

RECOVERY PLAN FOR *PEDIOCACTUS SILERI* (SILER PINCUSHION CACTUS)

ORIGINAL APPROVED: APRIL 14, 1986

ORIGINAL PREPARED BY: DR. ARTHUR M. PHILLIPS, III

DRAFT AMENDMENT

We have identified information that indicates the need to amend the recovery criteria for this species. In this proposed modification, we synthesize the adequacy of the existing recovery criteria, show 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. The proposed modification is shown as an appendix that supplements the existing recovery plan, superseding pages 19-41.

**For
U.S. Fish and Wildlife Service
Southwest Regional Office
Albuquerque, NM 87103**

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**Regional Director, U.S. Fish and Wildlife Service, Southwest Region,
Albuquerque, New Mexico**

Approved: _____ **DRAFT** _____ Date: _____
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BACKGROUND INFORMATION

Recovery plans should be consulted frequently, used to initiate recovery activities, and updated as needed. A review of the recovery plan and its implementation may show that the plan is out of date or its usefulness is limited, and therefore warrants modification.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 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.

In this recovery plan, we are amending the existing recovery criteria for *Siler pincushion* cactus, as well as defining what constitutes a population, and what constitutes disturbance of habitat. The 1986 recovery plan (USFWS 1986) does not define a population, nor does it define what constitutes habitat disturbance. We also did not include this information in the original listing rule (44 FR 61788) or the reclassification rule for *Siler pincushion* cactus (58 FR 68476). Additionally, the original recovery criteria are qualitative, not measurable targets. By modifying the existing criteria to be objective and measurable, we will be able to show when the criteria are met.

METHODOLOGY USED TO COMPLETE THE RECOVERY PLAN AMENDMENT

We coordinated with the Utah Ecological Services Office in West Valley City, Utah and reviewed existing quantifiable recovery criteria for similar species in similar habitats for input regarding quantifiable recovery criteria for this species. We updated the 2008 five-year review for *Siler pincushion* cactus (cactus) on June 25, 2018. We also analyzed what recovery actions have been taken since the development of the original plan. Additionally, we analyzed long-term monitoring data provided by the Arizona Strip BLM office, as well as monitoring data provided for populations in Utah. Our analysis of the 1986 recovery plan (USFWS 1986), the original listing rule (44 FR 61788), and the reclassification rule (58 FR 68476) indicated that neither population nor habitat disturbance were defined for this species. For this amendment and managing for the *Siler pincushion* cactus into the future, we are using NatureServe guidelines for delimiting plant populations (NatureServe 2004) based on the proximity of each location to one another. We considered locations within two kilometer (km) of each other and suitable habitat in between them to be a single population due to the presence of stable, contiguous, and suitable habitat between each location. Plant locations that were greater than two km from each other with persistently unsuitable habitat in between them, we considered separate populations (NatureServe 2004). Based on this criterion, we are estimating that there are currently 25 populations of *Siler pincushion* cactus. We are defining disturbance as the destruction of biological crust and modification of the microwatersheds, as defined by Wallace and Romney (1981), which negatively impacts individuals, the seedbank, and the successful re-establishment of *Siler pincushion* cactus.

ADEQUACY OF RECOVERY CRITERIA

Section 4(f)(1)(B)(ii) of the Endangered Species Act (Act) 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.

Recovery Criteria

Siler pincushion cactus was downlisted to threatened on December 27, 1993 and an explanation of how reclassification criteria were met can be found in the final reclassification rule (58 FR 68476). We will not be carrying forward any of the original downlisting criteria identified in the original recovery plan due to the 1993 reclassification of the species.

Current recovery criteria

The prime objective is to manage the essential habitat of *Pediocactus sileri* so that populations can be sustained in their natural habitat. Actions identified as necessary for meeting the prime objective and for delisting include:

1. Demonstrated long-term stability (or increase) in population levels and habitat through monitoring studies.
2. Suitability of downlisting actions demonstrated; plant stabilized in its habitat.
3. Continued assurance of no mining or new claims in known habitat.
4. Actions identified in Habitat Management Plan are implemented.

Synthesis

Our partners have implemented or are in the process of conducting many of the actions described in the step-down outline and narrative on pages 20-41 of the recovery plan. In addition, since the recovery plan was signed in 1986, biologists located a new population and additional suitable habitat. A new population of Siler pincushion cactus was discovered on the Kaibab Band of Paiute Indian Reservation during surveys associated with the proposed Lake Powell Pipeline (UBWR 2010). Over one million acres of land surrounding the Grand Canyon watershed were removed from mineral exploration under a 2012 Secretarial Order, thus removing one of the major threats to the cactus (DOI 2012). The Bureau of Land Management (BLM) in Arizona and Utah has designated six Areas of Environmental Concern (ACECs) that encompass 24 of the 25 populations of Siler pincushion cactus. The 25th population occurs within the White Dome Nature Preserve in Utah (TNC 2014), which is owned and managed by The Nature Conservancy. This preserve is managed as private land with land-use restrictions. None of the existing threats are occurring on the White Dome Nature Preserve; therefore, all 25 populations have some level of increased management and protections from other threats, such as off-highway vehicle (OHV) use. Additionally, the BLM's Arizona Strip Field Office has implemented travel management plans to close many roads in cactus habitat, thus further protecting cacti and their habitat from threats associated with OHV use. Demographic and ecological research has also been conducted in three cactus populations to provide a better understanding of cactus ecology and habitat management so that threats can be further reduced (Sodja and Schupp 2016). The Nature Conservancy has also assumed management of the White Dome Preserve in Utah, which was set aside to provide conservation and habitat protection for both the cactus and the dwarf bearclaw poppy (The Nature Conservancy 2014).

AMENDED RECOVERY CRITERIA

Recovery criteria serve as objective, measurable guidelines to assist in determining when an endangered species has recovered to the point that it may be downlisted to threatened, or that the

cactus no longer meets the definition of an endangered or threatened species and may be delisted. Delisting is the removal of a species from the Federal Lists of Endangered and Threatened Wildlife and Plants. Downlisting is the reclassification of a species from endangered to threatened. The term “endangered species” means any species (species, sub-species, or DPS) that is in danger of extinction throughout all or a significant portion of its range. The term “threatened species” means any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

We provide amended delisting criteria for the Siler pincushion cactus, which will supersede those included in the Siler Pincushion Cactus (*Pediocactus sileri*) Recovery Plan, as follows:

Definitions

Population: Groupings or single plants within 2 km of each other within areas of suitable habitat.

Disturbance: Destruction of the biological crust and modification of microwatersheds (as defined by Wallace and Romney [1981]) that negatively impacts individuals, the seedbank, and the successful re-establishment of the species.

Delisting Recovery Criteria

The cactus will be considered for delisting when the following recovery criteria, including the amended criteria are met. We are replacing criteria 1 and 3 above with the amended criteria. Criterion 2 was met when we downlisted the cactus. We are also removing Criterion number 4 above. All of the habitat management actions in the 1986 Siler Pincushion Cactus Habitat Management Plan (BLM 1986) have been implemented by the Arizona Strip BLM office. These actions included establishing long-term monitoring plots, protecting habitat (constructing livestock exclosures and establishing ACECs), managing off-road highway vehicles, and coordinating with mining companies to minimize impacts to the cactus. The amended criteria, and their associated Implementation Actions, provide a quantifiable approach to the original criteria 1 and 3 so that managers will know when these delisting criteria have been met:

Amended recovery criteria

1. Maintain populations at a level that demonstrates stable or increasing plant abundance and maintain the current distribution of locations within each population. Plant abundance (measured by the number of plants) may fluctuate within locations and populations, but the defined populations should be stable or increasing over a consecutive 10-year period.
2. Ensure no more than 20 percent of the occupied gypsiferous and calcareous clay soil habitat (as defined in the Recovery Plan and final rule to list the species: 44 FR 61786) within each of the populations is disturbed over a 10-year period.

All classification decisions consider the following five factors: (1) is there a present or threatened destruction, modification, or curtailment of the species’ habitat or range; (2) is the species subject to overutilization for commercial, recreational scientific or educational purposes; (3) is disease or predation a factor; (4) are there inadequate existing regulatory mechanisms in place outside the ESA (taking into account the efforts by states and other organizations to protect

the species or habitat); and (5) are other natural or manmade factors affecting its continued existence. When delisting or downlisting a species, we first propose the action in the *Federal Register* and seek public comment and peer review. Our final decision is announced in the *Federal Register*.

Implementing Actions for Recovery Criteria

1. **Conserve known extant Siler pincushion cactus populations and their habitat** (addresses all five factor threats). The primary threat to the cactus is the loss of habitat, mostly associated with mining activities. The cactus is only found in gypsiferous and calcareous soils within the various members of the Moenkopi Formation in northern Mohave and Coconino counties in Arizona, and adjacent southern Washington and Kane Counties in Utah. Preserving and enhancing these soils and habitat in this area is essential to the conservation of this species.
 - 1.1. **Manage for and enhance habitat using available mechanisms like land acquisition programs, conservation agreements, management agreements, etc.** Working in partnership with the BLM, we recommend using BLM's administrative processes to amend ACEC plans to provide adequate protection to cactus habitat from mining activity. ACECs provide special management for habitat and the plants and wildlife within them.
 - 1.2. **Maintain all Siler pincushion cactus populations.** Long-term management agreements, management plans, land designations, and other potential methods should be used to ensure that all populations of cacti are maintained at stable or increasing plant numbers.
 - 1.3. **Reclaim Disturbed Siler pincushion habitat.** For a location to continue to count as Siler pincushion cactus habitat, the responsible land manager must reclaim any disturbed site through: 1) the collection and planting of cacti and associated native plant seeds and plants in disturbed areas using standard habitat restoration techniques, 2) transplanting, following tested protocols, of cactus individuals that cannot be avoided by disturbance, 3) collection of cactus seed, using approved techniques, to be saved for conservation in a designated seed storage facility, and 4) monitoring for 10 consecutive years to ensure populations are established and stable or increasing in size.
 - 1.4. **Continue to monitor Siler pincushion cactus populations** to determine long-term population trends with a minimum of 10 years of consecutive monitoring. All large populations should be monitored annually in order to establish a trend and determine whether or not cactus populations are stable or increasing in order to delist the species. Populations should be stable or increasing over a 10-year period beginning with the implementation of the recovery plan and this implementation strategy.
 - 1.5. **Develop a standardized monitoring plan and protocol.** A cohesive plan for acquiring the quality and quantity of information required to detect population trends is needed for this species. The monitoring plan should provide information regarding both plant abundance and population trend as well as habitat conditions. Monitoring

protocols should include randomized monitoring plots across an area sufficient to detect population trends. Additionally, monitoring should include methods that will determine seedling survivorship. Results from past monitoring efforts should be used to inform improved monitoring protocols with the aim of facilitating consistency of data collection and analysis on a rangewide basis. Plant abundance and population trend will help determine if the cactus is remaining stable or increasing as monitoring continues over time.

ADDITIONAL SITE SPECIFIC RECOVERY ACTIONS

No additional site-specific recovery actions are necessary for this species; therefore, this is not applicable.

COSTS, TIMING, PRIORITY OF ADDITIONAL RECOVERY ACTIONS

No additional site-specific recovery actions are necessary for this species; therefore, this is not applicable.

LITERATURE CITED

- Bureau of Land Management. 1986. Siler pincushion habitat management plan (HMP). U.S. Department of the Interior Bureau of Land Management Arizona Strip District. December 1986. 20pp.
- Department of Interior (DOI). 2012. Record of Decision Northern Arizona Withdrawal Mohave and Coconino Counties. Signed January 9, 2012. 24pp.
- NatureServe. 2004. A habitat-based strategy for delimiting plant element occurrences: guidance from the 2004 working group. October 2004. 15pp.
- Sodja, E. and E.W. Schupp. 2016. Demographics and interspecific interactions of *Pediocactus sileri*. Unpublished report from Utah State University. 8pp.
- The Nature Conservancy. 2014. 2014 Field Monitoring and Reporting for Dwarf Bearpoppy (*Arctomecon humilis*) and Siler Pincushion Cactus (*Pediocactus sileri*) at the White Dome Nature Preserve, a Nature Conservancy Property in Washington County, Utah. 20 pp.
- U.S. Fish and Wildlife Service (USFWS). 1986. Siler Pincushion Cactus Recovery Plan. U.S. Fish and Wildlife Service, Albuquerque, NM. 57pp.
- Utah Board of Water Resources (UBWR). 2010. Lake Powell Pipeline Draft Special Status Plant species and Noxious Weeds Study Report. December 2010. 610pp.
- Wallace, A. and E.M. Romney. 1981. The role of pioneer species in revegetation of disturbed desert areas. Great Basin Naturalist Memoirs 4: 31-33