

5-YEAR REVIEW

Short Form Summary

Species Reviewed: *Malacothamnus clementinus*

(San Clemente Island bush mallow)

Current Classification: Endangered



Malacothamnus clementinus (San Clemente Island bush mallow) on San Clemente Island near Norton Canyon.
Photocredit: Susie Tharratt (USFWS 2011).

U.S. Fish and Wildlife Service

Carlsbad, CA

July 2012

Federal Register (FR) Notice Citation Announcing Initiation of This Review:

A notice announcing initiation of the 5-year review for this taxon and the opening of a 60-day period to receive information from the public was published in the **Federal Register** on May 21, 2010 (USFWS 2010, pp. 28636–28642). No information relevant to *Malacothamnus clementinus* was received. A 90-day finding on a petition to downlist *M. clementinus* was published in the **Federal Register** on January 19, 2011, and indicated that a status review was being conducted (USFWS 2011, pp. 3069–3074).

Lead Regional Office Contact:

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Methodology Used to Complete This Review:

On January 19, 2011, we announced a 90-day finding in the **Federal Register** (USFWS 2011, pp. 3069–3074) that a 2010 petition from the Pacific Legal Foundation to downlist *Malacothamnus clementinus* presented substantial information to indicate that the petitioned action may be warranted. We conducted a status review and in response to the petition published a 12-month finding and proposed rule in the **Federal Register** on May 16, 2012 (USFWS 2012, pp. 29078–29128). 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 *M. clementinus* in our 12-month finding. We also worked with the U.S. Department of the Navy (Navy) (Bryan Munson) to incorporate current information and data relevant to the taxon reviewed here. Our determination included an analysis of the information provided in the petition as well as other available information on the current status of and threats to *M. clementinus*, compared to its status when it was listed as endangered on August 11, 1977 (USFWS 1977, pp. 40682–40685). Included here is a brief summary of the information in the status review; see the 12-month finding for a complete review of the threats (five-factor analysis) (USFWS 2012, pp. 29078–29128).

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

The Endangered Species Act (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 distinct population segments to species of vertebrate fish or wildlife. Because the species under review is a plant, the DPS policy is not applicable, and the application of the DPS policy to the species’ listing is not further addressed in this review.

Background:

Since the 1970s, the distribution of *Malacothamnus clementinus* has been documented, with its known range on generally southwesterly facing coastal terraces and their associated escarpments in the southern and middle regions of San Clemente Island (USFWS 1984, p. 48; Junak and Wilken 1998, p. 298; Navy 2002, pp. D-19, D-20). San Clemente Island is owned by Navy and, with its associated offshore range complex, is the primary maritime training area for the Pacific Fleet and Navy Sea, Air, and Land teams. The island also supports training by the U.S. Marine Corps, the U.S. Air Force, and other military organizations. Extensive survey findings suggest that *M. clementinus* has increased in prevalence throughout most of its historical range, and there are more occurrences now than there were at the time of listing. It is unknown whether the higher number of occurrences represents detections due to increased survey efforts, recruitment from the seedbank, or recolonization by the listed taxon possibly as a result of the Navy's management actions.

From 1850 until 1934, San Clemente Island was used for sheep ranching, cattle ranching, goat grazing, and pig farming (Navy 2002, pp. 3-4). These nonnative herbivores greatly changed the vegetative landscape of San Clemente Island and were cited in the final listing rule as the main cause for decline of *Malacothamnus clementinus* (USFWS 1977, pp. 40682-40685). Sheep were removed from the island in the 1930s, but feral goats and pigs were not completely eradicated until 1992. Since that time, *M. clementinus* has been found at the base of escarpments between coastal terraces on the western side of the island within maritime cactus scrub (Figure 1; Navy 2002, pp. D-19, D-20).



Figure 1: Habitat conditions within an occurrence of *Malacothamnus clementinus* (light pink flowers) near Norton Canyon. Photocredit: Susie Tharratt (USFWS 2011).

Review Analysis:

A brief discussion of threats impacting *Malacothamnus clementinus* is discussed below. However, please refer to the 12-month finding published in the **Federal Register** on May 16, 2012, for a complete discussion of the species status (including biology and habitat), five-factor analysis, and an evaluation of ongoing management efforts (USFWS 2012, pp. 29078–29128).

Malacothamnus clementinus was listed as endangered on August 11, 1977 (USFWS 1977, pp. 40682–40685). Based on the best available information at that time, we determined that *M. clementinus* was threatened by habitat alteration by grazing of feral goats and rooting of feral pigs, and competition from nonnative plants. Three occurrences were known at the time of listing. Since listing, eight new occurrences of *M. clementinus* have been discovered among the generally southwesterly facing coastal terraces and their associated escarpments in the southern and middle regions of San Clemente Island (USFWS 2012, p. 29086). The predominant threat at listing (grazing from feral herbivores) was ameliorated with the removal of goats and pigs from the island in 1992 (USFWS 2007, pp. 1–28). In the 2007 status review, additional threats were identified, including: (1) land use, (2) fire, (3) erosion, (4) natural factors, (5) fire management, and (6) access to Shore Bombardment Area (SHOBA). In 2007, access to SHOBA was described as a threat because it reduces the effectiveness of surveys and management efforts (USFWS 2007, p. 21). While access to portions of the island still limits our ability to assess the status of the taxon, access to SHOBA, in and of itself, is not considered a threat.

In the 12-month finding we stated that threats to *Malacothamnus clementinus* impact this taxon throughout its range. Below, we discuss threats affecting the habitat or individual under the respective threat factor: (1) land use, (2) erosion, (3) nonnative plants, (4) fire, (5) fire management, (6) movement of vehicles and troops, (7) climate change, and (8) genetic diversity.

Factor A: Currently, the habitat of *Malacothamnus clementinus* is threatened by destruction and modification caused by land use, erosion, nonnative plants, fire, and fire management (USFWS 2012, pp. 29078–29128). Six of the 11 occurrences are within the SHOBA where impacts are likely to occur. To help ameliorate threats, the Navy is developing an erosion control plan, a fire management plan, and an island-wide nonnative species control program (USFWS 2008, pp. 1–237). However, management actions directed at conservation of *M. clementinus* may not be fully implemented at 4 of the 11 known occurrences (Lower China Canyon, Upper China Canyon, Horse Beach Canyon, and Lemon Tank Canyon) currently closed to natural resource access. Since the 2007 status review, the Navy has increased and intensified military operations through the Military Operations and Fire Management Plan and though the species is expanding and on-going and anticipated conservation efforts contribute to its conservation, significant habitat threats continue to impact the species.

Factor B: Overutilization for commercial, recreation, scientific, or educational purposes of *Malacothamnus clementinus* for any purpose is not currently considered a threat.

Factor C: The threat of grazing by feral goats and rooting of feral pigs was considered a serious threat to *Malacothamnus clementinus* in the final listing rule (USFWS 1977, pp. 40682–40685) and has since been ameliorated. Currently, no other predators or diseases on San Clemente Island are known to pose a significant threat to *M. clementinus*.

Factor D: *Malacothamnus clementinus* occurrences are afforded protection through Federal (the Act and the National Environmental Policy Act) and military mechanisms (Sikes Act—Integrated Natural Resources Management Plan; USFWS 2012, pp. 29078–29128).

Factor E: Threats associated with military activities, fire, climate change, and genetic diversity continue to impact *Malacothamnus clementinus* at all of the 11 occurrences on San Clemente Island (USFWS 2012, pp. 29078–29128). The Navy is implementing measures through the Integrated Natural Resources Management Plan to help minimize impacts associated with these threats (USFWS 2008, pp. 1–237). The genetic fitness of *M. clementinus* may also be threatened by low genetic diversity and small population size.

Since the removal of feral goats and pigs, the distribution of *Malacothamnus clementinus* has expanded from 3 to 11 occurrences on San Clemente Island. Since we conducted our 2007 status review, there has been a change in intensity of training and habitat impacts associated with the 2008 Military Operations and Fire Management Plan. These changes include the escalation in frequency and intensity of bombardments in Impact Areas I and II and the movement of troops and vehicles through *M. clementinus* habitat. Therefore, based on the increased habitat impacts since the last status review and the ongoing threats discussed above, at this time we conclude this taxon continues to be at risk of extinction throughout all of its range.

Recovery Criteria:

The Service published the California Channel Islands Species Recovery Plan (Recovery Plan) that included 10 plants and animals distributed among 3 of the Channel Islands, including *Malacothamnus clementinus* (USFWS 1984, pp. 1–165). Following guidance in effect at that time, the Recovery Plan did not provide criteria that specifically addressed the threats identified for each species in the listing rule. Instead, it included six general objectives covering all taxa. The recovery objectives were developed using information available in 1984, and additional occurrences occupied by *M. clementinus* have since been identified.

The Recovery Plan for *Malacothamnus clementinus* established the following objectives for recovery of the species:

- (1) Identify present adverse impacts to biological resources and strive to eliminate them.
- (2) Protect known resources from further degradation by: (a) removal of feral herbivores, carnivores, and selected exotic plant species; (b) control of erosion in sensitive locations; (c) direct military operations and adverse recreational uses away from biologically sensitive areas.
- (3) Restore habitats by revegetation of disturbed areas using native species.

- (4) Identify areas of San Clemente Island where habitat restoration and population increase of certain addressed taxa may be achieved through a careful survey of the island and research on habitat requirements of each taxon.
- (5) Delist or upgrade the listing status of those taxa that achieve vigorous, self-sustaining population levels as the result of habitat stabilization, restoration, and preventing or minimizing adverse human related impacts.
- (6) Monitor effectiveness of recovery efforts by undertaking baseline quantitative studies and subsequent follow-up work (USFWS 1984, pp. 106–107).

In summary, while the Recovery Plan does not include taxon-specific downlisting or delisting criteria for measuring the recovery of *Malacothamnus clementinus*, many of the actions identified in the Recovery Plan have been implemented to benefit this taxon. Most significantly, the Navy completed removal of feral goats and pigs from San Clemente Island in 1992. The improvement in the documented status of this taxon since suggests that the removal of these animals was integral to establishing self-sustaining populations of plant taxa on the island. Complementing the success of this conservation measure, the ecology and genetics of *M. clementinus* has also been studied and a number of programs are now in place to improve habitat suitability, prevent introductions of nonnative species, guide and track management efforts, and protect populations of these plant taxa. Though the distribution of *M. clementinus* has continued to increase on the island, the majority of its range occurs within SHOBA, which is subject to high levels of impact from military actions. Additionally, closure of areas on San Clemente Island to natural resource personnel creates uncertainty regarding the status of 4 of 11 occurrences, including the largest and most genetically diverse, and whether those occurrences will benefit from conservation measures (USFWS 2012, pp. 29082, 29122, 29123).

Synthesis:

Since listing and the removal of feral goats and pigs on San Clemente Island, the distribution of *Malacothamnus clementinus* has expanded from 3 to 11 occurrences, mainly among the southwesterly facing coastal terraces and their associated escarpments in the southern and middle regions of San Clemente Island. These extensive gains show that the species is continuing to expand despite existing threats across the landscape. However, there are still significant threats to the species, including: military land use, erosion, nonnative plants, fire, fire management, trampling, climate change, and genetic diversity. The range of *M. clementinus* is largely restricted to the southern part of the island, where occurrences are more likely to be impacted by intense military training, fire, erosion, and nonnatives. Furthermore, 4 of the 11 known occurrences of the species were closed to nonmilitary personnel in 2008, such that we are unable to assess the impacts of the threats described under the five listing factors, nor is the Navy able to conduct management and conservation measures in these areas. This closure includes one occurrence with the highest number of point localities and the greatest genetic variability. In 2008, the Navy adopted the Military Operations and Fire Management Plan. This plan provides a fire management strategy for the Navy, but also escalates and intensifies the level of military training allowed on the island. These changes include the escalation in frequency and intensity of bombardments in Impact Areas I and II, area closures, and the movement of large groups of troops and vehicles through *M. clementinus* habitat. Though the number of *M. clementinus*

occurrences has expanded on the island, several threats continue to impact this taxon. In our 12-month finding, we determined that downlisting of *M. clementinus*, as petitioned by Pacific Legal Foundation, is not warranted.

In conclusion, we carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by this species. Although we recommended downlisting in our 2007 status review, at this time we conclude *Malacothamnus clementinus* continues to be in danger of extinction throughout its range because since then there has been a change in intensity of training and habitat impacts associated with the 2008 Military Operations and Fire Management Plan. These changes include the escalation in frequency and intensity of bombardments in Impact Areas I and II and the movement of large groups of troops and vehicles through *M. clementinus* habitat. Additionally, the status of *M. clementinus* is unknown at four occurrences. The threats to *M. clementinus*, coupled with low genetic fitness, place this taxon at risk of extinction throughout all or a significant portion of its range. Therefore, consistent with our 12-month finding on a petition to reclassify *M. clementinus* (USFWS 2012, pp. 29078–29128), we recommend no change in status for this taxon at this time.

Recommendations for Future Actions:

- (1) Develop a systematic survey protocol for *Malacothamnus clementinus* on San Clemente Island. These surveys should include confirmation of existing locations at greater regularity to better determine accurate population status and trend for the species. Additionally, these protocols should include the standardization of information collected such as habitat conditions, habitat type, number of plants, date collected, etc.
- (2) Conduct studies to investigate genetic diversity of *Malacothamnus clementinus* to determine how the genetic fitness of the plant affects reproduction and the existence of the plant on island.
- (3) Conduct studies to determine the fire tolerance and preferred fire regime of *Malacothamnus clementinus*.
- (4) Work with the Navy to better estimate fire frequency in areas occupied by *Malacothamnus clementinus* on San Clemente Island.

New Recovery Priority Number and Brief Rationale:

No change is requested at this time. The Recovery Priority Number for *Malacothamnus clementinus* is 8C, indicating a moderate degree of threat, a high potential for recovery, and the “C” indicates conflict.

References Cited:

- Junak, S.A. and D.H. Wilken. 1998. Sensitive Plant Status Survey, Naval Auxiliary Landing Field San Clemente Island, California, Final Report. Santa Barbara Botanic Garden Technical Report No. 1 prepared for the Department of the Navy, Southwest Division. San Diego, CA. 416 pp.
- [Navy] U.S. Department of the Navy, Southwest Division. 2002. San Clemente Island Integrated Natural Resources Management Plan Draft Final, January 2002. Prepared by Tierra Data Systems, Escondido, California. pp. 1 to 8-12 and Appendices.
- [USFWS] U.S. Fish and Wildlife Service. 1977. Determination that seven California Channel Island animals and plants are either Endangered Species or Threatened Species. **Federal Register** 42: FR 40682–40685.
- [USFWS] U.S. Fish and Wildlife Service. 1984. Recovery Plan for the Endangered and Threatened Species of the California Channel Islands. U.S. Fish and Wildlife Service, Portland, Oregon. 165 pp.
- [USFWS] U.S. Fish and Wildlife Service. 2007. *Malacothamnus clementinus* (San Clemente Island bush mallow); 5-year Review: Summary and Evaluation. 28 pp.
- [USFWS] U.S. Fish and Wildlife Service. 2008. Biological Opinion San Clemente Island Military operations and fire management plan, Los Angeles County, California (Service File FWS–LA–09B0027–09F0040). Dated November, 2008. Carlsbad Fish and Wildlife Office, Carlsbad, California.
- [USFWS] U.S. Fish and Wildlife Service. 2010. Endangered and Threatened Wildlife and Plants; Initiation of 5-year reviews of 34 species in California and Nevada; Availability of 96 complete 5-year reviews in California and Nevada. Notice of initiation of 5-year reviews; availability of completed 5-year reviews. **Federal Register** 75: FR 28636–28642.
- [USFWS] U.S. Fish and Wildlife Service. 2011. Endangered and Threatened Wildlife and Plants; 90-day finding on a petition to delist or reclassify from endangered to threatened six California species. Notice of 90-day petition findings and initiation of status reviews. **Federal Register** 76: 3069–3074.
- [USFWS] U.S. Fish and Wildlife Service. 2012. Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition to Downlist Three San Clemente Island Plant Species; Proposed Rule to Reclassify Two San Clemente Island Plant Species; Taxonomic Corrections. **Federal Register** 77: 29078–29128.

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

***Malacothamnus clementinus* (San Clemente Island bush mallow)**

Current Classification: Endangered

Recommendation Resulting from the 5-year Review:

Downlist to Threatened
Uplist to Endangered
Delist

X No change needed

Review Conducted By: Carlsbad Fish and Wildlife Office

FIELD OFFICE APPROVAL:

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

ACTING

Approve  **Scott A. Sobiech**

JUN 25 2012
Date _____

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

Approve 

Date 7/10/12