U.S. FISH AND WILDLIFE SERVICE
SPECIES ASSESSMENT
AND LISTING PRIORITY ASSIGNMENT FORM

SCIENTIFIC NAME: *Zosterops luteirostris*

COMMON NAME: Gizo white-eye

HQ CONTACT: Elizabeth Maclin, Chief, Branch of Delisting and Foreign Species, 703–358–2646, elizabeth_maclin@fws.gov.

DATE INFORMATION CURRENT AS OF: July 2021

STATUS/ACTION

___Species petitioned for listing which we have determined is not a listable entity

___ Species petitioned for listing which we have determined does not warrant listing (does not meet the definition of a threatened or endangered species)

___Non-listed species for which we have not received a petition but for which we have undertaken a species status assessment on our own initiative and which we have determined does not warrant listing (does not meet the definition of a threatened or endangered species)

___Listed species petitioned for delisting which we have determined does not warrant delisting

___ Listed species petitioned for downlisting which we have determined does not warrant downlisting

___ Listed species petitioned for uplisting for which we have made a warranted-but-precluded finding for uplisting (this is part of the annual resubmitted-petition finding)

___ Listed species petitioned for uplisting which we have determined does not warrant uplisting

___ New candidate
_X_ Continuing candidate
Date when the species first became a candidate (as currently defined): May 21, 2004

___ Listing priority number change
Former LPN: ___
New LPN: ___

___ Candidate removal: Former LPN: ___
___ A – Taxon does not meet the Act's definition of "endangered species" or "threatened species" because it is more abundant or widespread than previously believed or

not subject to the degree of threats sufficient to warrant issuance of a proposed listing or continuance of candidate status.

___U – Taxon does not meet the Act's definition of "endangered species" or "threatened species" because it is not subject to the degree of threats sufficient to warrant issuance of a proposed listing or continuance of candidate status due, in part or totally, to conservation efforts that remove or reduce the threats to the species.

___ N – Taxon does not meet the Act's definition of "species."

___ M – Taxon mistakenly included in past notice of review.

___ X – Taxon believed to be extinct.

Petition Information:

___ Non-petitioned

_X_ Petitioned; Date petition received: November 28, 1980

90-day substantial finding FR publication date: May 12, 1981 (46 FR 26464)

12-month warranted but precluded finding FR publication date: May 21, 2004 (69 FR 29353)

FOR PETITIONED CANDIDATE SPECIES:

A. Is listing warranted? Yes
B. To date, has publication of a proposal to list been precluded by other higher priority listing actions? Yes
C. Why is listing precluded at this time? Higher-priority listing actions—including court-approved settlements, and court-ordered and statutory deadlines, for petition findings and listing determinations—continue to preclude the proposed and final listing rules for this species. We continue to monitor populations and, if necessary, will change the status of the species or implement an emergency listing. The "Progress on Revising the Lists" section of the current CNOR (https://endangered.fws.gov/) provides information on listing actions taken during the last 12 months.

PREVIOUS FEDERAL ACTIONS:

On November 28, 1980, we received a petition from the International Council for Bird Preservation to list 79 bird species, of which 60 were foreign species and 19 were occurring on U.S. territory, including the Gizo white-eye (*Zosterops luteirostris*), as endangered or threatened species under the Act. On May 12, 1981, we published in the Federal Register (46 FR 26464) a 90-day finding in which we announced that the petition contained substantial information indicating that listing may be warranted for 77 of the 79 bird species, including the Gizo white-eye. This document constitutes our 12-month finding on the November 28, 1980, petition to list the Gizo white-eye under the Act.

[ANIMAL GROUP AND FAMILY/PLANT GROUP, ORDER AND FAMILY]: Birds, White-

eyes (Aves: Zosteropidae)

DISTINCT POPULATION SEGMENT (DPS)
N/A

BIOLOGICAL INFORMATION

To assess Gizo white-eye viability, we followed the species status assessment (SSA) framework and used the three conservation biology principles of resiliency, redundancy, and representation (Shaffer and Stein 2000, pp. 306–310). Briefly, resiliency supports the ability of the species to withstand environmental and demographic stochasticity (for example, wet or dry, warm or cold years, variation in demographic rates), redundancy supports the ability of the species to withstand catastrophic events (for example, droughts, large pollution events), and representation supports the ability of the species to adapt to both near-term and long-term changes in its physical and biological environment (for example, climate change, disease). A species with a high degree of resiliency, representation, and redundancy is better able to adapt to novel changes and to tolerate environmental stochasticity and catastrophes. In general, species viability will increase with increases in resiliency, redundancy, and representation (Smith et al. 2018, p. 306). Using these principles, we identified the species' ecological requirements for survival and reproduction at the individual, population, and species levels, and described the beneficial and risk factors influencing the species' viability.

The SSA process can be categorized into three sequential stages. During the first stage, we evaluated the species' needs. The next stage involved an assessment of the historical and current condition of the species' demographics and habitat characteristics, including an explanation of how the species arrived at its current condition (i.e., how threats and conservation actions have influenced the species). The final stage of the SSA involved assessing the species' plausible range of future responses to positive and negative environmental and anthropogenic influences. This process used the best available information to characterize viability as the ability of a species to sustain populations in the wild over time. We use this information to inform our regulatory decision.

Species Description
The Gizo white-eye is a 12-centimeter (4.7-inch) tall passerine (perching) bird described as "warbler-like" (BLI 2016, unpaginated; Dutson 2011, p. 403). Its physical characteristics include silvery-white eye rings with dark-olive upper parts, and its underparts are bright lemon yellow (BLI 2017, unpaginated; Dutson 2011, p. 403). The species has an orange-yellow bill and legs (BLI 2017, unpaginated; Dutson 2011, p. 403).

Figure 1. Image of Gizo white-eye (Macaulay Library 2021, unpaginated. Photo Credit, John C. Mittermeier)

The Gizo white-eye (*Zosterops luteirostris*) is a bird in the Zosteropidae family. It is one of several island-endemic *Zosterops* in Melanesia (Dutson 2011, pp. 186–187). Through evolution, white-eyes of the genus *Zosterops* have radiated from a single ancestral species to a multitude of new forms, especially in the island archipelagos of Wallacea and the Pacific, with the Solomon Islands alone containing 14 taxa classified as 9 species (reviewed by Dutson 2008, p. 698). The Gizo white-eye has been recognized as a full species within a multispecies genus since its discovery in 1904 (Dutson 2011, pp. 186–187; Murphy 1929, p. 9; Rothschild and Hartert 1905, p. 266); therefore, we consider it a valid taxon for listing under the ESA. Other common names include Gononga white-eye, splendid white-eye, and yellow-billed white eye (BLI 2016, unpaginated).

Habitat/Life History

Little information is available about this species and its habitat. It is locally common in old-growth forest patches and less common elsewhere (BLI 2017, unpaginated; Dutson 2011, p. 186), although very little old growth forest is left on Ghizo Island (Buckingham *et al.* 1995 pp. 23). The species has been observed in a variety of habitats on the island, but it is unknown whether sustainable populations can exist outside of forested habitats (Buckingham *et al.* 1995 pp. 18, 23; Dutson *pers. obs.* 1998, Iles *verbally* 1998, Dutson 2011 as cited in BLI 2016, unpaginated).

The International Union for Conservation of Nature's (IUCN) Red List classifies this species as "Endangered", with a population trend of "Decreasing" (BLI 2016, unpaginated). It is not listed in any Appendices under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES 2019, unpaginated), as the species is not found in international trade.

Historical and Current Range/Distribution

The Gizo white-eye is endemic to Ghizo Island, Solomon Islands. Ghizo Island is 11 kilometers

(7 miles) long and 5 kilometers (3 miles) wide.

Ghizo is a densely populated island in the Solomon Islands in the South Pacific Ocean, east of Papua New Guinea (UN-Habitat 2012, pp. 7, 9). As of 2012, the human population on the Island was 7,177 and growing rapidly (UN-Habitat 2012, p. 7). We were unable to find a current population number. The total range of the Gizo white-eye is estimated to be fewer than 35 square kilometers [km^2; 13.5 square miles (mi^2); BLI2016, pp. 2, 9], of which less than 1 km^2 (0.4 mi^2) is old-growth forest (BLI 2016, unpaginated), which the species seems to prefer (BLI2017, unpaginated; Dutson 2011, p. 186).

Population and Special Needs

The Gizo white-eye needs old-growth forest patches (BLI 2017, unpaginated; Dutson 2011, p. 186). Within these patches, the species has been observed in forest edge, regrowth and mature secondary forest (BLI 2017, unpaginated). It is unknown whether sustainable populations can exist outside of forested habitats (Buckingham *et al.* 1995 pp. 18, 23; Dutson *pers. obs.* 1998, Iles *verbally* 1998, Dutson 2011 as cited in BLI 2016, unpaginated).

Limited information is available about this species and its population needs. To increase redundancy and representation, this species would benefit from increased suitable habitat for breeding and foraging to increase its population numbers.

SUMMARY OF BIOLOGICAL INFORMATION

The Gizo white-eye is a passerine (perching) bird described as “warbler-like”. It is endemic to the small island of Ghizo in the Solomon Islands in the South Pacific Ocean, east of Papua New Guinea. Population size of the Gizo white-eye is approximately 250 and 999 mature individuals in an estimated area of 35 square kilometers (km2, square miles (14 mi2)). Within this area, the Gizo white-eye is found in old-growth forest patches that account for approximately 1 km2 (0.39 mi2) of Ghizo Island. It is unknown whether sustainable populations can exist outside of forested habitats.

FACTORS INFLUENCING THE STATUS

The Act directs us to determine whether any species is an endangered species or a threatened species because of any factors (or threats) affecting its continued existence (i.e., whether it meets the definition of a threatened species or an endangered species). We use the term “threat” to refer in general to actions or conditions that are known to or are reasonably likely to negatively affect individuals of a species. The term “threat” includes actions or conditions that have a direct impact on individuals, as well as those that affect individuals through alteration of their habitat or required resources. The term “threat” may encompass—either together or separately—the source of the action or condition or the action or condition itself.

However, the mere identification of any threat(s) does not necessarily mean that the species meets the statutory definition of an “endangered species” or a “threatened species.” In

determining whether a species meets either definition, we must evaluate all identified threats by considering the expected response by the species, and the effects of the threats—in light of those actions and conditions that will ameliorate the threats—on an individual, population, and species level. We evaluate each threat and its expected effects on the species, then analyze the cumulative effect of all of the threats on the species as a whole. We also consider the cumulative effect of the threats in light of those actions and conditions that will have positive effects on the species—such as any existing regulatory mechanisms or conservation efforts. The Secretary determines whether the species meets the definition of an "endangered species" or a "threatened species" only after conducting this cumulative analysis and describing the expected effect on the species now and in the foreseeable future.

The Act does not define the term "foreseeable future," which appears in the statutory definition of "threatened species." Our implementing regulations at 50 CFR 424.11(d) set forth a framework for evaluating the foreseeable future on a case-by-case basis. The term foreseeable future extends only so far into the future as the Services can reasonably determine that both the future threats and the species' responses to those threats are likely. In other words, the foreseeable future is the period of time in which we can make reliable predictions. "Reliable" does not mean "certain"; it means sufficient to provide a reasonable degree of confidence in the prediction. Thus, a prediction is reliable if it is reasonable to depend on it when making decisions.

It is not always possible or necessary to define foreseeable future as a particular number of years. Analysis of the foreseeable future uses the best scientific and commercial data available and should consider the timeframes applicable to the relevant threats and to the species' likely responses to those threats in view of its life-history characteristics. Data that are typically relevant to assessing the species' biological response include species-specific factors such as lifespan, reproductive rates or productivity, certain behaviors, and other demographic factors.

Threats

~~A high number of native bird extinctions have occurred in the Pacific Islands with 23 extinctions this century (Johnson and Stattersfield 2008, p. 169). The three main causes of these extinctions are: (1) the introduction of non-native predator species, such as cats, (2) direct persecution by humans, and (3) habitat destruction, especially in forested areas (Johnson and Stattersfield 2008, p. 170).~~

A primary threat to the species is because of habitat loss (BLI 2016, unpaginated). The dense human population and prolific human growth on the Solomon Islands, mainly in the form of temporary housing (UN-Habitat 2012, p. 16) contributes to the loss of habitat for the species. Gizo—a town on Ghizo Island and the capital of Solomon Islands Western Province— is the second largest urban center in the Solomon Islands and a trading center for its 7,177 residents, equaling 190 people per km^2 (73.4 people per mi^2; Tahu 2011, p. 21). Additionally, loss of forested areas from logging and conversion to agricultural uses reduces suitable habitat (BLI 2016, unpaginated). The old-growth forests and the less suitable secondary growth on Ghizo Island is under threat of deforestation for local use as timber, firewood, and gardens (BLI 2016,

unpaginated).

Ghizo Island is vulnerable to the effects of climate change and natural disasters because it has low topographic relief, consisting mostly of flat land 50 centimeters (20 inches) above sea level (Manele and Wein 2006, as cited in Tahu 2011, p. 13). Forested areas around Gizo that previously supported the species were degraded by the 2007 tsunami and were found less likely to support the species even five years later in 2012 (Filardi *in litt.* 2012 as cited in BLI2017, unpaginated). Future sea-level rise and an increase in storms could result in coastal flooding and erosion, saltwater intrusion, and damage to inland habitats (Tahu 2011, pp. 38, 70), all of which can threaten the Gizo white-eye because of its small population size on a small island.

Small populations of the Gizo white-eye are likely subject to both demographic and unpredictable environmental events that can contribute to extirpations. Small populations are generally at greater risk of extinction from habitat loss, predation, disease, loss of genetic diversity, and stochastic (random) environmental events (Davies *et al.* 2004, pp. 265–271) such as tsunamis. We considered specific stressors that may affect the small population size for Gizo white-eye and conclude that habitat loss and destruction, storm events, and climate change has the ability to exacerbate risks to this small population.

Conservation Measures

While there is a conservation plan that was developed to help conserve the marine ecosystem of Ghizo Island, we could not find any information on current conservation measures planned or implemented specifically for the Gizo white-eye.

Cumulative Effects

Interactions between small population size limited geographic range and continued habitat loss and degradation (due to logging and development), natural disasters, effects of climate change such as sea-level rise, and stressors associated with small, isolated populations (e.g., low genetic diversity) will lead to further declines of the Gizo white-eye throughout its range. After analyzing the factors that affect the species, we have determined that the interactions and combinations of factors decrease the viability of this species and further warrant listing.

CURRENT CONDITION

Resiliency: Population size of the Gizo white-eye is approximately 250 and 999 mature individuals based on a population density of 46 birds per km^2 (18 birds per mi^2), across an area of occurrence of 35 km^2 (14 mi^2; BLI 2016, unpaginated). Because the species is restricted a very small area dependent on old growth forests that are threatened by human actions and natural events, the species has low resiliency.

Redundancy: The small range of the Gizo white-eye results in low redundancy, as limitations in habitat availability preclude sustaining multiple populations.

Representation: The Gizo white-eye has a small range of occupancy and is known to occur in

old-growth forested patches. Because of the restricted range, the species likely has low representation. There is no information to date on genetic diversity of the species/populations.

FUTURE CONDITION

Condition of the Gizo white-eye is expected to decline in the future because habitat loss and degradation (due to logging and development), natural disasters, effects of climate change such as sea-level rise, and the stressors associated with small, isolated populations (e.g., low genetic diversity) will continue to limit the size of the population.

FINDING

Standard for Review

Section 4 of the Act (16 U.S.C. 1533) and its implementing regulations (50 CFR part 424) set forth the procedures for determining whether a species is an "endangered species" or a "threatened species." The Act defines an endangered species as a species that is "in danger of extinction throughout all or a significant portion of its range," and a threatened species as a species that is "likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." The Act requires that we determine whether any species is an "endangered species" or a "threatened species" because of any one or a combination of the following factors:

(A) The present or threatened destruction, modification, or curtailment of its habitat or range;
(B) Overutilization for commercial, recreational, scientific, or educational purposes;
(C) Disease or predation;
(D) The inadequacy of existing regulatory mechanisms; or
(E) Other natural or manmade factors affecting its continued existence.

These factors represent broad categories of natural or human-caused actions or conditions that could have an effect on a species' continued existence. In evaluating these actions and conditions, we look for those that may have a negative effect on individuals of the species, as well as other actions or conditions that may ameliorate any negative effects or may have positive effects.

Summary of Analysis

After evaluating threats to the species and assessing the cumulative effect of the threats under the section 4(a)(1) factors, we determine that the Gizo white-eye experiences habitat loss and degradation (due to logging and development), natural disasters, effects of climate change such as sea-level rise, and the stressors associated with small, isolated populations (e.g., low genetic diversity). Thus, after assessing the best available information, we conclude that Gizo white-eye (*Zosterops luteirostris*) is warranted for listing, but precluded by other higher priority actions.

RECOMMENDED CONSERVATION MEASURES

- Establish protected areas in mature forests on Ghizo Island – suitable habitat for the Gizo white-eye.
- Create a strict forest and Gizo white-eye management plan, including sustainable natural resource use, with the Solomon Islands government.
- Increase public accessibility of information about the importance of conserving Gizo white-eye habitat.
- Partner with residents and the public to help restore and protect local habitats, as well as report illegal activity.
- Acquire privately owned land through strategic land acquisition processes (including conservation concessions) in order to protect Gizo white-eye habitat.
- Partner with other organizations such as non-profits to generate further attention to the Gizo white-eye, their importance, and the dangers they face.
- Encourage further research/provide funding for academic research to study the Gizo white-eye.

LISTING PRIORITY

THREAT			
Magnitude	Immediacy	Taxonomy	Priority
High	**Imminent**	Monotypic genus	1
		Species	**2***
		Subspecies/population	3
	Non-imminent	Monotypic genus	4
		Species	5
		Subspecies/population	6
Moderate to Low	Imminent	Monotypic genus	7
		Species	8
		Subspecies/population	9
	Non-imminent	Monotypic genus	10
		Species	11
		Subspecies/population	12

Rationale for listing priority number:
In the previous assessment (81 FR 71457), the Gizo white-eye was assigned an LPN of 2. After reevaluating the available information, we find that no change in the LPN for this species is warranted.

The Gizo white-eye does not represent a monotypic genus. It faces threats that are high in magnitude due to declining suitable habitat and its small population size. The best available information indicates that forest clearing is occurring at a pace that is rapidly denuding its

habitat; secondary growth forest continues to be converted for agricultural purposes. Further, the human population on the small island is likely contributing to the loss of old-growth forest for local uses such as gardens and timber. The estimate of the Gizo white-eye population is believed to be between about 250 to 999 mature individuals, and its population trend is likely declining.

Ghizo Island is vulnerable to the effects of climate change and natural disasters (Manele and Wein 2006, as cited in Tahu 2011, p. 13). Sea-level rise and an increase in storms could result in coastal flooding and erosion, saltwater intrusion, and damage to inland habitats (Tahu 2011, pp. 38, 70); all of which can threaten the Gizo white-eye because of its small population size on a small island. Threats to the species are ongoing, high in magnitude, and imminent. Thus, based on the best available scientific and commercial information, the LPN remains a 2 for this species.

Magnitude: The magnitude of threats to the Gizo white-eye is high. The species has a small population within a very limited geographic range and available suitable habitat is declining. Loss of primary and secondary forest is ongoing. Effects from climate change including storm surge, coastal flooding and erosion, saltwater intrusion, and damage to coastal and inland vegetation (Tahu 2011, pp. 38, 70) also contribute to habitat loss.

Imminence: Threats associated with habitat loss (i.e., logging, conversion for agriculture, encroachment from human settlements, effects from climate change; Factor A) are currently affecting the species and are expected to continue in the future. Therefore, threats to Gizo white-eye are considered imminent.

Rationale for Change in Listing Priority Number
N/A

Is Emergency Listing Warranted?
No; There is currently no emergency posing a significant risk to the conservation of the Gizo white-eye.

DESCRIPTION OF MONITORING

The candidate notice of review (CNOR) and accompanying species assessment forms constitute the Service's system for monitoring and making annual findings on the statis of petitioned species under sections 4(b)(3)(c)(i) and 4(b)(3)(c)(ii) of the Act. We review all new information on candidate species as it becomes available, prepare annual species assessments that reflect monitoring and research results and any other new information.

We are unaware of any active monitoring for the Gizo white-eye.

COORDINATION WITH STATES

No countries provided information or comments on the species or latest assessment.
The range country, **Solomon Islands**, did not provide information or comments.

LITERATURE CITED

BLI (BirdLife International). (2017). Species factsheet: *Zosterops luteirostris*. Retrieved from http://www.birdlife.org. Accessed March 29, 2017.

BLI (BirdLife International). (2016). *Zosterops luteirostris. The IUCN Red List of Threatened Species* 2016: e.T22714185A94405293. Retrieved from: http://dx.doi.org/10.2305/IUCN.UK.2016-3.RLTS.T22714185A94405293.en. Accessed July 17, 2020.

Buckingham, D.L.; Dutson, G.C.L.; Newman, J.L. (1995). Birds of Manus, Kolombangara and Makira (San Cristobal) with notes on: mammals and records from other Solomon Islands. Unpubl. report, Cambridge Solomons Rainforest Project 1990

CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora). (2019). Appendices I, II and III, valid from 26 November 2019. Retrieved from: https://www.cites.org/eng/app/appendices.php. Accessed July 17, 2020.

Davies, K. F., Margules, C. R., & Lawrence, J. F. (2004). A synergistic effect puts rare, specialized species at greater risk of extinction. *Ecology*, *85*(1), 265-271.

Dutson, G. (2011). *Birds of Melanesia: Bismarcks, Solomons, Vanuatu and New Caledonia*. Bloomsbury Publishing.

Dutson, G. (2008). A new species of White-eye Zosterops and notes on other birds from Vanikoro, Solomon Islands. *Ibis*, *150*(4), 698-706.

Johnson, T. H., & Stattersfield, A. J. (2008). A global review of island endemic birds. *Ibis, 132*(2), 167-180. doi:10.1111/j.1474-919x.1990.tb01036.x

Macaulay Library. The Cornell Labe of Ornithology, Splendid White-eye. Image. Retrieved from https://macaulaylibrary.org/asset/181536161. Accessed June 28, 2021.

Murphy, R.C. (1929). Birds collected during the Whitney South Sea expedition. IX: Zosteropidae from the Solomon Islands. *American Museum Novitates 365*:1-11.

Rothschild, W., & Hartert, E. (1905). Further contributions to our knowledge of the Ornis of the Solomon Islands. *Novitates Zoologicae 12*:243-268.

Sherley, G. (2001). Bird conservation priorities and a draft avifauna conservation strategy for the Pacific Islands Region. South Pacific Regional Environment Program.

Tahu, M. (2011). *Climate Change, sea-level rise and coastal biodiversity of Ghizo Island*

(Western Solomon Islands). Master's thesis, The University of the South Pacific, 2011. (pp. 1-204). The University of the South Pacific.

UN-Habitat (United Nations Human Settlements Programme). (2012). Solomon Islands: Gizo Urban Profile. UN-Habitat Regional and Informal Offices, Nairobi, Kenya. 40pp.

Approve: _____ 2/16/22
Gary Frazer, Assistant Director for Ecological Services Date

Concur: _____ 03/31/2022
Director, U.S. Fish and Wildlife Service Date

Do not concur: _____
Director, Fish and Wildlife Service Date

Director's Remarks:

Date of annual review: July 2021
Conducted by: Branch of Delisting and Foreign Species