

## **Draft Amendment to the Recovery Plan for the Nosa Luta or Rota Bridled White-Eye (*Zosterops rotensis*)**

**Original Approved:** [September 7, 2007](#)

**Original Prepared by:** Pacific Region, U.S. Fish and Wildlife Service

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**Species addressed in Draft Amendment:** Rota bridled white-eye (*Zosterops rotensis*)

We have analyzed the best available scientific and commercial information and find that an amendment to the recovery criteria for this species is warranted. The current recovery criteria have been in place since the recovery plan was completed in 2007. In this proposed modification, we discuss the adequacy of the existing recovery criteria, show amended recovery criteria, and present the rationale supporting the proposed recovery plan modification. The proposed modification of the criteria is presented as an appendix that supplements the recovery plan, superseding only pages 34-35 in Section II (Recovery) of the recovery plan (USFWS 2007).

### **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 A review of the recovery plan and its implementation may show that the plan is out of date or its usefulness is limited, and therefore warrants modification.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 appropriate in cases where 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.

## **METHODOLOGY USED TO COMPLETE THE RECOVERY PLAN AMENDMENT**

We utilized a group of expert biologists and managers, including staff from the Commonwealth of the Northern Mariana Islands Department of Fish and Wildlife and Ecological Services staff from the Pacific Islands Fish and Wildlife Office of the U.S. Fish and Wildlife Service. We met by phone and through email to develop these draft amended downlisting and delisting criteria. A priority of the group was to ensure the threats associated with single-island endemism were addressed in the criteria. The working group was composed of species experts, whose knowledge of the species and its habitat supplemented information in the most recent 5-year review (USFWS 2014).

Peer review of the updated delisting criteria will be concurrent with the public comment period on the draft amendment, and comments received will be incorporated into the final recovery plan amendment.

## **ADEQUACY OF RECOVERY CRITERIA**

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

See previous version of criteria on pages 34-35 in Part II (Recovery) of the Recovery Plan for the Nosa Luta, or Rota Bridled White-Eye (*Zosterops rotensis*) (USFWS 2007).

## **Synthesis**

In its current form, the recovery plan identifies only interim downlisting criteria because of limited information about threats to the species and causes for decline in abundance at the time of listing. The nosa Luta is restricted to approximately 300 hectares (741 acres) at elevations above 150 meters (492 feet) elevation (Zarones *et al.* 2013; Camp *et al.* 2014) on an island that is approximately 8,550 hectares (21,120 acres), and is thus highly range restricted. Some studies suggest that changes in the distribution of the nosa Luta may be due to a decrease in suitable habitat as a result of changes in forest structure (Amidon 2000; Zarones *et al.* 2013).

Between 1982 and 2012, 12 point-transect distance sampling surveys were conducted to assess population status of avian species on Rota (Camp *et al.* 2014). The white-eye population declined and increased over the 30 year period, yielding weak evidence for increasing or decreasing trends, and moderate evidence for a stable, long-term trend. Population point estimates for 1982 and 2012 were similar (14,963 and 14,384, respectively), but the level of precision for both estimates was low (95% CI 8,741-18,487 and 5,620-20,961, respectively) suggesting more research is needed to understand the status of this population.

The new criteria require more statistical confidence in the population trend through more frequent survey intervals and in the abundance estimate by ensuring it is sustained over multiple

years. We anticipate assessing the significance of decreasing, stable, or increasing population trends using an equivalency testing framework which allows for biologically meaningful trends to be statistically assessed (Camp *et al.* 2008). The new criteria continue to acknowledge the lack of information about the threats to the species and the reasons behind fluctuations in population abundance. The delisting criteria address the risks associated with restricted range and island endemism by including the establishment of a second population on another island.

### **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 species 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 distinct population segment) 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.

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 U.S. Fish and Wildlife Service (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*.

We provide both downlisting and delisting criteria for the nosa Luta, which will supersede those included in the Recovery Plan for the Nosa Luta or Rota Bridled White-Eye (USFWS 2007), as follows:

#### **Downlisting Recovery Criteria**

The nosa Luta will be considered for downlisting when:

Criterion 1: Over a minimum 10-year period, nosa Luta population data show a stable or increasing trend (i.e., finite rate of annual population increase, or Lambda, greater

than or equal to 1) that is statistically significant, as determined through quantitative surveys of abundance, or an index of abundance derived from quantitative surveys or demographic monitoring; and the average population on Rota throughout that time period is estimated to be at least 10,000 individuals.

Criterion 2: Habitat within the range of the nosa Luta is protected and restoration has been completed to the extent that the amount of suitable habitat has increased sufficiently to sustain a population of at least 10,000 individuals as identified in Criterion 1.

Criterion 3: Threats to the species, including predation by introduced predators, are effectively managed to the extent that mortality has been reduced and population targets in Criterion 1 are met.

In addition, any rule to downlist the nosa Luta should incorporate a rule under section 4(d) of the Act granting protections regarding take.

### **Delisting Recovery Criteria**

The nosa Luta will be considered for delisting when:

Criterion 1: Over a minimum 20-year period, nosa Luta population data show a stable or increasing trend (i.e., finite rate of annual population increase, or Lambda, greater than or equal to 1) that is statistically significant, as determined through quantitative surveys of abundance, or an index of abundance derived from quantitative surveys or demographic monitoring; and the average population on Rota throughout that time period as estimated from standardized survey techniques is at least 14,000 individuals; or the average population on Rota throughout that time period as estimated from standardized survey techniques is at least 12,000 individuals, and a second self-sustaining population is established on another island.

Criterion 2: Habitat within the range of the nosa Luta and/or on another island is protected and restoration has been implemented to the extent that the amount of suitable habitat available has increased sufficiently to meet population targets in Criterion 1.

Criterion 3: Threats to the species, including predation by introduced predators, pesticides, and disease, are effectively managed and mortality is minimized to the extent that population targets in Criterion 1 are met.

All classification decisions consider the following five factors: (A) the present or threatened destruction, modification, or curtailment of the species' habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms (outside the ESA, and taking into account the efforts by states and other organizations to protect the species or habitat); and (E) 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*.

### **Rationale for Recovery Criteria**

The amended downlisting and delisting criteria are based upon the best available scientific and commercial information about the species' biology and habitat. Timeframes for downlisting and delisting are based on our current understanding of life history characteristics of this species, and its population trends. In general, island species are believed to exhibit a shift toward slower life history strategies in which reproduction is delayed, clutch size is reduced, parental care is extended, and adults have a relatively long lifespan (Cody 1966, MacArthur and Wilson 1967). Information on breeding behavior comes from Amidon (2000), though sample size is limited. Clutch size is one to two eggs, and the incubation and nestling periods are 8-12 days and 10-12 days, respectively, based on observations from seven nests. Age at first breeding is unknown, as is the length of the breeding season. It is likely the Rota bridled white-eye has a high potential for population growth for an island species if it has an extended breeding season and has multiple clutches per year, but this information is currently unknown. Population trends over the past 20 years, as described in Camp *et al.* (2014), show high variability and wide confidence intervals, and as a result the trend of growth or decline is difficult to detect. The maximum average population estimate from these surveys was approximately 14,000 birds; thus the targets in Downlisting Criterion 1 incorporate a statistically positive growth rate approaching this population level, and the targets in Delisting Criterion 1 either reach this population level or provide redundancy through the establishment of a second self-sustaining population on another island. The difference in duration between Downlisting Criterion 1 and Delisting Criterion 1 reflects the need for greater statistical confidence about the population trend to support the conclusion that delisting is appropriate.

According to the most recent 5-year review (USFWS 2014), ongoing threats to the nasa Luta include habitat loss and degradation, the risk of accidental introduction of new predators (brown tree snakes), and susceptibility of small populations to random catastrophic events. In addition, threats for which there is insufficient data to evaluate current status include predation by introduced rats and drongos, avian disease, and pesticide impacts. The recovery criteria address these threats to this species. Population size and trend sufficient to meet Downlisting Criterion 1 and Delisting Criterion 1 would protect the species from impacts related to small population size (Factor E), such as vulnerability to stochastic events and loss of genetic diversity. Protection and restoration of suitable habitat sufficient to meet Downlisting Criterion 2 and Delisting Criterion 2 would counter threats from habitat loss and degradation (Factor A), allowing the habitat to support a population that can sustain the ecological, morphological, behavioral, and genetic diversity of the species. Effective management of other threats from existing introduced predators (Factor C), risk of brown tree snake introduction (Factor C), disease (Factor C), and pesticides (Factor E) that minimizes mortality and meets population targets would meet Downlisting Criterion 3 and Delisting Criterion 3. Preventing brown tree snake introduction is particularly critical to the species, given the devastating effect the snakes have already had on the Guam avifauna, and establishment of a population on another island as indicated in Delisting Criterion 1 would increase the security of the species against such an event.

The Service uses the conservation biology principles of resiliency, representation, and redundancy (Shaffer and Stein 2000) as a lens to evaluate current and future condition of species. The amended recovery criteria for nasa Luta will allow meeting recovery goals by: (1) ensuring the ecological, morphological, behavioral, and genetic diversity of the species is conserved within its current range (representation); (2) managing for stable or increasing populations with adequate reproduction and recruitment (resiliency); and (3) recommending assisted colonization to at least one additional island (redundancy). The recovery criteria are objective and measurable. Information is accurate, unbiased, and based upon the best known data at this time. Information sources include but are not limited to the most recent 5-year review (USFWS 2014), and expert opinion.

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