

5-YEAR REVIEW

Short Form Summary

Species Reviewed: *Zosterops rotensis* (Rota white-eye; Rota bridled white-eye)

Current Classification: Endangered

Federal Register Notice announcing initiation of this review:

[USFWS] U.S. Fish and Wildlife Service. 2013. Endangered and Threatened Wildlife and Plants; Initiation of 5-Year Status Reviews of 44 Species in Oregon, Hawaii, Guam, and the Northern Mariana Islands. Federal Register 78:8185-8187.

Lead Region/Field Office:

Region 1/Pacific Islands Fish and Wildlife Office (PIFWO), Honolulu, Hawaii

Name of Reviewer:

Julia Boland, Wildlife Biologist, PIFWO

Marie Brueggemann, Acting Recovery Program Lead, PIFWO

Kristi Young, Programmatic Deputy Field Supervisor, PIFWO

Methodology used to complete this 5-year review:

This review was conducted by staff of PIFWO, U.S. Fish and Wildlife Service (USFWS). The review was based on current, available information since the last 5-year review for the Rota white-eye (USFWS 2010). The evaluation by Julia Boland, Fish and Wildlife Biologist, was reviewed by Acting Recovery Program Lead. It was subsequently reviewed and approved by the Programmatic Deputy Field Supervisor.

Background:

For information regarding the species listing history and other facts, please refer to the Fish and Wildlife Service's Environmental Conservation On-line System (ECOS) database for threatened and endangered species (http://ecos.fws.gov/tess_public).

Review Analysis:

Please refer to the to the final listing rule for the Rota white-eye published in January 2004 (available at http://ecos.fws.gov/docs/federal_register/fr4219.pdf), the previous 5-year review published in August 2010 (available at http://ecos.fws.gov/docs/five_year_review/doc3342.pdf) and the Recovery Plan published in October 2007 (available at http://ecos.fws.gov/docs/recovery_plan/071019.pdf) for a complete discussion of the species' status (including biology and habitat), threats, and management efforts. No significant new information regarding the biological status has come to light since listing to warrant a change in the federal listing status of the Rota white-eye.

New status information:

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 8741-18,487 and 5620-20,961, respectively) suggesting more research is needed to understand the status of this population and whether it remains a conservation concern.

Occupancy models and current distribution patterns indicated that Rota white-eyes are restricted to a small area of forest (approximately 300 hectares [741 acres]) at elevations above 150 meters (492 feet) (Zarones *et al.* 2013; Camp *et al.* 2014). Zarones *et al.* (2013) documented greater abundance of Rota white-eyes in wetter forests with more dense foliage and higher stem density. Some studies suggest that changes in the distribution of the Rota white-eye may be due to a decrease in suitable habitat as a result of changes in forest structure (Amidon 2000; Zarones *et al.* 2013).

Table 1. Abundance estimates of Rota white-eyes from point-transect distance sampling surveys (also called variable circular plot sampling; Camp *et al.* 2014).

| Year | Population estimate (95% CI) |
|------|---------------------------------|
| 1982 | 14,963 (8,741–18,487) |
| 1987 | 7,885 (3,766–10,559) |
| 1994 | 4,789 (2,420–6,615) |
| 1995 | 2,015 (0–4,003) |
| 1998 | 2,898 (747–4,654) |
| 2003 | 6,591 (2,076–11,554) |
| 2006 | 9,730 (3,917–14,078) |
| 2012 | 14,384 (5,620–20,961) |

New management actions:

- Surveys / inventories – A range-wide survey using point-transect distance sampling took place in 2012 (Camp *et al.* 2014).
- Predator / herbivory monitoring and control – Some efforts for brown treesnake interdiction were reinstated on Rota in 2011 (J. Boland, USFWS, pers. comm. 2014).

Synthesis:

Point-transect distance sampling surveys conducted in 2012 suggest the abundance of Rota white-eyes may have increased to levels not seen since 1982 (Camp *et al.* 2014). However, estimate precision is low and additional research is needed to determine whether the Rota white-eye population has recovered. There has been little progress toward determining threats to the species, and research is still needed to determine what factors are contributing to apparent fluctuations in population abundance. Based on these results, Rota white-eye still warrants listing as endangered.

Recommendations for Future Actions:

- Population viability monitoring and analysis – Continue population monitoring to establish greater confidence in abundance estimates

- Predator / herbivory monitoring and control – Continue and expand brown treesnake interdiction on Rota
- Population biology research
 - Continue and expand threat assessments for the Rota white-eye to determine mortality factors
 - Continue and expand research into population dynamics to provide information on nest success and survival.
- Habitat and natural process management and restoration – Restore and protect native forest habitat throughout the historic range of the Rota white-eye.

Table 2. Status and trends of Rota white-eye from listing through current 5-year review. Abundance estimates and 95% confidence intervals from Camp et al. (2014).

| Date | Abundance estimate (95% CI) | Downlisting Criteria Identified in Recovery Plan | Downlisting Criteria Completed? |
|---|---|---|---|
| 2004 (listing); 2006 (critical habitat); 2007 (recovery plan); 2010 (5-year review); 2012 (most current survey) | 6,591 (2,076-11,554) ¹ ; 9,730 (3,917-14,078); No estimate; No estimate; 14,384 (5,620-20,961) | Restore population to 10,000 individuals | No |
| | | Reduce decline of habitat and restore enough habitat to sustain a population of at least 10,000 individuals | Partially; critical habitat designated in 2006 throughout its range |
| | | Assess impact of black drongos and rats and implement control of these species if needed | No |
| | | Implement measures to prevent brown treesnake and other threats | Partially; brown treesnake interdiction efforts on Guam, Saipan, and Rota |

¹ Estimate from 2003 surveys

Table 3. Threats to Rota white-eye and ongoing conservation efforts.

| Threat | Listing Factor | Current Status | Conservation/ Management Efforts |
|---|----------------|-------------------|--|
| Habitat loss and degradation | A | ongoing | Partially; federally designated critical habitat throughout it's range in 2006 |
| Predation by introduced rats, black drongos, and other predators | C | insufficient data | No |
| Accidental introduction of new predators, such as brown treesnakes | C | ongoing | Partially; brown treesnake interdiction efforts on Guam, Rota, and Saipan |
| Avian disease | C | insufficient data | No |
| Pesticides | E | insufficient data | No |
| Susceptibility of single small population to random catastrophic events | E | ongoing | No |

References:

See previous 5-year review for a full list of references. Only references for new information are provided below.

Amidon, F.A. 2000. Habitat relationships and life history of the Rota bridled white-eye (*Zosterops rotensis*). Thesis, Virginia Polytechnic Institute and State University, Blacksburg, Virginia. 134 pages.

Camp, R.J., K.W. Brinck, P.M. Gorresen, F.A. Amidon, P.M. Radley, S.P. Berkowitz, and P.C. Banko. 2014. Status of forest birds on Rota, Mariana Islands. Technical Report HCSU-048. Hawaii Cooperative Studies Unit. University of Hawaii at Hilo. Hilo, Hawaii. 105 pages.

Zarones, L. M.R. Colon, J.C. Ha, and R.R. Ha. 2013. Effects of foliage invertebrate availability and forest structure on the abundance of the critically endangered Rota white-eye *Zosterops rotensis* in Rota, Mariana Islands. Bird Conservation International.

Personal communications:

Boland, Julia. 2014. Wildlife biologist, Pacific Islands Fish and Wildlife Office, U.S. Fish and Wildlife Service. Notes within draft Rota white-eye 5-year review, dated July 29, 2014. Subject: Brown treesnake control on Rota.

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(Rota white-eye)

Pre-1996 DPS listing still considered a listable entity? N/A

Recommendation resulting from the 5-year review:

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- Delisting
 - Reclassify from Endangered to Threatened status
 - Reclassify from Threatened to Endangered status
 - No Change in listing status

for **Field Supervisor, Pacific Islands Fish and Wildlife Office**

Maria M. Bugmann

Date 2014-08-12