DRAFT ECONOMIC ANALYSIS OF CRITICAL HABITAT DESIGNATION FOR THE ROTA BRIDLED WHITE-EYE

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Acronyms and Abbreviations

Act	Endangered Species Act of 1973
APC	Area of Particular Concern
bbls	Barrels per day
CDBG	Community Development Block Grant
CFR	Code of Federal Regulations
CNMI	Commonwealth of the Northern Mariana Islands
Covenant	*Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America*
CRM	Coastal Resources Management
CRMO	CNMI Coastal Resources Management Office
DEQ	CNMI Division of Environmental Quality
DFW	CNMI Division of Fish and Wildlife
DHP	CNMI Division of Historic Preservation
DLNR	CNMI Department of Land and Natural Resources
DPL	CNMI Department of Public Lands
DPW	CNMI Department of Public Works
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FHA	Federal Highways Administration
FR	Federal Register
GBR	gross business revenues
GDP	gross domestic product
GIS	geographic information systems
ha	hectare
HCP	habitat conservation plan
HUD	U.S. Department of Housing and Urban Development
IEc	Industrial Economics, Incorporated
km	kilometers
Mcf	thousand cubic feet
MPLA	Marianas Public Lands Authority
MVA	Mariana Visitors Authority
NAICS	North American Industry Classification System

Acronyms and Abbreviations *(continued)*

NPS	National Park Service
NRHP	National Register of Historic Places
OMB	U.S. Office of Management and Budget
P.L.	Public Law (CNMI)
PV	present value
RFA	Regulatory Flexibility Act
SBA	Small Business Administration (U.S.)
SBREFA	Small Business Regulatory Enforcement Fairness Act
Secretary	Secretary of the Interior (U.S. Department of the Interior)
Service	U.S. Fish and Wildlife Service
U.S.C.	U.S. Code
USDA	U.S. Department of Agriculture

Executive Summary

I INTRODUCTION

The purpose of this report is to estimate the economic impacts of actions taken to protect the Federally listed Rota bridled white-eye (*Zosterops rotensis*) and its habitat. This report was prepared by Belt Collins Hawaii, Ltd., under contract to Industrial Economics, Incorporated (IEc), for the U.S. Fish and Wildlife Service's (Service) Division of Economics.

On September 14, 2005, the Service published a proposed critical habitat designation for the Rota bridled white-eye. The proposed critical habitat comprises 3,958 contiguous acres (1,602 hectares [ha]) in one unit on the island of Rota, the smallest of the three main islands that make up the Commonwealth of the Northern Mariana Islands (CNMI). The proposed critical habitat area, as highlighted in Figure ES-1, represents approximately 18 percent of the total area of Rota. Of the 3,958 acres (1,602 ha), approximately eight percent are privately owned land. The remaining 92 percent is public land, which was managed by the Marianas Public Lands Authority (MPLA) until its dissolution in February 2006, and now managed by the Department of Public Lands (DPL).

II. KEY FINDINGS

Potential economic impacts associated with Rota bridled white-eye conservation (the efforts to protect the Rota bridled white-eye and its habitat) are presented by activity in this analysis. The evaluated activities are:

- public land management activities,
- agricultural homestead development activities, and
- private development and tourism activities.

Costs for these three types of activities were estimated to determine total forecast costs associated with Rota bridled white-eye conservation. When evaluating agricultural homestead development activities, three different alternatives were identified. For this reason, this analysis summarizes total forecast economic costs for the following.

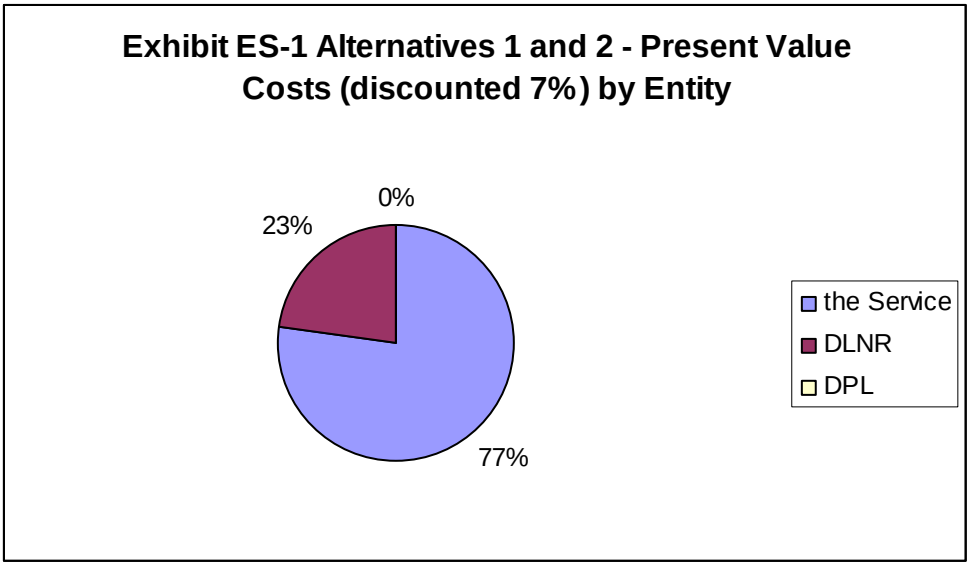
1. Alternative 1: The island-wide HCP, a public land management activity which considers multiple species and habitats including the Rota bridled white-eye, is developed and implemented (Section 3.1.4), and DPL proceeds with development of agricultural homesteads in Rota bridled white-eye critical habitat subject to the terms of the HCP. Specific information on what may constitute the terms of the HCP is unavailable.
2. Alternative 2: The island-wide HCP is not developed, but DPL prepares an HCP specifically for the agricultural homestead program in Rota bridled white-eye habitat.
3. Alternative 3: An HCP is not developed, DPL chooses to avoid development of agricultural homesteads in Rota bridled white-eye critical habitat, and a loss in land value within proposed critical habitat results.

The Service has begun the process of funding development of an island-wide HCP by the CNMI Department of Land and Natural Resources (DLNR). However, progress on funding this HCP has been stalled. Because of this, and because past habitat planning efforts have been subject to frequent change and none of the HCPs initiated on Rota over the past decade have been completed, this analysis assumes it is possible that Alternative 1 will not be carried out and the

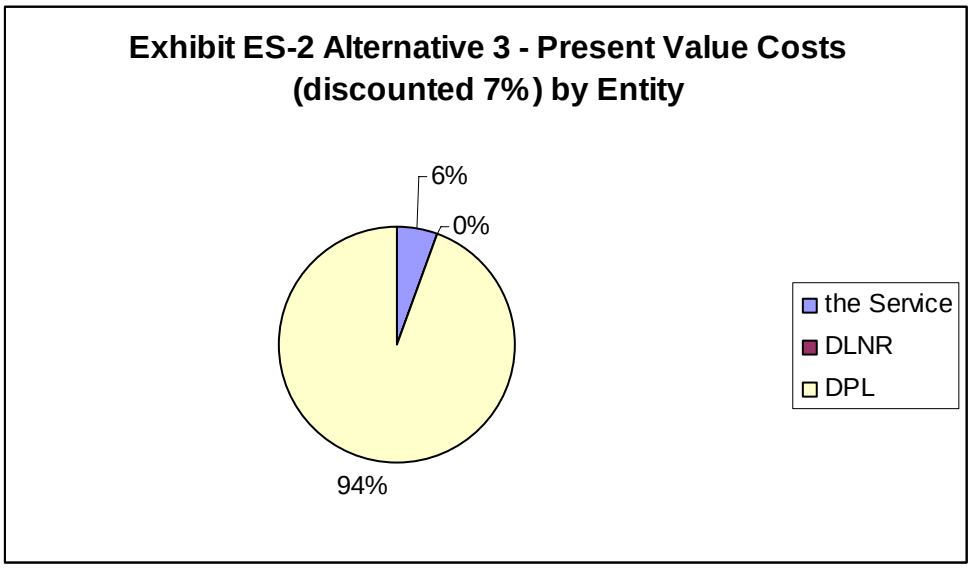
island-wide HCP may not be completed. Further, outside of species and habitat research and monitoring, it is unclear what types of conservation measures may be included in the HCP. Considering the uncertain future of the island-wide HCP, this analysis considers a second alternative, that the DLNR and DPL develop an HCP for the agricultural homestead program in Rota bridled white-eye habitat. This is a possible alternative because a similar HCP is being considered for the Mariana crow critical habitat. As with Alternative 1, specific information is not available for how agricultural development may be addressed in the HCP. This analysis therefore includes a third alternative that the developable land in Rota bridled white-eye critical habitat will not be used for development of agricultural homesteads, and that it therefore loses its development value.

Past costs associated with Rota bridled white-eye conservation activities within the proposed critical habitat since the species' listing in 2004 are estimated to be approximately $68,000 (in 2005 dollars); these costs include species and habitat research and planning efforts for a proposed island-wide Habitat Conservation Plan (HCP).

Under Alternatives 1 and 2, future costs would be expected to range from a present value of $806,000 to $830,000 or an annualized value of $76,000 to $79,000 over the 20-year forecast period, assuming a seven percent discount rate. These costs are for development of the HCP and for some implementation costs, such as additional species and habitat research and monitoring, in addition to existing ongoing Rota bridled white-eye conservation costs associated with species and habitat research. These impacts do not, however, capture the impacts of restrictions to agricultural development within the proposed critical habitat. Affected entities under Alternatives 1 and 2 are likely to be (1) the Service, and (2) the CNMI government, which is responsible for a population of 69,221 (2000 U.S. Census) and, in 2002, operated with expenditures of $212,089 and revenues of only $199, 713. The CNMI government departments affected by these alternatives are, for Alternative 1, the DLNR, and for Alternative 2, DLNR and DPL. Exhibit ES-1 illustrates the potential total cost (high-end) incurred by entity for Alternatives 1 and 2. Costs to the Service represent the largest percentage under these alternatives because the Service typically provides funding to CNMI specifically for habitat planning and conservation.



Under Alternative 3, future costs are expected to be a present value of $4,465,000 or an annualized value of $421,000 over the 20-year forecast period, assuming a seven percent discount rate. Approximately 94 percent of these costs are associated with the economic value of foregone future development of agricultural homesteads in proposed critical habitat; the remaining six percent is ongoing public land management activities, such as species and habitat research. Affected entities are likely to be (1) the Service, and (2) the CNMI government. The CNMI government department affected by these alternatives is the DPL (formerly the MPLA) which is tasked to manage public lands in the CNMI. The DPL is responsible for the homesteading program, which provides land to persons of Northern Marianas descent (an estimated population of 23,908 within the CNMI). Exhibit ES-2 illustrates the potential total cost (high-end) incurred by entity for Alternative 3.



The estimated economic impact of Alternatives 1 and 2 is less than that of Alternative 3. There are two major limitations to this assumption. First, Alternatives 1 and 2 do not capture all of the conservation measures that may be outlined in an HCP. Absent specific information on how the Service may consider mitigation associated with development of agricultural homesteads, the HCP implementation costs summarized in this analysis consider only the costs of conducting species and habitat monitoring and research. Second, costs associated with HCP development and implementation as estimated are real expenditures that will consume budgets of and funding to CNMI. Costs associated with precluding development of agricultural homesteads in Rota bridled white-eye critical habitat are losses of future benefits to persons of Northern Marianas descent, as provided by the DPL.

There is additional uncertainty associated with assumptions for future agricultural homesteads and land use restrictions in critical habitat. The total area within potential critical habitat that may be developed with agricultural homesteads in the future is unknown (this analysis assumes at the high end that all developable acres would otherwise be developed with agricultural homesteads). Land restrictions include a moratorium on agricultural homestead applications in place since 2002, which is not a specific result of Rota bridled white-eye conservation, but of the dwindling inventory of public land available on Rota.

This analysis also discusses the potential development of historic sites, the level of subsistence farming, and the likelihood of private development and tourism activities within the proposed critical habitat. Because no specific plans exist to develop historic sites within the proposed critical habitat, the level of subsistence farming is unknown within the area, and the likelihood of private development and substantial increases in tourism activities is low, no economic impacts are quantified for these activities.

Based on past experience with critical habitat for the Mariana crow on the island of Rota, stakeholders anticipate that the primary impact associated with critical habitat for the Rota bridled white-eye may be negative public sentiment. There are no Federally owned lands on Rota and the indigenous people have strong sentimental and cultural attachments to their land, typically opposing Federal involvement in land management. Anecdotal evidence indicates that the listing of the Mariana crow on Rota resulted in killings of the bird due to the public's disapproval of the Federal oversight of their land management activities. Government agencies and stakeholders on Rota therefore express that critical habitat designation for the Rota bridled white-eye may have adverse consequences on the survival of the species. If critical habitat is designated for the Rota bridled white-eye, the cumulative critical habitat area for the two species would represent approximately 43 percent of the total land area of Rota.

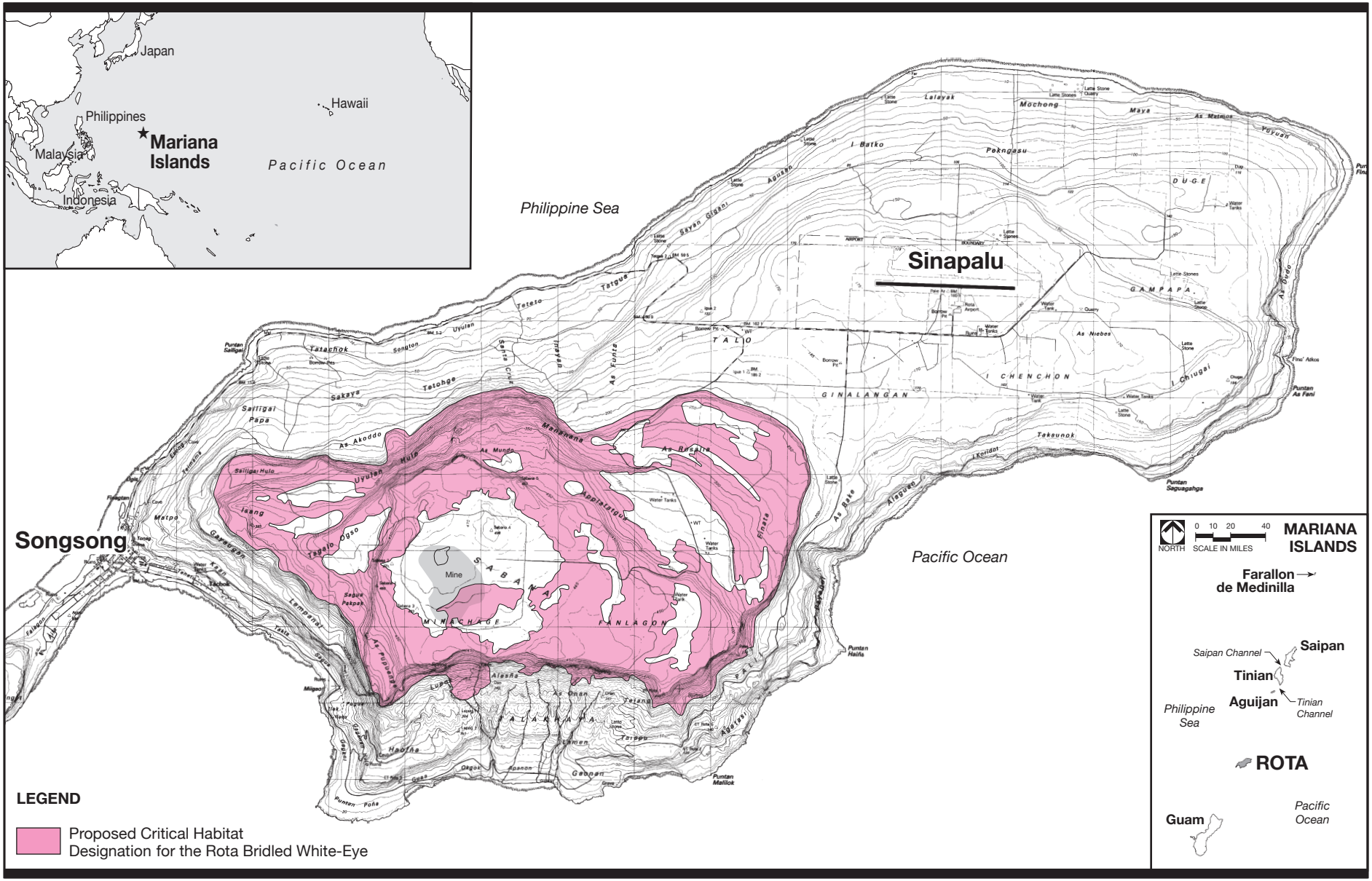


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Figure ES-1
PROPOSED CRITICAL HABITAT
FOR THE ROTA BRIDLED WHITE-EYE

III. FRAMEWORK FOR ANALYSIS

Section 4(b)(2) of the Endangered Species Act (Act) requires the Service to designate critical habitat on the basis of the best scientific data available, after taking into consideration the economic impact, and any other relevant impact, of specifying any particular area as critical habitat. The Service may exclude areas from critical habitat designation when the benefits of exclusion outweigh the benefits of including the areas within critical habitat, provided the exclusion will not result in extinction of the species.[1] In addition, this analysis provides information to allow the Service to address the requirements of Executive Orders 12866 and 13211, and the Regulatory Flexibility Act (RFA), as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA).[2] This report also complies with direction from the U.S. 10th Circuit Court of Appeals that, when deciding which areas to designate as critical habitat, the economic analysis informing that decision should include "co-extensive" effects.[3]

Executive Order 12866 directs Federal agencies to evaluate regulatory alternatives.[4] The Service delineated proposed critical habitat in only one unit. Because the unit is small and relatively homogenous in terms of biological features, land use, and ownership, this analysis does not identify impacts at a subunit level for all activities. The analysis of impacts to agricultural homestead development, however, represents 94 percent of the total forecast economic impacts under Alternative 3, the alternative with the greatest forecast costs. These impacts are expected to occur on specific tracts of land identified as "developable" within the proposed critical habitat. Figure ES-2 highlights developable areas, which represent potentially affected areas generating the greatest economic impacts in this analysis, within proposed critical habitat.

To comply with the 10th Circuit's direction to include all co-extensive effects, this analysis considers the potential economic impacts of Rota bridled white-eye conservation activities in potential critical habitat. It does so by taking into account the cost of conservation-related efforts that are likely to be associated with future economic activities that may adversely affect the habitat within the proposed boundaries. Actions undertaken to meet the requirements of other Federal, Commonwealth, and local laws and policies may afford protection to the Rota bridled white-eye and its habitat, and thus contribute to the efficacy of critical habitat-related conservation and recovery efforts. Thus, the impacts of these activities are relevant for understanding the full impact of the proposed designation.

This analysis considers both economic efficiency and distributional effects. In the case of habitat conservation, efficiency effects generally reflect the opportunity costs associated with the commitment of resources to comply with habitat protection efforts. This analysis also addresses how potential economic impacts are likely to be distributed (distributional effects), including the potential effects of conservation activities on small entities and the energy industry. This information can be used by decision-makers to assess whether the effects of the designation

1 16 U.S. Code (U.S.C.) §1533(b)(2).

2 Executive Order 12866, "Regulatory Planning and Review," September 30, 1993; Executive Order 13211, "Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use," May 18, 2001; 5. U.S.C. §§601 *et seq*; and Public Law No. 104-121.

3 In 2001, the U.S. 10th Circuit Court of Appeals instructed the Service to conduct a full analysis of all of the economic impacts of proposed critical habitat designation, regardless of whether those impacts are attributable co-extensively to other causes (*New Mexico Cattle Growers Ass'n v. U.S.F.W.S.*, 248 F.3d 1277 [10th Cir. 2001]).

4 U.S. Office of Management and Budget, "Circular A-4," September 17, 2003, p. 7.

might unduly burden a particular group or economic sector. Also, this analysis looks retrospectively at costs incurred since the date the species was listed and considers those costs that may occur after the designation is finalized. As implementation of conservation efforts for the Rota bridled white-eye is not anticipated to result in broader regional economic impacts, this analysis does not employ a regional impact model.

IV. BACKGROUND AND SOCIOECONOMIC OVERVIEW

Rota is the southernmost and third largest island in the CNMI (after Saipan and Tinian). It is approximately 33 square miles (85 square km) or 21,100 acres (8,550 ha). There are no Federally owned lands. Approximately 28 percent of Rota is privately owned, consisting of properties that have been deeded or are in the process of being deeded from the DPL to homestead recipients of Northern Marianas descent. The remaining 72 percent of the island is public land, which is managed by the DPL.

The *Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America* (Covenant), 48 U.S.C. §1801, reflects the importance of the land in the culture and traditions of the people of the Northern Mariana Islands. This Covenant recognizes "the importance of the ownership of land for the culture and traditions of the people of the Northern Mariana Islands, and in order to protect them against exploitation and to promote their economic advancement and self-sufficiency: (a) ...regulate the alienation of permanent and long-term interests in real property so as to restrict the acquisition of such interest to persons of Northern Mariana Islands descent; and (b) may regulate the extent to which a person may own or hold land which is not public land."

Approximately 69,221 reside in CNMI as of the 2000 U.S. Census, and approximately 34.5 percent, or 23,908, of these persons are of Northern Marianas descent. Rota residents make up approximately 4.7 percent of the CNMI population with a population of 3,283 persons. The two major economic activities on Rota are subsistence agriculture and tourism.

In 2000, the potential labor force (the population of individuals 16 years and older) numbered 2,209 on Rota. Of this total, 72 percent (1,591) were employed, 6.6 percent (145) were unemployed, and 21.4 percent (473) were not seeking employment. The U.S. Census indicates that approximately eight percent of the employed work force also engages in subsistence activities and 2.6 percent of the potential labor force engages exclusively in subsistence activities.[5] On Rota, 21 percent of the employed civilians hold government paid positions.

V. RESULTS OF THE ANALYSIS

ECONOMIC EFFICIENCY EFFECTS

Table ES-1 summarizes the potential economic impacts associated with the proposed critical habitat designation for the Rota bridled white-eye, by activity. Economic impacts represent those associated with the entire unit of 3,958 acres (1,602 ha) proposed for critical habitat designation on Rota, as locations of specific activities were generally not yet available or the activity applied to the entire area (e.g., island-wide HCP). In the case of agricultural homestead activities, the locations amenable to development of future agricultural homesteads are highlighted in Figure

[5] U.S. Census Bureau. "Commonwealth of the Northern Mariana Islands: 2000 Social, Economic, and Housing Characteristics." Issued June 2003. http://www.census.gov/prod/cen2000/phc-4-cnmi.pdf, accessed March 9, 2006.

ES-2. These areas amenable to development are defined in the analysis (Section 3.2) as public lands with less than 10 percent slope unconstrained by other planned uses; these lands constitute 1,040 acres (420 ha), or approximately 26 percent of the proposed critical habitat.

The total estimated past cost of Rota bridled white-eye conservation activities is $68,000 and is attributable solely to public land management activities (species and habitat research and monitoring). Future costs vary by alternative and range from a low of $806,000 under Alternatives 1 and 2 to a high of $4,465,000 under Alternative 3 with an annualized value of $76,000 to $421,000 over the 20-year forecast period; these costs describe impacts to public land management and agricultural homestead developments.

Public Land Management Activities. This analysis considers land management activities that contribute to the conservation of the Rota bridled white-eye within the proposed critical habitat area. These activities include: species and habitat research, subsistence farming, public access improvements to historic sites, and a proposed island-wide HCP.

Alternatives 1 and 2 of this analysis incorporate the costs of HCP development and some implementation (e.g., species and habitat research and monitoring) in addition to existing ongoing research and monitoring. Future costs are presumed to be species and habitat research and monitoring (approximately $265,000 in present value terms using a seven percent discount rate) and the proposed island-wide HCP (approximately $541,000 to $565,000 in present value terms using a seven percent discount rate). Therefore, total estimated future costs for public land management activities are approximately $806,000 to $830,000 in present value terms (using a seven percent discount rate). This represents a minimal level of implementation effort over the 20-year period, as specific activities associated with HCP implementation have not been determined. Past costs of public land management since the final rule listing the species as endangered in 2004 are $68,000. Entities expected to bear these conservation costs are the Service and the CNMI DLNR.

This analysis does not quantify impacts to subsistence farming and development of historic sites within the proposed critical habitat area. Information is not available regarding the extent and productivity of subsistence farming within the potential critical habitat. It is therefore unclear whether this type of activity represents a conservation threat to the Rota bridled white-eye. For these reasons, economic impacts on subsistence farming activities are not quantified. The CNMI Department of Historic Preservation (DHP) periodically develops historic sites on CNMI islands to improve public access to culturally significant sites. This may involve, for example, clearing roads to open access to a site and installing signage. While this is discussed qualitatively in this analysis as a potential activity, no plans currently exist to open specific areas in the proposed critical habitat on Rota and no other information has been provided to suggest costs for historic site development associated with Rota bridled white-eye conservation would occur over the 20-year analysis period.

Agricultural Homestead Development Activities. The DPL (formerly MPLA) distributes 2.5-acre (1-ha) agricultural homestead areas to persons of Northern Marianas descent for agricultural use; these homesteads are in demand on Rota as evidenced by a backlog of over 200 applicants awaiting a lot. Since October 2002, MPLA placed a moratorium on new applications for agricultural homesteads on the island of Rota due to the dwindling inventory of public land.

MPLA had not proceeded in planning agricultural homesteads in proposed critical habitat, so specific areas within proposed critical habitat likely to be considered for development of

agricultural homesteads have not been determined. Absent specific information on the land area that may be developed, and this analysis defines "developable land" within proposed critical habitat as public land with a slope less of than 10 percent as described in Section 3.2, and highlighted in Figure ES-2.

Because information is not available regarding what mitigation might be requested in an HCP for the development of agricultural homesteads, Alternative 1 does not include impacts to restrictions on this activity. Alternative 2 assumes that costs associated with this activity would be similar to those under the island-wide HCP (approximately $541,000 to $565,000 in present value terms using a seven percent discount rate) and also does not include impacts to restrictions on agricultural homestead development. Consequently, Alternative 3 assumes that all developable acres within proposed critical habitat will not be developed and therefore will lose their development value. The total decrease in value associated with the lost option of development is approximately $4,200,000 or $396,000 annualized over 20 years. This represents the full value of these land parcels as this analysis assumes that conservation land on Rota has negligible value, and therefore the full value of the land is associated with its potential for development.

Private Development and Tourism Activities. Rota and CNMI government representatives have identified eco-tourism as a market to spur economic development on Rota, but detailed information on plans or efforts leading to this objective is not available. Considering CNMI's land ownership requirements, need for substantial investment from outside investors, and lack of these types of investors to date, the likelihood of eco-tourism becoming a reality appears low. Further, the number of hotel rooms on the island has actually decreased in recent years. No specific private development and tourism activities which could be affected by the proposed Rota bridled white-eye critical habitat designation were identified during stakeholder meetings. Therefore, while the potential for proposed critical habitat to affect private development and tourism was considered in this analysis, costs associated with this activity were not quantified.

DISTRIBUTIONAL EFFECTS

This analysis also considers whether a particular group or economic sector bears an undue proportion of the impacts. Findings are summarized below.

Small Business Impacts. The estimated impacts of Rota bridled white-eye conservation in this analysis are anticipated to be borne by two entities: 1) the CNMI government (including DLNR and DPL), which is not defined as a small entity with 69,221 constituents, and 2) the Service, an agency of the Federal government.

Energy Impacts. Energy-related activities, such as those addressed under Executive Order 13211, are not present within the proposed critical habitat and are therefore not affected by the conservation efforts for the Rota bridled white-eye or its habitat.

Table ES-1. Summary of Economic Impacts

		Affected Entity	Past Costs	Future Quantified Costs by Activity				
				Undiscounted	PV at 7%	Annualized at 7%	PV at 3%	Annualized at 3%
Public Land Management Activities	Species and Habitat Research and Monitoring	Service	$51,000	$500,000	$265,000	$25,000	$372,000	$25,000
		DLNR	None	None	None	None	None	None
		DPL	None	None	None	None	None	None
		Rota Municipality	None	None	None	None	None	None
		Investors/ Business Owners	None	None	None	None	None	None
	SUBTOTAL		$51,000	$500,000	$265,000	$25,000	$372,000	$25,000
	Island-wide HCP	Service	None	$392,000 to $417,000	$354,000 to $377,000	$33,000 to $36,000	$375,000 to $399,000	$25,000 to $27,000
		DLNR	$17,000	$409,000 to $411,000	$187,000 to $188,000	$18,000	$287,000 to $288,000	$19,000
		DPL	None	None	None	None	None	None
		Rota Municipality	None	None	None	None	None	None
		Investors/ Business Owners	None	None	None	None	None	None
	SUBTOTAL		$17,000	$801,000 to $828,000	$541,000 to $565,000	$51,000 to $54,000	$662,000 to $687,000	$44,000 to $46,000
Agricultural Homestead Development Activities	Development with island-wide HCP	Service	None	None	None	None	None	None
		DLNR	None	None	None	None	None	None
		DPL	None	None	None	None	None	None
		Rota Municipality	None	None	None	None	None	None
		Investors/ Business Owners	None	None	None	None	None	None
	SUBTOTAL		None	None	None	None	None	None
	Ag. Homestead Development with Homestead HCP	Service	None	$392,000 to $417,000	$354,000 to $377,000	$33,000 to $36,000	$375,000 to $399,000	$25,000 to $27,000
		DLNR	None	$409,000 to $411,000	$187,000 to $188,000	$18,000	$287,000 to $288,000	$19,000
		DPL	None	None	None	None	None	None
		Rota Municipality	None	None	None	None	None	None
		Investors/ Business Owners	None	None	None	None	None	None
	SUBTOTAL		None	$801,000 to $828,000	$541,000 to $565,000	$51,000 to $54,000	$662,000 to $687,000	$44,000 to $46,000
	Development Outside Critical Habitat	Service	None	None	None	None	None	None
		DLNR	None	None	None	None	None	None
		DPL	None	$4,200,000	$4,200,000	$396,000	$4,200,000	$282,000
		Rota Municipality	None	None	None	None	None	None
		Investors/ Business Owners	None	None	None	None	None	None
	SUBTOTAL		None	$4,200,000	$4,200,000	$396,000	$4,200,000	$282,000
Private Development / Tourism	Leasing Land to Commercial Interests	Service	None	None	None	None	None	None
		DLNR	None	None	None	None	None	None
		DPL	None	None	None	None	None	None
		Rota Municipality	None	None	None	None	None	None
		Investors/ Business Owners	None	None	None	None	None	None
	SUBTOTAL		None	None	None	None	None	None

(Table continues on next page)

Table ES-1. Summary of Economic Impacts *(continued)*

		Affected Entity	Past Costs	Future Quantified Costs by Activity				
				Undiscounted	PV at 7%	Annualized at 7%	PV at 3%	Annualized at 3%
TOTAL ACTIVITY COSTS FOR EACH ALTERNATIVE	Alternative 1: Species and habitat research and monitoring & Island-wide HCP	Service	$51,000	$892,000 to $917,000	$619,000 to $642,000	$58,000 to $61,000	$747,000 to $771,000	$50,000 to $52,000
		DLNR	$17,000	$409,000 to $411,000	$187,000 to $188,000	$18,000	$287,000 to $288,000	$19,000
		DPL	None	None	None	None	None	None
		Rota Municipality	None	None	None	None	None	None
		Investors/ Business Owners	None	None	None	None	None	None
	TOTAL		$68,000	$1,301,000 to $1,328,000	$806,000 to $830,000	$76,000 to $79,000	$1,034,000 to $1,059,000	$69,000 to $71,000
	Alternative 2 Species and habitat research and monitoring Ag. Homestead Development with Homestead HCP	Service	$51,000	$892,000 to $917,000	$619,000 to $642,000	$58,000 to $61,000	$747,000 to $771,000	$50,000 to $52,000
		DLNR	$17,000	$409,000 to $411,000*	$187,000 to $188,000*	$18,000*	$287,000 to $288,000*	$19,000*
		DPL	None	None	None	None	None	None
		Rota Municipality	None	None	None	None	None	None
		Investors/ Business Owners	None	None	None	None	None	None
	TOTAL		$68,000	$1,301,000 to $1,328,000	$806,000 to $830,000	$76,000 to $79,000	$1,034,000 to $1,059,000	$69,000 to $71,000
	Alternative 3: Species and habitat research and monitoring & Development Outside of Critical Habitat	Service	$51,000	$500,000	$265,000	$25,000	$372,000	$25,000
		DLNR	$17,000	None	None	None	None	None
		DPL	None	$4,200,000	$4,200,000	$396,000	$4,200,000	$282,000
		Rota Municipality	None	None	None	None	None	None
		Investors/ Business Owners	None	None	None	None	None	None
	TOTAL		$68,000	$4,700,000	$4,465,000	$421,000	$4,572,000	$307,000

* DLNR and DPL would share costs for HCP development, but the breakdown by agency can not be determined at this time; therefore, costs are allocated to DLNR.

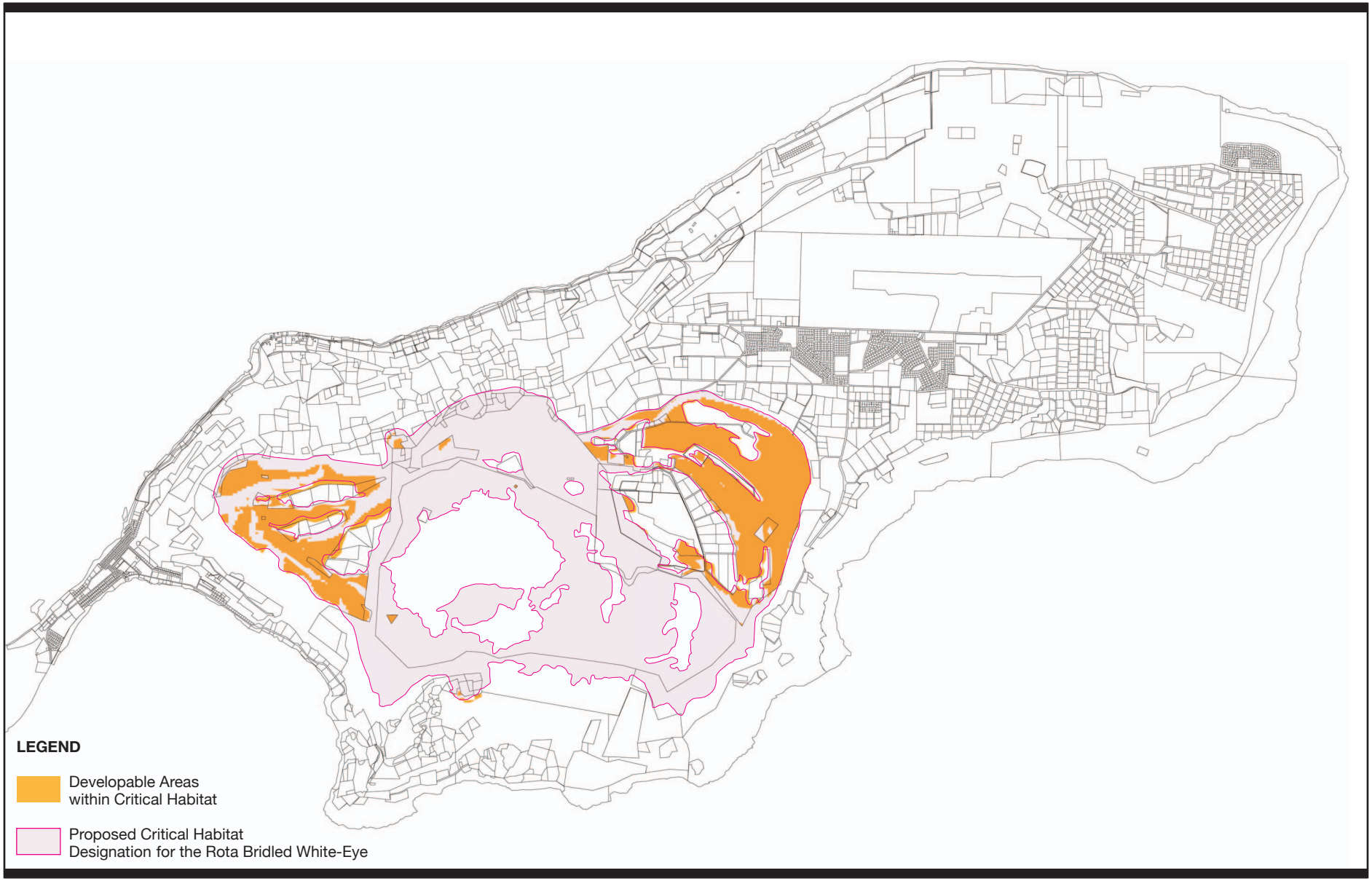

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Figure ES-2
DEVELOPABLE AREAS WITHIN PROPOSED CRITICAL HABITAT

1 Framework for Analysis

The purpose of this report is to estimate the economic impact of actions taken to protect the Federally listed Rota bridled white-eye (*Zosterops rotensis*) and its habitat. It attempts to quantify the economic effects associated with the proposed designation of critical habitat. It does so by taking into account the cost of conservation-related efforts that are likely to be associated with future economic activities that may adversely affect habitat within the proposed critical habitat boundaries. The analysis looks retrospectively at costs incurred since the Rota bridled white-eye was listed in 2004, and it attempts to predict future costs likely to occur within 20 years of the final critical habitat designation in 2006.

This information is intended to assist the Secretary of the Interior in determining whether the benefits of excluding particular areas from the designation outweigh the benefits of including those areas in the designation.[6] In addition, this information allows the United States Department of the Interior, Fish and Wildlife Service (Service) to address the requirements of Executive Orders 12866 and 13211, and the Regulatory Flexibility Act (RFA), as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA).[7] This report also complies with direction from the U.S. Court of Appeals for the 10th Circuit that "co-extensive" effects should be included in the economic analysis to inform decision-makers regarding which areas to designate as critical habitat.[8]

This section describes the framework for the analysis. First, it describes the general analytic approach to estimating economic impacts, including a discussion of both efficiency and distributional effects. Next, this section discusses the scope of the analysis, including the link between existing and critical habitat-related protection efforts and economic impacts. Then, it presents the analytic timeframe used in the report and the information sources relied upon in the analysis. Finally, the structure of the remainder of the report is described.

1.1 Approach to Estimating Economic Impacts

This economic analysis considers both the economic efficiency and distributional effects that may result from activities to protect the Rota bridled white-eye and its habitat (hereinafter referred to collectively as "Rota bridled white-eye conservation activities"). Economic efficiency effects generally reflect "opportunity costs" associated with the commitment of resources required to accomplish species and habitat protection. For example, if activities that can take place on a parcel of land are limited as a result of the designation or the presence of the species, and thus the market value of the land is reduced, this reduction in value represents an opportunity cost and change in economic efficiency. Similarly, the cost incurred by a Federal action agency to consult with the Service in accordance with section 7 represents an opportunity cost of Rota bridled white-eye conservation activities.

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6 16 U.S. Code (U.S.C.) §1533(b)(2).

7 Executive Order 12866, "Regulatory Planning and Review," September 30, 1993; Executive Order 13211, "Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use," May 18, 2001; 5 U.S.C. §§601 *et seq*; and Public Law No. 104-121.

8 In 2001, the U.S. Court of Appeals for the 10th Circuit instructed the Service to conduct a full analysis of all of the economic impacts of proposed critical habitat designation, regardless of whether those impacts are attributable co-extensively to other causes (*New Mexico Cattle Growers Ass'n v. U.S.F.W.S.*, 248 F.3d 1277 [10th Cir. 2001]).

Distributional effects consider impacts on certain groups of people and economic sectors, and are used to assess whether effects unduly burden a particular group or economic sector, e.g., small entities. For example, while conservation activities may have a relatively small impact relative to the regional economy, individuals employed in a particular sector of the local economy may experience relatively greater impacts. The difference between economic efficiency effects and distributional effects, as well as their application in this analysis, are discussed in greater detail below.

1.1.1 Efficiency Effects

At the guidance of the U.S. Office of Management and Budget (OMB) and in compliance with Executive Order 12866 "Regulatory Planning and Review," Federal agencies measure changes in economic efficiency in order to understand how society, as a whole, will be affected by a regulatory action. In the context of regulations that protect Rota bridled white-eye habitat, these efficiency effects represent the opportunity cost of resources used or benefits foregone by society as a result of the regulations. Economists generally characterize opportunity costs in terms of changes in producer and consumer surpluses in affected markets.

In some instances, compliance costs may provide a reasonable approximation for the efficiency effects associated with a regulatory action. For example, a Federal land manager, such as the U.S. Forest Service, may enter into a consultation with the Service to ensure that a particular activity will not adversely modify critical habitat. The effort required for the consultation is an economic opportunity cost because the land manager's time and effort would have been spent in an alternative activity had the parcel not been included in the designation. If this compliance activity is not expected to significantly affect markets (that is, not result in a shift in the quantity of a good or service provided at a given price, or in the quantity of a good or service demanded given a change in price), the measurement of compliance costs can provide a reasonable estimate of the change in economic efficiency.

Where habitat protection efforts are expected to significantly impact a market, it may be necessary to estimate changes in producer and consumer surpluses. For example, if the designation precludes the development of large areas of land and shifts the price and quantity of housing supplied in the region, changes in producer and consumer surpluses in the housing market would represent changes in economic efficiency (i.e., social welfare).

This analysis begins by measuring costs associated with efforts taken to protect the Rota bridled white-eye and its habitat. As noted above, in some cases, compliance costs can provide a reasonable estimate of changes in economic efficiency. However, if the cost of conservation activities is expected to significantly impact markets, the analysis considers potential changes in consumer and/or producer surplus in affected markets.

1.1.2 Distributional and Regional Economic Effects

Measurements of changes in economic efficiency focus on the net impact of conservation activities, without consideration of how certain economic sectors or groups of people are affected. Thus, a discussion of efficiency effects alone may miss important distributional considerations. OMB encourages Federal agencies to consider distributional effects separately

from efficiency effects.[9] This analysis considers several types of distributional effects, including impacts on small entities and regional economic impacts. It is important to note that these are fundamentally different measures of economic impact than efficiency effects, and thus cannot be added to or compared with estimates of changes in economic efficiency.

1.1.2.1 Impacts on Small Entities and Energy Supply, Distribution, and Use

This analysis considers how small entities, including small businesses, organizations, and governments, as defined by the RFA, might be affected by future conservation activities for the Rota bridled white-eye.[10] In addition, in response to Executive Order 13211 "Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use," this analysis considers the future impacts of conservation activities on the energy industry and its customers.[11] An RFA/SBREFA and Energy Impacts Screening Analysis is provided in Section 4 of this report.

1.1.2.2 Regional Economic Effects

A regional economic impact analysis can provide an assessment of the potential localized effects of conservation activities. Specifically, a regional economic impact analysis produces a quantitative estimate of the potential magnitude of the initial change in the regional economy resulting from a regulatory action. Regional economic impacts are commonly measured using regional input/output models. These models rely on multipliers that represent the relationship between a change in one sector of the economy (e.g., expenditures by recreationists) and the effect of that change on economic output, income, or employment in other local industries (e.g., suppliers of goods and services to recreationists). These economic data provide a quantitative estimate of the magnitude of shifts of jobs and revenues in the local economy.

The use of regional input/output models in an analysis of the impacts of species and habitat conservation activities can overstate the long-term impacts of a regulatory change. Most importantly, these models provide a static view of the economy of a region. That is, they measure the initial impact of a regulatory change on an economy but do not consider long-term adjustments that the economy will make in response to this change. For example, these models provide estimates of the number of jobs lost as a result of a regulatory change, but do not consider re-employment of these individuals over time or other adaptive responses by impacted businesses. In addition, the flow of goods and services across the regional boundaries defined in the model may change as a result of the regulation, compensating for a potential decrease in economic activity within the region.

Despite these and other limitations, in certain circumstances regional economic impact analysis may provide useful information about the scale and scope of localized impacts. It is important to remember that measures of regional economic effects generally reflect shifts in resource use rather than efficiency losses. Thus, these types of distributional effects are reported separately from efficiency effects (i.e., not summed). In addition, measures of regional economic impact cannot be compared with estimates of efficiency effects, but should be considered as distinct

[9] U.S. Office of Management and Budget. "Circular A-4." http://www.whitehouse.gov/omb/circulars/a004/a-4.pdf, accessed September 17, 2003.

[10] 5 U.S.C. § 601 *et seq.*

[11] Executive Order 13211, "Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use," May 18, 2001.

measures of impact. As implementation of conservation efforts for the Rota bridled white-eye is not anticipated to result in broader regional economic impacts, this analysis does not employ a regional impact model.

1.1.3 Present Value and Annualized Impacts

For each land use activity, this analysis compares economic impacts incurred in different time periods in present value terms. The present value is the value of a payment or stream of payments in common dollar terms. That is, it is the sum of a series of past or future cash flows expressed in today's dollars. Translation of economic impacts of past or future costs to present value terms requires the following: a) past or projected future costs of Rota bridled white-eye conservation activities; and b) the specific years in which these impacts have been or are expected to be incurred. With these data, the present value of the past or future stream of impacts (PV_c) of Rota bridled white-eye conservation activities from year t to T is measured in 2005 dollars according to the following standard formula:[12]

$$PV_c = \sum_{t=t_0}^{t=T} \frac{C_t}{(1+r)^{t-2005}}$$

C_t = cost of Rota bridled white-eye conservation activities in year t

r = discount rate[13]

Impacts of conservation activities for each activity are also expressed as annualized values. Annualized values are calculated to provide comparison of impacts across activities with varying forecast periods (T). For this analysis, however, all activities employ a forecast period of 20 years, 2006 (year of final designation) through 2025 (20 years from designation). Annualized impacts of future Rota bridled white-eye conservation activities (APV_c) are calculated by the following standard formula:

$$APV_c = PV_c \left[\frac{r}{1 - (1 + r)^{-(N)}} \right]$$

N = number of years in the forecast period (in this analysis, 20 years)

1.2 Scope of the Analysis

This analysis identifies economic activities believed to most likely threaten the listed species and its habitat and, where possible, quantifies the economic impact to avoid, mitigate, or compensate for such threats within the boundaries of the critical habitat designation. In instances where critical habitat is being proposed after a species is listed, some future impacts may be

[12] To derive the present value of past conservation activities for this analysis, t_o is 2004 and T is 2005; to derive the present value of future conservation activities, t_o is 2006 and T is 2025.

[13] To discount and annualize costs, guidance provided by the OMB specifies the use of a real rate of seven percent. In addition, OMB recommends sensitivity analysis using other discount rates such as three percent, which some economists believe better reflects the social rate of time preference. (U.S. Office of Management and Budget, "Circular A-4," September 17, 2003, and U.S. Office of Management and Budget, "Draft 2003 Report to Congress on the Costs and Benefits of Federal Regulations; Notice," 68 *Federal Register* 5492, February 3, 2003.)

unavoidable, regardless of the final designation and exclusions under 4(b)(2). However, due to the difficulty in making a credible distinction between listing and critical habitat effects within critical habitat boundaries, this analysis considers all future conservation-related impacts to be coextensive with the designation.[14,15]

As described in the proposed rule to designate Rota bridled white-eye critical habitat (the proposed rule),[16] the types of Federal actions or authorized activities the Service has identified as potential concerns (i.e., that when carried out may destroy or adversely modify habitat or that may be affected by critical habitat designation) include:

- Actions that would reduce the amount of limestone forest above 490 feet (150 meters) elevation in the Sabana region (i.e., vegetation clearing, fires);
- Actions that would increase the fragmentation of limestone forest above 490 feet (150 meters) elevation in the Sabana region (i.e., vegetation clearing, fires), as these activities could reduce connectivity between areas used by Rota bridled white-eyes for foraging and breeding, and increase the amount of forest edge exposed to potential impacts of typhoons;
- Actions that would degrade limestone forests above 490 feet (150 meters) elevation in the Sabana region (i.e., spreading or introducing invasive weed species which inhibit the natural regeneration of native forest used by Rota bridled white-eye for breeding and foraging).

Coextensive effects may also include impacts associated with overlapping protective efforts of other Federal and Commonwealth of the Northern Mariana Islands (CNMI) laws that aid habitat conservation in the area proposed for designation. Because habitat conservation activities affording protection to a listed species likely contribute to the efficacy of the designation activities, the impacts of these actions are considered relevant for understanding the full effect of the proposed critical habitat designation. Enforcement actions taken in response to violations of the Endangered Species Act of 1973 (Act), however, are not included.

1.2.1 Sections of the Act Relevant to the Analysis

This analysis focuses on activities that are influenced by the Service through sections 4, 7, 9, and 10 of the Act. Section 4 of the Act focuses on the listing and recovery of endangered and threatened species, as well as the critical habitat designation. In this section, the Secretary is required to list species as endangered or threatened "solely on the basis of the best available scientific and commercial data."[17] Section 4 also requires the Secretary to designate critical

[14] In 2001, the U.S. Court of Appeals for the 10th Circuit instructed the Service to conduct a full analysis of all of the economic impacts of proposed critical habitat designation, regardless of whether those impacts are attributable co-extensively to other causes (*New Mexico Cattle Growers Assn v. U.S.F.W.S.*, 248 F.3d 1277 [10th Cir. 2001]).

[15] In 2004, the U.S. Ninth Circuit invalidated the Service's regulation defining destruction or adverse modification of critical habitat (*Gifford Pinchot Task Force v. United States Fish and Wildlife Service*). The Service is currently reviewing the decision to determine what effect it (and to a limited extent *Center for Biological Diversity v. Bureau of Land Management* [Case No. C-03-2509-SI, N.D. Cal.]) may have on the outcome of consultations pursuant to section 7 of the Act.

[16] September 14, 2005, 70 FR 54335-54394, "Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Rota Bridled White-Eye (*Zosterops rotensis*)."

[17] 16 U.S.C. 1533.

habitat "on the basis of the best scientific data available and after taking into consideration the economic impact, and any other relevant impact, of specifying any particular area as critical habitat."[18]

The protections afforded to threatened and endangered species and their habitat are described in sections 7, 9, and 10 of the Act, and economic impacts resulting from these protections are the focus of this analysis:

- Section 7 of the Act requires Federal agencies to consult with the Service to ensure that any action authorized, funded, or carried out will not likely jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of critical habitat. The administrative costs of these consultations, along with the costs of project modifications resulting from these consultations, represent compliance costs associated with the listing of the species and critical habitat designation.[19]
- Section 9 defines the actions that are prohibited by the Act. In particular, it prohibits the "take" of endangered wildlife, where "take" means to "harass, harm, pursue, or collect, or to attempt to engage in any such conduct."[20] The economic impacts associated with this section manifest themselves in sections 7 and 10.
- Under section 10(a)(1)(B) of the Act, an entity (e.g., a landowner or local government) may develop a Habitat Conservation Plan (HCP) for an endangered animal species in order to meet the conditions for issuance of an incidental take permit in connection with the development and management of a property.[21] The requirements posed by the HCP may have economic impacts associated with the goal of ensuring that the effects of incidental take are adequately minimized and mitigated. The designation of critical habitat does not require completion of an HCP; however, the designation may influence conservation efforts provided under HCPs.

1.2.2 Other Relevant Protection Efforts

The protection of listed species and habitat is not limited to the Act. Other Federal agencies, as well the CNMI and Rota government, may also seek to protect the natural resources under their jurisdiction. For the purpose of this analysis, such protective efforts are considered to be co-extensive with the protection offered by critical habitat, and costs associated with these efforts are included in this report. In addition, under certain circumstances, the designation may provide new information to a community about the sensitive ecological nature of a geographic region, potentially triggering additional economic impacts under other local laws. In cases where these costs would not have been triggered absent the designation of critical habitat, they are included in this economic analysis.

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[18] 16 U.S.C. 1533.

[19] The Service notes, however, that a recent Ninth Circuit judicial opinion, *Gifford Pinchot Task Force v. United States Fish and Wildlife Service*, has invalidated the Service's regulation defining destruction or adverse modification of critical habitat. The Service is currently reviewing the decision to determine what effect it (and to a limited extent *Center for Biological Diversity v. Bureau of Land Management* [Case No. C-03-2509-SI, N.D. Cal.]) may have on the outcome of consultations pursuant to section 7 of the Act.

[20] 16 U.S.C. 1532.

[21] U.S. Fish and Wildlife Service, "Endangered Species and Habitat Conservation Planning." http://endangered.fws.gov/hcp/, accessed August 6, 2002.

1.2.3 Additional Considerations

This analysis also considers the potential for other types of economic impacts that can be related to section 7 consultations in general and critical habitat designation in particular, including time delay, regulatory uncertainty, stigma impacts, and (while not an economic impact) effects of public sentiment related to critical habitat designation.

1.2.3.1 Time Delay and Regulatory Uncertainty Impacts

Time delays are costs due to project delays associated with the consultation process or compliance with other regulations. Regulatory uncertainty costs occur in anticipation of having to modify project parameters (e.g., retaining outside experts or legal counsel to better understand their responsibilities with regard to critical habitat designation).

1.2.3.2 Stigma Impacts

Stigma refers to the change in economic value of a particular project or activity due to negative (or positive) perceptions of the role critical habitat will play in developing, implementing, or conducting that policy. For example, changes to private property values associated with public attitudes about the limits and costs of implementing a project in critical habitat are known as "stigma" impacts.

1.2.3.3 Public Sentiment

Based on discussions held during meetings with CNMI agencies, the public response to rule-making that designates critical habitat for the Rota bridled white-eye may have adverse consequences on the survival of the species. Anecdotal evidence has been presented by Rota residents to agency representatives indicating that killings of the Mariana crow occurred after the species was listed as endangered, although physical evidence of kills could not be provided.[22] As explained during the stakeholder meetings, the people of Rota have strong sentimental and cultural attachments to their land, and feel that Federal involvement in land management constitutes Federal occupancy. In addition, there is a perception that the lack of homestead land released by the Department of Public Lands (DPL), formerly the Marianas Public Lands Authority (MPLA)[23] to individuals on Rota is connected to the designation of Mariana crow critical habitat. While, in actuality, designation of Rota bridled white-eye critical habitat does not legally require a prohibition on DPL's activities, the perception that the presence of the species would prevent the release of land in consideration for homestead parcels could lead to "backlash" against the bird. Public sentiment regarding the Rota bridled white-eye does not appear to be as strong as that regarding the Mariana crow, as the crow is also considered an agricultural pest; however, the cumulative impact of the multiple critical habitat designations was identified during stakeholder meetings as a potential source of negative sentiment against the Rota bridled white-eye. Agency representatives on Rota have provided suggestions for ways the Service could communicate the intent of designation to the community (i.e., postings in plain language, in English and Chamorro, placed in highly-visible locations; face-to-face discussions

[22] Personal communication with CNMI DLNR (Rota Office), December 6, 2005.

[23] The DPL, an agency under the executive branch of the CNMI government, was created by CNMI Public Law 15-2, the Public Lands Act of 2006, in February 2006. This law transferred the functions of the MPLA to the executive branch, and dissolved the MPLA.

with small groups of landowners) to avoid negative sentiment.[24] However, should the potential "backlash" identified as a possible result of critical habitat designation for the Rota bridled white-eye occur, adverse impacts to the bird could result.

1.2.4 Benefits

Under Executive Order 12866, OMB directs Federal agencies to provide an assessment of both the social costs and benefits of proposed regulatory actions.[25] OMB's Circular A-4 distinguishes two types of economic benefits: *direct benefits and ancillary benefits*. Both types of benefits are introduced below.

In the context of critical habitat designation, the direct benefit (the primary purpose of the rulemaking) is the potential to enhance conservation of the species. The published economics literature has documented that social welfare benefits can result from the conservation and recovery of endangered and threatened species. OMB's guidance for implementing Executive Order 12866 acknowledges that it may not be feasible to monetize, or even quantify, the benefits of environmental regulations due to either an absence of defensible, relevant studies or a lack of resources on the implementing agency's part to conduct new research.[26] Rather than rely on economic measures, the Service believes that the direct benefits of the proposed rule are best expressed in biological terms that can be weighed against the expected cost impacts of the rulemaking.

Ancillary benefits are defined as favorable impacts of a rulemaking that are typically unrelated, or secondary, to the statutory purpose of the rulemaking.[27] Critical habitat designation aids in the conservation of species specifically by protecting the primary constituent elements on which the species depends. To this end, critical habitat designation can result in maintenance of particular environmental conditions that may generate other social benefits aside from the preservation of the species. That is, management actions undertaken to conserve a species or habitat may have coincident, positive social welfare implications, such as increased recreational opportunities in a region. While they are not the primary purpose of critical habitat, these ancillary benefits may result in gains in employment, output, or income that may offset the direct, negative impacts to a region's economy resulting from actions to conserve a species or its habitat.

It is often difficult to evaluate the ancillary benefits of critical habitat designation. To the extent that the ancillary benefits of the rulemaking may be captured through an identifiable shift in resource allocation, they are factored into the overall economic impact assessment in this report. For example, habitat preserves created to protect a species may serve as a recreational park to attract visitors and tourists, resulting in a measurable positive impact. This analysis attempts to capture the *net* economic impact (i.e., the increased regulatory burden less any discernable offsetting market gains) of species conservation efforts imposed on regulated entities.

[24] Ibid.
[25] Executive Order 12866, "Regulatory Planning and Review," September 30, 1993.
[26] Ibid.
[27] U.S. Office of Management and Budget. "Circular A-4." http://www.whitehouse.gov/omb/circulars/a004/a-4.pdf, accessed September 17, 2003.

1.2.5 Geographic Scope of the Analysis

The geographic scope of the analysis includes areas proposed for designation under section 4(b)(2) of the Act. The economic impacts of potential critical habitat designation are estimated for this area as identified in the proposed rule. The analysis focuses on activities within or affecting this area.

Impacts are presented at the lowest level of resolution feasible given available data. Because there is only one critical habitat unit totaling 3,958 acres (1,602 hectares [ha]) proposed for the Rota bridled white-eye, the economic analysis is organized by activity occurring within this one unit. In the case where an activity described herein may be constrained by physical or geographic boundaries (i.e., slope or land use) within the critical habitat unit, the areas of proposed critical habitat to be evaluated are defined for that activity.

1.3 Analytic Timeframe

The analysis estimates impacts based on activities that are "reasonably foreseeable," including, but not limited to, activities that are currently authorized, permitted, or funded, or for which proposed plans are currently available to the public. This analysis estimates economic impacts to activities from 2004 (year of the species' final listing) to 2025 (20 years from the year of final designation). Forecasts of economic conditions and other factors beyond the next 20 years are considered highly speculative and are not included.

1.4 Information Sources

The primary sources of information for this report are communications with and data provided by personnel from CNMI agencies and the Service. Data were collected from personnel from the following CNMI agencies:

- CNMI Department of Land and Natural Resources (DLNR)/Division of Fish & Wildlife (DFW)
- MPLA
- CNMI Division of Historic Preservation (DHP)
- CNMI Division of Environmental Quality (DEQ)
- Rota Mayor's office
- CNMI Rota Legislative Delegation (Senator Diego Songao)
- CNMI Coastal Resources Management Office (CRMO)
- CNMI Department of Commerce

The Service provided two section 7 consultation letters for the bridled white-eye prior to its listing as an endangered species and seven letters for other Rota consultations (primarily the Mariana crow), as little consultation information is available for the Rota bridled white-eye. Table 1 summarizes the consultation letters provided by the Service.

Table 1. List of Consultation Letters Provided by the Service

Date	Consulting Agency	Proposed Activity	Species
April 12, 2002	Federal Emergency Management Agency (FEMA)	Construction of broadcast tower	Rota bridled white-eye and Mariana fruit bat
June 1, 1999	U.S. Army Corps of Engineers	Pier, boa tramp, and seawall reconstruction, harbor dredging, breakwater construction	Rota bridled white-eye, Mariana crow, Mariana fruit bat
May 19, 2005	Federal Aviation Administration (FAA)	Rota International Airport runway extension	Mariana crow, Mariana fruit bat
March 26, 2003	Environmental Planning Services for FAA	Rota International Airport runway expansion	Mariana crow
September 20, 2002	FEMA	Construction of Cultural Center Stage Building	None identified
August 13, 2001	CNMI Department of Public Works (DPW) for Federal Highway Administration (FHA)	Route 100 road paving	Mariana crow, Mariana fruit bat, *Tabernaemontana rotensis*, *Nesogenes rotensis*
February 28, 2001	FEMA	Construction of public library	Mariana crow
July 19, 1999	FEMA	Construction of DPW office and shop building	Mariana crow
April 28, 1996	Rota Forestry	Sagua Gaga Bird Sanctuary educational trail extension and improvement	Mariana crow, Mariana fruit bat, Guam rail, others

In addition to the consultation letters, the Service provided the following information:

- October 2004, *Recovery Outline for the Rota Bridled White-eye* (*Zosterops rotensis*). This outline serves as interim guidance to direct recovery efforts and inform consultation and permitting activities until the comprehensive draft recovery plan is completed. At the time the Service provided this information, the recovery plan was in early draft form.
- January 22, 2004, 69 *Federal Register* (FR) 3022-3029, "Endangered and Threatened Wildlife and Plants; Endangered Status for the Rota Bridled White-Eye (*Zosterops rotensis*) From the Commonwealth of the Northern Mariana Islands" (final listing rule).
- September 14, 2005, 70 FR 54335-54394, "Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Rota Bridled White-Eye (*Zosterops rotensis*)" (proposed critical habitat designation rule).
- November 1, 2005, Economic Analysis Contact List For Rota Bridled White-eye Proposed Critical Habitat.
- November 1, 2005, Electronic data from the Service, including geographic information system (GIS) layers for critical habitat, land use, and land ownership.

1.5 Structure of Report

The remainder of this report is organized as follows:

- Section 2: Background and Socioeconomic Overview;
- Section 3: Economic Impacts
    - Section 3.1: Impacts to Public Land Management;
    - Section 3.2: Impacts to Agricultural Homesteads Development;

    - Section 3.3: Impacts to Private Development and Tourism;
- Section 4: RFA/SBREFA and Energy Impacts Screening Analysis;
- Section 5: Summary of Impacts;
- References;
- Appendix A; Unit Costs of Consultation; and
- Appendix B; Critical Habitat Photos.

2 Background and Socioeconomic Overview

This section provides information on the history of the Rota bridled white-eye listing and essential habitat proposed for critical habitat designation, describes the socioeconomic characteristics of identified areas, and provides a description of the regulatory environment that informs the analysis.

2.1 Background of Rota Bridled White-eye Listing and Designation

The Service has proposed to designate critical habitat for an endangered bird on Rota, in the CNMI (Figure 2-1). Rota, the southernmost and third largest island in CNMI (after Saipan and Tinian), is approximately 11 miles (18 kilometers [km]) long and 4 to 7 miles (6.4 to 11.3 km) wide, with an area of approximately 33 square miles (85 square km), or 21,100 acres (8,550 ha).

The Service determined endangered status for the Rota bridled white-eye (*Zosterops rotensis*), pursuant to the Act, in a final rule published in the FR on January 22, 2004 (50 Code of Federal Regulations [CFR] Part 17; 69 FR 3022). At the time of listing, the Service concluded that designating critical habitat for the Rota bridled white-eye was prudent, and a proposed rule for Rota bridled white-eye critical habitat designation was published in the September 14, 2005, FR (70 FR 54335).

A recovery outline was prepared by the Service in October 2004 that describes recovery guidance for the species. At the time of this report, the recovery plan for the species was in early draft stage, and the outline serves as the only recovery guidance available for the species.

2.2 Proposed Critical Habitat Designation

The Service is proposing one critical habitat unit of approximately 3,958 acres (1,602 ha) of forested land for the Rota bridled white-eye (see Figure 2-1). Of the 3,958 acres (1,602 ha) of proposed critical habitat, approximately eight percent or 318 acres (129 ha) are privately owned land and approximately 92 percent or 3,640 acres (1,473 ha)[28] are public land. This unit represents approximately 18 percent of the land area of Rota.

The Service is required to base critical habitat determinations on the best scientific and commercial data available, and to consider those physical and biological features that are essential to the conservation of the species. These features, the *primary constituent elements*, include, but are not limited to:

- forest above 490 feet (150 meters) in elevation containing a midstory and canopy layer, high epiphytic plant volume, *Elatostema* and *Procris* spp. on the ground, and *Elaeocarpus joga* (yoga), *Hernandia labyrinthica* (oschal), *Merrilliodendron megacarpum* (faniok), *Pandanus tectorius* (kafu), and/or *Premna obtusifolia* (ahgao) trees as dominant forest components for foraging, sheltering, roosting, nesting, and/or rearing of young;
- yoga, oshcal, faniok, *Macaranga thompsonii* (pengua), ahgao, *Pipturus argenteus* (amahadyan), *Persea americana* (avocado), *Ficus tinctoria* (hodda), *Aglaia mariannensis* (mapunyao), *Eugenia thompsonii* (atoto), *Acacia confusa* (sosugi), and/or *Tarenna*

[28] The proposed rule states that there are 3,700 acres of public land in the proposed critical habitat; however, acreages calculated from GIS data total 3,640 acres. For consistency throughout the document, this analysis assumes 3,640 acres are public and 318 acres are private.

sambucina (sumac-lada) trees, and/or *Bambusa vulgaris* (piao or bamboo), in the canopy or subcanopy for foraging; and

- yoga, oschal, faniok, and/or sosugi trees 10 to 49 feet (3 to 15 meters) tall and 1 to 24 inches (2 to 60 centimeters) diameter at breast height for nesting.

The proposed rule (70 FR 54335) provides further description of the physical environment and *primary constituent elements* for the species.

2.3 Description of the Species and Habitat[29]

The Rota bridled white-eye, a small flocking bird with a ring of white feathers around each eye and yellow-tinged plumage with yellow-orange bill, legs, and feet, is endemic to the island of Rota, CNMI. At one time, all of the bridled white-eyes in Micronesia were placed under one species (*Zosterops conspicillatus*). The bridled white-eyes found in the Mariana Islands were later recognized as three separate subspecies, and the Rota bridled white-eye was eventually found to be a full species based on genetic evidence.

Rota bridled white-eyes are primarily found in native forests and introduced sosugi (*Acacia confusa*) forests at upper elevations in Rota's Sabana region. The birds forage primarily on insects found on leaves of the upper, outer layers of trees, but also feed on seeds, nectar, flowers, and fruits. While little is known about the breeding biology of the Rota bridled white-eye, nest observations indicate the breeding season extends at least from December to August, and may be year-round. The primary threats to the species include habitat loss and degradation, and predation by introduced rats (*Rattus* spp.) and birds (black drongos [*Dicrurus macrocercus*]). The small population size and limited distribution of the species also make it vulnerable to extinction from random catastrophic events, such as typhoons.

2.4 Existing Conservation Efforts Affecting Rota Bridled White-eye

In addition to the Act, other existing regulations and land use plans on Rota provide various levels of protection for threatened and endangered species and their habitats. This subsection describes regulations and plans that identify management actions and associated costs which contribute to conservation of the Rota bridled white-eye. These costs are evaluated in Section 3. This section also describes land management programs that may, at the surface, suggest that they help to conserve the species, but in practice are land use designations without specific management requirements.

2.4.1 Federal Government

Section 6 of the Endangered Species Act

Section 6 of the Act authorizes grants for states and territories (and commonwealths) through the Cooperative Endangered Species Conservation Fund. These grants fund participation in voluntary conservation projects for candidate, proposed, and listed species. Funds may in turn be awarded to private landowners and groups for conservation projects.

[29] Information on the Rota bridled white-eye and its habitat included in this section are obtained from 70 FR 54335, the proposed rule.

The Cooperative Endangered Species Conservation Fund provides funding to states and territories for species and habitat conservation actions on non-Federal lands. The four grant programs available through this fund are:

- Conservation Grants – provide financial assistance to states and territories to implement conservation projects for listed species and species at risk. Funded activities include habitat restoration, species status surveys, public education and outreach, captive propagation and reintroduction, nesting surveys, genetic studies, and development of management plans;
- Habitat Conservation Planning Assistance Grants – provide funds to states and territories to support the development of HCPs, through support of baseline surveys and inventories, document preparation, outreach, and similar planning activities;
- HCP Land Acquisition Grants – provide funding to states and territories to acquire land associated with approved HCPs. Grants do not fund the mitigation required of an HCP permittee; instead, they support conservation actions by the State or local governments that complement mitigation; and
- Recovery Land Acquisition Grants – provide funds to states and territories for acquisition of habitat for endangered and threatened species in support of approved recovery plans. Acquisition of habitat to secure long term protection is often an essential element of a comprehensive recovery effort for a listed species.[30]

Since the Rota bridled white-eye was listed, the CNMI DLNR has received funding from the Conservation Grant program to conduct research on the bird's diet. Additional grant proposals have been submitted to the Service to obtain future funding for habitat research under the Conservation Grant and to conduct island-wide habitat conservation planning under the Habitat Conservation Planning Assistance Grant. Specific approved and proposed funding amounts are presented in Section 3 of this report to evaluate cost impacts to conserve the Rota bridled white-eye.

Sections 9 and 10 of the Endangered Species Act

Section 9 of the Act makes it unlawful to take endangered species. Section 10 of the Act provides exceptions to this prohibition, including economic hardship permits and a permitting process for incidental takes in some cases. To obtain a permit under this provision, a conservation plan is required and must specify the following: the impact likely to result from such taking; what steps the applicant will take to minimize and mitigate such impacts, and the funding that will be available to implement such steps; what alternative actions to such taking the applicant considered and the reasons why such alternatives are not being utilized; and other such measures that the Secretary may require as being necessary or appropriate for purposes of the plan.

For an economic hardship permit, a person must have (1) entered into a contract with respect to the endangered species before the FR publication of the Notice of Consideration of the species, and (2) document that listing of the species as endangered will cause "undue hardship" to the person. The exemption is limited to one year from the date of the FR Notice of Consideration of the species. Rationale for undue hardship includes substantial economic loss from the inability of

[30] U.S. Fish and Wildlife Service Web site. http://www.fws.gov/endangered/grants/grants.pdf, accessed January 15, 2006.

the person to fulfill the contract, and substantial loss to persons who had derived a substantial portion of their income from taking of the listed species.

Under section 10 of the Act, permits must include public notice in the FR and a public review process.

2.4.2 CNMI

Fish, Game, and Endangered Species Act

The DFW, within the DLNR, was established to protect endangered species and critical habitats for such species under Public Law (P.L.) 2-51, which was adopted in 1981. Provisions of the law include the following:

- determine status and requirements for survival of resident species of fish, wildlife, or plants;
- ensure the survival of endangered and threatened species, which may include designation of critical habitat;
- acquire land or aquatic habitat, or easements thereon, as necessary to carry out the purposes of the Act;
- accumulate necessary data on fish, game, and endangered and threatened species for statistical research purposes; and
- provide for enforcement measures with fines up to $5,000 for taking of endangered or threatened species.

The DFW has an Enforcement Section that carries out the law, and Conservation Officers are deemed law enforcement officers and address hunting and fishing license violations as well as endangered species violations. In addition, DFW supports research on fish and wildlife species and on critical habitat, and supports public education efforts for these topics. The DFW has been obtaining grants, as discussed under Section 6 grants above, to conduct surveys and research for the Rota bridled white-eye.

CNMI Earthmoving and Erosion Control Regulations

CNMI's Earthmoving and Erosion Control Regulations require a permit from the DEQ prior to commencing with grading, filling, or clearing of vegetation, except for landscaping or gardening on projects of less than 100 square meters and a grade less than 3 percent slope.[31] All project applicants, including CNMI agencies, are required to obtain this DEQ permit.

The DEQ permit procedures require reviews of the applicant's proposed action by multiple agencies. The CNMI DHP must provide its "clearance" (review and approval), in accordance with CNMI P.L. 3-29, before the permit process can be considered further. DFW review and approval has been added to the DEQ permit procedures through a memorandum of agreement.[32] Approvals from other agencies, e.g., CRMO, Zoning, and the DPW, occur as appropriate. Based upon the requirements in the permit procedures and reviews of the permit applications, this procedure engages agencies, such as the DFW, which can contribute the appropriate input needed to conserve the Rota bridled white-eye in accordance with the Act.

[31] CNMI. *Commonwealth Register*, Volume 15, Number 10, October 15, 1993.
[32] Personal communication with CNMI DEQ, January 12, 2006.

CNMI Historic Preservation

CNMI P.L. 3-39 was promulgated "To promote the preservation of the historic and cultural heritage of the Northern Mariana Islands, to prohibit the taking of historic properties and artifacts from the Northern Mariana Islands..." As provided under P.L. 3-39, the duties of the DHP include many. Regarding permits, the DHP is required to: "issue or deny permits, after review by the Review Board, for use, access, and development of land containing cultural and historic properties, and for the taking of any artifact of historic or cultural significance from the Commonwealth for cultural exchange, scientific identification, or donation to a non-profit organization recognized on the basis of its cultural significance to the Commonwealth." DHP's authority to issue or deny permits is presently exercised through the DEQ's Earthmoving and Erosion Control permit process and the CRMO's coastal permit process.

Coastal Resources Management Regulations

The proposed critical habitat designation is not expected to affect the CRMO management process and is not considered further in this economic analysis. However, because the CRMO is generally involved with consultation on CNMI permit application processes, the Coastal Resources Management (CRM) information is introduced herein.

The CRMO was established in 1983, under P.L. 3-47, to promote the conservation and wise development of coastal resources. Among its many duties, the CRMO is responsible for administering all programs and receiving all funding provided by the Federal government for coastal resources management related programs including Coastal Zone Management consistency research for Federal actions. It also coordinates the coastal permit process.[33]

A coastal permit from CRMO is required whenever projects are proposed wholly or partially within an Area of Particular Concern (APC), or when a proposed activity constitutes a major siting. An APC is a geographic area subject to special management. Five APCs have been identified:

- Shoreline APC – The area between the mean high water mark and 150 feet (46 meters) inland.
- Lagoon and Reef APC – The area extending seaward from the mean high water mark to the outer slope of the reef.
- Wetlands and Mangrove APC – Those areas permanently or periodically covered with water and where species of wetland or mangrove vegetation can be found.
- Port and Industrial APC – Those land and water areas surrounding the commercial ports of Saipan, Tinian, and Rota.
- Coastal Hazards APC – Those areas identified as coastal flood hazard zones in the Federal Emergency Management Act Flood Insurance Rate Maps.[34]

A major siting means any proposed project with potential to directly and significantly impact coastal resources (e.g., energy related facilities, wastewater treatment facilities, and transportation facilities).

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[33] CNMI, Coastal Resources Management Web site. *What is CRM.* http://www.crm.gov.mp, accessed September 16, 2002.

[34] CNMI, Coastal Resources Management Web site. *Areas of Particular Concern (APCs).* http://www.crm.gov.mp/apc's.htm, accessed September 16, 2002.

Rota Land Use Plans – Conservation Areas

There are two protected areas that overlap with proposed critical habitat area: the Sabana Protected Area and the Afatung Wildlife Management Area. The Sabana Protected Area covers much of the Sabana Plateau. The Afatung Wildlife Management Area extends from Puntan Malilok to Puntan Haina.

The DFW is responsible for management of the Sabana Protected Area[35] and the DLNR Division of Forestry is responsible for management of the Afatung Wildlife Management Area. However, other than a draft management plan developed in 1996 for the Sabana Protected Area that has not been finalized or implemented, no specific management activities are being planned or are occurring for these areas.[36] According to the CNMI DLNR, the designation of conservation areas on Rota generally implies a total restriction on the ability to use the land.[37] While restricting use of the land can benefit the conservation of a particular species, the lack of active management can mean that issues for species protection, such as predation or the spread of invasive species, are not controlled.

2.4.3 Presence of Other Listed Species

Other Federally or CNMI-listed endangered species may exist within or near essential Rota bridled white-eye habitat. For example, areas designated as critical habitat for the Mariana crow overlap with some of the areas proposed for Rota bridled white-eye designation. To the extent that these other species require the same protective efforts as the Rota bridled white-eye, costs incurred that protect Rota bridled white-eye habitat may not be solely attributable to the presence of this species. This analysis does not attempt to allocate costs among different species; instead, conservation costs within Rota bridled white-eye critical habitat are assumed to be attributable to the presence of this species.

2.5 Socioeconomic Profile of the Essential Rota Bridled White-eye Habitat Area

This section provides a brief introduction to the CNMI government, summarizes economic and demographic information for the island of Rota, and where possible, the proposed critical habitat area, including population and housing characteristics, as well as general economic activity.

The government and political union with and under the sovereignty of the U.S. were established in the *Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America* (Covenant).[38] The CNMI government provides for its own immigration, labor, and wage laws, and the citizens of the CNMI are U.S. citizens that do not pay Federal taxes and cannot vote in Federal elections. For these reasons, the *Commonwealth of the Northern Mariana Islands Economic Report,* prepared by the Bank of Hawaii and the East-West Center in October 2003, states that "the covenant created what is practically a country within a country, giving the commonwealth the autonomy typical of sovereign nations...CNMI residents enjoy the full protection of U.S. institutions, as well as a relatively high standard of

[35] CNMI. DLNR. Division of Fish and Wildlife Web site. *Hunting Regulations.* http://www.dfw.gov.mp/wildlife.htm, accessed September 17, 2002.
[36] Personal communication with CNMI DLNR/DFW, December 5, 2005.
[37] Ibid.
[38] 48 U.S.C. §1901 note.

living...Overall, the commonwealth combines features of a U.S. territory, a state, and an independent nation all in one." [39]

The 2003 Economic Report explains that "*The commonwealth does not use macroeconomic accounting methods or collect data that would generate information on the levels and changes of total output and its components, and provide a measure of productive capacity. Nor has it ever generated data on gross domestic product (GDP)...In the absence of complete and accurate macroeconomic data, there is no objective method to gauge the level of aggregate economic activity, the level of employment it supports, and other important measures such as total personal income that indicate the well-being of the economy and the average citizen. The information vacuum continues to be an obstacle to an objective and comprehensive assessment of the economy.*"

In the absence of economic data, a primary source of data used in this report is the 2000 U.S. Census. The U.S. Census Bureau's annual American Communities Survey, a smaller-scale information gathering effort conducted between each decennial (10-year period) census, has not been conducted for Rota since the 2000 census.

2.5.1 Population and Distribution

Approximately 4.7 percent of the CNMI's population of approximately 69,221 resides in Rota, according to the 2000 Census. The population on Rota in 1990 was 2,295 and increased to 3,283 in 2000, representing an annual growth rate of approximately 3.6 percent. Between 1980 (resident population of 1,261) and 1990, the growth rate on Rota was 6.2 percent.[40] A population growth rate of 2.5 to 4.0 percent is typical of developing economies in the Pacific Islands.

Most of Rota's population is in the two towns of Songsong (at the southwest end of the island) and Sinapalu (south of the airport). There are 318 acres (129 ha) of privately owned parcels within the proposed Rota bridled white-eye critical habitat. Limited infrastructure is available within the proposed area of designation; therefore, the residential population within this area is likely to be very small, possibly non-existent.

In 2000, the median age of Rota residents was 29.1 years. The ethnic makeup was dominated by persons of Chamorro (54.2 percent) and Asian descent (31.9 percent, the majority of whom are Filipino [27.1 percent]). Of the CNMI population, approximately 34.5 percent (23,908 people) identify themselves as Chamorro or Carolinian, or part-Chamorro or Carolinian.

There were 981 housing units on Rota in 2000, with 77.2 percent occupied. Of the occupied housing units (757), owner-occupied homes accounted for 51.8 percent, and renter-occupied homes accounted for 48.2 percent. Of the vacant housing units (224), 71 units were for seasonal, recreational, or occasional use. The remaining vacant housing units had a 12 percent vacancy rate for rentals and a 3.2 percent vacancy rate for homeowners. The average household size was 3.97 persons, and the average family size was 4.39.

[39] Bank of Hawaii and East-West Center. *Commonwealth of the Northern Mariana Islands Economic Report, October 2003.* http://166.122.164.43/jcc/reports/cnmi03.pdf, accessed January 2, 2006.

[40] Ibid.

2.5.2 Personal Income

According to the 2000 census, the mean household income in 1999 on Rota was $42,524 with the median income at $28,708. The mean and median family incomes for this period were $40,244 and $29,891 respectively. Rota's per capita income was $10,326, and total personal income was approximately $34 million.[41]

There were 124 families with incomes below the poverty level in 1999 (for Rota, the poverty threshold in 1999 for a four-person family was $17,029); this was approximately 23 percent of families.

The personal income information provided by the 2000 U.S. Census may be lower than the true representation of personal income on Rota, as there may be subsistence activities (such as hunting, fishing, and small-scale agriculture) for which the values were not included in the census reporting.

2.5.3 Primary Economic Activity

To gauge the aggregate business activity in the CNMI, the 2003 *Commonwealth of the Northern Mariana Islands Economic Report* summarized gross business revenues (GBR), which are derived from tax collections, by business sector. During the period from 2000 to 2002 (most recent years available), the greatest GBR-generating market sector was garment manufacturing, followed by retail trade/gas stations.

On Rota, no garment manufacturing occurs. The two major economic activities are subsistence agriculture and tourism. Crops grown on the island include sweet potato, taro, coconut, and breadfruit.[42] In 2002, there were approximately 100 farms on Rota that produced and sold $1,000 or more of agricultural products. These farms covered 849 acres (356 ha), of which 576 acres (233 ha) were active cropland. This is an increase from 19 farms in 1998, which covered 165 acres (67 ha) of land and 103 acres (42 ha) of active cropland.[43] There may be a number of reasons for the increase of over five times the number of farms in five years, including the release of agricultural homesteads on Rota (see Section 3.2), additional markets for Rota products, or simply variations in reporting. In addition to revenue-generating agriculture, subsistence agriculture is practiced on Rota, for which economic data is not available. However, because of the widespread practice of subsistence agriculture, the economic data that is available for the island may not be representative of socioeconomic conditions.

The total number of hotel rooms recorded annually from 1978 through 2002 range from 88 to 173, peaking at 243 during the period of 1998 to 2001.[44] These changes in the number of available hotel rooms reflect a response to the changes in demand resulting from fluctuations in Asian economies (Japan representing the greatest number of visitors to Rota) and the effect of the September 11, 2001, terrorist attacks. The number of hotel rooms increased steadily from 1993 (109 rooms) through 1998 (243 rooms), where it remained until 2001, at which time there

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41 Population (3,283) x per capita income ($10,326) = approximate total personal income ($33.9 million).

42 Personal communication with CNMI Department of Commerce, January 11, 2006.

43 U.S. Department of Agriculture. July 2004. *Commonwealth of the Northern Mariana Islands, 2002 Census of Agriculture, Volume 1, Geographic Area Series Part 56 (AC02-A-56).* http://www.nass.usda.gov/census/census02/cnmi/cnmi.pdf, accessed January 16, 2006.

44 Bank of Hawaii and East-West Center. *Commonwealth of the Northern Mariana Islands Economic Report, October 2003.* http://166.122.164.43/jcc/reports/cnmi03.pdf, accessed January 2, 2006.

was a sharp decrease (loss of 70 rooms to 173 rooms) from 2001 to 2002. Additional information on the annual revenues from various economic sectors for the island of Rota is not available, as limited economic data are generated specifically for Rota.[45]

While the two major economic activities on Rota may be subsistence agriculture and tourism, the 2000 Census shows that the most of the employed civilian population is in public administration (government paid positions), closely followed by the arts, entertainment, and recreation industry (see next section). Relative to Saipan and Tinian, the percentage of the population employed in "public administration" to "total industry-employed" is greatest on Rota at 21 percent. On Saipan and Tinian, the percentages are 5 and 15, respectively. The percentage for all of CNMI, including the remote northern islands, is 6 percent. Hence, Rota clearly has the greatest percentage of government paid positions, relative to other industries, within the CNMI.

Federal funding is distributed to Rota, directly and indirectly, via the CNMI. During the fiscal period from 2000 through 2004, Rota received or was obligated $105,390 to $1,198,281 annually.[46] In the most recent year of data available, 2004, the largest Federal government expenditure paid directly to Rota was in the sum of $839,992 described as "other direct payments," which includes $829,032 for food stamps, $10,647 for environmental quality incentives program, and $313 for post-Vietnam era veterans' educational assistance. Additional Federal monies are distributed via CNMI, but amounts distributed have not been obtained.

2.5.4 Labor Force and Employment

In 2000, the potential labor force on Rota, which is the population of individuals 16 years and older, numbered 2,209. Of this potential working population, 78.6 percent or 1,736 individuals were in the labor force. Rota does not have any armed forces. Of the total potential labor force, 72 percent (1,591) were employed, 6.6 percent (145) were unemployed, and 21.4 percent (473) were not seeking employment. The number of individuals engaged in subsistence activities, such as agricultural farming, hunting, and fishing, is not recorded in Table 2. According to the 2000 U.S. Census, approximately eight percent of Rota residents who are employed are engaged in some form of subsistence activity. In addition, 2.6 percent of the adults on Rota (16 years and older) engage exclusively in subsistence activities.[47] Table 2 identifies the industries for the employed percentage of the population on Rota as of 2000.

[45] Personal communication with CNMI Department of Commerce, January 11, 2006.

[46] U.S. Census Bureau. "Consolidated Federal Funds Report for Fiscal Year 2000 through 2004." http://harvester.census.gov/cffr/asp/Reports.asp, accessed January 24, 2006.

[47] U.S. Census Bureau. "Commonwealth of the Northern Mariana Islands: 2000 Social, Economic, and Housing Characteristics. Issued June 2003." http://www.census.gov/prod/cen2000/phc-4-cnmi.pdf, accessed March 9, 2006.

Table 2. Employment by Industry for Rota, 2000

Industry	# of Employees	Percent of Total
Public Administration	334	21.0
Arts, Entertainment, and Recreation	324	20.4
Construction	205	12.9
Education and Health Services	197	12.4
Other Services, excluding Public Administration	160	10.1
Agriculture and Forestry	114	7.2
Retail Trade	109	6.9
Transport and Utilities	67	4.2
Finance, Insurance and Real Estate	34	2.1
Professional and Managerial Services	18	1.1
Manufacturing	18	1.1
Wholesale Trade	6	0.4
Information	5	0.3
Total	**1591**	**100**

Source: U.S. Bureau of the Census

Since 2000, the number of Rota hotel rooms recorded decreased from 243 rooms to 173 rooms in 2002 (see Section 2.5.3). This decrease in reported hotel rooms may have impacted the employment figures in Table 2, but further information is not available to draw such conclusions.

2.5.5 Outlook for Growth and Socioeconomic Change

At the time the 2003 Bank of Hawaii report was prepared, evidence suggested that the CNMI economy would continue to stagnate, and that the challenges (revitalization of the economy) are more complicated because the surrounding markets, especially Japan, do not appear interested in investing sufficient capital in the commonwealth to lift income levels. Additionally, the CNMI recognizes the potential in Japan, but has yet to develop a plan (which would require funds and time to execute) for attracting more affluent tourists from that market.[48]

Since 2002, when the *Draft Economic Impact Analysis Of Proposed Critical Habitat For Three Endangered Species On Guam And Rota*[49] was prepared, Rota government representatives have identified eco-tourism as a market to spur economic development in Rota. While these objectives are often expressed within the CNMI government, it is not evident that significant plans or efforts have been undertaken to make this vision into a reality. Currently, an effort initiated by Senator Diego M. Songao and other members of Rota's senatorial delegation to establish a park or conservation area with the National Park Service (NPS) on Rota is underway, but many challenges having to do with land ownership, management, and funding will need to be overcome in order to consider this a realistic project. Eco-tourism is a reasonable vision to pursue considering that Rota managed to escape the effects of World War II, leaving it relatively pristine, culturally and environmentally. However, considering CNMI's land ownership requirements, need for substantial investment from outside investors, and the lack of these types of investors to date, the likelihood of this vision becoming a reality appears low. Outside

[48] Bank of Hawaii and East-West Center. *Commonwealth of the Northern Mariana Islands Economic Report, October 2003*. http://166.122.164.43/jcc/reports/cnmi03.pdf, accessed January 2, 2006.

[49] Belt Collins Hawaii Ltd. November 2002. *Draft Economic Impact Analysis Of Proposed Critical Habitat For Three Endangered Species On Guam And Rota*. Prepared for Industrial Economics Inc. for the U.S. Fish and Wildlife Service.

investors are reluctant to build expensive improvements (e.g., a small hotel) if they are barred from owning or leasing long-term the land associated with the improvements.

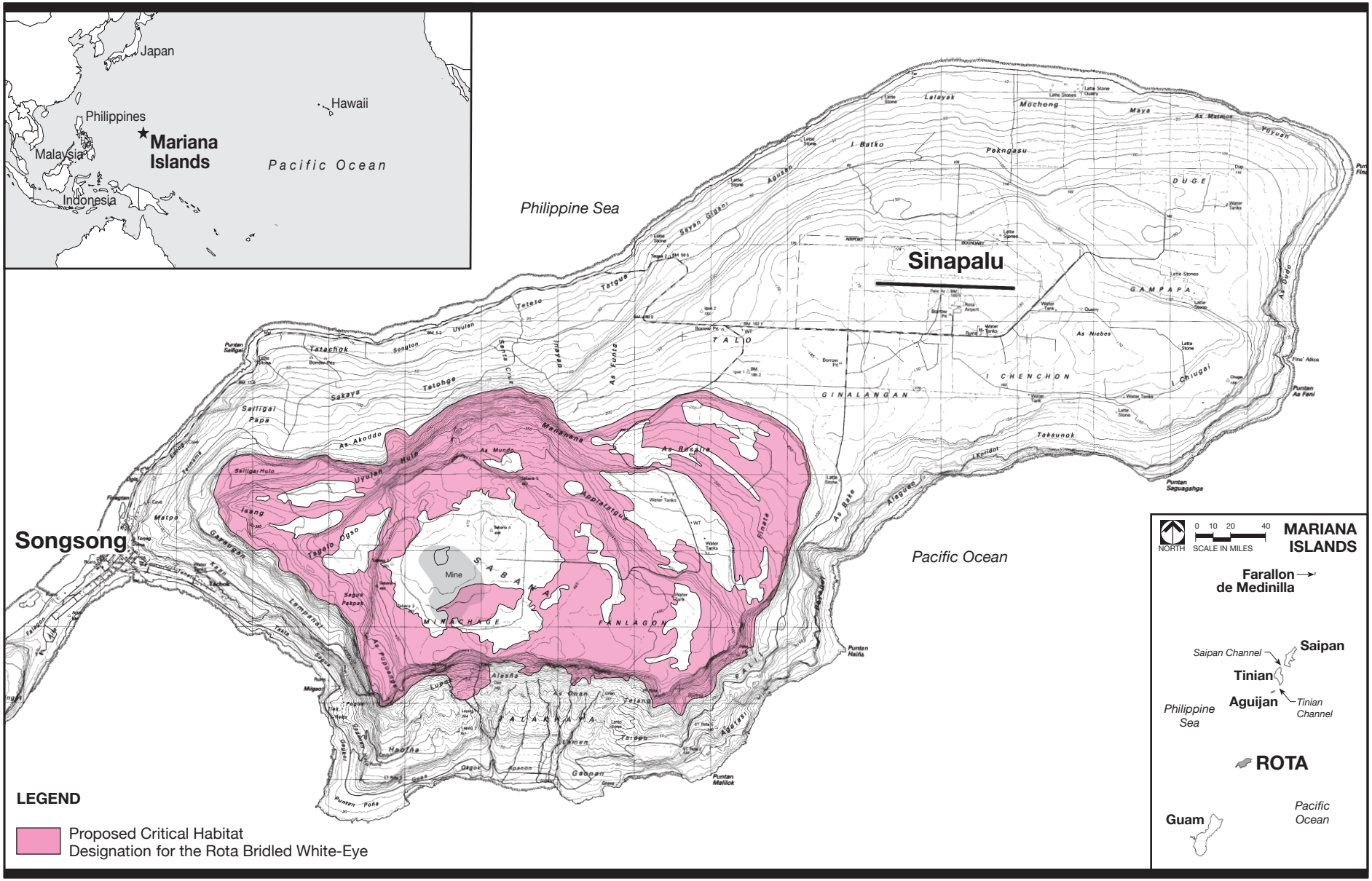


Figure 2-1
PROPOSED CRITICAL HABITAT
FOR THE ROTA BRIDLED WHITE-EYE

3 Economic Impacts

Potential economic impacts associated with the proposed critical habitat designation for the Rota bridled white-eye are presented in this section, organized by activity. Activities were identified through reviews of the listing rule, the proposed rule designating critical habitat, past section 7 consultations for Rota species, discussions with CNMI land management agencies, and reviews of existing relevant regulatory protections for the Rota bridled white-eye, and are as follows:

- public land management activities,
- agricultural homestead development activities, and
- private development and tourism activities.

Public land management activities potentially affected by Rota bridled white-eye conservation activities are presented in Section 3.1. These activities include those that solely support the conservation of the Rota bridled white-eye (consistent with the 10th Circuit Court of Appeals direction to include all co-extensive effects), along with other public land management activities that serve other purposes and could affect the conservation of the Rota bridled white-eye. Activities that solely support the conservation of the species include Endangered Species Act-funded studies specific for the Rota bridled white-eye. Activities that serve other purposes include the existing practice of allowing subsistence farming in the Sabana region by the CNMI DLNR, proposed plans to improve public access to historic sites by the CNMI DHP, and the proposed island-wide HCP.

Agricultural homestead activities potentially affected by the designation of proposed critical habitat are presented in Section 3.2. Activities considered include the DPL's planning and release of 2.5-acre (1-ha) agricultural homesteads to qualified persons of Northern Marianas descent,[50] including available areas where agricultural homesteads could be released: (1) outside of proposed critical habitat and (2) within critical habitat.

Section 3.3 discusses potential impacts on private development and tourism from the designation of proposed critical habitat.

Throughout this analysis, dollar amounts are expressed in terms of 2005 purchasing power and market conditions. Values, prices, costs, and dollar amounts for prior years are adjusted for inflation to 2005 dollars based on the Honolulu Consumer Price Index for urban consumers.

3.1 Impacts to Public Land Management

Of the 3,958 acres (1,602 ha) of proposed critical habitat, approximately 3,640 acres (1,473 ha), or 92 percent, are public lands. Public lands in the CNMI are defined in Article XI, Section 1 of the Commonwealth Constitution as "*belonging collectively to the people of the Commonwealth who are of Northern Marianas descent*."[51] As identified in December 2005 meetings with CNMI and Rota land management agencies, legislative representatives, and municipal government representatives, activities on public land within the proposed critical habitat may be managed by

[50] A person of Northern Marianas descent is a person who is a citizen or national of the United States and who is at least one-quarter Northern Marianas Chamorro or Northern Marianas Carolinian blood or a combination thereof or an adopted child of a person of Northern Marianas descent if adopted while under the age of eighteen years. (Commonwealth Constitution Article XII, Section 4)

[51] Commonwealth Constitution. http://www.cnmilaw.org/constitution.htm, accessed March 29, 2006.

several public agencies. Therefore, possible impacts on public land management activities from Rota bridled white-eye conservation are considered in this analysis.

The importance of public land to the people of CNMI provides context for this analysis. The Covenant[52] reflects the importance of the land in the culture and traditions of the people of the Northern Mariana Islands. Article VIII, Property, section 806 of the Covenant states: "…*the Government of the Northern Mariana Islands, in view of the importance of the ownership of land for the culture and traditions of the people of the Northern Mariana Islands, and in order to protect them against exploitation and to promote their economic advancement and self-sufficiency: (a) … regulate the alienation of permanent and long-term interests in real property so as to restrict the acquisition of such interest to persons of Northern Mariana Islands descent; and (b) may regulate the extent to which a person may own or hold land which is now public land."*

Article VIII, Property, section 801 of the Covenant requires:

All right, title and interest of the Government of the Trust Territory of the Pacific Islands in and to real property in the Northern Mariana Islands on the date of the signing of this Covenant or thereafter acquired in any manner whatsoever will, no later than upon the termination of the Trusteeship Agreement, be transferred to the Government of the Northern Mariana Islands. All right, title and interest of the Government of the Trust Territory of the Pacific Islands in and to all personal property on the date of the signing of this Covenant or thereafter acquired in any manner whatsoever will, no later than upon the termination of the Trusteeship Agreement, be distributed equitably in a manner to be determined by the Government of the Trust Territory of the Pacific Islands in consultation with those concerned, including the Government of the Northern Mariana Islands.

In the spirit of the Covenant provisions, there are no Federally owned lands on the island of Rota. Private ownership of property generally consists of properties that have been deeded or are in the process of being deeded from the DPL (formerly Marianas Public Land Corporation) to homestead recipients of Northern Marianas descent. Privately owned parcels make up approximately 28 percent of the land on Rota. In order to own land, individuals must prove a certain degree of indigenous blood. Leases up to 55 years are available to other corporations or individuals.[53] The remaining 72 percent of the island is public land.

3.1.1 Subsistence Farming

The CRMO identified the potential for critical habitat designation to restrict the practice of allowing subsistence farming in the Sabana region.[54] Concern was raised that the proposed designation may limit opportunities for people on Rota to grow crops on small, informal community farm plots for subsistence farming, and for use in acquiring other items by bartering. This analysis provides a qualitative discussion of the potential impacts.

[52] 48 U.S.C. §1801.

[53] CNMI, CRM Web site. *Coastal and Estuarine Land Conservation Plan for the Commonwealth of the Northern Mariana Islands.* http://www.crm.gov.mp/coastal_conservation.pdf, accessed February 21, 2006.

[54] Personal communication with CRMO, December 7, 2005.

The most recent agricultural data available for Rota are provided in the U.S. Department of Agriculture's 2002 Census of Agriculture.[55] According to the 2002 census, there were 99 farms operating on Rota in 2002, with 879 acres (356 ha) of land in farming. The census definition of a farm includes "*…all places from which $1,000 or more of agricultural products were produced and sold, or normally would have been sold, during the 2002 calendar year*." It is unknown whether revenues generated from public land within the proposed critical habitat area are included in the census figure, nor whether these revenues reflect root crops.

The major agricultural products harvested on Rota included root crops (mostly sweet potato, taro, and yams), vegetables and melons, fruits and nuts, livestock, poultry, and eggs.[56] According to 2002 Census of Agricultural data, the total market value of all agricultural products grown on Rota in 2002 was $670,472. Agricultural revenues from Rota in 2002 were approximately $763 per acre, assuming that all 879 acres (356 ha) were used for general agricultural production. Discussion with CRMO and field observations indicated that root crops were the primary agricultural products grown in the area proposed for critical habitat designation. According to the 2002 Census, 148,000 pounds of sweet potato were grown on 29 acres (11.7 ha), 148,924 pounds of taro were grown on 44 acres (17.8 ha), and 42,820 pounds of yams were grown on 10 acres on Rota (4.0 ha). The total market value of root crops on Rota in 2002 was $297,284. Assuming the above root crops were grown on all 83 acres (34 ha), the average market price per acre of root crops in 2002 was approximately $3,600, over four times higher than the average value per acre for all agricultural crops.

No past conservation efforts for the benefit of the Rota bridled white-eye or its habitat and associated with agricultural activities are known to have occurred. Therefore, past costs of critical habitat designation to subsistence farming have not been identified.

Approximately 1,040 acres (420 ha) of public land within the proposed critical habitat area were identified as developable for agricultural homesteads and, therefore, available for community (subsistence) farming. Assuming root crops were to be grown, as indicated by conversations with CRMO and observation of existing plots in areas adjacent to proposed critical habitat, the use (subsistence and barter) of these products are estimated to have an average value of approximately $3,600 per acre. If the proposed critical habitat designation were to prevent these areas from being developed into agricultural production, the value of these crops would not be realized.

The practice of allowing subsistence farming in the Sabana region could not be confirmed by DLNR and data on the number of community farms developed in the Sabana region were not available at the time of preparation of this analysis. Therefore, the potential for lost revenue associated with these community farms is not quantified.

3.1.2 Public Access Improvements to Historic Sites

The CNMI DHP is directed to "protect, preserve, and regulate access to places, artifacts and things of historical significance..." as stated in P.L. 3-39, but it is also directed to "develop an educational program and service for the purpose of making available to the public facts and

[55] U.S. Department of Agriculture. July 2004. *Commonwealth of the Northern Mariana Islands, 2002 Census of Agriculture, Volume 1, Geographic Area Series Part 56 (AC02-A-56).* http://www.nass.usda.gov/census/census02/cnmi/cnmi.pdf, accessed January 16, 2006.

[56] Ibid.

information pertaining to historic and archaeological sites, buildings, structures and other properties significant to the Commonwealth[.]" Consistent with the latter requirement, DHP is planning to improve public access to select sites.

In the future, the DHP plans to improve public access to historic sites on Rota, but implementation will depend upon current and future Commonwealth government administration plans and program funds.[57,58] While planning has not occurred in sufficient detail to anticipate activities that would occur in historic site areas, specific activities are likely to include vegetation clearing and sign installation, and could include additional activities (e.g., construction of Americans with Disabilities Act-compliant restrooms). DHP has indicated that the size of any site that would be developed for public access is difficult to predict; however, based on existing sites in the area and for the purpose of this assessment, a site size of one acre (0.4 ha) is plausible to presume.[59]

Of the historic sites being considered for public access in the future (within the next four years), DHP does not anticipate considering sites located within proposed critical habitat. This timeframe represents the period of the current administration, which took office in January 2006. Portions of the proposed critical habitat area have been partially surveyed, and survey results show that there are historic and prehistoric (or pre-European contact) sites. However, these surveyed sites are situated within elevated, difficult to access areas, which preclude near-future considerations for improving public access to the sites.[60] DHP has indicated that there are no written plans in preparation or completed that address site development within the proposed critical habitat area.[61]

Possible Act requirements associated with improving public access to historic sites include: (1) section 7 consultation and (2) section 9 compliance with a section 10 permit. Section 7 consultation regarding impacts to the Rota bridled white-eye and its habitat would be required should Federal funding, authorization, or implementation be involved. Section 7 consultations would be needed for sites eligible for listing or listed on the National Register of Historic Places (NRHP). DHP does not believe historic sites surveyed to date within proposed critical habitat are listed or eligible for listing on the NRHP,[62] but in time with more resources available to study and to consider the sites, additional sites could be determined to be eligible. In addition to NRHP sites, likely DHP undertakings at other sites, such as clearing vegetation and installing signs, would require that the NPS initiate a section 7 consultation with the Service. The Federal nexus is the funding of CNMI's Historic Preservation Program by the Historic Preservation Fund Grant, which is appropriated by Congress and overseen by the NPS.[63] Should no Federal funding, authorization, or implementation be involved for preparing historic sites for public access, the second possible Act requirement is a section 10 permit to comply with section 9 of the Act, which makes it unlawful to take endangered species. As discussed in Section 2.4.1 of this report, section 10 of the Act provides exceptions to this prohibition, including economic

57 Personal communication with CNMI DHP, December 5, 2005.
58 Personal communication with CNMI DHP, January 13, 2006.
59 Ibid.
Personal communication with CNMI DHP, January 22, 2006.
60 Personal communication with CNMI DHP, January 22, 2006.
61 Personal communication with CNMI DHP, January 13, 2006.
62 Ibid.
63 Ibid.

hardship permits and a permitting process for incidental takes in some cases. This hypothetical case of DHP proceeding through a section 10 permit appears highly unlikely and is not considered in the future projections.

3.1.2.1 Past Costs

Since the Rota bridled white-eye was listed as endangered in 2004, no section 7 consultations have occurred and no section 10 permits have been issued for the species. This suggests that (1) there were no activities proposed that involved Federal funding, authorization, or implementation to require a section 7 consultation, and (2) there were no non-Federal parties that proposed activities that would result in an incidental taking. The term "take" is defined as "... to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Therefore, no past cost is being attributed to Rota bridled white-eye conservation efforts for DHP projects within the proposed critical habitat.

3.1.2.2 Future Costs

In the future, DHP estimates that a maximum of one site per year may be made available for public access within CNMI.[64] For purposes of this analysis, one site every three years (one for each of the three major islands in CNMI – Saipan, Tinian, and Rota) is used to represent a reasonable rate on Rota. Areas of proposed critical habitat that have been surveyed are elevated and difficult to access, which precludes near-future considerations for improving public access to the sites. As only one historic site every three years is presumed to be opened up to the public on Rota, it is unlikely that historic sites within proposed critical habitat would be proposed for public access within the next 20 years. Additionally, while it is possible that historic sites outside of proposed critical habitat may be accessed by existing roads in critical habitat, such roads are not considered critical habitat. No information has been provided to suggest that substantial improvements to existing roads in proposed critical habitat would be needed. For these reasons, no costs associated with Rota bridled white-eye conservation are anticipated over the analysis period of 20 years.

3.1.3 Rota Bridled White-eye Endangered Species Act-funded Studies

This section quantifies the economic impact of critical habitat designation by estimating the costs of monitoring, habitat restoration, and predator management specific to the Rota bridled white-eye. No programs addressing invasive species control have been identified. Costs are based on information provided by the CNMI DLNR and DFW.

3.1.3.1 Past Costs

Past costs associated with Rota bridled white-eye conservation have included conducting quarterly breeding bird surveys and invertebrate and habitat sampling within the Sabana region (funded by Service grants under section 6 of the Act). These projects are funded with two-year grants totaling $50,055, or approximately $25,000 per year, based on grant proposals provided

[64] Personal communication with CNMI DHP, January 23, 2006.

by DLNR.[65] Since listing of the species in 2004, $50,775 (in 2005 dollars) can be attributed to past Rota bridled white-eye conservation efforts.[66]

3.1.3.2 Future Costs

The cost analysis assumes that the surveys and sampling described in Section 3.1.3.1 above will continue through the forecast period. At an annual cost of $25,000 (in 2005 dollars), the total future costs of the ongoing breeding bird surveys and invertebrate and habitat sampling through 2025 are projected to be $500,000 in undiscounted dollars over the 20-year forecast period; this amounts to approximately $265,000 in present value terms applying a seven percent discount rate. Table 3 provides the future costs of these studies.

Table 3. Future Costs of Act-funded Studies

(Values in 2005 dollars)

Year	Undiscounted Cost per Year	Present Value (PV) at 7%	PV at 3%
2006	$ 25,000	$ 23,400	$ 24,300
2007	$ 25,000	$ 22,000	$ 23,600
2008	$ 25,000	$ 20,400	$ 23,000
2009	$ 25,000	$ 19,000	$ 22,000
2010	$ 25,000	$ 18,000	$ 21,600
2011	$ 25,000	$ 16,700	$ 21,000
2012	$ 25,000	$ 15,600	$ 20,300
2013	$ 25,000	$ 14,500	$ 19,700
2014	$ 25,000	$ 13,600	$ 19,000
2015	$ 25,000	$ 12,700	$ 18,600
2016	$ 25,000	$ 12,000	$ 18,000
2017	$ 25,000	$ 11,000	$ 17,500
2018	$ 25,000	$ 10,400	$ 17,000
2019	$ 25,000	$ 9,700	$ 16,500
2020	$ 25,000	$ 9,000	$ 16,000
2021	$ 25,000	$ 8,500	$ 15,600
2022	$ 25,000	$ 8,000	$ 15,000
2023	$ 25,000	$ 7,400	$ 14,700
2024	$ 25,000	$ 7,000	$ 14,300
2025	$ 25,000	$ 6,500	$ 13,800
Total Present Costs	**$ 500,000**	**$ 265,000***	**$ 372,000***
	Annualized Costs	$ 25,000	$ 25,000

* sum of yearly costs may not equal total cost due to rounding

[65] Personal communication with CNMI DLNR/DFW, December 5, 2005.

[66] 2004 costs presented in 2005 dollars based on the Honolulu Consumer Price Index for Urban consumers.

3.1.4 Proposed Island-wide HCP

The CNMI is in the process of obtaining grant funding from the Service to prepare an island-wide HCP for Rota. The HCP would cover 10 Federally listed, proposed, and candidate animal and plant species on Rota (including the Rota bridled white-eye), and it is estimated that up to 80 percent of the breeding and foraging habitat of the Rota bridled white-eye will fall under the protection of this proposed island-wide HCP. The DLNR intends the island-wide HCP to "conserve, in perpetuity, habitats needed by the covered species for their long-term survival."[67] The objective of the proposed project, as defined by DLNR in the October 2005 project statement,[68] is to submit a draft of the island-wide HCP to the Service within 24 months of receipt of funding for the initial planning effort. Additional grant funding would be required for finalization and implementation of the HCP; however, costs for that effort were not provided by DLNR.

3.1.4.1 Past Costs

CNMI DLNR prepared a project statement for preparation of the draft HCP in October 2005. Since 2004, costs associated with preparation of this project statement include DLNR/DFW staff time. Without input from DLNR/DFW, it is estimated that the total past cost to prepare the project statement is five percent of the funding requested by CNMI to prepare the draft island-wide HCP, or $17,000 ($16,976 = 0.05 x $339,522 [Table 4]).

3.1.4.2 Future Costs

Table 4 provides the estimated costs associated with the first two years of HCP development, through submittal of the draft HCP to the Service, as provided by DLNR. Because the funding for this project is anticipated to be provided by the Service through a competitive section 6 grant, HCP development costs (years one and two) are solely attributed to the Service. The first two years of development of the HCP are estimated to cost the Service approximately $383,000 to $407,000. DLNR/DFW anticipates that the HCP will be developed and implemented in four years.[69] These costs assume that funding would be in place to begin HCP development in 2006; however, at the time of preparation of this analysis, funding had not been fully secured.

[67] CNMI DLNR/DFW. October 4, 2005. *Project Statement for Rota Island-wide Habitat Conservation Planning*.
[68] Ibid.
[69] Personal communication with CNMI DLNR/DFW, December 5, 2005.

Table 4. Initial Draft Island-wide HCP Development Costs to the Service

(Values in 2005 dollars)

Year One - 2006 (Planning)									
Activity	**Service Grant Cost***	**Service Manpower Costs****		**Total**		**Year One Costs at 7%**		**Year One Costs at 3%**	
		Low	**High**	**Low**	**High**	**Low**	**High**	**Low**	**High**
Define scope, identify impacts, gather and review baseline information	$53,100	$21,700	$33,600	$74,800	$86,700	$69,900	$81,000	$72,600	$84,100
Conduct baseline assessments	$72,100			$72,100	$72,100	$67,400	$67,400	$70,000	$70,000
Define mitigation efforts	$53,700			$53,700	$53,700	$50,200	$50,200	$52,100	$52,100
Prepare annual progress report	$2,600			$2,600	$2,600	$2,400	$2,400	$2,500	$2,500
Year One Subtotal†	*$181,400*	*$21,700*	*$33,600*	*$203,100*	*$215,000*	*$189,800*	*$201,000*	*$197,200*	*$208,800*
Year Two – 2007 (Planning and Permitting)									
Develop monitoring and adaptive management program	$25,800	$21,700	$33,600	$47,400	$59,400	$41,400	$51,800	$44,700	$55,900
Prepare internal HCP review drafts	$52,500			$52,500	$52,500	$45,900	$45,900	$49,500	$49,500
Prepare draft Implementation Agreement	$8,200			$8,200	$8,200	$7,200	$7,200	$7,800	$7,800
Prepare formal draft HCP	$10,300			$10,300	$10,300	$9,000	$9,000	$9,700	$9,700
Submit Draft HCP and EA to the Service and prepare NEPA documentation	$58,700			$58,700	$58,700	$51,300	$51,300	$55,300	$55,300
Prepare annual progress report	$2,600			$2,600	$2,600	$2,200	$2,200	$2,400	$2,400
Year Two Subtotal†	*$158,100*	*$21,700*	*$33,600*	*$179,800*	*$191,700*	*$157,000*	*$167,400*	*$169,400*	*$180,700*
Total Cost†	**$339,500**	**$43,400**	**$67,200**	**$382,900**	**$406,700**	**$346,900**	**$368,400**	**$366,700**	**$389,500**
					Annualized Costs	$32,700	$34,800	$24,600	$26,100

* Costs for CNMI to develop the island-wide HCP were provided in a grant proposal, and would be to the Service in the form of grant funding.

** Costs to the Service were developed from estimates provided by the Honolulu Field Office (Personal communication with USFWS, March 9, 2006) using a rate of $700 per eight-hour day. The total costs for initial draft HCP development included 30 to 40 days for Field Office HCP preparation and technical assistance and 32 to 56 days for Field Office preparation of compliance documents. These costs are split equally between years one and two of HCP development.

† Activity costs may not equal subtotals or total cost due to rounding.

Costs of preparing the final HCP and implementation of the monitoring and adaptive management programs have not been developed by DLNR/DFW. In lieu of the availability of such information, this analysis presumes the following:

- the effort involved with development of the draft HCP (years one and two) is as described in Table 4,
- CNMI's effort involved with processing the draft HCP and approval of a final HCP is similar to the unit cost for a formal section 7 consultation (see Appendix A),
- costs to the action agency and third-party costs are combined into "Costs to CNMI" as it is assumed that costs will be borne by the CNMI government,
- implementation of the HCP will comprise ongoing monitoring and management at a level of effort similar to the past species and habitat research on Rota described in Section 3.1.3, and
- as specific plans and activities to address the conservation of the species have not been developed, conservation efforts in response to specific development activities that arise in the future and are expected to increase the costs on the CNMI, Service, and (primarily) the entity proposing the development (e.g., design costs to re-align a roadway) are not included.

The above assumptions are used to guide the analysis, as no further information beyond the first two years of HCP development were provided. Because the existing HCP for agricultural homesteads in Mariana crow habitat (which could be used to estimate potential island-wide HCP implementation requirements) has not been finalized, continuation of the existing implementation activities is anticipated, as described above, with the understanding that this represents a relatively low level of management activities, and may underestimate potential implementation costs.

The Service's estimated costs for processing the draft HCP are anticipated to be 13 to 15 days as defined by the Honolulu Field Office.[70] Table 5 summarizes the estimated total cost of development and implementation of an island-wide HCP for Rota. The present value costs are the sum of estimated costs to CNMI and the Service.

[70] Personal communication with USFWS Honolulu Field Office, March 9, 2006.

Table 5. Estimated Costs for Island-wide HCP Development and Implementation*

(Values in 2005 dollars)

Activity	Cost to CNMI		Cost to Service		Total		PV at 7%		PV at 3%	
	Low	High	Low	High	Low	High	Low	High	Low	High
Draft HCP development (2006-2007)	NA	NA	$382,900	$406,700	$382,900	$406,700	$346,900	$368,400	$366,700	$389,500
Final HCP development (2008-2009)	$6,800	$10,600	$9,100	$10,500	$15,900	$21,100	$12,600	$16,700	$14,300	$19,000
HCP Implementation (2010-2025)	$400,000	$400,000	NA	NA	$400,000	$400,000	$180,200	$180,200	$279,000	$279,000
Total†	$406,800	$410,600	$392,000	$417,200	$798,822	$827,800	$539,600	$565,200	$660,000	$687,500
						Annualized Costs	$50,900	$53,400	$44,400	$46,200

* As described in the text above, costs for draft HCP development are taken from Table 4. CNMI costs for final HCP development are assumed for the purpose of this analysis to be similar to the unit costs for a formal section 7 consultation, and are taken from Appendix A. Service costs for final HCP development were provided by the Honolulu Field Office and are estimated to be 13 to 15 days at a rate of $700 per eight-hour day. Costs for HCP implementation are assumed to be similar to ongoing monitoring efforts conducted by CNMI.

† Activity costs may not equal subtotals or total cost due to rounding.

The total estimated future costs for the island-wide HCP development and implementation through 2025 are projected to range from approximately $798,800 to $827,800 in undiscounted dollars over the 20-year forecast period; this amounts to approximately $539,600 to $565,200 in present value terms applying a seven percent discount rate, and an annualized impact of approximately $50,900 to $53,400.

3.2 Impacts to Agricultural Homesteads Development

In accordance with CNMI P.L. 7-11, as amended by P.L. 10-3, the MPLA (now DPL) provides land for a nominal fee, generally consisting of a $100 application fee and $100 permit fee, to qualified persons of Northern Marianas descent seeking to finance and construct their own agricultural tract.[71,72] P.L. 10-3 states:

"Such areas of public lands on the island of Rota as may be suitable for agricultural purposes, and which are not required for government use or reserved for other purposes by any other provision of law, shall be designated by the Secretary of the Department of Lands and Natural Resources on behalf of the Commonwealth government for homesteading purposes. Such areas may, in accordance with the provisions of this law, be allotted to qualified persons for the purpose of farming with the right to acquire title upon the fulfillment of the conditions prescribed in this article."

[71] Marianas Public Land Corporation. December 15, 1992. "Proposed Rules and Regulations Promulgated Pursuant to the Rota Agricultural Homestead Act of 1990 (P.L. 7-11)." *Commonwealth Register*, Vol. 14, No. 12, pp 10182-10188.

[72] CNMI P.L. 10-3, *Rota Agricultural Homestead Corrections Act of 1996.*

Since October 2002, MPLA (now DPL) has placed a moratorium on new applications for agricultural homesteads on the island of Rota, due to the dwindling inventory of public land.[73] As of October 2005, a backlog of over 200 applicants existed for the 2.5-acre (1-ha) agricultural homestead lots.[74] As no new applications have been taken since 2002, the current demand for agricultural homestead lots is not known.

At the time of preparation of this economic analysis, the CNMI legislature had passed legislation (P.L. 15-2) to reorganize MPLA into the DPL, a department under the executive branch of the CNMI government, rather than an autonomous body.[75] This could present a limitation on development of agricultural homesteads, as the time and effort involved with the legislative process and reorganization may detract from the other functions of the agency. P.L. 15-2 assigns all existing MPLA duties and statutes to DPL. In addition, P.L. 15-2 directs the newly reorganized DPL to develop a homestead program. This analysis is based on information provided by MPLA and assumes that the agricultural homestead program would not significantly differ from the existing program as developed by the former MPLA.

MPLA gave first development priority to the public lands on Rota with slopes less than 10 percent that do not fall within critical habitat or other CNMI-designated conservation areas, as those may be developed with the least costs associated with site engineering or regulatory compliance.[76] It considered lands with a 10 percent slope to be the maximum developable slope without incurring additional development costs, such as soil stabilization.[77] Based on land use data provided by MPLA, there are approximately 2,400 acres (970 ha) of public land with less than 10 percent slope and outside the following areas:

- CNMI-designated conservation areas,
- existing Mariana crow critical habitat,
- other constrained areas such as around the airport or in urban areas, and
- areas already designated for agricultural homesteads.[78]

Of this 2,400 acres (970 ha), approximately 1,040 acres (420 ha) fall within the proposed Rota bridled white-eye critical habitat. Therefore, if Rota bridled white-eye critical habitat were to be designated as proposed, an additional 1,040 acres (420 ha) of public land with less than 10 percent slope would be unavailable for development on Rota.[79,80] As shown in Table 6, designation of the Rota bridled white-eye critical habitat represents a loss of approximately 43 percent of the additional potential agricultural homesteads that could be developed without

[73] Mariana Public Lands Authority Web site. http://www.mpla.gov.mp/homestead/homestead.php, accessed December 20, 2005.

[74] CNMI DLNR/DFW. October 4, 2005. *Project Statement for Rota Island-wide Habitat Conservation Planning.*

[75] *Saipan Tribune Online*. February 23, 2006. http://www.saipantribune.com/newsstory.aspx?cat=1&newsID=55080, accessed March 9, 2006.

[76] Personal communication with MPLA, January 9, 2005.

[77] Ibid.

[78] MPLA. *Draft Public Land Tenure and Existing Public Land Uses, Island of Rota*. Undated. Note: Datum transformation was used on all GIS data sets in Guam 1963. All data sets in Guam 1963 were transformed into WGS 1984 using 96.234, -252.601, 258.222.

[79] This includes lands excluded from proposed Rota bridled white-eye critical habitat and existing Mariana crow critical habitat.

[80] Note: Datum transformation was used on all GIS data sets in Guam 1963. All data sets in Guam 1963 were transformed into WGS 1984 using 96.234, -252.601, 258.222.

additional costs. Figure 3-1 identifies the developable areas, as defined in the above discussion, within the proposed critical habitat.

Table 6. Developable Land on Rota*

Category	Land Area in Acres (Ha)	Percent of Developable Land
Developable public land outside of proposed critical habitat	1,360 (550)	57
Developable public land within proposed critical habitat	1,040 (420)	43
Total developable public land on Rota	**2,400 (970)**	**100**

* Developable land is defined in the above paragraph.

3.2.1 Past Costs

The former MPLA had not proceeded with agricultural homestead development plans within the proposed critical habitat designation since the Rota bridled white-eye was listed as endangered in 2004, as it was in the process of evaluating their development priorities and creating a land use planning strategy to determine what type of development to pursue for Rota (i.e., development of agricultural homesteads, development of village homesteads, or commercial development).[81, 82] Therefore, there are no past costs associated with agricultural homestead development associated with Rota bridled white-eye conservation.

In the past, around 1994, development of agricultural homesteads was halted because of anticipated take of the Mariana crow and its breeding and foraging habitat (not the existence of critical habitat). Consequently, CNMI DFW and the mayor of Rota pursued compliance with sections 9 and 10 of the Act, which included preparation of an HCP. After several working draft versions, a draft HCP for agricultural homesteads in Mariana crow habitat was submitted to the Service in May 2005. The Service was in the process of reviewing this draft document during preparation of this analysis.[83] Agricultural homestead lots within proposed Rota bridled white-eye critical habitat are not included in this HCP.

3.2.2 Future Costs

With the designation of critical habitat for the Rota bridled white-eye, DPL is expected to consider the following alternative conditions in which to release homesteads:

1. the island-wide HCP discussed in Section 3.1.4 is developed and implemented, and DPL proceeds with development of agricultural homesteads in Rota bridled white-eye critical habitat subject to the terms of the HCP,
2. the island-wide HCP is not developed, and DPL chooses to proceed with section 10 compliance by preparing an HCP for developing agricultural homesteads in Rota bridled white-eye habitat, and
3. the island-wide HCP is not developed, and DPL chooses to avoid development in critical habitat, instead seeking other locations outside of critical habitat.

[81] Personal communication with MPLA, December 5, 2005.
[82] CNMI P.L. 15-2 Section 105 (f).
[83] Personal communication with USFWS Honolulu Field Office, March 27, 2006.

In the past, MPLA has expressed a preference for seeking out alternative homestead locations rather than developing agricultural homesteads in critical habitat for other species (i.e., the Mariana crow).[84] Critical habitat for the Rota bridled white-eye may therefore serve as an additional constraint in future planning and development.

Siting agricultural homesteads in other areas outside of proposed critical habitat was MPLA's preferred alternative; however, unidentified development constraints (such as additional engineering costs) for any or all of the available parcels could be discovered, resulting in additional losses of the available developable land. Hence, this analysis will evaluate the value associated with additional losses of developable land. In areas where critical habitat is designated and DPL desires to pursue use, DPL will need additional time, planning, and funding to release agricultural homesteads to private landowners.

3.2.2.1 Alternative 1: Island-wide HCP

Costs associated with the first option, island-wide HCP development, are presented in Section 3.1.4. No additional costs associated with agricultural homestead development are assumed under this option. This alternative does not capture impacts of restrictions to the level of development that may be associated with the HCP. HCP development and some implementation costs (e.g., species research and monitoring) are included, but absent specific information on the type and level of mitigation that may be included in the HCP regarding development of agricultural homesteads, this analysis does not quantify constrained development as part of Alternative 1.

In addition to the impacts that proposed critical habitat may bear on CNMI agencies, individual recipients of agricultural homesteads could be affected should they seek Federal or private assistance; however, this evaluation will show that such effects are unlikely. For example, recipients of agricultural homestead lots may choose to obtain grants and loans to construct residential dwellings on those parcels. Sources of Federal funding include the Department of Housing and Urban Development (HUD) and the U.S. Department of Agriculture (USDA) Rural Development Housing Program. HUD provides one lump-sum grant per year to CNMI through its Community Development Block Grant (CDBG) for Insular Areas program, which CNMI divides among activities on Saipan, Tinian, and Rota, and provides assistance for construction of new homes to low-income families through its HOMES program. Typically, one activity on Rota is funded through the CDBG per year, and funded activities generally benefit the community (i.e., construction of a public swimming pool, construction of a gymnasium). Since January 2004, two activities on Rota were funded by HUD CDBG, none of which occurred within the proposed critical habitat area, and no HOMES grant funding has been distributed on Rota since listing.[85] Based on this information, this analysis assumes that future CDBG funding would not be provided for projects within the proposed critical habitat area, as funded projects typically occur in more urban areas that serve a larger community (such as the villages of Songsong or Sinapalo).

USDA Rural Housing program provides direct loans for newly constructed housing and loans and grants for residential repair. According to the Saipan office, only loans for new residential

[84] Personal communication with MPLA, December 5, 2005.
[85] Personal communication with US HUD Honolulu Field Office, January 17, 2006.

construction have been issued to homeowners on Rota since 2004.[86] The loans were all issued for construction in the Sinapalo residential area, outside of the proposed critical habitat area. The landscape of the proposed critical habitat area does not contain much residential development. The majority of the island's population resides in the two villages, outside of the proposed critical habitat. Based on this information, this analysis assumes that future Federal residential development funding would not be provided for projects within the proposed critical habitat area.

Lenders may view the presence of the species or its habitat as posing an additional risk, which may affect the ability of residents to obtain funding. As the HCP process allows development to proceed while promoting listed species conservation, and pre-empts the need for landowners to proceed individually through the regulatory process, development of an HCP could reduce the risk perceived by lenders.

3.2.2.2 Alternative 2: Rota Bridled White-eye HCP

MPLA indicated that it is unlikely that they would undertake development within the proposed critical habitat area if designated without the island-wide HCP being developed and implemented. However, should the island-wide HCP not proceed and they pursue development of agricultural homesteads in the proposed critical habitat area, it is possible that DPL would obtain a section 10 permit and develop an HCP specific to the agricultural homestead development program in proposed critical habitat for Rota bridled white-eye. For the purpose of this analysis, costs to DPL, DLNR, and the Service for development of an HCP are assumed to be similar to those identified in Table 5. The total estimated future costs for development and implementation of an HCP through 2025 are projected to range from approximately $540,000 to $565,000 in present value terms applying a seven percent discount rate, and an annualized impact of approximately $51,000 to $53,000 over 20 years. This alternative does not capture impacts of restrictions to the level of development that may be associated with the HCP. HCP development and some implementation costs (e.g., species research and monitoring) are included, but absent specific information on the type and level of mitigation that may be included in the HCP regarding development of agricultural homesteads, this analysis does not quantify constrained development as part of Alternative 2.

3.2.2.3 Alternative 3: Lost Development Value of Critical Habitat Lands

Approximately 1,040 acres (420 ha) within proposed Rota bridled white-eye critical habitat are considered developable (as described below). Because MPLA has preferred in the past to avoid regulatory constraints or uncertainty and site developments outside of critical habitat areas, this analysis assumes that the same may be true of Rota bridled white-eye critical habitat. This analysis therefore estimates that the developable acres within the proposed critical habitat area lose their development value.

The available developable land outside of proposed critical habitat and existing constraints (see Table 6) was examined using MPLA land use data. This review shows that approximately 1,360 acres (550 ha) of developable land exists outside of the proposed critical habitat. Figure 3-2 illustrates the location of available developable land remaining after the following land use constraints were considered: existing Mariana crow critical habitat, physical and geographic constraints such as steep slope and urbanized areas, CNMI-designated conservation areas,

[86] Personal communication with USDA Rural Housing Saipan office, January 17, 2006.

existing and planned village and agriculture homestead areas, historic preservation sites, public lands planned for specific uses, and safety restrictions associated with development around the Rota International Airport.

Approximately 200 2.5-acre (1-ha) agricultural homesteads have been released on Rota since 1998.[87] Based on this limited set of data, the future rate of release of lots is 25 homesteads per year.[88] Assuming this rate of release continues, and the moratorium on homestead applications is removed, it is likely that 500 agricultural homesteads could be released over the 20-year analysis period. With land for 550 homesteads available in the approximately 1,360 acres (550 ha) of developable land outside of the proposed critical habitat, the number of homesteads anticipated to be released in the 20-year analysis period (500) can be accommodated outside of proposed Rota bridled white-eye critical habitat..

Although lands outside of critical habitat are available for development of agricultural homesteads, the land within critical habitat still loses its value as the options for its future use are more limited. Specifically, land for agricultural homestead use would be downgraded to a value comparable to that of conservation land, which has little economic value (as taxes are not assessed on public land and there is no comparable market value for conservation land in CNMI). To estimate this loss, the difference between the current value of agricultural homestead land minus the current value of conservation land (near zero value) is estimated. Social value of conservation land (such as scenic, recreational, or ecological value) is not quantified in this analysis as data from CNMI in these areas are not available.

Based on general information on past land transactions on Rota, the current value of unimproved agricultural parcels larger than two acres (this value is assumed to be comparable to the agricultural homestead parcel value) is approximately $0.09 per square foot (one dollar per square meter), or approximately $4,047 per acre ($10,000 per ha).[89] Therefore, the 1,040 acres (420 ha) of developable land within the proposed critical habitat represents a value of approximately $4,200,000. Designation of critical habitat on these 1,040 acres (420 ha) would therefore represent an immediate loss in land value of nearly $4,200,000. While this general information is not specific to individual parcels of land, it is provided as a guideline for the cost of agricultural land.

It is possible that developable lands outside of critical habitat may increase in value as developable acres across the island become more scarce. The increased value of developable parcels outside of critical habitat is not known, however, and this analysis does not assume that the potential increase in value of other parcels is equal and opposite to the lost value of development within critical habitat. While it is possible that there may be an offsetting effect outside of the proposed critical habitat of the foregone development within critical habitat, the magnitude of that offsetting effect is not known.

[87] Personal communication with MPLA, February 21, 2006.
[88] 25 homesteads per year = 200 homesteads / 8 years.
[89] Personal communication with Micronesian Appraisal Associates, Inc., February 24, 2006.

3.3 Impacts to Private Development and Tourism

DPL may lease idle public lands to commercial businesses for up to 25 years, with a 15-year extension on the approval of the Board of Directors. Minimum annual rental payments for public land leases is, by law, no less than eight percent of the appraised fair market value of the property.[90] If DPL were to focus on economic development of public lands (versus development of agricultural or village homesteads), the 1,040 acres (420 ha) of developable land within critical habitat could technically be leased to commercial interests.

3.3.1 Past Costs

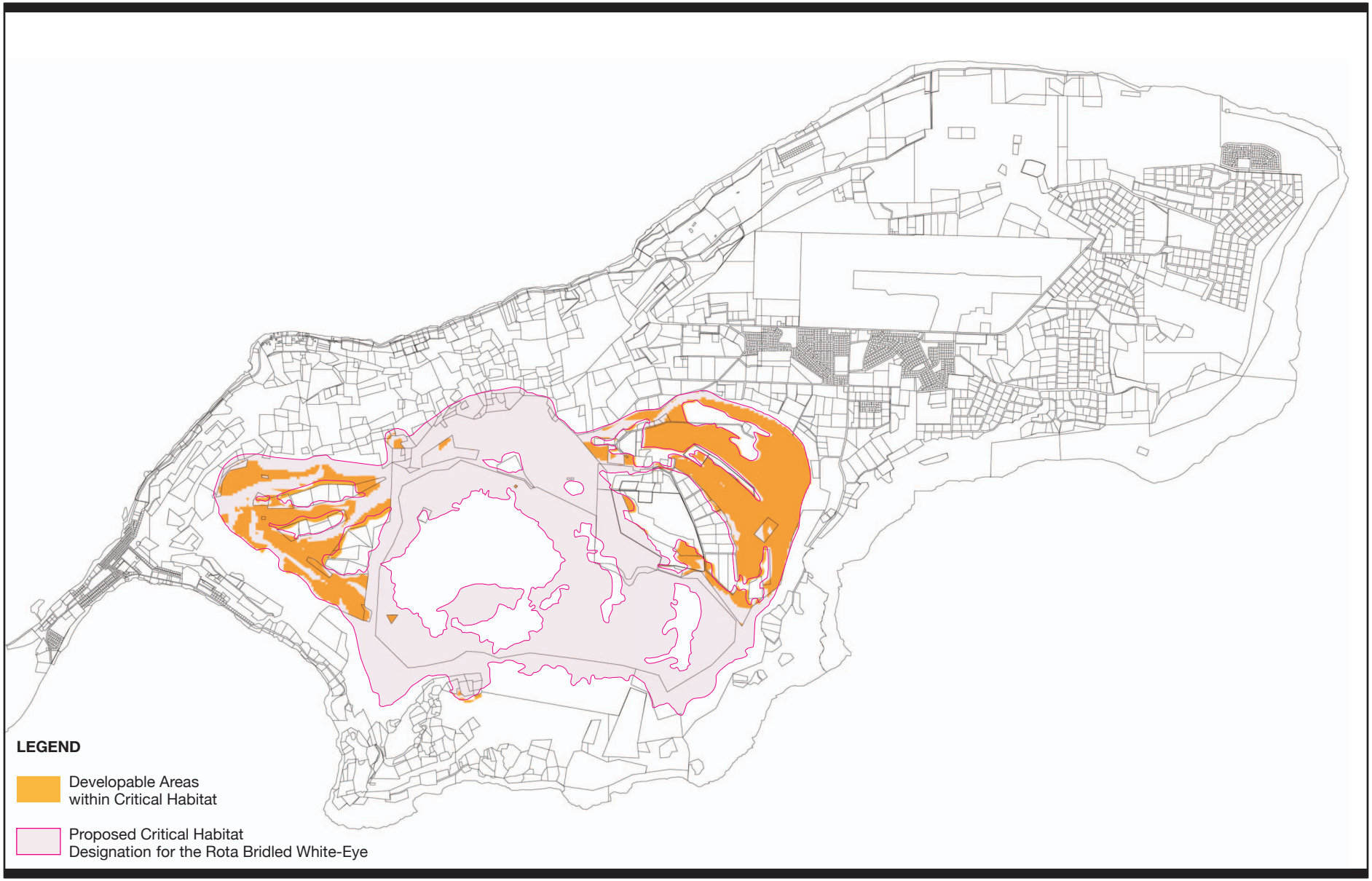
No specific private development projects were identified during stakeholder meetings as having been proposed in the proposed critical habitat area in the past. Therefore, no past cost is attributed to private development or tourism activities.

3.3.2 Future Costs

Prior to leasing the land designated as critical habitat for commercial purposes, DPL would need to obtain a section 10 permit. Based on DPL's past activities, a HCP is likely to be part of the section 10 permit process. As a result, two outcomes are reasonable to consider: (1) the developer loses interest as it or its bank/lender may perceive the presence of critical habitat as a risk to avoid, or (2) the developer attempts to obtain a Section 10 permit.

The Rota legislative representatives have expressed a desire to grow the eco-tourism industry in Rota;[91] however, no specific private development projects were identified during stakeholder meetings as potentially occurring in the next 20 years within the proposed critical habitat area, and to date, Rota has not been able to attract investors (see Section 2.5.5). For these reasons, and because other areas outside of proposed critical habitat are available (see Figure 3.2 for developable areas outside of proposed critical habitat), future costs associated with private development and tourism resulting from proposed critical habitat designation for the Rota bridled white-eye are not likely to be incurred.

[90] CNMI Public Law 12-33.
[91] Personal communication with Senator Diego Songao, Rota Legislative Delegation, December 6, 2005.



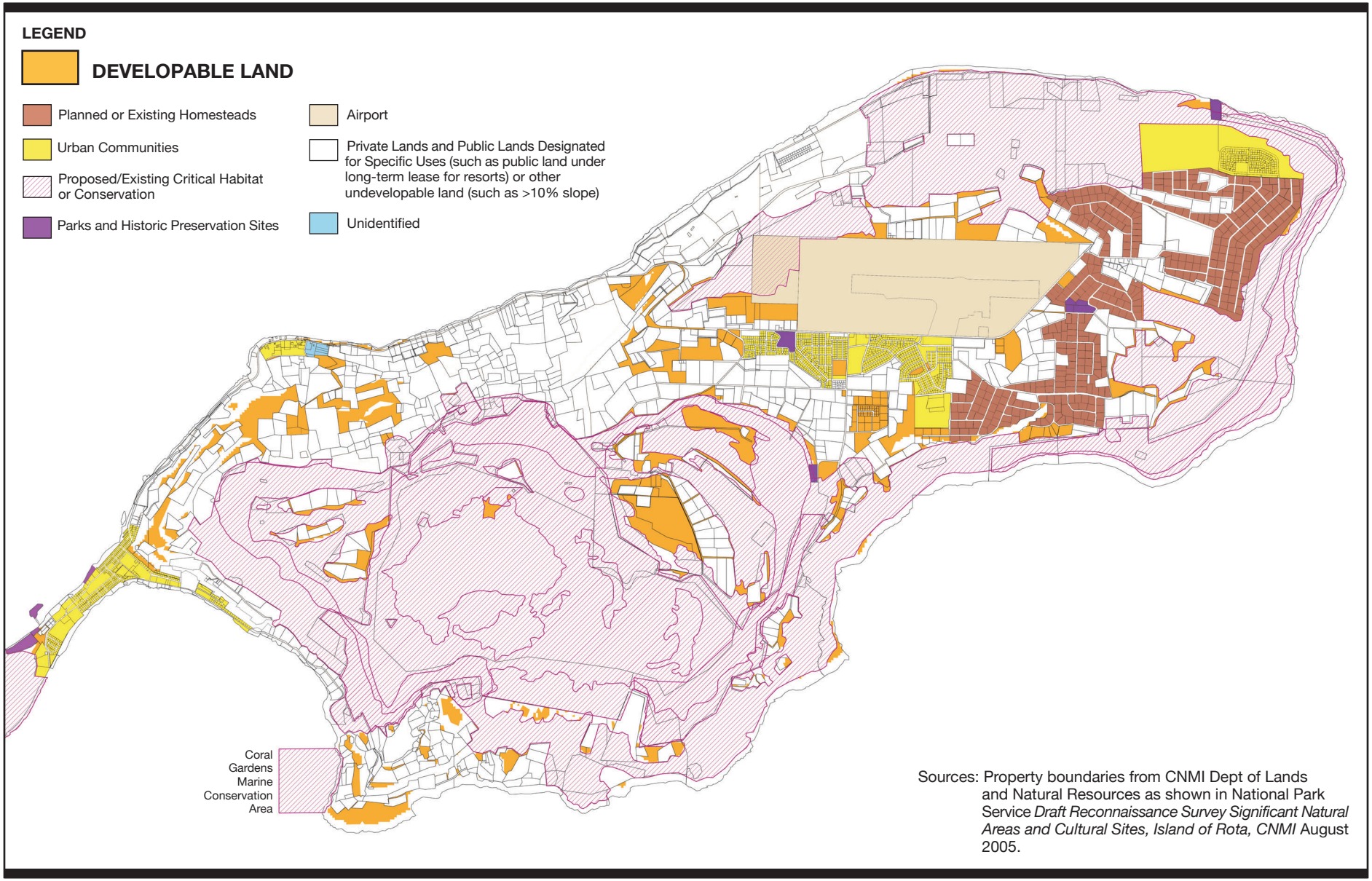
2005.85.0200/001-2 K03.09.06 4

NORTH

0 1500 3000 6000

SCALE IN FEET

Figure 3-1
DEVELOPABLE AREAS WITHIN PROPOSED CRITICAL HABITAT



NORTH

0 1500 3000 6000

SCALE IN FEET

Figure 3-2
DEVELOPABLE LAND OUTSIDE OF PROPOSED CRITICAL HABITAT

4 Regulatory Flexibility Act/Small Business Regulatory Enforcement Fairness Act and Energy Impacts Screening Analysis

This section considers the extent to which the analytic results presented in the previous sections reflect potential future impacts to small entities in proposed Rota bridled white-eye critical habitat. The screening analysis presented in this section is conducted pursuant to the RFA as amended by the SBREFA in 1996. This section also contains an analysis of the effects of rulemaking on energy markets, as required by Executive Order 13211.

4.1 RFA/SBREFA Screening Analysis

In accordance with RFA/SBREFA, when a Federal agency publishes a notice of rulemaking for any proposed or final rule, it must make available for public comment a regulatory flexibility analysis that describes the effect of the rule on small entities. However, no regulatory flexibility analysis is required if the head of an agency certifies that the rule will not have a significant economic impact on a substantial number of small entities.[92] SBREFA amended the RFA to require Federal agencies to provide a statement of the factual basis for certifying that a rule will not have a significant economic impact on a substantial number of small entities. To assist in this process, the following represents a screening level analysis of the potential effects of conservation efforts for the Rota bridled white-eye on small entities due to the rulemaking. This analysis is intended to facilitate determination of (1) whether this critical habitat designation potentially affects a "substantial number" of small entities in counties and/or supporting critical habitat areas; and (2) the probable number of small entities that are likely to experience a "significant effect."

Small entities include small businesses, small governments, or small organizations, as defined by the U.S. Small Business Administration (SBA). Size standards for small businesses are established for different types of economic activity or industry within the North American Industry Classification System (NAICS), and are commonly expressed in terms of the number of employees or annual receipts. For most industries, the size standard is based upon annual revenue for the business. The SBA publishes a table of current small business size standards on their Web site (www.sba.gov/size).[93] These size standards were most recently published by the SBA in "Table of Small Business Size Standards Matched to North American Industry Classification System Codes," effective December 6, 2005.

Federal courts have held that an RFA analysis should be limited to impacts on entities subject to the requirements of the regulation (i.e., participants in the section 7 consultation process).[94] These entities include participants in the section 7 consultation process, but not entities suffering the downstream effects of consultation outcomes. In spite of these rulings, in its guidance to

[92] Thus, for a regulatory flexibility analysis to be required, impacts must exceed a threshold for "significant impact" *and* a threshold for a "substantial number of small entities." See 5 U.S.C. § 605(b).

[93] U.S. Small Business Administration, "Small Business Size Standards matched to North American Industry Classification System," effective December 6, 2005. From: http://www.sba.gov/size/sizetable2002.html, accessed January 27, 2006.

[94] U.S. Small Business Administration, Office of Advocacy. May 2003. "A Guide for Government Agencies: How to Comply with the Regulatory Flexibility Act," pp. 69-70.

Federal agencies on conducting screening analyses, the SBA recommends considering impacts to entities that may be indirectly affected by the proposed regulation.[95]

After conducting meetings with various CNMI and Rota land management agencies and legislative and municipal government representatives about the proposed designation of critical habitat, entities potentially affected by the proposed rule include: the CNMI government, the Rota municipality, agricultural homesteaders producing crops for sale, and agricultural homesteaders using the property as a residence.

Using the RFA/SBREFA definitions for small entities, including:

- small businesses (as defined in the Small Business Act [P.L. 108-447][96] and codified at 13CFR121.201),
- small governments (the government of a city, county, town, school district, or special district with a population of less than 50,000), and
- small organizations (any not-for-profit enterprise which is independently owned and operated and is not dominant in its field).

This economic analysis estimates that future economic impacts are borne by the CNMI government and the Service. The CNMI government serves a population greater than 50,000 and is not a small entity as defined under the RFA/SBREFA.

4.2 Potential Impacts to the Energy Industry

Pursuant to Executive Order 13211, "Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use," issued May 18, 2001, Federal agencies must prepare and submit a "Statement of Energy Effects" for all "significant energy actions." The purpose of this requirement is to ensure that all Federal agencies "appropriately weigh and consider the effects of the Federal Government's regulations on the supply, distribution, and use of energy."[97] The Office of Management and Budget has provided guidance for implementing this Executive Order that outlines nine outcomes that may constitute "a significant adverse effect" when compared without the regulatory action under consideration:

- Reductions in crude oil supply in excess of 10,000 barrels per day (bbls);
- Reductions in fuel production in excess of 4,000 bbls;
- Reductions in coal production in excess of 5 million tons per year;
- Reductions in natural gas production in excess of 25 million Mcf (thousand cubic feet) per year;
- Reductions in electricity production in excess of 1 billion kilowatts-hours per year or in excess of 500 megawatts of installed capacity;

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95 U.S. Small Business Administration, Office of Advocacy. May 2003. "A Guide for Government Agencies: How to Comply with the Regulatory Flexibility Act."

96 Small Business Act (Public Law 85-536, as amended). http://www.sba.gov/regulations/sbaact/sbaact.html, accessed January 9, 2006.

97 Memorandum For Heads of Executive Department Agencies, and Independent Regulatory Agencies, "Guidance For Implementing E.O. 13211, M-01-27," Office of Management and Budget. July 13, 2001. http://www.whitehouse.gov/omb/memoranda/m01-27.html.

- Increases in energy use required by the regulatory action that exceed the thresholds above;
- Increases in the cost of energy production in excess of one percent;
- Increases in the cost of energy distribution in excess of one percent; or
- Other similarly adverse outcomes.[98]

None of these criteria is relevant to proposed Rota bridled white-eye critical habitat on Rota. Energy-related activities such as those addressed under Executive Order 13211 are not present nor will be affected by the proposed critical habitat designation.

[98] Ibid.

5 Summary of Impacts

This section summarizes the estimated economic impacts of actions to protect the Rota bridled white-eye and its habitat. The potential economic impacts associated with proposed critical habitat designation for the Rota bridled white-eye are quantified in Tables 7 and 8 by entity (e.g., Service, CNMI DLNR, etc.) and activity (e.g., public land management, agricultural homestead development, etc.), respectively. Because there are three agricultural homestead alternatives (development in critical habitat with an island-wide HCP, development in critical habitat with an agricultural homestead HCP, and development outside of critical habitat), as discussed in Section 3.2, subtotals in Table 7 and totals in Table 8 reflect these alternatives. Economic impacts represent the entire unit of 3,958 acres (1,602 ha) proposed for critical habitat designation on Rota, as locations of specific activities were generally not yet available, or the activity applied to the entire area (e.g., island-wide HCP). In the case of agricultural homestead activities, the locations of future agricultural homesteads were estimated.

In all cases, the total past cost is $68,000 and is attributable solely to public land management activities. Future costs could range from approximately $1,301,000 to $1,328,000 in undiscounted dollars or $806,000 to $830,000 (using a seven percent discount rate) in the case of either Alternative 1 (agricultural homestead development with preparation of an island-wide HCP) or Alternative 2 (agricultural homestead development with preparation of an agricultural homestead HCP. With Alternative 3, agricultural homestead development outside of critical habitat, future costs would be approximately $4,700,000 in undiscounted dollars or $4,465,000 (using a seven percent discount rate). The economic impact of Alternatives 1 and 2 are much less than those under Alternative 3; however, costs associated with HCP development and implementation are real expenditures to the relevant agencies, while costs associated with precluding development of agricultural homesteads in Rota bridled white-eye critical habitat are losses of future benefits to persons of Northern Marianas descent, as provided by the DPL. Specific activities and their economic impacts are described below.

Public Land Management Activities. Public land management activities likely to incur an economic impact from the designation of proposed critical habitat include: Act-funded studies specifically for the Rota bridled white-eye and the development of the proposed island-wide HCP. Costs associated with these activities are approximately $1,301,000 to $1,328,000 in undiscounted dollars or $806,000 to $830,000 (using a seven percent discount rate). Entities affected by these costs are the CNMI DLNR and the Service.

Agricultural Homestead Development Activities. Agricultural homestead development activities likely to incur an economic impact from the designation of proposed critical habitat include: land use changes restricting agricultural use in proposed critical habitat and releases of agricultural homesteads in proposed critical habitat. Costs associated with these activities could total $4,200,000 in undiscounted dollars or up to $4,200,000 (using a seven percent discount rate). Entities affected by these costs are the DPL, DLNR, and the Service.

Private Development and Tourism. Private development and tourism activities are not likely to incur an economic impact from the designation of proposed critical habitat.

Table 7. Summary of Economic Impacts from Rota Bridled White-eye Conservation Efforts by Affected Entity

(Values in 2005 dollars, rounded to the nearest thousand)

				Future Quantified Costs by Affected Entity				
		Activity	Past Costs	Undiscounted	PV at 7%	Annualized at 7%	PV at 3%	Annualized at 3%
Service	Public Land Management Activities	Rota bridled white-eye studies	$51,000	$500,000	$265,000	$25,000	$372,000	$25,000
		Subsistence farming	None	None	None	None	None	None
		Historic Preservation Activities	None	None	None	None	None	None
		Island-wide HCP	None	$392,000 to $417,000	$354,000 to $377,000	$33,000 to $36,000	$375,000 to $399,000	$25,000 to $27,000
	Agricultural Homestead Development Activities	Development with island-wide HCP	None	None*	None*	None*	None*	None*
		Ag. Homestead Development with Homestead HCP	None	$392,000 to $417,000	$354,000 to $377,000	$33,000 to $36,000	$375,000 to $399,000	$25,000 to $27,000
		Development Outside of Critical Habitat	None	None	None	None	None	None
	Private Development/ Tourism	Leasing Land to Commercial Interests	None	None	None	None	None	None
	SUBTOTALS	Alternative 1: Rota bridled white-eye studies & Island-wide HCP	$51,000	$892,000 to $917,000	$619,000 to $642,000	$58,000 to $61,000	$747,000 to $771,000	$50,000 to $52,000
		Alternative 2: Rota bridled white-eye studies & Ag. Homestead Development with Homestead HCP	$51,000	$892,000 to $917,000	$619,000 to $642,000	$58,000 to $61,000	$747,000 to $771,000	$50,000 to $52,000
		Alternative 3: Rota bridled white-eye studies & Development Outside of Critical Habitat	$51,000	$500,000	$265,000	$25,000	$372,000	$25,000
DLNR	Public Land Management Activities	Rota bridled white-eye studies	None	None	None	None	None	None
		Subsistence farming	None	None	None	None	None	None
		Historic Preservation Activities	None	None	None	None	None	None
		Island-wide HCP	$17,000	$409,000 to $411,000	$187,000 to $188,000	$18,000	$287,000 to $288,000	$19,000
	Agricultural Homestead Development Activities	Development with island-wide HCP	None	None	None	None	None	None
		Ag. Homestead Development with Homestead HCP	None	$409,000 to $411,000	$187,000 to $188,000	$18,000	$287,000 to $288,000	$19,000
		Development Outside of Critical Habitat	None	None	None	None	None	None
	Private Development/ Tourism	Leasing Land to Commercial Interests	None	None	None	None	None	None

(Table continued on next page)

Table 7. Summary of Economic Impacts from Rota Bridled White-eye Conservation Efforts by Affected Entity *(continued)*

				Future Quantified Costs by Affected Entity				
		Activity	Past Costs	Undiscounted	PV at 7%	Annualized at 7%	PV at 3%	Annualized at 3%
	SUBTOTALS	Alternative 1: Rota bridled white-eye studies & Island-wide HCP	$17,000	$409,000 to $411,000	$187,000 to $188,000	$18,000	$287,000 to $288,000	$19,000
		Alternative 2: Rota bridled white-eye studies & Ag. Homestead Development with Homestead HCP	None	$409,000 to $411,000	$187,000 to $188,000	$18,000	$287,000 to $288,000	$19,000
		Alternative 3: Rota bridled white-eye studies & Development Outside of Critical Habitat	None	None	None	None	None	None
DPL	Public Land Management Activities	Rota bridled white-eye studies	None	None	None	None	None	None
		Subsistence farming	None	None	None	None	None	None
		Historic Preservation Activities	None	None	None	None	None	None
		Island-wide HCP	None	None	None	None	None	None
	Agricultural Homestead Development Activities	Development with island-wide HCP	None	None	None	None	None	None
		Ag. Homestead Development with Homestead HCP	None	None	None	None	None	None
		Development Outside of Critical Habitat	None	$4,200,000	$4,200,000	$396,000	$4,200,000	$282,000
	Private Development/ Tourism	Leasing Land to Commercial Interests	None	None	None	None	None	None
	SUBTOTALS	Alternative 1: Rota bridled white-eye studies & Island-wide HCP	None	None	None	None	None	None
		Alternative 2: Rota bridled white-eye studies & Ag. Homestead Development with Homestead HCP	None	None	None	None	None	None
		Alternative 3: Rota bridled white-eye studies & Development Outside of Critical Habitat	None	$4,200,000	$4,200,000	$396,000	$4,200,000	$282,000

(Table continued on next page)

Table 7. Summary of Economic Impacts from Rota Bridled White-eye Conservation Efforts by Affected Entity *(continued)*

				Future Quantified Costs by Affected Entity				
		Activity	Past Costs	Undiscounted	PV at 7%	Annualized at 7%	PV at 3%	Annualized at 3%
Rota Municipality	Public Land Management Activities	Rota bridled white-eye studies	None	None	None	None	None	None
		Subsistence farming	None	None	None	None	None	None
		Historic Preservation Activities	None	None	None	None	None	None
		Island-wide HCP	None	None	None	None	None	None
	Agricultural Homestead Development Activities	Development with island-wide HCP	None	None	None	None	None	None
		Ag. Homestead Development with Homestead HCP	None	None	None	None	None	None
		Development Outside of Critical Habitat	None	None	None	None	None	None
	Private Development/ Tourism	Leasing Land to Commercial Interests	None	None	None	None	None	None
	SUBTOTALS	Alternative 1: Rota bridled white-eye studies & Island-wide HCP	None	None	None	None	None	None
		Alternative 2: Rota bridled white-eye studies & Ag. Homestead Development with Homestead HCP	None	None	None	None	None	None
		Alternative 3: Rota bridled white-eye studies & Development Outside of Critical Habitat	None	None	None	None	None	None
Investors/ Business Owners	Public Land Management Activities	Rota bridled white-eye studies	None	None	None	None	None	None
		Subsistence farming	None	None	None	None	None	None
		Historic Preservation Activities	None	None	None	None	None	None
		Island-wide HCP	None	None	None	None	None	None
	Agricultural Homestead Development Activities	Development with island-wide HCP	None	None	None	None	None	None
		Ag. Homestead Development with Homestead HCP	None	None	None	None	None	None
		Development Outside of Critical Habitat	None	None	None	None	None	None

(Table continued on next page)

Table 7. Summary of Economic Impacts from Rota Bridled White-eye Conservation Efforts by Affected Entity`

		Activity	Past Costs	Future Quantified Costs by Affected Entity				
				Undiscounted	PV at 7%	Annualized at 7%	PV at 3%	Annualized at 3%
	Private Development/ Tourism	Leasing Land to Commercial Interests	None	None	None	None	None	None
	SUBTOTALS	Alternative 1: Rota bridled white-eye studies & Island-wide HCP	None	None	None	None	None	None
		Alternative 2: Rota bridled white-eye studies & Ag. Homestead Development with Homestead HCP	None	None	None	None	None	None
		Alternative 3: Rota bridled white-eye studies & Development Outside of Critical Habitat	None	None	None	None	None	None
TOTAL COSTS to All Affected Entities	ALTERNATIVES	Alternative 1: Rota bridled white-eye studies & Island-wide HCP	$68,000	$1,301,000 to $1,328,000	$806,000 to $830,000	$76,000 to $79,000	$1,034,000 to $1,059,000	$69,000 to $71,000
		Alternative 2: Rota bridled white-eye studies & Ag. Homestead Development with Homestead HCP	$68,000	$1,301,000 to $1,328,000	$806,000 to $830,000	$76,000 to $79,000	$1,034,000 to $1,059,000	$69,000 to $71,000
		Alternative 3: Rota bridled white-eye studies & Development Outside of Critical Habitat	$68,000	$4,700,000	$4,465,000	$421,000	$4,572,000	$307,000

Table 8. Summary of Economic Impacts from Rota Bridled White-eye Conservation Efforts by Activity

(Values in 2005 dollars; rounded to nearest thousands)

		Affected Entity	Past Costs	Future Quantified Costs by Activity				
				Undiscounted	PV at 7%	Annualized at 7%	PV at 3%	Annualized at 3%
Public Land Management Activities	Rota bridled white-eye studies	Service	$51,000	$500,000	$265,000	$25,000	$372,000	$25,000
		DLNR	None	None	None	None	None	None
		DPL	None	None	None	None	None	None
		Rota Municipality	None	None	None	None	None	None
		Investors/ Business Owners	None	None	None	None	None	None
	SUBTOTAL		$51,000	$500,000	$265,000	$25,000	$372,000	$25,000
	Subsistence farming	Service	None	None	None	None	None	None
		DLNR	None	None	None	None	None	None
		DPL	None	None	None	None	None	None
		Rota Municipality	None	None	None	None	None	None
		Investors/ Business Owners	None	None	None	None	None	None
	SUBTOTAL		None	None	None	None	None	None
	Historic Preservation Activities	Service	None	None	None	None	None	None
		DLNR	None	None	None	None	None	None
		DPL	None	None	None	None	None	None
		Rota Municipality	None	None	None	None	None	None
		Investors/ Business Owners	None	None	None	None	None	None
	SUBTOTAL		None	None	None	None	None	None
	Island-wide HCP	Service	None	$392,000 to $417,000	$354,000 to $377,000	$33,000 to $36,000	$375,000 to $399,000	$25,000 to $27,000
		DLNR	$17,000	$409,000 to $411,000	$187,000 to $188,000	$18,000	$287,000 to $288,000	$19,000
		DPL	None	None	None	None	None	None
		Rota Municipality	None	None	None	None	None	None
		Investors/ Business Owners	None	None	None	None	None	None
	SUBTOTAL		$17,000	$801,000 to $828,000	$541,000 to $565,000	$51,000 to $54,000	$662,000 to $687,000	$44,000 to $46,000
Agricultural Homestead Development Activities	Ag Homestead Development with island-wide HCP	Service	None	None	None	None	None	None
		DLNR	None	None	None	None	None	None
		DPL	None	None	None	None	None	None
		Rota Municipality	None	None	None	None	None	None
		Investors/ Business Owners	None	None	None	None	None	None
	SUBTOTAL		None	None	None	None	None	None
	Ag. Homestead Development with Homestead HCP	Service	None	$392,000 to $417,000	$354,000 to $377,000	$33,000 to $36,000	$375,000 to $399,000	$25,000 to $27,000
		DLNR	None	$409,000 to $411,000*	$187,000 to $188,000*	$18,000*	$287,000 to $288,000*	$19,000*
		DPL	None	None	None	None	None	None
		Rota Municipality	None	None	None	None	None	None
		Investors/ Business Owners	None	None	None	None	None	None
	SUBTOTAL		None	$801,000 to $828,000	$541,000 to $565,000	$51,000 to $54,000	$662,000 to $687,000	$44,000 to $46,000

(Table continued on next page)

Table 8. Summary of Economic Impacts from Rota Bridled White-eye Conservation Efforts by Activity *(continued)*

		Affected Entity	Past Costs	Future Quantified Costs by Activity				
				Undiscounted	PV at 7%	Annualized at 7%	PV at 3%	Annualized at 3%
	Homestead Development Outside Critical Habitat	Service	None	None	None	None	None	None
		DLNR	None	None	None	None	None	None
		DPL	None	$4,200,000	$4,200,000	$396,000	$4,200,000	$282,000
		Rota Municipality	None	None	None	None	None	None
		Investors/ Business Owners	None	None	None	None	None	None
	SUBTOTAL		None	$4,200,000	$4,200,000	$396,000	$4,200,000	$282,000
Private Development / Tourism	Leasing Land to Commercial Interests	Service	None	None	None	None	None	None
		DLNR	None	None	None	None	None	None
		DPL	None	None	None	None	None	None
		Rota Municipality	None	None	None	None	None	None
		Investors/ Business Owners	None	None	None	None	None	None
	SUBTOTAL		None	None	None	None	None	None
Alternatives	Alternative 1: **Rota bridled white-eye studies & Island-wide HCP**	Service	$51,000	$892,000 to $917,000	$619,000 to $642,000	$58,000 to $61,000	$747,000 to $771,000	None
		DLNR	$17,000	$409,000 to $411,000	$187,000 to $188,000	$18,000	$287,000 to $288,000	None
		DPL	None	None	None	None	None	None
		Rota Municipality	None	None	None	None	None	None
		Investors/ Business Owners	None	None	None	None	None	None
	TOTAL		$68,000	$1,301,000 to $1,328,000	$806,000 to $830,000	$76,000 to $79,000	$1,034,000 to $1,059,000	$69,000 to $71,000
	Alternative 2: Rota bridled white-eye studies & Ag. Homestead Development with Homestead HCP	Service	$51,000	$892,000 to $917,000	$619,000 to $642,000	$58,000 to $61,000	$747,000 to $771,000	$50,000 to $52,000
		DLNR	$17,000	$409,000 to $411,000	$187,000 to $188,000	$18,000	$287,000 to $288,000	$19,000
		DPL	None	None	None	None	None	None
		Rota Municipality	None	None	None	None	None	None
		Investors/ Business Owners	None	None	None	None	None	None
	TOTAL		$68,000	$1,301,000 to $1,328,000	$806,000 to $830,000	$76,000 to $79,000	$1,034,000 to $1,059,000	$69,000 to $71,000
	Alternative 3: **Rota bridled white-eye studies & Development outside critical habitat**	Service	$51,000	$500,000	$265,000	$25,000	$372,000	$50,000 to $52,000
		DLNR	$17,000	None	None	None	None	$19,000
		DPL	None	$4,200,000	$4,200,000	$396,000	$4,200,000	None
		Rota Municipality	None	None	None	None	None	None
		Investors/ Business Owners	None	None	None	None	None	None
	TOTAL		$68,000	$4,700,000	$4,465,000	$421,000	$4,572,000	$307,000

* DLNR and DPL would share costs for HCP development, but the breakdown by agency can not be determined at this time; therefore, costs are allocated to DLNR.

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APPENDIX A: UNIT COSTS OF CONSULTATION

This appendix describes the section 7 consultation process and the administrative costs associated with the process. First, it describes the types of consultations typically undertaken by the Service, Action agencies, and third parties. Then, it describes typical per consultation costs obtained from a 2002 survey of consultation records. As there is no consultation history for the Rota bridled white-eye, costs associated with section 7 consultations specific to Rota were not available for use in the analysis.

Technical Assistance

The Service responds to requests for technical assistance from Commonwealth agencies, local municipalities, and private landowners and developers who may have questions regarding whether specific activities affect the Rota bridled white-eye and its critical habitat. Technical assistance costs represent the estimated economic costs of informational conversations between these entities and the Service. Such conversations may occur between municipal or private property owners and the Service regarding lands designated as critical habitat or lands adjacent to critical habitat. The Service's technical assistance activities are voluntary and may occur with Federal or local agencies, or private stakeholders.

Section 7 Consultations

Section 7(a)(2) of the Act requires Federal agencies (Action agencies) to consult with the Service whenever activities that they undertake, authorize, permit, or fund may affect a listed species or designated critical habitat. In some cases, consultations will involve the Service and another Federal agency only, such as the U.S. Forest Service. More often, they will also include a third party involved in projects on non-Federal lands with a Federal nexus, such as Commonwealth agencies and private landowners.

During a consultation, the Service, the Action agency, and the landowner manager applying for Federal funding or permitting (if applicable) communicate in an effort to minimize potential adverse effects to the species and/or to the proposed critical habitat. Communication between these parties may occur via written letters, phone calls, in-person meetings, or any combination of these. The duration and complexity of these interactions depends on a number of variables, including the type of consultation, the species, the activity of concern, and the potential effects to the species and designated critical habitat associated with the proposed activity, the Federal agency, and whether there is a private applicant involved.

Section 7 consultations with the Service may be either informal or formal. Informal consultations consist of discussions between the Service, the Action agency, and the applicant concerning an action that may affect a listed species or its designated critical habitat, is designed to identify and resolve potential concerns at an early stage in the planning process. By contrast, a formal consultation is required if the Action agency determines that its proposed action may or will adversely affect the listed species or designated critical habitat in ways that cannot be resolved through informal consultation. The formal consultation process results in the Service's determination in its Biological Opinion of whether the action is likely to jeopardize a species or adversely modify critical habitat, and recommendations to minimize those impacts. Regardless of the type of consultation or proposed project, section 7 consultations can require substantial administrative effort on the part of all participants.

Per Consultation Costs

Estimates of the cost of an individual consultation and technical assistance request were developed from a review and analysis of historical section 7 files from a number of Service field offices around the country conducted in 2002. These files addressed consultations conducted for both listings and critical habitat designations. Cost figures were based on an average level of effort of low, medium, or high complexity, multiplied by the appropriate labor rates for staff from the Service and other Federal agencies.

The administrative cost estimates presented in this Section take into consideration the level of effort of the Service, the Action agency, and the applicant, as well as the varying complexity of the consultation or the technical assistance request. Costs associated with these consultations include the administrative costs associated with conducting the consultation, such as the cost of time spent in meetings, preparing letters, and the development of a biological opinion. Table A-1 summarizes the estimated administrative costs of consultations and technical assistance requests.

Table A-1. ESTIMATED ADMINISTRATIVE COSTS OF CONSULTATION AND TECHNICAL ASSISTANCE EFFORTS (PER EFFORT)

Consultation Type	Service	Action Agency	Third Party	Biological Assessment
Technical Assistance	$260 - $680	N/A	$600 - $1,500	N/A
Informal Consultation	$1,000 - $3,100	$1,300 - $3,900	$1,200 - $2,900	$0 - $4,000
Formal Consultation	$3,100 - $6,100	$3,900 - $6,500	$2,900 - $4,100	$4,000 - $5,600
Programmatic Consultation	$11,500 - $16,100	$9,200 - $13,800	$0	$5,600

Sources: IEc analysis based on data from the Federal Government General Schedule Rates, Office of Personnel Management, 2002, a review of consultation records from several Service field offices across the country. Confirmed by local Action agencies.
Note: Low and high estimates primarily reflect variations in staff wages and time involvement by staff.

APPENDIX B: CRITICAL HABITAT PHOTOS

Photo 1: Typical areas of proposed critical habitat along the northern slopes of the Sabana

Photo 2: Agricultural and forest lands downslope of the proposed critical habitat, on the northern side of the island

Photo 3: Remnant of World War II-era road in proposed critical habitat

Photo 4: Forested area of proposed critical habitat with roadway

Photo 5: Forest canopy and subcanopy in proposed critical habitat