

Amendment to Florida salt marsh vole (*Microtus pennsylvanicus dukecampbelli*) Recovery Plan

Original Approved: September 20, 1997

Original Prepared by: Southeast Region

AMENDMENT 1

We have identified the need to amend recovery criteria for Florida salt marsh vole (*Microtus pennsylvanicus dukecampbelli*; Florida salt marsh vole) which was listed as endangered under the Endangered Species Act of 1973 as amended (Federal Register 1991, pp. 1457). In this proposed modification, we synthesize the adequacy of the existing recovery criteria; show amended recovery criteria, and provide the rationale supporting the modification. The proposed modification is an addendum that supplements the Florida salt marsh vole Recovery Plan (USFWS 1997) by adding delisting criteria which were not developed at the time of publication. The Recovery Objective and the Recovery Actions are described in the Recovery section parts A and B (page 5-6) of the Florida salt marsh vole Recovery Plan (USFWS 1997). Recovery plans are a non-regulatory document that provides guidance on how best to help recover the species.

**For
U.S. Fish and Wildlife Service
Atlanta, Georgia**

Approved: Garry Williams
Acting Regional Director, U.S. Fish and Wildlife Service

Date: September 26, 2019

METHODOLOGY USED TO COMPLETE THE RECOVERY PLAN AMENDMENT

This proposed amendment to the recovery criteria was developed using the best available information for the species. This information was reviewed by the U.S. Fish and Wildlife Service (Service) North Florida Ecological Services Field Office in order to develop the delisting criteria for the Florida salt marsh vole. The draft Amendment published in the Federal Register (2019 p. 30764) which noticed a public comment period. Comments were only received from the Florida Fish and Wildlife Conservation Commission and the Service reviewed, addressed, and incorporated those comments into this Amendment to the Florida salt marsh vole Recovery Plan.

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 listing factors.

Recovery Criteria

The Florida salt marsh vole Recovery Plan did not provide any downlisting or delisting criteria (USFWS 1997, p. 5; https://ecos.fws.gov/docs/recovery_plan/970930d.pdf).

Synthesis

The assessment of threats, recommended recovery actions, and life history information included in the Florida salt marsh vole Recovery Plan (1997) and 5-Year Review (2008) remain relevant and applicable. It continues to be endangered due to its limited range within Florida’s central Gulf Coast salt marshes and from the threat of extreme high water events and oil spills (chance of occurrence is low but the impact would be catastrophic). Gradually rising sea levels may also pose a future threat to the Florida salt marsh vole. In developing the delisting criteria, the Service also reviewed recent literature, survey and research reports, and a recent draft Species Status Assessment (drafted 2019) to inform this amendment to the Recovery Plan.

At the time of listing and publication of the Recovery Plan, this subspecies of the meadow vole was only known from one location and thus the immediate objective was to prevent extinction. To date, little information is known about its specific life history and ecological needs. Florida salt marsh voles have proven to be hard to study due to the dynamic nature of the salt marsh, the remoteness of where the habitat is located, and difficulty in capturing and studying the species.

From 1979 to 2009, live-trapping surveys were conducted at 42 different locations. Over the 30-year period, these surveys included 115 nights trapped and 11,123 trap nights and yielded only 43 individuals from three locations within the salt marshes near Cedar Key. Based on these surveys, the species range was estimated to be an 8 km (5 mi.) extent of salt marsh along the coast line (Hotaling 2010, pp. 797). Through targeted habitat surveying using an innovative camera trapping technique in 2012 (McCleery et al. 2014, pp. 1-4), the Florida salt marsh vole’s known range increased from 8 km (5 mi.) to 32 km (20 mi.). The increase in range resulted from new detections in adjacent salt marsh habitat extending north to the Suwannee River and south to the Withlacoochee River, Levy County, Florida (McCleery & Zweig 2016, pp. 2). We note that this expansion in the distribution is likely a function of increased survey effort utilizing a novel

technique and not actual range expansion resulting from individuals pioneering into previously unoccupied areas.

In summary, the Florida salt marsh vole continues to be at risk due to its small range, threat of hurricanes and severe storms that cause extreme high water events, and from potential oil spill events. The gradually rising sea levels may also pose a future threat to the Florida salt marsh vole.

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 protections afforded by the Act are no longer necessary and the Florida salt marsh vole 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 an endangered species to a threatened species. The term “endangered species” means any species (species, sub-species, or DPS) which is in danger of extinction throughout all or a significant portion of its range. The term “threatened species” means any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Revisions to the Lists, including delisting or downlisting a species, must reflect determinations made in accordance with sections 4(a)(1) and 4(b) of the Act. Section 4(a)(1) requires that the Secretary determine whether a species is an endangered species or threatened species (or not) because of threats to the species. Section 4(b) of the Act requires that the determination be made “solely on the basis of the best scientific and commercial data available.” Thus, while recovery plans provide important guidance to the Service, States, and other partners on methods of minimizing threats to listed species and measurable objectives against which to measure progress towards recovery, they are guidance and not regulatory documents.

Recovery criteria should help indicate when we would anticipate that an analysis of the species’ status under section 4(a)(1) would result in a determination that the species is no longer an endangered species or threatened species. A decision to revise the status of or remove a species from the Federal Lists of Endangered and Threatened Wildlife and Plants, however, is ultimately based on an analysis of the best scientific and commercial data then available, regardless of whether that information differs from the recovery plan, which triggers rulemaking. When changing the status of a species, we first propose the action in the Federal Register to seek public comment and peer review, followed by a final decision announced in the Federal Register.

Herein, we provide delisting criteria for the Florida salt marsh vole as the Recovery Plan (USFWS 1997) did not include downlisting or delisting criteria.

Delisting Recovery Criteria

The Florida salt marsh vole will be considered for delisting when the following criteria are met:

1. The three (3) Florida salt marsh vole Resiliency Units exhibit stable or increasing demographic and/or occupancy trends as compared to long-term historic levels, and exhibit natural recruitment. (Factor A and E)
2. When, in addition to the above criteria, it can be demonstrated that despite sea level rise and other environmental influences, sufficient suitable habitat remains for Florida salt marsh vole to remain viable into the foreseeable future. (Factor A and E)

Justification

Resiliency Units: Resiliency is the ability of the species to withstand stochastic disturbance events (USFWS 2016). Because resiliency is associated with population size, growth rate, and habitat quality, we divided the Florida salt marsh vole range into three units to assess resiliency. The types of data needed to delineate biological populations of FSMV is not available at this time. Therefore, we use Resiliency Units as a way to divide the species range in order to assess and report the variation in current and future resiliency across the range. The three Resiliency Units are West, Central, and East, and correspond with the major geographic features of the coastline (Fig. 1). The FSMV has a very limited geographic range, and there is no genetic or ecological evidence to support delineating multiple representative units (genetically isolated populations).

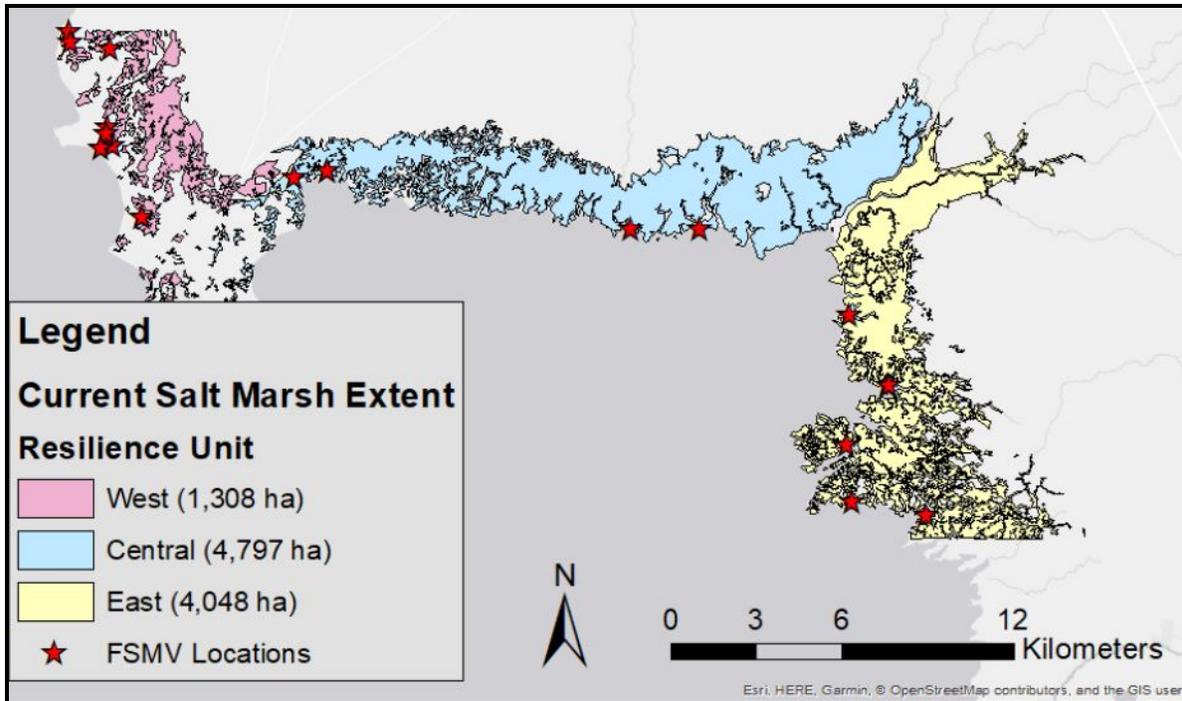


Figure 1. Florida salt marsh vole resilience units, West, Central, and East.

Criterion 1: Provides redundancy through multiple resiliency units and sufficient habitat. Evaluating the stability of trends in demography and/or occupancy provides a measure of the species' resiliency to stochastic events. For the Florida salt marsh vole, we conclude that the three resiliency units exhibiting stable or increasing trends in demography and/or occupancy are necessary to ensure this subspecies of meadow vole will no longer require protection under the Act.

Criterion 2: The Florida salt marsh vole has a naturally narrow distribution; historically known from only one location and recently documented to occur along additional sections of salt marsh habitat between the Suwannee River and Withlacoochee River in Levy County Florida. Maintaining sufficient habitat and habitat connectivity allows for redundancy and representation for persistence and viability into the foreseeable future. Criterion 1 reflects the level of species resiliency by examining demography and/or occupancy of the Resiliency Units.

Rationale for Amended Recovery Criteria

The proposed delisting recovery criteria reflect the best available information on the Florida salt marsh vole, which mainly consists of the Florida salt marsh vole Recovery Plan (1997), the 5-Year Review (2008), recent survey and research reports, and Species Status Assessment (2019 draft). Meeting the above delisting criteria ensure that the underlying causes that led to its listing will be addressed.

Criterion 1 is a measure of demography and/or occupancy that ensures the Resiliency Units have reached the point of stability or increase. Since populations of many small mammals, including the Florida salt marsh vole, fluctuate cyclically, it is necessary to evaluate demographics and/or occupancy over time to delineate real trends from natural variation when assessing resiliency. In the case of the Florida salt marsh vole, where it may not be possible to collect demographic information, a measure of occupancy across the range and three resiliency units will serve as an equally appropriate measure of stability and resiliency over time. Both demography and occupancy, when measured over time, provide an adequate way to determine if the species is responding positively or negatively to environmental conditions.

Criterion 2 is a measure of habitat quality/quantity that provides for redundancy and representation. Occupancy of the Resiliency Units along Florida's Levy County coastline, with sufficient amounts of connected, suitable habitat will allow the voles within those units to successfully respond to gradual sea level rise and/or other environmental factors that change over time. Habitat connectivity provides for genetic exchange and genetic variability, and ensures representation and resiliency of this subspecies.

Together, these recovery criteria sufficiently address the current and future threats related to habitat loss, suitability and connectivity, genetic diversity, and sea level rise. In meeting these criteria, we expect the Florida salt marsh vole to no longer be in danger of extinction throughout all or a significant portion of its range, nor likely to become an endangered species within the foreseeable future. We will work together with our partners to strategically and efficiently implement the new criteria.

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