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**IMPORTANT BIRD AREAS OF THE
KINGDOM OF TONGA**

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Environment Consultants Fiji

IMPORTANT BIRD AREAS OF THE KINGDOM OF TONGA

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1 BACKGROUND

1.1 PROCESS

Identification of the Important Bird Areas (IBA) of the Kingdom of Tonga was undertaken by Environment Consultants Fiji Ltd. of Suva, Fiji, together with the Tonga Trust of Nuku'alofa, Tonga under contract to BirdLife International as a part of its IBA project funded by the DGIS Project TMF – DML0018314-7099 and contributing to the EC project TF Env 2001 207 Result Area 4

Environment Consultants Fiji is a well-established environmental and natural resource management consultancy founded on the work of its principal, Dr Dick Watling. Dr Watling has undertaken a wide variety of surveys and consultancy work in Tonga since 1974 (www.environmentfiji.com ; www.pacificbirds.com).

The Tonga Trust is a member of the Foundation for the People of the South Pacific Network, based in Nuku'alofa, and engaged in a wide variety of community development and natural resource management under its Chief Executive Sione Lanivia Faka'osi.

1.2 TERMS OF REFERENCE

Terms of Reference for the IBA identification study are appended as Attachment 1.

2 KINGDOM OF TONGA – A GENERAL INTRODUCTION

2.1 GEOGRAPHIC SETTING

The Kingdom of Tonga comprises more than 170 named islands which are distributed in a north-south line stretching over about 900 km of ocean between latitudes 15° and 23° 50' South and longitudes 173° 00' and 176° 00' West, encompassing some 400,000 square kilometers of territorial waters, refer Figure 1..

The islands are predominantly elevated coral reefs which cap the peaks of two parallel submarine ridges, although some are volcanic. The extinct volcano of Kao, rising to 1,046 m is the highest point in the kingdom. The region is geologically active, with earthquakes and volcanic eruptions in recent times.

The islands are arranged in four main groups:

- 1/ Tongatapu (265 sq. km) in the south; low-lying coral limestone islands
- 2/ Ha'apai (119 sq. km) in the centre; low-lying coral limestone islands with some volcanic islands to the west (Tofua, Kao)
- 3/ Vava'u (143 sq. km) in the north; islands of volcanic origin
- 4/ Niua (71 sq. km incl. lakes) in the far north; islands of volcanic origin.

Table 1 summarises the Kingdom's land, coastal water and pelagic resources.

	Area (sq. km)
Total land area	747
36 inhabited islands	670
Easily accessible shallow-water reefs	550
Readily accessible land and marine resources	1200
Pelagic and deep water	393,000
Pelagic and deep water (on declaration of EEZ)	677,000

Table 1: Miscellaneous data on land and maritime resources of the Kingdom of Tonga. Source: SPREP (1993)

2.2 CLIMATE

The climate of the Tongan archipelago is tropical maritime with a mean annual rainfall varying between approximately 1,770 mm on Tongatapu and 2,350 mm on Vava'u. The prevailing winds are the Southeast Trades which dominate during the months of May to October, a period when rainfall is lowest and when periodic water shortages occur. Tonga experiences an average of two tropical cyclones per year, usually between November and March, but severe cyclones affecting the islands are uncommon, with eight since 1951.

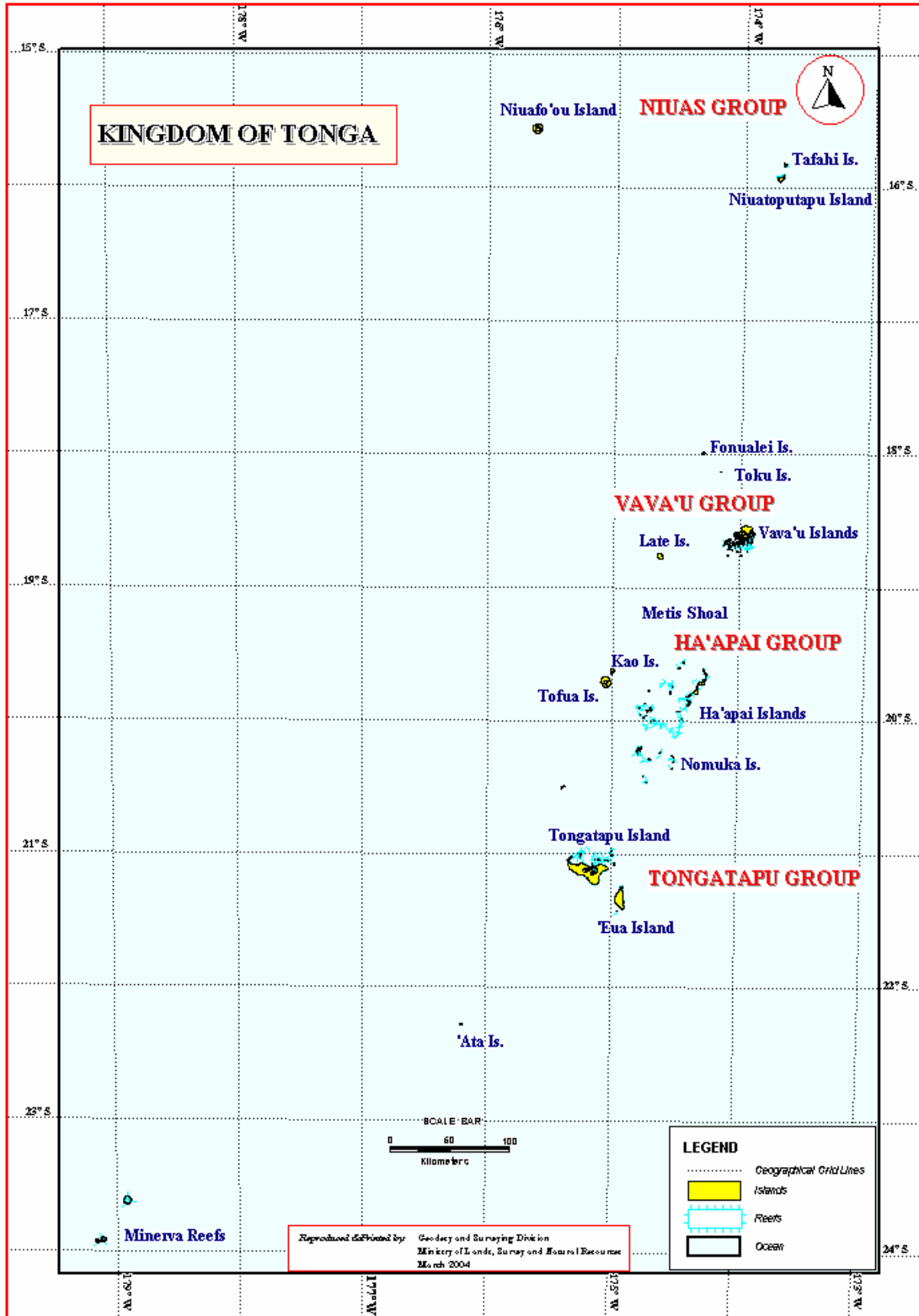


Figure 1: The Kingdom of Tonga

2.3 GEOLOGY AND GEOMORPHOLOGY

The Tongan Islands lie over the tectonic zone where the Pacific plate is being subducted under the Asia-Australia plate. The uplifting of the Asia-Australia plate in this area is responsible for the raised coral reef and limestone which form the basis for the island groups of Tongatapu, Ha'apai, and Vava'u. Islands to the west along a fracture zone from southwest to northeast, including Niuafu'ou, Tafahi, Niuatoputapu, Late, Kao, Tofua, Hunga Ha'apai, Hunga Tonga, and 'Eua, were created by active volcanoes that continue to erupt on an average of every 4 years (Bryan *et al.* 1972). 'Eua, however, also is believed to be partly comprised of an ancient fragment of Gondwanaland that has moved close to Tonga after being much nearer to Fiji and New Caledonia millions of years ago (Mueller-Dombois & Fosberg 1998).

2.4 POPULATION AND DEMOGRAPHY

48 of the Kingdom's 170 islands are inhabited, the remainder being too small, isolated or lacking water resources for permanent habitation. About 70 per cent of the Kingdom's population of 101,169 (2006 Census) reside on Tongatapu, with a further 20 per cent on 5 other islands. A similar number of Tongans is believed to reside in overseas countries, mainly in New Zealand, Australia and the United States of America. There has been considerable internal migration from rural areas and outer islands to Tongatapu, accompanied by increasing urbanization, currently approximately 30,000 reside in the capital, Nukulofa.

2.5 TERRESTRIAL BIODIVERSITY

Tonga was once all but entirely forested and its terrestrial biodiversity assets are primarily forest-based. Tonga has been inhabited for approximately 3,500 years and anthropogenic pressure has resulted in extensive modification of all ecosystems on the inhabited islands and the loss of forest results in secondary habitats largely comprising invasive alien species. There are considered to be no pristine terrestrial habitats remaining on any of the inhabited islands, where only small areas of indigenous forest remain, primarily in steep and inaccessible localities and even these are secondary in nature.

With the loss of forest there has been a significant and concurrent loss of birds and reptiles. Steadman (2006) documents the loss of 26 species of bird from the Kingdom which exceeds the extant avifauna and a large skink and giant iguana are also now extinct.

On the inhabited islands, the least disturbed habitats are forest areas on 'Eua and Mt Talau on Vava'u which are both conserved as protected areas. Tongatapu has been all but completely transformed into secondary habitats, with remnant native vegetation being restricted to small isolated areas. The most significant of these, the Toloa forest is being rehabilitated. Only isolated and uninhabited or sparsely inhabited and steep volcanic islands, such as the islands of Late (17 km²), Kao (12.5 km²) and Tofua (55.4 km²), still support relatively large areas of high diversity native forest with large populations of birds and reptiles.

Tonga supports 419 angiosperm plants and fern species with approximately three percent endemic, including some spectacular *Hibiscus* spp. (Whistler 1992). Plant

diversity on individual islands ranges from 340 species on Tongatapu and 300 species on 'Eua, to 145 species on Late, and 107 on Vava'u (Sykes 1981).

Wetlands are an important habitat in Tonga. Several of the wetlands are very large by Pacific island standards and the total area of lakes and internal waters amounts to over 2,963 ha. There are, however, no streams of significance or permanence.

There are three main types of wetlands in Tonga:

- partially enclosed tidal lagoons with mangrove forest;
- totally enclosed brackish to saline lagoons with saltwater marshes and/or mangroves, and
- freshwater crater lakes.

The Kingdom's principal wetlands are summarised in Box 1.

Tonga's vertebrate terrestrial fauna consists of:

- two indigenous mammals, both bats;
- fifteen terrestrial reptiles (7 lizards, 7 geckos and 1 iguana) – one gecko of which is endemic and found only on 'Eua (*Lepidodactylus euaensis*); and,
- 51 breeding bird species (23 seabirds, 22 native landbirds and 6 introduced landbirds). Two birds, the Tongan Megapode *Megapodius pritchardii* and the Tongan Whistler *Pachycephala jacquinoti* are endemic to Tonga

Box 1. Important wetlands of the Kingdom of Tonga

1 Fangu'ata and Fangakakau lagoon near Nuku'alofa on Tongatapu

A large, partially enclosed double lagoon system with extensive mangrove swamps

Area: 2835 ha

Protected Area declared in 1974 (Birds & Fish Preservation Act 24 - 2nd schedule)

Ecological features: Extensive sea grass and algal beds. The best developed mangrove forests in Tonga with five associations with some remnant littoral woodland.

Overview: A shallow, tidal, double, lagoon complex with fringing mangrove forest, some salt marsh vegetation and a only a narrow outlet to the sea. An important fish breeding area, but now degraded by pollution and over fishing and threatened by conversion and dredging.

Rare & endangered species: no information available

2 Volcanic crater lakes on Niuafu'ou, Tofua, Kao and possibly also

Late.

Tofua crater lake - 815 ha; A large undisturbed crater lake associated with an active volcano. No ecological information.

Kao Crater lake - less than 50 ha; a small freshwater crater lake surrounded by moss forest near the summit of the island (1,046 m); associated with active volcano. No detailed ecological information available but the moss forest is the only habitat of its type in Tonga, perhaps in the Pacific, and is of extreme scientific interest.

Niuafu'ou crater lake - 1,450 ha. A large crater lake and several smaller lakes with associated hot springs near sea level. The island is of special interest for its

endemic megapode, *Megapodius pritchardii*. Tilapia *Oreochromis mossambica* have been introduced to the lake and are abundant.

3/ Enclosed brackish lagoons on Nomuka and 'Uta Vava'u.

Ngofe Marsh near Tu'anuku on 'Uta Vava'u.

- A large brackish lake of approximately 500 ha. No ecological information available.

Nomuka lagoon in the Ha'apai Group.

- An enclosed brackish to saline lagoon with a fringe of mangroves and salt marsh vegetation.
- No ecological information available.
- Recommended for World Heritage listing - (Nicholas Clark Associates, 1994)

4/ A freshwater marsh near Tu'anuku on 'Uta Vava'u

Lake Ano a small freshwater swamp of approximately 25 ha on a coral limestone island. No ecological information but recommended for protection by Dahl (1980).

5/ Sopu flats, Tongatapu.

A large area (3,000-4,000 ha) close to the Nuku'olofa, of inter tidal reef flats, important for waterbirds, especially migratory shorebirds.

2.6 THE ECONOMY

Tonga's economy is characterized by a large non-monetary sector and a heavy dependence on remittances from the more than half of the country's population that lives abroad, chiefly in Australia, New Zealand, and the United States. The manufacturing sector consists of handicrafts and a few other very small-scale industries, which together contribute only about 3% of GDP. Commercial business activities are to a large extent dominated by large trading companies found throughout the South Pacific. Rural Tongans rely on plantation and subsistence agriculture. Squash pumpkins, vanilla beans, and root crops such as cassava and yams, coffee, and noni are the major cash crops. Pigs and poultry are the major types of livestock. Fisheries are also a growing export sector, with tuna, beche de mer, and seaweed being the major marine export products.

3 ORNITHOLOGICAL IMPORTANCE

3.1 KNOWLEDGE BASE

The inter-island distribution of Tonga's birds is quite well documented for most major islands or island clusters based initially on the collections of the Whitney South Sea Expedition which visited all the significant islands in the Kingdom between June-August 1925. The Expedition worked under the auspices of the American Museum of Natural History in New York where the collections are housed in the Whitney Wing. Between 1983 and 1995, Dr Dieter Rinke and his associates undertook wide-ranging ornithological surveys and studies in Tonga and together with Dr David Steadman and his associates have provided the current substantive information on the status of Tonga's birds. David Steadman has undertaken detailed archaeological studies in the Kingdom and documented the extinction of the larger portion of the avifauna which was present in the islands when people first arrived, about 2800 years ago (Steadman 2006). There is a field guide to the avifauna (Watling 2001) and a bilingual pocket guide (Watling 2005).

Currently, there are 74 species recorded from Tonga, 28 breeding land and freshwater birds, 24 breeding seabirds and 22 migrants or vagrants (Watling 2001).

The Kingdom's native land and freshwater birds comprise 20 extant genera (none endemic) and 22 species, two of which are currently considered to be endemic – the malau or Tongan megapode *Megapodius pritchardii* and the hengahenga, Tongan whistler *Pachycephala jacquinoti*. Six introduced birds have become established, the jungle fowl *Gallus gallus* and the red shining parrot *Prosopeia tabuensis* were aboriginal introductions, the feral pigeon *Columba livia*, the red-vented bulbul *Pycnonotus cafer*, the jungle mynah *Acridotheres fuscus* and the European starling *Sturnus vulgaris* have become naturalized within the last 100 years. Steadman (2006) documents at least 26 additional species of landbirds which formerly occurred in Tonga, most of which are now extinct.

While the occurrence of seabirds in the Kingdom is quite well documented, the inter-island breeding distribution and status are rather poorly known. 21 seabirds have been recorded breeding in Tonga, another three are believed to breed, five are considered annual migrants or visitors, and a further eight have been recorded as vagrants. Given the large number of uninhabited islands including some large and inaccessible ones which have little potential for development, there is considerable potential for healthy seabird populations in Tonga, by comparison with neighbouring Fiji.

3.2 SPECIES OF CONSERVATION CONCERN

Three species of global conservation concern (IUCN 2007), two of which are endemic, have breeding populations in the Kingdom. They are:

1. Tongan megapode *Megapodius pritchardii* (endemic - endangered)
2. Tongan whistler *Pachycephala jacquinoti* (endemic – near threatened)
3. Friendly ground-dove *Gallicolumba stairii* (native, also found in Fiji, Samoa, American Samoa - vulnerable).

The bristle-thighed curlew *Numenius tahitiensis* is a regular northern winter migrant in small numbers. Several seabird species of global concern are either passage migrants, visitors or status unknown in Tonga. These include: wandering albatross *Diomedea* sp.; southern giant petrel *Macronectes giganteus*; Phoenix petrel *Pterodroma alba*; white-naped petrel *P. cervicalis*; Buller's shearwater *Puffinus bulleri*; Polynesian storm petrel *Nesofregetta fuliginosa*.

Watling (2001) established two 'national' categories of conservation status, for native species whose status in Tonga is of concern, although they may be secure elsewhere in the region, refer Table 2. The two categories – At Risk (higher concern) and Conservation Concern (lower concern) were qualitatively categorised based on the opinions of the few experienced ornithologists who had worked in Tonga.

Landbirds	GLOBAL STATUS (IUCN 2007)	NATIONAL STATUS (Watling 2006)	REMARKS
Tongan Megapode	EN		For endemic species – global status prevails
Spotless Crake	LC	AR	
Friendly Ground-dove	VU	AR	
Many-coloured Fruit-dove	LC	AR	
Blue-crowned Lory	LC	AR	
Red shining Parrot	LC	AR	Introduced species
Lesser Shrikebill	LC	AR	
Tongan Whistler	NT		For endemic species – global status prevails
Migrants			
Far Eastern Curlew	NT		Numbers over-wintering in Tonga not well known
Bristle-thighed Curlew	VU		
Seabirds			
Herald Petrel	LC	CC	National status for these seabirds refers to their breeding status in Tonga (only includes known breeding species. Others whose breeding status is not confirmed are excluded, i.e. Collared Petrel, Phoenix Petrel, Tahiti Petrel, Polynesian Storm Petrel).
Audubon's Shearwater	LC	CC	
Red-tailed Tropicbird	LC	AR	
Masked Booby	LC	AR	
Great Frigatebird	LC	AR	
Lesser Frigatebird	LC	CC	
Crested Tern	LC	AR	
Sooty Tern	LC	CC	
Grey-backed Tern	LC	AR	
Bridled Tern	LC	AR	
Blue Noddy	LC	CC	
Grey Noddy	LC	CC	

Table 2: Birds of Global and National Conservation Concern in Tonga

3.2.1 Tongan Megapode *Megapodius pritchardii*

The Tongan (or Polynesian megapode) is the rarest of all 22 megapode species (Megapodiidae, Galliformes, Aves). In 1991-1993, there were an estimated 188-235 pairs restricted to the volcanic island of Niuafu'ou and it was listed as Critically Endangered (Megapode Action Plan 2000-2004; Stattersfield *et al.* 2000). However, on the basis of archaeological evidence it was formerly found throughout Tonga¹. From 1991 to 1993 60 eggs were buried at volcanically heated sites on Late, and an additional 35 eggs and chicks were transferred to Fonualei, both uninhabited and rarely visited by humans. Surveys of Late in the mid 1990s by the Tonga Bird Park indicated that the translocations had been successful. However, Watling (2003, 2004) found no evidence of the megapode on Late, but confirmed that the translocation to Fonualei had been successful with an estimated 300-500 megapodes on the island, more than doubling the world population. As a result of this, the Tongan Megapode has been downlisted from Critically Endangered to Endangered (IUCN 2007). This is not warranted given the small size of Fonualei and its very active volcanic state which poses a major hazard to all life on the island.

3.2.2 Tongan Whistler *Pachycephala jacquinoti*

The Tongan whistler is a geographically isolated population of the widespread golden whistler *P. pectoralis* superspecies, from which it is now generally separated as a valid species. Currently, the Tongan whistler is restricted to but quite widespread in the Vava'u group, though previously it had a wider distribution in at least the Ha'apai and Tongatapu groups (Steadman 2006). The largest population is found on the island of Late.

3.2.3 Friendly Ground-dove *Gallicolumba stairii*

Also found in Fiji, Samoa and American Samoa, the friendly ground-dove is uncommon in Tonga and has been lost as a breeding bird to all the inhabited islands in the group² and is restricted to the uninhabited volcanic outliers of Fonualei (Watling 2003), Hunga Ha'apai (Rinke *et al.* 1992) and Late (Rinke 1991, Watling 2003).

3.3 RESTRICTED RANGE SPECIES AND ENDEMIC BIRD AREAS

There are no Endemic Bird Areas (EBA) in Tonga (Stattersfield *et al.* 1998). However, all the islands of the Kingdom apart from Niuafu'ou, together form the Tongan Secondary Area (s130) on account of the endemic Tongan whistler and the occurrence of several central Polynesian restricted range species: friendly ground-dove, many-coloured fruit-dove *Ptilinopus perousii*; crimson-crowned fruit-dove *Ptilinopus porphyraceus*; blue-crowned lory *Vini australis*; polynesian triller *Lalage maculosa*; Fiji shrikebill *Clytorhynchus vitiensis*; wattled honeyeater *Foulehaio carunculata*; Polynesian starling *Aplonis tabuensis*; red shining parrot *Prosopeia tabuensis* (an introduced species from EBA 202, Fiji).

¹ May have formerly occurred on Niue (Worthy *et al.* 1998).

² An exception is a single record on 'Uta Vava'u (Steadman 2006)

The island of Niuafu'ou is a Secondary Area (s129) on account of the single island endemic, Tongan megapode and three central Polynesian restricted range species: crimson-crowned fruit-dove; blue-crowned lory, and the Polynesian starling. This categorization was made based on the information available prior to the successful translocation of the megapode to Fonualei.

3.4 LEGISLATION

3.4.1 General

The Kingdom's land and sea (and its resources) are the property of the Crown (Land Act 1927; Territorial Sea and EEZ Act 1978). As such, the rights to all natural resources are vested in the Crown, and the representative of the Crown is the government.

Prescott and Folaumoetu'i (2004) document the weakness of the Kingdom's biodiversity protection and protected area legislation with outdated legislation, unclear and overlapping responsibilities, and inadequate enforcement resources.

The Minister of Lands can authorise certain activities by issuing leases in specified marine and terrestrial areas. He also has the power for conservation and management of marine and national parks, and in all government land (Parks & Reserve Act and the Land Act). This has led to inconsistencies with the Birds and Fish Preservation Act (s. 6) for protected areas which is regarded as the most important piece of legislation in Tonga for the conservation of biodiversity and wildlife (ESCAP 1990).

Currently there are five gazetted marine parks around Tongatapu and the Fanga'uta and Fangakakau Lagoon is nominally a protected area. The 'Eua National Park is the best managed terrestrial protected area, but nonetheless lacks resources for adequate enforcement. Similarly the Mt Talau protected area on Vava'u struggles to achieve management protection.

3.4.2 Legislaton and Policy

The Tongan Government acceded to the United Nation Convention on Biological Diversity in 1998 and ratified the Cartagena Protocol on Biosafety to CBD in 2003. The signing of these international conventions tied Tonga to certain obligations, especially in terms of the protection of biological diversity, including birds. One of its obligations under Article 6 requires Tonga to develop national strategies and action plans (NBSAP). Tonga's NBSAP was launched in June 2006 and is now ready for ongoing implementation and monitoring.

However, fulfilling international obligations is hampered by the lack of resources and a proper national framework. Bird protection and conservation suffers in this respect. Some of the relevant legislation are as follows:

- Birds Preservation Act 1915, last amended in 1988 provides for the preservations of wild birds.
- Parks and Reserves Act 1976, amended in 1988 provides for the establishment of Parks and Reserves Authority, as well as administrative mechanisms

- Fonos Act (Caps 50) of 1924, amended in 1988 provided for all community members to attend the monthly village meeting or fonos to discuss issues of importance to the village.
- Government Act 1903 (CAP 3), amended in 1988 provides for District Officer to develop and submit regulation in relation to environmental issues.
- District and Town Officers Act (Caps 43) of 1930, amended in 1988 provides more specific about roles of district and town officers in relation to environmental management

3.5 BIRD CONSERVATION ACTIVITIES IN TONGA

Relevant activities on bird's protection and rehabilitation have been implemented on an *ad hoc* basis, depending on external funding support available. This *ad hoc* approach will continue unless it is mainstreamed to the government planning and implementation processes to ensure sustainability (refer Attachment 2).

There is a positive sign with the recent endorsement of Tonga's NBSAP in 2006. It is anticipated that this can engender a much closer and collaborative effort among relevant government departments, local NGOs, communities and donors in prioritizing conservation activities for birds in Tonga.

Tonga's conservation action received international acclaim through the successful translocation of the malau, Tongan megapode (refer section 3.2.1) from Niuafu'ou to Fonualei and perhaps Late, though the success on this island remains to be confirmed. The Tonga Wildlife Trust undertook the translocation work in collaboration with government departments and in addition to the malau, translocations were undertaken of the Koki or 'Eua parrot *Prosopeia tabuensis* to Late in Vava'u and also to Kao and Tofua in Ha'apai.

4 CONSULTATION

4.1 PURPOSE

The IBA identification process combined a technical appraisal with a consultation-awareness raising component. Consultation was designed to be undertaken in each of the four main groups. However, the consultation scheduled for Niuafu'ou was cancelled due to the cancellation of all flights to the island. In its stead, a meeting was conducted for people that recently came from the Niuafo'ou to Tongatapu.

The consultation report is appended as Attachment 2.

4.2 CONSULTATION PROCESS

The process of consultation with government, ngos, and community representatives was conducted in a workshop format both in Vava'u and Ha'apai. It was started with a presentation on IBA aims and objectives, and followed by a brief outline of the different birds in Tonga. This was to raise participant's awareness by providing background information and also to set the scene for the working group's activities.

The second half of the workshop organized participants into three main working groups to discuss the status of sea birds, land birds and shore birds in Tonga, identify areas of importance for their protection, identify existing and future threats to their existence.

4.3 RESULTS

4.3.1 Proposed Sites from Community Consultation

Based on the consultation in Vava'u, the following areas were proposed as important for birds conservation:

- i. Late – home for hengehenga
- ii. Fonualei – malau (megapode) were introduced
- iii. Toku – home for various birds
- iv. Mt. Talau – home for various land birds

Ha'apai consultation suggested the following areas:

- i. Kao – Pacific Harrier (Taiseni), pigeons and introduced malau (megapode)
- ii. Tofua – Pacific Harrier (Taiseni) & Pigeons
- iii. Luahoko – a hub for both land and sea birds
- iv. Hunga – a hub for both land and seabirds

The following areas were proposed as IBA sites for the Niuafo'ou and Niuafo'ou

- i. Niuafo'ou – Tongan Megapode residing in thick forested areas in the bush and the lagoon

4.3.2 Issues and threats to identified IBAs

The consultation developed a list of issues and likely threats to the identified IBAs as follows:

- Habitat destruction induced by natural causes as well as human
- Natural disaster, such as, push fire, hurricane, etc
- Natural predator such as human, cats and rats

- Lack of knowledge of birds among the young population will decline their understanding and appreciation of birds.
- Deforestation to give way to agricultural development activities, such as kava plantation in Tofua

In order to address these issues and threats, the following actions were proposed:

Recommendation 1

That Tonga Trust seeks the endorsement of the Ministry of Lands, Survey, Natural Resources and Environment in getting technical support and work collaboratively with relevant stakeholders in the development of a legislation and policy direction for the protection of birds in Tonga. Such a process will take into consideration threats to birds and issues related to people's health and environment.

Recommendation 2

That Tonga Trust works through the NBSAP framework to implement strategic actions on the protection of birds in Tonga. Some of these actions will be developed under the following components:

- Raising Public Awareness for both communities and schools
- Protection and Replanting of natural habitat
- Eradication of natural predators, such as rats
- Rehabilitation of endangered bird species
- Identify invasive species of birds and develop a national program for eradication
- Develop a national database and build network with other programs in the region to share information and resources

5 IMPORTANT BIRD AREA IDENTIFICATION

5.1 METHODS

IBAs were identified through a technical appraisal of the recommendations of the consultation process together with published file and unpublished data, against the IBA selection criteria of BirdLife International. Unpublished data was sourced mainly from Dr Dieter Rinke, former head of the Tonga Wildlife Centre and Director of the Brehm South Seas Expedition, and from the database of Environment Consultants Fiji / Dick Watling.

5.2 IBA SELECTION CRITERIA

IBA selection criteria are taken from the BirdLife International IBA Programme Guidance Notes, refer Table 3. The “threshold values” for each waterbird and seabird species were provided by BirdLife International and are appended as Attachment 3.

5.3 SITES

Seven IBAs were selected (refer Figure 2):

1. Niuafo’ou Island, Niua Group
2. Fonualei Island, Vava’u Group
3. Late Island, Vava’u Group
4. Maninita-Taula-Lualoli Islands, Vava’u Group
5. Tofua Island, Ha’apai Group
6. Hunga Ha’apai, Hunga Tonga Islands, Ha’apai Group
7. ‘Ata island, Tongatapu Group

5.4 IBA SITE INFORMATION

Site information sheets are appended as Attachment 4.

GLOBAL IBA CRITERIA

A1. GLOBALLY THREATENED SPECIES

The site qualifies if it is known, estimated or thought to hold a population of a species categorized by the IUCN Red List as Critically Endangered, Endangered or Vulnerable. In general, the regular presence of a Critical or Endangered species, irrespective of population size, at a site may be sufficient for a site to qualify as an IBA. For Vulnerable species, the presence of more than threshold numbers at a site is necessary to trigger selection. Thresholds are set regionally, often on a species by species basis. The site may also qualify under this category if holds more than threshold numbers of other species of global conservation concern in the Near Threatened, Data Deficient and, formerly, in the no-longer recognised Conservation Dependent categories. Again, thresholds are set regionally.

A2. RESTRICTED-RANGE SPECIES

The site forms one of a set selected to ensure that, as far as possible, all restricted-range species of an EBA or SA are present in significant numbers in at least one site and, preferably, more. The term 'significant component' is intended to avoid selecting sites solely on the presence of one or more restricted range species that are common and adaptable within the EBA and, therefore, occur at other chosen sites. Sites may, however, be chosen for one or a few species that would, e.g. because of particular habitat requirements, be otherwise under-represented.

A3. BIOME-RESTRICTED SPECIES

The site forms one of a set selected to ensure, as far as possible, adequate representation of all species restricted to a given biome, both across the biome as a whole and, as necessary, for all of its species in each range state. The 'significant component' term in the category definition is intended to avoid selecting sites solely on the presence of one or a few biome-restricted species that are common, widespread and adaptable within the biome and, therefore, occur at other chosen sites. Additional sites may, however, be chosen for the presence of one or a few species which would, e.g. for reasons of particular habitat requirements, be otherwise under-represented.

A4. CONGREGATIONS

- i. This applies to 'waterbird' species as defined by Delaney and Scott (2002) 'Waterbird Population Estimates' Third Edition, Wetlands International, Wagenigen, The Netherlands, and is modelled on criterion 6 of the Ramsar Convention for identifying wetlands of international importance. Depending upon how species are distributed, the 1% thresholds for the biogeographic populations may be taken directly from Delaney & Scott, they may be generated by combining flyway populations within a biogeographic region or, for those for which no quantitative thresholds are given, they are determined regionally or inter-regionally, as appropriate, using the best available information.
- ii. This includes those seabird species not covered by Delaney and Scott (2002). Quantitative data are taken from a variety of published and unpublished sources.
- iii. This is modelled on criterion 5 of the Ramsar Convention for identifying wetlands of international importance. Where quantitative data are good enough to permit the application of A4i and A4ii, the use of this criterion is discouraged.
- iv. The site is known or thought to exceed thresholds set for migratory species at bottleneck sites. Thresholds are set regionally or inter-regionally, as appropriate.

Table 3: IBA Selection Criteria

(Source: BirdLife 2007; see also – threshold values for species – Attachment 3)

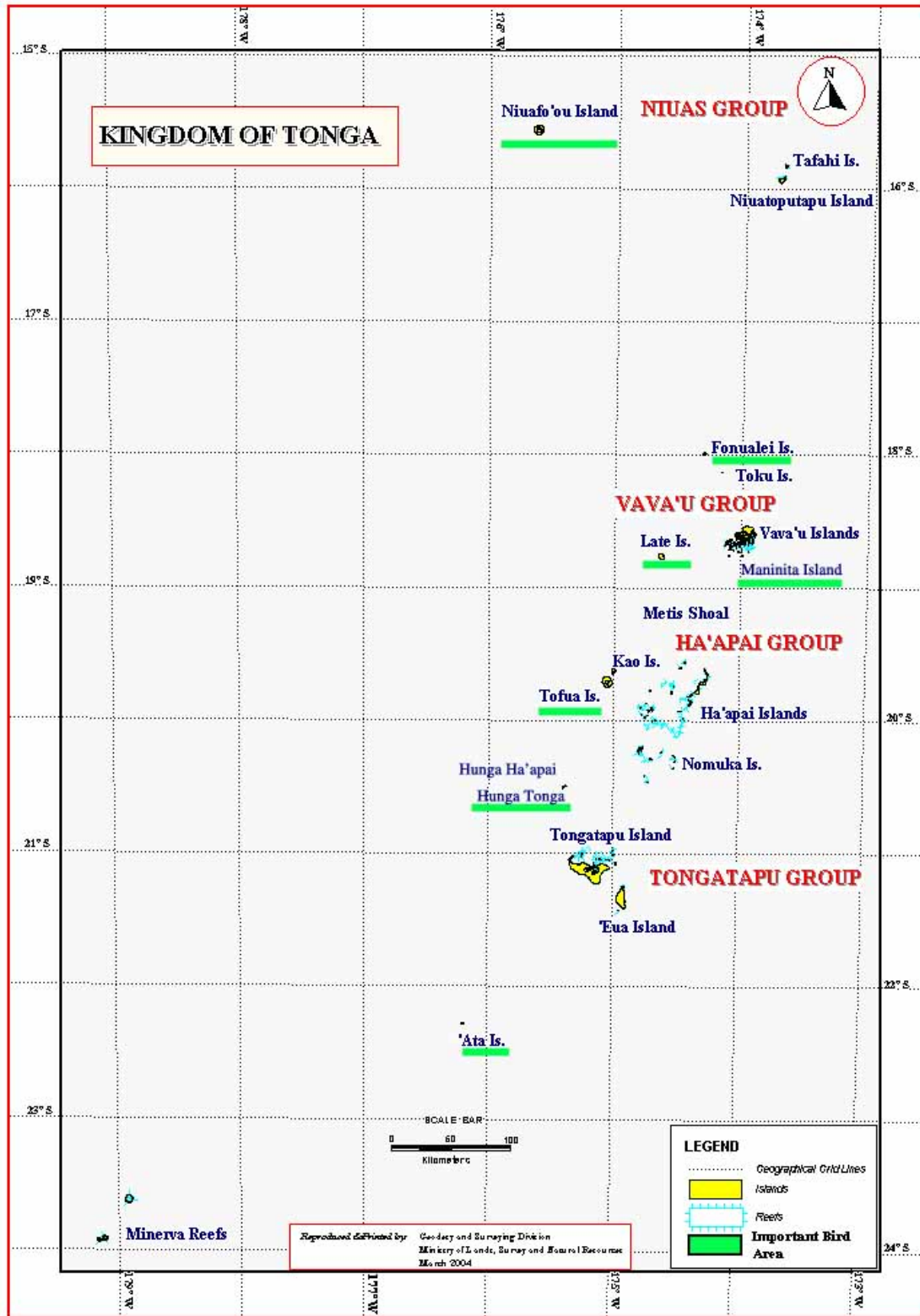


Figure 2: Location of Important Bird Areas

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ATTACHMENT 1

Important Bird Area Identification – Kingdom of Tonga Terms of Reference

Annex 1: Terms of Reference

Identification of Important Bird Areas in Pacific Island Countries and Territories by Desk-Based Methods

Context

The EC funded project *Sustainable management of sites globally important for biodiversity in the Pacific* (revised log frame 2006) has the Overall Objective: *To increase the number of sites of global biodiversity importance that are sustainably managed to conserve terrestrial biodiversity in the Pacific region.* The Project Purpose is *Identification of Important Bird Areas (IBAs) in the Pacific region as sites of global importance for the conservation of terrestrial biodiversity.*

This specifically includes the identification of Important Bird Areas in a minimum of 15 Pacific Island Countries and Territories (PICTs). This is being undertaken using field based methods in PICTs where BirdLife partners are present, and through desk based methods in PICTs without partners. A priority list of Pacific island countries and territories (PICTs) was drawn up in June 2006 following a mid-term review of the project.

Priority PICTs

Countries identifying IBAs using field based research

1. Fiji (completed 2005 - BLI Fiji programme)
2. Palau (To be completed 2007- PCS)
3. New Caledonia (Completed 2006 - SCO)
4. French Polynesia (To be completed 2007 - Manu)
5. Pitcairn Island Group (completed 2006 - RSPB)
6. Cook Islands (to be undertaken - TIS)
7. Samoa (To be undertaken - OLSSI)

IBAs to be identified by desk based methods

Micronesia

Federated States of Micronesia (FSM)

Guam

Marshall Islands

Commonwealth of the Northern Marianas Islands (CNMI)

Kiribati

Melanesia

8. Papua New Guinea

9. Solomon Islands

10. Vanuatu

11. Wallis and Fortuna

Polynesia

12. American Samoa

13. Tonga

14. Niue

15. Nauru

16. Tuvalu

Overall Purpose

To identify and report IBAs using current international criteria through desk-based studies and consultation with in-country organisations, to agree IBA designations with in national governmental departments and civil society organisations where feasible.

Specific Tasks

1. to produce lists of trigger species for Category A1 – Globally Threatened species, A2 Range Restricted species and thresholds levels for specified countries
2. to identify, inform and engage governmental and civil society stakeholders in target countries regarding the IBA process
3. to identify candidate IBAs in specified countries using trigger species and regional colonial water bird thresholds from data in published literature, grey literature, by consultation with local and any other reliable data sources available
4. to compile IBA report for each country and consult with key stakeholders to agree IBA designation and boundaries
5. to liaise with BirdLife staff or other consultants over the mapping of IBA boundaries and the capture of data on the World Bird Database
6. to produce a final report on IBAs for each priority PICTs including electronic copies of the data suitable for capture on the WBDB.
7. To engage and subcontract local partner Tonga Trust to undertake national consultation, dissemination and advocacy including community visits to three priority IBAs

Outputs

A report on IBAs identified in each in each priority PICT including:

1. general national introduction
2. a summary of ornithological importance
3. a summary of key conservation issues and threats to identified IBAs
4. a summary of conservation actions and mechanisms
5. and a site inventory including for each identified IBA: a summary of 1) site description 2) bird species of conservation concern 3) other endemic or threatened wildlife 4) conservation issues
6. simple maps showing the locations of each IBA and the IBA boundary
7. references
8. a list of key stakeholders and advocated dissemination list
9. an annexe identifying any advocated changes in species threat status identified during the course of the research
10. Data available in electronic format for uploading on the World Bird Data Base
- 11. Reports on community visits**
- 12. Report on national dissemination**

ATTACHMENT 2

Community Consultation Report

IMPORTANT BIRD AREAS

-

COMMUNITY AND NATIONAL CONSULTATION

October 2007

**Sione Lanivia Faka'osi
Tonga Community Development Trust
Nuku'alofa**

Introduction

Tonga is an archipelago directly south of Western Samoa. Its 171 islands, 48 of them inhabited, are divided into four main groups: Niuafu'ou/Niuatoputapu, Vava'u, Ha'apai, and Tongatapu/'Eua. It has a landmass of about 747 sq kilometer (288 sq miles.). The largest island, Tongatapu, on which the capital city of Nuku'alofa is located, covers 257 square kilometers (99 sq. mi.). Geologically the Tongan islands are of two types: most have a limestone base formed from uplifted coral formations; others consist of limestone overlaying a volcanic base.

The climate is basically subtropical with a distinct warm period (December-April), during which the temperatures rise above 32°C (90°F), and a cooler period (May-November), with temperatures rarely rising above 27°C (80°F). The temperature increases from 23°C to 27°C (74°F to 80°F), and the annual rainfall is from 170 to 297 centimeters (67-117 in.) as one moves from Tongatapu in the south to the more northerly islands closer to the Equator. The mean daily humidity is 80%.

The 2006 population census counted 101,169 residing in Tonga. The same number of Tongans is believed to reside in overseas countries, mainly in New Zealand, Australia and the United States of America.

Tonga's geography is a major determinant of its development opportunities and constraints. However, it is well endowed with agricultural and marine resources. Majority (65%) of the workforce is engaged on agriculture as sources of livelihood. The exclusive economic zone (EEZ) is approximately 700,000 sq km. Like most Pacific Island countries, Tonga is vulnerable to external economic shocks and natural disasters, particularly droughts and cyclones.

Consultation with government and civil society

The process of consultation with government, ngos, and community representatives was conducted in a workshop format both in Vava'u and Ha'apai. It was started with a presentation on IBA aims and objectives, a brief outline of the different birds in Tonga. This is to raise participant's awareness by providing background information and also to set the scene for the working group's activities.

The second half of the workshop organized participants into three main working groups to discuss the status of sea birds, land birds and shore birds in Tonga, identify areas of importance for their protection, identify existing and future threats to their existence.



Photo 1. Workshop presentation



Photo 2. Working groups

The consultation scheduled for Niuafu’ou was cancelled due to the cancellation of all flights. However, a meeting was conducted for people that recently came from the Niuaus to Tongatapu.

Results of the consultation

One of the interesting outcomes from the consultation is sharing of traditional stories about birds in Tonga. Participants realized the need to capture and document traditional stories about birds from elders in the communities before they are lost forever. One way of addressing this problem is to collate the stories and incorporate them into the schools curriculum as part of preserving traditional knowledge about birds in Tonga.

Limitations

Due to logistics challenges, the consultation was focused only in the two main capital towns of Neiafu in Vava’u and Pangai in Ha’apai. The representation of stakeholders in the Neiafu consultation workshop was satisfactory. Participants were drawn from relevant government departments, as well as, some representing communities from the outer islands. Time constraints and unfavorable weather prevented getting participants from the outer islands to the Pangai consultation in Ha’apai. Thus, getting the right people from the community who knows about birds, such as fisherman, farmers and elders from the rural and outer islands was a challenge.

The consultation workshop was also a good forum for raising awareness, especially some of the participants who have limited knowledge about birds, as well as, limited

understanding about the distinctiveness of bird types and species. This is clearly indicated by the lack of knowledge about the Tongan names in comparison to scientific and English names.

Limited time and resources prevented direct visitation to the proposed IBA sites for observations and first hand experience of physical and other features of the proposed areas. The consultation is purely based on information provided by the participants.

Environmental legislation, actions and mechanisms

Legislative and Policy

The Tongan Government acceded to the United Nation Convention on Biological Diversity in 1998 and ratified the Cartagena Protocol on Biosafety to CBD in 2003. The signing of these international conventions tied Tonga to certain obligations, especially in terms of the protection of biological diversity, including birds. One of its obligations under Article 6 requires Tonga to develop national strategies and action plan (NBSAP). Tonga NBSAP was launched in June 2006 and is now prepared for ongoing implementation and monitoring.

However, fulfilling of international obligation is hampered by the lagging in developing of proper national framework. A clear example is posed here by the lack of a national legislative and policy direction for bird's protection and conservation. However, some of the existing legislation that may bear some effect on any current effort on bird conservation are presented here as follows:

- Birds Preservation Act 1915, last amended in 1988 provides for the preservations of wild birds.
- Parks and Reserves Act 1976, amended in 1988 provides for the establishment of Parks and Reserves Authority, as well as administrative mechanisms
- Fonos Act (Caps 50) of 1924, amended in 1988 provided for all community members to attend the monthly village meeting or fonos to discuss issues of importance to the village.
- Government Act 1903 (CAP 3), amended in 1988 provides for District Officer to develop and submit regulation in relation to environmental issues.

- District and Town Officers Act (Caps 43) of 1930, amended in 1988 provides more specific about roles of district and town officers in relation to environmental management

The lack of a clear policy direction and legislation on birds is a major constraint to the protection and revival of endangered species of birds. The government needs not only to take note but to actively lead in protecting its national resources and heritage for the benefits of current and future generation.

Actions on bird conservation in Tonga

Relevant activities on bird's protection and rehabilitation have been implemented on an ad hoc basis, depending on external funding support available. This *ad hoc* approach will continue unless it is mainstreamed to the government planning and implementation processes to ensure sustainability.

There is a positive sign with the recent endorsement of Tonga's NBSAP in 2006 for a much closer and collaborative effort among relevant government departments, local NGOs, communities and donors in prioritizing activities that are crucial for the way forward in the development and conservation of birds in Tonga.

One of the *ad hoc* activities was carried out by the Tonga Wildlife Trust which set up the Veitongo Bird Park, Tongatapu. In his letter on 24 October 2007, Haniteli Fa'anunu, Chairman of the Tonga Wildlife Trust and also a retired Director of MAFF stated that they were involved in re-locating of birds in the following sites – Late, Fonualei, Toku, Tofua and Kao. In particular, malau (Tongan megapode) were transferred to Fonualei, Toku and Late in Vava'u. Koki or 'Eua parrot were relocated at Late in Vava'u and also in Kao and Tofua in Ha'apai. Lupe (ground doves) were also relocated at Late in Vava'u. He also added that one of the main threats to their work was cats and pigs (Fa'anunu 2007).

Management Mechanism

There is currently no mechanism in Tonga to address bird conservation. The consultation has raised the need to establish a mechanism within the NBSAP framework to deal with issues regarding birds in Tonga. It is evident from the consultation that the communities have issues with birds but they do not know which authority to turn to. An example is the feral pigeon as become a major source of water tanks contamination and eyesore throughout the country. They are now shifting from town and villages to the push and sometime devour newly planted seedlings and vegetables. People do not dare to touch them because feral pigeon were introduced by the late King George Tupou IV as a pet. This is seen as a classical example of introduced species becoming invasive birds in Tonga.

Consultation with the Niuas identified two birds that are becoming a problem for people. They are the Jungle Mynah (Ngutuenga) and Purple Swamphen (Kalae) and they both causes destruction to peoples plantation as well as other birds.

Recommendation

That Tonga Trust seeks the endorsement of the Ministry of Lands, Survey, Natural Resources and Environment in getting technical support and work collaboratively with relevant stakeholders in the development of a legislation and policy direction for the protection of birds in Tonga. Such process will take into consideration threats to birds and issues related to people's health and environment.

Proposed Sites from community consultation

Based on the consultation in Vava'u, the following areas were proposed as important for birds conservation:

- v. Late – home for hengehenga
- vi. Fonualei – malau (megapode) were introduced
- vii. Toku – home for various birds
- viii. Mt. Talau – home for various land birds

Ha'apai consultation suggested the following areas:

- v. Kao – Pacific Harrier (Taiseni), pigeons and introduced malau (megapode)
- vi. Tofua – Pacific Harrier (Taiseni) & Pigeons
- vii. Luahoko – a hub for both land and sea birds
- viii. Hunga – a hub for both land and seabirds

The following areas were proposed as IBA sites for the Niuatoputapu and Niuafu'ou

- ii. Niuafu'ou – Tongan Megapode residing in thick forested areas in the bush and the lagoon

Issues and threats to identified IBAs

The consultation developed a list of issues and likely threats to the identified IBAs as follows:

- Habitat destruction induced by natural causes as well as human
- Natural disaster, such as, push fire, hurricane, etc
- Natural predator such as human, cats and rats
- Lack of knowledge of birds among the young population will decline their understanding and appreciation of birds.
- Deforestation to give way to agricultural development activities, such as kava plantation in Tofua

In order to address these issues and threats, the following actions are proposed.

Recommendation

That Tonga Trust works through the NBSAP framework to implement strategic actions on the protection of birds in Tonga. Some of these actions will be developed under the following components:

- Raising Public Awareness for both communities and schools
- Protection and Replanting of natural habitat
- Eradication of natural predators, such as rats
- Rehabilitation of endangered bird species
- Identify invasive species of birds and develop a national program for eradication
- Develop a national database and build network with other programs in the region to share information and resources

References

Watling, Dick., 2001, A Guide to the Birds of Fiji & Western Polynesia, Suva, Fiji
Department of Environment, 2006, NBSAP Stocktaking Report, Nuku'alofa, Tonga

List of key stakeholders consulted

i. Vava'u: 2 October 2007

<i>Name</i>	<i>Organisation</i>
Fehi Moala	Ministry of Agriculture, Forestry, and Food (MAFF)
Malina Lolo	MAFF
Silika Ngahe	Ministry of Fisheries
Sione Paea	Department of Environment
Sipati Fusikata	Central Planning Department
Tevita Taufa	Ministry of Lands, Survey and Natural Resources
'Alaipuke 'Esau	Vava'u National Youth Congress
Maopa	Governor's Office
Finau Sione Tupou	District Officer, Neiafu
Hala 'Otukolo	Town Officer, Neiafu
Sione Kuli Tu'uta	Town Officer, Falaleu
Tevita Manuofetoa	Town Officer, Pangaimotu
Tino Tofu	Neiafu village
Maamaloa Loloma	'Otea village
Maloni Uasila'a	Feletoa village
'Ana Hoeft	Falaleu village
Lutoviko Tapuelelu	Media
Vao Langi	Amatakiloa Project Coordinator, Tonga Trust
Emeli 'Esau	People and Policy Project Coordinator, Tonga Trust
Haniteli Fa'anunu	'Ene'io Enterprises Company Limited

ii. Ha'apai: 5 October 2007

<i>Name</i>	<i>Organisation</i>
Manu'ele Mo'ale	MAFF
Malakai Finau	Department of Environment
Moli Pale	Tonga Visitors Bureau
Pita Vi	District Officer, Lifuka
Viliani Tukutau	Town Officer, Lotofoa
Mo'ale Fono	Town Officer, Holopeka
Sione K Vailahi	Town Officer, Faleloa
'Ulu Tamale	?
Potaufa Talakai	?
'Alani Kavakiholeva	?
Fokitala'a Kakau	Extension Officer, Ha'apai

iii. Niua: 26 October 2007

<i>Name</i>	<i>Location</i>
Taniela Mahe	Petani
Latai Vaka	Niuafo'ou
'Unaloto Vaka	
Moheloa Molia	
'Emisi Afa	
Sulieti	
Lavinia Afa	
Vesita Mahe	
'Akesa Mahe	
Viliani Mahe	
F Sikaleti	Niuaatoputapu
S Sinilau	
T Vaivelata	
V Fa'osi	

V. Loketi
K MAkoni
S Kuma
S 'Iloa
S Manu
M Ptolo

ATTACHMENT 3

Seabird Threshold Numbers for Individual Species (Source: BirdLife International)

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 <i>Tachybaptus novaehollandiae</i>	Pacific (Aus and Melanesia)	10,000	10,000
Little Black Cormorant <i>Phalacrocorax sulcirostris</i>	Pacific (Aus, NZ, NG, NC)	10,000	10,000
Great Cormorant <i>P. carbo</i>	Pacific (Aus, NG, NZ, Rennell, NC)	10,000	20,000
Little Pied Cormorant <i>P. melanoleucos</i>	Pacific (Aus, NG, Melanesia, NZ)	10,000	10,000
Great (White) Egret <i>Ardea (Casmerodius) alba</i>	Pacific (Aus, NG, NZ)	1,000	20,000
Yellow Bittern <i>Ixobrychus sinensis</i>	Pacific (Micronesia)	10,000	10,000
Grey Teal <i>Anas gracilis</i>	Global (Aus, NZ and NC)	20,000	20,000
Pacific Black Duck <i>Anas superciliosa</i>	Global (Indonesia, Aus, NG, Pacific Islands, NZ)	11,000	11,000
Hardhead <i>Aythya australis</i>	Global (Aus, Vanuatu, NC)	10,000	10,000
Pacific Golden Plover <i>Pluvialis fulva</i>	East Asian flyway and Alaska migrating to central Pacific	1,400	2,000
Double-banded Plover <i>Charadrius b. bicinctus</i>	NZ migrating north	500	500
Bar-tailed Godwit <i>Limosa lapponica baueri</i>	East Asian flyway and Alaska migrating to central Pacific	3,300	11,000
Whimbrel <i>Numenius phaeopus variegatus</i>	East Asian Flyway	550	20,000
Bristle-thighed Curlew <i>Numenius tahitiensis</i>	Global (Alaska migrating to central Pacific)	100	100
Grey-tailed Tattler <i>Tringa (Heteroscelus) brevipes</i>	Global (East Asian flyway)	400	400
Wandering Tattler <i>T. (H.) incana</i>	Global (Alaska migrating to American W coast and Pacific)	250	250
Tuamotu Sandpiper <i>Prosobonia cancellata</i>	Global (Tuamotu archipelago)	6	6
Ruddy Turnstone <i>Arenaria interpres</i>	East Asian Flyway and Alaska migrating to central Pacific	1,000	7,000
Sanderling <i>Calidris alba</i>	East Asian Flyway	220	7,000
Silver Gull <i>Larus novaehollandiae</i>	Global (Aus, NC)	20,000	20,000
Crested Tern <i>Sterna bergii cristata</i>	Pacific (Aus; small numbers in Pacific Islands)	5,000 pairs	6,000 pairs
Roseate Tern <i>S. dougallii bangsi</i> and <i>S. d. gracilis</i>	Pacific (Aus, Melanesia)	130 pairs	500 pairs
Black-naped Tern <i>S. sumatrana</i>	Pacific (Aus, Pacific Islands)	1000 pairs	1000 pairs
Common Tern <i>S. hirundo longipennis</i>	East Asian Flyway	10,000	20,000
Little Tern <i>S. albigrons placens</i> and <i>S. a.</i>	Pacific (Aus, NG, Solomons)	40 pairs	1000 pairs

IMPORTANT BIRD AREAS – KINGDOM OF TONGA

<i>sinensis</i>			
Fairy Tern <i>S. nereis</i>	Global (Aus, NC, NZ)	30 pairs	30 pairs
Grey-backed Tern <i>S. lunata</i>	Global (Hawai'i, Micronesia, Tuamotus)	1000 pairs	1000 pairs
Bridled Tern <i>S. a. anaethetus</i> and <i>S. a. novaehollandiae</i>	Pacific	1000 pairs	7000 pairs
Sooty Tern <i>S. fuscata</i>	Pacific	20,000	20,000
Brown (Common) Noddy <i>Anous stolidus pileatus</i>	Pacific	5,000 pairs	12,000 pairs
Black Noddy <i>A. minutus</i>	Pacific	4,000 pairs	6,000 pairs
Blue Noddy <i>Procelsterna cerulea</i>	Global (tropical Pacific)	200 pairs	200 pairs
Grey Noddy <i>Procelsterna albivitta</i>	Global (sub-tropical Pacific)	250 pairs	250 pairs
White Tern <i>Gygis alba</i> (including Little White Tern <i>G. microrhyncha</i>)	Pacific	1000 pairs	10,000 pairs

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

In most cases follow Brooke (2004) as the most authoritative guide, updating previous BirdLife estimates. However there are a couple of cases where BirdLife data for threatened species may be more accurate than Brooke (2004).

English and Scientific name	Global population estimate	1% threshold
Wedge-tailed Shearwater <i>P. pacificus</i>	5,200,000 individuals	17,000 pairs
Christmas Shearwater <i>P. nativitatis</i>	50,000 pairs	500 pairs
Little Shearwater <i>P. assimilis</i>	300,000 pairs	3,000 pairs
Audubon's Shearwater <i>P. lherminieri</i>	150,000 pairs	1,500 pairs
Heinroth's Shearwater <i>P. heinrothi</i>	500 individuals	1 pair
Bulwer's Petrel <i>Bulweria bulwerii</i>	750,000 individuals	2,500 pairs
Tahiti Petrel <i>Pseudobulweria rostrata</i>	10,000 pairs	100 pairs
Beck's Petrel <i>P. becki</i>	25 individuals	1 pair
Fiji Petrel <i>P. macgillivrayi</i>	25 individuals	1 pair
Black-winged Petrel <i>Pterodroma nigripennis</i>	9,000,000 individuals	30,000 pairs
Collared Petrel <i>P. brevipes</i>	10,000 individuals	30 pairs
Gould's Petrel <i>P. leucoptera</i>	20,000 individuals	60 pairs
Phoenix Petrel <i>P. alba</i>	10,000 pairs	100 pairs
Henderson Petrel <i>P. atrata</i>	16,000 pairs	160 pairs
Kermadec Petrel <i>P. neglecta</i>	55,000 pairs	550 pairs
Herald Petrel <i>P. heraldica</i>	50,000 pairs	500 pairs
Murphy's Petrel <i>P. ultima</i>	265,000 pairs	2,650 pairs
White-bellied Storm-petrel <i>Fregetta grallaria</i>	100,000 pairs	1000 pairs
Polynesian Storm-petrel <i>Nesofregetta fuliginosa</i>	10,000 individuals	17 pairs
Red-tailed Tropicbird <i>Phaethon rubricauda</i>	10,000 pairs	100 pairs
White-tailed Tropicbird <i>P. lepturus</i>	17,000 pairs	170 pairs
Masked Booby <i>Sula dactylatra</i>	70,000 pairs	700 pairs
Red-footed Booby <i>S. sula</i>	200,000 pairs	2,000 pairs
Brown Booby <i>S. leucogaster</i>	70,000 pairs	700 pairs
Great Frigatebird <i>Fregata minor</i>	100,000 pairs	1,000 pairs
Lesser Frigatebird <i>F. ariel</i>	70,000 pairs	700 pairs

ATTACHMENT 4

Information Sheets for Identified IBAs

XX001 Niuafu'ou

Country/Territory	Kingdom of Tonga
Administrative region(s)	Niuas
Central coordinates	15°36'S 175°38'W
Area	58 sq km
Delineation status	
Delineation notes	Whole island
Endemic Bird Area(s)	Whole island is Secondary Area (s129)
Biome(s)	
Altitude	0-260m
Qualification status	
Criteria	A1; A2
Year of IBA assessment	2007
Criteria notes	
Other notes	

Summary

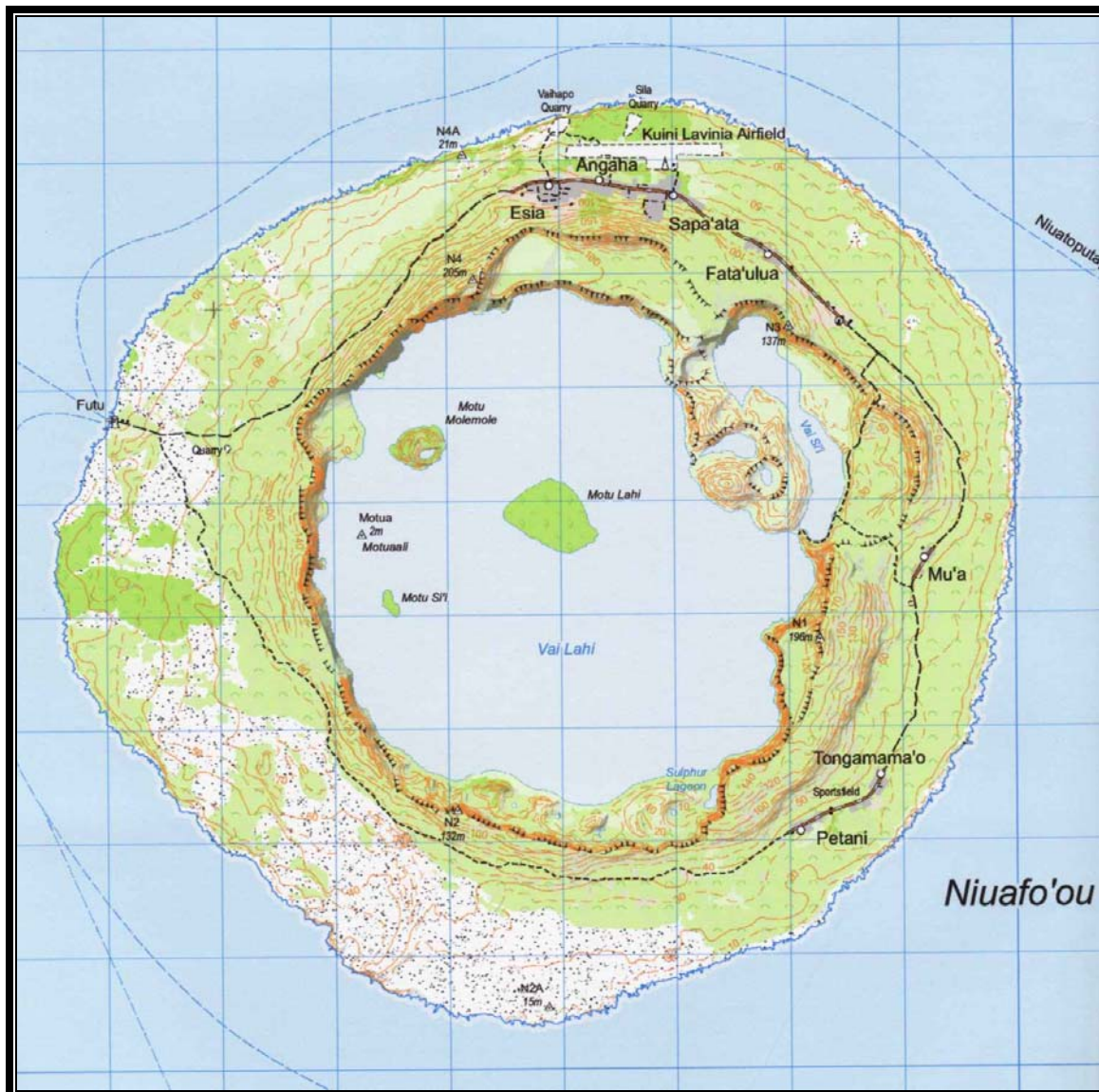
Niuafu'ou IBA comprises the whole island of Niuafu'ou which until recently supported the only extant population of the Tongan megapode *Megapodius pritchardii*. The island is an active volcano and the megapodes lay their eggs in soil heated by volcanic ducts. An island-endemic form of the Polynesian starling *Aplonis tabuensis nesiotus* occurs on the island, along with two other range restricted species, the crimson-crowned fruit-dove *Ptilinopus porphyraceus* and the blue-crowned lorikeet *Vini australis*.

Site description

Niuafu'ou is the Kingdom of Tonga's most remote island and at 640 km north of Tongatapu it is closer to Fiji and Samoa. The 8-km-wide circular island forms the summit of a largely submerged basaltic shield volcano. The island encloses a 5-km-wide caldera that is mostly filled by a lake whose bottom extends to below sea level. The inner walls of the caldera drop sharply to the caldera lake, Vai Lahi, which contains several small islands and pyroclastic cones on its north east shore. Niuafu'ou is an active volcano and there have been 11 eruptions since 1814, the last major eruption being in 1946 after which the inhabitants were evacuated to 'Eua. Some of the former residents returned in 1958 and today the population has risen to approximately 800 living in about 140 households in eight villages.

Much of Niuafu'ou is barren lava flow. Approximately one third of the land area has potential for agriculture, and two soil types are currently recognised, a clay with good agricultural potential which covers slightly more than half of the arable land and a sandy loam, with lesser potential, which covers the remainder. Most of the accessible arable areas have or are planted on an extensive basis to yams, cassava, taro, bananas, plantains and vegetables. The only commercial crop that has been planted is copra. Undisturbed dense, humid broad-leaved forest is only found on the inner walls of the crater lake and its islands, while the island's outer slopes comprise a mosaic of regenerating forest, agricultural gardens and lava flows of varying antiquity. The majority of agricultural areas are on the north and eastern slopes, while the southern and western slopes are relatively barren.

Habitat type	Current percentage cover	Habitat subtypes present
Forest	10%	Moist forest on inaccessible inner walls of crater lake
Wetland (inland)	35%	Crater lakes with hot springs
Mixed agriculture; old lava flow and regenerating forest	30%	
Lava flow (recent)	25%	Pioneer vegetation



Niufo'ou Island, Niua Group.

(1:50,000 map series; courtesy Ministry of Lands, Survey, and Natural Resources)

[paragraph on 'Land ownership']

[paragraph on 'Access/Land-owner requests']

Ornithological information

Seventeen bird species have been recorded breeding on Niufo'ou (Goth & Vogel 2001; Rinke 1986, 1991).

Niufo'ou is best known for the Tongan megapode *Megapodius pritchardii*, the only surviving megapode east of Vanuatu. Megapodes were probably common throughout Fiji, Tonga and Samoa but were one of the first species to succumb to the arrival of the first people. The Tongan megapode is thus of considerable national and international significance.

Megapodes have the unique behaviour of laying their eggs in unconsolidated soils or organic debris, allowing external heat sources to provide for incubation without any parental care. On Niuafou the Tongan megapode seek out well established 'breeding grounds' where the soil is heated by volcanic ducts. Sixteen of these sites are known but those outside the crater are no longer used because of continued removal of the eggs by the islanders. Other unknown and inaccessible sites may also occur.

The current population of the Tongan megapode on Niuafou is estimated to be 188-235 pairs (Goth & Vogel 1995), but it is a shy and rarely seen species (Rinke 1991). There is only one native passerine on Niuafou, an endemic form of the Polynesian starling *Aplonis tabuensis nesiotis*. This and the Blue-crowned Lory *Vini australis* are two central Polynesian restricted range species which occur on the island, the former is abundant and the latter common. Two feral species introduced to Fiji have also arrived naturally or been boat-assisted to Niuafou, the red-vented bulbul *Pycnonotus cafer* and the jungle mynah *Acridotheres fuscus*.

Two seabirds, tropical shearwater *Puffinus bailloni* (previously Audubon's shearwater *P. lherminieri*) and the white-tailed tropic bird *Phaethon lepturus* breed on Niuafou, whereas the wedge-tailed shearwater *P. pacificus* is collected in large numbers on the island, but there is no evidence of breeding (Goth & Vogel 1995).

Species		Comment
Landbirds		
Pacific Harrier	<i>Circus approximans</i>	Visitor (Goth & Vogel, 2001)
Pacific Reef Heron	<i>Egretta sacra</i>	Goth & Vogel, 2001
Pacific Black Duck	<i>Anas superciliosa</i>	Goth & Vogel, 2001
Tongan Megapode	<i>Megapodius pritchardii</i>	188-235 breeding pairs, Goth & Vogel, 1995. Endemic; Endangered – A1; RRS – A2
Banded Rail	<i>Gallirallus philippensis</i>	Goth & Vogel, 2001
Spotless Crake	<i>Porzana tabuensis</i>	Goth & Vogel, 2001
Purple Swamphen	<i>Porphyrio porphyrio</i>	Goth & Vogel, 2001
Pacific Pigeon	<i>Ducula pacifica</i>	Goth & Vogel, 2001
Crimson-crowned Fruit-dove	<i>Ptilinopus porphyraceus</i>	Goth & Vogel, 2001. RRS – A2
Blue-crowned Lorikeet	<i>Vini australis</i>	Goth & Vogel, 2001. RRS – A2
Barn Owl	<i>Tyto alba</i>	Goth & Vogel, 2001
Long-tailed Cuckoo	<i>Eudynamis taitensis</i>	Migrant. Goth & Vogel, 2001
White-rumped Swiftlet	<i>Aerodramus spodiopygius</i>	Goth & Vogel, 2001
Polynesian Starling	<i>Aplonis tabuensis</i>	Goth & Vogel, 2001. RRS – A2
Jungle Myna	<i>Acridotheres fuscus</i>	Introduced. Goth & Vogel, 2001
Red-vented Bulbul	<i>Pycnonotus cafer</i>	Introduced. Goth & Vogel, 2001
Seabirds		
Wedge-tailed Shearwater	<i>Puffinus pacificus</i>	Visitor. Breeding not confirmed (Goth & Vogel, 2001)
Tropical (Audubon's) Shearwater	<i>Puffinus bailloni</i>	Goth & Vogel, 2001
White-tailed Tropicbird	<i>Phaethon lepturus</i>	Goth & Vogel, 2001
White Tern	<i>Gygis alba</i>	Goth & Vogel, 2001
Migrant Waders		

Pacific Golden Plover	<i>Pluvialis fulva</i>	Annual (Goth & Vogel, 2001)
Wandering Tattler	<i>Heteroscelus incanus</i>	Annual (Goth & Vogel, 2001)
Ruddy Turnstone	<i>Arenaria interpres</i>	Annual (Goth & Vogel, 2001)

Birds recorded from Niuafu'ou Island, Niua Group.

(Breeding confirmed unless otherwise noted. Source: Goth & Vogel 2001. RRS – Restricted Range Species (Statterfield *et al.* 1998)).

Species	Season	Year	Min-Max	Units	Quality	Criteria
<i>Megapodius pritchardii</i>	breeding	1991-93	188-235	prs	good	A1
<i>Ptilinopus porphyraceus</i>	breeding	1991-93	Common			A2
<i>Aplonis tabuensis</i>	breeding	1991-93	Common			A2
<i>Vini australis</i>	breeding	1991-93	Common			A2

Other biodiversity

Niuafu'ou's biodiversity has not been well studied. There is no plant list for the island but there are no known endemic species (Whistler pers.comm. Oct.1994). Within Tonga, Niuafu'ou is well known for the fine Ta'ovala weaved from the inner bark of the Fanakio tree, *Sterculia fanahio* which is widely regarded to occur only on Niuafu'ou. This is true in respect of Tonga, but it is also found in Samoa, Rotuma and Niue. It is widespread on the island and will remain so as long as fruiting trees survive and the Pacific pigeon *Ducula pacifica* survives in numbers to distribute its seeds.

Seven skinks and two geckos have been recorded on Niuafu'ou . None of these are island or Tongan endemic species but two of them *Emoia nigra* and *E.adspersa* are not found south of the Niua (Prescott & Folaumoetu'i 2004).

Conservation issues

It is probable that all nesting sites on Niuafu'ou are known to villagers and are harvested, and at least 50% of all eggs laid are collected or destroyed (Goth & Vogel 1995). Adults are also hunted on a small scale, and adults and chicks are predated by feral cats and dogs, while pigs may compete for food. Fonualei is uninhabited so the threats of hunting and human disturbance are less immediate for the population there, however, Fonualei is small and an active volcano, a major eruption could see the demise of the entire population.

Research, conservation projects

A well illustrated, bilingual interpretive booklet on the Tongan megapode has been published (Rinke *et al.* 1993). The Tongan megapode is protected by law - Birds and Fish Preservation Act, but this is not enforced on Niuafu'ou. From 1991 to 1993 60 eggs were conveyed to the island of Late, and 35 eggs and chicks were transferred to Fonualei, both uninhabited islands and rarely visited by humans. Surveys of Late in 2003 and 2004 failed to find any Tongan megapode, but confirmed that the translocation to Fonualei had been successful (Watling 2003,2004). It was planned for these translocation initiatives to be extended to Tofua, however currently there are no research or conservation projects in place or planned.

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xx002 Fonualei

Country/Territory	Kingdom of Tonga
Administrative region(s)	Vava'u
Central coordinates	18°1'0"S 174°19'30"W
Area	4 sq. km.
Delineation status	
Delineation notes	Whole island
Endemic Bird Area(s)	Part of Tongan Secondary Area (s130)
Biome(s)	
Altitude	0-195 m
Qualification status	
Criteria	A1, A2, A4ii, A4iii
Year of IBA assessment	2007
Criteria notes	
Other notes	

Summary

Fonualei IBA comprises the whole island of Fonualei which supports a recently established population of the Tongan megapode *Megapodius pritchardii*, and another globally threatened species, the friendly ground-dove *Gallicolumba stairi*. The island is an isolated active volcano, approximately 200 ha in area and the megapodes lay their eggs in soil heated by volcanic ducts. The sooty tern *Sterna fusca* nests in very large numbers on the island and two restricted range species, the wattled honeyeater *Foulehaio carunculata* and the Polynesian starling *Aplonis tabuensis* occur on the island.

Site description

Fonualei is an isolated island about 65 km north west of Vava'u. It is a round volcanic cone with a fumarolically active crater, approximately 1.5km across, which rises to about 195m. There are steep cliffs on all but the eastern side. There is a fresh lava flow extending from a breach of the crater to the south west, extending to the sea where it forms a rugged shoreline. Eruptions in 1846/7 and in 1864 covered Vava'u with ash which also blew onto ships 800 km away. There were new lava flows in 1939 and explosions in 1943. Significant eruptions took place in 1946/7 which formed a new cone inside the crater (Crane 1992).

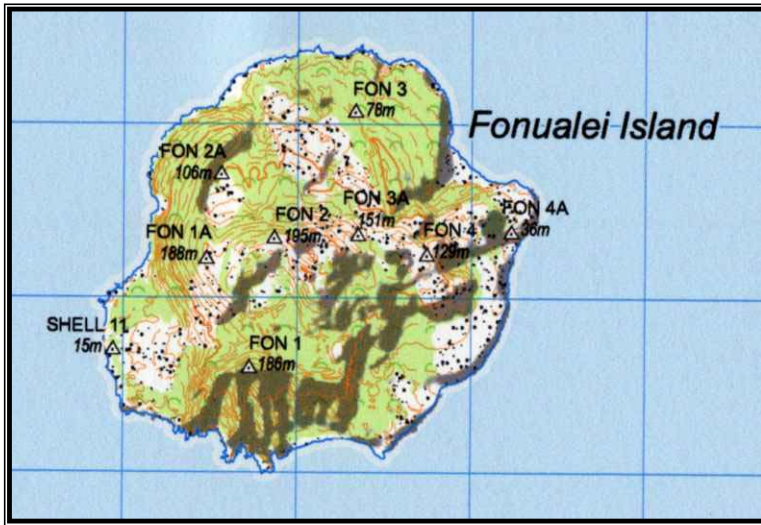


Fonualei island

(photo: courtesy of Rene Dekker in Watling 2003).

Thermal vents and areas of warmed soil from which steam rises early on cool mornings can be seen at several places around the island. Most of Fonualei is barren, relatively recent lava flows with myriads of small cliffs and ravines of jagged black lava covered in vines, ferns and shrubs. There are small areas of stunted trees up to

5 m, dominated by *Macaranga harveyi*, *Hibiscus tiliaceus*, *Morinda citrifolia* and *Ficus scabra* and only in a few steep gulleys and slopes, but for the most part vegetation is either absent or comprised of 1-3m shrubs of these and other species (Watling pers.obs.).



Fonualei Island
(1:50,000 map series; courtesy Ministry of Lands, Survey, and Natural Resources)



Summit crater on Fonualei, site of the largest sooty tern colony (photo: Dick Watling)

Access and land ownership: private, government

[paragraph on 'Land ownership']

[paragraph on 'Access/Land-owner requests']

Ornithological information

Fonualei is known primarily for its large colony of sooty tern *Sterna fuscata* which was estimated at over 100,000 in 1980 (Jenkins 1980). In 2003, there were three colonies on the island, the largest in the crater was over one hectare in area and quite densely packed (Watling 2003). More recently, Fonualei has become better known because of the successful translocation to the island of the Tongan megapode *Megapodius pritchardii* (Beaudry *et al.* 1997; Watling 2003) by Dieter Rinke and staff of the Tongan Wildlife Centre in 1993. Also occurring on the island is the friendly ground-dove *Gallinolumba stairi*, the wattled honeyeater *Foulehaio carunculata* and the Polynesian starling *Aplonis tabuensis*. The Whitney South Seas Expedition collected on the island, August 25 1925,

their collections included a vagrant pintail duck *Anas acuta*, the only record ever in the region.

Common Name	Species	Status
Landbirds		
Tongan Megapode	<i>Megapodius pritchardii</i>	Eggs and chicks from Niufo'ou introduced to the island in 1993 by Dr Dieter Rinke. 300-500 estimated in 2003. A1; RRS – A2.
Black Duck	<i>Anas superciliosa</i>	Collected by WSSE
Pintail	<i>Anas acuta</i>	Vagrant, collected by WSSE
Spotless Crake	<i>Porzana tabuensis</i>	WSSE
Banded Rail	<i>Gallirallus philippensis</i>	WSSE
Purple Swampphen	<i>Porphyrio porphyrio</i>	WSSE
Long-tailed Cuckoo	<i>Eudynamis taitensis</i>	WSSE
Friendly ground-dove	<i>Gallicolumba stairi</i>	Common although but WSSE noted 'no doves or pigeons'. A1; RRS – A2
Wattled honeyeater	<i>Foulehaio carunculata</i>	Common; RRS – A2.
Polynesian starling	<i>Aplonis tabuensis</i>	Common; RRS – A2.
Seabirds		
Sooty tern	<i>Sterna fuscata</i>	Breeding – three colonies – the largest in the central crater (1 ha in area – eggs but mostly pulli or runners); one dispersed over the western lava fields (perhaps one to two thousand pairs); another on a flat above the coast on the eastern side (perhaps three thousand pairs). A4ii.
Red-footed booby	<i>Sula sula</i>	Breeding – very common
Brown booby	<i>Sula leucogaster</i>	Breeding – very common
Brown noddy	<i>Anous stolidus</i>	Breeding – abundant
Lesser frigatebird	<i>Fregata ariel</i>	Breeding
Greater frigatebird	<i>Fregata minor</i>	Present over the island but breeding not confirmed
White tern	<i>Gygis alba</i>	Present over the island but breeding not confirmed
Herald petrel	<i>Pterodroma heraldica</i>	Present over the island but breeding not confirmed
Black-winged petrel	<i>P. nigripennis</i>	Seen offshore
Wedge-tailed shearwater	<i>Puffinus pacificus</i>	Heard on shore at night. Breeding previously confirmed (Jenkins 1980)
White-tailed tropicbird	<i>Phaethon lepturus</i>	Breeding
Red-billed tropicbird	<i>Phaeton rubricauda</i>	Seen offshore

Birds recorded from Fonualei Island

(Source: Watling unpubl. 2003 unless otherwise noted; WSSE - published papers and DW notes from examination of journals of Rollo H. Beck and other collectors of the Whitney South Sea Expedition at the American Museum of Natural History. RRS – Restricted Range Species (Statterfield *et al.* 1998)).

Species	Season	Year	Min-Max	Units	Quality	Criteria
<i>Megapodius pritchardii</i>	breeding	2003	300-500	inds	poor	A1
<i>Gallicolumba stairi</i>	breeding	2003	common			A1
<i>Aplonis tabuensis</i>	breeding	2003	common			A2
<i>Foulehaio carunculata</i>	breeding	2003	common			A2
<i>Sterna fuscata</i>	breeding	1980	100,000 +	inds	poor	A4ii

Other biodiversity

There is no plant list for Fonualei and nothing recorded on faunal groups other than the birds.

Conservation issues

Fonualei is difficult to land on, very isolated and has no agricultural potential. It is rarely visited by people. The greatest threat to the avifauna at present would appear to be volcanic eruption.

Research/Conservation projects

There are no research or conservation projects on Fonualei at the present time (Prescott & Folaumoetu'i, 2004).

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XX003 Late

Country/Territory	Kingdom of Tonga
Administrative region(s)	Vava'u
Central coordinates	18°48'20"S 174°39'0"W
Area	1500
Delineation status	
Delineation notes	
Endemic Bird Area(s)	Part of Tongan Secondary Area (s130)
Biome(s)	
Altitude	0-565 m
Qualification status	
Criteria	A1, A2, A4ii, A4iii
Year of IBA assessment	2007
Criteria notes	
Other notes	

Summary

The Late IBA comprises the whole island of Late, an uninhabited 15 sq km island which rises to 565m. It is volcanically active but has been dormant since 1854. Late has some of the finest forest to be found in Tonga and is a global stronghold of the threatened friendly ground-dove *Gallicolumba stairi* and the endemic Tongan whistler *Pachycephala jacquinoti*. A translocation attempt of the Tongan megapode *Megapodius pritchardii* to Late in was made in 1992, an initial positive report (1997) was not confirmed by searches at the translocation site in 2003 and 2004. Late is also home to seven central Polynesian Restricted Range Species, as well as eleven species of seabird which are currently believed to breed on the island.

Site description

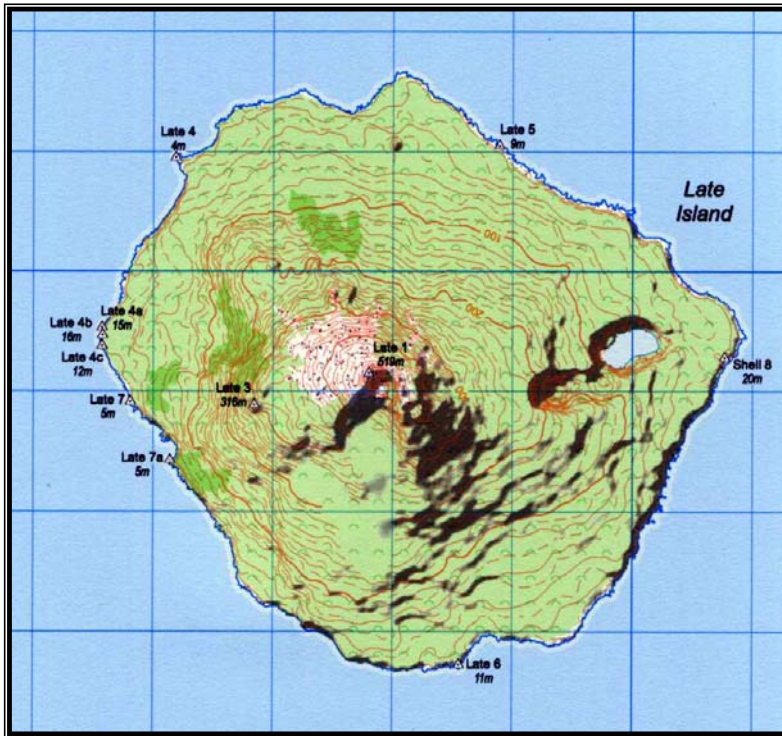
Late is an isolated 6-km-wide circular island about 55 km WSW of the island of Vavau which rises to 565m. It is a stratovolcano lying along the Tofua volcanic arc containing a 400-m-wide, 150-m-deep summit crater with an ephemeral lake, and on its eastern flank there are two large pit craters, the lower of which is partially filled by a slightly-brackish lake. Late is volcanically active but has been dormant since 1854, although steam vents have been seen from time to time (Crane 1992). Late has some of the finest forest to be found in Tonga comprising a lowland broadleaf rain forest, with a canopy to 30 m with *Alphitonia zizyphoides*, *Calophyllum neo-ebudicum* *Rhus taitensis*, and *Elattostachys falcata* significant dominants on Late's young volcanic soils (Sykes 1981).



Late Island
(1990 aerial photograph, courtesy Ministry of Lands, Survey, and Natural Resources)

Casuarina equisetifolia dominates communities on newer ash deposits and lava flows, in the area around the crater and generally on thin soils, often with *Pandanus tectorius*, *Syzygium dealatum*, *Hibiscus tiliaceus*, and *Scaevola taccada* (Sykes 1981). Late was formerly inhabited but its

inhabitants were moved to the mainland of Vava'u in the 1830s (?) to forestall the slave raiders who were raiding isolated islands at the time.



Late Island, Vava'u
(1:50,000 map series;
courtesy Ministry of Lands,
Survey, and Natural
Resources)

Habitat and Landuse

Late was formerly inhabited and traces of habitation remain in the presence of fruit trees in certain localities, otherwise the island is fully forested with a savanna-like habitat of *Casuarina equisetifolia* dominated grass and fernland on the thin soils around the summit. There is a small, slightly brackish crater lake on the eastern flank.

Habitat type	Current percentage cover	Habitat subtypes present
Forest	90%	Lowland broadleaf rain forest, with a canopy to 30 m
Wetland (inland)	1%	Summit crater lake (ephemeral) and one crater lake on eastern flank
Dry Savanna	9%	On thin soils, recent lava and ash deposits around the summit

Access and land ownership: private, government [list of land-ownership types that are relevant, based on classification in WBDB]

[paragraph on 'Land ownership']

[paragraph on 'Access/Land-owner requests']

Ornithological information

Late is particularly important for the conservation of the endemic Tongan whistler whose status on Vava'u gives rise for serious concern but appears secure on Late. The friendly ground-dove (Vulnerable; A1) is very common on the island, and Late clearly represents a major stronghold for this species in Tonga. 63 eggs of the Tongan megapode were translocated to the island in September, October 1992 (Goth pers. comm.) Adults were reportedly observed in late 1996 by a team from the Tongan Wildlife Centre (Beaudry *et al.* 1997), however, searches in 2003, 2004 found no megapodes or any signs of breeding activity, or elevated temperatures in the soils in the

location where they were released in 1992 (Watling 2003, 2004). A further survey on the eastern side of the island is required to confirm the success or otherwise of the translocation. Late has eight (perhaps nine – the megapode) of the ten central Polynesian ‘restricted range species’ for which the Tongan Secondary Area (s130) was created (A2). Late is also important for its seabird breeding colonies, although these are poorly documented at the moment, however, it is very likely that combined they exceed 10,000 breeding pairs (A4iii), and that it may be a stronghold for tropical (Audubon’s) shearwaters (A4ii).

Species		Comment
Landbirds		
Tongan Megapode	<i>Megapodius pritchardii</i>	Eggs and chicks translocated to the island in early 1990s. Reportedly observed in late 1990s. No sign in 2003, 2004. (Endemic; Endangered – A1; RRS – A2)
Pacific Black Duck	<i>Anas superciliosa</i>	Several pairs intermittently on the lake
Banded Rail	<i>Gallirallus philippensis</i>	Seen and heard irregularly
Spotless Crake	<i>Porzana tabuensis</i>	WSSE; seen daily around the lake and several times inland. Chicks seen 2004
Friendly Ground-dove	<i>Gallicolumba stairii</i>	WSSE; common (Vulnerable – A1; RRS – A2)
Pacific Pigeon	<i>Ducula pacifica</i>	WSSE; common
Many-coloured Fruit-dove	<i>Ptilinopus perousii</i>	WSSE; heard and seen irregularly (RRS – A2)
Crimson-crowned Fruit-dove	<i>Ptilinopus porphyraceus</i>	Abundant (RRS – A2)
Blue-crowned Lorikeet	<i>Vini australis</i>	WSSE; observed by Rinke (1991) but not by DW 2003,2004 (RRS – A2)
Red Shining Parrot	<i>Prosopiea tabuensis</i>	One heard and seen in both 2003 and 2004. Introduced to the island – 1990s. (RRS – EBA Fiji 202; – A2)
White-rumped Swiftlet	<i>Aerodramus spodiopygius</i>	WSSE; Abundant
White-collared Kingfisher	<i>Todirhamphus chloris</i>	Common
Polynesian Triller	<i>Lalage maculosa</i>	Present but not common (RRS – A2)
Tongan Whistler	<i>Pachycephala jacquiniti</i>	Common (Endemic; Near threatened; RRS – A2)
Wattled Honeyeater	<i>Foulehaio carunculata</i>	WSSE; Abundant (RRS – A2)
Polynesian Starling	<i>Aplonis tabuensis</i>	Abundant (RRS – A2)
Seabirds		
Wedge-tailed Shearwater	<i>Puffinus pacificus</i>	Reported to breed (Rinke 1991)
Tropical (Audubon's) Shearwater	<i>Puffinus bailloni</i>	Heard every night calling just after night fall and before dawn
White-tailed Tropicbird	<i>Phaethon lepturus</i>	Common nesting in tree hollows (2003,2004)
Brown Booby	<i>Sula leucogaster</i>	Nesting on cliff tops
Red-footed Booby	<i>Sula sula</i>	Common - nesting
Great Frigatebird	<i>Fregata minor</i>	Abundant and nesting on the island, both

Lesser Frigatebird	<i>Fregata ariel</i>	species confirmed as present and both believed to be breeding but not confirmed for <i>F.minor</i>
Black-naped Tern	<i>Sterna sumatrana</i>	Observed
Black Noddy	<i>Anous minutus</i>	Common – roosting on island but nesting not confirmed
Brown Noddy	<i>Anous stolidus</i>	Common, nesting on the island
White Tern	<i>Gygis alba</i>	Common

Birds recorded from Late Island.

(Source: Rinke 1991; Watling 2003, 2004 and unpublished; WSSE – published papers and DW notes from examination of journals of Rollo H. Beck and other collectors of the Whitney South Sea Expedition at the American Museum of Natural History; RRS – Restricted Range Species (Statterfield *et al.* 1998)).)

Species	Season	Year	Min-Max	Units	Quality	Criteria
<i>Pachycephala jacquinoti</i>	breeding	2004	common			A1
<i>Gallicolumba stairi</i>	breeding	2004	common			A1
<i>Ptilinopus perousii</i>	breeding	2004	common			A2
<i>Ptilinopus porphyraceus</i>	breeding	2004	common			A2
<i>Prosopeia tabuensis</i>	breeding	2004	present			A2
<i>Aplonis tabuensis</i>	breeding	2004	common			A2
<i>Foulehaio carunculata</i>	breeding	2004	common			A2
<i>Lalage maculosa</i>	breeding	2004	common			A2
<i>Vini australis</i>	breeding	1990	uncommon			A2
<i>Aplonis tabuensis</i>	breeding	2004	common			A2
<i>Puffinus bailloni</i>	breeding	2004	?common			A4ii

Other biodiversity

Late has some of the best remaining high diversity native forest in Tonga and still supports large populations of birds and reptiles (Steadman 1998). A plant list of 145 species was prepared by Sykes (1981), the highest island number for Tonga behind Tongatapu and 'Eua. There is no published list of the reptiles of Late

Conservation issues

Tofua and Late support the largest remaining areas of Tonga's high diversity rainforest. Rinke (1986) has suggested that the greatest potential for conservation lies in the protection of uninhabited, forested, and predator-free islands such as these two islands to which could be translocated threatened flora and fauna from inhabited islands. Late is uninhabited and there are few visitors to the island because of the difficulty of landing, however, informal clearing for plantations and cutting of timber is taking place. Pigs were once found on the island but do not appear to be present at the moment¹. The WSSE was told that pigs were present on the island but noted that they saw no sign of them. The introduction of rats (*Rattus rattus* or *R.norvegicus*), feral cats or pigs would have disastrous consequences on the island's wildlife.

Research/Conservation projects

There are no research or conservation projects on Late at the present time (Prescott & Folaumoetu'i 2004).

¹ A well-decayed skull and boar's tusk was unearthed by Dick Watling and colleagues in 2004.

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XX004 Maninita, Taula, Lualoli

Country/Territory	Kingdom of Tonga
Administrative region(s)	Vava'u
Central coordinates	18°51'S 174°00'W
Area	13 ha (three islands combined)
Delineation status	
Delineation notes	Three islands
Endemic Bird Area(s)	Part of Tongan Secondary Area (s130)
Biome(s)	
Altitude	0-5 m
Qualification status	
Criteria	A4i
Year of IBA assessment	2007
Criteria notes	
Other notes	

Summary

The Maninita (or Otu Motu Lalo) IBA comprises the three uninhabited islands of Maninita, Taula, Lualoli, the southern most islands in the Vava'u group. All three islands are raised limestone islands and together total approximately 13 ha. The vegetation on all three islands is almost intact, native vegetation which is representative of coral cay islands throughout Tonga. The *Pisonia grandis* woodland on Maninita, has some particularly large and impressive trees. The islands support extremely important nesting colonies of over 15,000 seabirds, especially black noddy *Anous minutus*. Rats were eradicated from the islands in 2002. The islands are owned by the government and there is an extant lease on Taula. All three islands are coming under increasing pressure from visiting fishermen and the tourist industry.

Site description

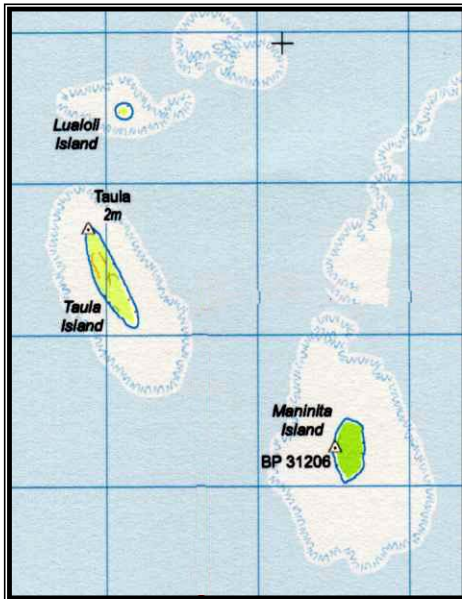
Maninita, Taula and Lualoli are the southernmost islands of the Vava'u group. All three are raised limestone islands with a maximum height of less than 5m above sea level. Maninita has an area of 5.2 ha., Taula - 7.0 ha and Lualoli approximately 0.3 ha. The islands are situated on large patch reefs. Maninita is accessible to small craft at high tide, but the other islands are more difficult to access. The dominant vegetation of the islands is closed canopy woodland, where *Pisonia grandis* is overwhelmingly dominant. Only in a few locations does *Neisosperma oppositifolium* becomes dominant over small areas on Maninita, *Pemphis acidula* on Taula. A well-developed strand vegetation surrounds the islands above the beachline which is a more diverse vegetation with over 20 plant species recorded, although it is of limited extent. The strand vegetation is well formed on Maninita and a less so on the other island and extends from 5-20 m inland.



Maninita (upper right), Taula (bottom left) and Lualoli (bottom right).

(Not to the same scale: 1990 aerial photographs, courtesy Ministry of Lands, Survey, and Natural Resources)





Otu Motu Lalo. The islands of Maninita, Taula and Lualoli, Vava'u.

(1:50,000 map series; courtesy Ministry of Lands, Survey, and Natural Resources)

Habitat type	Current percentage cover	Habitat subtypes present
Forest	100%	Littoral forest with strand vegetation

Access and land ownership

The three islands are owned by the Government. On Taula, there is a registered lease of 2.73 ha under the name of Mapaha'amo Fifita (Taunga Island); another lease of 2.66 ha has been surrendered but not registered. On Maninita there is an application of 1969 by Teisina Fifita (Taunga Island) but without response from the government.

Ornithological information

Twenty species of bird have been recorded on or around the three islands¹. There are only three species of resident, breeding land birds – wattled honeyeater *Foulehaio carunculata*, banded rail *Galirallus philippensis* and white-collared kingfisher *Todiramphus chloris*. Five seabirds nest on the islands – black and brown noddys (*Anous minutus* and *A. solidus*), white tern *Gygis alba* and the red-footed booby *Sula sula* nest on both islands, black-winged petrel *Pterodroma nigripennis* nests only on Taula. Based on a stratified sampling of the two larger islands, the number of breeding pairs of black noddy was estimated at 13,248, brown noddy at 1,522 and with 50 pairs of red-footed booby. 547 pairs of white tern bred on Maninita, but breeding was not taking place during the survey of Taula, combined over 1,000 white terns probably breed on both islands (Watling 2002). No surveys were taken on Lualoli but small numbers of all but the black-winged petrel breed on this island too.

A single, bristle-thighed curlew *Numenius tahitiensis*, a globally threatened species was observed moving between the three islands throughout the surveys.

¹ All information based on Watling (2002; 2003)

Species		Comment
Landbirds		
Reef Heron	<i>Egretta sacra</i>	Seen daily, no evidence of breeding
Banded Rail	<i>Gallirallus philippensis</i>	c.2 pairs on both Taula, Maninita, breeding
Long-tailed Cuckoo	<i>Eudynamis taitensis</i>	Observed on both islands
Pacific Pigeon	<i>Ducula pacifica</i>	Occasional visitor
Collared Kingfisher	<i>Halcyon chloris</i>	Resident and breeds on both islands
Wattled Honeyeater	<i>Foulehaio carunculata</i>	Resident and breeds on both islands
Bristle-thighed Curlew	<i>Numenius tahitiensis</i>	Seen daily on one or both islands
Eastern Golden Plover	<i>Pluvialis dominica</i>	Seen daily
Wandering Tattler	<i>Heteroscelus incanus</i>	Seen daily
Turnstone	<i>Arenaria tetanus</i>	Seen daily
Seabirds		
Black-winged Petrel	<i>Pterodroma nigripennis</i>	Nesting colony on Taula only, circa 200 burrows
Black-naped Tern	<i>Sterna sumatrana</i>	Resident but not observed breeding
Sooty Tern	<i>Sterna fusca</i>	Visitor
Brown Noddy	<i>Anous stolidus</i>	Breeds – 1,522 pairs (Maninita 848; Taula 674)
Black Noddy	<i>Anous minutus</i>	Breeds – 13,248 pairs (Maninita 7,467; Taula 5,781)
White Tern	<i>Gygis alba</i>	Breeds - > 547 pairs (Maninita 547; Taula no count – breeding completed)
Lesser Frigatebird	<i>Fregata ariel</i>	Observed over both islands
Greater Frigatebird	<i>Fregata minor</i>	Observed over both islands
Red-footed Booby	<i>Sula sula</i>	Breeds – 50 pairs (Maninita 12; Taula 38)
Brown Booby	<i>Sula leucogaster</i>	Roosts on both islands

Birds recorded from 'Otu Motu Lalo' Maninita, Taula and Lualoli

(Source: Watling 2002, 2003)

Species	Season	Year	Min-Max	Units	Quality	Criteria
<i>Anous minutus</i>	breeding	2002	13,248	prs	good	A4i
<i>Foulehaio carunculata</i>	breeding	2002	10	inds	good	A2
<i>Numenius tahitiensis</i>	Passage	2002	1	Inds	good	A1

Other biodiversity

Twenty eight plant species have been recorded on Maninita and 37 species on Taula, with four vegetation associations distinguished – strand vegetation, pure stands of *Neisosperma oppositifolium*, *Pemphis acidula* scrub, and a woodland almost totally composed of *Pisonia grandis* with a canopy height of between 7-15m, which forms the core vegetation type. A globally rare and threatened plant *Sesbania coccinea* is present on both Maninita and Taula with a total of no more than seven plants. Whistler (1992) indicates that this species may be extinct in Tonga. The flying fox *Pteropus tonganus* visits the islands in small numbers. Four terrestrial reptiles have been recorded - by far the commonest is the gecko *Gehyra oceanica*, others included *Lepidodactylus lugubris*, *Lipinia noctua* and *Emoia impar*. Formerly, the Polynesian rat *Rattus*

exulans occurred at very high densities on both Maninita and Taula, the rats were eradicated from Maninita in June/July 2002 and from Taula and Lualoli in December 2002 (Houston 2003).

Conservation issues

Maninita, Taula and Lualoli are the southernmost islands of the Vava'u Group, collectively referred to as 'Otu Motu Lalo'. Maninita has been the subject of at least two Ministry of Lands, Survey and Natural Resources' surveys which resulted in it being proposed as a Protected Marine Area in the early 1990's. Lack of resources and alternative priorities have prevented the proposal being implemented. Maninita and Taula are very important seabird nesting colonies, while all three islands have intact native island flora. They are some of the best remaining examples of Tonga's small island ecosystems, however, their attributes are deteriorating through increasing and damaging exploitation, and the lack of any management framework.

A proposal to nominate these islands for consideration by the Parks and Reserves Management Authority to be established as 'The Otu Motu Lalo Reserve' was prepared by the Tonga Visitors Bureau and the Department of the Environment, following nearly four years of joint preparatory work, supported through the NZAid Nature Tourism Programme 2001-2004 (Dept.Environment 2003). The legislative context of this nomination is the Parks and Reserves Act (1976).

Research/Conservation Projects

There are no research or conservation projects on Maninita at the present time (Prescott & Folaumoetu'i, 2004).

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XX005 Tofua

Country/Territory	Kingdom of Tonga
Administrative region(s)	Ha'apai Group
Central coordinates	19°45'0"S 175°4'0"W
Area	46.6 sq. km.
Delineation status	
Delineation notes	Whole island
Endemic Bird Area(s)	Part of Tongan Secondary Area (s130)
Biome(s)	
Altitude	558 m
Qualification status	
Criteria	A2
Year of IBA assessment	2007
Criteria notes	
Other notes	

Summary

The Tofua IBA comprises the whole island of Tofua, a 46.6 sq. km active volcanic island which retains the largest area of biodiversity rich moist tropical forest in Tonga. The island has seven of the ten central Polynesian restricted range species, and is particularly important for the Tongan populations of the Fiji shrikebill *Clytorhynchus vitiensis* and the blue-crowned lorikeet *Vini australis*. The island is inhabited and the on-going clearing of forest for kava plantations is a significant conservation concern as is the presence of feral pigs. Very little is documented on the avifauna and biodiversity of Tofua, for instance there are no seabird records from the island.

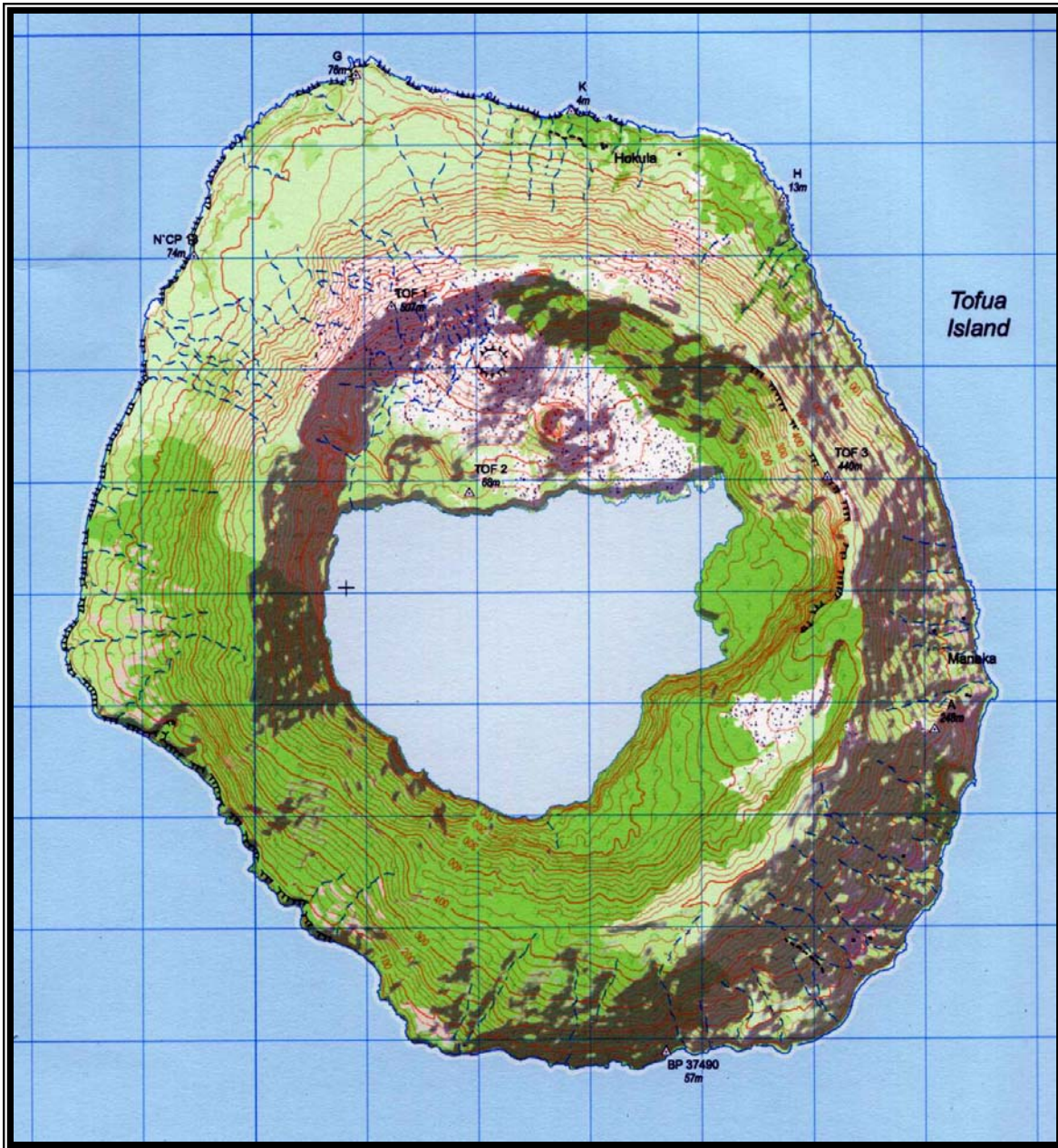
Site description

Tofua is an almost circular island eight kilometres across at its widest point. The island contains a five kilometres caldera with a steep sided rim rising to 558 m. Inside, 23 m above sea level is the brackish lake, Lofia, which is 3 km wide. The volcano is still active – inside the northern edge of the caldera three young cones have built up. Lava sometimes pours out from one vent, and smoke, steam and gases constantly blow from the largest vent, a crater 200 m wide. Violent eruptions have occurred in the last hundred years from cracks in the outer slopes, the last eruption was in 1958/9 (Crane 1992). The island is well forested with a moist broadleaf tropical forest over much of the southern half of the island, the northern side has more grassland, scrub and *Casuarina equisetifolia* reflecting younger and shallower soils.

Tofua Island. Ha'apai Group

(1990 aerial photograph, courtesy Ministry of Lands, Survey, and Natural Resources)





Tofua Island, Ha'apai Group

(1:50,000 map series; courtesy Ministry of Lands, Survey, and Natural Resources)

Habitat and Landuse

Tofua is inhabited and there are two small villages on the island, although no population was recorded for the island in the 2006 census. The villagers primarily grow kava for consumption in Tongatapu and this involves constant clearing of forest for plantations.

Habitat type	Current percentage cover	Habitat subtypes present
Forest	50%	Lowland broadleaf rain forest, with a canopy to 30 m
Wetland (inland)	16%	Summit crater lake (ephemeral) and one crater lake on eastern flank
Light Forest;	34%	On thin soils, recent lava and ash deposits around

Scrub

the summit

Access and land ownership: private, government [list of land-ownership types that are relevant, based on classification in WBDB]

[paragraph on 'Land ownership']

[paragraph on 'Access/Land-owner requests']

Ornithological information

The volcanic islands of Tofua (55.4 km²) and Late (17 km²) are recognised as having some of Tonga's best remaining high diversity native forest and still support large populations of birds and reptiles (Steadman 1998) with Tofua's forest complement being nearly three times the area of that of Late. However, Tofua's birds and biodiversity in general is very poorly documented and there are no seabird records from the island. Confirmed records from the island still rely greatly on the Whitney South Seas Expedition which collected on 27-28 July 1925. Dieter Rinke and colleagues visited the island briefly in October 1990 with a single observation documented (Rinke et al 1992). Steadman (2006) records observations made in July 1995 and July 1996 which confirmed one additional species. These are summarised in the table below. Of particular significance is the suite of seven 'central polynesian' restricted range species (A2).

Species		Comment
Black Duck	<i>Anas superciliosa</i>	Steadman (2006)
Pacific Harrier	<i>Circus approximans</i>	WSSE
Pacific Pigeon	<i>Ducula pacifica</i>	WSSE; Steadman (2006)
Many-coloured Fruit-dove	<i>Ptilinopus perousii</i>	WSSE; Steadman (2006); RRS – A2
Crimson-crowned Fruit-dove	<i>Ptilinopus porphyraceus</i>	WSSE; Steadman (2006); RRS – A2
Blue-crowned Lorikeet	<i>Vini australis</i>	WSSE; RRS – A2
Barn Owl	<i>Tyto alba</i>	Steadman (2006)
White-rumped swiftlet	<i>Aerodramus spodiopygius</i>	WSSE; Steadman (2006)
Pacific Swallow	<i>Hirundo tahitica</i>	Rinke et al (1992)
Collared Kingfisher	<i>Todiramphus chloris</i>	WSSE; Steadman (2006)
Polynesian Starling	<i>Aplonis tabuensis</i>	WSSE; Steadman (2006). RRS – A2
Polynesian Triller	<i>Lalage maculosa</i>	WSSE; Steadman (2006). RRS – A2
Fiji Shrikebill	<i>Clytorhynchus vitiensis</i>	WSSE; Steadman (2006); RRS – A2
Wattled Honeyeater	<i>Foulehaio carunculata</i>	WSSE; Steadman (2006); RRS – A2

Birds recorded from Tofua

(Source: Steadman 2006 (also identifies an additional 4 'probable' and 'possible' species – unconfirmed and so excluded in the above table); Rinke et al. (1992); WSSE – published papers and DW notes from examination of journals of Rollo H. Beck and other collectors of the Whitney South Sea Expedition at the American Museum of Natural History. RRS – Restricted Range Species (Statterfield et al. 1998)).

Species	Season	Year	Min-Max	Units	Quality	Criteria
<i>Ptilinopus perousii</i>	breeding	1996				A2
<i>Ptilinopus porphyraceus</i>	breeding	1996				A2
<i>Aplonis tabuensis</i>	breeding	1996				A2
<i>Foulehaio carunculata</i>	breeding	1996				A2
<i>Lalage maculosa</i>	breeding	1996				A2
<i>Vini australis</i>	breeding	1925				A2
<i>Clytorhynchus vitiensis</i>	breeding	1996				A2

Other biodiversity

No records

Conservation issues

The island is inhabited and the principal activity is forest clearing for kava production. The Whitney Expedition reported feral pigs and feral dogs on the island, both of which would severely affect accessible seabird nesting colonies on the island.

Habitat destruction, poaching for food and feathers, and introduced species are the principal threats to remaining Tongan biodiversity (WWF 2001). Introduced pigs, rats and cats can have catastrophic impacts on breeding seabirds and passerines. There are no national parks in Tonga and Rinke (1986b) has suggested that the greatest potential for conservation lies in the protection of uninhabited, forested, and predator-free islands such as 'Ata, Tofua and Late that are stocked with threatened flora and fauna from inhabited islands. Paleoecology studies suggest many of the target species once occurred on these refuge islands and this approach may offer the best chance for conservation of many threatened species. Although Tofua is inhabited, it has the largest remaining area of biodiversity rich forest in Tonga, such forest is the principal habitat for Tonga's landbirds, and as such it remains a very important conservation area.

Threat type	Subtype	Year	Timing	Scope	Severity	Pressure
Agricultural expansion	Kava – 3-5 year crop; small-holder farming	continuing	happening now	<20% of forest area currently affected	severe deterioration	medium

Research/Conservation Projects

There are no research or conservation projects on Tofua at the present time (Prescott & Folaumoetu'i (2004).

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XX006 Hunga Ha'apai, Hunga Tonga Islands

Country/Territory	Kingdom of Tonga
Administrative region(s)	Ha'apai Group
Central coordinates	20.55° S 175.42° W
Area	0.7 & 0.4 sq km
Delineation status	
Delineation notes	Two islands
Endemic Bird Area(s)	Part of Tongan Secondary Area (s130)
Biome(s)	
Altitude	122m; 149m
Qualification status	
Criteria	A1, A2, A4iii
Year of IBA assessment	2007
Criteria notes	
Other notes	

Summary

The Hungas IBA comprises both the islands of Hunga Ha'apai and Hunga Tonga, two isolated volcanic islands of the Ha'apai Group with a combined area of just over one square kilometre. The islands are uninhabited and are very rarely visited by people. The Hungas are renowned for their seabird colonies, although these are poorly documented they probably exceed over 10,000 pairs of several species. A breeding record of the globally threatened Phoenix petrel from the Hungas is doubted, but the threatened friendly ground-dove *Gallicolumba stairi* occurs on both islands as well as four other 'central Polynesian' restricted range species.

Site description

Hunga Ha'apai and Hunga Tonga (the Hungas) are a pair of isolated volcanic islands, 55 km west of the Ha'apai group. The two linear andesitic islands are about 2 km long. They have inward-facing cliffs that represent the western and northern remnants of the rim of a largely submarine



caldera lying east and south of the islands. A rocky shoal is visible 3.2 km SE of Hunga Ha'apai and 3 km south of Hunga Tonga and marks the most prominent historically active vent (Taylor and Ewart, 1997). Submarine eruptions were reported here in 1912 and 1937 and from a fissure 1 km SSE of Hunga Ha'apai in 1988 (Smithsonian 2007). The islands are uninhabited and rarely visited. There are no records or accounts of the vegetation or flora or of the fauna other than some observations on the avifauna. Jenkins (1980) describes the islands as 'rocky and steep, with sheer cliffs and thin vegetation'.

Hunga Ha'apai (left) and Hunga Tonga (right), Ha'apai Group. (1990 aerial photograph, courtesy Ministry of Lands, Survey, and Natural Resources)

Access and land ownership

Ornithological information

There are very few published ornithological observations for the Hungas. The Whitney South Seas Expedition visited the islands in July 23,24 1925 but not all their observations or collections have been published. Information from journal accounts of the Expedition's collectors was extracted for seabirds by Jenkins (1980). Rinke et al. (1992) records some of DRs previous observations on a visit to the Hungas in April 1991. Two globally threatened species (A1) have been recorded although the record of the Phoenix Petrel is doubted; and, five 'central polynesian' restricted range species (A2). It is considered probable that there are more than 10,000 pairs of seabirds of mixed species on the islands (A4iii).

Species		Comment
Landbirds		
Spotless Crake	<i>Porzana tabuensis</i>	WSSE
Friendly Ground-dove	<i>Gallicolumba stairi</i>	Rinke et al (1992). Vulnerable – A1; RRS – A2
Pacific Pigeon	<i>Ducula pacifica</i>	WSSE
Crimson-crowned Fruit-dove	<i>Ptilinopus porphyraceus</i>	WSSE. RRS – A2
Collared Kingfisher	<i>Halcyon chloris</i>	WSSE
Barn Owl	<i>Tyto alba</i>	WSSE
Fiji Shrikebill	<i>Clytorhynchus vitiensis</i>	Rinke et al (1992); WSSE. RRS – A2
Polynesian Starling	<i>Aplonis tabuensis</i>	WSSE. RRS – A2
Wattled Honeyeater	<i>Foulehaio carunculata</i>	WSSE. RRS – A2
Seabirds		
Black-winged Petrel	<i>Pterodroma nigripennis</i>	Rinke et al (1992); WSSE
Phoenix Petrel	<i>Pterodroma alba</i>	Eggs taken on Hunga Tonga by WSSE were attributed to this species (Murphy 1952) but identification doubted by Bourne (Jenkins 1980). Vulnerable – A1
Herald Petrel	<i>Pterodroma heraldica</i>	WSSE; Jenkins (1980) 'known to breed'
Wedge-tailed shearwater	<i>Puffinus pacificus</i>	Jenkins (1980) 'known to breed'
White-tailed tropicbird	<i>Phaethon lepturus</i>	Jenkins (1980) 'known to breed'
Sooty Tern	<i>Sterna fuscata</i>	WSSE records it breeding on Hunga Ha'apai. Jenkins (1980)
Tropical Shearwater (Audubons)	<i>Puffinus bailloni</i>	Jenkins (1980) 'probably breeds'
White Tern	<i>Gygis alba</i>	Jenkins (1980) 'probably breeds'
Red-footed Booby	<i>Sula sula</i>	Todd in Jenkins (1980)
Brown Booby	<i>Sula leucogaster</i>	Todd in Jenkins (1980)

Birds recorded from Hunga Ha'apai and Hunga Tonga, Ha'apai Group

(Source: Rinke *et al* (1992); Jenkins (1980); WSSE – published papers and DW notes from examination of journals of Rollo H. Beck and other collectors of the Whitney South Sea Expedition at the American Museum of Natural History. RRS – Restricted Range Species (Statterfield *et al.* 1998)).

Species	Season	Year	Min-Max	Units	Quality	Criteria
<i>Pterodroma alba</i>	breeding	1925				A1
<i>Gallicolumba stairi</i>	breeding	1990				A1
<i>Ptilinopus porphyraceus</i>	breeding	1925				A2
<i>Aplonis tabuensis</i>	breeding	1925				A2
<i>Foulehaio carunculata</i>	breeding	1925				A2
<i>Clytorhynchus vitiensis</i>	breeding	1925				A2

Other biodiversity

There appear to be no records of the flora, vegetation or any faunal groups other than birds.

Conservation issues

The Hungas are difficult to land on, very isolated and have no agricultural potential. They are rarely visited by people, and when visits are made they are generally to harvest seabirds or their eggs.

Research/Conservation projects

There are no research or conservation projects on the Hungas at the present time (Prescott & Folaumoetu'i (2004).

References

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XX007 'Ata Island

Country/Territory	Kingdom of Tonga
Administrative region(s)	Tongatapu Group
Central coordinates	22.58° S 176.17° W
Area	2.3 sq. km
Delineation status	
Delineation notes	Whole island
Endemic Bird Area(s)	Part of Tongan Secondary Area (s130)
Biome(s)	
Altitude	355 m
Qualification status	
Criteria	A2, A4i, A4ii
Year of IBA assessment	2007
Criteria notes	
Other notes	

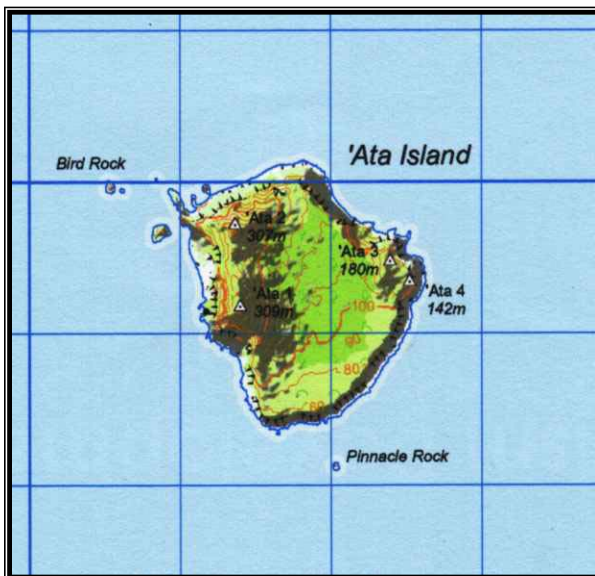
Summary

The 'Ata IBA comprises the whole of the 2.3 sq.km. volcanic island of 'Ata, the southernmost island of the Tongan archipelago. The island is mostly forested and is currently uninhabited and very rarely visited by people. 'Ata has some of the largest seabird colonies in Tonga especially wedge-tailed shearwaters, masked, red-footed and brown booby, and black and brown boobies. Together these are believed to number over 50,000 birds.

Site description

The 'Ata IBA comprises the whole of the island of 'Ata, a volcanic island that rises to 355 m. The island is very isolated being over 140 km SSW of Tongatapu. Rinke (1991) visited the island (5-9 April 1990) and provides the following description. The island is comprised of a 'plateau' bordered by two mountains in the west and two lower peaks in the east, almost completely surrounded by steep cliffs between 60-100 m high but there is a single landing place on a short sand beach on the NW coast. The plateau is heavily forested but vegetation on the cliffs is sparse. The island is uninhabited and is very rarely visited by people today, however, it was once inhabited but the population was removed to live in 'Eua in the 1860s. Evidence of their former presence is found in

lingering populations of fruit trees and crops.



Ata Island, Tongatapu Group.

(Source: 1:50,000 series Maps. Courtesy Ministry of Lands, Survey, and Natural Resources)

Access and land ownership: private, government [list of land-ownership types that are relevant, based on classification in WBDB]

Ornithological information

'Ata is renowned for its seabird colonies but these remain very poorly documented. Apart from the collectors of the Whitney South Sea Expedition who visited the island 13-14 July 1925, only Rinke (1991) has published ornithological observations. These observations are summarised in Table xx below. The apparent loss of the Pacific harrier and the exotic European starling between the visits of the WSSE and Dieter Rinke's visit is of great interest.

The island indubitably supports over 10,000 pairs of seabirds (A4iii), probably comprising 15 species. Whilst the breeding populations of the three species of booby and the two species of noddy both fulfill IBA criteria (A4ii). In addition, the Polynesian starling is a 'central polynesian' restricted range species (A2).

Species		Comment
Landbirds		
Pacific Harrier	<i>Circus approximans</i>	Collected by WSSE but considered extirpated by Rinke (1991)
Junglefowl	<i>Gallus gallus</i>	Common (WSSE; Rinke 1991)
Banded Rail	<i>Gallirallus philippensis</i>	Believed present (Rinke 1991)
Pacific Pigeon	<i>Ducula pacifica</i>	Common (WSSE; Rinke 1991)
Barn Owl	<i>Tyto alba</i>	Recorded (WSSE; Rinke 1991)
European Starling	<i>Sturnus vulgaris</i>	Collected by WSSE but considered extirpated by Rinke (1991)
Polynesian Starling	<i>Aplonis tabuensis</i>	Common (WSSE; Rinke 1991) RRS – A2
Seabirds		
Kermadec Petrel	<i>Pterodroma neglecta</i>	Rinke (pers comm. 2000)
Herald Petrel	<i>Pterodroma heraldica</i>	Breeds (Rinke 1991)
Tropical Shearwater (Audubons)	<i>Puffinus bailloni</i>	Jenkins (1980) 'may breed'
Wedge-tailed Shearwater	<i>Puffinus pacificus</i>	Breeds 20-50,000 (Rinke 1991) A4ii
Red-tailed Tropicbird	<i>Phaethon rubricauda</i>	Breeds (Rinke 1991)
White-tailed Tropicbird	<i>Phaethon lepturus</i>	?Breeds (Rinke 1991)
Masked Booby	<i>Sula dactylatra</i>	Breeds > 1,000 (Rinke 1991) A4ii
Brown Booby	<i>Sula leucogaster</i>	Breeds 1-10,000 (Rinke 1991) A4ii
Red-footed Booby	<i>Sula sula</i>	Breeds > 10,000 (Rinke 1991) A4ii
Great Frigatebird	<i>Fregata minor</i>	?Breeds (Rinke 1991); Jenkins (1980)
Lesser Frigatebird	<i>Fregata ariel</i>	?Breeds (Rinke 1991)
Blue Noddy	<i>Procelsterna cerulea</i>	?Breeds (Rinke 1991)
Brown Noddy	<i>Anous stolidus</i>	Breeds > 10,000 (Rinke 1991) A4i
Black Noddy	<i>Anous tenuirostris</i>	Breeds > 10,000 (Rinke 1991) A4i
White Tern	<i>Gygis alba</i>	?Breeds (Rinke 1991)

Birds recorded from 'Ata Island, Tongatapu Group

(Source: Rinke (1991); Jenkins (1980); WSSE – published papers and DW notes in AMNH – examination of journals of Rollo H. Beck and other collectors of the Whitney South Sea Expedition at the American Museum of Natural History. RRS – Restricted Range Species (Statterfield *et al.* 1998)).

Species	Season	Year	Min-Max	Units	Quality	Criteria
<i>Puffinus pacificus</i>	breeding	1990	20,000-50,000	inds	poor	A4ii
<i>Sula dactylatra</i>	breeding	1990	>1,000	inds	poor	A4ii
<i>Sula leucogaster</i>	breeding	1990	>1,000-<10,000	inds	poor	A4ii
<i>Sula sula</i>	breeding	1990	>10,000	inds	poor	A4ii
<i>Anous stolidus</i>	breeding	1990	>10,000	inds	poor	A4i
<i>Anous tenuirostris</i>	breeding	1990	>10,000	inds	poor	A4i
<i>Aplonis tabuensis</i>	breeding	1990	abundant			A2

Other biodiversity

Rinke (1991) records the abundance of *Ficus* spp. in the forest on the plateau, as well as the presence of *Inocarpus edulis* and coconuts and pawpaw. Other species noted include *Wedelia biflora* thickets, *Pisonia grandis*, *Hibiscus tiliaceus* and *Casuarina equisetifolia*. He confirmed the presence of the Polynesian rat *Rattus exulans* and three skinks. *Emoia cyanura*, *E.pheonura* and *Cryptoblepharus eximius*.

Conservation issues

The remotest of Tonga's islands and rarely if ever visited by people. Habitat destruction, poaching for food and feathers, and introduced species are the principal threats to remaining Tongan biodiversity (WWF 2001). Introduced pigs, rats and cats can have catastrophic impacts on breeding seabirds and passerines. There are no national parks in Tonga and Rinke (1986) has suggested that the greatest potential for conservation lies in the protection of uninhabited, forested, and predator-free islands such as 'Ata, Tofua and Late that are stocked with threatened flora and fauna from inhabited islands. Paleoecology studies suggest many of the target species once occurred on these refuge islands and this approach may offer the best chance for conservation of many threatened species.

Research/Conservation Projects

There are no research or conservation projects on 'Ata at the present time (Prescott & Folaumoetu'i (2004).

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