

Recovery Plan for Choctawhatchee Beach Mouse (*Peromyscus polionotus allophrys*)
https://ecos.fws.gov/docs/recovery_plan/870812.pdf

Original Approved: 12 August 1987

Original Prepared by: U.S. Fish and Wildlife Service Southeast Region

DRAFT AMENDMENT 1

We have identified best available information that indicates the need to amend recovery criteria for Choctawhatchee Beach Mouse (*Peromyscus polionotus allophrys*; CBM) since the recovery plan was completed. 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. The proposed modification is shown as an addendum that supplements the Choctawhatchee Beach Mouse, Perdido Key Beach Mouse, and Alabama Beach Mouse Recovery Plan (USFWS 1987) by adding delisting criteria for the CBM that were not developed at the time this recovery plan was completed. The original recovery objectives and the step-down outline are described on page 12 of the Recovery Plan. Recovery plans are a non-regulatory document that provide guidance on how best to help recover species.

**For
U.S. Fish and Wildlife Service
Region 4
Atlanta, Georgia**

March 2019

METHODOLOGY USED TO COMPLETE THE RECOVERY PLAN AMENDMENT

This amendment was developed using the most recent and best available information for the Choctawhatchee beach mouse since the completion of the most current 5-Year Review (USFWS 2007). In addition to recent data, a primary source of information drawn upon was the 5-Year Review, which drew upon information from the following sources: the Recovery Plan for the Choctawhatchee Beach Mouse, Perdido Key Beach Mouse, and Alabama Beach Mouse (USFWS 1987), peer-reviewed scientific publications, unpublished reports, ongoing field survey results and information from qualified Service and State biologists, the final rule listing the subspecies, revised critical habitat (USFWS 2006), and peer review comments. This amendment was completed by the Service's lead recovery biologist for the Choctawhatchee beach mouse located at the Panama City Field Office. No part of the review was contracted to an outside party. All literature and documents used for this amendment are on file at the Panama City Field Office.

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 Recovery Plan only provides downlisting criteria for the CBM, and they can be found on page 12 of the document (https://ecos.fws.gov/docs/recovery_plan/870812.pdf).

Synthesis

New information and research studies have been conducted since the Recovery Plan was finalized and new data have been received since the most recent 5-Year Review. This information is synthesized below. The assessment of threats, suggested recovery actions, and life history information included in the Recovery Plan and 5-Year Review largely remain applicable and relevant. Issues related to habitat (i.e. loss, fragmentation, connectivity, management, and restoration; Factor A) and predation from non-native, invasive species and free-roaming pets (Factor C) are still directly pertinent to the CBM's recovery.

Our partners have developed a noninvasive monitoring protocol that has been established across all public lands where CBM habitat and connectivity are found. This track tube monitoring allows us to determine where CBM are on a monthly or bi-monthly basis by recording the footprints of beach mice visiting a baited tube. While this method does not give us a population estimate, it is low impact to CBM and less intensive for biologists than regular trapping. We get a snapshot over time to determine trends and when more intensive management is needed. Prior to Hurricane Michael making landfall on October 10, 2019, current track tube data suggested CBM were doing well in three (West Crooked Island, Shell Island-State, and Shell Island-Federal) out of seven public land units. Those three units were hit extremely hard by the hurricane, and we are currently trying to assess those populations and habitats. Initial assessments suggest the habitat in these units was inundated over most of West Crooked Island and severely eroded on Shell Island-State and Shell Island-Federal. Prior to this hurricane, these three units were the stronghold for the species. Topsail Hill Preserve State Park has been a relatively stable population and continues to be so. Two units (Grayton Beach State Park and Deer Lake State Park) were of concern before the hurricane with extremely low numbers. Unpublished track tube data for 2018 suggested CBM may have been extirpated at Deer Lake State Park. These two parks have had low populations in the past, and successful reintroductions occurred in 2003, 2005, and 2012. Although local extirpations are a normal phenomenon for CBM throughout its life history, habitat destruction and fragmentation have made it nearly impossible for CBM to recolonize and rebuild their population numbers without translocations from other populations. Other threats, such as free-roaming or feral cats and other non-native predators, require constant management and have not yet been abated completely in these developed areas. More focus on non-native predators needs to be a funded priority in the smaller units surrounded by development as well as a focus on habitat restoration to enhance connectivity to these units.

The Service, Florida Fish and Wildlife Conservation Commission (FWC), and Florida State Parks conducted a reintroduction of CBM onto St. Andrews State Park-Mainland (SASP) in 2016. While evidence suggested this area was once occupied by CBM, there was no written documentation of CBM occurrence in SASP. As of March 2018, the population was surviving and expanding. Spring 2019 will be two years post reintroduction and another assessment will occur. This unit was also recently affected by Hurricane Michael and assessments are underway to determine the extent of habitat damage and population loss. This area did suffer from erosion along the primary and secondary dune system; however the scrub dune habitat remains intact. Further assessments will determine how the population was affected. This task was identified in the Recovery Plan as a needed action towards recovery of CBM.

Connectivity between the larger core populations is a major concern. This issue occurs mostly on private lands. Many private lands have developed too close to the Gulf resulting in the loss of the dune ecosystem between the development and the water, this creates a barrier for CBM to get around the structures and non-native landscaping. We are working to address this issue with new construction, but older, existing developments continue to be a concern.

Genetic variation between the eastern and western portions of the CBM range has been apparent in the past. However, as different populations are extirpated or sustain catastrophic damage from hurricanes, we may need to translocate CBM from the most resilient population to the other sites in need, thus mixing the east and west populations.

The Recovery Plan does not specifically address climate change or sea-level rise in the CBM recovery criteria or recovery actions. Using the NOAA Sea-level Rise Viewer tool (NOAA 2017); with a 3-foot (0.9 m) rise in sea-level, CBM habitat around the coastal dune lakes begins to encroach into the low lying coastal dune swales and a wider more permanent outfall starts to be noticed. Connectivity to available dune habitat will be severed once permanently underwater. Bays and inland waters connected to the Gulf quickly engulf coastal dune swales from rising backwaters and become fragmented by newly formed connections between the bay and gulf. This intermediate scenario is predicted to occur in 50-70 years (NOAA 2017). The higher dune habitat will still be available, but upland access and connectivity will be severed. These dune systems are a dynamic habitat and will always be dynamic and changing. Storms always have the potential to completely alter the coastal dune habitat as was just experienced with Hurricane Michael. With the potential for more frequent and intense storms, the coastal dune environment may not have the ability to grow and reform as it has in the past. It is likely we will lose much of the three stages of the coastal dune habitat (primary, secondary, and scrub) that are dependent on by CBM.

Free-roaming and feral cat populations in CBM areas consist of outdoor pets and unwanted pets. The free-roaming/feral cats are usually associated with development near the coastal dune habitat. In the western portion of CBM range, approximately 18 cats were removed over the past year, with the majority being in Grayton Beach and Deer Lake State Parks.

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 Choctawhatchee beach mouse 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 CBM as the Recovery Plan only developed downlisting criteria as discussed above.

Downlisting Recovery Criteria

We are not amending the existing downlisting criteria (please refer to page 12 of the Recovery Plan).

Delisting Recovery Criteria

The Choctawhatchee beach mouse will be considered for delisting when all the following criteria have been met:

1. Populations inhabit all five (5) critical habitat units, and three (3) additional populations inhabit Habitat Conservation Plan (HCP) covered lands that directly connect to the critical habitat units. Populations exhibit stable or increasing trends, evidenced by natural recruitment and multiple age classes (Factor A).
2. Habitat connectivity and genetic diversity shall be maintained throughout the range to a level that does not require translocations or captive breeding (Factors A and E).
3. All designated CBM critical habitat under public ownership (Federal, State, and Local entities) is managed under a conservation mechanism that addresses beach mice (Factor A).
4. Non-native predator removal (specifically free-roaming/feral cats) shall be conducted to a degree that CBM will remain viable for the foreseeable future (Factor C, D).
5. When, in addition to the above criteria, it can be demonstrated that habitat loss associated with climate change/sea-level rise and development are diminished such that enough suitable habitat remains in the foreseeable future for CBM to remain viable (Factor E).

Justification

The proposed delisting criteria reflect the best available and most up-to-date information of the CBM, while incorporating information still relevant from the Recovery Plan. Furthermore, the delisting criteria developed reflect the species' overarching recovery strategy, and are consistent with current goals, objectives, and known risk levels.

Specifically, each delisting criterion ensures that the underlying causes of decline and impediments to recovery will be addressed and mitigated by:

Criterion 1. Providing redundancy through multiple populations and sufficient habitat, and reaching demographic parameters that allow for resilient and stable populations. Providing natural, functional connectivity is critical because the intensive management actions required to lessen the effects of fragmentation is very labor intensive and only provides short-term solutions. Since populations of many small mammals, including the CBM, fluctuate both seasonally and annually, it is necessary to evaluate population demographics amongst multiple generations to assess true trends. These units are defined in the Critical Habitat Rule (USFWS 2006). For the CBM it is believed that a minimum of eight populations exhibiting these traits are necessary to provide sufficient redundancy to ensure the species will no longer require protection under the Act.

Criterion 2. Providing resiliency through maintenance of genetic diversity across the entire range preserving the subspecies and prevent bottlenecks. For CBM, habitat connectivity between the populations will lead to a genetically diverse population. Management actions are in place to assess the genetic stability when required. Management and preservation of north-

south and east-west habitat corridors are required to achieve the needed genetic diversity across the species range and facilitate recolonization of areas after localized extirpations.

Criterion 3. Developing/updating management plans and implementing recovery actions on publicly owned lands will ensure sufficient habitat is available into the foreseeable future. Regulatory actions focused on CBM conservation by local and State government entities is also needed to help meet this criteria.

Criterion 4. Providing a long-term solution to significantly reduce or eliminate the threat of non-native species. Currently there are efforts by our partners to reduce the threat of non-native species to our native listed species. Certainty of funding and objectives focused on CBM are still needed.

Criterion 5. Ensuring sufficient habitat is expected to remain for long-term persistence, despite habitat changes and habitat loss projected due to climate change/sea-level rise. Regulatory actions focused on CBM conservation by local and State government entities is also needed to help meet this criteria.

Together, these recovery criteria cover threats related to habitat loss and fragmentation, non-native predators, genetic diversity, and climate change; all of which are likely drivers of the CBM's population demographics and the species' long-term persistence.

Rationale for Amended Recovery Criteria

The existing criteria for CBM on page 12 of the Recovery Plan (Service 1987) (https://ecos.fws.gov/docs/recovery_plan/870812.pdf) included only downlisting criteria. The amended delisting recovery criteria provide an avenue for connectivity between private lands and the larger core CBM populations on public lands. It is imperative that the primary dune systems be restored along these private lands. It is the main pathway for connectivity between the existing CBM populations. When populations become extirpated or significantly imperiled due to hurricanes or other climate related actions, the habitat needs to be restored or maintained to allow CBM to repopulate these areas. Scrub habitat is a valuable resource to preserve throughout the entire range, as this is the only area CBM will be able to survive and repopulate from after a major hurricane. CBM and other beach mice are currently experiencing this situation due to Hurricane Michael. Recovery of CBM can only be achieved when the habitat is available and connectivity is established to ensure genetic diversity. A private/public partnership is needed to fully recover CBM. Local governments and land managers must actively participate toward recovery by implementing recovery actions set forth by the recovery lead.

With the proposed amendments, delisting has been clearly defined with measurable, objective criteria in keeping with the recovery strategy and goals outlined in the Recovery Plan. These criteria address what is necessary to ensure resiliency, redundancy, and representation by addressing factors that threaten the species. In achieving these criteria, we expect the CBM to have a low probability of extinction for the foreseeable future and have stable populations needed for long-term recovery. We will work together with our partners to strategically and efficiently implement the new criteria.

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