the effects of flood control, in particular the reduction of large flood events, on the successional stage of Ute ladies'-tresses habitat below (see ''Vegetative Succession,'' below).

Despite management of hydrology for purposes other than Ute ladies'-tresses conservation, the species has proliferated in areas with greatly altered wetland, riparian, and lakeshore habitats that occasionally experience 10,000-year flood events (*e.g.,* Diamond Fork occurrence (Jordan AU), Lower Green River AU) (Central Utah Water Conservation District (CUWCD) 1996, pp. 4–3–4–9, 4–11–4–12; Central Utah Project Completion Act Office (CUPCA) 1999, entire; Ward and Naumann 1998, entire; Grams et al. 2002, entire; Black and Gruwell 2004, entire; USBR 2005a, entire). Water management for hydropower or irrigation has augmented natural flows in some streams, especially in late summer when natural stream flows were historically low (*e.g.,* Diamond Fork occurrence (Jordan AU), Lower Green River AU). This augmentation has expanded the amount of streamside habitat with suitable hydrology to support large numbers of Ute ladies'-tresses (Ward and Naumann 1998, pp. 25–26; Black and Gruwell 2004, pp. 8–9).

Ute ladies'-tresses plants are frequently encountered along streams and canals and in wet hay pastures in the Uinta Basin, Utah (Lower Green River AU), even though an extensive irrigation canal system was constructed in the early 1900s and natural streams are nearly dry all summer (Fertig et al. 2005, pp. 19, 44, 48; Goodrich 2005, entire; Jordan 2006, entire). The species has colonized wetlands left behind when peat was mined, and it occurs in drainage ditches alongside roads and railroad tracks (Fertig et al. 2005, pp. 16, 19, 32–33, 36–37, 45, 50, 52).

In growing urban areas, primarily in the urban areas of Utah and Colorado (see Urban Development, above) and possibly Nevada, an increased demand for municipal water and conversion of irrigation water to municipal water may lead to dewatering of Ute ladies'-tresses habitat (Riedel 2004, p. 2). One occurrence in Utah (Jordan AU) may be extirpated due to dewatering in the last decade, although it is possible dormant plants remain and could emerge if the hydrological regime again becomes suitable for Ute ladies'-tresses (Fertig et al. 2005, p. 82; Trater 2020, pers. comm.; Service 2024, p. 47). Dewatering may exacerbate the effects of drought and climate change.

We incorporated this stressor in our evaluation of current resiliency by assessing the hydrologic condition of occurrences (Service 2024, pp. 97–98). We incorporated this stressor in our evaluation of future resiliency by evaluating projected changes in drought severity and frequency at the occurrence and AU levels (Service 2024, pp. 129–134).

Agriculture

Agricultural practices have the potential to result in the loss of plants and habitat under cultivation (croplands) and with herbicide use, or they can support or maintain suitable habitat conditions for Ute ladies'-tresses under managed pastures (irrigated

pastures with some mowing or haying) or irrigation canals (Fertig et al. 2005, pp. 83, 85; Service 2024, p. 92). Some occurrences in five AUs (Great Salt Lake, Jordan, Lower Bear, Lower Green River, South Platte) are in irrigated pastures that function as wet meadow habitat and support the species (Service 2024, pp. 43–51; Fertig et al. 2005, pp. 13, 17, 19). Conversely, negative impacts to Ute ladies'-tresses have also been documented along irrigation canals that have been converted to water pipelines in one AU (Lower Green River), but these impacts are localized and have not resulted in the total loss of an occurrence (ULT Tech 2021, entire; Service 2024, p. 51). Non-Federal landowners actively manage irrigation water at two occurrences in Utah and Colorado (Lower Bear and South Platte AUs) to support the Ute ladies'-tresses on lands used for the species' preservation and for recreation, respectively (Riedel 2004, p. 2; Bear River Land Conservancy 2014, pp. 5–14; Service 2024, p. 49).

We incorporated this stressor in our evaluation of current resiliency by assessing the agricultural land use, habitat condition, and hydrological condition of occurrences (Service 2024, pp. 96–121). For future resiliency, we considered the effects of this stressor as part of our evaluation of projected changes in land use and anthropogenic effects (Service 2024, pp. 134–135).

Livestock Grazing

Livestock grazing, haying, and mowing have the potential to result in the loss of plants or flowers but can also result in beneficial effects by removing competing vegetation and maintaining an open canopy (Fertig et al. 2005, pp. 70, 79, 81; Sipes et al. 1995, pp. 24–25; Service 2024, p. 91). Ute ladies'-tresses appears to need these types of disturbances in meadow or spring habitats that experience less frequent disturbance events than rivers and streams (Arft 1995, pp. 122–153, 157–159; Allison 2001, pp. 1–10; Fertig et al. 2005, pp. 81–82). The results of Ute ladies'-tresses population projections in wet meadow habitat conditions under various management practices identified the importance of livestock grazing or grazing and mowing to support population persistence (Arft 1995, pp. 122–153, 157–159; Hazlett 1996, p. 7). Long-term studies of wet meadow habitat in Colorado found that Ute ladies'-tresses' recruitment and flowering density were significantly higher in grazed and mowed habitat compared to undisturbed habitat (Arft 1995, pp. 122–153, 157–159; Allison 2001, pp. 1–10). Winter grazing or mowing also appears to be beneficial in reducing the negative impact of field vole (*Microtus pennsylvanicus* and *M. ochrogaster*) herbivory on Ute ladies'-tresses fruit and seed production by removing vegetation and litter that support vole populations (Arft 1995, pp. 153, 157–159; Fertig et al. 2005, p. 70). Where wet meadow habitat is protected and managed for Ute ladies'-tresses in Colorado and Utah (South Platte and Lower Bear AUs), managers recommend timed haying, livestock grazing, and irrigation practices to maintain optimal habitat conditions and minimize impacts to flowering plants (Allison, 2001, pp. 1–3; Bear River Land Conservancy 2014, pp. 7–8, 14, 16; Service 2024, pp. 49, 84). Excessive or improperly timed livestock grazing, haying, and mowing may negatively impact the species (Fertig et al. 2005, p. 81; Service 2024, p. 35).

We incorporated this stressor in our evaluation of current resiliency by assessing the land use and habitat condition of occurrences (Service 2024, pp. 96–121). For future resiliency, we considered the effects of this stressor as part of our evaluation of projected changes in land use (Service 2024, pp. 134–135).

Recreation

Recreation has the potential to result in plant damage and mortality through trampling as well as provide a land use that conserves Ute ladies'-tresses habitat (Service 2024, p. 91). Many occurrences in Colorado, Nevada, Utah, Idaho, and Washington (Lower Colorado-Lake Mead, Jordan, Upper Green, South Platte, Snake Headwaters, and Upper Columbia AUs) are located on lands where recreation occurs; however, recreation was only identified as a current or potential stressor at a few occurrences in Colorado, Idaho, and Utah where trampling from fishing, boating, and off-road vehicle access has been reported (Fertig et al. 2005, pp. 35–53; Service 2024, p. 63).

We incorporated this stressor in our evaluation of current resiliency by assessing the land use and habitat condition of occurrences (Service 2024, pp. 96–121). For future resiliency, we considered the effects of this stressor as part of our evaluation of projected changes in land use (Service 2024, pp. 134–135).

Invasive Plants

Invasive plants have the potential to directly compete with Ute ladies'-tresses plants for water, nutrients, and sunlight (Service 2024, p. 94). Some invasive plants are adapted to the same early- to mid-seral successional habitats as Ute ladies'-tresses and are highly effective competitors. Fourteen invasive plants commonly occur with Ute ladies'-tresses, including upland plants such as thistles (*Cirsium* spp.) and leafy spurge (*Euphorbia esula*), wetland plants such as purple loosestrife (*Lythrum salicaria*) and reed canary grass (*Phalaris arundinacea*), and woody invasives such as tamarisk (*Tamarix* spp.) and Russian olive (*Elaeagnus angustifolia*) (Murphy 2001, pp. 19–20; Naumann 2003, entire; Murphy 2004, p. 10; Fertig et al. 2005, p. 83; Jones 2006, entire).

While invasive plants are present in Ute ladies'-tresses habitat, and some occurrences may have been partially overtaken by invasive plants, the best available information indicates this stressor has not resulted in Ute ladies'-tresses' plant mortality or the extirpation of occurrences (Fertig et al. 2005, pp. 45–47, 50; Service 2024, p. 94).

We considered this stressor in our evaluation of current resiliency as part of our occurrence habitat condition assessment (Service 2024, pp. 96–121). For future resiliency, we considered the effects of this stressor as part of our evaluation of projected changes in land use and effects of climate change (Service 2024, pp. 134–135).

Collection

We identified overcollection as a threat to Ute ladies'-tresses in the final listing rule (57 FR 2048 at 2051 and 2052, January 17, 1992). Despite the one documented instance of ''essence of *Spiranthes*'' derived from Ute ladies'-tresses flowers in the late 1990s, the threat of collection is low, given that the species is less showy than tropical orchids and other *Spiranthes* species are available for purchase (Kratz 1998, entire; Fertig et al. 2005, p. 86; Alaskan Essences 2024, entire; Carnivorous Plant Nursery 2024, entire; Microsoft Bing 2024, entire; Plant Delights Nursery 2024, entire). There is no evidence that collection is currently impacting Ute ladies'-tresses or is likely to do so in the future.

Vegetative Succession

Vegetative succession has the potential to change the habitat condition and suitability for Ute ladies'-tresses due to lack of sunlight and competition for resources (Fertig et al. 2005, p. 84; Service 2024, p. 94). Flooding is the primary disturbance along river and stream corridors that influences vegetative succession. Water level fluctuations in combination with land use activities such as mowing and grazing, and occasionally fire, appear to be the primary disturbances in

lakeshore, wet meadow, and spring habitats (Fertig et al. 2005, p. 32).

The extent of woody encroachment and late-seral successional habitats within Ute ladies'-tresses occurrences is variable and site-specific depending on the degree to which the hydrologic and disturbance regimes have been altered. The best available information indicates that vegetative succession is currently only affecting individual plants and portions of an occurrence (Fertig et al. 2005, p. 66; Black 2006, entire). The primary driver of vegetative succession is the hydrologic regime or land use associated with the habitat. Therefore, this stressor is not having a population-level effect to Ute ladies'-tresses on its own unless vegetative succession is associated with a major change to the hydrology or land use of the occurrence. We incorporated this stressor in our evaluation of current resiliency by assessing the habitat condition of occurrences (Service 2024, pp. 113–116). For future resiliency, we evaluated projected changes to the vegetative resiliency metric based on projected land use changes (Service 2024, pp. 139–195).

Disease or Predation

Predation (herbivory) on Ute ladies'-tresses was mentioned in the final listing rule because excessive livestock grazing was thought to be detrimental, and plants are highly palatable and preferentially grazed by small herbivores (57 FR 2048 at 2051, January 17, 1992). Although livestock grazing was categorized as a stressor under Factor C at the time of listing, we consider the effects of livestock grazing to be better characterized by Factor A (see ''Livestock Grazing,'' above). Herbivory of flowers and inflorescences (entire flowering stems) by field voles has been documented at a few occurrences in Colorado and Utah (Arft 1995, pp. iv, 79–87, 103–104, 113–117; Sipes et al. 1995, pp. 9–10; Heidel 2001, p. 8; Black and Gruwell 2004, p. 10; Fertig et al. 2005, pp. 89–90; Black 2006, entire). Additional monitoring indicates that winter livestock grazing or mowing maintains early seral habitat conditions favored by Ute ladies'-tresses and reduces vole herbivory by removing thatch buildup, which serves as a protective cover favored by voles, in the habitat (Arft 1995, pp. 79–87, 103–104, 113–117; Sipes et al. 1995, pp. 9–11; Peles and Barrett 1996, entire; Skopec et al. 2017, pp. 5–6). The best available information indicates that vole herbivory occasionally impacts individual plants and may locally affect some populations; however, it is seasonal in nature and unpredictable (Skopec et al. 2017, pp. 5–6; Andreassen et al. 2021, pp. 601–605). Most occurrences along rivers and streams occur in early- to mid-seral habitat conditions with little to no thatch buildup, and most meadow or seep habitats are grazed or mowed to remove thatch buildup. We did not find that vole herbivory occurs at spatial and temporal scales large enough to affect the overall status of Ute ladies'-tresses given the plant's current status. We are not aware of any issues or potential stressors related to disease or insect predation. Therefore, we did not include this stressor in our evaluation of current and future resiliency.

Drought

Drought has the potential to result in the loss of Ute ladies'-tresses plants; changes in vegetation, hydrology, and soil saturation; and temporary or permanent loss of habitat depending on the severity and duration of drought conditions (Service 2024, p. 92). Water management has ameliorated summer drought conditions in some river corridors (see ''Water Management,'' above), but increases in municipal water use (dewatering or loss of irrigation water) could exacerbate the effects of drought in Ute ladies'-tresses habitat (Fertig et al. 2005, p. 85).

The best available information indicates that this stressor is not having a population-level effect to Ute ladies'-tresses. Ute ladies'-tresses tolerates a range of soil moisture as well as drought conditions, and, while drought conditions may temporarily reduce the number of flowering plants, Ute ladies'-tresses is able to remain dormant during periods of drought. The species' reliance on mycorrhizae may also mitigate the effects of drought stress (Ahluwalia et al. 2021, p. 7). The hydrology of its wetland habitat likely buffers the effects of minor reductions in precipitation or available water. We do not have a clear understanding of how Ute ladies'-tresses responds to severe or extreme droughts (defined as -3.0 or less on the Palmer Drought Index) (Dai et al. 2023, p. 1). However, we assume that an increase in the frequency of severe and extreme droughts will have a negative impact on the species. Therefore, we incorporated this stressor in our evaluation of current resiliency by assessing the hydrologic condition of occurrences (Service 2024, pp. 129–134). We incorporated this stressor in our evaluation of future resiliency based on the frequency of severe and extreme droughts at the occurrence level as part of the climate change stressor, which is discussed below (Service 2024, pp. 113–116).

Climate Change

Climate change has the potential to impact Ute ladies'-tresses if the frequency of severe and extreme droughts increases in the future (see ''Drought,'' above), and it may place an added stress on the species and its habitat, particularly when other stressors are present. We used the Standardized Precipitation Evaporation Index (SPEI) that allowed us to project drought severity and frequency at the occurrence level, and we used a precipitation-evaporation model ensemble (of 20 models) to evaluate how annual moisture availability is projected to change at the AU level (Service 2024, pp. 132–134). These models allowed us to evaluate future hydrologic conditions at the occurrence level, and the projected changes in water availability at the AU level. The SSA report describes other models and their limitations in detail (Service 2024, pp. 131–133). We used two different emission scenarios, a stabilization emission scenario using representative concentration pathway (RCP) 4.5 and a rising greenhouse gas emissions scenario using RCP 8.5 developed by the Intergovernmental Panel on Climate Change (IPCC).

The SPEI index accounts for precipitation and temperature changes that are useful indicators for detecting and measuring drought severity and duration within a variety of habitats and over a range of climate projections (Vicente-Serrano et al. 2010, entire). For occurrences, we used the SPEI index data for the spring and summer months (March through August) that are important for plant growth and reproduction to calculate and compare the historical (1980–2019) and future (2023–2074) decadal frequency of severe and extreme droughts (North Central Climate Adaptation Science Center (NC CASC) 2022, data set; Service 2024, pp. 132–134). The results of our evaluation indicate that the frequency of severe or extreme droughts during the spring and summer months varies across the species' range. At most occurrences, drought frequency is projected to increase by at least one but fewer than three additional severe or extreme droughts per decade; at some occurrences, drought frequency is projected to remain similar to or slightly increased from the historical frequency; and several occurrences project a slight decrease in drought frequency under one or both climate scenarios. Northern Utah, Idaho, and Washington are projected to generally remain stable or even see slight decreases in severe and extreme drought frequencies under both

scenarios. Occurrences along the southern part of the range, as well as those in Montana, are projected to see the greatest increase in drought severity and frequency. Lower elevation occurrences in desert ecosystems see the most extreme increases overall, and are more vulnerable to extirpation (Service 2024, pp. 198–199).

The precipitation-evaporation model ensemble accounts for larger scale changes to regional water availability (*e.g.,* dry getting drier, wet getting wetter) that we applied to the AU level as a proxy for future changes to the amount of potentially suitable habitat for Ute ladies'-tresses (Service 2024, pp. 134–136). While we do not know exactly how the amount of potentially suitable habitat will change in response to regional or watershed changes in water availability, we assumed that the amount of potentially suitable habitat within an AU would not change if future water availability in an AU remained within one standard deviation of historical levels. We compared the historical (1980–2020) and future (2020–2074) water availability in AUs. We found there was no meaningful change in water availability from historical levels under the two emission scenarios to indicate a decline in the amount of potentially suitable habitat (Willey 2024, entire; Service 2024, pp. 134–136).

Both intermediate and high emission scenarios (RCP 4.5 and 8.5) indicate that the range of Ute ladies'-tresses will be warmer and drier throughout the southern part of the range and warmer but with similar or slightly increased precipitation in northern Utah, Idaho, and Washington State in the future (through 2074) compared to historical conditions (Alder 2022, entire; Service 2024, pp. 13, 198). The frequency of severe or extreme droughts is expected to increase throughout most, although not all, of Ute ladies'-tresses' range. There is substantial uncertainty in how Ute ladies'-tresses will respond to more frequent severe or extreme droughts in many AUs within its range. When we considered characteristics that contribute to its ability to adapt to changing climate conditions, Ute ladies'-tresses has many attributes indicating moderate to high levels of adaptive capacity; these attributes include the species' large range occupying 12 ecoregions, its variable dispersal ability and moderately high dispersal distance along waterways, its general habitat requirements, and its flexible ability to reduce its exposure to climate stressors by remaining dormant during unfavorable conditions (Thurman et al. 2020, entire; Service 2024, pp. 123–129). We incorporated this stressor in our evaluation of future resiliency as part of the combined results of climate change and the human population change stressor in the SSA report and below (see *Future Scenarios and Future Condition,* below; Service 2024, pp. 129–199).

Human Population Change

Human population change within the range of Ute ladies'-tresses may increase the negative effects of anthropogenic stressors and environmental stressors to the species. The future rate and location of these changes is unclear, but human population growth is projected to increase at a regional scale within the species' range in the western United States (Weldon Cooper Center for Public Service 2024, entire).

We incorporated this stressor in our evaluation of future resiliency by evaluating the projected loss of Ute ladies'-tresses habitat in occurrences (Service 2024, pp. 129–136). We report the combined results of climate change and the human population change stressor in the SSA report and below (*see Future Scenarios and Future Condition,* below; Service 2024, pp. 129–199).

Current Condition

To assess the current condition of Ute ladies'-tresses across its extensive range, we broke the range into 18 smaller analytical units (AUs) based on USGS 6-digit hydrological unit code (HUC–6) watershed basins in consultation with species experts (see table 1 below; Jones et al. 2022, pp. 2, 5; Service 2024, pp. 26–28). This watershed scale provides a biologically meaningful delineation of areas where regular gene flow likely occurs between occurrences (Service 2024, pp. 23–26). As discussed above, we consider Ute ladies'-tresses AUs to be surrogates for populations (see Background, above). A map of these AUs is available in the SSA report (Service 2024, p. 4, figure 1).

In our SSA report, we evaluate current condition by examining current levels of resiliency in the 18 extant Ute ladies'-tresses AUs and implications for redundancy and representation. Here, we summarize our evaluation of the current condition for the resiliency, redundancy, and representation of Ute ladies'-tresses. Additional detail regarding our analysis is provided in the SSA report (Service 2024, pp. 100–127).

Resiliency

We describe the resiliency for each of the 18 AUs in terms of the demographic and habitat factors needed by Ute ladies'-tresses (Service 2024, pp. 93–96). We developed a categorical model to calibrate resiliency based on the range of demographic and habitat conditions in each AU. We first identified resource or demographic factors that contribute to the species' resiliency; these factors align with the individual resource needs and population-level needs we identified in the SSA analysis. We then defined threshold values for each identified resource or demographic factor that represent high, moderate, or low levels of that factor. Finally, we evaluated whether the current levels of each resource or demographic factor in a population fall within the predetermined thresholds for a high, moderate, or low score for the category; we then averaged these scores for each category to develop an overall current resiliency score for each population.

For Ute ladies'-tresses, our categorical model assessed the resiliency of each AU by evaluating (1) hydrologic condition, a qualitative evaluation of the hydrologic regime; (2) vegetative habitat condition, a qualitative evaluation of floral resources for Ute ladies'-tresses pollinators and successional stage; (3) abundance, the number of occupied occurrences within the AU; (4) potential habitat availability, the percentage of modeled suitable habitat within the AU; and (5) connectivity, the number of occurrences connected by modeled suitable habitat. We selected these habitat and demographic factors based on their importance to the species' resiliency and because we could evaluate them relatively consistently across all 18 AUs.

Resiliency categories, thresholds, and scores were established based on the best available information and professional opinion of species experts. Hydrologic condition was based on expert opinion, available survey reports, and inspection of aerial imagery to assess surface or subsurface water in the habitat and the frequency of extreme flooding or year-round inundation. Vegetative habitat condition was based on expert opinion and available survey reports to assess whether the condition was good, moderate, or poor for Ute ladies'-tresses. Abundance was based on State heritage program database information and available survey reports to identify the number of extant occurrences within AUs. Percentage of potential habitat availability and connectivity (the number of occurrences connected by potentially suitable habitat) within each AU were based on Service modeled suitable habitat (Service 2024, pp. 96–99, appendix I). We applied equal weight to four factors (hydrologic condition, vegetative habitat condition, abundance, and connectivity)

and applied one-half the weight (0.5) to the potential habitat availability factor because we have less confidence in the results compared to the other factors, as the potential habitat availability model only represents the potential for the species to recolonize into new areas following a possible extirpation and may overpredict potential habitat in AUs.

There are 18 Ute ladies'-tresses AUs comprised of 62 occurrences, and according to our current condition analysis in the SSA report, 5 have high resiliency, 8 have moderate resiliency, and 5 have low resiliency (see table 1, below; Service 2024, pp. 122–123). The 13 AUs with high and moderate resiliency maintain moderate or high hydrologic condition; moderate or high population abundance (the exception is Lower Bear AU with low abundance); and a range of scores for vegetative habitat condition, connectivity, and potential habitat availability. The 13 AUs with high or moderate resiliency are distributed across the species' range, are present in all 8 U.S. States and Canada, and are present in 10 of the 12 ecoregions (see table 1, below). Five AUs have low resiliency due to low abundance and two or more additional factors with low scores. Notably, all 18 AUs have moderate or high resiliency scores for hydrological condition. The 13 AUs with high or moderate resiliency are at less risk from potential stochastic events, such as climatic variation, than the AUs with low resiliency.

TABLE 1—CURRENT CONDITION RESILIENCY RANKINGS FOR UTE LADIES'-TRESSES AUS

AU name (States * or Canada)	Number of extant occurrences	AU resiliency	Level-III ecoregions
Cheyenne (WY, SD, NE)	1	Low	Northwestern Great Plains.
Colorado Headwaters (CO)	2	Moderate	Southern Rockies.
Great Salt Lake (UT, NV)	1	Low	Central Basin and Range.
Jordan (UT)	5	High	Central Basin and Range, Wasatch and Uinta Mountains.
Lower Bear (UT, ID)	1	Moderate	Central Basin and Range, Wasatch and Uinta Mountains.
Lower Colorado-Lake Mead (NV, UT, AZ)	1	Low	Wasatch and Uinta Mountains, Colorado Plateaus.
Lower Green River (UT, CO)	13	High	Central Basin and Range.
Missouri Headwaters (MT, WY)	9	High	Middle Rockies.
Niobrara (WY, SD, NE)	2	Moderate	High Plains.
North Platte (WY, NE, CO)	3	High	High Plains.
Snake Headwaters (ID, WY)	2	Moderate	Snake River Plain, Middle Rockies.
South Platte (WY, CO, NE)	6	Moderate	Southern Rockies, High Plains.
Upper Colorado-Dirty Devil (UT, AZ)	1	Low	Colorado Plateau.
Upper Columbia (WA, Canada)	6	Moderate	Columbia Plateau, North Cascades.
Upper Green (UT, CO)	2	High	Wasatch and Uinta Mountains, Colorado Plateau, Wyoming Basin.
Upper Missouri (MT)	2	Moderate	Middle Rockies.
Upper Snake (ID, WY, UT, NV)	4	Moderate	Snake River Plain, Middle Rockies.
Weber (UT, WY)	1	Low	Central Basin and Range.

* State abbreviations are Arizona (AZ), Colorado (CO), Idaho (ID), Montana (MT), Nebraska (NE), Nevada (NV), South Dakota (SD), Utah (UT), Washington (WA), and Wyoming (WY).

Redundancy

Redundancy describes the number and distribution of AUs, and the greater the number and the wider the distribution of the AUs, the better Ute ladies'-tresses can withstand catastrophic events. The plausibility of catastrophic events also influences species' redundancy; if catastrophic events are unlikely within the range of the species, catastrophic risk is inherently lower. We identified severe to extreme drought conditions as a plausible catastrophic event that may affect one or more population simultaneously. We evaluated the risk of this catastrophic event and its impact on species redundancy in our future scenarios (see *Future Scenarios and Future Condition,* below). Ute ladies'-tresses' redundancy is characterized by 18 AUs (watersheds) distributed across its large range; AUs are separated by the Northern and Middle Rocky Mountains, and distances of approximately 350 miles for the more isolated Upper Columbia AU. As we mentioned above, the 13 AUs with high or moderate resiliency are distributed across the species' range, are present in all 8 U.S. States and Canada, and are present in 10 of the 12 ecoregions. Thus, the 13 higher resiliency populations and their distribution help spread the risk of catastrophic drought conditions over a larger geographic area and contribute to the species' ability to withstand catastrophic events. We are aware of one AU (Upper Arkansas) that is extirpated in Colorado due to urban development (Service 2024, pp. 65–66, 100–109).

Representation

Ute ladies'-tresses exhibits considerable ecological diversity; the species is found in 3 different ecological classifications (Great Plains, North American Deserts, and Western Forested Mountains), 12 level-III ecoregions, and 7 habitat types (see Background, above). High genetic diversity was documented in populations located in six of the eight States within the species' range, and there is very little morphological variability across the range. The species has greater levels of representation than we previously understood at the time Ute ladies'-tresses was listed in 1992, because of our better understanding of the species, including more known occurrences and AUs, and a broader known distribution.

Future Scenarios and Future Condition

In our SSA report, we forecasted the resiliency of Ute ladies'-tresses AUs and the redundancy and representation of the species for approximately 50 years (to 2074) using a range of three plausible future scenarios. We relied on combined IPCC climate and land use projections out to 2074 (the timeframe for which they were available). These projections informed our evaluation of habitat loss from anthropogenic activities. This

timeframe encompasses approximately 2 to 3 generations of the species, the duration (30 years) of the applicable Federal land management plans by USFS and BLM, and the duration (50 years or more) of dam operation contracts or licenses. We can reasonably determine projected changes in the climate change and anthropogenic activities/stressors using geospatial data sets and the species' likely responses to those stressors within this 50-year timeframe (*i.e.,* the foreseeable future).

We developed three plausible future scenarios using three climate models that were downscaled to the Ute ladies'-tresses' AUs. By developing a range of plausible future scenarios, we assume that actual future conditions will likely fall somewhere between these three scenarios. We consider the driving factors of the species' viability to be two separate, but interconnected influences—the effects of anthropogenic activity related to loss of habitat from stressors that include urban development, water management, agriculture, recreation, and land conversion, and the effects of climate change influencing the amount of water available in a watershed. The primary negative influence of anthropogenic activity to AU resiliency is the loss of Ute ladies'-tresses plants and habitat, regardless of the particular anthropogenic stressor(s). We then used existing models and data to project the effects of climate change and anthropogenic activities on the demographic and habitat factors that influence resiliency, redundancy, and representation. We calculated the future resiliency score using the same methods as the current condition score. If anthropogenic activity was projected to cause extirpation of an occurrence (50 percent or more potential suitable habitat loss was projected), it was removed from the AU prior to the evaluation of climate change effects. If the AU future resiliency ranking fell below 0.9 (lowest possible original score), we assumed the AU would become extirpated (a condition lower than the low condition category and unlikely to be resilient to stochastic events) in the foreseeable future under that scenario.

For anthropogenic activity, we evaluated the projected loss of Ute ladies'-tresses habitat in occurrences based on changes in land use and land cover (Service 2024, pp. 134–136). We used USGS land cover projections out to 2074 that correspond to the three climate change and human population change scenarios (B1, B2, and A2) developed by the IPCC (Sohl et al. 2018, data set; USGS 2019, dataset). Detailed descriptions of each scenario are available in the SSA report (Service 2024, pp. 129–199). Scenario 1 (B1) represents a stabilization of emissions (RCP 4.5) and a slowed rate of human population growth. The B1 or stabilization climate scenario describes a global population that peaks in mid-century and declines thereafter under intermediate emissions. Scenario 2 (B2) represents the continuation of the current rate of human population growth into the future with technology mitigating some growth under high emissions (RCP 8.5), and Scenario 3 (A2) represents a largely unchecked population growth under high emissions (RCP 8.5) (IPCC 2000, pp. 9–11).

The USGS land cover projections identify changes on non-Federal lands because they have a higher risk of development and other anthropogenic stressors compared to Federal lands. This is consistent with our understanding of the development risk for the species' wetland habitats. We consider there to be a low risk of future development in Ute ladies'-tresses habitat on Federal lands, and we assumed no habitat loss from development on Federal lands in our future projections.

We consider the USGS emergent wetlands, woody wetlands, and hay or pasture land cover categories to represent suitable habitat for Ute ladies'-tresses, and we calculated the amount of habitat loss based on projected changes to those land cover categories. We assumed the loss of habitat if suitable habitat for Ute ladies'-tresses within an occurrence was converted to moderately or highly developed land or to cultivated cropland categories. If there was 50 percent or more suitable habitat loss within an occurrence, then we considered the occurrence to be extirpated.

Depending on the scenario, some occurrences in rapidly urbanizing areas are projected to be extirpated; however, there is very little habitat loss projected for most of the occurrences (Service 2024, pp. 139–199). In the B1 scenario, human population change and associated anthropogenic stressors were projected to result in the loss of three occurrences in Utah and Colorado (within the Jordan, Lower Green River, and South Platte AUs). In the B2 scenario, we project a loss of 10 occurrences in Utah, Colorado, Montana, and Idaho (within the Jordan, Lower Green River, Missouri Headwaters, South Platte, Upper Colorado-Dirty Devil, Upper Snake AUs). In the A2 scenario, we project a loss of 11 occurrences in Utah, Colorado, Nevada, Montana, and Idaho (within the Jordan, Lower Colorado-Lake Mead, Lower Green River, Missouri Headwaters, South Platte, Upper Colorado-Dirty Devil, Upper Missouri, Upper Snake AUs). For some occurrences, if they were projected to be extirpated because of a loss of hydrologic condition, we did not assess their projected extirpation risk from human activities.

As discussed above, we evaluated climate change effects to occurrence hydrologic condition using SPEI index projections of severe and extreme drought frequency out to 2074 (see ''Climate Change,'' above). We used SPEI index projections under intermediate emissions (RCP 4.5) for Scenario 1, and SPEI index projections under high emissions (RPC 8.5) for Scenarios 2 and 3. For each occurrence, we compared the historical and projected future decadal frequency (to 2074) of severe and extreme droughts within the species' range. We made no change to an occurrence's projected hydrologic or vegetative condition category if the drought frequency was projected to remain similar to the historical drought frequency (less than one additional severe or extreme drought per decade above the historical frequency). For all three scenarios, we reduced an occurrence's future hydrologic condition by one category (from high to moderate; moderate to low) if the drought frequency was projected to increase by 1 to 1.9 severe to extreme drought(s) per decade above the historical frequency, and by two categories if the frequency was projected to increase by 2 to 3 severe to extreme droughts per decade above the historical frequency.

For climate change effects to occurrence vegetative habitat condition, we assumed that there was no change in the condition category under intermediate emissions (RCP 4.5) for Scenario 1. However, we assumed that vegetative habitat condition would change the same amount as hydrologic condition for a given occurrence under the two high emissions scenarios, Scenarios 2 and 3 (Service 2024, p. 133).

In Scenario 1 (B1), anthropogenic activities are projected to increase in two States within the range; associated habitat loss would result in the extirpation of three occurrences in Utah and Colorado (within the Jordan, Lower Green River, and South Platte AUs). However, the extirpations of these occurrences do not affect the overall AU resiliency scores.

The frequency of severe and extreme droughts varies across the species' range. Small increases in decadal

drought frequency are projected for most occurrences in northern Utah, Idaho, and Washington, although a few occurrences in those States show a small decrease in drought frequency relative to current trends. The remaining States and Canada show a larger per decade increase in drought frequency (by approximately 1 to 2 more additional severe to extreme droughts per decade) at most occurrences. No occurrences were projected to have an increase of three or more severe to extreme droughts in any scenario. Occurrences in Montana and those at the southern edges of the range in Nevada and southern Utah are projected to see the largest increases in drought frequency. Projected climate change effects and associated declines in occurrence hydrologic condition result in the extirpation of five occurrences in Montana, Colorado, and Utah (within the Missouri Headwaters, South Platte, Upper Colorado-Dirty Devil AUs). The one extirpated occurrence in the Upper Colorado-Dirty Devil AU results in the extirpation of that AU, since that is the only occurrence in that AU.

We project the resiliency of 15 AUs will remain the same as current conditions, 2 AUs (Missouri Headwaters, North Platte) will drop from high to moderate overall resiliency, and 1 AU (Upper Colorado-Dirty Devil) will drop from low resiliency to extirpated (see table 2, below). Declines in AU resiliency were driven by climate change effects. Redundancy declines because 17 AUs remain and 1 is extirpated, and representation remains the same as current conditions in terms of represented ecoregions and habitat types.

Ute ladies'-tresses is projected to maintain 13 AUs with high or moderate resiliency in Scenario 1 (B1), and these AUs are at less risk from potential stochastic events, such as climatic variation, than the 4 AUs with low resiliency.

In Scenario 2 (B2), anthropogenic activities increase in four States within the range; projections of this stressor and associated habitat loss result in the extirpation of nine occurrences in Utah, Colorado, Montana, and Idaho (within the Jordan, Lower Green River, Missouri Headwaters, South Platte, and Upper Snake AUs).

The frequency of severe and extreme droughts is projected to increase in most AUs by one to less than three additional severe to extreme droughts per decade over current trends. Similar to Scenario 1, Utah, Idaho, and Washington experience the smallest increases in drought frequency, and in some cases smaller than the frequencies projected in Scenario 1, which is considered the less extreme climate scenario. However, occurrences in Montana and at the southern edges of the range in Nevada and southern Utah are projected to have the largest increases in drought frequency. Projected climate change effects and associated declines in occurrence hydrologic condition result in the extirpation of the Upper Colorado-Dirty Devil AU and two additional occurrences in Montana in the Missouri Headwaters AU.

We project the overall resiliency of 13 AUs will remain the same as the current condition, 2 AUs (Jordan, North Platte) will drop from high to moderate condition, 1 AU (Missouri Headwaters) will drop from high to low condition, 1 AU (South Platte) will drop from moderate to low condition, and 1 AU (Upper Colorado-Dirty Devil) will drop from low to extirpated condition (see table 2, below). Declines in AU resiliency were driven by anthropogenic activities in the Jordan AU, the combination of anthropogenic activities and climate change effects in the Missouri Headwaters and South Platte AUs, and climate change effects in the North Platte and Upper Colorado-Dirty Devil AUs. Redundancy declines because 17 AUs remain and 1 is extirpated, and representation remains the same as current conditions in terms of represented ecoregions and habitat types.

The increase in climate change and anthropogenic effects compared to current conditions under Scenario 2 has the potential to negatively impact vegetative condition. We expect dormant seedlings and plants to remain viable under this scenario and to support population resiliency. Despite some reduction in resiliency, Ute ladies'-tresses is projected to maintain 11 AUs with high or moderate resiliency in this scenario, and these AUs are at less risk from potential stochastic events, such as climatic variation, than the 6 AUs with low resiliency.

In Scenario 3 (A2), anthropogenic activities increase in 5 States within the species' range; associated habitat loss results in the extirpation of 11 occurrences in Utah, Colorado, Montana, Idaho, and Nevada (within the Jordan, Lower Green River, Missouri Headwaters, South Platte, Upper Snake, Upper Missouri, and Lower Colorado-Lake Mead AUs).

As in Scenario 2, more occurrences are projected to see increases of one to less than three additional severe to extreme droughts per decade over current trends, and these effects are compounded by more anthropogenic activity. Projected climate change effects and associated declines in occurrence hydrologic condition result in the extirpation of the Upper Colorado-Dirty Devil AU, as well as three occurrences in Colorado and Montana (within the South Platte and Missouri Headwaters AUs).

We project the overall resiliency of 11 AUs will remain the same as the current condition, 2 AUs (Jordan, North Platte) will drop from high to moderate condition, 1 AU (Missouri Headwaters) will drop from high to low condition, 2 AUs (South Platte and Upper Missouri) will drop from moderate to low condition, and 2 AUs (Upper Colorado-Dirty Devil and Lower Colorado-Lake Mead) will drop from low to extirpated condition (see table 2, below). Declines in AU resiliency were driven by anthropogenic activities in the Jordan and Lower Colorado-Lake Mead AUs; the combination of anthropogenic activities and climate change effects in the Missouri Headwaters, Upper Missouri, and South Platte AUs; and climate change effects in the North Platte and Upper Colorado-Dirty Devil AUs. Redundancy declines because 16 AUs remain and 2 are extirpated, and representation remains the same as current conditions in terms of represented ecoregions and habitat types.

The increase in climate change and anthropogenic effects compared to current conditions under Scenario 3 has the potential to negatively impact vegetative condition. We expect dormant seedlings and plants to remain viable under this scenario and to support population resiliency. Despite some reduction in resiliency, Ute ladies'-tresses is projected to maintain 10 AUs with high or moderate resiliency in this scenario, and these AUs are at less risk from potential stochastic events, such as climatic variation, than the 6 AUs with low resiliency.

TABLE 2—SUMMARY OF UTE LADIES'-TRESSES RESILIENCY FOR THE CURRENT CONDITION AND THREE FUTURE SCENARIOS

AU	Resiliency			
	Current condition	Future scenario 1	Future scenario 2	Future scenario 3
Cheyenne	Low	Low	Low	Low.
Colorado Headwaters	Moderate	Moderate	Moderate	Moderate.
Great Salt Lake	Low	Low	Low	Low.
Jordan	High	High	Moderate	Moderate.
Lower Bear	Moderate	Moderate	Moderate	Moderate.
Lower Colorado-Lake Mead	Low	Low	Low	Extirpated.
Lower Green River	High	High	High	High.
Missouri Headwaters	High	Moderate	Low	Low.
Niobrara	Moderate	Moderate	Moderate	Moderate.
North Platte	High	Moderate	Moderate	Moderate.
Snake Headwaters	Moderate	Moderate	Moderate	Moderate.
South Platte	Moderate	Moderate	Low	Low.
Upper Colorado-Dirty Devil	Low	Extirpated	Extirpated	Extirpated.
Upper Columbia	Moderate	Moderate	Moderate	Moderate.
Upper Green	High	High	High	High.
Upper Missouri	Moderate	Moderate	Moderate	Low.
Upper Snake	Moderate	Moderate	Moderate	Moderate.
Weber	Low	Low	Low	Low.

Under all three future scenarios, the overall resiliency of at least 11 AUs is projected to remain the same as the current condition. Declines in overall resiliency for the remaining AUs were driven by climate change in Scenario 1 and the combination of anthropogenic activities and climate change in Scenarios 2 and 3. Under all three future scenarios, Ute ladies'-tresses is projected to maintain at least 10 AUs with high or moderate resiliency, and these AUs are at less risk from potential stochastic events, such as climatic variation, than the AUs with low resiliency. AUs along large, mainstem rivers with multiple occurrences (Upper Green, Lower Green River, Upper Columbia, Upper Snake, Lower Bear, Niobrara, Colorado Headwaters) are the most resilient; they maintain their overall resiliency scores across all future scenarios despite projected declines in abundance and connectivity. The Upper Colorado-Dirty Devil AU in the southern part of the range is the least resilient and is projected to be extirpated in all three future scenarios due to climate change.

Under all three future scenarios, some genetic diversity within populations could be lost. However, even in the most pessimistic plausible scenario (Scenario 3), 16 AUs are expected to remain extant and ecological variation will continue to be represented by the 12 ecoregions and 7 habitat types across Ute ladies'-tresses' range.

We note that, by using the SSA framework to guide our analysis of the scientific information documented in the SSA report, we have analyzed the cumulative effects of identified threats and conservation actions on the species. To assess the current and future condition of the species, we evaluate the effects of all the relevant factors that may be influencing the species, including threats and conservation efforts. Because the SSA framework considers not just the presence of the factors, but to what degree they collectively influence risk to the entire species, our assessment integrates the cumulative effects of the factors and replaces a standalone cumulative-effects analysis.

See the SSA report (Service 2024, entire) for a more detailed discussion of our evaluation of the biological status of Ute ladies'-tresses and the stressors that may affect its continued existence. Our conclusions in the SSA report, which form the basis for the determination below, are based upon the best available scientific and commercial data.

Conservation Efforts and Regulatory Mechanisms

There are several regulatory mechanisms, as well as conservation efforts, that may minimize the effect of stressors or provide benefits to Ute ladies'-tresses. Due to the broad distribution of Ute ladies'-tresses in the United States and Canada, management of this species falls under numerous jurisdictions. Roughly 95 percent of the species' range occurs in the United States, with the remaining 5 percent of its range occurring in British Columbia, Canada. In the United States, approximately 37 percent of land where the species occurs is federally owned or managed by the BLM, USBR, USFS, Service, NPS, and DOD. Almost half of the land, approximately 47 percent, is under private ownership. There is a small amount (approximately 3 percent) of Ute ladies'-tresses habitat where the land ownership is not known. The remaining 13 percent of the species' range is on State and Tribal lands (Service 2024, p. 39).

International Regulatory Mechanisms

International trade in all orchids is regulated by the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES; 27 U.S.T. 1087, March 3, 1973), an international agreement ratified by most countries worldwide since 1975. The purpose of CITES is to regulate the international wildlife trade to safeguard certain species from over-exploitation. Ute ladies'-tresses is listed as an appendix II species of CITES and would remain an appendix II species if delisted under the Act because it is an orchid. Under CITES, exporters must obtain a permit for international shipment of specimens. Export permits for an appendix II species are issued only when the following findings are made: (1) a scientific finding of non-detriment (*i.e.,* data or expert scientific opinion on the biological status of the species indicating that the export is not likely to be detrimental to species survival); and (2) a finding that specimens were acquired legally (*i.e.,* evidence that specimens to be exported were not obtained in violation of any State, Federal, or other jurisdictional law). More information on CITES can be found at: *https://cites.org/eng/disc/what.php.*

In Canada, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) designated Ute ladies'-tresses as a schedule 1 endangered species under the Canadian Species at Risk Act (SARA) in November 2018, due to the high risk of extirpation

(COSEWIC 2018, entire). This designation provides protection from harming, killing, collecting, buying, selling, or possessing Ute ladies'-tresses on Federal Crown lands. In Canada, the species occurs on lands within an Ecological Reserve that are permanently protected and managed by British Columbia Parks for their biodiversity, and on lands within the Osoyoos Indian Reserve with no conservation status (COSEWIC 2018, pp. 43–44).

Federal Regulatory Mechanisms

Clean Water Act—The Clean Water Act (CWA) was designed, in part, to protect surface waters of the United States from unregulated pollution from point sources. The CWA provides some benefit to Ute ladies'-tresses through the regulation of discharge into surface waters through a permitting process; however, the historical threats to Ute ladies'-tresses habitat have not typically been associated with point sources of pollution, and the best available information indicates that pollution is not a stressor.

Under section 404 of the CWA, the U.S. Army Corps of Engineers (USACE) regulates the discharge of fill material into waters of the United States, including wetlands that meet certain jurisdictional requirements. In general, the term ''wetland'' refers to areas meeting the USACE's criteria of hydric soils, hydrology (either sufficient annual flooding or water on the soil surface), and hydrophytic vegetation (plants specifically adapted for growing in wetlands).

The USACE and the U.S. Environmental Protection Agency (EPA) amended the definition of ''waters of the United States'' as it applies to the CWA and the jurisdictional authority of the USACE on September 8, 2023 (88 FR 61964), to comply with a 2023 Supreme Court Decision, *Sackett* v. *Environmental Protection Agency.* Under the new definition, jurisdictional (that is, regulated under the authority of the CWA) wetlands are those wetlands adjacent to navigable waters defined as interstate waters, and relatively permanent, standing or continuously flowing bodies of water with continuous surface connection to certain other bodies of water (see 33 CFR 328.3(a)(1) and (a)(4), and 40 CFR 120.2(a)(4)); and jurisdictional ''waters of the United States'' include certain intrastate lakes and ponds (see 33 CFR 328.3(a)(5)). Under this definition of waters of the United States, Ute ladies'-tresses occurrences along interstate waters or along intrastate lakes, ponds, streams, or wetlands that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to certain waterbodies would be considered as occurring in jurisdictional waters/wetlands, and we expect the protections of the CWA to remain if we delist Ute ladies'-tresses under the Act. However, in some cases, occurrences in wet meadow, spring, or seep habitats that do not meet the definition would not be considered jurisdictional waters/wetlands under the CWA. This means the loss of indirect protections under the CWA for occurrences on non-Federal lands in the United States. Under the previous and new definition of ''waters of the United States,'' certain farming activities, ditches, artificially irrigated areas that would revert to dry land if irrigation ceased, and artificial lakes, ponds, or waterfilled depressions incidental to construction activity are not considered waters of the United States and are excluded from the CWA's section 404 regulations.

National Environmental Policy Act—Environmental review of potential effects of Federal actions is mandated under the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 *et seq.*). When NEPA analysis reveals significant environmental effects, the Federal agencies must disclose those effects to the public and consider mitigation that could offset the effects. These mitigations usually provide some protections for listed species. However, NEPA does not require that adverse impacts be mitigated, only disclosed. Therefore, it is unclear what level of protection would be conveyed to Ute ladies'-tresses through NEPA, in the absence of protections under the Act.

National Park Organic Act—Federal activities on National Park Service (NPS) lands are subject to the National Park Service Organic Act (54 U.S.C. 100101 *et seq.*). The Organic Act specifies that the NPS will promote and regulate the use of the National Park System (System) by means and measures that conform to the fundamental purpose of the System units, which purpose is to conserve the scenery, natural and historic objects, and wild life in the System units and to provide for the enjoyment of the scenery, natural and historic objects, and wild life in such manner and by such means as will leave them unimpaired for the enjoyment of future generations (54 U.S.C. 100101(a)).

The NPS manages Ute ladies'-tresses occurrences in Dinosaur National Monument along the Green River in northwestern Colorado (Upper Green and Lower Green River AUs) and a historical occurrence in Capitol Reef National Park in Utah (Fertig et al. 2005, pp. 74, 77–78, 82, 89–90; Hendricks 2005, entire; Service 2024, pp. 67, 71, 84–85). For listed species, NPS provides habitat protections from conflicting land use; however, the NPS does not control the hydrology of the Green or Fremont Rivers. We expect habitat protections to continue along the Green River if we delist Ute ladies'-tresses based on the regulatory mechanisms provided by the Organic Act.

National Wildlife Refuge System Improvement Act—As directed by the National Wildlife Refuge System Improvement Act (Pub. L. 105–57), Service refuge managers have the authority and responsibility to protect native ecosystems, fulfill the purposes for which an individual refuge was founded, and implement strategies to achieve the goals and objectives stated in management plans. In the Lower Green River AU, Browns Park National Wildlife Refuge contained habitat for Ute ladies'-tresses along the Green River in northwestern Colorado upstream of Dinosaur National Monument as recently as 1999. Since then, flood and scour events have reduced the amount of occupied and suitable Ute ladies'-tresses habitat on the refuge (Horne 2024, pers. comm.). Browns Park National Wildlife Refuge's comprehensive conservation plan (CCP) is a land management plan that directs the protection and restoration of riparian and wetland habitats, including Ute ladies'-tresses habitat on the refuge (Service 1999, p. 22). Browns Park National Wildlife Refuge will continue to protect riparian and wetland habitats that include Ute ladies'-tresses habitat regardless of the Federal listing status of Ute ladies'-tresses (Horne 2024, pers. comm.).

In addition to specific protections for Ute ladies'-tresses provided under CCPs, the species is permanently protected by the mission of the National Wildlife Refuge System to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans (16 U.S.C. 668dd(a)(2)).

National Forest Management Act—Federal activities on U.S. Forest Service (USFS) lands are subject to the National Forest Management Act of 1976 (NFMA; 16 U.S.C. 1600 *et seq.*). The NFMA requires the development and implementation of resource management plans to guide the maintenance of ecological conditions that support natural distributions and abundance of species and not contribute to their extirpation.

The USFS manages Ute ladies'-tresses occurrences in the Ashley National Forest in northeastern Utah (Lower Green River AU), the Uinta-Wasatch Cache National Forest in northcentral Utah (Jordan AU), and the Caribou-Targhee National Forest in Idaho (Snake Headwaters AU) (Service 2024, pp. 47, 51, 61). Guidance for conservation of Ute ladies'-tresses is included in the Caribou-Targhee, Uinta, and Ashley National Forest plans (USFS 1997, p. III–14; USFS 2003, pp. 2–6, 5–51–5–53; USFS 2023, pp. 20–21, 54, 90, 93). The Uinta-Wasatch Cache National Forest designated the portion of the Diamond Fork Creek occurrence as a ''riparian habitat conservation area class I,'' which affords the highest level of protection (300-ft (91-m) avoidance buffer) for Ute ladies'-tresses in that area (USFS 2003, pp. D–1, D–2).

If we delist Ute ladies'-tresses, the species may still be recognized as a USFS species of conservation concern whereby the agency is directed to provide ecological conditions necessary to maintain viable populations of the species (77 FR 21162, April 9, 2012; 36 CFR 219.9; Hayward et al. 2016, pp. 8, 21–28). The USFS in each respective region has the authority to designate Ute ladies'-tresses as regional forester sensitive species (RFSS), which is similar to a USFS species of conservation concern (77 FR 21162 at 21175, April 9, 2012; 36 CFR 219.9(c)). If, in the future, Ute ladies'-tresses undergoes a downward trend and its viability is a concern, the USFS has the authority to designate it as a species of conservation concern. In addition, if delisted, Ute ladies'-tresses occupying riparian habitats on USFS lands will continue to receive levels of protection for riparian habitats identified in the forest plans (USFS 1997, pp. III–9–III–12; USFS 2003, pp. 3–2–3–5, 3–9–3–10, 3–14–3–15, 3–22, 3–25–3–27, D–1, D–2; USFS 2023, pp. 17–18, 46, 50, 53–54, 92).

Federal Land Policy and Management Act—The Federal Land Policy and Management Act (FLPMA; 43 U.S.C. 1701 *et seq.*) applies to the BLM with regard to the conservation and use of public lands under their management. The BLM manages Ute ladies'-tresses occurrences in Colorado, Utah, Idaho, Washington, and Wyoming (Colorado Headwaters, Lower Colorado-Lake Mead, Upper Colorado-Dirty Devil, Lower Green River, Upper Green, Snake Headwaters, Upper Snake, Upper Columbia, North Platte, and Cheyenne AUs) (Fertig et al. 2005, pp. 38–55; Service 2024, pp. 84–85).

Guidance for Ute ladies'-tresses conservation is included in some BLM resource management plans (RMPs) that include surveys, monitoring, avoidance buffers, and invasive species control (BLM 2020, pp. F–24–F–25; BLM 2015a, appendix J; BLM 2000, pp. 15–17; BLM 2007, appendix Z; BLM 2008a, appendix 14; BLM 2010, appendix T; BLM 2014, appendix P; BLM 2015b, appendix K; BLM 2015c, appendix K; BLM 2015d, appendix K; BLM 2016, appendix 28; BLM 2023a, pp. 3–12, 3–13, and 4–81–4–82; Carroll 2005, entire).

The one extant occurrence along Deer Creek in the Upper Colorado-Dirty Devil AU is located in the Grand Staircase National Monument in Utah, established in 1996 to preserve geologic, archaeologic, and ecological communities and provide for scientific research, education, and exploration (Presidential Proclamation 6920, September 18, 1996; BLM 2020, p. F–24–F–25). Occurrences in the Upper Snake River, Idaho (Upper Snake AU), are located along the floodplain of the Snake and Henry's Fork Rivers. The Snake River area of critical environmental concern (ACEC) includes 21,954 ac (8,884 ha) of BLM-managed public lands designated to protect and conserve riparian-wetland habitat. This ACEC is the top priority wetland in the State of Idaho, and we consider it to contain the highest-quality cottonwood riparian zone in the western United States (BLM 1985, pp. 25–26; Fertig et al. 2005, pp. 38–44; Velman 2005, entire; BLM 2023b, pp. 8–9; BLM 2023c pp. 90–91). Occurrences in the Green River (Lower Green River AU) are found in the Browns Park ACEC in Utah; the ACEC comprises 18,480 ac (7,479 ha) and protects high value scenery, wildlife habitat, and cultural resources (Fertig et al. 2005, p. 46; BLM 2008b, p. 36). The protections provided by ACEC designations are not contingent upon the species' federally listed status. The BLM's ACECs do not have an expiration date, and removing an ACEC designation is not simple. A withdrawal of an ACEC can be made only by the Secretary of the Interior (Secretary) or, if delegated by the Secretary, an individual in the Office of the Secretary who has been appointed by the President, by and with the advice and consent of the Senate (43 U.S.C. 1714(a)). The Snake River and Browns Park ACECs were designated to protect multiple species and resources in addition to Ute ladies'-tresses. Therefore, the ACEC designations will not change under the current BLM RMP, even if Ute ladies'-tresses is delisted.

Even without the protections of the Act, Ute ladies'-tresses orchid would remain a BLM sensitive species for at least 5 years (BLM 2008c, pp. 36, 47). The BLM in each respective State has the authority to designate Ute ladies'-tresses as a BLM sensitive species, which would provide protections equivalent to a Federal candidate species (BLM 2008c, pp. 43, 47). If, in the future, Ute ladies'-tresses undergoes a downward trend and its viability is at risk such that it meets the definition of a BLM sensitive species, the BLM has the authority to designate it as a BLM sensitive species (BLM 2008c, pp. 36–37).

If delisted, Ute ladies'-tresses occupying riparian habitats on BLM lands would also receive the levels of protection for riparian habitats identified in the RMPs, including avoidance buffers, livestock grazing provisions, and invasive species control (BLM 1985, p. 39; BLM 2000, pp. 8–12, 15–18, 37–40, 45–49, 54, 61; BLM 2007, pp. 2–10, 2–18–2–24, 2–40, 2–44; BLM 2008a, pp. 2–19, 2–35, 2–42, 2–46–2–50, and appendix 14; BLM 2008b, pp. 44, 113–115; BLM 2010, pp. 2–24–2–25, 2–30, 2–33–2–38, 2–45–2–49, 2–60, and appendix T; BLM 2014, pp. 18–19, 39–41, 46–48, 52, 58, 67, 98–99; BLM 2015a, pp. 33–48, and appendices B and J; BLM 2015b, pp. 6, 10, 32, 36–37, 47, 54, 59, 62, 73, 75–76, 85, 86, 97, 101–102, 106, 117–118, 125–126, 148–150, 161, 179–180; BLM 2015c, pp. 5, 27, 33–34, 42–43, 55, 60, 72, 75–76, 81, 85, 93, 105, 115, 121–123; BLM 2015d, pp. 5, 33–34, 42–43, 55, 60, 71, 74–76, 80, 84, 91, 103, 115, 126–128; BLM 2016, pp. 1–5–1–7, 2–3, 2–15–2–19, 2–25, 2–41–2–43, 2–55, 2–65–2–66, and appendix 28; BLM 2020, pp. ROD–17, ARMPs-14–15, C–16–C–17, C–20, F–9–F–11, F–25; BLM 2023a, pp. 2–14, 2–16–4–231).

Reclamation Act of 1902—The U.S. Bureau of Reclamation (USBR) is responsible for the management and development of many large Federal dams, water diversion structures, and water storage project construction in the western United States subject to the Reclamation Act of 1902 (Pub. L. 57–161; 43 U.S.C. 371 *et seq.*), and section 4007 of the Water Infrastructure Improvements for the Nation Act (WIIN Act, Pub. L. 114–322; 43 U.S.C. 390b note). The USBR has the authority to manage water flows and water releases along the Green River in Colorado and Utah, and the South Fork Snake River in Idaho. The USBR has delegated its authority in some areas to commissions (*e.g.,* the Utah Reclamation Mitigation and Conservation Commission (URMCC)) or Water Conservation Districts to manage smaller rivers such as the Provo, Duchesne, and Diamond Fork Rivers in Utah.

The USBR and other cooperating agencies have implemented management actions to benefit federally listed fish in river corridors where Ute ladies'-tresses occurs, and we expect these management actions to continue if Ute ladies'-tresses is delisted. The USBR, commissions, or Water Conservation Districts manage peak and base flows to support a more natural hydrograph and contribute to the creation of wetland habitats to support conservation of federally listed and native fish species such as the humpback chub (*Gila cypha*), Colorado pikeminnow (*Ptychocheilus lucius*), razorback sucker (*Xyrauchen texanus*), June sucker (*Chasmistes liorus*), and bull trout (*Salvelinus confluentus*). Fish conservation actions indirectly benefit Ute ladies'-tresses by creating suitable habitat and allowing a more natural hydrograph that allows for periodic flood and scour events to maintain early- to mid-seral habitat conditions.

Examples of management actions taken by the USBR include: (1) In the Upper Green and Lower Green River AUs, as part of the Upper Colorado River endangered fish recovery program (UCRRP) established in 1988, the USBR manages peak and base flows of the Green River to support a more natural hydrograph and contributes to the creation of wetland habitats to support conservation of native fish species (UCRRP 1988 and 2022, entire); (2) in the Jordan AU, as part of the June sucker recovery implementation program, the USBR and URMCC are restoring, enhancing, and creating wetland habitat conditions along the lower Provo River and Provo River Delta where it connects to Utah Lake (Service 2016, entire). The Provo River Delta restoration project (PRDRP) has already protected Ute ladies'-tresses and was complete in 2024 (Service 2016, entire; US Department of Interior 2024, entire); and (3) in the Snake River AU, as part of the consultation for the operations and maintenance of USBR projects in the Snake River Basin above Brownlee Reservoir, the USBR manages flows to support a more natural hydrograph (USBR 2005b, entire).

Sikes Act and Sikes Act Improvement Act—Federal activities on Department of Defense (DOD) lands are subject to the Sikes Act (Pub. L. 86–797; 16 U.S.C. 670 *et seq.*) and Sikes Act Improvement Act (SAIA; Pub. L. 105–85). The Sikes Act and SAIA provide for cooperation by the DOD, the Department of the Interior (including the Service), and State fish and wildlife agencies in the planning, development, and maintenance of fish and wildlife resources on military installations throughout the United States. Each military department is required to develop and implement an integrated natural resources management plan (INRMP) that must be reviewed on a regular basis, but not less often than every 5 years, and must reflect the agreement of the parties concerning conservation, protection, and management of fish and wildlife resources.

Ute ladies'-tresses was found on the F.E. Warren Air Force Base (FEWAFB) in Wyoming during Colorado butterfly plant (*Gaura neomexicana* var. *coloradensis*) monitoring in August 2023 (Heidel 2023, entire). Given the recent discovery of Ute ladies'-tresses there, the current INRMP does not include protections or conservation measures for Ute ladies'-tresses (INRMP 2022, p. 48). However, the species' habitat is managed under a formal conservation agreement for the Colorado butterfly plant, a plant species delisted under the Act in 2019 (see 84 FR 59570, November 5, 2019), and Preble's meadow jumping mouse (*Zapus hudsonius preblei*), a threatened species under the Act. Management actions include annual monitoring, noxious weed control, avoidance buffers, public access restrictions, riparian habitat protections, and targeted grazing for noxious weed control (FEWAFB 2004, pp. 7–9). These management actions are also beneficial to Ute ladies'-tresses, and we expect them to continue in the future to conserve Preble's meadow jumping mouse and achieve the INRMP's goal of protecting and conserving populations of native plants, fish, and wildlife on FEWAFB.

Federal Power Act—The Federal Power Act (16 U.S.C. 791 *et seq.*) provides for the equal protection of fish and wildlife and other aspects of environmental quality as power and development. As with NEPA, we have the authority to participate in the environmental evaluation process, but acceptance and implementation of our recommendations by a Federal action agency is not required. Under the Federal Power Act, the Federal Energy Regulatory Commission (FERC) is responsible for the regulation of hydropower projects and other interstate energy sources transmission of natural gas, oil, and electricity. In Washington, FERC requires the Chelan Public Utility District (PUD) and Grant PUD to control noxious weeds where Ute ladies'-tresses occurs, conduct regular surveys to document plant numbers and distribution, and conduct a survey of suitable habitats every 5 years to identify new populations (Pope and Cordell 2023, p. 2). The Chelan PUD recently acquired an easement on private land to protect the species and implemented conservation actions to control invasive plants on all landownerships (Pope and Cordell 2023, p. 7). These protections at the Chelan PUD-managed Rocky Reach and Rock Islands occurrences will likely continue, at a minimum, through the post-delisting monitoring period; these protections will continue regardless of the species' listing status under the Act at the Grant PUD-managed Vantage occurrence (LeMoine 2024, entire).

Other Federal Regulatory Mechanisms

We considered the wetland protections from croplands on private lands afforded under the Food Security Act (16 U.S.C. 3801 *et seq.*), but the best available information does not indicate that crops or cropland conversion are stressors to Ute ladies'-tresses.

Various Executive Orders provide guidance for Federal land management agencies to manage for habitat characteristics essential for the conservation of Ute ladies'-tresses. They include Executive Order 11990 (Protection of Wetlands) (May 24, 1977), Executive Order 11988 (Floodplain Management) (May 24, 1977), and Executive Order 13112 (Invasive Species) (February 3, 1999).

State Regulatory Mechanisms

In the United States, Ute ladies'-tresses has State protections in Washington as ''endangered,'' in Nebraska as ''threatened,'' and in Nevada as ''fully protected'' (Washington Natural Heritage Program 2021, pp. 1–2, 104–106; title 163 of the Nebraska Administrative Code at chapter 4, section 163–4–004; and chapter 527 of the Nevada Administrative Code at section 527.010, respectively). In Washington State, the designation of Ute ladies'-tresses as a State endangered plant species prioritizes the conservation of its wetland habitat, and mitigation may be required to offset habitat impacts (Rocchio 2024, entire). In Nebraska, State-listed plant protections generally mirror the Act for endangered and threatened plant species; however, exceptions are provided for normal agricultural practices (title 163 of the Nebraska Administrative Code at chapter 4, section 163–4–004). In Nevada, fully protected species are declared to be threatened with extinction and require a special permit for removal or destruction on public and private lands (chapter 527 of the Nevada Administrative Code at section 527.010, and title 47 of the Nevada Revised Statutes at chapter 527, sections 527.050

and 527.270). There are no State protections for Ute ladies'-tresses in Colorado, Idaho, Montana, Utah, or Wyoming. Ute ladies'-tresses' habitat is protected where it occurs in State wildlife areas in Washington, Idaho, and Utah (Fertig et al. 2005, pp. 72–76; Pope and Cordell 2023, p. 8).

County/City Regulatory Mechanisms

Multiple occurrences (Boulder Creek, South Boulder Creek, and Clear Creek) in the South Platte AU are protected in natural areas and managed by the City of Boulder Open Space and Mountain Parks (OSMP) to conserve rare or endangered plant species and their habitats (see title 33 of the Colorado Revised Statutes at section 33–33–104). The City of Boulder's OSMP manages open space in perpetuity to preserve natural areas, water resources, floodplains, and wildlife habitats (Riedel 2004, p. 1; City of Boulder OSMP 2024, p. 4). Most of the Ute ladies'-tresses plants in Boulder County are protected in the South Boulder Creek State Natural Area and Tallgrass Natural Area, which include approximately 1,347 ac (545 ha) of remnant tallgrass prairie habitat (Riedel 2002, pp. 1, 7; City of Boulder OSMP 2023, entire). Boulder's OSMP would likely continue to protect Ute ladies'-tresses if Federal protections are removed (Riedel 2024, pers. comm.). Additionally, the title 9 of the City of Boulder's Municipal Code at section 9–3–9 (Stream, Wetlands, and Water Body Protection) ensures the preservation, protection, restoration, and enhancement of the quality and diversity of wetlands and water bodies; this city regulation would continue to protect Ute ladies'-tresses habitat if the species is delisted under the Act.

Private Lands

Conservation efforts that have been performed by private entities to benefit and conserve Ute ladies'-tresses are discussed here.

In the Lower Bear AU, the single occurrence, Mendon Meadows, is protected as a preserve specifically for Ute ladies'-tresses, and the land is managed solely for the species (Bear River Land Trust (BRLT) 2014, entire). Management practices include regular surveys, irrigation, seasonal grazing or mowing that avoids the flowering period, a prohibition on recreation and development, and restrictions on herbicide use (BRLT 2014, pp. 6, 14, 16). Long-term habitat protections are provided for this Ute ladies'-tresses occurrence, and if we delist the species, any future changes would need Service approval (BRLT 2014, pp. 3, 5–6).

Tribal Lands

Occurrences in the Lower Green River, Upper Snake, and Upper Columbia AUs occur on Tribal lands (Fertig et al. 2005, pp. 71, 74, 77–78; Service 2024, pp. 39, 51, 69, 75). We are not aware of regulations that provide protections to Ute ladies'-tresses on Tribal lands.

Overall, the conservation measures and regulatory mechanisms afforded to wetland riparian habitats on Federal, State, and private lands in the United States and on British Columbia Parks and Federal Crown lands in Canada minimize the effects of anthropogenic stressors to Ute ladies'-tresses, in particular the threat of urban development to the species' habitat, regardless of the species' status under the Act.

Proposed Determination of Ute Ladies'-Tresses' Status

Section 4 of the Act (16 U.S.C. 1533) and its implementing regulations (50 CFR part 424) set forth the procedures for determining whether a species meets the definition of an endangered species or a threatened species. The Act defines an ''endangered species'' as a species that is in danger of extinction throughout all or a significant portion of its range, and a ''threatened species'' as a species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. The Act requires that we determine whether a species meets the definition of an endangered species or a threatened species because of any of the following factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence.

When we listed Ute ladies'-tresses as threatened in 1992 (see 57 FR 2048; January 17, 1992), we identified habitat loss and modification due to water development and urbanization (Factor A) as the primary threat to the species. We considered collection (Factor B) to be a threat because it is an orchid species. Disease and predation (Factor C) were not considered threats. Regulatory mechanisms (Factor D) included a limited degree of protection for the species' wetland habitat under the Clean Water Act and for the species itself through the regulation of international trade for all orchids by CITES. Finally, we identified small and scattered populations, the variable demographic structure of populations, and a presumed slow reproductive rate (Factor E) as vulnerabilities to threats and stressors. In our SSA report, we evaluated these stressors and additional stressors that were identified after the time of listing. Much more is presently known about the species and its stressors than at the time of listing. The best available information indicates that habitat loss from anthropogenic activities (Factor A) and climate change (Factor E) are the most influential threats affecting Ute ladies'-tresses now and into the future, although we acknowledge there is uncertainty about the future impacts of anthropogenic activities and climate change to the species and its habitats.

We consider the severity and magnitude of the primary threat, habitat loss and modification due to urbanization and water development (we refer to this threat as water management here and in the SSA report) (Factor A) to be much lower now than we believed at the time of listing, given the increase in the number of known Ute ladies'-tresses populations and the increase in the extent of the species' known range based on new information over the past 32 years. While this threat has resulted in the localized loss of occurrences and the extirpation of one historical AU (Upper Arkansas), it does not result in a species-level impact given the much larger number of known occurrences, AUs, and species' range that comprise the species' current status. Future projections of this threat in combination with other anthropogenic stressors indicate that this threat will increase in the future, but will remain localized within the species' range and will be minimized by conservation measures and regulatory mechanisms afforded to wetland riparian habitats on Federal, State, and private lands in the United States and on British Columbia Parks and Federal Crown lands in Canada regardless of Ute ladies'-tresses' status under the Act (see *Conservation Efforts and Regulatory Mechanisms,* above).

Collection (Factor B) from the wild has not occurred at the level anticipated at the time of listing presumably because the species is less showy than the tropical orchids and other *Spiranthes* species available for purchase (see ''Collection,'' above). Protections from collection and international trade are also afforded by CITES for all orchids; these protections are not contingent on an orchid species being federally listed. Disease and

predation (Factor C) have not materialized since listing.

Climate change (Factor E) and drought (Factor A) are not currently having a population-level or species-level effect on Ute ladies'-tresses and are not projected to result in a species-level effect in the future. The best available information indicates that these stressors have not resulted in the extirpation of occurrences or AUs. Future projections of climate change indicate that the frequency of severe and extreme droughts may decrease or remain the same in some areas of the range, but in much of the range, the frequency will increase above current trends. Ute ladies'-tresses is drought-tolerant and adapted to a range of soil moisture conditions, which increases its resilience to potential future increases in severe and extreme drought frequency. The resiliency of Ute ladies'-tresses AUs varies across the species' range. Ute ladies'-tresses AUs along large, mainstem rivers with multiple occurrences (Upper Green, Lower Green River, Upper Columbia, Upper Snake, Lower Bear, Niobrara, Colorado Headwaters) are the most resilient; they maintain their overall resiliency scores across all future scenarios despite projected declines in abundance and connectivity. The Upper Colorado-Dirty Devil AU in the southern part of the range is the least resilient and is projected to be extirpated in all three future scenarios due to climate change. Based on the best available information, the majority of AUs are tolerant of the effects of climate change (Factor E) and are able to withstand the cumulative effects of all stressors (Factor E).

We also evaluated a variety of conservation efforts and regulatory mechanisms (Factor D) that either reduce or ameliorate stressors and improve or maintain habitat conditions and population resiliency in the absence of the Act's protections. The Clean Water Act provides some habitat protections for Ute ladies'-tresses occurrences in jurisdictional waters/wetlands, such along interstate waters or along intrastate lakes, ponds, streams, and wetlands that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to certain waterbodies. Habitat protections for wetland and riparian habitats are also afforded to the species on Federal lands by regulatory mechanisms provided by the NPS Organic Act on NPS lands in Colorado and Utah; the National Wildlife Refuge System Improvement Act on Service refuge lands in Colorado; the National Forest Management Act of 1976 and USFS National Forest plans on USFS lands in Utah and Idaho; the Federal Land Policy and Management Act and BLM RMPs and ACEC designations on BLM lands in Colorado, Utah, Idaho, Washington, and Wyoming; and the Sikes Act and Sikes Act Improvement Act and INRMPs on DOD lands in Wyoming (see *Conservation Efforts and Regulatory Mechanisms,* above). The USBR and FERC regulate the hydrological regime and, in doing so, provide some habitat protection along rivers and streams in some watersheds for the benefit of federally listed fish species and other resources, which indirectly benefits Ute ladies'-tresses.

In Canada, Ute ladies'-tresses is protected within an Ecological Reserve managed by British Columbia Parks as well as on Federal Crown land as a schedule 1 endangered species under SARA. Ute ladies'-tresses also receives partial protections on State lands in Washington, Nevada, and Nebraska and on open space lands in Boulder County, Colorado. Due in part to the regulatory mechanisms described here on Federal lands and other protected lands, the anthropogenic threats to the species, particularly the threat of urban development to the habitat of Ute ladies'-tresses, have been sufficiently reduced.

Status Throughout All of Its Range

Endangered Throughout Its Range Determination

Our evaluation of the current condition of Ute ladies'-tresses found that there are currently 18 AUs distributed across eight U.S. States and one Canadian Province. Ute ladies'-tresses' current condition represents a marked improvement from what we understood its condition to be when we first listed it as a threatened species in 1992. Over the last three decades, many more occurrences have been discovered in an additional 14 AUs, increasing both numbers and the species' known geographic range. Thirteen AUs have high or moderate resilience to stochastic events, and these AUs are distributed across 6 U.S. States and Canada. The high or moderately resilient AUs typically display a combination of resilient habitat (based on vegetative habitat condition and hydrologic condition) and demographic factors (based on the number of occurrences, connectivity within the AU, and potentially suitable habitat within the AU) that enable them to adequately withstand environmental and demographic stochasticity. The five AUs with low resiliency are less able to withstand stochastic events.

While some stressors have impacted occurrences and AUs, none are having species-level impacts individually or cumulatively. The severity and magnitude of the primary threat, habitat loss and modification due to urbanization and water development, is much lower now than believed at the time of listing; it has resulted in the extirpation of localized occurrences across the range, including one historical AU (Upper Arkansas), representing 5 percent of the species' 19 historical AUs, and some of the occurrences in three extant AUs (South Platte, Jordan, and Weber) in Colorado and Utah (see ''Urban Development,'' above). Despite these impacts, the South Platte and Jordan AUs remain in moderate and high current condition, respectively (see table 1, above). Ute ladies'-tresses is tolerant of and adapted to the altered habitat conditions in AUs from various stressors, as well drought and climate change and the cumulative effects of all stressors.

With 18 AUs distributed across 12 ecoregions and 7 habitat types, the species currently has sufficient resiliency, redundancy, and representation to withstand stochastic and catastrophic events and adapt to changes. Therefore, we find that Ute ladies'-tresses is not in danger of extinction throughout all of its range.

Threatened Throughout Its Range Determination

Under the Act, a threatened species is any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range (16 U.S.C. 1532(20)). The foreseeable future extends only so far into the future as the Service can make reasonably reliable predictions about the threats to the species and the species' responses to those threats (50 CFR 424.11(d)). The Service describes the foreseeable future on a case-by-case basis, using the best available data and taking into account considerations such as the species' life-history characteristics, threat-projection timeframes, and environmental variability (50 CFR 424.11(d)). The key statutory difference between a threatened species and an endangered species is the timing of when a species may be in danger of extinction, either now (endangered species) or in the foreseeable future (threatened species).

For the purposes of our analysis, we defined the foreseeable future for Ute ladies'-tresses as approximately 50 years (to 2074). We relied on combined climate and land use projections by the IPCC out to 2074, the timeframe for which they were available. These

projections provide the best available evaluation of the primary stressors to the species. After 2074, we do not have information that reliably projects the combined effects of climate change and habitat loss from anthropogenic activities within the species' range. We also selected this timeframe because it allows us to reliably project changes in other species' stressors and land management and is biologically meaningful to the species to begin to understand the response of ecosystems to those changes. By 2074, we anticipate a range of plausible future conditions for Ute ladies'-tresses.

Our evaluation of the projected future condition of Ute ladies'-tresses found that resiliency and redundancy are projected to decline under all three plausible future scenarios based on the future impacts of anthropogenic activities and climate change. In general, the species' range is projected to become hotter and drier under all three future scenarios, even under the most optimistic scenario (Scenario 1). Declines in resiliency and redundancy were driven by climate change in Scenario 1 and the combination of anthropogenic activities and climate change in Scenarios 2 and 3. Despite the combined effects of anthropogenic activities and climate change, Ute ladies'-tresses' life-history characteristics (such as its capability for extended, underground dormancy during unfavorable conditions including drought and habitat changes (*e.g.,* vegetative succession); its dispersal and colonization ability within watersheds to escape land use and habitat changes; and its ability to thrive in human-managed water systems that have altered flow regimes) confer sufficient resiliency to the projected hotter, drier hydrological conditions, as well as habitat and land use changes.

The plausible future condition of Ute ladies'-tresses in 2074 ranges from 17 AUs across the range with 13 of those AUs being highly or moderately resilient to stochastic events (Scenario 1) to 16 AUs across the range with 10 of those AUs being highly or moderately resilient (Scenario 3). While the species' actual future condition may fall anywhere between Scenarios 1 and 3, even if we assume that Scenario 3 (the worst-case) were to occur, the species is projected to maintain 16 AUs across its range, with 11 of those AUs projected to maintain the same condition as their current condition. Ten of the 16 AUs in 6 States (Colorado, Idaho, Nebraska, Utah, Wyoming, and Washington) and Canada are projected to be highly or moderately resilient to stochastic events. Ute ladies'-tresses' redundancy declines slightly from 18 AUs to 16 AUs, with a contraction along the southern part of its current range due to projected extirpations in Nevada (Lower Colorado-Lake Mead AU) and southern Utah (Upper Colorado-Dirty Devil AU). Representation is projected to be similar to current conditions, as the species is projected to maintain the same number of ecoregions (12) and habitat types (7) across its range. Therefore, even in the worst-case scenario, our analysis suggests that losses of resiliency and redundancy would be modest, with 16 AUs remaining across the range, and 10 of those AUs remaining in moderate or high condition, with no major changes in representation expected. Collectively, this suggests that in 50 years, viability of the species will not be significantly reduced (Service 2024, pp. 198–199). Recovery efforts, particularly survey efforts that have identified many more occurrences, have increased Ute ladies'-tresses' known resiliency, redundancy, and representation such that the species is now better able to recover from impacts noted at the time of listing, and we anticipate that Ute ladies'-tresses will retain sufficient levels of resiliency, redundancy, and representation in the foreseeable future.

Two factors support the maintenance of the current condition in 11 AUs and the moderate to high future resiliency of at least 10 AUs: (1) regulatory mechanisms and conservation efforts, and (2) the species' biological characteristics. First, the maintenance of the current condition and the high to moderate resiliency of more than half of Ute ladies'-tresses AUs is, in part, due to habitat protections and regulations implemented by Canada; U.S. Federal agencies; the States of Washington, Nebraska, and Nevada; the City of Boulder; and private entities (Factor D) that will continue to be implemented into the future, even in the absence of protections afforded by the Act, as described above under *Conservation Efforts and Regulatory Mechanisms.* These protections will continue to limit the potential effects of stressors on Ute ladies'-tresses in the future.

Second, independent of future regulatory mechanisms and conservation efforts, Ute ladies'-tresses' biological characteristics moderate its response to increasing stressors. Ute ladies'-tresses' ruderal life-history strategy; adaptation and resilience to disturbance (stochastic events) such as flooding, mowing, and grazing; its dispersal and colonization ability in many habitat types; and its drought tolerance all increase its resilience to potential future increases in stressors and habitat and environmental changes (representation) evidenced by the species' past ability to maintain high and moderate resiliency in the face of ongoing stressors in the Jordan and South Platte AUs. Although habitat conditions could become considerably drier under Scenario 3, Ute ladies'-tresses is hardy and already adapted to periods of drought. Individuals may live many decades and have maintained healthy recruitment and survival despite drought conditions and other climatic variation in the past.

We recognize that some habitat-related threats remain present, and they have ongoing impacts to Ute ladies'-tresses AUs. We acknowledge that the specific effects of climate change on Ute ladies'-tresses and its habitat are uncertain and may have a negative impact. However, we found that current and expected patterns in site protection and habitat management (Factor D) and the species' adaptation and resilience to disturbance are sufficient to prevent effects at the species level.

After evaluating threats to the species and assessing the cumulative effect of the threats under the Act's section 4(a)(1) factors, and considering the levels of resiliency, redundancy, and representation projected under the current and future scenarios described in the SSA report, Ute ladies'-tresses will be able to withstand stochastic events, catastrophic events, and environmental change now and into the foreseeable future. Thus, after assessing the best available information, we conclude that Ute ladies'-tresses is not in danger of extinction now or likely to become so within the foreseeable future throughout all of its range.

Status Throughout a Significant Portion of Its Range

Under the Act and our implementing regulations, a species may warrant listing if it is in danger of extinction or likely to become so within the foreseeable future throughout all or a significant portion of its range. Having determined that Ute ladies'-tresses is not in danger of extinction or likely to become so within the foreseeable future throughout all of its range, we now consider whether it may be in danger of extinction (*i.e.,* endangered) or likely to become so within the foreseeable future (*i.e.,* threatened) in a significant portion of its range—that is, whether there is any portion of the species' range for which both (1) the portion is significant; and (2) the species is in danger of extinction or likely to become so within the foreseeable future in that portion. Depending on the case, it might be more efficient for us to address the ''significance'' question or the ''status''

question first. We can choose to address either question first. Regardless of which question we address first, if we reach a negative answer with respect to the first question that we address, we do not need to evaluate the other question for that portion of the species' range.

In undertaking this analysis for Ute ladies'-tresses, we choose to address the status question first. We began by identifying portions of the range where the biological status of the species may be different from its biological status elsewhere in its range. For this purpose, we considered information pertaining to the geographic distribution of (a) occurrences of the species, (b) the threats that the species faces, and (c) the resiliency condition of AUs (populations).

We evaluated the range of Ute ladies'-tresses to determine if the species is in danger of extinction now or likely to become so within the foreseeable future in any portion of its range. The range of a species can theoretically be divided into portions in an infinite number of ways. We focused our analysis on portions of the species' range that may meet the Act's definition of an endangered species or a threatened species. For Ute ladies'-tresses, we considered whether the threats or their effects on the species are greater in any biologically meaningful portion of the species' range than in other portions such that the species is in danger of extinction now or likely to become so within the foreseeable future in that portion. We examined the following threats: anthropogenic activities including urban development, water management, agriculture, livestock grazing, recreation, invasive plants, and collection; and environmental conditions including vegetative succession, disease or predation, drought, climate change, and human population change, including cumulative effects.

We examined the range of Ute ladies'-tresses for biologically meaningful portions that may be at a higher risk of extirpation, as reflected by potentially larger climate change effects and anthropogenic effects to the species. We determined that by itself, any single AU is too small to be considered a biologically meaningful portion of the range for Ute ladies'-tresses because each AU represents a small percentage (6 percent) of the total number of the 18 AUs rangewide, and each AU contains only a small area of the species' range. Therefore, even though the Upper Columbia AU is separate from the rest of the range, we do not consider it to be a biologically meaningful portion on its own.

We identified seven AUs that are a geographically concentrated grouping at a biologically meaningful scale along the southern edge of Ute ladies'-tresses' overall range; those seven AUs are the Great Salt Lake, Jordan, Lower Colorado-Lake Mead, Upper Colorado-Dirty Devil, Lower Green River, Colorado Headwaters, and South Platte AUs. Relative to the remainder of the range, this portion of the range is impacted by elevated levels of drought, climate change, and anthropogenic stressors now and into the future.

This portion may be at higher risk of extirpation, as reflected by the current and future resiliency of the seven AUs. Currently, three of these seven AUs have low resiliency, so they are at a greater risk of extirpation than the other four AUs, two of which have high resiliency and two have moderate resiliency. We examined the following threats, for the reasons described above: anthropogenic activities including urban development, water management, agriculture, livestock grazing, recreation, invasive plants, and collection; and environmental conditions including vegetative succession, disease or predation, drought, climate change, and human population change, including cumulative effects. We concluded that although almost half of the AUs in this portion have low resiliency, the species has sufficient resiliency, redundancy, and representation across the seven AUs in the portion. The three AUs in low condition (Great Salt Lake, Lower Colorado-Lake Mead, Upper Colorado-Dirty Devil) have sufficiently high or moderate hydrologic condition to remain viable in the near term despite lower scores for other metrics such as AU abundance and connectivity. The seven AUs cover a wide geographic area that spans portions of four States across a variety of climatic and habitat types from north-to-south and east-to-west, such that there is no stochastic or catastrophic event that would extirpate the portion in the near term. Therefore, we conclude that the risk of extinction in the portion is not low now, and the species in this portion does not meet the Act's definition of an endangered species.

We also evaluated the status of this portion into the foreseeable future. In the future, three of the seven AUs are projected to have low resiliency or be extirpated (Great Salt Lake, Upper Colorado-Dirty Devil, Lower Colorado-Lake Mead), one AU may have moderate to low resiliency (South Platte), and the other three AUs have moderate to high resiliency (Jordan, Lower Green River, Colorado Headwaters). We examined the same threats described above for the species: anthropogenic activities including urban development, water management, agriculture, livestock grazing, recreation, invasive plants, collection; and environmental conditions including vegetative succession, disease or predation, drought, climate change, human population change, including cumulative effects. We concluded that although two AUs in this portion may be extirpated, the species has sufficient resiliency, redundancy, and representation in the remaining five AUs in the portion. The one AU consistently in low condition (Great Salt Lake) is projected to maintain sufficiently moderate hydrologic and vegetative condition to remain viable into the foreseeable future despite lower scores for other metrics such as AU abundance and connectivity. The five AUs cover a wide geographic area that spans portions of three States across a variety of climatic and habitat types from north-to-south and east-to-west, such that there is no stochastic or catastrophic event that would extirpate the portion in the foreseeable future. Even with two AUs in low condition and the slight increase in extinction risk under Scenario 3, we found that the current and projected patterns of habitat management and protection, the hydrologic condition of the AUs, and the species' adaptation to disturbance are sufficient to prevent effects to the species that would cause it to meet the Act's definition of an endangered species or a threatened species. Therefore, we conclude that the risk of extinction in the portion is low in the foreseeable future and the species in this portion does not meet the Act's definition of a threatened species.

As a result, we found no portion of Ute ladies'-tresses' range where the biological condition of the species differs from its condition elsewhere in its range such that the status of the species in that portion differs from any other portion of the species' range. Therefore, the portion both currently and into the future has enough resiliency such that it is not at risk of extinction now or within the foreseeable future. Because we determined that this portion does not have a different status, we did not need to assess its potential significance.

Therefore, we find that the species is not in danger of extinction now or likely to become so within the foreseeable future in any significant portion of its range. This does not conflict with the courts' holdings in *Desert Survivors* v. *Department of the Interior,* 336 F. Supp. 3d 1131 (N.D. Cal. 2018), and *Center for*

Biological Diversity v. *Jewell,* 248 F. Supp. 3d. 946, 959 (D. Ariz. 2017) because, in reaching this conclusion, we did not apply the aspects of the Final Policy on Interpretation of the Phrase ''Significant Portion of Its Range'' in the Endangered Species Act's Definitions of ''Endangered Species'' and ''Threatened Species'' (79 FR 37578; July 1, 2014), including the definition of ''significant'' that those court decisions held to be invalid.

Determination of Status

Our review of the best available scientific and commercial information indicates that Ute ladies'-tresses does not meet the Act's definition of endangered species or threatened species in accordance with sections 3(6) and 3(20) of the Act. In accordance with our current regulations at 50 CFR 424.11(e)(2), Ute ladies'-tresses has recovered and no longer warrants listing. Therefore, we propose to remove Ute ladies'-tresses from the Federal List of Endangered and Threatened Plants.

Effects of This Rule

This proposed rule, if made final, would revise 50 CFR 17.12(h) by removing Ute ladies'-tresses from the Federal List of Endangered and Threatened Plants. The prohibitions and conservation measures provided by the Act, particularly through sections 7 and 9, would no longer apply to this species. Federal agencies would no longer be required to consult with the Service under section 7 of the Act if activities they authorize, fund, or carry out may affect Ute ladies'-tresses.

There is no critical habitat designated for this species, so there would be no effect to 50 CFR 17.96.

Post-Delisting Monitoring

Section 4(g)(1) of the Act requires us, in cooperation with the States, to implement a monitoring program for not less than 5 years for all species that have been recovered. Post-delisting monitoring (PDM) refers to activities undertaken to verify that a species delisted due to recovery remains secure from the risk of extinction after the protections of the Act no longer apply. The primary goal of PDM is to monitor the species to ensure that its status does not deteriorate, and if a decline is detected, to take measures to halt the decline so that proposing it as endangered or threatened is not again needed. If, at any time during the monitoring period, data indicate that protective status under the Act should be reinstated, we can initiate listing procedures, including, if appropriate, emergency listing.

We have prepared a draft PDM plan for Ute ladies'-tresses. The draft PDM plan: (1) summarizes the status of Ute ladies'-tresses at the time of proposed delisting; (2) describes the frequency and duration of monitoring; (3) discusses monitoring methods and potential sampling regimes; (4) defines what potential triggers will be evaluated to address the need for additional monitoring; (5) outlines reporting requirements and procedures; (6) proposes a schedule for implementing the PDM plan; and (7) defines responsibilities. It is our intent to work with our partners towards maintaining the recovered status of Ute ladies'-tresses. We appreciate any information on what should be included in post-delisting monitoring strategies for this species (see Information Requested, above).

Required Determinations

Clarity of the Rule

We are required by Executive Orders 12866 and 12988 and by the Presidential Memorandum of June 1, 1998, to write all rules in plain language. This means that each rule we publish must:

(1) Be logically organized;

(2) Use the active voice to address readers directly;

(3) Use clear language rather than jargon;

(4) Be divided into short sections and sentences; and

(5) Use lists and tables wherever possible.

If you feel that we have not met these requirements, send us comments by one of the methods listed in **ADDRESSES**. To better help us revise the rule, your comments should be as specific as possible. For example, you should tell us the numbers of the sections or paragraphs that are unclearly written, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.

Government-to-Government Relationship With Tribes

In accordance with the President's memorandum of April 29, 1994 (Government-to-Government Relations with Native American Tribal Governments; 59 FR 22951), Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments), and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with federally recognized Tribes on a government-to-government basis. In accordance with Secretary's Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with Tribes in developing programs for healthy ecosystems, to acknowledge that Tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to Tribes. We notified and invited the following Tribes to participate in the SSA process and to provide information at the beginning of the SSA process: Shoshone-Bannock Tribes, Eastern Shoshone Tribe, Confederated Salish and Kootenai Tribes, Blackfeet Nation, Ute Tribe of the Uintah and Ouray Reservation, Confederated Tribes of the Colville Reservation, and Confederated Tribes and Bands of the Yakama Nation. We did not receive a response from any Tribe. We will continue to work with Tribal entities during the development of a final delisting determination for Ute ladies'-tresses.

References Cited

A complete list of references cited in this rulemaking is available on the internet at *https://www.regulations.gov* and upon request from the Utah Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Authors

The primary authors of this proposed rule are the staff members of the Fish and Wildlife Service's Species Assessment Team and the Utah Ecological Services Field Office.

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Plants, Reporting and recordkeeping requirements, Transportation, Wildlife.

Signing Authority

Martha Williams, Director of the U.S. Fish and Wildlife Service, approved this action on November 18, 2024. Acting Director Steve Guertin approved these packages December 15, 2024. On December 16, 2024, the acting Director authorized the undersigned to sign the document electronically and submit it to the Office of the Federal Register for publication as an official document of the U.S. Fish and Wildlife Service.

Proposed Regulation Promulgation

Accordingly, we propose to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—ENDANGERED AND THREATENED WILDLIFE AND PLANTS

■ 1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 1531–1544; 4201–4245, unless otherwise noted.

§ 17.12 [Amended]

■ 2. In 17.12, in paragraph (h), amend the List of Endangered and Threatened Plants by removing the entry for ''*Spiranthes diluvialis*'' under FLOWERING PLANTS.

Madonna Baucum,

Regulations and Policy Chief, Division of Policy, Economics, Risk Management, and Analytics of the Joint Administrative Operations, U.S. Fish and Wildlife Service.

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