Proposed
Important Bird Areas (IBAs) in the Commonwealth of the Northern Mariana Islands (CNMI)

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Contents

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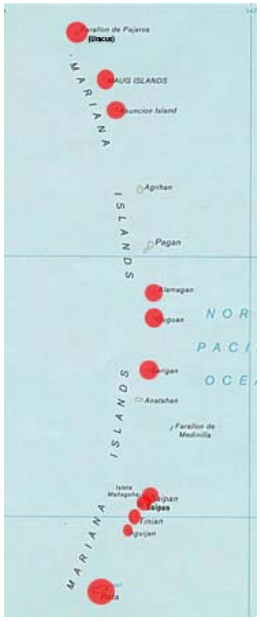
Executive Summary

The Commonwealth of the Northern Mariana Islands (CNMI) consists of the 14 northern islands in the Mariana Archipelago. The CNMI has a number of unique bird species, endemic at the species or subspecies level. Three bird species are endemic to the CNMI. In addition, several species that used to be present on Guam and CNMI now occur only on CNMI. Most of CNMI's native forest birds are threatened or endangered, in part due to the effects of invasive alien species. The CNMI also has significant breeding seabird populations.

Important Bird Areas (IBA) were identified in the CNMI through a desk-based literature review. IBAs were selected using BirdLife International criteria, including the presence of endangered and regionally-restricted species and populations of breeding seabirds meeting or exceeding regional or global thresholds.

Eleven IBAs are proposed for the CNMI:

1. Rota IBA
2. Aguiguan Island and Naftan Rock IBA
3. Tinian Island IBA
4. Northern Saipan IBA
5. Topachau-Susupe-Kagman IBA
6. Uracus Island IBA
7. Maug Islands IBA
8. Asuncion Island IBA
9. Alamagan Island IBA
10. Guguan Island IBA
11. Sarigan Island IBA



Of the proposed IBAs, nine are fully or partially protected.

The possible establishment of the Brown Treesnake or other invasive species pose the CNMI's greatest threat. The Brown Treesnake has decimated bird populations on Guam (Wiles et al. 2003), and could do the same on CNMI's islands, each of which are home to endangered and regionally-restricted birds. Several of the islands have birds that are endemic to only one or two of the islands.

Chapter 1. Introduction and Background to the CNMI

The CNMI's Terrestrial Environment

Geography

The Commonwealth of the Northern Mariana Islands (CNMI) consists of the 14 northern islands in the Mariana Archipelago (Figure 1). The Mariana archipelago is located in the tropical Pacific, north of the equator. The CNMI stretches across 650 km of ocean from the southern island of Rota to the northern island of Uracus (Farallon de Pajaros). The CNMI lies between 20°31' to 14°10' North latitude and 144°45' to 145°12' East longitude (Engbring et al., 1986) and has a total land area of 470 km^2. The largest island in CNMI is Saipan, at 120 km^2, and is home to the majority of the population. The CNMI has an Exclusive Economic Zone of over 750,000 km^2. The southern islands are raised limestone, and the northern islands are volcanic, with recently active volcanoes on Anahatan, Pagan, and Agrihan. The highest elevation in the CNMI is 965 m on the island of Agrihan.

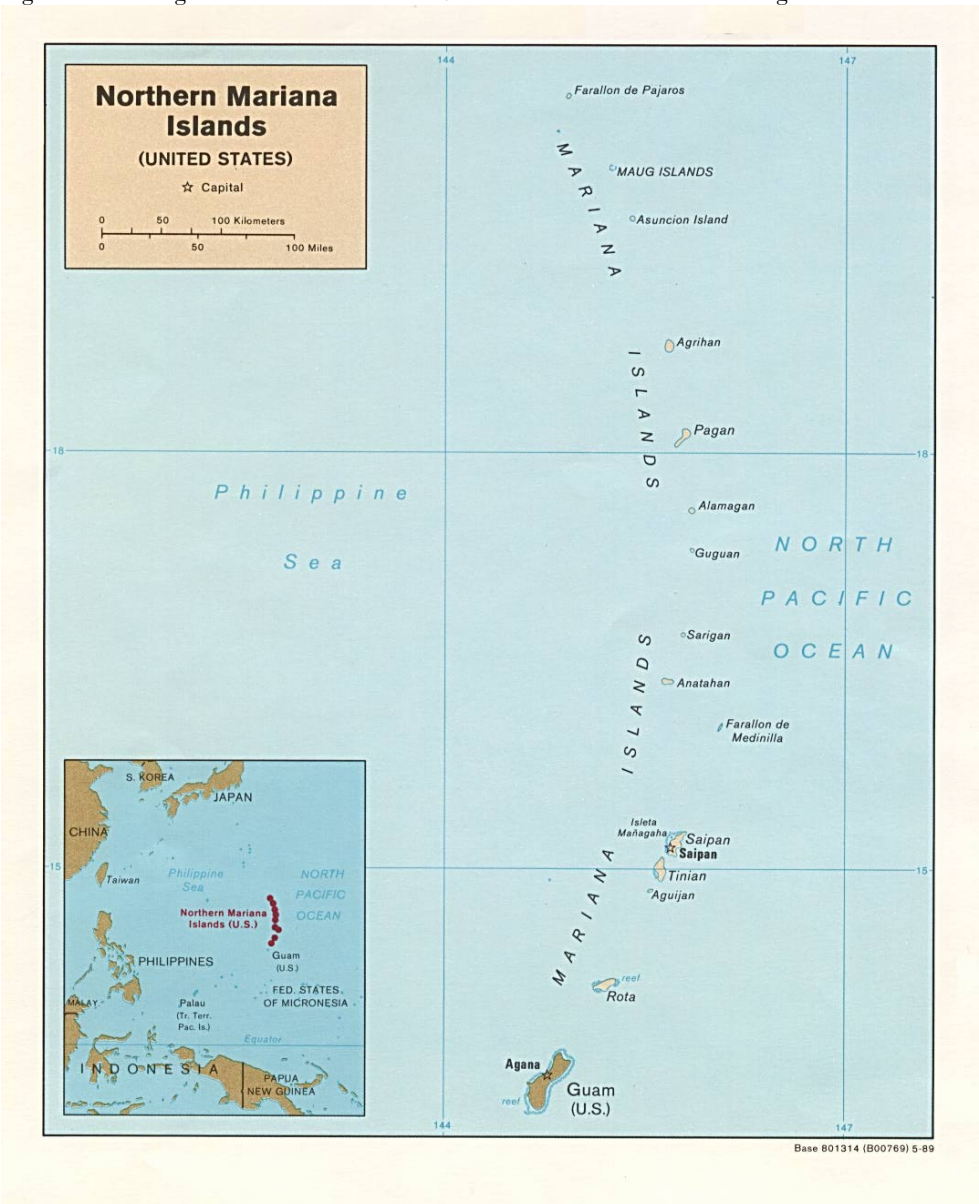


Figure 1. Map of CNMI (www.utexas.edu)

Political Boundaries
The CNMI is a Commonwealth in Political Union with the United States (DOI, 2007). CNMI has its own constitution which provides for a governor, a lieutenant governor, and a bicameral legislature. The CNMI has elected representatives who represent the Commonwealth before the US Congress and US Federal government. In general, US federal laws apply in the CNMI, and citizens are granted US passports. The islands are governed locally as the municipalities of Saipan, Rota, Tinian and Aguiguan, and the ten Northern Islands. Under the CNMI constitution, only persons of Northern Mariana descent may own land (DOI, 2007).

Geology
The Mariana Islands are on the edge of the Philippine Plate. They were formed by underwater volcanoes along the Marianas Trench. The northern islands are high volcanic islands and the southern islands are raised limestone (DOI, 2007). The northern islands are volcanically active.

Climate
CNMI's climate is a tropical, hot climate. Annual temperatures are consistent, ranging between 25^0 and 30^0 C (Engbring et al., 1986), although temperature is affected by elevation. Annual rainfall is 200-250 cm, but varies throughout the year and by location. Higher elevation forest in Rota, for instance, may receive considerably more rainfall. A dry season occurs from December to June, and some islands occasionally experience droughts during this time. Humidity averages around 80% year round. Northeast tradewinds blow much of the year. Typhoons are common and regularly impact the CNMI.

Freshwater Resources
Groundwater is an important water source in inhabited areas. Saipan has intermittent streams and is home to Lake Susupe, the largest wetland in the CNMI. Additional wetlands are found Tinian, Rota, and Pagan (Burr et al., 2005).

Soils
Soils in the southern islands are limestone derivatives with a few pockets of volcanic-base soils. Tinian has particularly rich soils and supports grazing and agriculture. Agriculture is important on some of the inhabited islands, including Rota, Tinian, and Saipan. Soils in the northern islands are volcanic in origin.

Land Cover
Land cover varies by island (Figure 2). The USDA Forest Service uses the following categories for land cover types on the southern limestone islands:

1. Native limestone forest
2. Mixed introduced forest
3. Casuarina thickets
4. *Leucaena leucocephala* (Tangantangan)
5. Agroforest/Coconut
6. Strand
7. Savanna
8. Shrub and grass
9. Urban/Urban vegetation
10. Cropland
11. Wetland
12. Barren/Sandy beach/Bare

On the southern islands, Rota retains the largest stands of native forest; in areas that have not been cleared old growth limestone forest remains. Tinian and Saipan both have significantly altered vegetation, with land cover mostly consisting of introduced mixed forest and areas with the introduced *Leucaena leucocephala* (Tangantangan) tree. Aguiguan was also cleared for agriculture earlier in the 20^{th} century and is now covered largely by introduced vegetation, although 46% remains as native limestone forest (Esselstyn et al. 2004). There are some areas with native limestone forest on the island.

On the northern islands there is native volcanic forest (Wiles, pers. comm.).

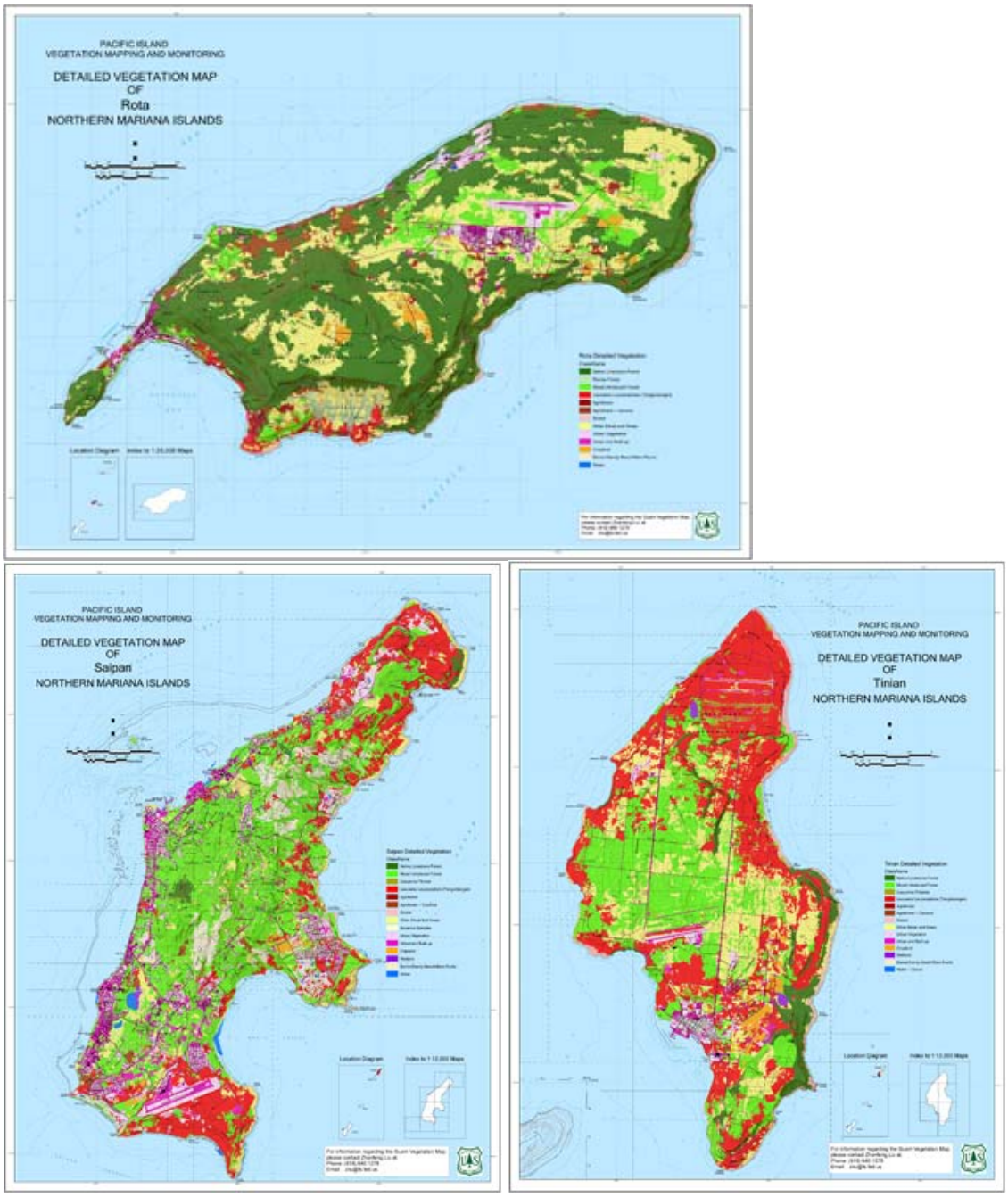


Figure 2. Land Cover in Rota, Saipan, and Tinian (USDA Forest Service, 2006)

Population, Economy, and Development

The majority of the population is currently located on the southern islands, although some of the northern islands have previously been settled. In 2000 the population was around 69,000, with over 62,000 residing on Saipan (DOI, 2007). Rota and Tinian, both with populations over 3000, are the other locations with major settlements. The CNMI is considered to be culturally part of Micronesia, with what were originally Chamorro and Carolinian populations.

Tourism was a major industry in CNMI in the 1980s and 1990s, but the Japanese recession and Asian economic crisis has resulted in a recent decline in the tourism industry. Garment manufacturing, which was a growing industry in the 2000s (DOI, 2007), is no longer present on the island. Tourism is expected to increase, and there are plans for major development projects to attract visitors from various Asian countries. GDP per capita in 2005 was $7900 (Chape, 2006).

Terrestrial Biodiversity

Terrestrial vegetation has been severely impacted by humans. Alien species were first introduced by initial settlers, but alien species populations and types increased dramatically with Spanish discovery in the 1500s (Engbring et al., 1986). Over subsequent foreign administrations (German, Japanese, and American) further changes were introduced, including conversion of natural areas to agriculture and plantation and introduction of invasive species. Certain introduced species, such as the Black Drongo (*Dicrurus macrocercus*) are believed to be responsible for directly negatively impacting native species, including birds. The Brown Treesnake (*Boiga irregularis*), which has driven many of Guam's native birds to extinction (Wiles et al., 2003), has been sighted or captured on Saipan, Tinian, and Rota (Campbell, 2004). Some of these sightings have been at points of shipping entry (Wiles, pers. comm.). It is uncertain whether a population of Brown Treesnakes on Saipan is fully established and breeding, although many biologists believe that a population may be in its initial stages of development (Wiles, pers. comm.).

Despite human impacts, and like many other islands, the CNMI has a variety of unique flora and fauna (Table 1). The Mariana archipelago has been designated part of a biodiversity Hotspot by the Critical Ecosystem Partnership Fund (CI, 2007) for its high endemism, much of which is threatened.

Table 1. Overview of the Terrestrial Biodiversity of the CNMI (Chape, 2000; threatened data from CI, 2007)

Species	Known Species	Endemic	Known Threatened
Native Plants	221	37%	4
Native Mammals	2	0%	2
Breeding birds	31	13%	10 (Tables 2-6)
Native Reptiles	11	Several are endemic to the Marianas (USGS, 2005)	2
Amphibians	1 (Introduced marine toad (Wiles, pers. comm.))	0%	0
Arthropods			8
Mollusks			2

As a Commonwealth of the United States, the CNMI is not a party to the Convention on Biological Diversity, to which the US is not party. It is a party to CITES. However, the CNMI does attend CBD meetings as an observer, and in 2005 joined with other Micronesian leaders to commit to the Micronesia Challenge, which was issued at the 8th Conference of the Parties to the CBD. As part of the Challenge, the CNMI agreed to work towards protecting 20% of its forest resources by 2020. US Fish and Wildlife laws, including those pertaining to endangered species, apply in the CNMI.

Chapter 2. Birds of the CNMI, including Status

The CNMI has a number of unique bird species, endemic at the species or subspecies level. Three birds are endemic to the CNMI (Table 2). Two species were formerly found only on Guam and CNMI, but now occur only on CNMI.

Engbring et al. (1986) surveyed the four southern islands in 1982 and recorded nearly 100 bird species, including introduced and extinct species. Wiles (2005) compiled additional observations and reported 144 known species records from the CNMI. Between 1986 and 2005 the Bridled White-Eye (*Zosterops conspicillata*) has been split into two separate species: the Bridled White-Eye, found in Saipan, Tinian, and Aguiguan, and the Rota Bridled White-Eye (*Zosterops rotensis*), endemic to Rota. The formerly called Vanikoro Swiftlet, which Engbring et al. (1986) reported as widespread throughout Micronesia, has also been split into separate species. The Mariana Swiftlet (*Aerodramus bartschi*) is now considered a separate species from that found in Palau (*Aerodramus pelewensis)* and the Federated States of Micronesia (*Aerodramus inquietus*). The Marianas Fruit Dove (*Ptilinopus roseicapilla)*, previously found throughout the Marianas including on Guam, is now only in the CNMI.

Several of CNMI's resident birds are endemic at the subspecies level. These include the Micronesian Megapode, from CNMI, Palau, and formerly in Guam. The megapode is subspecies *laperouse* in CNMI and *senex* in Palau. The Collared Kingfisher, Nightingale Reed-Warbler, Rufous Fantail, Micronesian Honeyeater, and Micronesian Starling all have subspecies unique to the CNMI, with some individual islands having their own unique subspecies (Engbring et al., 1986). The Nightengale Reed Warbler is endemic at the species level to the Marianas chain, with three unique subspecies (*luscinia* on Guam, Saipan, and Alamagan; *yamashinae* on Pagan; and *nijoi* on Agiguan) (Baker, 1951, in Engbring et al., 1986). The Mariana Common Moorhen (*Gallinula chloropus)* is endemic at the subspecies level to the Marianas island chain, including both Guam and the CNMI. The Common Buzzard (*Buteo buteo*) may be endemic at the subspecies level; further study is needed (Reichel et al., 1994).

The Golden White-Eye (*Cleptornis marchei)* was earlier classified as a Honeyeater (Engbring et al., 1986).

The Mariana Mallard (*Anas oustaleti*), recorded from Guam and the CNMI, is extinct. Draining and filling of wetland habitats and overhunting have been listed as reasons for its extinction (USFWS, 2007).

Tables 2-6 give a list of bird species recorded in the CNMI (Engbring et al., 1986; Wiles, 2005).

Table 2. Endemic Birds of the CNMI

Family	**Common Name**	***Species Name***	***Chamorro Name***	**IUCN***	**Distribution**
Doves, Pigeons (Columbidae)	Mariana Fruit-Dove*	*Ptilinopus roseicapilla*	*Totot*	EN	Now only in CNMI
Monarchs (Monarchidae)	Tinian Monarch	*Monarcha takatsukasae*	*Chuchurikan Tinian*	VU	Endemic
White-Eyes (Zosteropidae)	Golden White-Eye	*Cleptornis marchei*	*Kanario*	CR	Endemic
White-Eyes (Zosteropidae)	Rota Bridled White-Eye	*Zosterops rotensis*	*Nosa*	CR	Endemic
White-Eyes (Zosteropidae)	Bridled White-Eye	*Zosterops conspicillatus*	*Nosa*	EN	Now only in CNMI

* IUCN Abbreviations:CR (Critically endangered); EN (Endangered); VU (Vulnerable); NT (Near threatened)

Table 3. Resident Land and Wetland Birds (Non-endemic)

Family	Common Name	Species Name	Chamorro Name	IUCN	Distribution
Crows, Jays (Corvidae)	Mariana Crow	*Corvus kubaryi*	*Aga*	EN	RR
Doves, Pigeons (Columbidae)	White-throated Ground-Dove	*Gallicolumba xanthonura*	*Paluman Apaka*	NT	RR
Fantails (Rhipiduridae)	Rufous Fantail	*Rhipidura rufifrons*	*Chuchurika*		RR
Honeyeaters (Meliphagidae)	Micronesian Honeyeater	*Myzomela rubratra*	*Egigi*		RR
Kingfishers (Alcedinidae)	Collared Kingfisher	*Todiramphus chloris*			
Medapodes (Megapodiidae)	Micronesian Megapode	*Megapodius laperouse*	*Sasngat*	EN	RR
Old World Warblers (Sylviidae)	Nightengale Reed-Warbler	*Acrocephalus syrinx*	*Ga'ga' Karisu*	EN	RR
Rails, Moorhens, Coots (Rallidae)	Mariana Common Moorhen	*Gallinula chloropus*	*Pulattat*	*	
Starlings, Mynas (Sturnidae)	Micronesian Starling	*Aplonis opaca*	*Sali*		RR
Swifts (Apodidae)	Mariana Swiftlet	*Aerodramus bartschi*	*Yayaguak*	EN	RR
Hawks (Accipitridae)	Common Buzzard	*Buteo buteo***			
Herons, Egrets, Bitterns (Ardeidae)	Yellow Bittern	*Ixobrychus sinensis*	*Kakkak*		

RR: Regionally-restricted
* The Mariana Common Moorhen is listed as federally endangered on the US Endangered Species List
** Possibly endemic at the subspecies level

Table 4. Breeding Seabirds and Shorebirds of the CNMI

Family	Common Name	Species Name	Chamorro Name
Boobies (Sulidae)	Brown Booby	*Sula leucogaster*	*Luao Attilong*
Boobies (Sulidae)	Masked Booby	*Sula dactylatra*	*Luao Apaka*
Boobies (Sulidae)	Red-footed Booby	*Sula sula*	*Lua Talisai*
Frigatebirds (Fregatidae)	Great Frigatebird	*Fregata minor*	*Paya'ya'*
Gulls, Terns (Laridae)	Black Noddy	*Anous minutus*	*Fahang Dikike*
Gulls, Terns (Laridae)	Brown Noddy	*Anous stolidus*	*Fahang Dankolo*
Gulls, Terns (Laridae)	Little Tern	*Sternula albifrons*	
Gulls, Terns (Laridae)	Sooty Tern	*Sterna fuscatus*	*Girigirak*
Gulls, Terns (Laridae)	Gray-backed (Spectacled) Tern	*Sterna lunata*	
Gulls, Terns (Laridae)	White Tern	*Gygis alba*	*Chunge*
Herons, Egrets, Bitterns (Ardeidae)	Pacific Reef-Heron	*Egretta sacra*	*Chuchuko Atilong*
Petrels, Shearwaters (Procellariidae)	Wedge-tailed Shearwater	*Puffinus pacificus*	*Liforo*
Tropicbirds (Phaethontidae)	Red-tailed Tropicbird	*Phaethon rubricauda*	*Fagpi-Agaga*
Tropicbirds (Phaethontidae)	White-tailed Tropicbird	*Phaethon lepturus*	*Fagpi-Apaka*

Table 5. Introduced Bird Species in the CNMI

Family	Common Name	Species Name	Chomorro Name
Doves, Pigeons (Columbidae)	Island Collared-Dove	*Streptopelia bitorquata*	*Paluman Apu*
Doves, Pigeons (Columbidae)	Rock Pigeon	*Columba livia*	*Paluman Mansu*
Drongos (Dicruridae)	Black Drongo	*Dicrurus macrocercus*	*Salin Taiwan*
Old World Sparrows (Passeridae)	Eurasian Tree Sparrow	*Passer montanus*	*Ga'ga' Pale*
Pheasants, Quail, Francolins (Phasianidae)	Red Junglefowl	*Gallus gallus*	*Mangnok Halom Tano*

Table 6. Migrant and Vagrant Bird Species Recorded in the CNMI

Family	Common Name	Species Name	Chamorro Name	Code*	IUCN
Albatrosses(Diomedeidae)	Laysan Albatross	*Phoebastria immutabilis*		P	*VU*
Cormorants (Phalacrocoracidae)	Great Cormorant	*Phalacrocorax carbo*		V	
Cormorants (Phalacrocoracidae)	Little Pied Cormorant	*Phalacrocorax melanoleucos*		V	
Cuckoos (Cuculidae)	Island Cuckoo	*Urodynamis taitensis*		V	
Ducks, Geese, Swans (Anatidae)	Common Pochard	*Aythya ferina*		M	
Ducks, Geese, Swans (Anatidae)	Eurasian Wigeon	*Anas Penelope*		M	
Ducks, Geese, Swans (Anatidae)	Falcated Duck	*Anasfalcata*		V	
Ducks, Geese, Swans (Anatidae)	Gadwall	*Anas strepera*		M	
Ducks, Geese, Swans (Anatidae)	Garganey	*Anas querquedula*		M	
Ducks, Geese, Swans (Anatidae)	Greater Scaup	*Aythya marila*		M	
Ducks, Geese, Swans (Anatidae)	Green-winged Teal	*Anas crecca*		M	
Ducks, Geese, Swans (Anatidae)	Mallard	*Anas platyrhynchos*		M	
Ducks, Geese, Swans (Anatidae)	Northern Pintail	*Anas acuta*		M	
Ducks, Geese, Swans (Anatidae)	Northern Shoveler	*Anas clypeata*		M	
Ducks, Geese, Swans (Anatidae)	Red-breasted Merganser	*Mergus serrator*		V	
Ducks, Geese, Swans (Anatidae)	Spot-billed Duck	*Anas poecilorhyncha*		V	
Ducks, Geese, Swans (Anatidae)	Tufted Duck	*Aythya fuligula*		M	
Ducks, Geese, Swans (Anatidae)	Tundra Swan	*Cygnus columbianus*		V	
Falcons (Falconidae)	Amur Falcon	*Falco amurensis*		V	
Falcons (Falconidae)	Eurasian Kestrel	*Falco tinnunculus*		M	
Falcons (Falconidae)	Peregrine Falcon	*Falco peregrinus*		M	
Frigatebirds (Fregatidae)	Lesser Frigatebird	*Fregata ariel*		S	
Gulls, Terns (Laridae)	Black-naped Tern	*Sterna sumatrana*		S	
Gulls, Terns (Laridae)	Common Black-headed Gull	*Larus ridibundus*		M	
Gulls, Terns (Laridae)	Common Tern	*Sterna hirundo*		M	
Gulls, Terns (Laridae)	European Herring Gull	*Larus argentatus*		V	
Gulls, Terns (Laridae)	Great Crested Tern	*Thalasseus bergii*		S	
Gulls, Terns (Laridae)	Laughing Gull	*Larus atricilla*		V	
Gulls, Terns (Laridae)	Long-tailed Jaeger	*Stercorarius longicaudus*		P	
Gulls, Terns (Laridae)	Pomarine Jaeger	*Stercorarius pomarinus*		P	
Gulls, Terns (Laridae)	Whiskered Tern	*Chlidonias hybrida*		M	
Gulls, Terns (Laridae)	White-winged Tern	*Chlidonias leucopterus*		M	
Hawks (Accipitridae)	Black Kite	*Milvus migrans*		M	
Hawks (Accipitridae)	Chinese Goshawk	*Accipiter soloensis*		M	
Hawks (Accipitridae)	Eastern Marsh-Harrier	*Circus spilonotus*		V	
Hawks (Accipitridae)	Osprey	*Pandion haliaetus*		M	
Herons, Egrets, Bitterns (Ardeidae)	Black-crowned Night-Heron	*Nycticorax nycticorax*		M	
Herons, Egrets, Bitterns (Ardeidae)	Cattle Egret	*Bubulcus ibis*	*Chuchuko Apaka*	M	
Herons, Egrets, Bitterns (Ardeidae)	Gray Heron	*Ardea cinerea*		M	
Herons, Egrets, Bitterns (Ardeidae)	Great Egret	*Ardea alba*		M	
Herons, Egrets, Bitterns (Ardeidae)	Intermediate Egret	*Egretta intermedia*		M	
Herons, Egrets, Bitterns (Ardeidae)	Little Egret	*Egretta garzetta*		M	
Herons, Egrets, Bitterns (Ardeidae)	Rufous Night-Heron	*Nycticorax caledonicus*		V	
Herons, Egrets, Bitterns (Ardeidae)	Striated Heron	*Butorides striata*		M	
Hoopoes (Upupidae)	Eurasian Hoopoe	*Upupa epops*		V	
Owls (Strigidae)	Short-eared Owl	*Asio flammeus*	*Mongmo*	M	
Petrels, Shearwaters (Procellariidae)	Audubon's Shearwater	*Puffinus lherminieri*		P	
Petrels, Shearwaters (Procellariidae)	Black-winged Petrel	*Pterodroma nigripennis*		P	
Petrels, Shearwaters (Procellariidae)	Bonin Petrel	*Pterodroma hypoleuca*		P	
Petrels, Shearwaters (Procellariidae)	Bulwer's Petrel	*Bulweria bulwerii*		P	
Petrels, Shearwaters (Procellariidae)	Christmas Shearwater	*Puffinus nativitatis*		P	
Petrels, Shearwaters (Procellariidae)	Short-tailed Shearwater	*Puffinus tenuirostris*		P	
Petrels, Shearwaters (Procellariidae)	Streaked Shearwater	*Calonectris leucomelas*		P	
Petrels, Shearwaters (Procellariidae)	Townsend's Shearwater	*Puffinus auricularis*		P	
Petrels, Shearwaters (Procellariidae)	White-necked Petrel	*Pterodroma cervicalis*		P	*VU*

Family	Common Name	Species Name	Chamorro Name	Code*	IUCN
Plovers (Charadriidae)	Black-bellied Plover	*Pluvialis squatarola*		M	
Plovers (Charadriidae)	Common Ringed Plover	*Charadrius hiaticula*		M	
Plovers (Charadriidae)	Greater Sandplover	*Charadrius leschenaultii*		M	
Plovers (Charadriidae)	Lesser Sandplover	*Charadrius mongolus*	*Dulili*	M	
Plovers (Charadriidae)	Little Ringed Plover	*Charadrius dubius*		M	
Plovers (Charadriidae)	Pacific Golden-Plover	*Pluvialis fulva*		M	
Plovers (Charadriidae)	Snowy Plover	*Charadrius alexandrinus*		M	
Pratincoles (Glareolidae)	Oriental Pratincole	*Glareola maldivarum*		M	
Rails, Moorhens, Coots (Rallidae)	Eurasian Coot	*Fulica atra*		V	
Sandpipers, Snipe (Scolopacidae)	Bar-tailed Godwit	*Limosa lapponica*		M	
Sandpipers, Snipe (Scolopacidae)	Black-tailed Godwit	*Limosa limosa*		M	
Sandpipers, Snipe (Scolopacidae)	Bristle-thighed Curlew	*Numenius tahitiensis*		M	*VU*
Sandpipers, Snipe (Scolopacidae)	Common Greenshank	*Tringa nebularia*		M	
Sandpipers, Snipe (Scolopacidae)	Common Redshank	*Tringa tetanus*		M	
Sandpipers, Snipe (Scolopacidae)	Common Sandpiper	*Actitis hypoleucos*		M	
Sandpipers, Snipe (Scolopacidae)	Common Snipe	*Gallinago gallinago*		M	
Sandpipers, Snipe (Scolopacidae)	Dunlin	*Calidris alpine*		M	
Sandpipers, Snipe (Scolopacidae)	Eurasian Curlew	*Numenius arquata*		M	
Sandpipers, Snipe (Scolopacidae)	Far Eastern Curlew	*Numenius madagascariensis*		M	
Sandpipers, Snipe (Scolopacidae)	Gray-tailed Tattler	*Tringa brevipes*		M	
Sandpipers, Snipe (Scolopacidae)	Great Knot	*Calidris tenuirostris*		M	
Sandpipers, Snipe (Scolopacidae)	Greater Yellowlegs	*Tringa melanoleuca*		V	
Sandpipers, Snipe (Scolopacidae)	Green Sandpiper	*Tringa ochropus*		V	
Sandpipers, Snipe (Scolopacidae)	Little Curlew	*Numenius minutus*		M	
Sandpipers, Snipe (Scolopacidae)	Little Stint	*Calidris minuta*		V	
Sandpipers, Snipe (Scolopacidae)	Long-toed Stint	*Calidris subminuta*		M	
Sandpipers, Snipe (Scolopacidae)	Marsh Sandpiper	*Tringa stagnatilis*		M	
Sandpipers, Snipe (Scolopacidae)	Pectoral Sandpiper	*Calidris melanotos*		M	
Sandpipers, Snipe (Scolopacidae)	Red Phalarope	*Phalaropus fulicarius*		V	
Sandpipers, Snipe (Scolopacidae)	Red-necked Stint	*Calidris ruficollis*		M	
Sandpipers, Snipe (Scolopacidae)	Ruddy Turnstone	*Arenaria interpres*		M	
Sandpipers, Snipe (Scolopacidae)	Ruff	*Philomachus pugnax*		M	
Sandpipers, Snipe (Scolopacidae)	Sanderling	*Calidris alba*		M	
Sandpipers, Snipe (Scolopacidae)	Sharp-tailed Sandpiper	*Calidris acuminata*		M	
Sandpipers, Snipe (Scolopacidae)	Swinhoe's Snipe	*Gallinago megala*		M	
Sandpipers, Snipe (Scolopacidae)	Temminck's Stint	*Calidris temminckii*		V	
Sandpipers, Snipe (Scolopacidae)	Terek Sandpiper	*Xenus cinereus*		M	
Sandpipers, Snipe (Scolopacidae)	Wandering Tattler	*Tringa incana*		M	
Sandpipers, Snipe (Scolopacidae)	Whimbrel	*Numenius phaeopus*	*Kalalong*	M	
Sandpipers, Snipe (Scolopacidae)	Wood Sandpiper	*Tringa glareola*		M	
Starlings, Mynas (Sturnidae)	White-cheeked Starling	*Sturnus cineraceus*		V	
Stilts (Recurvirostridae)	Black-winged Stilt	*Himantopus himantopus*		M	
Storm-Petrels (Hydrobatidae)	Band-rumped Storm-Petrel	*Oceanodroma castro*		P	
Storm-Petrels (Hydrobatidae)	Leach's Storm-Petrel	*Oceanodroma leucorhoa*		P	
Storm-Petrels (Hydrobatidae)	Matsudaira's Storm-Petrel	*Oceanodroma matsudairae*		P	*DD*
Swallows (Hirundinidae)	Barn Swallow	*Hirundo rustica*		M	
Swifts (Apodidae)	Fork-tailed Swift	*Apus pacificus*		M	
Thruses (Turdidae)	Dusky Thrush	*Turdus naumanni*		V	
Wagtails, Pipits (Motacillidae)	Black-backed Wagtail	*Motacilla lugens*		V	
Wagtails, Pipits (Motacillidae)	Gray Wagtail	*Motacilla cinerea*		V	

* Codes:

E Extinct, formerly breeding
I Introduced species with breeding population
P Pelagic seabird, non-resident migrant
S Seabird visitor, not known to breed but may roost
H Hypothetical record
M Migrant or wintering species
R Resident, native with breeding population
V Vagrant, occurring well out of normal range

Endangered Species

Many birds in the Mariana Islands, including Guam and CNMI, are already vulnerable simply because they are restricted to small islands and thus have a small range. The inclusion of so many of CNMI's birds on the IUCN Red List is both a factor of this small range, but more recently, is a factor of the possible introduction of the Brown Treesnake on Saipan and possibly on Rota. The Brown Treesnake is responsible for massive declines in birds in Guam (Wiles et al., 2003), where it has been present for more than 40 years, and is now expected to contribute to declines in bird species in the CNMI. Other invasive species, such as the Black Drongo, and have also been suggested as reasons for the decline in bird populations. Habitat loss and pesticide use combined with restricted and small ranges are also attributed to species declines.

The International Union for the Conservation of Nature (IUCN) Red List of Globally Threatened Birds lists birds according to 6 categories: Critically Endangered, Endangered, Vulnerable, Near Threatened, Least Concern, and Data Deficient. Of the CNMI's resident native birds, 10 are on the IUCN Red List, including:

IUCN Red List

Golden White-Eye	*Cleptornis marchei*	*Kanario*	CR
Rota Bridled White-Eye	*Zosterops rotensis*	*Nosa*	CR
Mariana Crow	*Corvus kubaryi*	*Aga*	EN
Mariana Fruit-Dove	*Ptilinopus roseicapilla*	*Totot*	EN
Micronesian Megapode	*Megapodius laperouse*	*Sasngat*	EN
Nightengale Reed-Warbler	*Acrocephalus syrinx*	*Ga'ga' Karisu*	EN
Mariana Swiftlet	*Aerodramus bartschi*	*Yayaguak*	EN
Bridled White-Eye	*Zosterops conspicillatus*	*Nosa*	EN
Tinian Monarch	*Monarcha takatsukasae*	*Chuchurikan Tinian*	VU
White-throated Ground-Dove	*Gallicolumba xanthonura*	*Paluman Apaka*	NT

Additional IUCN-listed birds visit the CNMI as regular or irregular migrants or vagrants, including:

Bristle-thighed Curlew	*Numenius tahitiensis*	*VU*
Matsudaira's Storm-Petrel	*Oceanodroma matsudairae*	*DD*
Laysan Albatross	*Phoebastria immutabilis*	*VU*
White-necked Petrel	*Pterodroma cervicalis*	*VU*

The CNMI also has one subspecies that has gone extinct:

Mariana Mallard	*Anas platyrhynchos oustaleti*	*Nganga Palao*

Birds of Local Concern
The US Fish and Wildlife Service (USFWS, 2005) lists several birds on the US Endangered Species List:

Rota Bridled White-Eye	*Zosterops rotensis*	E - Endangered
Micronesian Megapode	*Megapodius laperouse*	E - Endangered
Nightengale Reed-Warbler	*Acrocephalus syrinx*	E - Endangered
Mariana Swiftlet	*Aerodramus bartschi*	E - Endangered
Mariana Crow	*Corvus kubaryi*	E - Endangered
Mariana Common Moorhen	*Gallinula chloropus*	E - Endangered

The Tinian Monarch was formerly listed on the US Endangered Species list as Endangered. It was downlisted to threatened in 1987, and was removed from the threatened species list in 2004 (USFWS, 2005). Surveys of the bird showed that its population continued to increase with time, possibly due to regrowth of vegetation.

The Common Moorhen (*Gallinula chloropus*) is distributed worldwide, and common in the few wetlands present in the southern islands in the CNMI. Due to limited habitat availability, populations are small. The subspecies found in the Mariana Islands (*Gallinula chloropus guamii*) is endemic to the region.

Reichel et al. (1994) determined that a previously undescribed breeding population of the Common Buzzard (*Buteo buteo*) is present on the island of Anatahan. They wrote that the bird is likely endemic to the CNMI at the subspecies level.

Chapter 3. Important Bird Area Program

Using Birds as Indicators

Important Bird Areas (IBAs) are sites of global, regional, or sub-regional biodiversity conservation importance that are chosen using internationally agreed, objective, quantitative, and scientifically defensible criteria (Bennun & Njoroge, 1999). The IBA process uses birds to select key sites for conservation. IBAs are selected because they may hold threatened or endangered birds, birds restricted to particular regions or biomes, or significantly large populations of congregatory waterbirds. Through this process, sites directly important for bird conservation are identified and prioritized for conservation actions. In addition, birds have been shown to be extremely good indicators of overall biodiversity, and throughout the world, IBAs themselves protect a high percentage of many nations' total biodiversity (Stattersfield et al, 1998; Bennun & Njoroge, 1999).

Birds serve as a good indicator for several reasons. In certain places birds are some of the largest terrestrial predators, and thus are sensitive to changes throughout their ecosystems. Multiplying effects from less visible biodiversity in lower trophic levels may be manifested and then observed in birds. Birds also play a role in maintaining biodiversity through their ecological role as pollinators and seed dispersers, and thus a change in bird biodiversity may indicate a change in overall biodiversity. Birds also tend to be well studied and well understood, and because they are larger, aesthetically pleasing fauna, they lend themselves easily to many community-based research and monitoring programs. Thus birds, for the inherent biodiversity and ecosystem service value they hold and the popular appeal they hold to people, serve as good indicator species for overall biodiversity and ecosystem health. In addition, conserving a site because it holds bird species of concern will most probably lead to conservation of other important plant and animal species as well.

International IBA Program

The IBA Program has been developed by BirdLife International and tested throughout the world. IBAs have been identified in Europe, Africa, and in parts of Asia, North America, South America, and Australia.

The International IBA Program is designed to identify areas of global significance. However, national programs have used the same process to identify sites important globally, nationally, or regionally. To be listed as an IBA of global importance, sites must meet one of four criteria. These criteria are listed in Table 7. For some of the criteria's categories, quantitative thresholds are set to aid site selection and to help define the concept of "significant numbers" of species (Appendix A1 lists thresholds for Pacific sea and shorebirds).

Table 7. Criteria for selection of Important Bird Areas of global significance (Bennun & Njoroge, 1999)

CATEGORY	CRITERION	NOTES
A1. Globally-threatened Species	The site regularly holds significant numbers of a globally threatened species, or other species of global conservation concern.	Globally threatened species are those listed on the IUCN Red List. Sites qualify if they are known or thought to hold a population of Critically Endangered or Endangered species. Population-size thresholds are set for species classified as Vulnerable, Conservation Dependent, Data Deficient, and Near Threatened. Thresholds may be set (1% of global population, >10 pairs or 30 individuals).
A2. Restricted Range species	The site is known or thought to hold a significant component of the restricted-range species whose breeding distributions define an Endemic Bird Area (EBA) or Secondary Area (SA)	Restricted-range species are defined as all landbirds which have had, throughout historical times, a total global breeding range estimated at below 50,000 km^2. EBAs are defined as an area which encompasses the overlapping breeding ranges of restricted-range bird species, such that the complete ranges of two or more restricted-range species are entirely included within the boundary of the EBA. EBAs capture endemic birds and other birds with limited ranges.
A3. Biome-restricted species	The site is known or thought to hold a significant component of the group of species whose distributions are largely or wholly confined in one biome.	This applies to species that share a distribution of greater than 50,000 km^2 and occur within a biome, defined as a major regional ecological community characterized by distinctive life forms and principal plant species.
A4. Congregations	(i) The site is known or thought to hold, on a regular basis, $\geq$1% of a biogeographic population of a congregatory waterbird species.	Follows Rose & Scott (1994). Thresholds may be set regionally or inter-regionally. See Appendix A1.
	(ii) The site is known or thought to hold, on a regular basis, $\geq$1% of the global population of a congregatory seabird or terrestrial species.	Thresholds may be set regionally or inter-regionally. See Appendix A1.
	(iii) The site is known or thought to hold, on a regular basis, $\geq$20,000 waterbirds or $\geq$10,000 pairs of seabirds of one or more species.	Follows the Ramsar criterion for waterbirds. Use of this criterion is discouraged when data is good enough to permit use of A4 (i) or (ii).
	(iv) The site is known or thought to exceed thresholds set for migratory species at bottleneck sites.	Thresholds may be set regionally or inter-regionally.

In addition to the criteria, site selection requires the following:

1. IBAs must have a definitive border, such that the IBA is different in habitat or character from surrounding areas;
2. IBAs should exist as a protected area or be managed for conservation;
3. IBAs should, either alone or with other sites, be a self-sufficient area that provides the requirements of the birds that use it during the time they are present; and
4. Selection of a set of IBAs in an Endemic Bird Area[1] should also be designed to ensure that all restricted-range species are present in significant numbers in one or more sites (Bennun & Njoroge, 1999).

[1] An Endemic Bird Area (EBA) is defined as an area which encompasses the overlapping breeding ranges of restricted-range bird species, such that the complete ranges of two or more restricted-range species are entirely included within the boundary of the EBA (Stattersfield, et al., 1998).

Chapter 4. Identifying IBAs in the CNMI

IBAs were identified based on the presence of threatened or regionally-restricted species, or the presence of significant populations of breeding shore and seabirds. Those species by which CNMI areas can qualify as an IBA are listed in Table 8.

Table 8. CNMI Qualifying Bird Species under A1 and A2 criteria

CRITERIA CATEGORY	SPECIES MEETING GLOBAL CRITERIA (BIRDLIFE (2006); IUCN REDLIST)	ADDITIONAL SPECIES OF LOCAL CONCERN (ENGBRING ET AL. (1986)
A1. Globally-threatened Species	Golden White-Eye *Cleptornis marchei* Rota Bridled White-Eye *Zosterops rotensis* Mariana Crow *Corvus kubaryi* Mariana Fruit-Dove *Ptilinopus roseicapilla* Micronesian Megapode *Megapodius laperouse* Nightengale Reed-Warbler *Acrocephalus luscinia* Mariana Swiftlet *Aerodramus bartschi* Bridled White-Eye *Zosterops conspicillatus* White-throated Ground-Dove* *Gallicolumba xanthonura* Tinian Monarch* *Monarcha takatsukasae* * Must meet threshold populations (>10 pairs or 30 individuals)	Mariana Common Moorhen *Gallinula chloropus*
A2. Restricted Range species	Golden White-Eye* *Cleptornis marchei* Rota Bridled White-Eye* *Zosterops rotensis* Mariana Fruit-Dove* *Ptilinopus roseicapilla* Tinian Monarch* *Monarcha takatsukasae* Bridled White-Eye** *Zosterops conspicillatus* Mariana Crow *Corvus kubaryi* Micronesian Megapode *Megapodius laperouse* Nightengale Reed-Warbler *Acrocephalus syrinx* Mariana Swiftlet *Aerodramus bartschi* White-throated Ground-Dove *Gallicolumba xanthonura* Rufous Fantail *Rhipidura rufifrons* Micronesian Honeyeater *Myzomela rubratra* Micronesian Starling *Aplonis opaca* * Endemic to CNMI ** Extinct from Guam, now only in CNMI	
A3. Biome-restricted species	Criteria not applicable in the CNMI	
A4. Congregations	Varies 20,000 total birds or Regional Thresholds (BirdLife, 2007) (Appendix 1)	

Methods

IBAs were selected through a review of literature and by analyzing data presented in literature. As the majority of IBA-qualifying birds are resident land and wetland birds, this report used the most recently published, publicly available Forest Bird Survey of CNMI as one of its major sources (Engbring et al., 1986)[2]. It should be noted that there are more recent surveys that have been conducted for specific species on specific islands in the CNMI. These sources were used where available and are cited throughout the text of this report. These other surveys include: DFW (2000a-c), Lusk et al. (2000), Reichel and Glass (1991), Wiles (pers. comm.), and Worthington, 1998.

[2] This report relies heavily on Engbring et al. (1986) to determine the locations of bird species. It should be noted that Engbring et al. (1986) estimated bird populations for 1982, when the survey was actually conducted. Several studies have been conducted on various islands in the CNMI to estimate bird populations in various locations; these are used where available.

Engbring et al. (1986) conducted a systematic forest bird survey using the Variable Circular Plot Method to estimate bird populations. Although the VCP method has some limitations, it is the best method available for estimating forest bird populations (Wiles, pers. comm.). During the surveys, which followed transects and took place during 8-minute counts at set stations, all birds observed were recorded. The survey, conducted in 1982, surveyed forests on Saipan, Tinian, Aguiguan, and Rota. This report uses the analyzed data as it was presented in Engbring et al. (1986), even though this data is outdated for some species. In Engbring et al. (1986), raw data is presented in aggregate form for differing size areas on each island (except Aguiguan, which is presented as a total for the island). For each aggregate area, Engbring et al. (1986) reported the number of birds recorded (total) and the estimated population for each bird species in that area. Reichel (1991) was a major source for seabird surveys. This report used these data sources to determine where on each island birds were located.

This report used data in Engbring et al. (1986) report to determine that Rota, Tinian, and Saipan and Aguiguan each had an endemic species. After this step, additional data and reports were consulted in order to determine the current extent of each species and to determine boundaries of proposed IBAs. These more current data and surveys are referenced throughout the text.

Results

An overview of qualifying birds on each island is presented in Table 9. More detailed results are presented for individual islands in the following sections.

Table 9. Bird species on each island in the CNMI (Engbring et al. (1986), Lusk et al. (2000), Reichel and Glass (1991), Wiles (pers. comm.), Worthington, 1998)

Island	Golden White-Eye	Micronesian Megapode	Mariana Swiftlet	Nightengale Reed Warbler	Tinian Monarch	Rota Bridled White-Eye	Mariana Crow	Bridled White-Eye	White-throated Ground-Dove	Mariana Fruit-Dove	Collared Kingfisher	Rufous Fantail	Micronesian Honeyeater	Micronesian Starling	Mariana Common Moorhen
Rota		[1]	[1]			x	x		x	x	x	x	x	x	x [2]
Aguiguan	x	x	x	[3]				x	x	x	x	x	x	x	
Tinian		x	[1]		x			x	x	x	x	x	x	x	x
Saipan	x	x	x	x				x	x	x	x	x	x	x	x
Farallon de Medinilla		x							x					x	
Anatahan		x							x				x	x	
Sarigan		x							x		x		x	x	
Guguan		x							x		x		x	x	
Alamagan		x		x					x		x		x	x	
Pagan		x		[1]					x		x		x	x	
Agrihan		x							x		x		x	x	
Asuncion		x							x		x		x	x	
Maug		x									x		x	x	
Uracas		x													

[1] probably or certainly extirpated from the island (Reichel and Glass, 1991)
[2] Worthington (1998)
[3] last seen in 1995

Results – Rota Data

Rota has two threatened birds that are restricted in range. The Rota Bridled White-Eye (formerly classified as a subspecies of Bridled White-Eye in Engbring et al. (1986) but later separated as its own species) is endemic to Rota and listed as Critically Endangered due to declining populations. Decline of the Rota Bridled White-Eye is in part due to predation by introduced species such as the Black Drongo and rats and in part due to habitat loss and degradation (USFWS, 2004; Craig, 1999). A small population size and limited distribution also increase the species vulnerability (USFWS, 2004). In 2004 there had been two captures of the Brown Treesnake on Rota (Campbell, 2004).

The Mariana Crow, originally restricted to Guam and Rota, is listed as Endangered. The population in Guam was extirpated, although in 2005 10 birds were transplanted from Rota and did survive on Guam (Aguon et al., 2005). Declines of the Mariana Crow on Guam are largely attributed to the Brown Treesnake (Wiles et al., 2003), but introduced predators, human persecution, and habitat loss and degradation have all contributed to the decline (Plentovich et al., 2005).

Table 10. Bird populations on Rota, 1982 (Engbring et al., 1986)*

	Rota Bridled White Eye	Mariana Crow	White-throated Ground-Dove	Mariana Fruit-Dove	Collared Kingfisher	Rufous Fantail	Micronesian Honeyeater	Micronesian Starling
Rota								
Sabana	10015	70	663	705	261	2872	2839	3440
Talakhaya	621	118	240	333	95	1498	2975	2146
Tatachog	127	135	21	215	99	1276	3450	1104
Sinapalo	0	450	266	575	211	2600	7482	1652
Tatgua	0	354	263	655	286	2390	7032	2761
Palie	0	144	463	496	189	2016	2784	1859
Songsong	0	47	501	556	144	3118	3119	1723

* These are population estimates from surveys conducted in 1982 and do not represent current estimates. They are included in this report because they are the most comprehensive population estimates publicly available. Craig (1996) calculated station densities for surveys conducted in 1991-1993 surveys, but did not include population estimates.

In 1982 Engbring et al. (1986) estimated the population of Rota Bridled White-Eyes to number over 10,000 (Table 10). The species was found in several areas, but generally above 300 meters in elevation. By 1996 the population numbered only over 1000 birds and was restricted to four patches of mature wet forest above 200 m (Fancy and Snetsinger (2001) in USFWS (2004)) (Figure 3). Craig (1999) wrote that the bird was restricted to the Sabana plateau region of Rota.

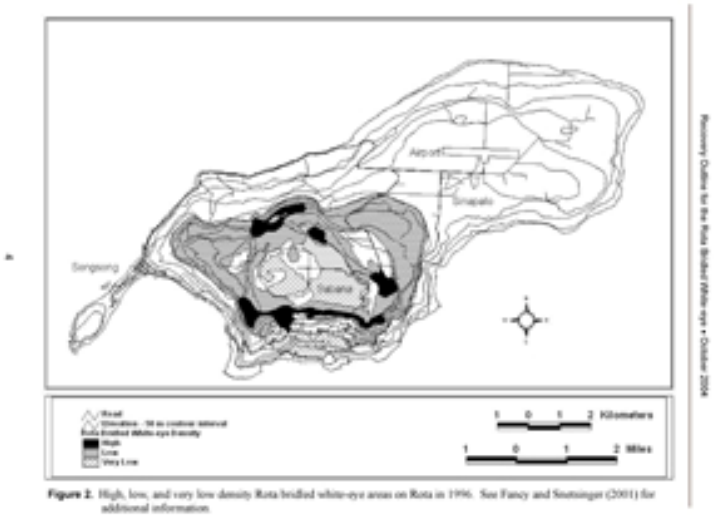


Figure 3. Extent of Rota Bridled White Eye in 1996 (USFWS, 2004). The region in the south of Rota includes the Sabana Plateau.

In 2006 the USFWS (2006) designated Critical Habitat for the Rota Bridled White-Eye pursuant to regulations of the US Endangered Species Act (Figure 4). They used the 150 meter contour line and above as the limit to the species, and designated enough area to support a self-sustaining population of 16,000. Non-forested areas were not included in the Critical Habitat designation.

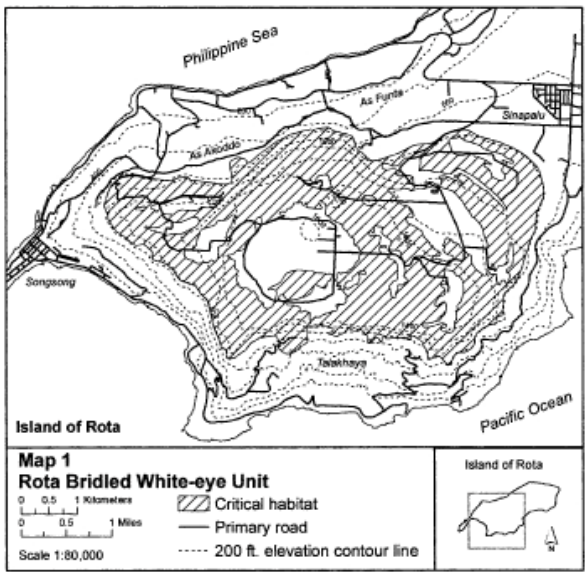


Figure 4. Critical habitat for the Rota Bridled White-Eye (USFWS, 2006).

In 1982 Engbring et al. (1986) found Mariana Crows to be distributed throughout Rota (Table 10) with a population of over 1300 birds. In 2004 there were only an estimated 85 pairs remaining (Aguon et al., 2005). In 2004 the USFWS (2004) designated Critical Habitat for the Mariana Crow (Figure 5). This habitat included expected recovery zones.

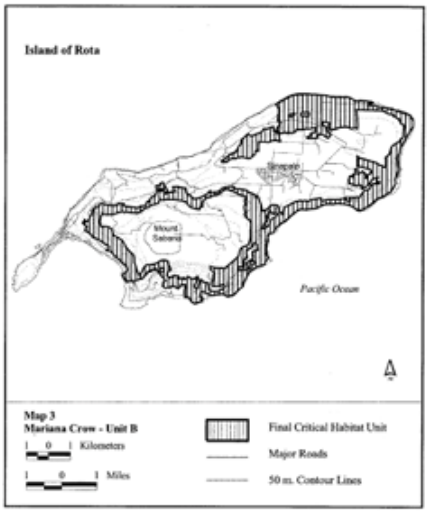


Figure 5. Critical habitat for the Mariana Crow on Rota (USFWS, 2004).

According to the USFWS (2006), Critical Habitat designation does not impact any state government or private landowner actions unless they receive Federal monies. The designation does regulate the actions and activities of the Federal government, which cannot negatively impact endangered species in Critical Habitat.

Tanaka and Haig (2004) did not detect Mariana Common Moorhens during surveys, but did report several sightings, including evidence of breeding (Worthington, 1998), of the birds on golf course wetlands and ephemeral streams.

Reichel (1991) reported 445 pairs of breeding seabirds for Rota, including 200 pairs of Red-footed Boobies and 100 pairs of Brown Noddies.

Results – IBAs on Rota

One IBA is proposed for Rota (Figure 6), to include the majority of the critical habitats for the Bridled White-Eye and Mariana Crow, and on lands that are currently publicly-owned and have been judged as feasible for management as a US National Park.

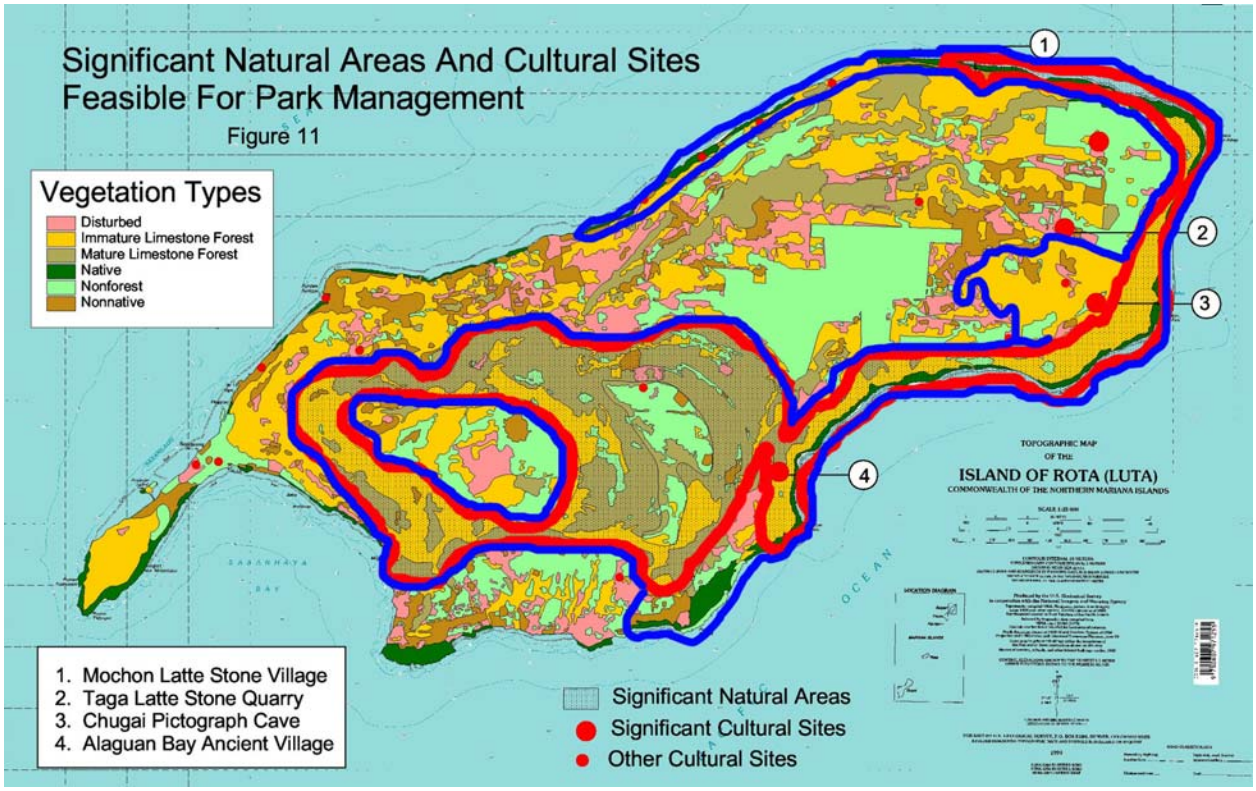


Figure 6. Proposed Rota IBA – total area in blue (NPS, 2005; Kessler, pers. comm.). Areas in red include Critical Habitat and proposed parklands. Additional areas in blue are areas of remaining coastal forest or limestone forest (Lalayak mochong area) that are known to be home to nesting Mariana Crow pairs.

Rota currently has three terrestrial conservation areas, all legislated by CNMI law in the 1990s (Figure 7) (CNMI DFW, 2007d). These conservation areas include parts of the critical habitats for the Rota Bridled White-Eye and the Mariana Crow. In 2004 Senators from the Rota government requested assistance from the US National Park Service (NPS, 2005) in identifying feasibility and alternatives for a National Park or conservation area on Rota. In 2004 the NPS conducted a reconnaissance survey of Rota and found that the natural and cultural resources of Rota were feasible as additions to the National Park System. The NPS identified areas that would be suitable as a National Park (Figure 6). They found that these areas were publicly-owned lands where current human uses could be phased out; most of the lands are currently protected under current law. They also found that there was strong support from the Rota government and the Rota community for a National Park (NPS, 2005). This report has thus selected all of those natural heritage areas found to be feasible as a National Park to be an IBA. Additional coastal forests and an area of limestone forest were also included in the IBA because they are home to nesting Mariana Crow pairs (Kessler, pers. comm.). Boundaries for the proposed IBA follow some roads, forest edges, and topographic features such as the tops of cliffs and the coastline.

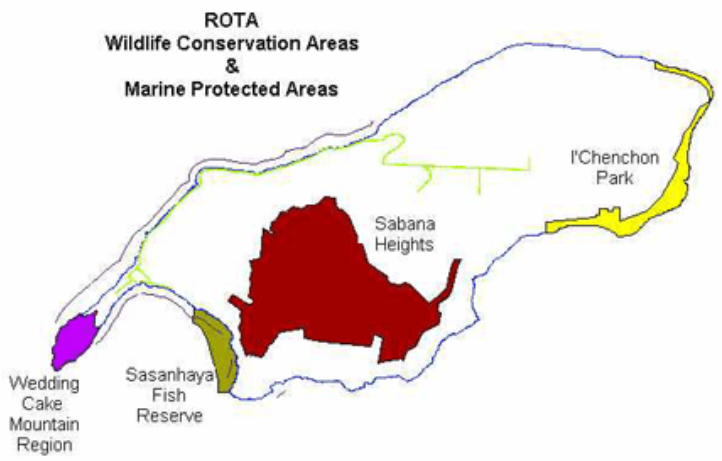


Figure 7. Existing conservation areas on Rota (www.dfw.gov.mp).

Results – Aguiguan Island and Naftan Rock Data

In 1982 Engbring et al. (1986) found that all of the CNMI's native birds, with the exception of the Tinian Monarch, Mariana Crow, and Rota White-eye, used the small uninhabited island of Aguiguan (Table 11). Craig (1999) wrote that Aguiguan was important to the Critically Endangered Golden White-Eye, which was threatened on Saipan due to the establishment of the Brown Treesnake. Naftan Rock is a small islet 1 km off the southwest coast of Aguiguan and is home to several thousand seabirds (Table 11). Birds are believed to fly back and forth between the two islands (A. Marshall, pers. comm.) and thus the two islands are treated as one complex in this report.

Goats are present on Aguiguan and degrade habitat there. Craig (1999) wrote that birds on Aguiguan are vulnerable to destruction of habitat caused by typhoons, given Aguiguan's small size. However, typhoons are a regular occurrence in the CNMI, and birds have presumably adapted to the current typhoon regime. Changing typhoon frequency and intensity as predicted by some climate change models (Chowdhury et al., 2007) may change this balance.

Table 11. Bird populations on Aguiguan Island (Engbring et al., 1986)* and Naftan Rock (C. Kessler, pers. comm., 2007)

	Golden White-Eye	Micronesian Megapode	Mariana Swiftlet	Nightengale Reed Warbler	Bridled White Eye	White-throated Ground-Dove	Mariana Fruit-Dove	Collared Kingfisher	Rufous Fantail	Micronesian Honeyeater	Micronesian Starling	Sooty Tern (2007)	Brown Noddy (2007)
Aguiguan	2366	11	1022	15**	7431	34	292	42	1472	2195	428		
Naftan Rock												3000	5000

* These are population estimates from surveys conducted in 1982 and do not represent current estimates. They are included in this report because they are the most comprehensive population estimates publicly available. Craig (1996) calculated station densities for surveys conducted in 1991-1993 surveys, but did not include population estimates.
** Nightengale Reed Warblers may no longer be present on Aguiguan.

Reichel (1991) reported over 600 pairs of breeding seabirds for Aguiguan, including 120 pairs of Brown Boobies and 450 pairs of Brown Noddies.

Results – IBAs in Aguiguan Island and Naftan Rock

The entire complex of Aguiguan Island and Naftan Rock(Figure 8) is proposed as an IBA because of the presence of the Golden White-Eye and the Mariana Swiftlet (found only on Saipan and Aguiguan) and the small but consistent population of Micronesian Megapodes . The islands are uninhabited and can be difficult to access because of steep cliffs. The island does have an abundant population of feral goats, and hunters do visit the island periodically to hunt goats (Esselstyn et al., 2004). Permission to land on Aguiguan should be obtained from the Tinian Mayor's Office (MARAMP, 2005), however, poaching does occur on the island. Steadman (1999) wrote that positive attributes of Aguiguan's habitat was the lack of human inhabitants, Brown Treesnakes, feral cats, pigs, dogs, or cattle, the presence of only the Pacific Rat rather than the Black rat, and relative difficulty of access. He proposed the island as one site for translocation of endangered bird species, noting that the feral goat and chicken populations should be removed.

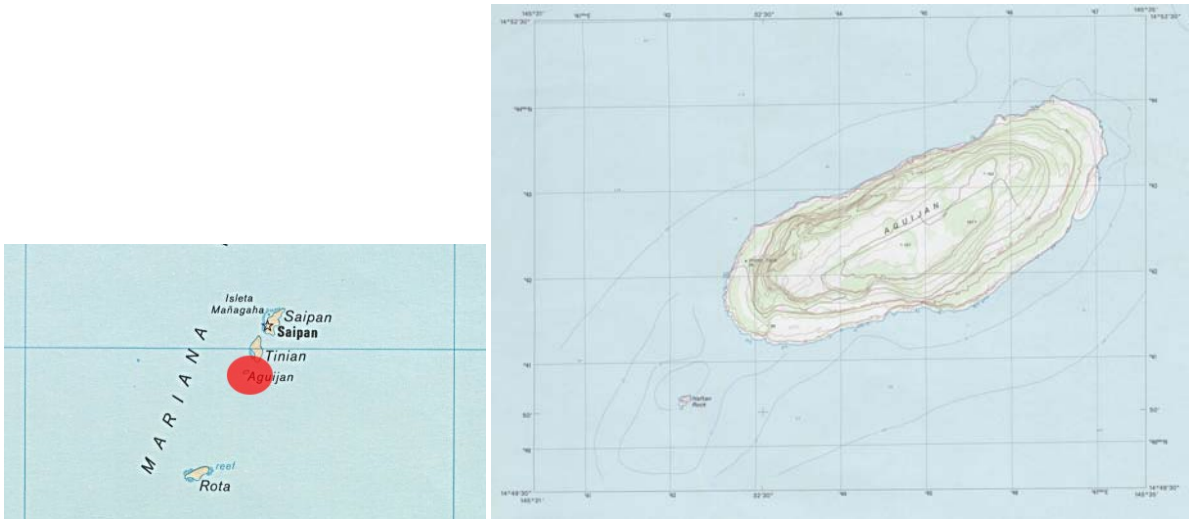


Figure 8. Proposed Aguiguan Island and Naftan Rock IBA

Results – Tinian Data

Engbring et al. (1986) reported that the Tinian Monarch, endemic only to Tinian, was present in every surveyed habitat in Tinian (Table 12). The USFWS (2005) also found that the Tinian Monarch inhabited a variety of forest habitats, including native, secondary, and introduced vegetation. Engbring et al. (1986) also found that other native birds were distributed throughout the island. Engbring et al. (1986) found that the northern part of Tinian, the location of Hagoi marsh (Figure 9), held the largest population of monarchs and was important for wetland birds, including the US federally listed and protected Mariana Common Moorhen. Tanaka and Haig (2004) found that Mariana Common Moorhens appear to use Tinian's Lake Hagoi, particularly during the dry season.

Figure 9. Hagoi Lake and marsh are in the northwest corner of Tinian (www.40thbombgroup.org).

Wiles et al. (1985) and O'Daniel and Krueger (1999) found the Micronesian Megapode on Tinian. O'Daniel and Krueger (1999) reported sightings of the Megapode were made at Maga, Upper Mt. Lasu, and Bateha, all sites with native limestone forest (Figure 10). These sites are located on the center escarpment of the island. Native forest is also found on the eastern part of the island in Unai Dankulo (NPS, 2001).

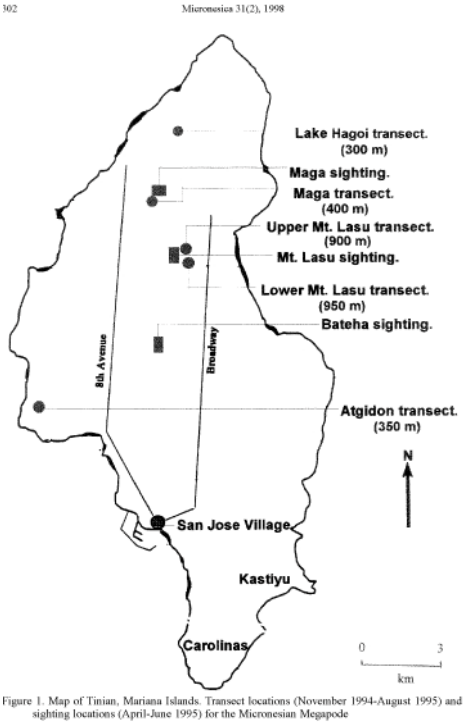


Figure 1. Map of Tinian, Mariana Islands. Transect locations (November 1994-August 1995) and sighting locations (April-June 1995) for the Micronesian Megapode

Figure 10. O'Daniel and Krueger (1999)observed Micronesian Megapodes at Maga, Mt. Lasu, and Bateha.

Table 12. Bird populations on Tinian, 1982 (Engbring et al., 1986)*

	Tinian Monarch	Bridled White Eye	White-throated Ground-Dove	Mariana Fruit-Dove	Collared Kingfisher	Rufous Fantail	Micronesian Honeyeater	Micronesian Starling	Mariana Common Moorhen	Micronesian Megapode (O'Daniel and Krueger, 1999)
Tinian										
Hagoi	11733	55358	41	865	233	7977	1653	4150	x	x
Diablo	10971	48976	65	517	137	6430	2338	2565		x
Masalog	9672	87921	221	979	418	7595	2820	2635		
Carolinas	6961	49096	86	714	163	6120	1862	2644		

* These are population estimates from surveys conducted in 1982 and do not represent current estimates. They are included in this report because they are the most comprehensive population estimates publicly available. Craig (1996) calculated station densities for surveys conducted in 1991-1993 surveys, but did not include population estimates.

Reichel (1991) reported over 270 pairs of breeding seabirds on Tinian, including 150 pairs of White Terns.

Results – IBAs in Tinian

This report recommends designating the majority of the island of Tinian, excluding the area around the town of San Jose, as an IBA (Figure 11). This is because the endemic and threatened birds are ubiquitous throughout the island. There are some local, small conservation areas on Tinian, such as the Airport Mitigation Site, a small conservation area in the southwest corner of the island established for Tinian Monarchs, and a small mitigation area in the central part of the island (A. Marshall, pers. comm.). However, selection of one part of the island over another as an IBA would be arbitrary, therefore, the IBA is selected to include all areas other than the main town of San Jose, which is the seat of current development. Selection of the majority of the island results in selection of all remnant patches of native forest.

Figure 11. The Proposed Tinian Island IBA, which excludes the town in the southern portion of the island. The rest of the island is proposed as an IBA.

The northern two-thirds of Tinian Island are owned by the CNMI and under lease to the US Department of Defense. Under the terms of the lease agreement, no Tinian resident may live on or develop the leased lands (NPS, 2001). The military lease zone is largely undeveloped, although the Navy conducts training exercises on the land. In 2001 (NPS, 2001), no major construction projects were planned for the military's leased areas, but the military did announce that it would increase use of the area for live fire training. In more recent years the military has announced plans for major construction projects in this area (A. Marshall, pers. comm.). The northern third of the island is an exclusive military zone, and the middle third of the island is a leaseback area, with areas leased to residents of CNMI for agriculture and grazing (NPS, 2001). When not in use for military activities, both areas are open to the public for limited uses. There are cultural and National Historic Sites, as well as recreational facilities, in the leased zone. A portion of the northern part of the leased zone is a National Historic Site, containing the World War II site of North Field. A petition to move administration of North Field to the National Park Service was denied under the conditions of the lease; however, the military does manage historic sites in the area and provides access and interpretive signs through the Department of Defense Resource Management Program (NPS, 2001). This report did not recommend selection of the military leasehold area as an IBA alone because there is no actual physical boundary to separate the military lease area from the public and private Tinian lands (Figure 12). Further, this report did not recommend selection of the National Historic Site of North Field as an IBA alone because it excludes the Lake Hagoi and associated wetlands.

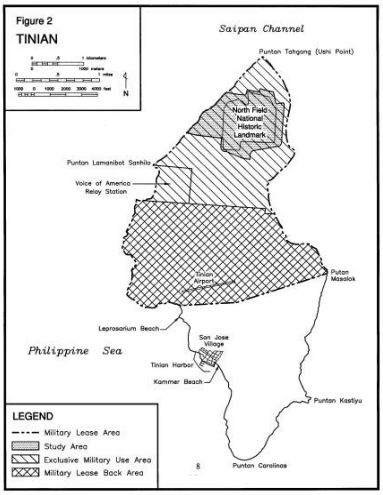


Figure 12. The administrative boundaries of the military leasehold.

The southern third of Tinian is home to the town of San Jose with a population of approximately 4000 people. In 2001 there were plans to build additional hotels and expand tourism through construction of a casino. This report thus recommended excluding the town from the IBA, although birds do use its urban areas.

Native forest is found in patches scattered throughout Tinian, including in the military lease area and in the southeast corner of the island; thus, the majority of the island was selected as a proposed IBA. Unai Dankulo on the eastern part of the island has native forest, and Lake Hagoi, on the northwestern part of the island, is a rare wetland area. The central escarpment, with patches of native forest, runs down the middle of the island. Rather than select many IBAs to capture the scattered native habitats, this report recommended one IBA for the majority of the island of Tinian.

Results – Saipan Data

In 1982, Engbring et al. (1986) found the Golden White-Eye to be well-distributed throughout Saipan (Table 13). They also found that the bird was well adapted to residential and agriforest areas and apparently did well in all vegetation types. It was restricted to Saipan and Aguiguan only. Stinson and Stinson (1994) also found the bird in a variety of forest and semi-open areas. Craig (1999) wrote that the Brown Treesnake had successfully been established in Saipan in the 1990s, posing an immediate threat to all Golden White-Eyes on Saipan and "dooming" them to extinction. However, the current status of the Brown Treesnake on Saipan is unclear, although many biologists believe that an initial population is in the initial stages of establishment (Wiles, pers. comm.).

Craig (1996) repeated the methods of Engbring et al. (1986), comparing areas of limestone forest with disturbed sites. He found the Micronesian Megapode, Mariana Fruit-Dove, and Golden White Eye to be more common in limestone forest than in disturbed habitats. The White-throated Ground-Dove, Rufous Fantail, Micronesian Starling, Micronesian Honeyeater, and Bridled White Eye were all found in both native forest and disturbed habitats. The Nightengale Reed Warbler was observed more often in disturbed habitats than in limestone forest. The Mariana Swiftlet was not systematically surveyed by Craig (1996) but he did observe the birds in the more mountainous areas.

After surveys in 2004 and 2005, Hess and Pratt (2006) wrote that most native birds on Saipan, including the Golden White-Eye, Nightengale Reed Warbler, Mariana Swiftlet, and Micronesian Megapode, are found in the northern part of Saipan. Micronesian Megapodes may be found throughout Saipan, but appear to be concentrated in the north. These species were found in existing conservation areas in the north of Saipan and in some unprotected lands, also in the north. This northern region corresponds with the Suicide region surveyed by Engbring et al. (1986), where, in 1982, the only Micronesian Megapodes in Saipan were observed.

Table 13. Bird populations on Saipan, 1982 (Engbring et al., 1986)*

Island and Region	Golden White-Eye (CR)	Micronesian Megapode (EN)**	Mariana Swiftlet (EN)	Nightengale Reed Warbler (EN)	Bridled White-Eye (EN)	Mariana Fruit-Dove (EN)**	White-throated Ground-Dove (NT)	Collared Kingfisher (RR)	Rufous Fantail (RR)**	Micronesian Honeyeater (RR)	Micronesian Starling (RR)	Mariana Common Moorhen (Local Concern)
Saipan (North to South)												
Suicide	11769	40	0	284	45312	510	52	286	9721	2243	801	
Tanapag	3209	0	2024	373	24964	253	18	124	4116	3410	255	
Garapan	11254	0	3728	880	46174	727	9	260	6604	5959	675	
Kagman	14277	0	2904	1124	55193	843	47	325	12634	5705	1220	
Susupe	9434	0	418	863	30021	119	108	37	6729	4655	91	x
Fadang	5578	0	46	1342	27474	89	20	65	7109	602	147	

* These are population estimates from surveys conducted in 1982 and do not represent current estimates. They are included in this report because they are the most comprehensive population estimates publicly available. Craig (1996) calculated station densities for surveys conducted in 1991-1993 surveys, but did not include population estimates.
** Craig (1996) noted possible population declines in these species compared to Engbring et al. (1986).

Stinson et al. (1993) found the Mariana Common Moorhen in Lake Susupe and in other small wetlands around the island. Tanaka and Haig (2004) found Mariana Common Moorhens at a number of seasonal and permanent wetlands on Saipan. Hess and Pratt (2006) found Mariana Common Moorhens and Nightengale Reed Warblers residing in wetlands in wetlands in the American Memorial Park in the Garapan region.

Reichel (1991) reported over 500 pairs of breeding seabirds on Saipan, including 300 pairs of Brown Noddies and 200 pairs of White Terns.

Results – IBAs in Saipan

Two IBAs are proposed for Saipan (Figure 13). The Northern Saipan IBA includes the Laderan Tangke Conservation Area (Saipan Upland Mitigation Bank) and the Bird Island Wildlife Conservation Area, as well as the Marpi area, which is known for Nightengale Reed Warblers. This area includes confirmed records of the Critically Endangered Golden White-Eye (Craig, 1986; Hess and Pratt, 2006). This northern part of the island also had confirmed records of the Micronesian Megapode, Mariana Swiftlet, and Nightengale Reed Warbler in 2004-2005, and all of the other endangered, threatened, and regionally-restricted birds in 1982. Zotomayor (2006) reported that birdwatchers had recent observations of the Micronesian Honeyeater, Bridled White Eye, Collared Kingfisher, Marianas Fruit Dove, and White-throated Ground-Dove. The majority of the area is protected under CNMI law.

The Tapochau-Susupe-Kagman IBA includes a number of areas with habitats important to critical bird species. The Kagman area and adjacent Forbidden Island are home to established populations of Micronesian Megapodes (Marshall pers. comm.), White-throated Ground-Doves, and Mariana Fruit-Doves; as well as the island's largest population of Golden White-Eyes. Part of the Kagman area is protected by law as the Kagman Wildlife Conservation Area (Schroer, 2007). Forbidden island is not formally protected, but access is difficult and there is a management plan for the island (Marshall, pers. comm.). This report includes a golf course in the Kagman area as part of the proposed IBA because of the numerous ponds on the golf course that attract Nightengale Reed Warblers and Mariana Common Moorhens. Lake Susupe, which is also regulated as a Limited Take Zone by CNMI law, is included both for its value as a wetland (and home for Mariana Common Moorhens) and because it is home to large numbers of Nightengale Reed Warblers. Mount Tapochau (surveyed as part of the Garapan area) is home to the bulk of the current population of Mariana Swiftlets, in addition to Saipan's other critical species. Boundaries for this IBA follow roads, coastlines, and topographic features.

Additional areas that are locally important but not proposed as part of the IBAs include Managaha Island, which is currently free of cats, and the Naftan/Obyan areas, which are home to Micronesian Megapodes and Nightengale Reed Warblers, but parts of which have recently been leased as a golf course.

Figure 13. Proposed Northern Saipan IBA (top) and Topachau-Susupe-Kagman IBA (bottom)

Results – Northern Islands Data

Terrestrial birds known from the Northern Islands are presented in Table 14.

Table 14. Terrestrial birds (individuals) in the Northern Islands (IBA-qualifying species) (DFW, 2000a-c; Reichel and Glass, 1991).

		Uracus	Maug	Asuncion	Agrihan	Pagan	Alamagan	Guguan	Sarigan	Anatahan	de Medinilla
Micronesian Megapode	*Megapodius laperouse*	X	50-150 *	25 *	x	50-100 *	2	305	360	200-300 *	4
White-throated Ground-Dove	*Gallicolumba xanthonura*			X	X	X	83	54	3	X	50
Nightengale Reed Warbler	*Acrocephalus syrinx*						173				
Micronesian Starling	*Aplonis opaca*		X	X	X	X	X	X	X	X	X
Micronesian Honeyeater	*Myzomela rubrata*		X	X	X	X	X	X	X	X	

* (www.birdinghawaii.co.uk/XMicroMegapode2.htm)

Reichel (1991) summarized breeding seabird population data from a number of surveys conducted between 1979 and 1988 (Table 15). Population estimates are for pairs unless otherwise noted. Additional population estimates from other sources are so noted.

Table 15. Seabird populations (pairs); also other IBA-qualifying species in the northern islands

		Uracus	Maug	Asuncion	Agrihan	Pagan	Alamagan	Guguan (CNMI DFW 2000b)	Sarigan	Anatahan	Farallon de Medinilla
Wedge-tailed Shearwater	*Puffinus pacificus*										
Red-tailed Tropicbird	*Phaethon rubricauda*	40	200	5	1	250		32 ind.	1		10
White-tailed Tropicbird	*Phaethon lepturus*	1	15	10	4	1	1	25 pairs (Reichel, 1991)	1	3	5
Masked Booby	*Sula dactylatra*	50	250	1				2 ind.		0	750 ind.
Red-footed Booby	*Sula sula*		1000	20		100		460 ind. (1000 pairs in Reichel, 1991)			500 ind.
Brown Booby	*Sula leucogaster*	100	130	35	4	100	2	533 ind.	7	7	200 ind.
Great Frigatebird	*Fregata minor*		3 ind. (Lusk et al)								25 ind.
Grey-backed Tern	*Sterna lunata*							276 ind.* (1200 pairs Reichel, 1991)			
Sooty Tern	*Sterna fuscata*	95000		500				37665 ind.			
Little Tern	*Sterna albifrons*										
Brown Noddy	*Anous stolidus*	150	6000	70	100	1000	20	980 ind.	30	30	50 ind.
Black Noddy	*Anous minutus*		150		100	1000	2000	360 ind.			20 ind.
White Tern	*Gygis alba*	5	100	70	100	100	250	78 ind.	15	30	200 ind.
Total Pairs		95346	7845	711	309	2551	2273	20218	54	70	887
Total Individuals		190692	15690	1422	618	5102	4546	40436	108	140	1775
	Qualifying Criteria	**A4i** **A4iii**	**A4i** **A4ii**			**A4ii**		**A4i** **A4iii**			

* Likely underestimated (DFW, 2000Db)

Four of CNMI's islands meet or exceed global or bioregional thresholds for breeding seabirds:

Uracus (Farallon de Pajaros) - IBA Qualifying species:

Bird	Population	Threshold	Category
Sooty Terns	95,000 pairs/190,000 birds	20,000 birds	A4i
All	190,692 birds	>20,000 birds	A4iii

Maug Islands - IBA Qualifying species:

Bird	Population	Threshold	Category
Red-tailed Tropicbird	200 pairs/400 birds	80 pairs	A4ii
Brown Noddy	6000 pairs/12,000 birds	5000 pairs	A4i

Pagan - IBA Qualifying species:

Bird	Population	Threshold	Category
Red-tailed Tropicbird	250 pairs/500 birds	80 pairs	A4ii

Guguan - IBA Qualifying species:

Bird	Population	Threshold	Category
Grey-backed Terns	1200 pairs/2400 birds	1000 pairs	A4i
Sooty Terns	15,000 pairs/30,000 birds	20,000 birds	A4i
All	35,590 birds	>20,000 birds	A4iii

Results – IBAs in the Northern Islands

Six of the Northern Islands are proposed as IBAs (Figure 14). Three of these proposed IBAs, Uracus Island, Maug Islands, and Guguan Island, are proposed for their populations of breeding seabirds. These islands are also home to endangered and endemic species. Three additional islands are proposed as IBAs because of their importance to endangered and endemic birds. Of these, five are protected. The proposed IBA of Alamagan Island is inhabited, but is proposed as an IBA because it is one of only two locations with extant populations of Nightengale Reed Warblers.

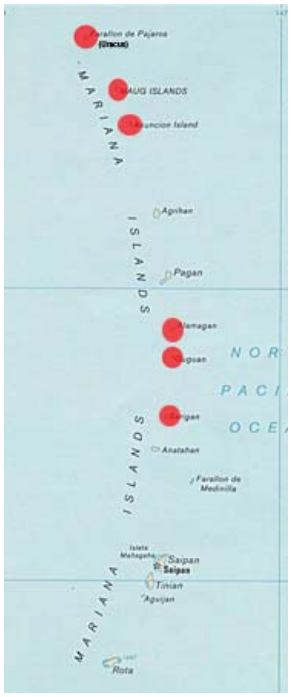


Figure 14. Proposed IBAs in the Northern Islands

Uracus (Farallon de Pajaros) Island IBA
The entire island of Uracus (Figure 15) is proposed as an IBA because of its population of breeding seabirds. Uracus qualifies under both A4i criteria for its population of Sooty Terns and under A4iii for its total population. Micronesian Megapodes are also breeding on the island (Reichel and Glass, 1991). Uracus is currently protected under CNMI law as part of the Northern Islands Conservation Area (DFW, 2007d). The island was previously proposed for protection under the International Biological Programme's "Islands for Science" program (Falanruw, 1989).



Figure 15. Proposed Uracus Island IBA. (Left: http://volcano.und.nodak.edu/vwdocs/volc_images/southeast_asia/mariana/falleron.html. Right: www.oceandots.com)

Maug Islands IBA

The entire three-island complex of Maug (Figure 16) is proposed as an IBA because of its population of breeding seabirds. The three Maug Islands qualify under the A4i criteria for Brown Noddies and under the A4ii criteria for Red-tailed Tropicbirds. Micronesian Megapodes are common on Maug (Reichel and Glass, 1991). Maug is also home to Micronesian Starlings and Micronesian Honeyeaters. The islands are lushly vegetated (UOG, 1977) and are protected as part of the Northern Islands Conservation Areas (DFW, 2007d).

Figure 16. Proposed Maug Islands IBA. (Left: http://volcano.und.nodak.edu/vwdocs/volc_images/southeast_asia/mariana/maug.html. Right: www.oceandots.com)

Asuncion Island IBA

The entire island of Asuncion (Figure 17) is proposed as an IBA under A1 and A2 criteria. The island is home to Micronesian Megapodes, White-throated Ground-Doves, Micronesian Starlings, Collared Kingfishers, and Micronesian Honeyeaters. The island is currently protected under CNMI law. It is uninhabited and one of the few islands that is free of goats, pigs, and cattle (Falanruw, 1989). The island was previously proposed for protection under the International Biological Programme's "Islands for Science" program (Falanruw, 1989). Falanruw (1989) described Asuncion as being unique among the northern islands in having a native forest type, the main species of which was endemic. A common tree species is *Terminalia rostrata*, which in 1989 was only known from Asuncion. The island also harbors many coconut crabs. The island also provides habitat for the endangered skink *Emoia slevini*, which in 1989 was only known from Rota, Tinian, and Guam. In addition, Falanruw (1989) described Asuncion as providing the largest area of sheltered habitat for native, endemic, and endangered fauna in the northern islands; these islands are frequently affected by typhoons.

Figure 17. Proposed Asuncion Island IBA. (Left: http://volcano.und.nodak.edu/vwdocs/volc_images/southeast_asia/mariana/asuncion.html. Right: www.oceandots.com)

Alamagan Island IBA

The entire island of Alamagan (Figure 18) is proposed as an IBA under A1 and A2 criteria, specifically for its population of Nightengale Reed Warblers. The island is also home to Micronesian Megapodes, White-throated Ground-Doves, Collared Kingfishers, Micronesian Starlings, and Micronesian Honeyeaters. Currently, populations of Nightengale Reed Warblers are found only on Saipan and Alamagan (DFW, 2007a), with approximately 100 pairs residing on Alamagan. Although Micronesian Megapodes and Nightengale Reed-Warblers prefer to use forested areas, the entire island is proposed as an IBA due to its small size. The island is inhabited. DFW (2007a) noted that the birds are most abundant in those forests that have been proposed for homestead lots.

Figure 18. Proposed Alamagan Island IBA. (Left: http://volcano.und.nodak.edu/vwdocs/volc_images/southeast_asia/alamagan.html. Right: www.oceandots.com)

Guguan Island IBA

The entire island of Guguan (Figure 19) is proposed as an IBA under A4i and A4iii criteria. The island qualifies as an IBA under A4i criteria for Grey-backed Terns and Sooty Terns. The island qualifies under A4iii criteria for its total seabird population. Guguan is also home to Micronesian Megapodes, White-throated Ground-Doves, Micronesian Starlings, Collared Kingfishers, and Micronesian Honeyeaters (DFW, 2007b). The island is currently protected under CNMI law as part of the Northern Islands Conservation Area (CNMI DFW, 2007). Guguan had previously been nominated as one of the "Islands for Science" reserves. Guguan is uninhabited and feral ungulates have never been introduced to the island (DFW, 2007b). Guguan, along with Asuncion and Maug, are the only proposed IBAs that are uninhabited and free of ungulates.

Figure 19. Proposed Guguan Island IBA. (Left: http://volcano.und.nodak.edu/vwdocs/volc_images/southeast_asia/guguan.html. Right: www.oceandots.com)

Sarigan Island IBA

The entire island of Sarigan (Figure 20) is proposed as an IBA under A1 and A2 criteria. Sarigan has a large population of Micronesian Megapodes and may consistently harbor 50% of the total CNMI megapode population (Marshall, pers. comm.). The island is also home to White-throated Ground-Doves and has a small population of Grey Backed Terns, which are rare in the CNMI, as well as Micronesian Starlings, Collared Kingfishers, and Micronesian Honeyeaters. A small population of Common Buzzards was present on Sarigan (Reichel et al., 1994)

during surveys in the 1980s and 1990s. Sarigan is uninhabited. Ungulates were removed from the island in 1998 as mitigation for military use of Farallon de Medinilla.

Figure 20. Proposed Sarigan Island IBA.
(http://volcano.und.nodak.edu/vwdocs/volc_images/southeast_asia/mariana/sargian.html)

Islands not proposed as IBAs

Two islands were considered for IBA status but are not currently proposed as IBAs. One island is Pagan, which qualifies for IBA status under A4ii criteria. However, this report does not propose IBA designation for Pagan because it is not currently protected and people are known to use the island. Although all of the Northern Islands are volcanically active, a 1981 eruption in Pagan may have reduced the viability of the island as seabird breeding habitat.

The island of Farallon de Medinilla (FDM) is also extremely important regionally but is not currently proposed as an IBA because of current US military activity and because the number of breeding seabirds does not meet global thresholds. Lusk et al. (2000) reported 750 masked boobies, 200+ brown boobies, 500 red-footed boobies, and 25 Great Frigatebirds, each with nesting. Lusk et al. (2000) observed Micronesian Megapodes on the island but reported that it was not likely that megapodes nested on the island due to its hard packed soil. They did point out that the island be valuable to megapodes if it provides a genetic link between northern and southern populations and if it offers a rest stop for dispersing birds (Lusk et al., 2000). FDM is particularly important for Masked Boobies because it represents the largest known nesting site for this species in the Mariana Islands (Lusk et al., 2000). FDM is also home to the largest Great Frigatebird colony in the Mariana Islands. The only other island on which Great Frigatebirds have been observed breeding is Maug, which is also home to the Mariana Islands second largest colony of Masked Boobies. Although FDM is not currently proposed as an IBA, it should be monitored for possible later inclusion. Vogt (2005) reported the results of systematic monitoring between 1999 and 2003 and found an increasing trend in Masked Boobies and steady numbers of Red-footed and Brown Boobies, despite Navy bombing. The US Navy controls for Brown Tree Snakes and positions its targets on the advice of a biologist (FDM Fact Sheet).

Chapter 5. Conservation Coverage and IBAs in the CNMI

This report proposes eleven IBAs for the CNMI (Figure 21):

1. Rota IBA
2. Aguiguan Island and Naftan Rock IBA
3. Tinian Island IBA
4. Northern Saipan IBA
5. Topachau-Susupe-Kagman IBA
6. Uracus Island IBA
7. Maug Islands IBA
8. Asuncion Island IBA
9. Alamagan Island IBA
10. Guguan Island IBA
11. Sarigan Island IBA

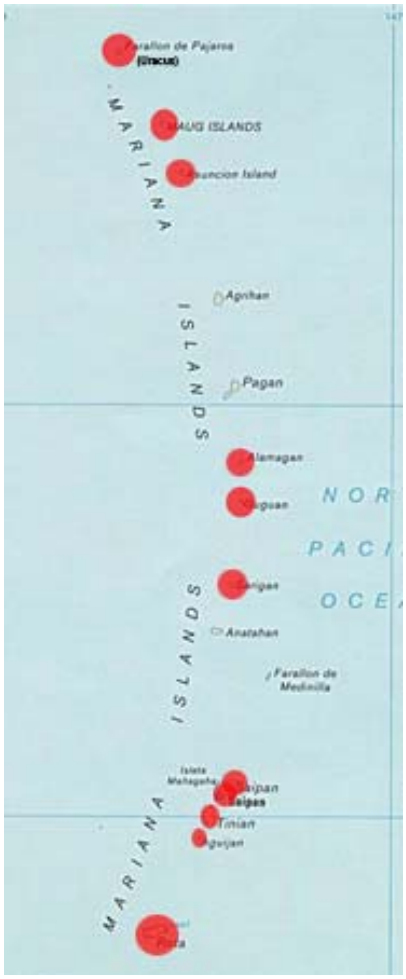


Figure 21. Proposed IBAs in CNMI

The suite of eleven proposed IBAs include records and habitat for all of the CNMI's threatened or endangered, endemic, and regionally-restricted birds. Most birds are found in more than one IBA (Table 16), except for those that are restricted to just one island. All of the IBAs were selected for the presence of more than one endangered or regionally-restricted species, or because they included significant seabird populations and endangered species.

Table 16. Known Bird Records represented in CNMI IBAs (excluding seabirds)

Proposed IBA	Golden White-Eye	Micronesian Megapode	Mariana Swiftlet	Nightengale Reed Warbler	Tinian Monarch	Rota Bridled White Eye	Mariana Crow	Bridled White Eye	White-throated Ground-Dove	Mariana Fruit-Dove	Collared Kingfisher	Rufous Fantail	Micronesian Honeyeater	Micronesian Starling	Mariana Common Moorhen	Number of forest birds recorded in IBA
Rota IBA						X	X		X	X	X	X	X	X	X	9
Aguiguan Island and Naftan Rock IBA	X	X	X					X	X	X	X	X	X	X		10
Tinian Island IBA		X			X			X	X	X	X	X	X	X	X	10
Northern Saipan IBA	X	X	X	X				X	X	X	X	X	X	X		11
Topachau-Susupe-Kagman IBA	X	X	X	X				X	X	X	X	X	X	X	X	12
Uracas Island IBA		X														1
Maug Islands IBA		X									X		X	X		4
Asuncion Island IBA		X							X		X		X	X		5
Alamagan Island IBA		X		X					X		X		X	X		6
Guguan Island IBA		X							X		X		X	X		5
Sarigan Island IBA		X							X		X		X	X		5
# Times represented in an IBA (of 11 IBAs)	3	10	3	3	1	1	1	4	9	5	10	5	10	10	3	

Conservation Activities in proposed IBAs

The suite of proposed IBAs was selected not only for the presence of bird species of concern, but also because conservation of the area is likely and viable. Five of the eleven proposed IBAs are formally and fully protected as Wildlife Conservation Areas by the CNMI Division of Fish and Wildlife (DFW, 2007):

1. Uracus Island IBA
2. Maug Islands IBA
3. Asuncion Island IBA
4. Guguan Island IBA
5. Sarigan Island IBA

Four of the proposed IBAs are partially protected (some of the proposed IBA is protected):

1. Rota IBA
2. Tinian Island IBA
3. Northern Saipan IBA
4. Topachau-Susupe-Kagman IBA

Part of the IBA on Tinian is a US National Historical Monument, and the US Military has responsibility to maintain the integrity of the site. Additional areas on Tinian are local mitigation sites. The proposed IBA on Rota is also being considered for status as a National Park.

Two of the proposed IBAs are not protected, although of these, only Alamagan in inhabited:

1. Aguiguan Island and Naftan Rock IBA
2. Alamagan Island IBA

The CNMI Division of Fish and Wildlife is tasked with protection of endangered and threatened species in the CNMI. The agency conducts research, monitoring, regulation, enforcement, planning, and management, including management of CNMI's Wildlife Conservation Areas. The agency also has programs specifically designed to control the introduction and spread of the Brown Treesnake.

The US Fish and Wildlife Service conducts species-specific conservation activities in the CNMI. The USDA Forest Service is also tasked with conservation activities in the islands. Activities to improve the status of threatened species, such as monitoring, specific actions such as translocations, and control of invasive species, are taken out by local and Federal government entities. Commonwealth regulations also protect birds from hunting and other immediate disturbance.

The CNMI government has also pledged to effectively conserve 20% of its forest resources by 2020 as part of the Micronesia Challenge. A nongovernmental nonprofit organization called the Mariana Islands Nature Alliance was formed in 2005.

Conservation Issues and Threats to IBAs in the CNMI

Alien invasive species pose the greatest threat to the CNMI. The islands have been heavily impacted by man, and the presence of feral mammals, including rats, cats, and ungulates, pose threats on many islands. The loss of native vegetation is another threat. Declines in the Rota Bridled White-Eye and the Mariana Crow have been attributed to the impacts of invasive species, such as predation by the Black Drongo, and habitat degradation and loss. Sherley (2001) lists assessment of impacts, particularly on Rota, as priority conservation actions for the CNMI.

The possible establishment of the Brown Treesnake throughout CNMI is a major threat. The Brown Treesnake has decimated bird populations on Guam (Wiles et al., 2003). The proximity of Guam to the CNMI and the frequency with which commerce and trade occur between the islands increases the probability that the Brown Treesnake may become established on CNMI. A population may have already been established on Saipan; and there have been sightings of the snake on Tinian and Rota. The CNMI has implemented quarantine procedures as control measures, but the possibility that the Brown Treesnake may bypass quarantine measures is still a threat.

Many of the islands have introduced populations of the Monitor Lizard (*Varanus indicus*). The lizard is known from Rota, Aguiguan, Saipan, Anatahan, Sarigan, and Pagan, and is likely also present on Alamagan and Agrihan (USGS, 2005).

Degradation and fragmentation of native forests pose additional threats, particularly for the Mariana Crow, which appears to prefer closed canopy native forests (Aguon et al., 2005). Persecution by humans (hunting and illegal shooting as nuisance species) also poses a threat to Mariana Crows (Plentovich et al., 2005). Hunting also poses a threat to several other bird species, including seabirds, megapodes, and moorhens. Typhoons, although natural, pose a threat that is compounded by the existing small populations and limited range. Increasing frequency and intensity of typhoons, as predicted by some climate change predictions (Chowdhury et al., 2007), may pose an additional threat through increased habitat loss and direct mortality of birds.

IBAs and Other Biodiversity

The proposed IBAs include known records for rare, threatened, and endemic plants and animals other than birds. For example, the proposed IBA on Rota, which captures most of the native forest remaining on the island, is known to support populations of the endangered Mariana Fruit Bat, two endangered trees, and the rare Fragile Tree Snail (Wiles et al., 1996; USFWS, 2007). Aguiguan, which also maintains much of its native forest, hosts the CNMI's only remaining population of the Pacific Sheath-tailed Bat (Esselstyn et al., 2004).

Chapter 6. IBA Inventory

CNMI IBA 1

Name: Rota IBA
Country/Territory: Rota Island, Commonwealth of the Mariana Islands
Approximate Area: ~23 km^2
Altitude: 0-450 m
Coordinates $14^0$10'N; $145^0$12'E
Criteria: A1, A2
Site Description: The proposed IBA on Rota includes those areas that have been deemed feasible for management under the US National Park system. The IBA includes large areas of native forest and the USFWS-designated Critical Habitats for the Rota Bridled White-Eye and the Mariana Crow. Several cultural sites are included in the proposed IBA. Parts of the proposed IBA are currently protected by CNMI law. Because of Rota's remaining native forest, several rare, endangered, and endemic species are known to occur in the proposed IBA, including:

- Endangered plants
  - *Osmoxylon mariannenese*
  - *Nesogenese rotensis*
  - *Serianthes nelsonii*
  - *Tabernaemontana rotensis* (candidate endangered species)
- Mariana Fruit Bats
- Fragile Tree Snail
- A translocated population of Guam Rails (introduced to Rota)

Species: IBA-qualifying birds found in the proposed IBA are:

Common Name	**Species Name**	**Criteria**
Mariana Crow	*Corvus kubaryi*	A1, A2
Mariana Fruit-Dove	*Ptilinopus roseicapilla*	A1, A2
Rota Bridled White Eye	*Zosterops rotensis*	A1, A2
White-throated Ground-Dove	*Gallicolumba xanthonura*	A1, A2
Micronesian Honeyeater	*Myzomela rubratra*	A2
Micronesian Starling	*Aplonis opaca*	A2
Rufous Fantail	*Rhipidura rufifrons*	A2
Mariana Common Moorhen	*Gallinula chloropus*	Locally rare

Conservation Issues/Threats: Invasive species pose a threat. Predation by Black Drongos is a threat to the Rota Bridled White Eye and the Rufous Fantail. Deer are a threat if they destroy native forest by overbrowsing; rats and monitor lizards are also a current threat. Habitat degradation and loss also threats. There are some human use areas within the proposed IBA, although major settlements are located outside the proposed IBA. The Brown Treesnake has been captured on Rota, although there is no evidence of an established population.

CNMI IBA 2

Name: Aguiguan Island and Naftan Rock IBA
Country/Territory: Aguiguan Island, Commonwealth of the Mariana Islands
Approximate Area: 7.5 km^2
Altitude: 0-150 m
Coordinates $14^0$51'N; $145^0$34'E
Criteria: A1, A2
Site Description: Aguiguan Island is an uninhabited island with patches of native forest. The island is difficult to access due to steep cliffs and visitors to the island should have permission. Other rare, endemic, and threatened species occurring in the proposed IBA are:

- Sheath-tailed Bats
- Mariana Fruit Bat
- Langford's Tree Snail

Species: IBA-qualifying birds found in the proposed IBA are:

Common Name	**Species Name**	**Criteria**
Bridled White Eye	*Zosterops conspicillatus*	A1, A2
Golden White-Eye	*Cleptornis marchei*	A1, A2
Mariana Fruit-Dove	*Ptilinopus roseicapilla*	A1, A2
Mariana Swiftlet	*Aerodramus bartschi*	A1, A2
Micronesian Megapode	*Megapodius laperouse*	A1, A2
White-throated Ground-Dove	*Gallicolumba xanthonura*	A1, A2
Micronesian Honeyeater	*Myzomela rubratra*	A2
Micronesian Starling	*Aplonis opaca*	A2
Rufous Fantail	*Rhipidura rufifrons*	A2

Conservation Issues/Threats: The island is uninhabited. There is a large population of feral goats that disturb native flora and fauna. Rats and monitor lizards also pose a threat. Invasive weeds cover open fields on the island and may prevent the return of forest cover.

CNMI IBA 3

Name: Tinian Island IBA
Country/Territory: Tinian Island, Commonwealth of the Mariana Islands
Approximate Area: 95 km^2
Altitude: 0-178 m
Coordinates 15^0N; $145^0$38'E
Criteria: A1, A2
Site Description: The proposed Tinian Island IBA encompasses the majority of the island, excluding a small settlement in the southern part of the island and including a large military leasehold area in the north. Part of the military leasehold area is designated a National Historical Site. The military leasehold areas are used for training exercises, but are uninhabited. The proposed IBA includes the Hagoi Marsh and Marpo Swamp areas, which are important as water sources and as animal habitat.

Species: IBA-qualifying birds found in the proposed IBA are:

Common Name	**Species Name**	**Criteria**
Bridled White Eye	*Zosterops conspicillatus*	A1, A2
Mariana Fruit-Dove	*Ptilinopus roseicapilla*	A1, A2
Tinian Monarch	*Monarcha takatsukasae*	A1, A2
Micronesian Megapode	*Megapodius laperouse*	A1, A2
White-throated Ground-Dove	*Gallicolumba xanthonura*	A1, A2
Micronesian Honeyeater	*Myzomela rubratra*	A2
Micronesian Starling	*Aplonis opaca*	A2
Rufous Fantail	*Rhipidura rufifrons*	A2
Mariana Common Moorhen	*Gallinula chloropus*	Locally rare

Conservation Issues/Threats: There are no formal protective mechanisms, although the military must ensure the integrity of the National Historical Site and natural features of the area. The island is inhabited and development projects are planned to increase tourism. The military also plans to increase and intensify use of the military leasehold areas. Grazing by goats and cattle has disturbed much of the island's vegetation, most of which is introduced. There have been a few credible sightings of the Brown Treesnake on Tinian, although there is no evidence of an established population. Rats pose a current threat.

CNMI IBA 4

Name: Northern Saipan IBA
Country/Territory: Saipan Island, Commonwealth of the Mariana Islands
Approximate Area: 6.5 km^2
Altitude: 0-235 m
Coordinates $15^0$16'N; $145^0$49'E
Criteria: A1, A2
Site Description: The proposed Northern Saipan IBA is located on the island of Saipan. The proposed IBA contains two areas that are currently protected by CNMI law as conservation areas: Bird Island and land up to and including the Saipan Upland Mitigation Bank. The IBA also includes the Marpi area that is not protected. Bird Island has small populations of terrestrial and sea birds. The Mitigation Bank is an area that has specifically been set aside for the protection of Nightengale Reed Warblers and as mitigation for development in other locations that disturbs warblers.

Species: IBA-qualifying birds found in the proposed IBA are:

Common Name	**Species Name**	**Criteria**
Bridled White Eye	*Zosterops conspicillatus*	A1, A2
Golden White-Eye	*Cleptornis marchei*	A1, A2
Mariana Fruit-Dove	*Ptilinopus roseicapilla*	A1, A2
Mariana Swiftlet	*Aerodramus bartschi*	A1, A2
Micronesian Megapode	*Megapodius laperouse*	A1, A2
Nightengale Reed Warbler	*Acrocephalus syrinx*	A1, A2
White-throated Ground-Dove	*Gallicolumba xanthonura*	A1, A2
Micronesian Honeyeater	*Myzomela rubratra*	A2
Micronesian Starling	*Aplonis opaca*	A2
Rufous Fantail	*Rhipidura rufifrons*	A2

Conservation Issues/Threats: There have been over 60 confirmed records of the Brown Treesnake on Saipan (Campbell, 2004), which may be already established on the island. Saipan is the administrative and commercial center for the CNMI, and has been heavily impacted by man. Further introduced species and additional forest degradation or loss may pose additional threats. Rats and monitor lizards are current threats.

CNMI IBA 5

Name: Topachau-Susupe-Kagman IBA
Country/Territory: Saipan Island, Commonwealth of the Mariana Islands
Approximate Area: 30 km^2
Altitude: 0-466 m
Coordinates: $15^0$10'N; $145^0$45'E
Criteria: A1, A2
Site Description: The proposed IBA is located in the central part of Saipan Island. The area includes the central Mount Topachau, which runs down the center of the island, Lake Susupe and associated wetlands, and the Kagman area and Forbidden Island. Parts of the Kagman area are protected as a Conservation Area and Lake Susupe is a Limited Take area.

Species: IBA-qualifying birds found in the proposed IBA are:

Common Name	**Species Name**	**Criteria**
Bridled White Eye	*Zosterops conspicillatus*	A1, A2
Golden White-Eye	*Cleptornis marchei*	A1, A2
Mariana Fruit-Dove	*Ptilinopus roseicapilla*	A1, A2
Mariana Swiftlet	*Aerodramus bartschi*	A1, A2
Micronesian Megapode	*Megapodius laperouse*	A1, A2
Nightengale Reed Warbler	*Acrocephalus syrinx*	A1, A2
White-throated Ground-Dove	*Gallicolumba xanthonura*	A1, A2
Micronesian Honeyeater	*Myzomela rubratra*	A2
Micronesian Starling	*Aplonis opaca*	A2
Rufous Fantail	*Rhipidura rufifrons*	A2
Mariana Common Moorhen	*Gallinula chloropus*	Locally rare

Conservation Issues/Threats: There have been over 60 confirmed records of the Brown Treesnake on Saipan (Campbell, 2004), which may be already established on the island. Saipan is the administrative and commercial center for the CNMI, and has been heavily impacted by man. Additional impacts from introduced species and ongoing forest degradation or loss may pose additional threats. Rats and monitor lizards are current threats. Parts of this IBA are developed or close to development, thus encroachment by additional development may pose a threat.

CNMI IBA 6

Name: Uracus IBA
Country/Territory: Uracus (Farallon de Pajaros) Island, Commonwealth of the Mariana Islands
Approximate Area: 2 km^2
Altitude: 360 m
Coordinates 20.535N, 144.895E
Criteria: A1, A2, A4i, A4iii
Site Description: Farallon de Pajaros is the northernmost island in the CNMI. The island is a steep volcanic cone, which has erupted several times in the last century. The island is largely bare exposed rock with little vegetation. The proposed IBA is uninhabited and protected by CNMI law as a Wildlife Conservation Area.

Species: IBA-qualifying birds found in the proposed IBA are:

Common Name	**Species Name**	**Population**	**Criteria**
Micronesian Megapode	*Megapodius laperouse*		A1, A2
Sooty Terns	*Sterna fuscata*	95,000 pairs/190,000 birds	A4i

Conservation Issues/Threats: Volcanic eruptions pose a possible threat. Rats are a threat.

CNMI IBA 7

Name: Maug Islands IBA
Country/Territory: Maug Islands, Commonwealth of the Mariana Islands
Approximate Area: 2 km^2
Altitude: 227 m
Coordinates 20.020N, 145.220E
Criteria: A1, A2, A4i, A4ii
Site Description: The proposed Maug Islands IBA is composed of three separate islets that are the remains of a collapsed volcanic cone. They are thickly vegetated mostly with grasses, low scrub, and coconut trees. The proposed IBA is uninhabited and protected by CNMI law as a Wildlife Conservation Area. Additional species occurring on the island include:

- Mariana Fruit Bat

Species: IBA-qualifying birds found in the proposed IBA are:

Common Name	**Species Name**	**Population**	**Criteria**
Micronesian Megapode	*Megapodius laperouse*		A1, A2
Micronesian Honeyeater	*Myzomela rubratra*		A2
Micronesian Starling	*Aplonis opaca*		A2
Red-tailed Tropicbird	*Phaethon rubricauda*	200 pairs/400 birds	A4ii
Brown Noddy	*Anous stolidus*	6000 pairs/12,000 birds	A4i

Conservation Issues/Threats: Possible introduced species, including rats.

CNMI IBA 8

Name: Asuncion Island IBA
Country/Territory: Northern Islands, Commonwealth of the Mariana Islands
Approximate Area: 7.4 km^2
Altitude: 857 m
Coordinates 19.7N, 145.4E
Criteria: A1, A2
Site Description: The proposed Asuncion Island IBA is an uninhabited island and free of introduced large mammals. Asuncion Island is protected by CNMI law. Asuncion maintains some of the largest stands of native forest in the Northern Islands. Additional species occurring on the island include:

- Mariana Fruit Bat
- *Emoia slevini*
- *Terminalia rostrata*
- Coconut Crabs

Species: IBA-qualifying birds found in the proposed IBA are:

Common Name	**Species Name**	**Criteria**
Micronesian Megapode	*Megapodius laperouse*	A1, A2
White-throated Ground-Dove	*Gallicolumba xanthonura*	A1, A2
Micronesian Honeyeater	*Myzomela rubratra*	A2
Micronesian Starling	*Aplonis opaca*	A2

Conservation Issues/Threats: Rats are threat.

CNMI IBA 9

Name: Alamagan Island IBA
Country/Territory: Northern Islands, Commonwealth of the Mariana Islands
Approximate Area: 11 km^2
Altitude: 774 m
Coordinates 17.6N, 145.8E
Criteria: A1, A2
Site Description: The proposed Alamagan Island IBA is one of only two islands with extant populations of Nightengale Reed Warblers. The interior of the island has steep slopes cut by steep ravines; other areas are grassland or bare lava flows.

Species: IBA-qualifying birds found in the proposed IBA are:

Common Name	**Species Name**	**Criteria**
Micronesian Megapode	*Megapodius laperouse*	A1, A2
White-throated Ground-Dove	*Gallicolumba xanthonura*	A1, A2
Nightengale Reed Warbler	*Acrocephalus syrinx*	A1, A2
Micronesian Honeyeater	*Myzomela rubratra*	A2
Micronesian Starling	*Aplonis opaca*	A2

Conservation Issues/Threats: The island is inhabited and development poses a threat. Rats are a threat.

CNMI IBA 10

Name: Guguan Island IBA
Country/Territory: Guguan Island, Commonwealth of the Mariana Islands
Approximate Area: 4 km^2
Altitude: 301 m
Coordinates 17.310N, 145.845E
Criteria: A1, A2, A4i, A4iii
Site Description: The proposed Guguan Island IBA is uninhabited and protected by CNMI law as a Wildlife Conservation Area. The volcanic island is free of large introduced mammals. The coast is bordered by steep basaltic rock with gables of high ridges which contain deep, rain-eroded gorges. Additional rare and endangered species on the island include:

- Mariana Fruit Bat

Species: IBA-qualifying birds found in the proposed IBA are:

Common Name	**Species Name**	**Population**	**Criteria**
Micronesian Megapode	*Megapodius laperouse*		A1, A2
White-throated Ground-Dove	*Gallicolumba xanthonura*		A1, A2
Micronesian Honeyeater	*Myzomela rubratra*		A2
Micronesian Starling	*Aplonis opaca*		A2
Grey-backed Terns	*Sterna lunata*	276-2400 individuals	A4i
Sooty Terns	*Sterna fuscata*	37,665 individuals	A4i

Conservation Issues/Threats: Rats are present on the island. Guguan is an active volcano and last erupted in the 1880s (www.volcano.si.edu).

CNMI IBA 11

Name: Sarigan Island IBA
Country/Territory: Northern Islands, Commonwealth of the Mariana Islands
Approximate Area: 5 km^2
Altitude: 538 m
Coordinates 16.7N, 145.8E
Criteria: A1, A2
Site Description: The proposed Sarigan Island IBA consistently harbors a relatively large population of Micronesian Megapodes, with up to 50% of the CNMI's total megapode population. Sarigan is uninhabited and feral ungulates were removed from the island in 2000. The island serves as a mitigation site for military use of the Farallon de Medinilla. Vegetation on the island has returned rapidly since ungulate eradication.

Species: IBA-qualifying birds found in the proposed IBA are:

Common Name	**Species Name**	**Criteria**
Micronesian Megapode	*Megapodius laperouse*	A1, A2
White-throated Ground-Dove	*Gallicolumba xanthonura*	A1, A2
Micronesian Honeyeater	*Myzomela rubratra*	A2
Micronesian Starling	*Aplonis opaca*	A2

Conservation Issues/Threats: Rats pose a threat.

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Appendix 1. Thresholds for Seabird IBAs

Table of 1% thresholds for Pacific waterbirds (Category A4i)

English and Scientific name	**Bioregion** (distribution of regional population)	**1% regional population** (individuals)	**1% global population** (individuals)
Australasian Grebe *Tachybaptus novaehollandiae*	Pacific (Aus and Melanesia)	10,000	10,000
Little Black Cormorant *Phalacrocorax sulcirostris*	Pacific (Aus, NZ, NG, NC)	10,000	10,000
Great Cormorant *P. carbo*	Pacific (Aus, NG, NZ, Rennell, NC)	10,000	20,000
Little Pied Cormorant *P. melanoleucos*	Pacific (Aus, NG, Melanesia, NZ)	10,000	10,000
Great (White) Egret *Ardea (Casmerodius) alba*	Pacific (Aus, NG, NZ)	1,000	20,000
Yellow Bittern *Ixobrychus sinensis*	Pacific (Micronesia)	10,000	10,000
Grey Teal *Anas gracilis*	Global (Aus, NZ and NC)	20,000	20,000
Pacific Black Duck *Anas superciliosa*	Global (Indonesia, Aus, NG, Pacific Islands, NZ)	11,000	11,000
Hardhead *Aythya australis*	Global (Aus, Vanuatu, NC)	10,000	10,000
Pacific Golden Plover *Pluvialis fulva*	East Asian flyway and Alaska migrating to central Pacific	1,400	2,000
Double-banded Plover *Charadrius b. bicinctus*	NZ migrating north	500	500
Bar-tailed Godwit *Limosa lapponica baueri*	East Asian flyway and Alaska migrating to central Pacific	3,300	11,000
Whimbrel *Numenius phaeopus variegatus*	East Asian Flyway	550	20,000
Bristle-thighed Curlew *Numenius tahitiensis*	Global (Alaska migrating to central Pacific)	100	100
Grey-tailed Tattler *Tringa (Heteroscelus) brevipes*	Global (East Asian flyway)	400	400
Wandering Tattler *T. (H.) incana*	Global (Alaska migrating to American W coast and Pacific)	250	250
Tuamotu Sandpiper *Prosobonia cancellata*	Global (Tuamotu archipelago)	6	6
Ruddy Turnstone *Arenaria interpres*	East Asian Flyway and Alaska migrating to central Pacific	1,000	7,000
Sanderling *Calidris alba*	East Asian Flyway	220	7,000
Silver Gull *Larus novaehollandiae*	Global (Aus, NC)	20,000	20,000
Crested Tern *Sterna bergii cristata*	Pacific (Aus; small numbers in Pacific Islands)	5,000 pairs	6,000 pairs
Roseate Tern *S. dougallii bangsi* and *S. d. gracilis*	Pacific (Aus, Melanesia)	130 pairs	500 pairs
Black-naped Tern *S. sumatrana*	Pacific (Aus, Pacific Islands)	1000 pairs	1000 pairs
Common Tern *S. hirundo longipennis*	East Asian Flyway	10,000	20,000
Little Tern *S. albifrons placens and S. a. sinensis*	Pacific (Aus, NG, Solomons)	40 pairs	1000 pairs
Fairy Tern *S. nereis*	Global (Aus, NC, NZ)	30 pairs	30 pairs
Grey-backed Tern *S. lunata*	Global (Hawai'i, Micronesia, Tuamotus)	1000 pairs	1000 pairs
Bridled Tern *S. a. anaethetus* and *S. a. novaehollandiae*	Pacific	1000 pairs	7000 pairs
Sooty Tern *S. fuscata*	Pacific	20,000	20,000

Brown (Common) Noddy *Anous stolidus pileatus*	Pacific	5,000 pairs	12,000 pairs
Black Noddy *A. minutus*	Pacific	4,000 pairs	6,000 pairs
Blue Noddy *Procelsterna cerulea*	Global (tropical Pacific)	200 pairs	200 pairs
Grey Noddy *Procelsterna albivitta*	Global (sub-tropical Pacific)	250 pairs	250 pairs
White Tern *Gygis alba* (including Little White Tern *G. microrhyncha)*	Pacific	1000 pairs	10,000 pairs

Table of 1% thresholds for Pacific seabirds (Category A4ii)

In most cases follow Brooke (2004a) as the most authoritative guide, updating previous BirdLife estimates. Where BirdLife (2004b) has estimated numbers for threatened species, these figures are used as they are likely to be more accurate and more precautionary than figures in Brooke (2004a).

English and Scientific name	**Global population estimate**	**1% threshold**
Wedge-tailed Shearwater *P. pacificus*	5,200,000 individuals	10,000 pairs
Christmas Shearwater *P. nativitatis*	50,000 pairs	500 pairs
Little Shearwater *P. assimilis*	300,000 pairs	3,000 pairs
Audubon's Shearwater *P. lherminieri*	150,000 pairs	1,500 pairs
Heinroth's Shearwater *P. heinrothi*	500 individuals	1 pair
Bulwer's Petrel *Bulweria bulwerii*	750,000 individuals	1,500 pairs
Tahiti Petrel *Pseudobulweria rostrata*	10,000 pairs	100 pairs
Beck's Petrel *P. becki*	25 individuals	1 pair
Fiji Petrel *P. macgillivrayi*	25 individuals	1 pair
Black-winged Petrel *Pterodroma nigripennis*	9,000,000 individuals	20,000 pairs
Collared Petrel *P. brevipes*	5,000 individuals	10 pairs
Gould's Petrel *P. leucoptera*	5,000 pairs	50 pairs
Phoenix Petrel *P. alba*	5,000 individuals	10 pairs
Henderson Petrel *P. atrata*	16,000 pairs	160 pairs
Kermadec Petrel *P. neglecta*	55,000 pairs	550 pairs
Herald Petrel *P. heraldica*	50,000 pairs	500 pairs
Murphy's Petrel *P. ultima*	265,000 pairs	2,650 pairs
White-bellied Storm-petrel *Fregetta grallaria*	100,000 pairs	1000 pairs
Polynesian Storm-petrel *Nesofregetta fuliginosa*	1700 pairs	17 pairs
Red-tailed Tropicbird *Phaethon rubricauda*	32,000 individuals	80 pairs
White-tailed Tropicbird *P. lepturus*	50,000 individuals	125 pairs
Masked Booby *Sula dactylatra*	200,000 individuals	500 pairs
Red-footed Booby *S. sula*	600,000 individuals	1,500 pairs
Brown Booby *S. leucogaster*	200,000 individuals	500 pairs
Great Frigatebird *Fregata minor*	340,000 individuals	850 pairs
Lesser Frigatebird *F. ariel*	200,000 individuals	500 pairs

Appendix 2. Key Stakeholders and Advocated Dissemination List

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Appendix 3. Recommended changes to the IUCN Red List

Mariana Crow (*Corvus kubaryi)*
The Mariana Crow is currently listed as Endangered (EN). The Mariana Crow continues to decline in population. In 1982 1300 birds were estimated for the island of Rota. In 1985 only 170 birds (85 pairs) were known from Rota. The population on Guam numbered fewer than 20 birds, and with the presence of the Brown Treesnake, the population on Guam is not considered viable. Due to the continual decline of the population of this bird and its current small, restricted population, this report recommends consideration of the species for a listing of Critically Endangered (CR).

Nightengale Reed Warbler (*Acrocephalus syrinx)*
The Nightengale Reed Warbler is currently listed as Endangered (EN). The bird appears to be declining, having been reduced in extent from four islands in 1982 to only two islands in 2007. The bird previously was found on Aguiguan and Pagan, but now is only on Saipan and Alamagan. Studies conducted by the US Fish and Wildlife Service in 1982, 1997, and 2007 show a steady decline in birds per station. Due to the continual decline of the population of this bird, this report recommends consideration of the species for a listing of Critically Endangered (CR).