

**5-YEAR REVIEW**  
Short Form Summary  
**Species Reviewed:** Stephens' kangaroo rat  
(*Dipodomys stephensi*)  
**Current Classification:** Endangered

**FR Notice announcing initiation of this review: 69 FR 21567.**

Endangered and threatened wildlife and plants; 90-day finding on petition to delist the Stephens' kangaroo rat and initiation of a 5-year review

**Lead Regional Office:**

Larry Rabin, Deputy Division Chief for Listing, Recovery, and Environmental Contaminants, Region 8; 916-414-6464.

**Lead Field Office:**

Jim Bartel, Carlsbad Fish and Wildlife Office; 760-431-9440.

**Name of Reviewer(s):**

Susie Tharratt, Carlsbad Fish and Wildlife Office; 760-431-9440.

**Methodology used to complete this 5-year review:**

On April 21, 2004, we announced a 90-day finding that a 1995 delisting petition presented substantial information to indicate the petitioned action may be warranted and initiated a status review under section 4(b)(3)(A) of the Endangered Species Act of 1973, as amended (Act). In the same Federal Register notice, we initiated this 5-year review (Service 2004, pp. 21567-21569). The 12-month finding, in response to the 1995 petition, published in the Federal Register on August 19, 2010 (Service 2010, pp. 51204-51223) and found that the species should not be delisted at this time. We compiled the best scientific and commercial information available regarding past, present, and future threats faced by the species, and used that information to assess the status of the Stephens' kangaroo rat in our 12-month finding. Our determination included an analysis of the information provided in the delisting petition as well as other available information on the current status of and threats to Stephens' kangaroo rat compared to when it was listed as endangered on September 30, 1988 (Service 1988, p. 38465). Although that 12-month finding concluded that the species should not be delisted at this time, it does not address the question as to whether or not the species warrants downlisting. Included here is a brief summary of the information in the 12-month finding; for a complete analysis, please refer to the 12-month finding.

**Application of the 1996 Distinct Population Segment (DPS) Policy:**

The Act defines "species" as including any subspecies of fish or wildlife or plants, and any distinct population segment (DPS) of any species of vertebrate wildlife. This definition of species under the Act limits listing as DPS to species of vertebrate fish or wildlife. The 1996 policy regarding the recognition of distinct vertebrate population segments under the Endangered Species Act (Service 1996, pp. 4722-4725) clarifies the interpretation of the phrase "distinct

population segment” for the purposes of listing, delisting, and reclassifying species under the Act. Stephens' kangaroo rat was listed as endangered in 1988. Stephens' kangaroo rat is not listed as a DPS, and no new information exists to suggest that this species should be listed as a DPS.

### **Review Analysis:**

Please refer to the 12-month finding published in the Federal Register on August 19, 2010, for a complete discussion of the species status (including biology and habitat), five-factor analysis, and an evaluation of ongoing management efforts (Service 2010, pp. 51204–51223).

The Stephens' kangaroo rat was listed as endangered on September 30, 1988. Based on the best available information at that time, we determined that the Stephens' kangaroo rat was threatened by the following factors: habitat loss resulting from widespread, rapid urbanization and agricultural development; fragmented and isolated populations; reduction of habitat suitability (from anthropogenic activities including grazing, off-highway vehicle use, disking, plowing, introduction of nonnative vegetation, and rodent control programs); predation by domestic cats; and the lack of existing regulatory protections.

In the 12-month finding and in this 5-year review, we find that the threats to Stephens' kangaroo rat remain similar today to those identified at listing in 1988, with additional impacts from nonnative plant species and climate change. However, the primary and imminent threat at the time of listing, habitat destruction from urban and agricultural development resulting in isolated habitat patches, has been largely ameliorated through the implementation and design of the core reserve system in western Riverside County (through the Stephens' Kangaroo Rat Habitat Conservation Plan), through ongoing land acquisitions and easements, and with other conservation plans and efforts (Multiple Species Habitat Conservation Plan (MSHCP) and Integrated Natural Resource Management Plans (INRMPs)). The Stephens' kangaroo rat population at Camp Pendleton and Detachment Fallbrook in San Diego County is covered by active INRMPs that include actions to provide for the long-term conservation of the Stephens' kangaroo rat on Federal military lands. Significant areas of habitat have been conserved and managed in Riverside and San Diego Counties since the species was listed.

Data collected since 1988 show that the species continues to be restricted to a relatively small geographic area where it is dependent on sparsely vegetated, forb-dominated grasslands. New areas not known at listing have since been identified as a result of more focused research efforts and consultations. In the proposed listing rule, we identified eight general areas where the species was recorded (Service 1987, p. 44454). At least 15 geographical areas are currently known to be occupied by Stephen's kangaroo rat (Service 2010, p. 51205). The documentation of additional occupied areas, as well as some of the largest remaining populations (e.g., Rancho Guejito in San Diego County) of the species in Riverside and San Diego Counties, expands the known range of the species. These populations can potentially contribute to genetic diversity and the amelioration of effects from small population size and risks associated with reduced genetic variability and inbreeding.

## Recovery Criteria:

We published a draft recovery plan for the Stephens' kangaroo rat on June 23, 1997 (Service 1997, pp. 1–71), but it has not been finalized. The draft recovery plan provides recovery guidance and a benchmark for delisting or downlisting the species. Criteria in the draft recovery plan to reclassify the Stephens' kangaroo rat do not reflect the most current information. The recovery criteria were developed using information available in 1997, and additional occurrences occupied by Stephens' kangaroo rat have since been identified. While recovery plans are intended to guide actions to recover listed species and to provide measurable objectives against which to measure progress towards recovery, precise attainment of the recovery criteria is not a prerequisite for downlisting or delisting.

The draft recovery plan for Stephens' kangaroo rat outlined a twofold strategy (consistent with direction established at listing in 1988) to recover the species and established the following criteria for downlisting the species from endangered to threatened:

1. Establishment of four reserves, which encompass at least 6,070 hectares (15,000 acres) of occupied habitat that are permanently protected, funded, and managed and are located in western Riverside County; and
2. establishment of one ecosystem-based reserve in either western or central San Diego County that is permanently protected, funded, and managed.

Our review of the recovery criteria in the draft recovery plan for Stephens' kangaroo rat indicates both small, isolated reserves and larger ecosystem-based reserves have been established that help to ameliorate the threat of urban development. The Riverside County Habitat Conservation Agency's Habitat Conservation Plan for the Stephens' Kangaroo Rat in Western Riverside County (the HCP) (see *Western Riverside County - Stephens' Kangaroo Rat Habitat Conservation Plan (HCP)* of the 12-month finding) has resulted in the conservation of eight reserves. The established eight reserves (including Potrero Valley) exceed the four reserves required by criterion 1 (see Table 3 of the 12-month finding). In San Diego County, active INRMPs at Marine Corps Base Camp Pendleton (Camp Pendleton) and Naval Weapons Station Seal Beach Detachment Fallbrook (Detachment Fallbrook) include actions to provide for the long-term conservation of Stephens' kangaroo rat on Federal military lands. The INRMPs are based, to the maximum extent practicable, on ecosystem management principles and provide for the management of Stephens' kangaroo rat and its habitat while sustaining necessary military land uses. Despite the fact that INRMPs may be superseded by the military's obligation to ensure readiness of the Armed Forces and are subject to discretionary funds and planning, the occurrence of the species and its habitat on Federal land, the existing INRMPs, and the continued consultation provisions of the Act provide some of the best assurances for long-term conservation of the species and its habitat. For the aforementioned reasons, Stephens' kangaroo rat occupied habitat and surrounding natural lands encompassed at Camp Pendleton and Detachment Fallbrook meet the intent of downlisting of Criterion 2 in the draft recovery plan for an ecosystem-based reserve in western San Diego County.

While the criteria in the draft recovery plan appropriately indicate the need for habitat protection and management of reserves, the criteria do not reflect the current conservation status and no longer adequately address the threats to the species. Our review of the strategy and objectives outlined in the draft recovery plan indicates that both types of reserves remain important for the long-term persistence of Stephens' kangaroo rat throughout its range. Recovery criteria should be modified and updated to incorporate new information regarding current threats to the species and the quality and maintenance of remaining habitat (Service 2010, p. 51204).

### **Synthesis:**

In our 12-month finding, we determined that delisting was not warranted. For this review, we evaluated recovery progress based on the recovery criteria for downlisting in the draft recovery plan and considered the current threats attributable to one or more of the five threat factors described in section 4(a)(1) of the Act (please refer to the 12-month finding for the five-factor analysis). As discussed above, our review of the recovery criteria from the draft recovery plan for Stephens' kangaroo rat indicates that reserves in western Riverside and San Diego counties effectively have been established that address the primary and imminent threat at the time of listing, habitat destruction from urban and agricultural development. Substantial progress clearly has been made since listing in protecting and conserving habitat for Stephens' kangaroo rat. Nevertheless, additional management effort and alternative approaches likely will be needed over time to maintain this conserved habitat to ensure the species' long-term survival.

In conclusion, we carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by this species. Based on this review of the factors affecting the species and an evaluation of the recovery progress to date, we conclude threats have been removed or their imminence, intensity, or magnitude reduced to the extent that the species is no longer in danger of extinction throughout all or a significant portion of its range. Despite this significant reduction in threats, non-conserved Stephens' kangaroo rat habitat continues to be impacted by urban and agricultural development, while nonnative species, off-highway vehicles, and the potential impacts associated with climate change continue to pose a threat to the species over the long term. As a result, Stephens' kangaroo rat best fits the definition of a threatened species, a species likely to become endangered within the foreseeable future, throughout all or a significant portion of its range. Therefore, we recommend a change in status from endangered to threatened at this time.

In making this determination to reclassify Stephens' kangaroo rat from endangered to threatened, we followed the procedures set forth in section 4(a)(1) of the Act and regulations implementing the listing provisions of the Act (50 CFR 424).

### **Recommendations for Future Actions:**

1. Secure and conserve remaining large contiguous blocks of habitat and Stephens' kangaroo rat populations in southern portions of this species' range (i.e., San Diego County) that will lower the extirpation risks associated with lower genetic variability and smaller, fragmented populations.

2. Develop and adopt a systematic survey program for monitoring species status and trends across the range of Stephens' kangaroo rat. This objective will include standardization of habitat assessment methodologies across reserves and will require rigorous, detailed, and consistent surveys at appropriate regularity necessary to reliably determine an accurate population status and trend for the species.
3. Develop and adopt a centrally organized management plan which employs appropriate management techniques for maintaining suitable habitat quality for Stephens' kangaroo rat. The management plan will prevent habitat loss and degradation and restore degraded habitats through practices directed at increasing occupied habitat, including reduction of nonnative grass density and thatch buildup that inhibits species movement.
4. Revise the draft recovery plan to include threats-based and demographic criteria that objectively address current threats. Recovery criteria should be modified and updated to incorporate new information regarding current threats to the species and the quality and maintenance of remaining habitat (Service 2010, p. 51204).
5. Increase funding and support for investigations, which support translocation activities. Encourage hypothesis-driven studies that investigate effects of grazing, controlled burns, vegetation mowing, tilling and scraping as habitat management tools and which test their efficacy in site-specific locations.
6. Conduct genetic studies to examine gene flow over a more recent period that will help to clarify impacts of recent habitat fragmentation on Stephens' kangaroo rat genetics, and provide information on the frequency with which genetic exchange occurs between existing populations.

**Literature Cited:**

- [Service] U.S. Fish and Wildlife Service. 1987. Endangered and threatened wildlife and plants; Determination of endangered status for Stephens' kangaroo rat. *Federal Register* 52:44453–44456.
- [Service] U.S. Fish and Wildlife Service. 1988. Endangered and threatened wildlife and plants; Final rule to determine endangered or threatened status for the Stephens' kangaroo rat. *Federal Register* 53:38465–38470.
- [Service] U.S. Fish and Wildlife Service. 1996. The 1996 policy regarding the recognition of distinct vertebrate population segments under the Endangered Species Act. *Federal Register* 61:4722–4725.
- [Service] U.S. Fish and Wildlife Service. 1997. Draft recovery plan for the Stephens' kangaroo rat (*Dipodomys stephensi*). U.S. Fish and Wildlife Service, Region 1, Portland, Oregon. April 1997. 71 pp.
- [Service] U.S. Fish and Wildlife Service. 2004. Endangered and threatened wildlife and plants; 90-day finding on petition to delist the Stephens' kangaroo rat and initiation of a 5-year review. *Federal Register* 69:21567–21569.
- [Service] U.S. Fish and Wildlife Service. 2010. Endangered and threatened wildlife and plants; 12-month finding on a petition to remove the Stephens' kangaroo rat from the Federal list of endangered and threatened wildlife. *Federal Register* 75:51204–51223.

**U.S. FISH AND WILDLIFE SERVICE  
5-YEAR REVIEW**

**Stephens' kangaroo rat (*Dipodomys stephensi*)**

**Current Classification:** Endangered

**Recommendation Resulting from the 5-Year Review:**

- Downlist to Threatened
- Uplist to Endangered
- Delist
- No change needed

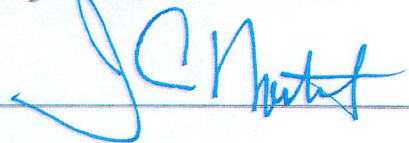
**Review Conducted By:** Carlsbad Fish and Wildlife Office

**New Recovery Priority Number and Brief Rationale: 11**

We recommend a change in the recovery priority number for Stephens' kangaroo rat from 2C to 11. The primary threat at listing was habitat destruction from urban and agricultural development. Impacts from these activities largely have been ameliorated through the implementation and the SKR HCP and Western Riverside County MSHCP, such that Stephens' kangaroo rat faces a moderate degree of threat. Though threats have been reduced, Stephens' kangaroo rat still faces a low recovery potential; continued management of conserved habitat is needed to further reduce current threats, and additional research and monitoring is needed to better understand biological and ecological limiting factors. Therefore, we recommend the recovery priority number be changed to 11.

**FIELD OFFICE APPROVAL:**

**Lead Field Supervisor, U.S. Fish and Wildlife Service**

Approve 

Date July 19, 2011

**Lead Assistant Regional Director, Ecological Services, U.S. Fish and Wildlife Service,  
Region 8**

Approve 

Date July 22, 11