RECOVERY PLAN FOR Barneby ridge-cress (*Lepidium barnebyanum)*

ORIGINAL APPROVED: July 23, 1993

ORIGINAL PREPARED BY: U.S. Fish and Wildlife Service, Region 6, Utah Ecological Services Field Office

DRAFT PREPARED: October 2018

DRAFT AMENDMENT

We have identified information that indicates the need to amend the recovery criteria for the Barneby ridge-cress (*Lepidium barnebyanum*). In this proposed modification, we synthesize the adequacy of the existing recovery criteria, provide amended recovery criteria and the rationale supporting the proposed recovery plan modification, and document the completion of recovery actions that have met the delisting criteria. This modification is attached as an appendix to the existing recovery plan.

BACKGROUND INFORMATION

Recovery plans should be consulted frequently, used to initiate recovery activities, and updated as needed. A review of a recovery plan and its implementation may show that the plan is out of date or its usefulness is limited, and therefore warrants modification. Keeping recovery plans current ensures that the species benefits through timely, partner-coordinated implementation based on the best available information. The need for, and extent of, plan modifications will vary considerably among plans. Maintaining a useful and current recovery plan depends on the scope and complexity of the initial plan, the structure of the document, and the involvement of stakeholders.

An amendment involves a substantial rewrite of a portion of a recovery plan that changes any of the plan's statutory elements. The need for an amendment may be triggered when, among other possibilities: (1) the current recovery plan is out of compliance with regard to statutory requirements; (2) new information has been identified, such as population-level threats to the species or previously unknown life history traits, that necessitates new or refined recovery actions and/or criteria; or (3) the current recovery plan is not achieving its objectives. The amendment replaces only that specific portion of the recovery plan, supplementing the existing recovery plan, but not completely replacing it. An amendment may be most appropriate if significant plan improvements are needed, but resources are too scarce to accomplish a full recovery plan revision in a short time.

Although it would be inappropriate for an amendment to include changes in the recovery program that contradict the approved recovery plan, it could incorporate study findings that enhance the scientific basis of the plan, or that reduce uncertainties as to the life history, threats, or species' response to management. An amendment could serve a critical function while awaiting a revised recovery plan by: (1) refining and/or prioritizing recovery actions that need to be emphasized, (2) refining recovery criteria, or (3) adding a species to a multispecies

or ecosystem plan. An amendment can, therefore, efficiently balance resources spent on modifying a plan against those spent on managing implementation of ongoing recovery actions.

REASON FOR AMENDMENT

The existing Barneby ridge-cress recovery plan identifies four downlisting criteria and does not identify delisting criteria. In this recovery plan, we are amending the existing recovery criteria by adding delisting criteria for Barneby ridge-cress. By adding delisting criteria that are objective and measurable, we will be able to confirm when the criteria are met.

METHODOLOGY USED TO COMPLETE THE RECOVERY PLAN AMENDMENT

There is not an appointed recovery team for Barneby ridge-cress. There is no critical habitat designated for Barneby ridge-cress.

We requested updated survey data and species information from the Utah Natural Heritage Program, Utah Department of Wildlife Resources, Northern Ute Tribe, and Bureau of Indian Affairs. The revised criteria are based upon new information summarized in the 5-year review (USFWS 2011) and species survey data. We also analyzed what recovery actions have been implemented since the development of the original plan. The rationale we are employing to define quantitative delisting criteria is that successful conservation and recovery efforts will alleviate threats and lead to stable or improving demographic trends of the metapopulation needed for recovery.

ADEQUACY OF RECOVERY CRITERIA

Section 4(f)(1)(B)(ii) of the Endangered Species Act (ESA) requires that each recovery plan shall incorporate, to the maximum extent practicable, "objective, measurable criteria which, when met, would result in a determination…that the species be removed from the list." Legal challenges to recovery plans (see Fund for Animals v. Babbitt, 903 F. Supp. 96 (D.D.C. 1995)) and a Government Accountability Audit (GAO 2006) also have affirmed the need to frame recovery criteria in terms of threats assessed under the five delisting factors.

Current Downlisting Recovery Criteria

The primary objective is to maintain a viable population of Barneby ridge-cress at its only known location. A secondary objective is to initiate conservation and recovery measures which may lead to the downlisting to threatened status (USFWS 1993). Current downlisting criteria are as follows:

1. Maintain a viable metapopulation at its only known location,
2. Have five separate subpopulations of at least 2,000 individuals that have been demonstrated to be at minimum viable population levels,
3. Document a total of 20,000 individuals for at least 5 years,
4. Have formal land conservation designations in place to protect the five separate subpopulations of 2,000 individuals.

Analysis

Our analysis of survey data collected between 2010 and 2016 indicates that there are at least 7,633 known Barneby ridge-cress individuals occupying 500 acres of suitable habitat. In 2014, a new disjunct subpopulation of 24 Barneby ridge-cress individuals was located on privately owned property (EIS 2014). This new subpopulation is the most western known stand and is approximately 4.7 miles from the nearest known occupied habitat. In 2015, approximately 1,090 individuals were located on land owned by the State of Utah Department of Wildlife Resources that is managed as a wildlife management area (USFWS 2015). The 2015 survey on state lands was not a complete census and we expect that additional individuals are located on State lands. The majority of the population and habitat are located within the Uintah and Ouray Reservation of the Ute Indian Tribe; however, two subpopulations of Barneby ridge-cress also occur on private and state owned lands.

The threats identified in the Barneby ridge-cress 5-year review are habitat loss and destruction from off highway vehicle use and energy development, inadequacy of existing regulatory mechanisms, natural biological factors, and climate change. These threats have not changed; see the 5-year review for detailed analysis of threats.

A step-down action item identified in the recovery plan is to "regulate activities that affect Barneby ridge-cress subpopulations and habitats through section 7 and section 9 of the ESA and other relevant laws and regulations." Oil and gas leasing is permitted in the species' habitat by the Bureau of Indian Affairs, the Bureau of Land Management, and Utah Division of Oil Gas and Mining. Since 2006, we have conducted six Section 7 consultations on energy development projects that occurred in Barneby ridge-cress suitable or occupied habitat. These consultations resulted in the development and implementation of conservation measures, including a measure to avoid plants by 300 feet (an increase from the previous avoidance buffer of 100 feet. To the best of our knowledge there have been no ESA section 9 violations resulting in loss of the species.

Another action item identified in the recovery plan is to "inventory suitable habitat for Barneby ridge-cress and determine its population and distribution." Surveys of some of the species' suitable habitat were conducted between 2010 and 2016 resulting in discovery of two new subpopulations on state and private lands. There are no formal land protections designated for the protection of the Barneby ridge-cress. Other recovery actions identified in the recovery plan have not been initiated and the criterion for the downlisting of Barneby ridge-cress has not been met.

AMENDED RECOVERY CRITERIA

The recovery criteria presented below represent our best assessment of the conditions that would most likely result in a determination that delisting of Barneby ridge-cress is warranted as the outcome of a formal five-factor analysis in a subsequent regulatory rulemaking. Achieving the prescribed recovery criteria is an indication that the species is no longer threatened or endangered, but this must be confirmed by a thorough analysis of the five listing factors. All

downlisting criteria from the previous plan were reviewed and found to be adequate. The downlisting criteria address the need for the persistence of resilient, redundant, and representative subpopulations across the habitat as well reduced threats, and regulatory certainty. Below we provide delisting criteria for Barneby ridge-cress that were not included in the 1993 Recovery Plan. Therefore, Barneby ridge-cress will be considered for delisting when all of the downlisting recovery criteria have been met, in addition to the following delisting criteria:

1. A Conservation Agreement (CA) has been developed and implemented for Barneby ridge-cress that addresses all five listing factors on the lands it would cover. The CA will help reduce the risk of destruction or modification of habitat, such as road and well pad construction, and off road vehicle use. The CA will keep the species relevant in decision making, provide regulatory certainty, and will keep the species from being relisted under the ESA.

2. An ex-situ seed bank collection is maintained at a Center for Plant Conservation affiliated institution and contains a minimum of 500 seeds. The ex-situ seed bank contains genetic material collected from each known subpopulation across the range of the species and is collected over a period of at least five years. While sufficient seedbank in the soil would typically provide a strategy for the taxon to persist through several years of short- or medium-term drought, it may not be sufficient to persist through long-term drought. Therefore, an ex situ seedbank provides assurance that a population could be reseeded should long-term drought, or other stochastic events, make it necessary. A seed bank preserves the genetic material of the species to support resiliency and representation of the species if the species is propagated for population augmentations or reintroductions to the wild.

LITERATURE CITED

EIS 2014. Threatened and Endangered species inventories and habitat delineations summary 2014. Duchesne and Uintah Counties. EIS Environmental and Engineering Consulting. Helper, Utah.

USFWS 1993. Barneby ridge-cress Recovery Plan. U.S. Fish and Wildlife Service. Utah Ecological Services Field Office, West Valley City, Utah. 84119. July 1993.

USFWS 2011. *Lepidium barnebyanum* (Barneby ridge-cress) 5-Year Review: Summary and evaluation. U.S. Fish and Wildlife Service. Utah Ecological Services Field Office, West Valley City, Utah. 84119. July 2011.

USFWS 2015. Field Visit Report: *Lepidium barnebyanum* survey on the Utah DNR Cottonwood State Wildlife Area. U.S. Fish and Wildlife Service. Utah Ecological Services Field Office, West Valley City, Utah. 84119.