Filling the gaps: identifying candidate sites to expand Fiji's national protected area network

Outcomes report from provincial planning meeting, 20-21 September 2010

Stacy Jupiter[1], Kasaqa Tora[2], Morena Mills[3], Rebecca Weeks[1,3], Vanessa Adams[3], Ingrid Qauqau[1], Alumeci Nakeke[4], Thomas Tui[4], Yashika Nand[1], Naushad Yakub[1]

[1] Wildlife Conservation Society Fiji Country Program
[2] National Trust of Fiji
[3] ARC Centre of Excellence for Coral Reef Studies, James Cook University
[4] SeaWeb Asia-Pacific Program

ARC Centre of Excellence Coral Reef Studies

WILDLIFE CONSERVATION SOCIETY

National Trust of Fiji Islands our heritage in trust

SeaWeb Leading Voices for a Healthy Ocean

This work was supported by an Early Action Grant to the national Protected Area Committee from UNDP-GEF and a grant to the Wildlife Conservation Society from the John D. and Catherine T. MacArthur Foundation (#10-94985-000-GSS)

This document to be cited as:
Jupiter S, Tora K, Mills M, Weeks R, Adams V, Qauqau I, Nakeke A, Tui T, Nand Y, Yakub N (2011) Filling the gaps: identifying candidate sites to expand Fiji's national protected area network. Outcomes report from provincial planning meeting, 20-21 September 2010. Wildlife Conservation Society, Suva, Fiji, 65 pp.

Executive Summary

The Fiji national Protected Area Committee (PAC) was established in 2008 under section 8(2) of Fiji's *Environment Management Act 2005* in order to advance Fiji's commitments under the Convention on Biological Diversity (CBD)'s Programme of Work on Protected Areas (PoWPA). To date, the PAC has: established national targets for conservation and management; collated existing and new data on species and habitats; identified current protected area boundaries; and determined how much of Fiji's biodiversity is currently protected through terrestrial and marine gap analyses.

Between 20-21 September 2010, members of the PAC facilitated a workshop in Nadave for administrators from Fiji's 14 provinces to describe the progress under PoWPA. In addition, technical experts provided background information on several processes undertaken in Fiji since the 1980s to identify sites of national and global importance for protection. These processes include: development of Fiji's National Biodiversity Strategy and Action Plan (NBSAP); identification of sites housing endemic plant and animal species; designation of important bird and key biodiversity areas; identifying priority forest, wetland, mangrove and connectivity areas; and classifying Fiji's significant marine ecoregions. The main goal of the workshop was to identify candidate sites for protection and management within each province which could simultaneously satisfy national and provincial biodiversity conservation and resource management objectives. This report details the outcomes of the material presented, candidate sites identified and strategies for implementation within each province.

The provincial administrators, with the assistance of government and non-government (NGO) participants, identified a range of sites for protection under the following general categories: Nature Reserves; Forest Reserves; Water Catchment Areas; Habitat/Species Management Areas; Conservation Areas; Community Forest Parks; Conservation Corridors/ Sustainable Use Areas; Cultural/Heritage Areas; No-take Marine Reserves; Tabu Areas (fisheries closure subject to periodic harvest); and Managed Marine Areas. Not all of the proposed categories neatly fit into the International Union for Conservation of Nature (IUCN)'s six tiered definitions of protected areas. Therefore, one of the main tasks for the PAC in 2011 will be to reconcile the different classification systems and determine the most appropriate scheme for Fiji. The ultimate aim is to use the recommendations emerging from the workshop as a basis to develop a representative protected area network situated within a broader ecosystem-based management (EBM) framework.

Each provincial working group developed strategies for implementing the protected area recommendations, which broadly included tasks such as discussion of workshop outcomes during provincial meetings and consultations with resource owners and users. The working groups also identified many challenges and limitations to implementation of protected areas, which fell into the following major categories: lack of awareness of threats, existing data, and best practice for management; conflicting mindsets among stakeholders; increasing development and extractive industry; poor communication among stakeholders; lack of resources for monitoring and enforcement; and the need to strengthen management and compliance with national and local rules and policies. The PAC will now seek to work closely with the Provincial Offices across Fiji to overcome these challenges, support stakeholder engagement, and develop innovative financing solutions to enable site-based implementation.

List of Acronyms

CBD	Convention on Biological Diversity
CI	Conservation International
COWRIE	Coastal and Watershed Restoration for the Integrity of Island Environments
CRISP	Coral Reef Initiatives for the Pacific
DoE	Department of Environment
EBM	Ecosystem-Based Management
FELA	Fiji Environmental Law Association
FFI	Fiji Forest Industries
FLMMA	Fiji Locally Managed Marine Area Network
FNBSAP	Fiji National Biodiversity Strategy and Action Plan
GEF	Global Environment Facility
GIS	Geographic Information System
GO	Government Office
IAB	iTaukei Affairs Board
IAS	Institute of Applied Sciences
IBA	Important Bird Area
IUCN	International Union for the Conservation of Nature
KBA	Key Biodiversity Area
LMMA	Locally Managed Marine Area
MoFF	Ministry of Fisheries and Forests
MPA	Marine Protected Area
MPI	Ministry of Primary Industries
NEC	National Environment Council
NGO	Non-Government Organisation
NLTB	Native Land Trust Board
NTF	National Trust of Fiji
PAC	Protected Area Committee
PoWPA	Programme of Work on Protected Areas
SOPAC	Pacific Islands Applied Geoscience Commission
TFRO	Traditional Fishing Rights Owner
UNDP	United Nations Development Programme
USP	University of the South Pacific
WANI	Water and Nature Initiative
WCS	Wildlife Conservation Society
WDCS	Whale and Dolphin Conservation Society
WDPA	World Database on Protected Areas
WIO	Wetlands International-Oceania
YMST	Yaubula Management Support Team

Table of Contents

Introduction

The Fiji national Protected Area Committee (PAC) was established in 2008 under section 8(2) of Fiji's *Environment Management Act 2005* as a technical advisory arm to the National Environmental Council (NEC). The PAC is chaired by the National Trust of Fiji and includes representatives from: Department of Environment; Ministry of Fisheries and Forests (MoFF); Department of Heritage, Culture and Arts; the Native Land Trust Board; NGOs; academia; and the private sector. The main goal of the PAC is to advance Fiji's commitments under the Convention on Biological Diversity (CBD), as ratified by the Fiji Government in 2001. The specific functions of the PAC are to: (1) advise the NEC on protected area policies and priorities; (2) support the establishment of an adequate and representative national protected area system; (3) facilitate consensus on national priority areas for conservation; (4) identify gaps in the existing protected area system; (5) identify actions for the establishment and effective management of protected areas; (6) source options for sustainable financing of protected area management; and (7) facilitate the exchange of information and data among stakeholders.[1] Here we report on the progress of functions (4) and (5) of the PAC.

To date, the PAC has been funded by an early action grant by the Global Environment Facility (GEF), implemented through the United Nations Development Programme (UNDP), to carry out actions under the *Programme of Work on Protected Areas* (PoWPA) through the Convetion on Biological Diversity (CBD). The PoWPA was drafted at the 7th Conference of Parties of the CBD, held in Kuala Lumpur, Malaysia, in February 2004. Under the PoWPA, the CBD encourages signatories to carry out a gap analysis to determine whether current systems of protected areas are adequate to protect all important national biodiversity. The basic concept of a gap analysis involves comparing the current distribution of biodiversity with the distribution of established protected areas, typically within a geographic information system (GIS), to determine the degree to which species and ecosystems are under- or over-represented (Dudley and Parish 2006). Throughout 2009 and much of 2010, terrestrial and marine working groups within the PAC: (1) set terrestrial, freshwater and marine biodiversity targets; (2) collated existing and new data on species and habitats; (3) identified current protected area boundaries; and (4) determined how much of Fiji's biodiversity is currently protected (*representation gaps*; Steps 1-4 in Figure 1). In Part I of this report we summarize the results of the marine and terrestrial gap analyses.

Between 20-21 September 2010, the PAC hosted a workshop for provincial administrators from Fiji's 14 provinces in Nadave, Fiji, to present the outputs of the terrestrial and marine gap analyses. During the workshop, invited speakers from the PAC and supporting organizations (including BirdLife International, Conservation International (CI), Fiji Locally Managed Marine Area Network (FLMMA), James Cook University, National Trust of Fiji (NTF), Wetlands International-Oceania (WI-O), Wildlife Conservation Society (WCS), WWF) gave presentations on the evolution of Fiji's current protected area networks and important processes for identifying national priorities for additional conservation and management (see Appendix A for full agenda). The provincial administrators then worked with workshop participants (see

[1] From *Protected Area Committee Annual Report 2009* to the National Environment Council

Appendix B) to identify candidate sites for protection and management within each province which could simultaneously satisfy national and provincial biodiversity conservation and resource management objectives. In Part II of this report we detail the outcomes of the workshop, including candidate sites identified for future management and strategies for implementation within each province.

PART I. IDENTIFY GAPS IN EXISTING PROTECTED AREA SYSTEM

Evolution of Fiji's Protected Area System

Most protected area networks are generally initiated in a fairly ad hoc manner, with reserves that are often located in places that do not contribute to the full representation of biodiversity targets (Margules and Pressey 2000). Fiji is no exception. The 2007 Fiji National Biodiversity Strategy and Action Plan (FNBSAP) acknowledges that:

"*Fiji has a rudimentary system of protected areas, however, none of the areas have been selected on the basis of ecological knowledge or biodiversity values. Nonetheless, these sites in combination with other priority sites which have been identified for their biodiversity values, have the potential to provide the basis of a representative system of protected areas. The intention is for the representative system of protected areas to be augmented by a large number and variety of protected areas which are important at the provincial or local level." (DoE 2007)*

A preliminary register of terrestrial, wetland and marine sites of national significance was developed in concert with the Fiji National Environment Strategy (Appendix C; GOF 1993). Though the list has been used to evaluate proposed development projects and has the advantage of integrating biodiversity and national heritage, most of the sites have never been formalized for protection or management. Two major objectives from the FNBSAP 2007 were therefore to: (1) establish a comprehensive and representative core protected area system; and (2) institutionalise the sites of national significance programme, embedded within the core protected area system. FNBSAP priorities for protected area locations are listed in Table 1.

While national priorities for protection and management were being documented through the National Environment Strategy and the FNBSAP, community-based initiatives simultaneously emerged across Fiji to conserve and manage marine resources. For example, in the early 1990s, residents of villages such as Ucunivanua in Verata, Tailevu and Waisomo in Ono, Kadavu, began re-implementing customary bans on harvesting to stem perceived declines in resources within their *qoliqoli* (fisheries management areas; Veitayaki et al. 2003). By 2001, these local practitioners, together with government and non-government partner organizations, had organized themselves within the Fiji Locally Managed Marine Area (FLMMA) network to share knowledge and lessons to achieve three common goals: (1) implement more effective projects; (2) systematically identify under what conditions a strategy is successful; and (3) improve the capacity for adaptive management by practitioners (Parks and Salafsky 2001). FLMMA's mission

is to "promote and encourage the preservation, protection and sustainable use of marine resources in Fiji by the owners of marine resources"[2] and to support the Fiji Government commitment at the Barbados Plan of Action in Mauritius in 2005 to effectively manage and finance at least 30% of Fiji's inshore marine areas (Jupiter et al. 2010). LMMAs have grown rapidly in number from one site in 1997 to approximately 150 LMMAs in 2009, with at least 216 *tabu* areas (traditionally managed closures; Mills et al. in review). The FLMMA experience has been mainstreamed through its strong recognition by Fiji Government, including the Departments of Environment and Fisheries, as the optimal forum for practitioners, researchers and government officials to learn how community-based marine conservation can be implemented (Veitayaki et al. 2003).

Table 1. Priority localities for terrestrial, marine and mangrove protected areas contained in Fiji's NBSAP (DoE 2007)

#	ISLAND	LOCATION
Terrestrial		
1	Viti Levu	Tomainiivi National Park
2	Viti Levu	Sovi Basin
3	Viti Levu	Monosavu-Nadrau Plateau
4	Viti Levu	Koroyanitu
5	Vanua Levu	Tunuloa Silktail Reserve
6	Vanua Levu	Vunivia
7	Vanua Levu	Waisali
8	Taveuni	Taveuni Conservation Area (incl. Taveuni Forest Reserve, Ravilevu Nature Reserve and Bouma-Lavena Forest Park)
Marine		
9	Kadavu	Great Astrolabe Reef
10	Nadi Bay	Tai, Levuka, Vomo, Vomo Sewa islands - fringing and offshore reef areas
11	Namenalala	Fringing and barrier reefs
12	Yadua Taba	Fringing reef and surrounding waters
13	Lau Group	TBD
Mangrove		
14	Ba Delta	Nawaqarua - Natutu
15	Rewa Delta	Muanicake - Nasoata River
16	Labasa Delta	Labasa River; Labasa Delta Mouth

Gap Analysis Results

For management and planning purposes, distributions of species, species assemblages and habitat types are often used as surrogates to represent total biodiversity (Margules and Pressey 2000). For Fiji, where comprehensive distribution data is not available for most species or

[2] Presentation by M. Tabunakawai, on behalf of FLMMA members, at the PAC Provincial Planning Meeting, 20-21 Sep 2010

species assemblages, habitats represent a good proxy and there is reasonable spatial information on a number of different terrestrial and marine habitat types.

Terrestrial

The terrestrial working group for the PAC is composed of representatives from the University of the South Pacific (USP) Herbarium, Conservation International (CI), National Trust of Fiji (NTF), BirdLife International and NatureFiji/Mareqeti Viti. In setting the terrestrial habitat targets for Fiji, the working group chose to follow the recognised principle vegetation types for Fiji proposed by (Mueller-Dombois and Fosberg 1998). These include: lowland rainforest; upland rainforest; cloud/montane forest; dry forest; talasiga vegetation; freshwater wetland vegetation (e.g. peat and sago swamp); mangrove forest and scrub; coastal strand vegetation (including coastal littoral forests); and smaller island vegetation (Mueller-Dombois and Fosberg 1998). The list was later modified to include karst forests on uplifted limestone (Table 2). Mangroves were considered in the marine gap analysis. The working group arrived at the percentage targets for protection and management through consensus among members. The 100% protection targets for remaining upland rainforest, cloud/montane forest, dry forest, freshwater wetland vegetation, and coastal strand vegetation reflects their current rarity due to anthropogenic habitat modification.

Table 2. Principle vegetation types of Fiji (modified from Mueller-Dombois and Fosberg 1998) with habitat targets and definitions.

Vegetation Type	Target	Definition
Lowland rainforest	60% managed; 40% protected	Forest on land greater than 2 m and less than or equal to 600 m elevation
Upland rainforest	100% of remaining	Forest on land greater than 600 m and less than or equal to 850 m elevation
Cloud/montane rainforest	100% of remaining	Forest on land greater than 850 m elevation
Dry forest	100% of remaining	Mesic forest of the *Dacrydium-Fagraea* type
Talasiga vegetation	0% protected; % for restoration TBD	Fire modified and degraded forest to be targeted for restoration with teak and fuel wood
Freshwater wetland vegetation	100% remaining	*Pandanus* and sedges on peats and gley soils
Mangrove forest and scrub	100% managed; 30% protected	Mangroves and mangrove associates found in four environmental settings classified by Woodroffe (1987)
Coastal strand vegetation	100% remaining	Herb, shrub, tree zonation affected by natural physical disturbance from surf
Smaller island vegetation	60% managed; 40% protected	
Karst vegetation	N/A	Forest associated with uplifted limestone islands

Table 3. Identified gaps in protection of Fiji's vegetation types under existing terrestrial protected area network and potential for filling gaps through reservation of new terrestrial protected areas in Nadi Basin, Nakauvadra range, Nakorotubu range, and Natewa peninsula.

Vegetation type	% Target	% Currently Protected	% with Proposed Conservation Forests
Lowland rainforest	40.0	3.7	39.6
Upland rainforest	100.0	13.2	65.8
Cloud/montane forest	100.0	19.2	82.7
Dry forest	100.0	0.0	29.7
Freshwater wetland	100.0	8.9	19.9
Coastal strand vegetation	100.0	N/A	N/A
Smaller island vegetation	40.0	N/A	N/A
Karst vegetation	N/A	0.0	8.8

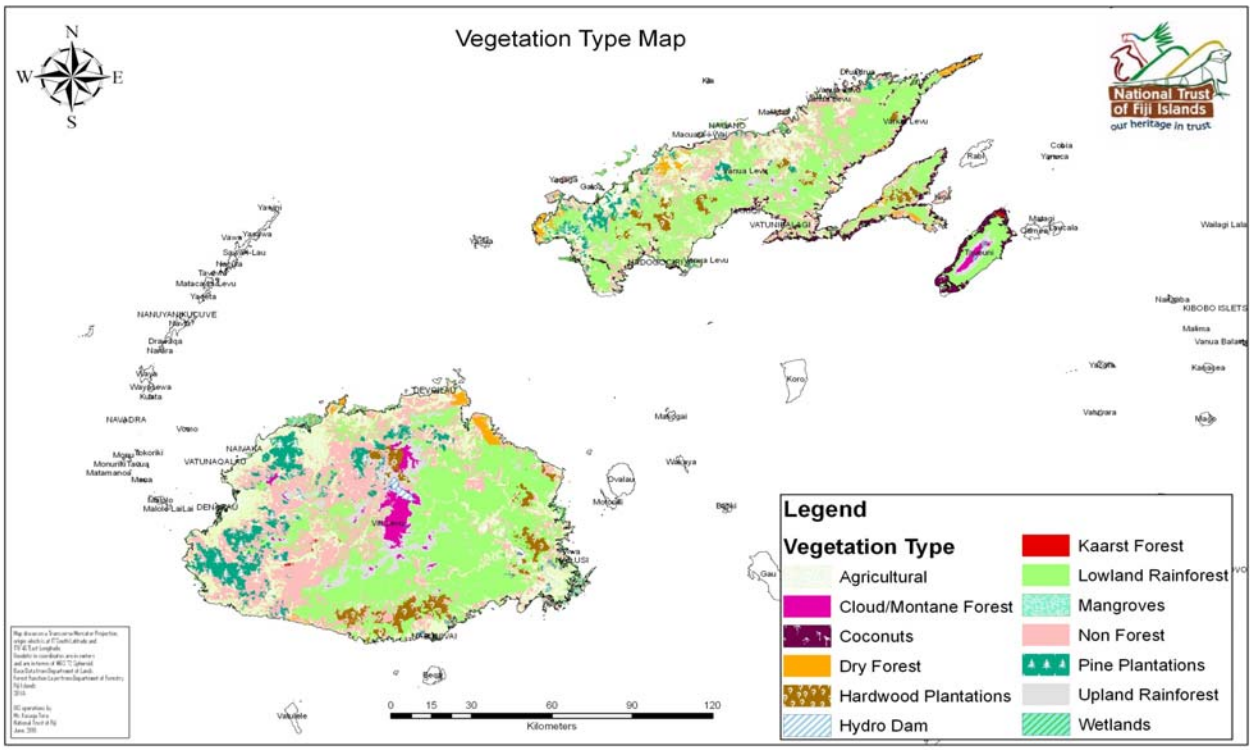


Figure 1. Vegetation type map for the main Fiji islands based on the modified classification of Mueller-Dombois and Fosberg (1998)

When the current boundaries of existing protected areas were overlaid with the vegetation type map of Fiji's main islands (Figure 1), nearly all habitat types were found to be underrepresented. The most significant gaps in protection were found in dry forests, freshwater wetlands and upland rainforests (Table 3). These gaps could be partially filled if the priority forest areas proposed by the working group (Figure 2)[3] are adopted as protected areas

[3] These forest areas are numbers 2, 7, 9 and 14 listed in Appendix E and were prioritized by the terrestrial working group of the PAC.

(Table 3), however considerably more protection and management will be required to meet national targets. Additionally, it is likely that there are significant gap in coverage of habitat types for which digital data on distribution are currently unavailable (e.g. coastal strand vegetation, smaller island vegetation).

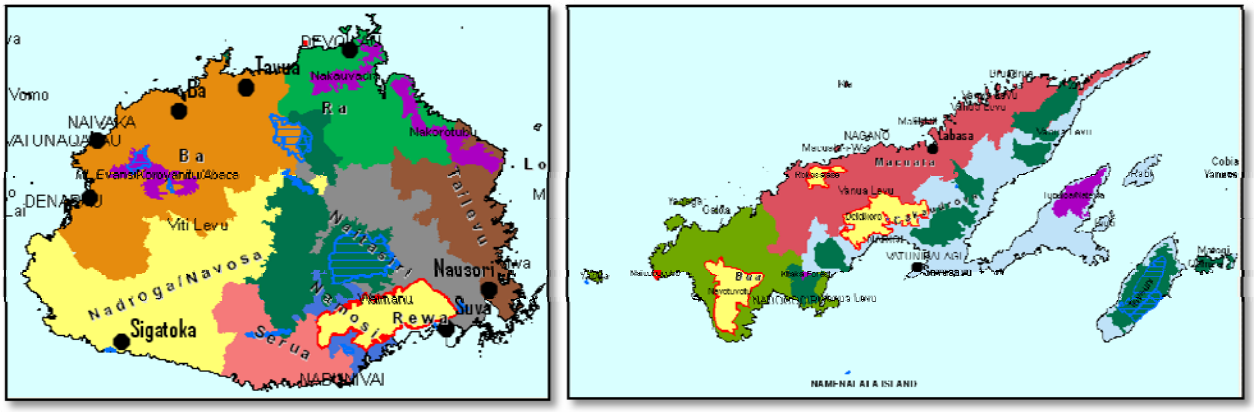


Figure 2. Maps of Viti Levu (LEFT) and Vanua Levu/Taveuni (RIGHT) indicating existing terrestrial protected areas (blue diagonal lines), proposed priority forest areas where steps have been taken to initiate management but lacking formal protection (purple), high priority areas without any management (yellow with red border), and key biodiversity areas (dark green).

Marine

The core members of the marine working group includes representatives from the Wildlife Conservation Society (WCS), Department of Fisheries, WWF South Pacific Programme, Wetlands International-Oceania (WIO) and USP, all of which are FLMMA partners. In addition, the group has received contributions from marine experts from SOPAC, BirdLife International, Whale and Dolphin Conservation Society (WDCS) and private sector groups (i.e. Beqa Adventure Divers, Marine Ecology Consulting; (Jupiter et al. 2010). In June 2009, WCS facilitated a workshop to identify key marine species and surrogate habitat targets. These targets were later refined based on data availability and a follow-up workshop in March 2010 (Table 4; Jupiter et al. 2010).

To assess achievement towards the conservation targets set at the March 2010 workshop, the marine working group collaborated with researchers at James Cook University and collated information on the distribution of ecosystems, management strategies, and the ecological effectiveness of each strategy for different species groups. The management strategies for which national-scale spatial data were available included: permanent closures; conditional closures with controlled harvesting; conditional closures with uncontrolled harvesting; and other management within the broader LMMA (see Table 5 for definitions). This information was then used to assess the achievement of national marine conservation targets in Fiji under the assumption that different management strategies vary in their effectiveness for species and ecosystem conservation (Mills et al. in review). To our knowledge, this is the first time that the relative ecological effectiveness of different management strategies has been considered in a national-scale gap analysis.

Table 4. Surrogate habitat targets for marine biodiversity conservation in Fiji (adapted from Mills et al. in review)

Habitat	Main Species	% Target	Data Source
Intertidal mudflats	Shorebirds, invertebrates	30% (with 100% of mudflats known to be important to waders in 2009)	Fiji Department of Lands, digitized from aerial photographs captured in 1986 and validated in 1995
Mangroves	Fish, invertebrates, seabirds, bats, mangroves	30%	Fiji Department of Forestry, digitized from 2001 Landsat ETM+ data
Fringing reef	Coral, invertebrates, fish	30%	Fiji Department of Lands, exposed and submerged reefs digitized from aerial photographs captured in 1994 and 1996. Reefs that had sections less than 100m from the coastline were classified as fringing, all others were non-fringing
Non-fringing reef	Coral, invertebrates, fish	30% (with 100% of reef channels known to support spawning aggregations)	As above
Other benthos < 30 m	Invertebrates, fish, seagrass, turtles	10% (with 100% of highest quality turtle feeding ground known from 2009)	General Bathymetric Chart of the Oceans
Permanent sandy cays, beaches and coastal littoral forests	Turtles, seabirds	50% (with 100% of priority seabird and turtle nesting sites known from 2009)	N/A

Empirical data on the ecological effectiveness of different marine management strategies in Fiji are unavailable and consequently expert advice was considered the best source of information until field data are collected. Twelve experts were consulted, including members of the Institute of Applied Science (USP), International Union for Conservation of Nature (IUCN), Department of Fisheries, Department of Environment, WIO, WCS, and National Trust of Fiji. All had significant experience with local resource management and had expertise on local fauna and/or flora. Participants scored the effectiveness of the different management actions. Scores were between 0 to 1. A score of 1 represented the maximum level of protection from fishing and associated damage (e.g. one would expect local fish populations to return to non-exploited levels if the population has not fallen below critical thresholds) and 0 represented no benefit from management. No-take closures, all given a value of 1, were assumed to be fully ecologically effective although it was recognized that they may in fact have varying management effectiveness (e.g. compliance with rules, enforcement capacity). Additional details on methods used for scoring and the effectiveness weightings for all species groups across all target habitats can be found in Mills et al (in review).

Table 5. Definitions of marine management strategies in use in Fiji for which national spatial data are currently available.

Management strategy	*Definition*
Locally Managed Marine Area (LMMA)	A spatial area of inshore waters within qoliqoli boundaries governed by local community members and involving a collective understanding of, and commitment to, a management intervention in response to threats to marine resources
Permanent closure	A closed area where extractive use of resources is prohibited and the management plan specifies (or a collective decision at the community level determines) that it will remain permanently closed
Conditional closures with controlled harvesting	A closed area where extractive use of resources is permitted periodically (once per year or less) and where the management plan specifies (or a collective decision at the community level determines) dates and periods for which it will be opened for extractive use and/or the amount and kind of resources that can be taken
Conditional closures with uncontrolled harvesting	A closed area where extractive use of resources is permitted periodically and where the duration of opening for extractive use or total catch allowed during opening have not been decided upon collectively at the community level and are not specified in the management plan
Other management	The suite of management actions, such as bans on fishing gear, species bans and seasonal prohibitions, operating within the boundaries of an LMMA outside of any closures

While national targets for other benthic habitat were achieved at all depths across all habitats, the gap analysis results indicated that Fiji will require approximately an additional 10-20% effective coverage across fringing reefs, non fringing reefs, mangroves and intertidal habitats (Table 6). This can be accomplished through implementing the range of different management strategies across the remaining unprotected inshore marine areas in Fiji. For example, to meet the national target of 30% effective coverage of fringing reefs would require the addition of 402 km^2 of permanent closures, 574 km^2 of conditional closures with controlled harvesting or 2,010 km^2 of other management. Given that there is only 867 km^2 of unmanaged fringing reef in Fiji, it will be necessary to think about establishing larger and more numerous permanent closures and conditional closures with controlled harvesting. We do not recommend conditional closures with uncontrolled harvesting as fishing efforts tend to focus in these areas when opened, leading to unsustainable yields.

Table 6. Percent cover of each target habitat by current marine management strategies. The range indicates the range calculated using the differential effectiveness weightings for the main species groups found in each habitat (species groups are listed next to habitat name). The total represents the range of the minimum to maximum percent covered by all management strategies of each habitat. (adapted from Mills et al. in review)

	Permanent closures	Controlled conditional closures	Uncontrolled conditional closures	Other management	Total
Fringing Reef *(corals; targeted invertebrates; non-targeted invertebrates; targeted fish; non-targeted fish; coralline algae)*					
Range	*0.6*	*1.8-2.3*	*0.3-1.5*	*7.9-17.8*	*10.5-22.2*
Non fringing reef *(corals; targeted invertebrates; non-targeted invertebrates; targeted fish; non-targeted fish; coralline algae)*					
Range	*1.2*	*1.7-2.1*	*0.0-0.3*	*7.1-15.9*	*9.9-19.4*
Mangrove *(targeted invertebrates; non-targeted invertebrates; targeted fish; non-targeted fish; mangroves; seabirds; bats)*					
Range	*1.6*	*1.8-3.4*	*0.0*	*6.7-22.4*	*10.1-27.5*
Intertidal *(targeted invertebrates; non-targeted invertebrates; targeted fish; non-targeted fish; mangroves; seabirds)*					
Range	*0.1*	*2.1-2.9*	*0.0*	*7.2-16.3*	*9.5-19.2*
Other benthic substrate (0-5m) *(targeted invertebrates; non-targeted invertebrates; targeted*					
Range	*0.3*	*0.5-0.6*	*0.4-1.0*	*11.4-25.6*	*12.5--27.5*
Other benthic substrate (5-10m) *(targeted invertebrates; non-targeted invertebrates; targeted*					
Range	*0.0*	*1.3-1.7*	*0.9-2.3*	*19.1-42.9*	*21.2-46.8*
Other benthic substrate (10-20m) *(targeted invertebrates; non-targeted invertebrates; targeted fish)*					
Range	*0.0*	*0.4-0.5*	*0.3-0.7*	*11.0-24.7*	*11.6-25.9*
Other benthic substrate (20-30m) *(targeted invertebrates; non-targeted invertebrates; targeted fish)*					
Range	*0.1*	*0.2-0.3*	*0.1-0.3*	*12.9-28.9*	*13.3-29.7*

National Priorities to Fill the Gaps

For many years prior to the establishment of the national Protected Area Committee, different groups within Fiji have undertaken a variety of different processes to identify habitats and species of national significance that should be prioritised for conservation and management. The processes and output priorities are described below for: endemic species; important bird areas; priority forest areas; priority wetland and mangrove areas; priority habitat connectivity areas; and Fiji Island marine ecoregions.

Endemic Species

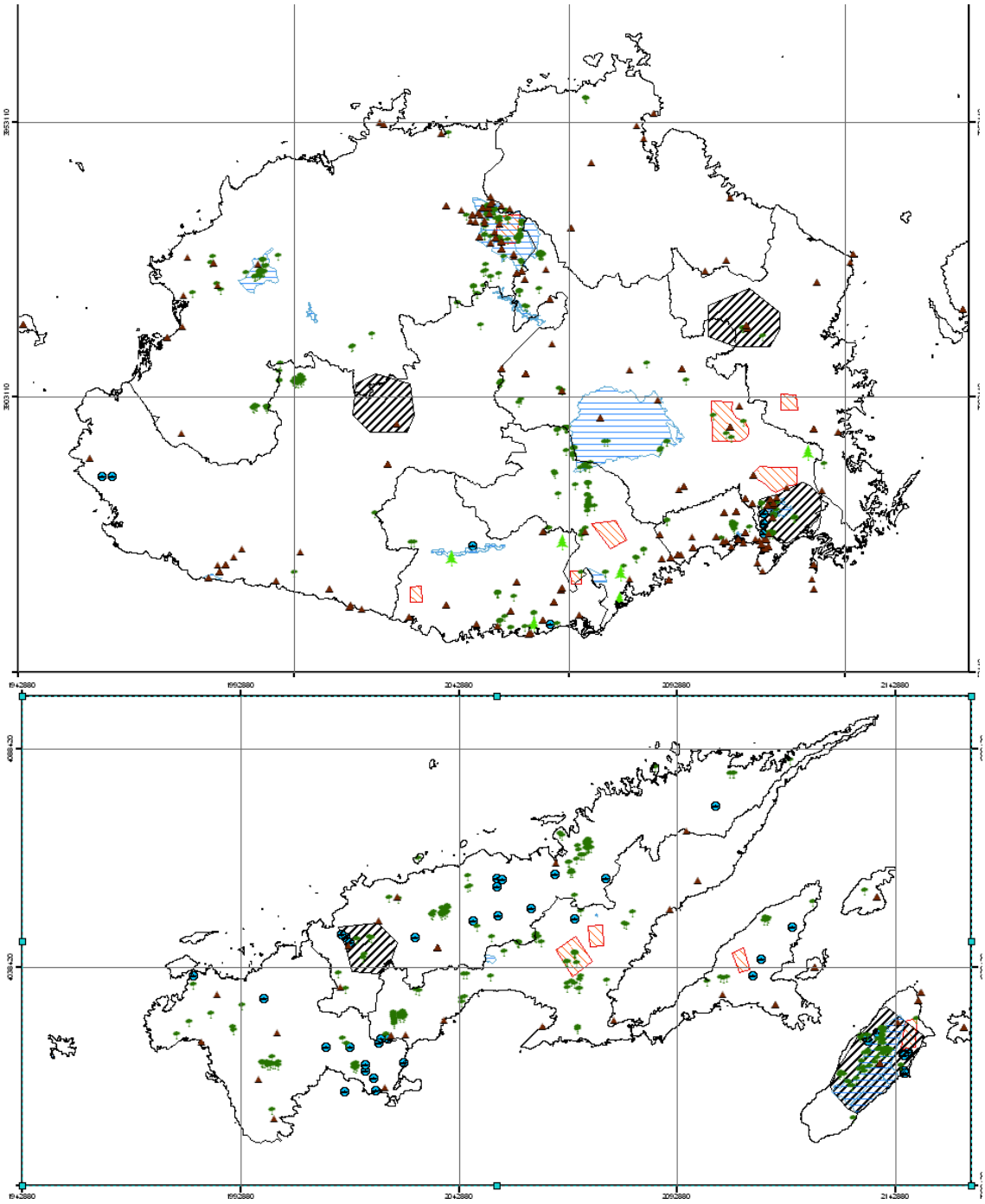


Figure 3. Maps of known locations of endemic trees (tree icon), sago palms (palm icon) freshwater fish (blue circle) and snails (brown triangle). Priority sites for bats (black hash), endemic palms (red hash) are also indicated, along with current protected area boundaries (blue hash) on Viti Levu (TOP) and Vanua Levu/Taveuni (BOTTOM).

The PAC has compiled lists of known localities where endemic plants and snails (Figure 3) and marine and estuarine fish (Figure 4) have been confirmed. Of the endemic plants, 29% are covered within existing terrestrial protected areas, with an additional 27% of localities covered by the proposed conservation forests. Participants at the June 2009 marine working group workshop emphasized that 100% of localities where marine and estuarine fish endemics are known to occur should be included in the national marine protected area network, through LMMAs or other types of more top-down management (Jupiter et al. 2010).

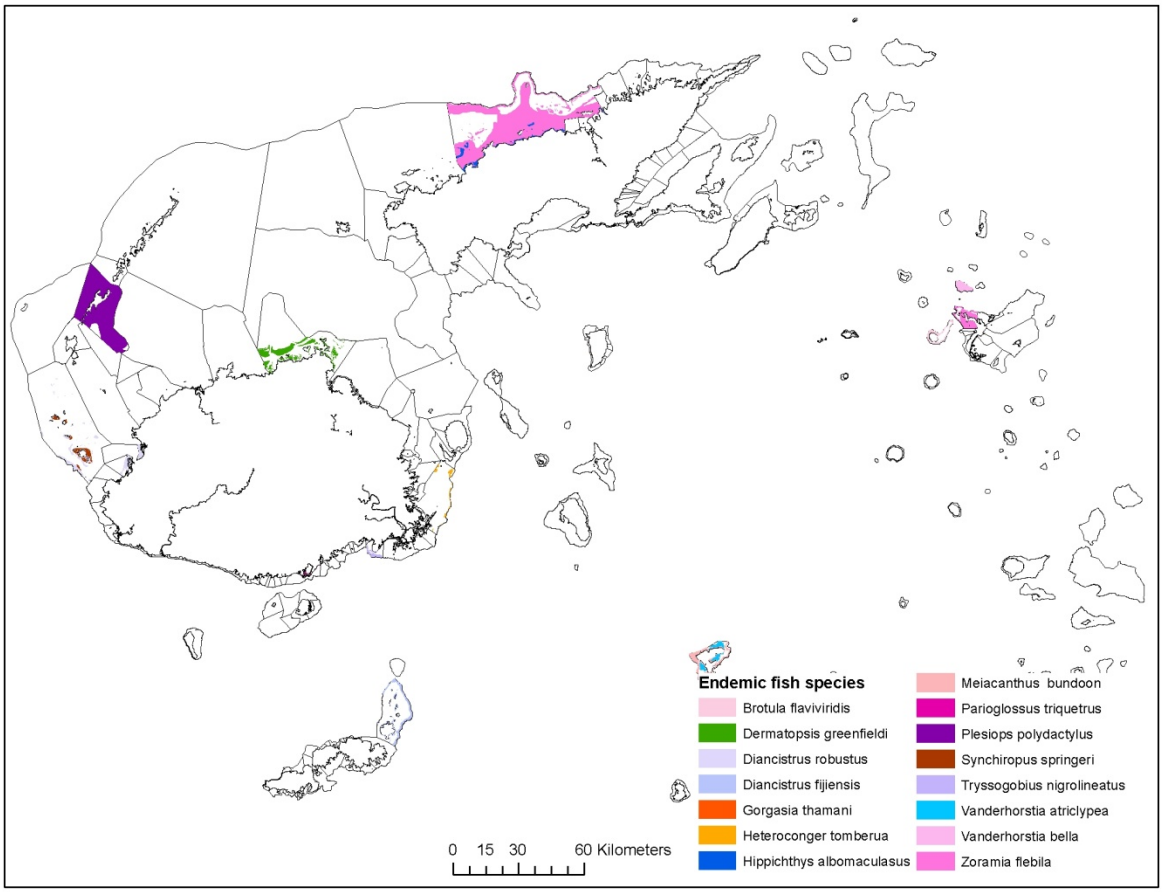


Figure 4. Known records of marine and estuarine endemic fish collections across Fiji (Figure from (Jupiter et al. 2010).

Important Bird Areas

There is little information on the overall biodiversity distribution in Fiji, or health of the different habitat types. Birds, however, serve as important biological indicators of the overall health and biodiversity of forests, as they are: (1) reliant on good forest condition for feeding and breeding grounds; (2) distributed across the world in patterns reflecting biodiversity of other significantly threatened and rarer taxa; and (3) easily surveyed by experts and community members alike (Masibalavu and Dutson 2006). BirdLife International has used established

international criteria (Table 7) to identify a total of 14 important bird areas (IBAs) and 5 additional proposed IBAs for Fiji (Figure 5; Appendix D).

Table 7. Internationally recognized IBA categories and criteria (modified from Masibalavu and Dutson 2006)

Category	Criterion	Notes
A1. Globally threatened species	Site is known or thought to hold significant numbers of globally threatened species[4]	Site qualifies if known (or thought) to support a bird species categorised as Critically Endangered, Endangered or Vulnerable. Can qualify based on Near Threatened or Data Deficient status if these are not adequately represented elsewhere
A2. Restricted-range species	Site is known or thought to hold a significant component of the restricted-range bird species comprising the Fiji or Rotuma Endemic Bird areas[5]	Site qualifies if it forms one of a set selected to ensure that all restricted-range bird species are present in significant numbers in at least 3 sites. Any site holding >5% of the population of any restricted-range species or greatly adding to its geographic spread is more likely to qualify
A3. Biome-restricted assemblages	Site is known or thought to hold a significant component of the group of bird species whose distributions are largely or wholly confined to one biome	Not applicable to Fiji
A4. Congregations	(i) The site is known or thought to hold: ≥1% of a biogeographic population of a congregatory waterbird species on a regular basis *Or*	Applies to waterbird species as defined by Wetlands International for the Ramsar Convention and listed in the book *Waterbird Population Estimates*
	(ii) ≥1% of the global population of a congregatory seabird [or terrestrial species] on a regular basis *Or*	This applies to those seabird species not covered in *Waterbird Population Estimates*
	(iii) a total of ≥20,000 waterbirds or ≥10,000 pairs of seabirds on a regular basis *Or*	This is based upon one of the criteria used to identify wetlands of international importance under the Ramsar Convention
	(iv) threshold numbers set for migratory species at bottleneck sites	Not applicable to Fiji

[4] In Fiji, 17 bird species meet the IUCN Red List criteria (Masibalavu and Dutson 2006)

[5] There are 4 restricted-range species in Rotuma and an additional 24 in the rest of Fiji (Presentation by M. O'Brien, on behalf of BirdLife International, at the PAC Provincial Planning Meeting, 20-21 Sep 2010

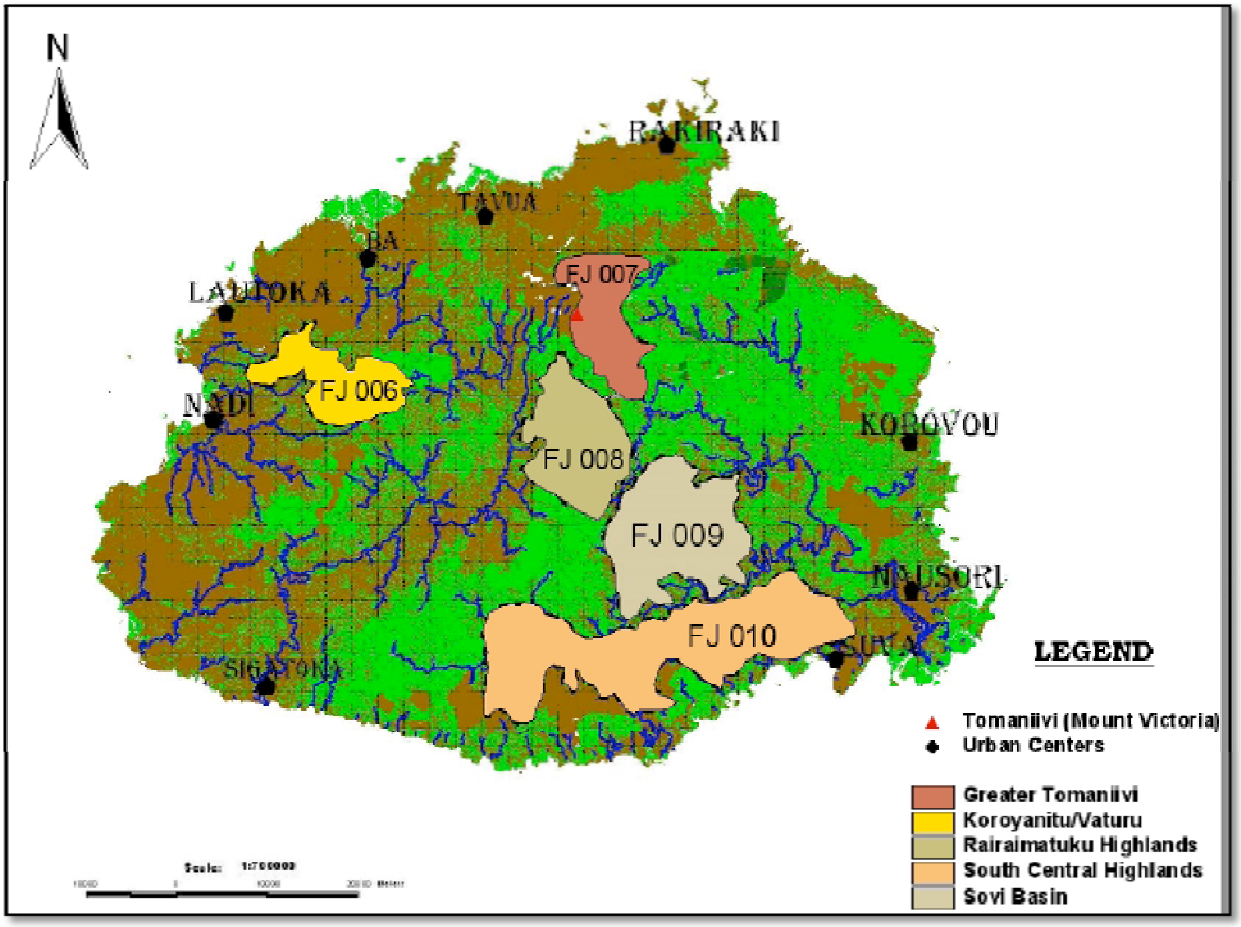


Figure 5. Example of IBAs on Viti Levu overlaid on Fiji Forest Cover map 1994. (See Appendix D for complete list)

Important congregation areas occur for: the black noddy on Vatu-i-Ra and Vetauua Islands and Mabualau and Saqata Rocks; the red footed booby on Namenalala and Quelelevu islands; and for the brown booby and the lesser frigatebird at Nukubasaga and Nukupureti. It is important to note that the while the current IBAs were designed to meet global criteria, there may be additional bird sites in Fiji that could be considered important at the national or provincial level.

Priority Forest Areas

In addition to IBAs, another process of designating important forest areas from Fiji relied on the principles associated with assigning key biodiversity areas (KBAs). KBAs are identified by addressing species' vulnerability and site irreplaceability (Margules and Pressey 2000). As described in the IUCN guidelines for establishing KBAs, a site meets the vulnerability criterion for a KBA if it holds globally significant numbers of at least one globally threatened species on the IUCN Red List. A site fits the irreplaceability category if it houses a globally significant proportion of a species' population at some stage in that particular species' lifecycle (Table 8; Langhammer et al. 2007).

A few concerns about the national application of the KBA and IBA approaches were highlighted by Knight et al. (2007), who noted that they: (1) are overly prescriptive in identifying important conservation features; (2) are therefore inflexible in identifying important buffers and corridors for connectivity; (3) ignore local opportunities and socioeconomic constraints; and (4) fail to involve input from local experts and local implementation agencies in the assessment process. Olson et al. (2009) sought to address these shortcomings by taking a four-phased approach to identifying a comprehensive network of 40 priority forests for Fiji (Appendix E). They considered: (1) information used in the preparation of the FNBSAP, such as existing protected areas, priority areas, natural forest cover and watershed; (2) studies published subsequent to the preparation of the FNBSAP; (3) a set of decision rules built around the IBA/KBA concepts; and (4) priority areas not identified in previous analyses (Olson et al. 2009). Importantly, Olson et al. (2009) note that the exact boundaries should be flexible based on considerable negotiation with multiple stakeholders.

Table 8. Summary of global KBA criteria and thresholds (reproduced from Langhammer et al. 2007)

Criterion	Sub-criteria	Provisional thresholds for triggering KBA status
Vulnerability Regular occurrence of a globally threatened species (IUCN Red Listed) at the site	N/A	Critically Endangered and Endangered species - presence of a single individual Vulnerable species - 30 individuals or 10 pairs
Irreplaceability	a) Restricted-range species	Species with a global range less than 50,000 km^2 5% of global population at site
	b) Species with large but clumped distributions	5% of global population at site
	c) Globally significant congregations	1% of global population at site
	d) Globally significant source populations	Site is responsible for maintaining 1% of global population
	e) Bioregionally restricted assemblages	To be defined

Priority Wetland and Mangrove Areas

Wetlands, and mangroves in particular, provide essential ecosystem services in terms of water regulation, nutrient filtering, sediment storage, fisheries production, shoreline protection and carbon sequestration. The Government of Fiji, as a condition of becoming a signatory to the Ramsar Convention, endorsed the Upper Navua Conservation Area as its first wetland of international importance in 2003. Fiji has further established a Fiji Wetlands Working Group (now the Wetlands Steering Committee) that since 1999 has been working on identifying by consensus and documenting the 48 wetlands sites of national and international significance

into the Fiji Wetlands Information Database housed with the Department of Environment (Appendix F). The list has been included in an updated Fiji Country Chapter for *A Directory of Wetlands in Oceania* (Scott 1993). Some notable sites on the list include: Vaturu Dam as a water source for Nadi; the Rewa, Ba and Labasa deltas which contain 1/3 of Fiji's mangroves; Fiji's largest peat swamp at Bonatoa near Nausori; and Lake Tagimaucia, Fiji's largest freshwater lake. Mangrove management plans for the mangroves of the Rewa, Ba and Labasa deltas (Phase I) and the mangroves of Nadi Bay and Suva-Navua corridor (Phase II) was prepared by Watling (1985), however the specified management actions have not been implemented to date. It is hoped that a revised national-scale management rules and zonation schemes will be outlined in a forthcoming National Coastal Plan for Fiji, whose framework is currently being prepared under the Department of Environment with consultation of the Integrated Coastal Management Committee, a second technical advisory committee to the NEC established under section 8(2) of the *Environment Management Act 2005*.

Priority Habitat Connectivity Areas

Fiji's high islands exhibit particularly strong connectivity between watershed habitats, with more than 98% of Fiji's freshwater ichthyofauna making contact with the sea at some stage in their life cycles (Jenkins et al. 2010). Given the high degree of cross-habitat migration, these animals are highly susceptible to human disturbance to hydrologic networks, both through flow interruptions and habitat destruction. The loss of invertebrates and fish have strong socioeconomic implications as several sensitive species are major sources of food and income for inland communities, so it important to protect areas where this connectivity remains undisturbed by human activity. Jenkins et al. (2010) used a set of decision rules that considered habitat intactness and complexity, hydrology and sensitivity to erosion to identify regions of Viti Levu, Vanua Levu and Taveuni with high potential for habitat connectivity between terrestrial, freshwater and marine systems. Mapped watersheds were merged with qoliqoli to create 76 mapping units which were each scored for their relative erosion potential (from Atherton et al. 2005), road density, number of creek crossings, presence/absence of non-native freshwater fish, mangrove area relative to catchment size, mangrove habitat complexity, reef area relative to qoliqoli size, and reef habitat complexity.

The ten highest scoring mapping units for intact connectivity are shown in Figure 6. They include the remote, largely undeveloped regions in Cakadrove and Macuata provinces (Udu Point, Qelewara, Natewa) and Bua province (Kubulau, Wainunu, Dama), as well as the northern and eastern side of Taveuni. Two smaller mapping units of Viti Levu, Naikorokoro and Sawakasa, scored ninth and tenth respectively due to the low density of roads and creek crossing and reasonable, proportional amounts of mangroves and reefs. The mapping units with the lowers scores (zero or below) were largely situated around the highly agricultural centres of Nadi, Ba and Labasa, which each have high urban population density, considerable forest clearing for sugar cane, extensive unsealed road networks for agriculture and logging, and records of introduced fish species. The Yarawa and combined Kolovisilou-Nubulotulotu catchments on the central Coral Coast of south Viti Levu also had low scores owing to high catchment erosion potential, records of introduced fish and little area or complexity of

mangroves and coral reefs (Jenkins et al. 2010). We recommend active management in the low scoring areas, such as revegetation projects, particularly along waterways.

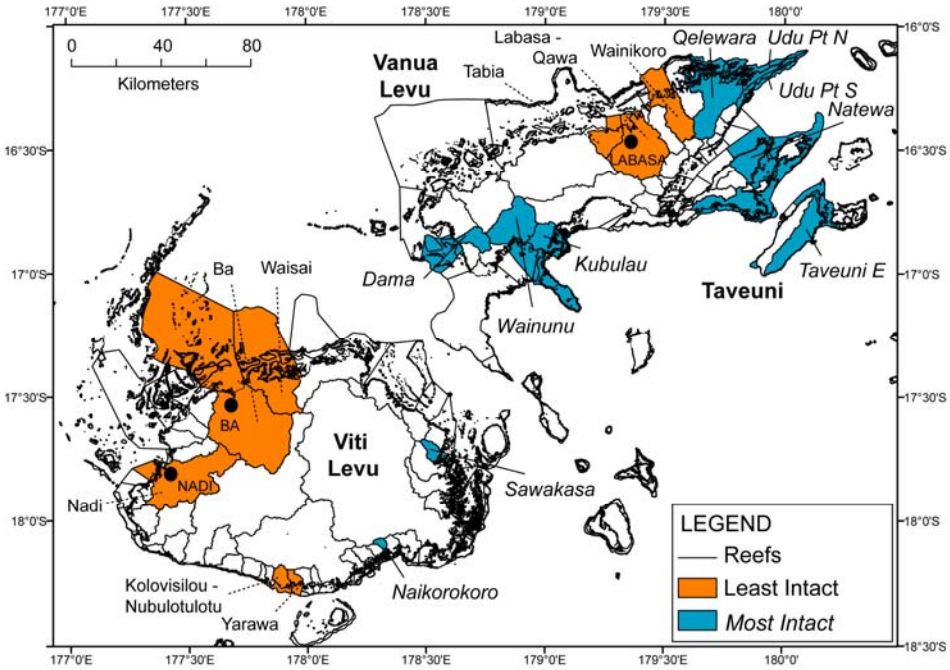


Figure 6. Mapping units (merged catchments with adjacent fishing grounds) that had the most intact (blue, solid line) and least intact (orange, dashed line) connectivity between terrestrial, freshwater, estuarine and marine areas on the main islands of Fiji. (adapted from Jenkins et al. 2010)

Fiji Islands Marine Ecoregion Areas

In 2003, over 80 stakeholders, including scientific experts, government officials, local community members and key marine resource user groups met at a workshop facilitated by WWF to identify marine ecoregions within Fiji's waters of global, national and local importance (WWF 2004). Based on biological, geological and cultural attributes, participants determined by consensus 35 priority conservation areas, of which 5 are globally important, 15 are nationally important, and 15 are sub-regionally important (Figure 7; Appendix G). The five areas of global importance included: the Great Sea Reef; Lomaiviti Triangle (including Vatu-i-Ra Passage, Ovalau, Makogai, and Wakaya); Namena Barrier Reef; Southern Lau; and Rotuma.

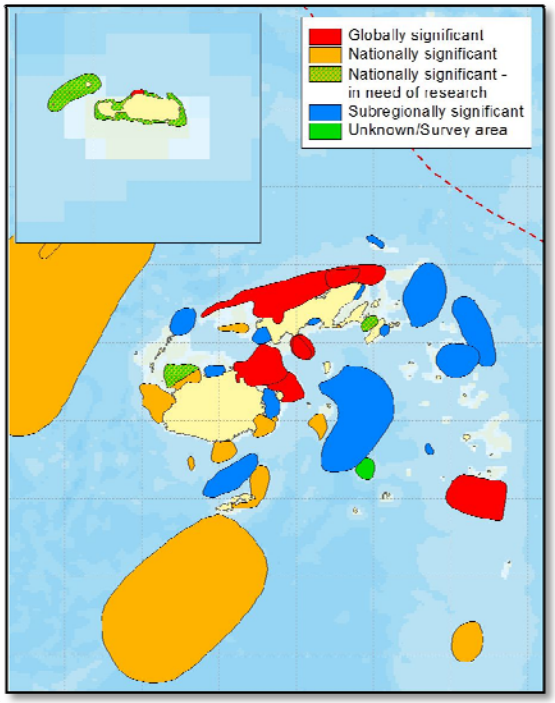
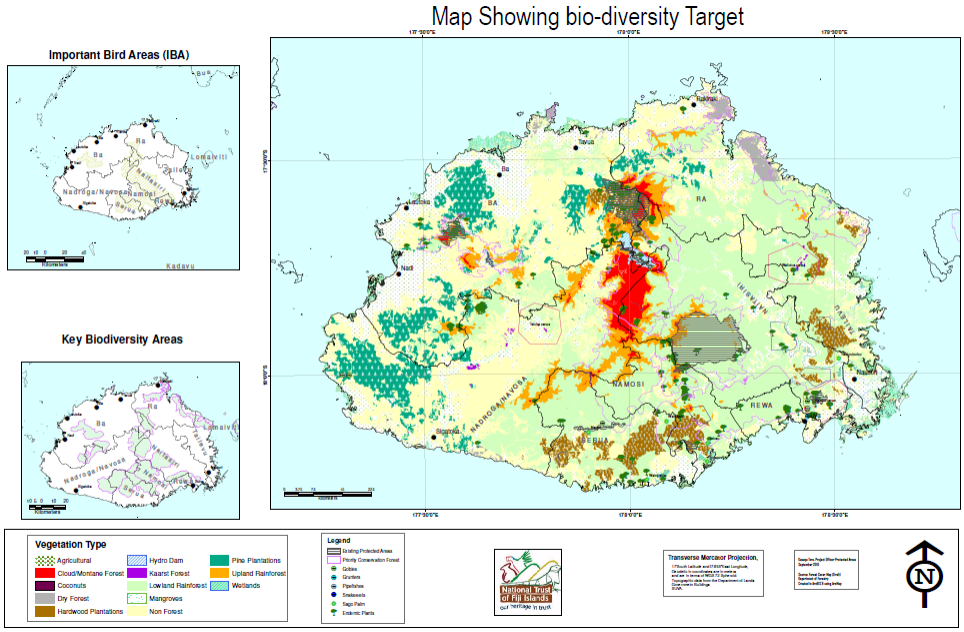


Figure 7. Outcome priorities from Fiji Islands Marine Ecoregion planning workshop

PART II. IDENTIFYING ACTIONS FOR THE ESTABLISHMENT AND EFFECTIVE MANAGEMENT OF PROTECTED AREAS

Preliminary Provincial Priorities and Candidate Sites

After the facilitators presented all of the national priorities to the provincial administrators, the participants split into working groups by province to identify potential areas for future management within their province. Each group received: a map of terrestrial habitats with existing protected areas demarcated (Figure 8a); a map of marine habitats with existing protected areas demarcated (Figure 8b); a map indicating gaps in protection for each of the marine habitats (Figure 8c); and a map of national priorities regions located in the province (Figure 8d).



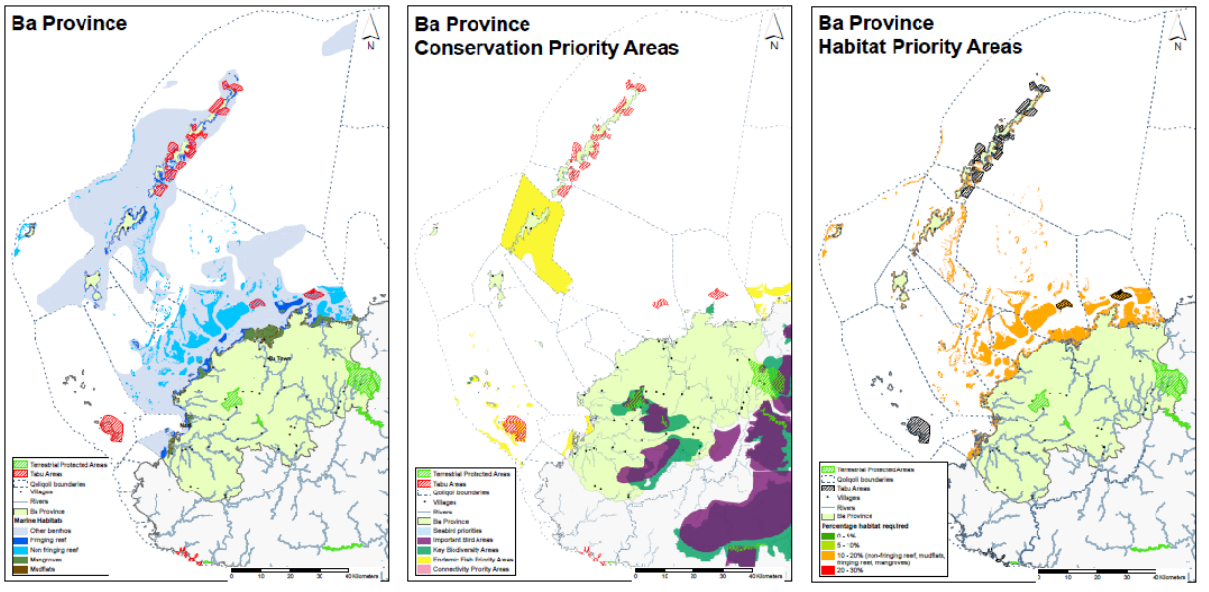


Figure 8. (a) Map of terrestrial habitats of Viti Levu and some conservation priorities, TOP (b) Ba Province marine habitats, BOTTOM LEFT, (c) Ba Province Conservation Priorities, BOTTOM MID, (d) Ba Province gaps to fill to reach marine targets, BOTTOM RIGHT.

Protected Area Categories

Prior to discussions to identify new candidate sites for protection and management, participants were informed of potential protected area categories. The broad definition of a protected area adopted by IUCN is:

" A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values" (Dudley 2008)

Many countries have used the updated IUCN categories for protected areas (Table 9) to assess the status of current protected areas to achieving national biodiversity targets, and the CBD recommends that networks should include a variety of the different types of protected areas (Dudley and Parish 2006). However, protected areas that are culturally appropriate for Fiji and the Pacific do not always neatly fit into any one of the six IUCN categories.

Table 9. Updated global IUCN categories for protected areas (after Dudley 2008)

IUCN Protected Area Categories	
Ia	Strict nature reserve with uses highly minimized to maintain conservation value
Ib	Wilderness area without permanent or significant human habitation managed to preserve natural condition
II	National park managed to preserve ecosystem processes and species, and also managed for environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities
III	Natural monument or feature managed to preserve that feature
IV	Habitat/species management area, which may require regular active interventions to address the requirements of particular species or to maintain habitats
V	Protected landscape/seascape where the interaction of people and nature over time has produced an area of distinct character with significant ecological, biological, cultural and scenic value and where safeguarding the integrity of this interaction
VI	Protected areas with sustainable use to conserve ecosystems and habitats, together with associated cultural values and traditional natural resource management systems. They are generally large, with most of the area in a natural condition, where a proportion is under sustainable natural resource management and where low-level non-industrial use of natural resources compatible with nature conservation is seen.

For example, a clear majority of IUCN members favour a definition that moves the emphasis of management towards conservation as the primary objective of a protected area (Dudley et al.

2010). Dudley (2008) notes, "For IUCN, only those areas where the main objective is conserving nature can be considered protected areas; this can include many areas with other goals as well, at the same level, but in the case of conflict, nature conservation will be the priority." This question bears particular relevance in Fiji where nearly 100% of the LMMAs cite food security as their primary aim (Govan et al. 2009). If all of these areas were restricted from inclusion on the World Database on Protected Areas (WDPA), as promoted by many in the developed world (e.g. Locke and Dearden 2005), Fiji would be well behind in meeting its commitments to CBD targets.

Thus, until many of the debates are resolved, Fiji has chosen to develop categories of protected areas that best suit national needs. The existing and proposed sites, therefore, largely fall into the categories displayed in Table 10, along with some of the legislative and logistical hurdles that will need to be overcome for full management implementation (see also Clarke and Gillespie 2008 and Minter 2008). We recognize a strong need for reconciliation among proposed protected area categories into a confirmed scheme and suggest that this should be a priority task for the PAC in 2011.

Table 10. Protected area categories for Fiji

TERRESTRIAL	
Category	**Opportunities/Challenges**
Nature Reserve	Under the *Forest Decree 1992*, section 6, the Minister can designate a Nature Reserve on: (a) unalienated State land; (b) land leases to the State; and (c) unalienated native land, with the prior consent of the owner of the land and of the Native Land Trust Board Under section 7(2), "Nature reserves shall be managed for the exclusive purpose of permanent preservation of their environment, including flora, fauna, soil and water" In practice, the Department of Forestry does not currently have enough resources allocated to manage any new Nature Reserves, therefore external opportunities for sustainable financing must be sought.
Forest Reserve	Under the *Forest Decree 1992*, section 6, the Minister can designate a Forest Reserve on: (a) unalienated State land; (b) land leases to the State; and (c) unalienated native land, with the prior consent of the owner of the land and of the Native Land Trust Board Under section 7(1), "Forest reserves shall be managed as permanent forest in order to provide on a permanent basis the optimum combination of benefits of protection and production of which they are capable" In practice, the Department of Forestry does not currently have enough resources allocated to manage any new Forest Reserves, therefore external opportunities for sustainable financing must be sought.
Water Catchment Area	Under the *Water Supply Act 1955* [Revised 1985], section 4(1): "Where the Minister considers it desirable that any area of land or water should be a catchment area for the purposes of a water supply, he may give notice in the Gazette and in *Na Mata* of his intention to declare the said area to be a catchment area" Under section 4(2b): "Such notices shall state that the effect of declaration as a catchment area will be to prohibit any act causing pollution of any water therein" In practice, some person or organisation needs to bear the cost of surveying the catchment to determine the legal boundaries. These fees are typically too costly for most communities, NGOs and small private enterprises to bear.

Habitat/Species Management Area	There are currently no provisions for specific habitat or species management areas within existing Fijian legislation
Conservation Area	Under the *Native Land Trust Act*, the Native Land Trust Board (NLTB) can issue leases over native land for conservation purposes (e.g. Namenalala Nature Reserve, Upper Navua Conservation Area). In addition, under section 15(1), the NLTB can "by notice in the Gazette, . . . set aside any portion of native land as a native reserve". Under the *National Trust Act 1970*, the National Trust can enter into binding conservation covenants with landowners and purchase land for conservation purposes. Conservation covenants are a flexible, though under utilised, mechanism for long-term protection of natural and cultural sites (Clarke and Gillespie 2008)
Community Forest Park	The Fiji Department of Forestry has indicated that community forest parks could be conceivably established in Fiji with legal recognition. In practice, this has never occurred. New Protected Areas legislation developed under the PoWPA process should consider incorporating legal recognition of community management plans.
Conservation Corridor/ Sustainable Use Area	Under the *Land Conservation and Improvement Act*, section 7(2) the Land Conservation Board can set conservation orders that: "(a) prohibit, regulate and control the breaking up or clearing of land for cultivation or any other purpose; (b) prohibit, regulate and control the grazing and watering of livestock; (c) prohibit or restrict the cultivation of crops specified in the order; (d) regulate the method of cultivation of land; (e) require the uprooting or destruction, without payment of any compensation therefore, of any crop which has been planted in contravention of any of the provisions of a conservation order; (f) prohibit, regulate and control the use of sledges; (g) prohibit, regulate and control the lighting of fires and burning of vegetation." Clarke and Gillespie (2008) note that an order could be used to establish buffer zones that prohibit clearing and burning while still allowing for some small-scale cultivation. It is unknown how frequently conservation orders are applied across Fiji.
Cultural/Heritage Area	The term 'National Heritage Park' currently has no legal status in Fiji, but it has been used (e.g. Mt. Koroyanitu, Bouma) to denote areas where landowners, the Native Land Trust Board and the government have agreed to protect nationally important natural and cultural heritage values (Clarke and Gillespie 2008)
MARINE	
Category	**Opportunities/Challenges**
Marine Reserve (no-take)	Under the current *Fisheries Act*, traditional fishing rights owners (TFROs) still maintain the right to fish for subsistence anywhere within their qoliqoli. While tradtional leaders may in practice establish no-take reserves, compliance with the rules is largely based on respect for customary authority and does not have legal backing. Traditional leaders can, however, issue conditions to fisheries permits to ban fishing for 'trade or business' within district reserves (Clarke and Jupiter 2010)
Tabu (fisheries closure)	Under the current *Fisheries Act*, traditional fishing rights owners (TFROs) still maintain the right to fish for subsistence anywhere within their qoliqoli. While traditional leaders may in practice establish temporary closures (tabu areas), compliance with the rules is largely based on respect for customary authority and does not have legal backing (Clarke and Jupiter 2010). Traditional leaders can, however, issue conditions to fisheries permits to ban fishing for 'trade or business' within district tabu areas (Clarke and Jupiter 2010)

Managed Marine Area	In over 150 of Fiji's 410 qoliqoli, LMMAs have been established whereby communities have formal or informal management plans governing fishing activities within their broader qoliqoli area. Under the current *Fisheries Act*, these plans have no legal backing and there is still discussion whether or not customary fisheries management and development plans will receive legal support under the draft *Inshore Fisheries Decree*
Habitat/Species Management Area	Under the current draft *Inshore Fisheries Decree*, there are new provisions in section 15 where: "the Minister may, by Order in the Gazette, cause to be established an inshore fisheries management plan for each designated fishery". If approved, this will apply to marine and coastal species as well as habitats containing those species, as per draft section 15(3e): " Each inshore fishery management and development plan shall – specify the objectives to be achieved in the management and development of the fishery or area" This piece of new legislation still needs further consultation and approval. It may be several years before regulations are developed to allow complete implementation.

Candidate Sites by Province

The following sections describe: (1) the list of candidate sites for protection and management proposed by each province, including GIS map outputs of existing and proposed sites; (2) challenges and limitations for implementation (where noted); and (3) a communication strategy and action plan for carrying forward with the work at the provincial level.[6]

Ba

Outcomes from discussions for Ba include (Figure 9):

- *Proposed Marine Areas*: Permanent no-take reserves on non-fringing reefs are proposed for: Votua (new tabu in addition to existing tabu), Vitogo, Vuda and Yasawa (new tabu in addition to existing tabu). New tabu areas on fringing reefs are proposed for: Votua, Vitogo, Vuda and Nadi (endemic fish site). In addition, tabu areas are proposed for: Naviti (endemic fish site), and Waya, neither of which are shown on map in Figure 9.
- *Proposed Mangrove Area* for Ba, Vitogo and Tavua
- *Proposed Conservation Corridor* surrounding the Mt. Koroyanitu Heritage Park
- *Proposed Forest Areas* in dry forests of Sawailau, Waya and Vatia

Some of the challenges and limitations noted from Ba include:

- Changing the mindset to think about sustainable use/management of their resources;
- Developing unity among landowners and traditional fishing rights owners (TFROs); and
- Lack of information at the provincial level on significant cultural, wetland, forest and marine sites

The communications plan for Ba is displayed in Table 11.

[6] Note that the communications strategies and action plans were not received from Tailevu, Naitasiri or Rewa.

Table 11. Communications strategies and actions for informing stakeholders in Ba.

TARGET AUDIENCE	COMMUNICATION STRATEGY	COMMUNICATION TOOL	RESPONSIBILITY	TIMEFRAME
Provincial Council	Council Meeting	Presentations	Provincial office/Roko Tui & NGOs	3-4 Nov 2010
Tikina Councils	Tikina Meetings	Workshops & visits to existing tabu areas	Provincial Office & other stakeholders	Feb 2011
Villages	Village meeting and LOU	Workshop	Provincial Office & other stakeholders	March-Apr 2011
Youths & Women's Group	Youth and women's group meetings	Workshop and visits to existing tabu areas	Provincial Office & other stakeholders	May 2011
Ba Province and general public	Adi Salusalu Festival	NGOs, Gov't Depts Displays	Provincial Office and NGOs	October 2011

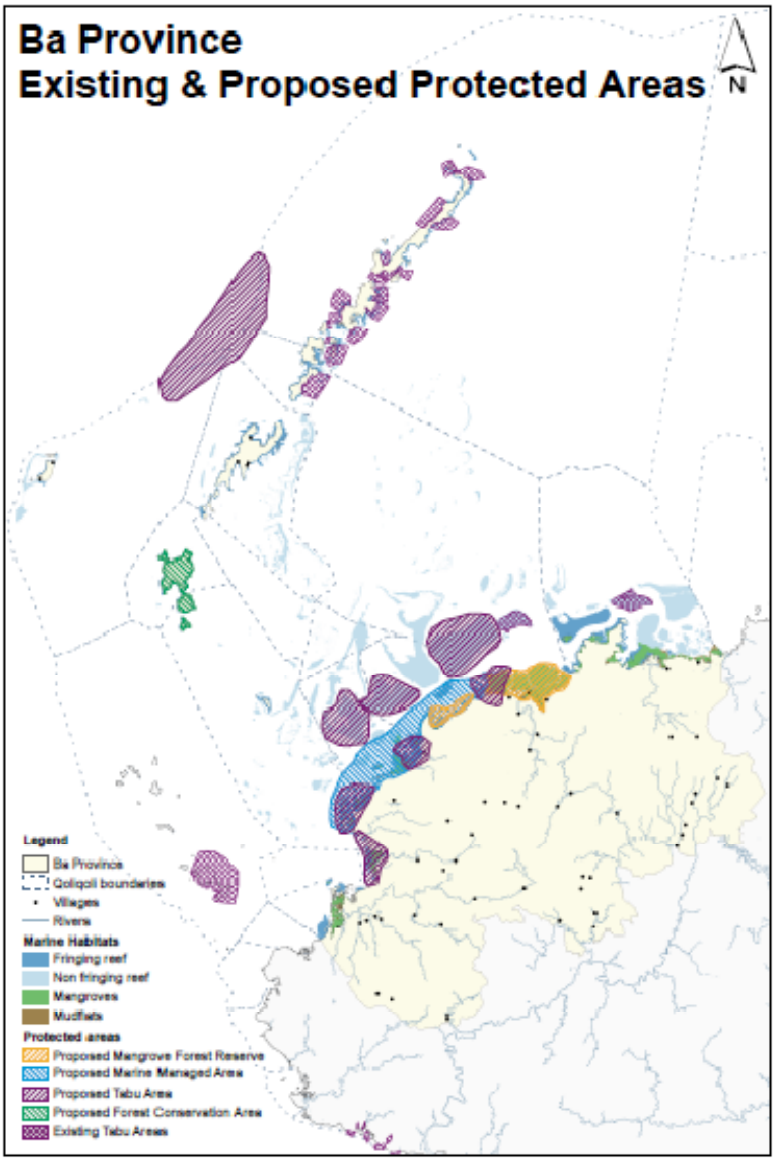


Figure 9. Map of existing and proposed conservation and management areas for Ba Province.

Bua

Outcomes from discussions for Bua include (Figures 10 and 11):

- *Proposed Nature Reserves* at Navotuvotu, Seatura and Uluivuyua
- *Proposed Water Catchment Areas* at Navotuvotu, Seatura and Uluivuyua
- *Proposed Conservation Areas* at Navotuvotu (Tekiteki Vunimoceyawa), Seatura and Naicobocobo
- *Proposed Habitat/Species Conservation Areas* at: Yaqaga, Naicobocobo and Yadua (Turtle nesting sites); Solevu offshore reef; and Dama mangroves (Lekubi)
- *Proposed Community Forest Park* at Uluivuya
- *Proposed Reef Tabu Areas* at Tatavu, Cokota and Cakabavu reefs in Bua District and Caniqe Reef in Wainunu District
- *Proposed Marine Managed Area* around Lekutu Reef in northern Bua Province
- *Proposed Cultural Heritage Sites* at Solevu Catholic Parish, Seatura House, Nakabuta (Whippy Monument), Cogea hotspring and Navurevure (Nakawakawa) fish pond

Some of the challenges and limitations noted from Bua include:

- The widespread nature of current Fiji Forest Industries (FFI) concessions prevents the establishment of Forest Reserves in large tracks;
- There is a strong push by Fiji Government to exploit bauxite mining potential throughout the province; and
- Although there are important mangrove areas at the estuary of Dama District, the connectivity has been interrupted by upstream rice plantations.

The communications plan for Bua is displayed in Table 12.

Table 12. Communications strategies and actions for informing stakeholders in Bua.

TARGET AUDIENCE	COMMUNICATION STRATEGY	COMMUNICATION TOOL	RESPONSIBILITY	TIMEFRAME
Asst Roko Tui	Meeting with Roko Tui Bua	Posters Presentations	Roko Tui	Sep 2010
Head of department in Gov't	Meetings with officials in provincial office	Posters Maps Presentations	Roko Tui and provincial office staff	27 Sep 2010
Tikina Council Members	Meetings	Posters Maps presentations	Roko Tui and the Gov't team	29 Sep 2010
Provincial Council Members	Meetings	Posters Maps Presentations	Roko Tui and Gov't team	1 - 15 Oct 2010
Provincial Council Members	Meetings (PC meetings)	Posters Maps Presentations	Roko Tui and Gov't team	24 - 25 Nov 2010
Turaga ni yavusa	Meetings to seek approvals and consider further proposals (if any)	Presentations Maps Posters	Roko Tui	Dec 2010

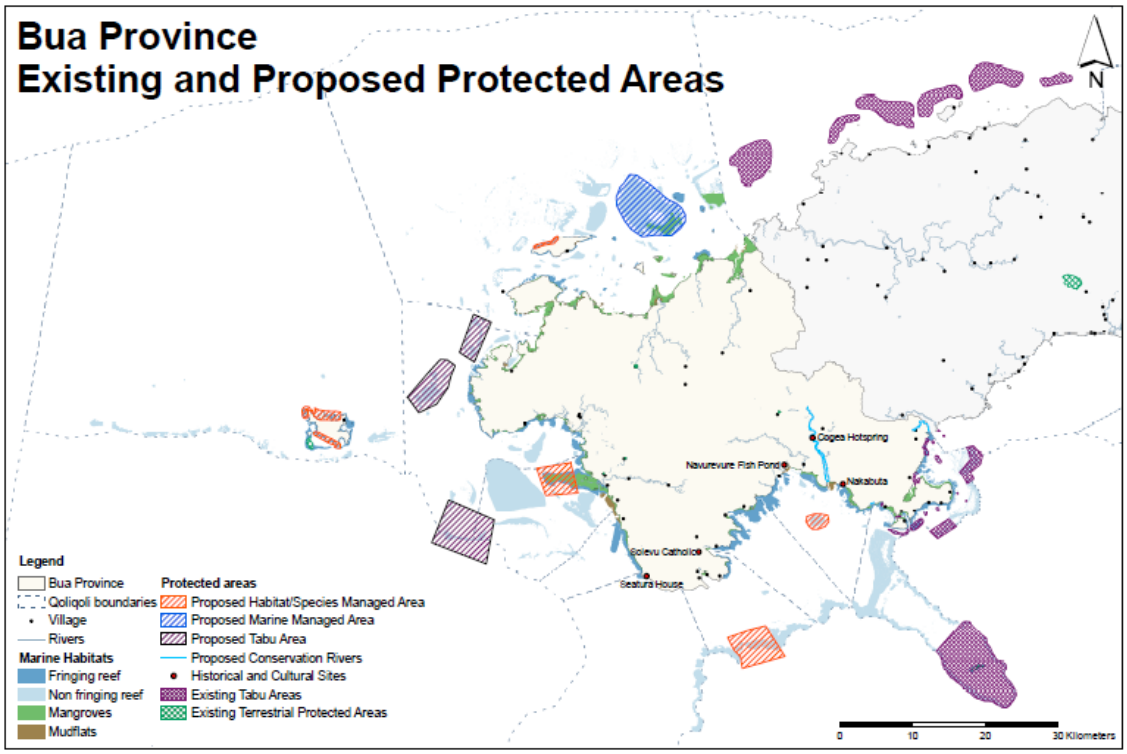


Figure 10. Map of existing and proposed conservation and management areas for Bua Province.

Figure 11. Photograph of terrestrial areas identified for protection and as threatened habitats from proposed mining and forestry activities.

Cakaudrove

Participants in the Cakaudrove group listed a number of proposed protected areas and existing ones which were not evident on the maps (Figure 12 and 13):

1. *Proposed LMMA* at Vuna qoliqoli
2. *Existing MPA* at Rainbow Reef
3. *Proposed Water Catchment Area* at headwaters of Mariko River
4. *Existing LMMAs and Tabu Areas* along southern coast of Udu Point
5. *Existing LMMAs and Tabu Areas* along eastern coast of Natewa Peninsula
6. *Proposed Mangrove Forest Reserve* at northeastern Taveuni
7. *Proposed Mangrove Forest Reserve* at Qamea Island
8. *Proposed Water Catchment Area* around hydroelectric development at Bucy
9. *Proposed Water Catchment Area* around mini-hydroelectric development
10. *Proposed Water Catchment Area* in upper Nadrogo watershed
11. *Proposed Water Catchment Area* around Nayarabale village
12. *Proposed Water Catchment Area* around Vatukuca village
13. *Proposed Forest Reserve* around Mt. Kasi
14. *Proposed Conservation Corridor* around Taveuni Nature Reserves
15. *Proposed Community Forest Park* around Natuvu watershed
16. *Proposed Habitat/Species Management Area* for cetaceans in Natewa Bay
17. *Proposed Wetland Area* at salt lake and mangroves at base of Natewa Peninsula
18. *Existing Tabu Area* at Waitabu
19. *Existing Nature Reserve* at Waisali Amenity Reserve
20. *Proposed Cultural Heritage Site* at kuta wetlands of Naweni
21. *Proposed Cultural Heritage Site* at Molivanavana/Vatuni Vanua/Swiflet Cave
22. *Existing Heritage Forest* at Bouma (community-managed)
23. *Proposed Cultural Heritage Site* at Savusavu hotsprings

Some of the challenges and limitations noted from Cakaudrove include:

- Many of existing FLMMA tabu areas were not on maps, which implies lack of communication between FLMMA partners
- Relaying proposed sites to the communities[7];
- Finding alternative sources of income to offset foregone revenue;
- Reducing the threat of agricultural encroachment into Taveuni's existing protected forests may require a conservation lease for implementation of a buffer zone to ensure adequate compensation to landowners;
- Enforcement of existing rules and regulations for clearing around streams needs to be strengthened;
- Lack of resources (finances, staff, materials and equipment) to conduct baseline assessments and monitor all projects around province; and
- Limited use to date of existing systems and mechanisms in place (e.g. provincial officers, Caukaudrove Yaubula Management Support Team) to coordinate efforts.

[7] Note: presenter did not specifically mention if this was due to lack of resources or communication gaps

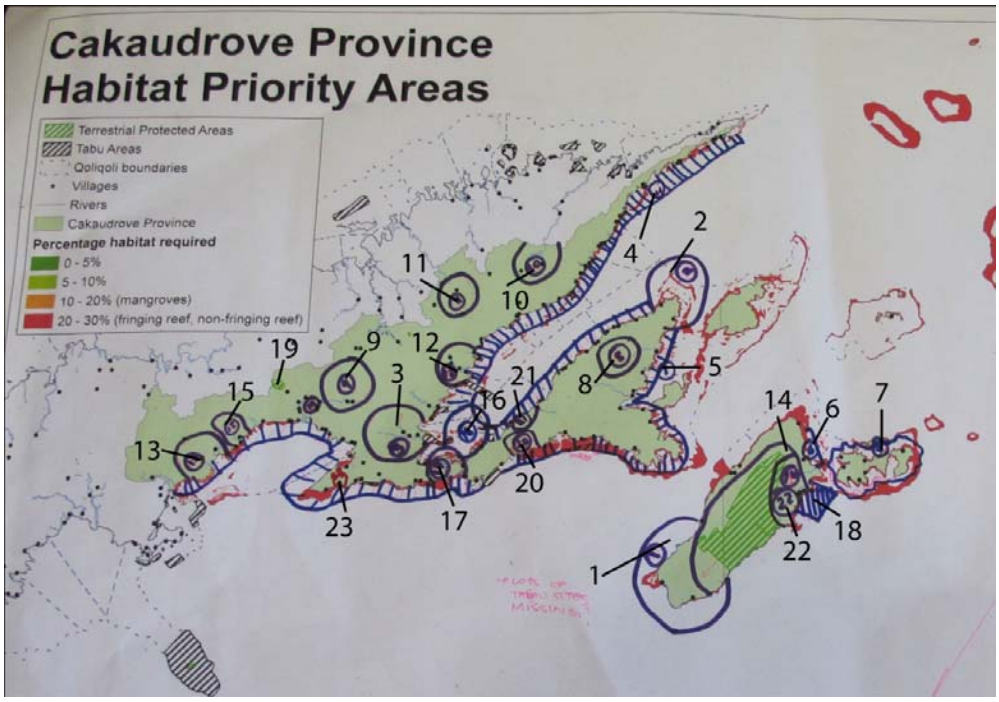


Figure 12. Photograph of areas identified for protection in Cakaudrove. Numbers refer to list of sites above. Note that purple hashed areas along coastline indicate that there are established LMMAs present within those regions, but they are not continuous.

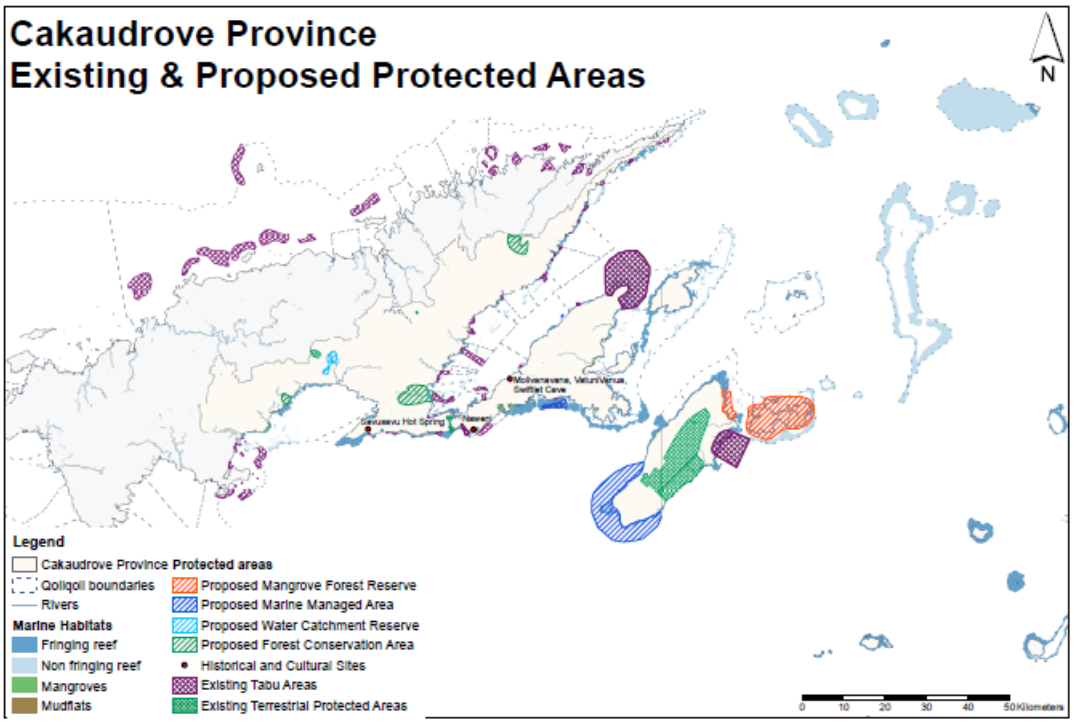


Figure 13. Map of existing and proposed conservation and management areas for Cakaudrove Province. [Note: some proposed and existing sites are still missing GIS database]

The communications plan for Cakaudrove is displayed in Table 13.

Table 13. Communications strategies and actions for informing stakeholders in Cakaudrove.

TARGET AUDIENCE	COMMUNICATION STRATEGY	COMMUNICATION TOOL	RESPONSIBILITY	TIMEFRAME
-Bose Vanua **-Mata ni Bose ni Yasana** **-Women** **-Youth** **-Church**	Provincial office Roko Tui SART CYMST	Presentations Maps Data Handouts Posters	Expert orgs Media Govt reps – DoE, Landuse, Agriculture, Fisheries, iTaukei Affairs, NGOs – FLMMA, Birdlife, Mareqeti Viti, USP Herbarium	Bose ni Tikina (Somosomo) 21 October 2010
Mata Bose Vanua ni Tikina: **Mata ni Tikina** **Turaga ni Koro** **Mata ni marama** **Mata ni Tabagone** **Lotu** **Dauteitei/Dauqoli**	Bose ni Tikina	Presentations Maps Data Handouts Posters	Roko Tui/ SART/ CYMST	
Mata Bose Vanua **Turaga ni koro** **Marama** **Tabagone** **Lotu** **Komiti ni Koro** **Dauteitei/Dauqoli**	Bose Vakoro	Presentations Maps Data Handouts Posters	Roko Tui/ SART/ CYMST	

Kadavu

The numerous partnerships between conservation and academic organisations and local communities in Kadavu Province are evident by the advanced state of their provincial marine protected area network and planning for new terrestrial and freshwater additions. As of September 2010, there were 64 marine protected areas in the province, managed by communities with the support of the Kadavu YMST, established in 2003 through the FLMMA network. BirdLife International has been actively working with communities to protect habitat for the Kadavu shining parrot, while IUCN is implementing the Water and Nature Initiative (WANI) catchment management project in conjunction with USP.

The outcomes from the Kadavu discussions are presented in Figure 14 and Table 14. A communications plan for Kadavu is combined with the plans for Nadroga and Ra and displayed in Table 20.

Table 14. Priority areas for protection in Kadavu listed with main threats, strategies, actions and timelines.

Priority Areas	Threats/Issues	How to overcome threats	Responsibility	Timeframe
Cloud montane forest (two main water catchments in Nakasaleka (Mt. Challenger) and Nabukelevu (Mt. Washington)	1.Cutting down of trees for farming (upland/uphill farming) 2.Unnecessary burning will destroy insect and bird habitat 3. No awareness	1.Sustainable farming currently in practice in Nabukelevu (signing of MOU) 2.Current WATER AND NATURE INITIATIVE (WANI) projects in Nakasaleka (nursery currently in Vacalea, Lomaji and Tabuya) 3.Unnecessary burning 4. Enforcement of Arson Decree 2009 by Village headman	1.Turaga ni Koro and Mata ni Tikina to take lead from villages and Tikina 2.Enforcement agency to enforce the Arson Decree 3. Provincial Office	2010 - 2015
New species of Tagimoucia (tagi vula) in Matasawa levu in Nakasaleka	1. Burning 2. No awareness 3. Deforestation	1.Sustainable farming currently in practice in Nabukelevu (signing of MOU) 2.Current WATER AND NATURE INITIATIVE (WANI) projects in Nakasaleka (nursery currently in Vacalea, Lomaji and Tabuya) 3.Unnecessary burning 4. Enforcement of Arson Decree 2009 by Village headman	1.Turaga ni Koro and Mata ni Tikina to take lead from villages and Tikina. 2.Enforcement agency to enforce the Arson Decree 3. Provincial Office	2010-2012
Pole trees forest in Daku (kau salusalu) 9 species	1. Burning 2. No awareness	1.Sustainable farming currently in practice in Nabukelevu (signing of MOU) 2.Current WATER AND NATURE INITIATIVE (WANI) projects in Nakasaleka (nursery currently in Vacalea, Lomaji and Tabuya) 3.Unnecessary burning 4. Enforcement of Arson Decree 2009 by Village headman 5.More awareness to the whole province	1.Turaga ni Koro and Mata ni Tikina to take lead from villages and Tikina. 2.Enforcement agency to enforce the Arson Decree 3. Provincial Office	ONGOING

Mahogany and Yasi (sandalwood) in Muanisolo, Mataso, Vunisei, Namara and Yawe	1. Burning 2.No awareness 3. Logging	1.Sustainable farming currently in practice in Nabukelevu (signing of MOU) 2.Current WATER AND NATURE INITIATIVE (WANI) projects in Nakasaleka (Nursery currently in Vacalea, Lomaji and Tabuya) 3.Unnecessary burning 4. Enforcement of Arson Decree 2009 by Village headman	1.Turaga ni Koro and Mata ni Tikina to take lead from villages and Tikina. 2.Enforcement agency to enforce the Arson Decree	ONGOING
Kadavu Pride (birds): nesting sites for Kaka-Shining Parrot, Whisling Dove-Soqe Da, Fantail (Collared (Lagio) Petrel	1.Cutting down of mangroves (their nesting areas for firewood, building materials etc).	1.Sustainable farming currently in practice in Nabukelevu (signing of MOU) 2.Current WATER AND NATURE INITIATIVE (WANI) projects in Nakasaleka (nursery currently in Vacalea, Lomaji and Tabuya) 3.Unnecessary burning 4. Enforcement of Arson Decree 2009 by Village headman 5.More awareness	1.Turaga ni Koro and Mata ni Tikina to take lead from villages and Tikina. 2.Enforcement agency to enforce the Arson Decree 3. Provincial Office	2010-2011
Sacred site (Yawe, Soso)	1. Some villagers are un aware of its significance	More awareness to villages and province	1.Turaga ni Koro and Mata ni Tikina to take lead from villages and Tikina. 2.Enforcement agency to enforce the Arson Decree 3. Provincial Office	2010-2012
Vono ni Matari (Matari Beach-Yal)	1.No awareness 2.Too much demand for vono	1.Re planting 2.More awareness	1.Turaga ni Koro and Mata ni Tikina to take lead from villages and Tikina. 2.Enforcement agency to enforce the Arson Decree	2010-2013

Seni Giagia Flower (Nabukelevu - Nagigia Island)	1. Burning 2. Re-planting	1. More awareness	1.Turaga ni Koro and Mata ni Tikina to take lead from villages and Tikina. 2.Enforcement agency to enforce the Arson Decree	2010-2013
Transit point for birds migration (Yabu-Buliya)	1. Destruction of habitats through human habitation	1. More awareness	1.Turaga ni Koro and Mata ni Tikina to take lead from villages and Tikina. 2.Enforcement agency to enforce the Arson Decree	ONGOING
Endemic freshwater fish (Nakaugasele)	1. Duva	1. More awareness	1.Turaga ni Koro and Mata ni Tikina to take lead from villages and Tikina.	2010-2011
Turtle calling spot - Mua I Caukala in Namuana and Tabaji in Solodamu	1. When it turns into business/commercialised eg. No cameras allowed during the process 2. No awareness to the bete, those who perform the calling process	1. To develop protocols of the process	1.Turaga ni Koro and Mata ni Tikina to take lead from villages and Tikina. 2. Provincial Office	2011-2013
Turtle nesting areas (Waisalima, Wailage, Daku, Matari, Muani)	1. Disturbances from tourism 2. No Awareness	1. More awareness	1.Turaga ni Koro and Mata ni Tikina to take lead from villages and Tikina. 2. Provincial Office	2011-2013 ONGOING
Surfing spot - Nagigia Island	1.Conflict between Qoliqoli committee and Nagigia Resort (compensation issue)	1. More awareness	1.Turaga ni Koro and Mata ni Tikina to take lead from villages and Tikina. 2. Provincial Office	2011-2013 ONGOING
Kawakawa spawning sites (Naiqoro Passage)	1.Overfishing 2. Poaching	1. More awareness	1.Turaga ni Koro and Mata ni Tikina to take lead from villages and Tikina. 2. Provincial Office	2011-2013 ONGOING
Qau spawning site - Matanuku	1.Overfishing 2. Poaching	1. More awareness	1.Turaga ni Koro and Mata ni Tikina to take lead from villages and Tikina. 2. Provincial Office	2011-2013 ONGOING

The Great Astrolabe Reef (the 4th longest reef in the world)	1.Habitat degradation particularly coral reefs through human and natural disturbances 2. Poaching	1.More awareness 2. Request for more and frequent naval patrol within Kadavu Passage -enquire about fishing licence -Boat master's licence (FIMSA regulation)	Provincial Office to correspond to relevant agencies	2011-2013 ONGOING

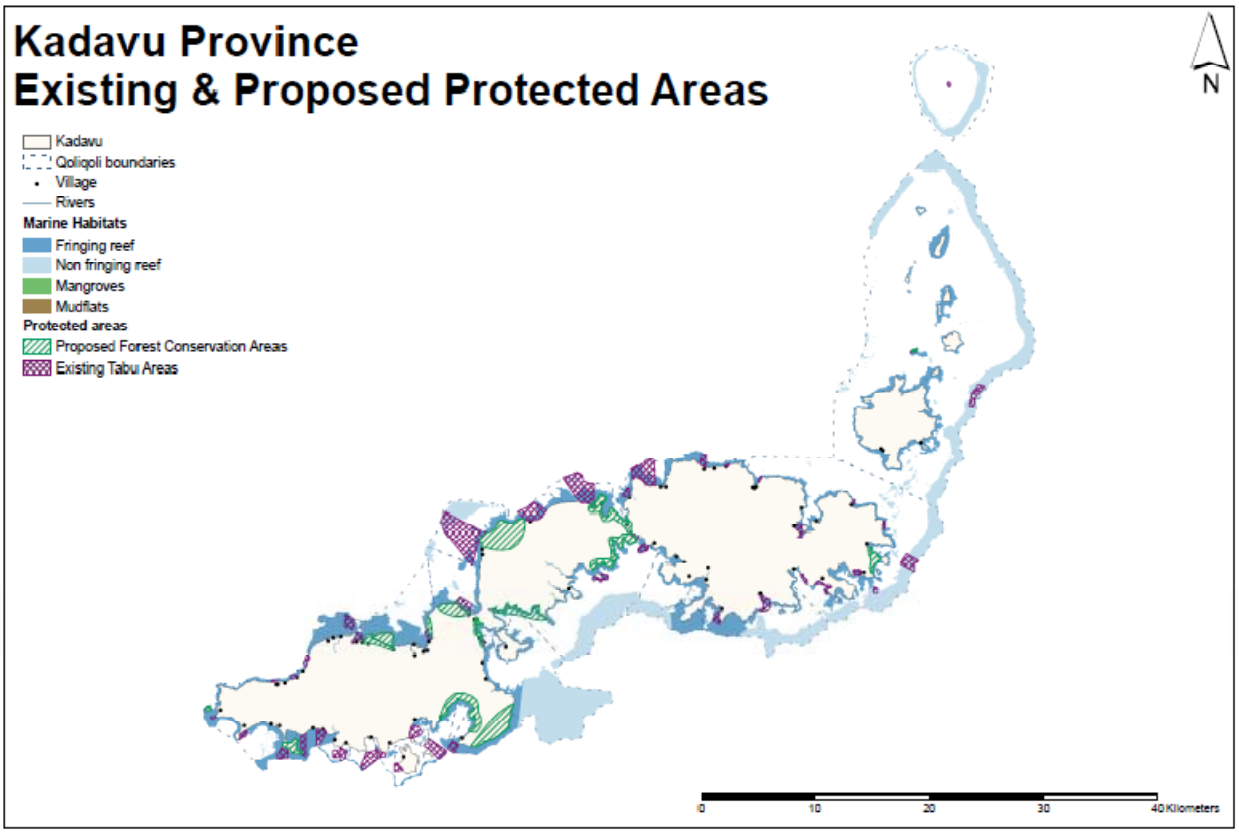


Figure 14. Map of existing marine tabu and proposed terrestrial conservation and management areas for Kadavu Province

Lau

Lau Province has the exceptional challenge that it encompasses 22 inhabited islands spread over large expanses of water. The vast distances between islands make coordination and monitoring of development and management projects difficult. Participants in the Lau group focused on special features worthy of protection and management, sites where these features are located, challenges for management and proposed solutions. These are listed in Table 15 and sites are displayed in Figure 15. Because there is a will to establish open ocean protected areas outside of qoliqoli boundaries, there is a unique opportunity for the PAC to use Lau as a test case for the establishment of offshore MPAs.

Table 15. Priority areas for protection in Lau listed by special feature, potential sites, challenges and proposed solutions.

Special Features	Potential Sites	Challenges	Proposed Solutions
1. Turtle nesting/feeding sites	Kibobo, Sovu, Nuku-i-Cikobia, Katafaga, Tuvuca, Aroua, Vua, Qava, Yagasa, Vatoa, Tuvana Islands, Ono	1. Poaching 2. Climate change 3. Lack of transportation 4. Lack of staff to be in charge of yaubula issues	1. Increase awareness 2. Regular visits
2. Seabird colonies	Kibobo, Sovu, Nuku-i-Cikobia, Katataga, Vekai, Aiwa, Vanua Masi, Vatoa Ono, Ogea (for pidgeon, Ogea monarch)	1. Human disturbance	1. Increase awareness
3. Butterflies/flowers (endemic species)	Tuvuca	1. Agriculture developments	1. Increase awareness
4. Iguana	Aiwa	1. Human disturbance	1. Increase awareness
5. Spawning sites	Bay of Islands, Yewabu, Vanuabalavu lagoons , Aroua, Katataga, Vanua Masi, Late Fiji, Late Toga, Bukatatanoa, Fulaga, Ono, Vatoa, Tuvana	1. Overexploitation 2. Poaching 3. Removal of mangroves	1. Increase awareness 2. Regular visits 3. MPAs 4. Mangrove replanting
6. Fringing reefs	All islands in Lau	1. Overfishing 2. Removal of corals for development 3. Landslides 4. Burning of landscapes 5. Use of chemicals	1. Increase awareness 2. MPAs 3. Waste management (e.g. toilets)
7. Giant clams	Vuata Vatoa, Vuata Ono	1. Poaching 2. Climate change	1. Increase awareness
8. Coconut crabs	Kibobo, Sau, Tuvuca, Katataga	1. Development 2. Overexploitation	1. Increase awareness
9. Limestone islands	Vanua Vatu, Tuvuca, Ogea, Driki, Kabara, Fulaga	1. Lack of food security	1. Plantings to be introduced annually
10. Lobsters	Tuvana Islands	1. Poaching	1. Increase awareness
11. Indigenous trees	Kabara, Cicia, Fulaga, Ogea, Namuka	1. Overharvesting 2. Economic development	1. Increase awareness 2. Replanting 3. Reserves
12. Marine parks	Vast open seas covering small uninhabited islands	1. Yet to be established	1. Work with PAC to establish

The communications plan for Lau is displayed in Table 16.

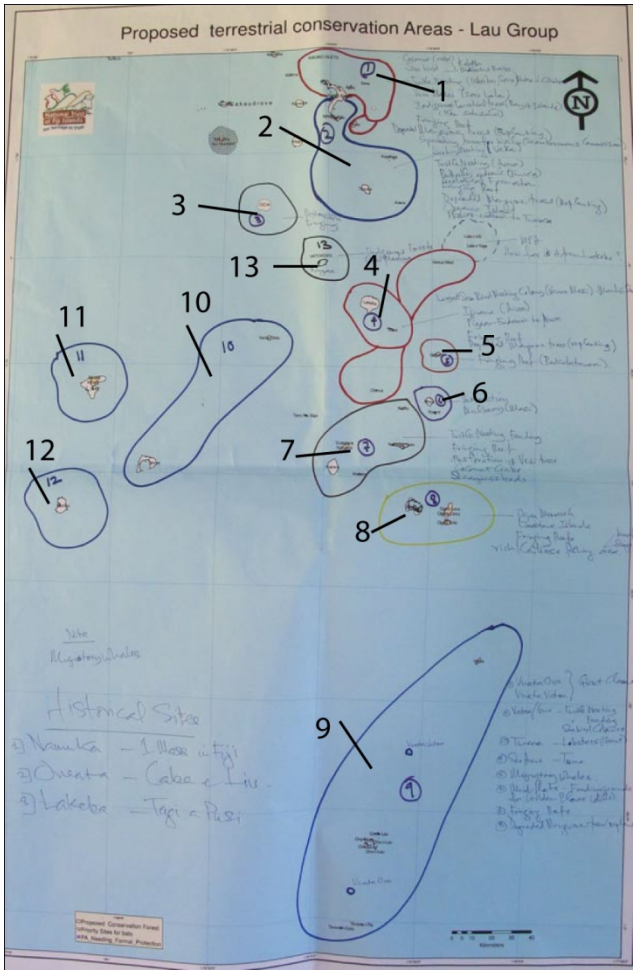


Figure 15. Map of special features at candidate sites for protection in Lau:
1. Kibobo - coconut crabs, red footed booby, turtle nesting; Sovu - turtle nesting, vuni masei; Nuku-i-Cikobia - turtle nesting; Bay of Islands - Indigenous trees (kau salusalu)
2. Vekai - seabird nesting; Tuvuca - endemic butterfly and flower; Aroua - turtle nesting; spawning aggregation for *Scomberomous commersoni*; unique geological formations; replanting mangroves
3. Cicia - restoration of fringing reef
4. Vanua masi - large seabird nesting colony; Aiwa - iguana, endemic pidgeon; replanting mangroves; proposed offshore MPA around Late-i-Viti/Late-i-Toga
5. Bukatatanoa - proposed protection for fringing reef
6. Moce - restoration of mulberry tree for masi
7. Kabara - turtle nesting/feeding, coconut crabs, proposed tabu for seagrass and fringing reef, restoration of mangroves, replanting vesi tree
8. Ogea - endemic Ogea monarch, limestone islands, proposed tabu for fringing reefs, mudflats (high kaikoso), and seagrass
9. Vuata Ono/Vuata Vatioa - giant clams; Ono - turtle nesting/feeding, seabird colonies, mudflats feeding for golden plover; Tuvana - lobsters; proposed offshore MPA for cetaceans and tuna
10. Totoya and Vanua Vatu
11. Moala
12. Matuku
13. Vatuvovo - indigenous trees, coral planting

Cultural heritage sites were proposed for:

- Namuka: first mass in Fiji
- Oneata: Cabe e Liu
- Lakeba: Tage a Pusi

Table 16. Communications strategies and actions for informing stakeholders in Lau.

TARGET AUDIENCE	COMMUNICATION STRATEGY	COMMUNICATION TOOL	RESPONSIBILITY	TIMEFRAME
Provincial staff	Consolidation of all yaubula issues in Lau	Meeting/workshop training	Provincial office FLMMA/WWF WCS IAS NTF, PAC	Third quarter 2010
Chairman Provincial office	Present consolidated report	Presentations -Maps -reports	Provincial office Technical experts FLMMA, WCS, NTF, PAC	Third quarter 2010
Tikina council	Present consolidated report	Brochures, flyers, maps	Provincial staff	First quarter 2011
Subdivision management team	Integration Core stakeholders	Workshop Training of trainers	Provincial staff	Second quarter 2011
Village resource owners	Awareness	Presentations	Trainers	Second quarter 2011
Bose ni tikina	Disseminate resource owner resolution	Tikina meeting	Turaga ni koro Community trainers	Second quarter 2011
Provincial council	Present concept from vanua	Council meeting	Provincial staff	

Lomaiviti

The Lomaiviti group noted that there were 19 LMMA sites missing from the provided map. The group identified new candidate MPA, forest conservation, sustainable land use areas and cultural heritage sites as indicated in Figure 16 and Table 17.

Table 17. Priority areas for protection in Lomaiviti listed by

Category	Existing sites[8]	Priority Areas	Recommendations
MPAs	19 sites from Gau: Sawaieke, Somosomo, Nawaikama, Levuka, Lovu, Yadua, Vadravara (turtle nesting), Nukuloa Koro: Nabuna Ovalau: Rukuruku, Nukutocia (Ovalau Bay), Nauouo Batiki: Yavu, Naigani, Manuku, Mua Nairai: Lawaki, Waitoga, Tovulailai	Cakaumomo Reef, Nairai (Nama Reef) Nasova Mokodraga Island (banded iguana, turtle nesting)	Protect all qoliqoli boundaries within districts
Forest Conservation	N/A	Gau, Koro, Ovalau, Batiki (Community Forest Park)	
Sustainable Landuse	Namoli, Natokalau	Gau, Koro	
Cultural Heritage	Levuka, Lovoni, Draiba, Nasova	Makogai, Wakaya	

[8] Sites that were not indicated on distributed maps

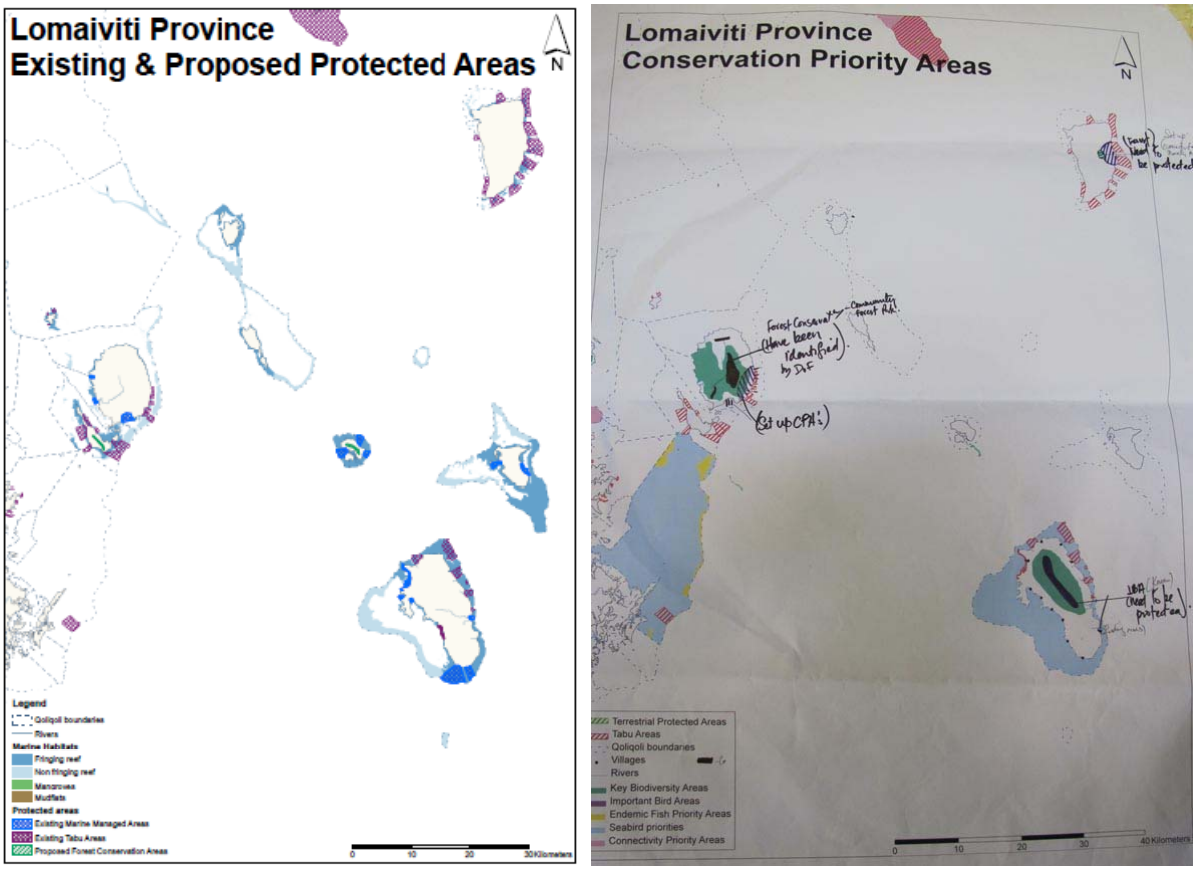


Figure 16. Map and photograph of existing and proposed conservation and management marine (LEFT) and terrestrial (RIGHT) areas for Lomaiviti Province

There was an emphasis on creating connectivity between protected and managed land/seascapes. The Lomaiviti seascape was additionally noted as an important cetacean corridor. The communications plan for Lomaiviti is displayed in Table 18.

Table 18. Communications strategies and actions for informing stakeholders in Lomaiviti.

TARGET AUDIENCE	COMMUNICATION STRATEGY	COMMUNICATION TOOL	RESPONSIBILITY	TIMEFRAME
Provincial Council	Provincial Council Meeting	Presentation of consolidated report	FLMMA Roko Tui, Dept of Environment, Ministry of Fisheries and Forest	Nov 2010
Tikina Council	Bose ni Tikina	Presentation Workshop	FLMMA, Asst Roko, DoE, MoFF, Agriculture Dept	2011
Village Council	Bose Vakoro	Workshop, Posters, Presentation (visual)	FLMMA, ART, DoE, MoFF, Agriculture Dept	2011

TARGET AUDIENCE	COMMUNICATION STRATEGY	COMMUNICATION TOOL	RESPONSIBILITY	TIMEFRAME
Youth Group	Youth retreats	Workshop, drama, handouts	FLMMA. Provincial office	Nov 2010 – Feb 2010
Women's Group	Bose ni tikina Soqosoqo Vakamarama Annual Meeting	Presentation of consolidated reports	Provincial office FLLMA- Lomaiviti	2011
Church group	Monthly meeting Quarterly meeting	Presentation	Provincial office FLMMA - Lomaiviti	Jan 2011 – March 2011
Business operators	LTC Meeting Chamber of commerce	Presentation	FLMMA- Lomaiviti Provincial office	Feb 2011

Macuata

Outcomes from discussions for Bua include (Figure 17):

- *Proposed Water Catchment Areas* at Namalamala, Nawave, Savutadai, Macayamena
- *Proposed Natures Reserves* at Dogotuki, Rokosalase
- *Proposed Conservation Area* around Dreketi River system (for endemic fish), Navakasobu (for kuta pond)
- *Proposed Mangrove Restoration/Protection Forest* at Wailevu, Labasa/Qawa, Wainikoro
- *Proposed National Monument* status for Nubu floating island
- *Confirmed Marine Reserve (No-Take)* at Vorovoro Passage, Talai-i-Lau

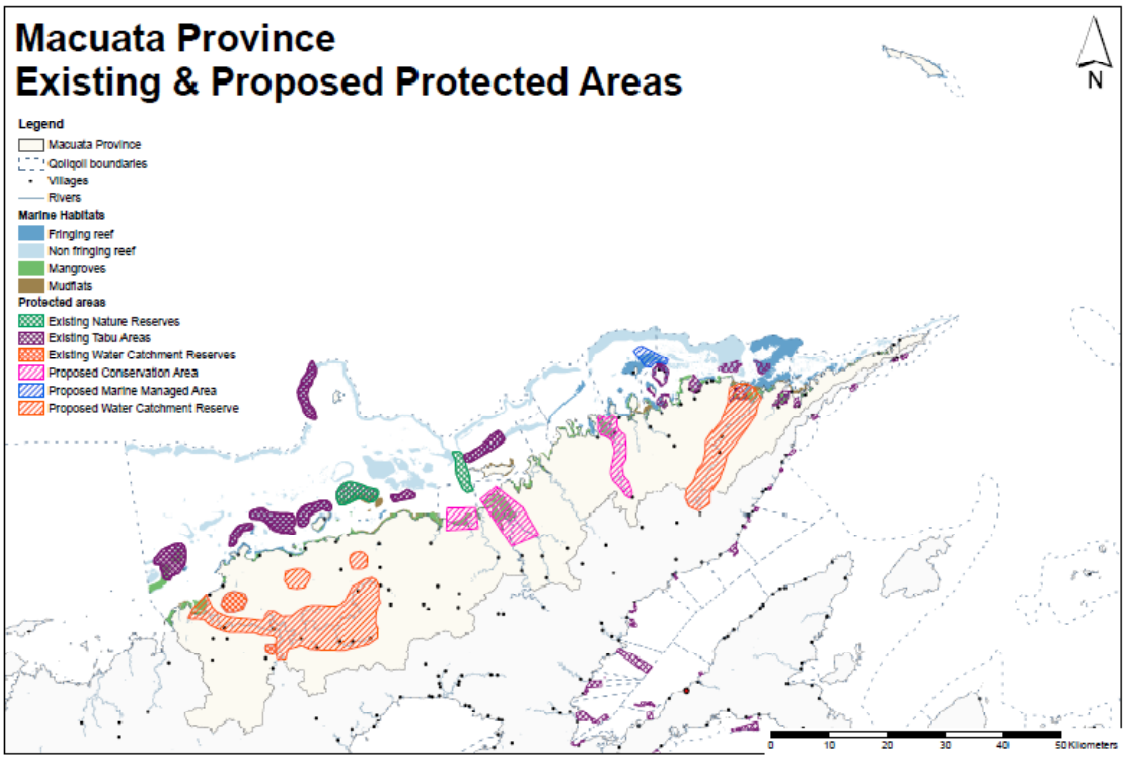


Figure 17. Map of existing and proposed protected areas for Macuata Province.

Some of the challenges and limitations noted from Macuata include:

- Need to empower traditional leadership;
- Although have been working on environmental management and protection since 2004, hard to change the attitude of people;
- Increasing awareness at the grassroots level;
- Participation of key stakeholders (e.g. cane farmers); and
- Lack of resources for enforcement

The communications plan for Macuata is displayed in Table 19.

Table 19. Communications strategies and actions for informing stakeholders in Macuata.

TARGET AUDIENCE	COMMUNICATION STRATEGY	COMMUNICATION TOOL	RESPONSIBILITY	TIMEFRAME
Yaubula sub-committee	Sub-committee meeting	Presentation Reports	Provincial office	Nov 2010
Traditional leaders	Bose Vanua	Vanua Meetings Presentation Maps	Yaubula sub-committee NGO counterparts	Nov 2010
Resource owners	Awareness: - Village council - Provincial council	Council meeting	Yaubula sub-committee Provincial office NGO counterpart	March - April 2011
Govt stakeholders &Church denominations	Awareness	Joint meeting Presentation Reports Maps	Provincial office Yaubula sub-committee NGO counterparts	June 2011
Fishermen **Fish warden** **Police officers**	Awareness	Joint meeting -Presentation -reports -Maps	Provincial Office Fisheries Yaubula sub-committee NGOs counterpart	June 2011
Farmers	Awareness	Joint meeting Presentation	Provincial Office Yaubula Sub-committee NLTB/Forestry, MPI Lands etc	Jul 2011

Nadroga

Outcomes from discussions for Nadroga include (Figure 18):

- *Proposed Water Catchment Areas* at Navosa - Namosi border (high value water catchments, cicada habitat, native forest) and Kordevu (between Beusevu - Namatokula: high value water catchment, scenic waterfall, native forests/bird habitat)
- *Proposed Conservation Area* at Vatulele (red prawn habitat), Navosa (cicada habitat, native forest), Nadrau/Naga (Fiji tree frog, native forests, hot springs), Malolo Island

(crested iguana and seabird habitat, patches of dry forest, catau yali), and Baravi (Vatukaurasa: dry forest habitat)

- *Proposed Sustainable Use Areas* at Lomawai (mangrove forest, cultural Tai Butani), and Nayawa/Nakabuta (high value clay soils)
- *Proposed Marine Reserves (No-take)* at reef areas around major hotels
- *Proposed Cultural Heritage Sites* at Naroro (Tavuni), Naqalimari (limestone, natural landscape), Vatulele (caves), Sila/Navada (missionary site)

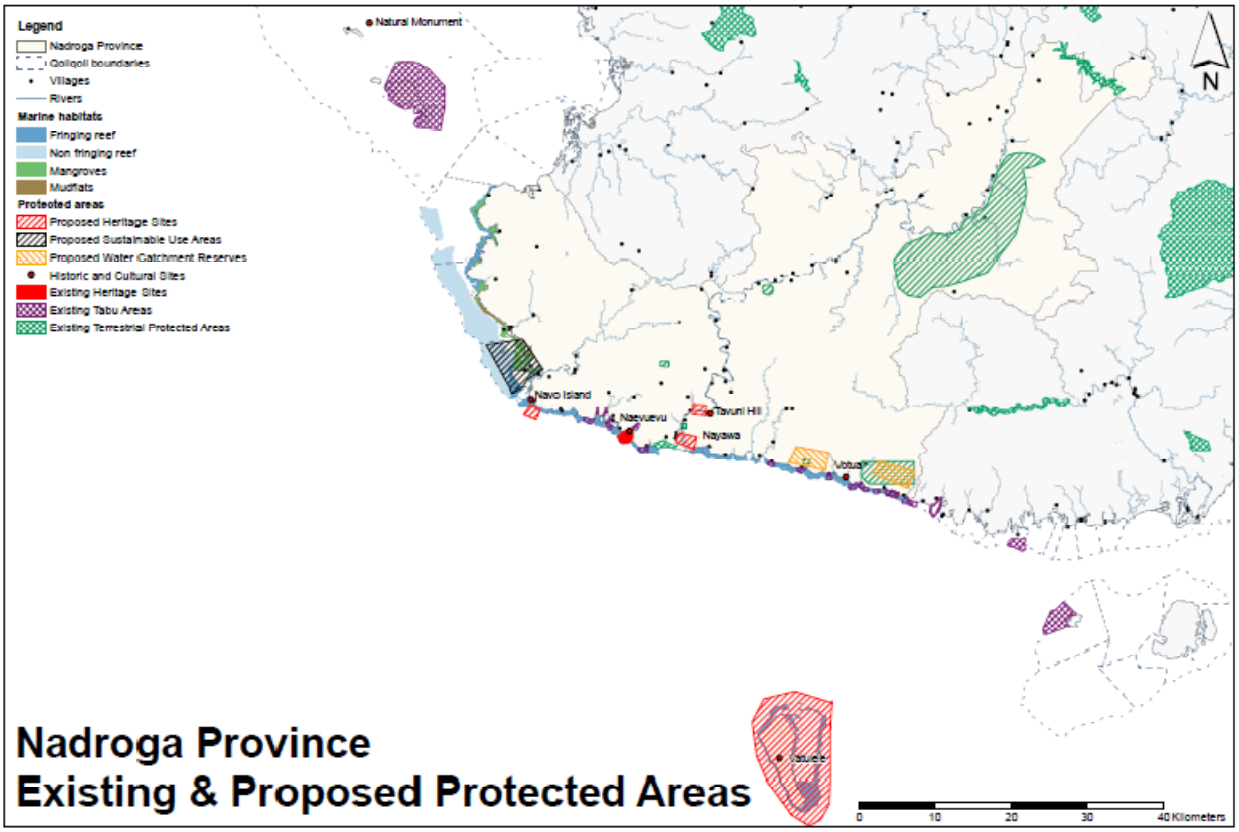


Figure 18. Map of existing and proposed protected areas for Nadroga Province.

Some of the challenges and limitations noted from Nadroga include:

- Reconciling with development goals of Fiji Government;
- Lack of financial support;
- Disputes of qoliqoli areas and boundaries;
- Contrary views of landowners; and
- Lack of scientific data

The communications plan for Nadroga (as well as Kadavu and Ra) is displayed in Table 20. These provinces were merged as the communities all work with the same lead support partner (IAS/USP).

Table 20. Communications strategies and actions for informing stakeholders in Nadroga, Kadavu and Ra.

TARGET AUDIENCE	COMMUNICATION STRATEGY	COMMUNICATION TOOL	RESPONSIBILITY	TIMEFRAME
Lewenivanua • **Turaga ni vanua** • **Turaga ni mataqali**	Community Awareness Translate in Fijian	Workshop Vuli Koro Tikina Yasana	Roko/ART FLMMA USP/ Birdlife National Trust CI WCS	*Kadavu* Bose ni tikina(Sept 2010) *Nadroga* Bose ni Yasana Nov 2010 *Ra* Bose ni tikina Sept 2010
Lewe ni koro	Exchange visit/ study tour	Posters Maps Radio Video DVD	Provincial office Tobu ni lavo ni yaubula NGOs /DoE	*Kadavu* end of 2011 *Nadroga* end of 2011 *Ra* end of 2011
Provincial offices	Cross-site visits	Presentation Exchange of ideas, lessons learnt	Provincial office	Jan 2011 – end of 2011
Community leaders	Yaubula officer for Ra/Nadroga (YMST) to be established	Village mataqali	Roko Tui budget allocation 2011 Resolution of Bose ni Yasana	End of 2011

Naitasiri

Outcomes from discussions for Nadroga include (Figure 19):

- *Proposed Nature Reserve* for Sovi Basin
- *Proposed Wilderness Area* for Upper and Lower Wainimala
- *Proposed National Park* for Savura (existing park at Colo-i-Suva)
- *Proposed Cultural Heritage/Natural Monument* at Nacau Hill, Nasokovakawalu Hill, Kalabu Village, Navuso Heritage site
- *Proposed Habitat/Species Management Areas* at Navolau Village (Binovi eel) and Nakini Village (freshwater mussel pond)
- *Proposed Sustainable Use Areas* from all flatlands (Viria, Muainaweni, Baulevu and particular along major rivers and creeks)

Some recommendations noted from the Naitasiri group include suggestions for:

- Candidate sites to be relayed to villages and tikinas for further identification and confirmation of sites;
- Provincial council to prioritise identification of sites selected by villages and tikinas for provincial and nationally recognised sites;

- Land use capability classification maps to be provided by Ministry of Primary Industries (MPI) for future land development guidelines;
- Provincial council to request of all NGOs and government ministries to provide them with all data and information (physical, socioeconomic, biodiversity, etc) about Naitasiri Province; and
- An inventory of all protected sites in the provincial office to support management and enforcement of sites.

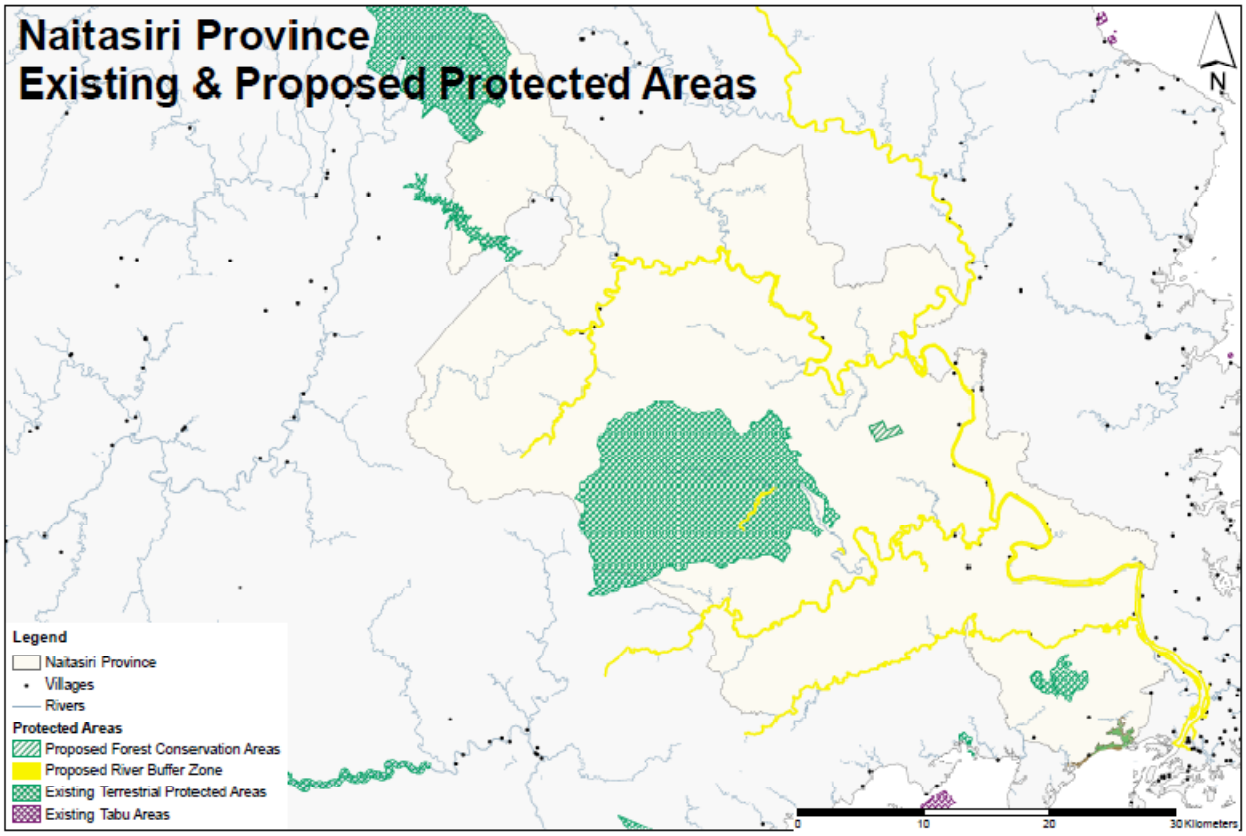


Figure 19. Map of existing and proposed protected areas for Naitasiri Province.

Namosi/Serua

Discussions for Namosi and Serua were conducted jointly and outcomes include (Figures 20 and 21):

- *Proposed Protected Landscapes* (mangrove replanting) at Toqoru Settlement to Vunibau, Naboutini, and Qilai to Veivatuloa (NOTE: will require technical expertise and valuation by UNDP, Red Cross, GO, IAB)
- *Proposed Ramsar* Sites at Nabukelevu to Wainadiro (Serua) and Navunikabi to Namuamua (Namosi)
- *Proposed Nature Reserve* at Wainiyabia (eco-tourism opportunities)
- *Proposed Sustainable Landuse Areas* at Nabukavesi (Wainoulai) and Navunikai

- *Proposed Water Catchment Area* at Upper Serua and Namosi border to Navosa and Naitasiri
- *Proposed Habitat/Species Management Areas* for: soga at Maratu, Culanuku, Galoa and Namelimeli; cicada at Upper Namosi and Serua, northwestern Namosi and north Serua towards Navosa; endemic plant species at Nakavika (Wainadoi)
- *Proposed Cultural Heritage Sites* at Deuba (methodist church), Naraiyawa (cave), Naqaributa (Catholic church), and Mount Voma/Namosi (memorial cross, first mass)

Some of the challenges and limitations noted from Namosi and Serua include:

- Attitude of landowners; and
- Proposed Namosi copper mine.

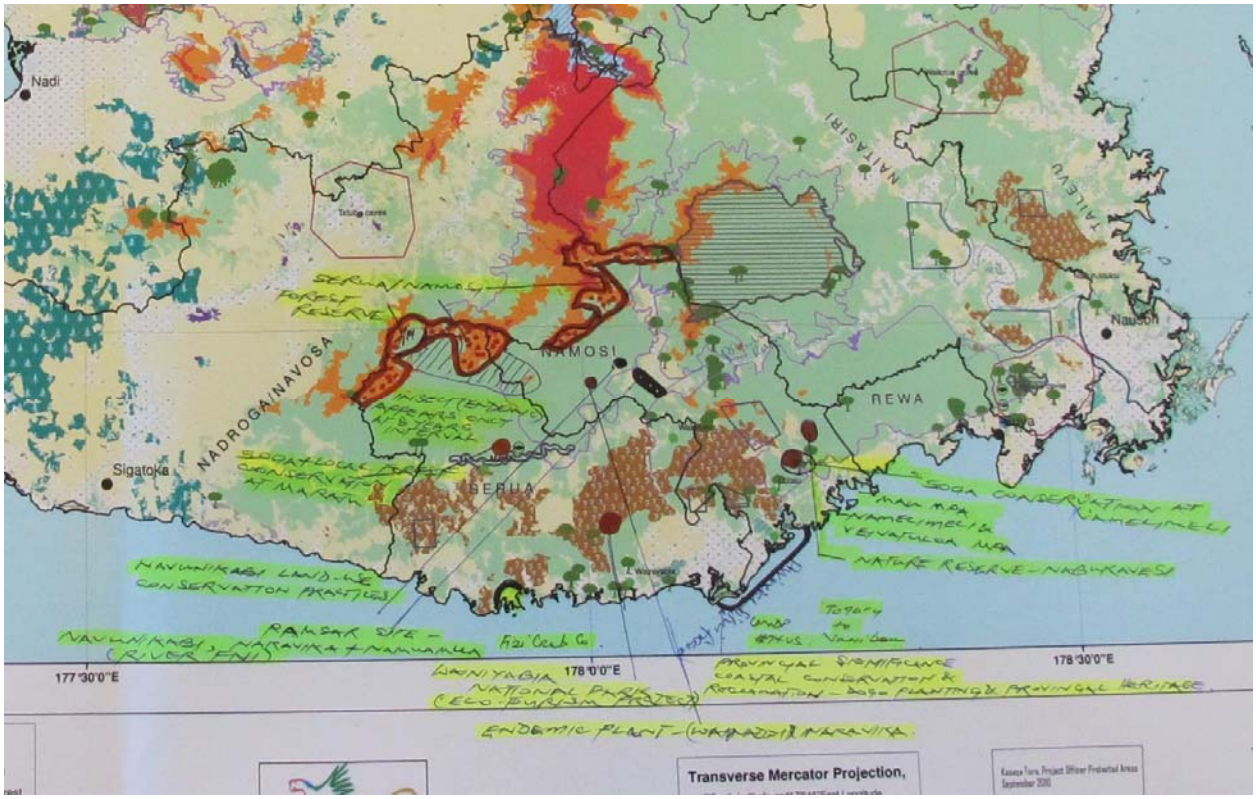


Figure 20. Photograph of proposed terrestrial protected, managed and cultural heritage sites for Namosi and Serua.

The joint communications plan for Namosi and Serua is displayed in Table 21.

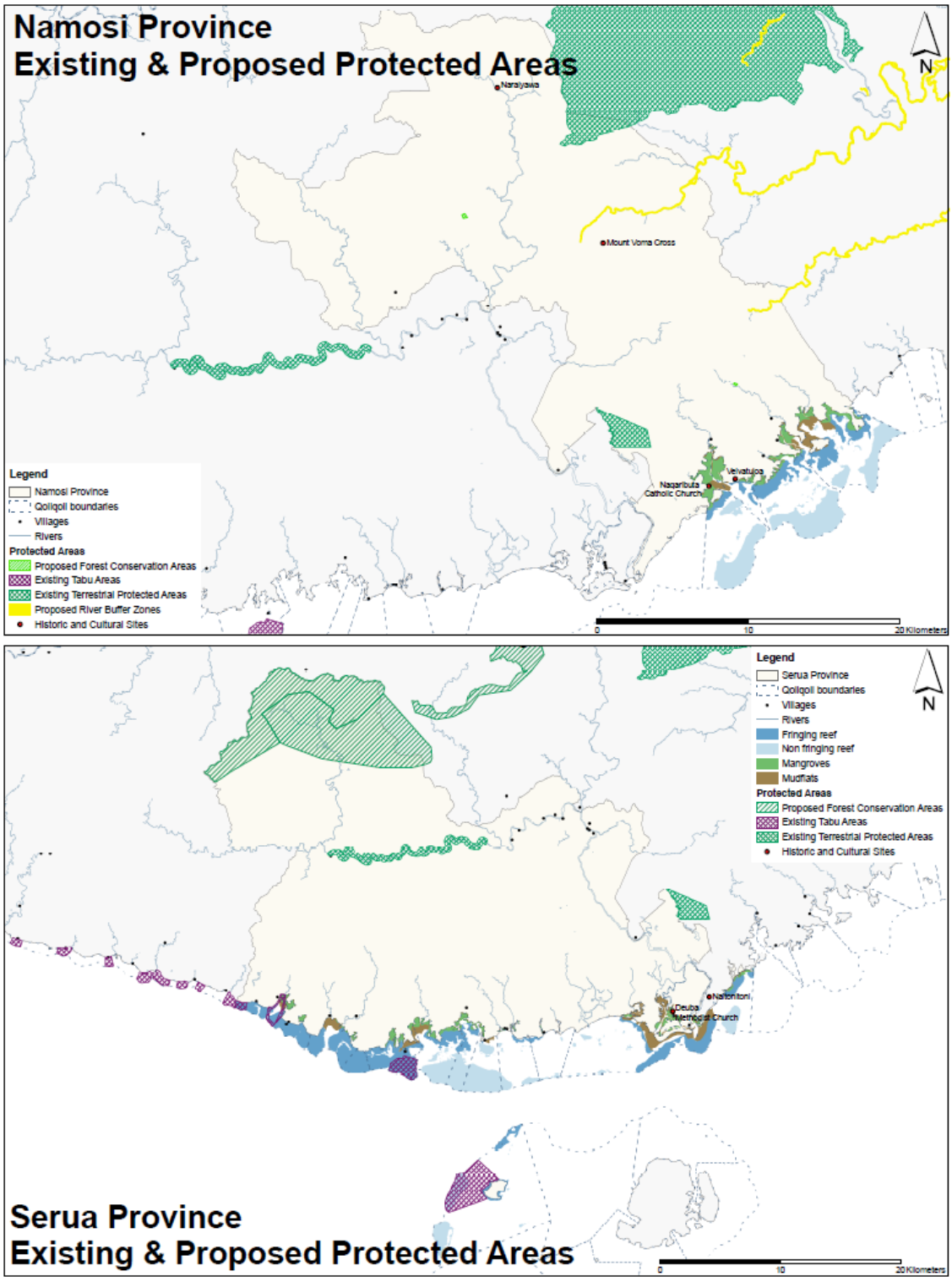


Figure 1. Maps of proposed and existing protected areas in Namosi (TOP) and Serua (BOTTOM) provinces.

Table 21. Communications strategies and actions for informing stakeholders in Namosi and Serua.

TARGET AUDIENCE	COMMUNICATION STRATEGY	COMMUNICATION TOOL	RESPONSIBILITY	TIMEFRAME
• **Resource owners** • **Village council** • **Tikina council** • **Sub-committees and committees** • **Youth &women's groups**	Awareness programs Mataqali, yavusa and village Tikina Provincial council meetings Bose Vanua	Butcher paper, pens, Posters, maps, powerpoint presentations Laptop and multi media Group discussions and presentations Role plays/ Dramas	Provincial office-guidance of the Roko Tui GO's NGOs Private sectors Foreign Aid and Donor Agencies/ Technical expertise	2011-2013

Ra

Because there is considerable conservation work already in practice in Ra Province, there were few new specific candidate sites proposed (Figure 22). Some of the recent and ongoing activities include:

- Work led by Conservation International (CI) to plant 1000 ha of indigenous and exotic timber around Nakauvadra by 2012;
- Rat eradication on Vatu-i-Ra Island, led by BirdLife International;
- The ridge-to-reef Coastal and Watershed Restoration for the Integrity of Island Environments (COWRIE) project at Nakorotubu funded by Coral Reef Initiatives for the Pacific (CRISP) and led by USP; and
- Identification of candidate tabu sites with FLMMA partner IAS/USP within Rakiraki and Nakorotubu qoliqoli

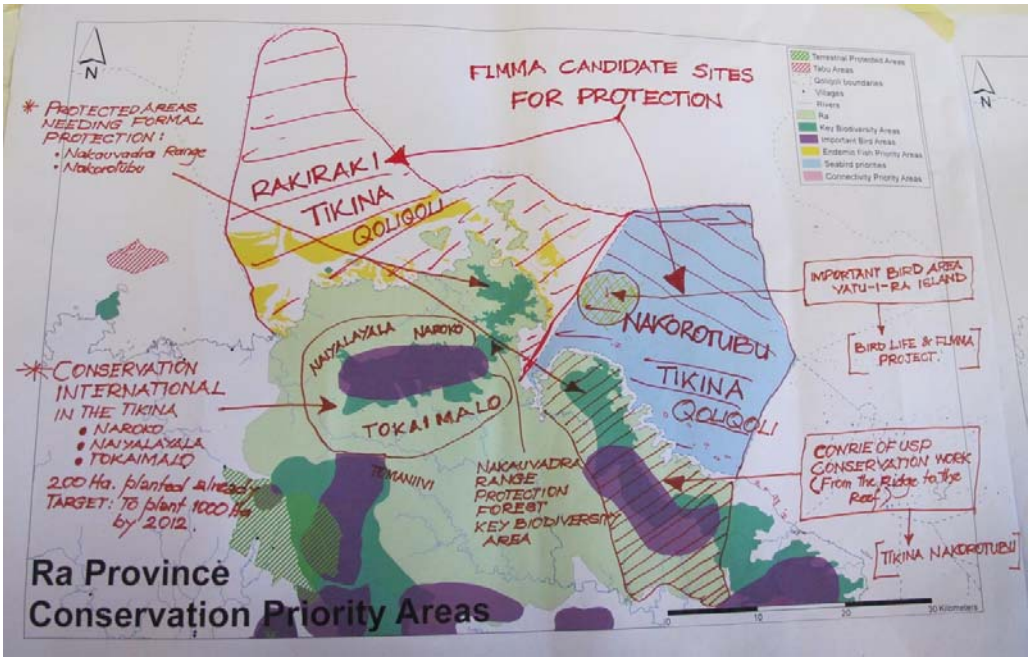
Some of the recommendations for improvements to management include:

- Formal protection for Nakauvadra and Nakorotubu ranges;
- Coral reef rehabilitation in Viti Levu Bay;
- Increased focus on mangrove and mudflats as important fish spawning aggregation sites; and
- Village by-laws that require 25 m buffer zone around all rivers and streams

Some of the main challenges and limitations identified include:

- Poachers from outside of the province who aren't aware of the conservation work;
- Fish wardens are ill-equipped;
- Penalties in the legislation are not severe enough to act as deterrents; and
- Threats to biodiversity from invasive species such as tilapia and eucalyptus

The joint communications plan for Ra, Nadroga and Kadavu is displayed in Table 20.



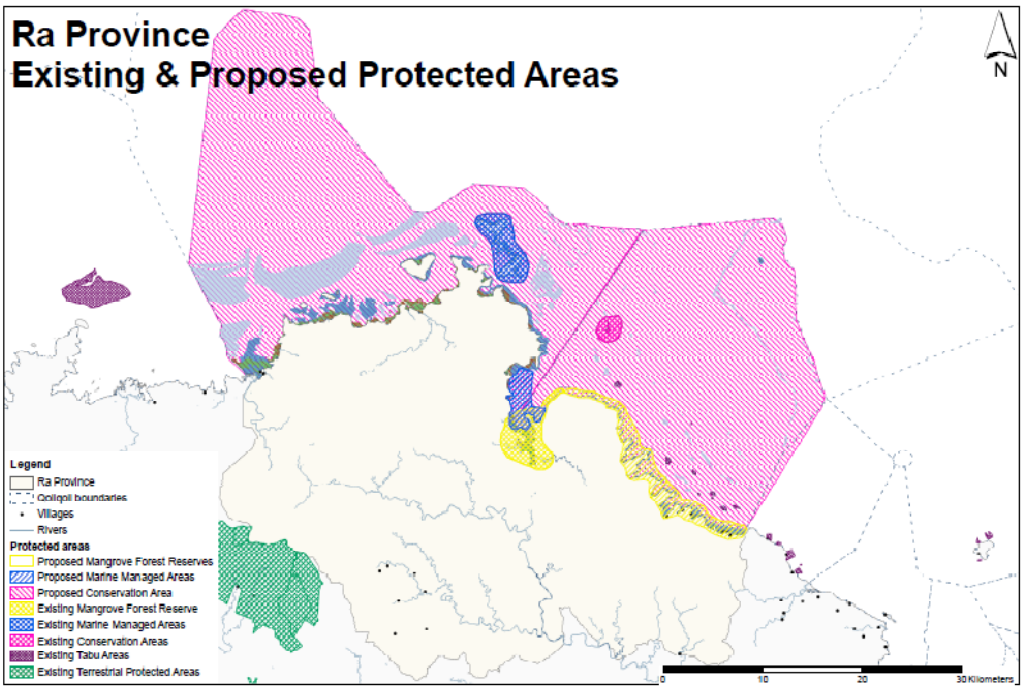


Figure 22. Photograph (TOP) and map (BOTTOM) of existing and proposed protection and management in Ra.

Rewa

Outcomes from discussions for Rewa include (Figure 23):

- *Proposed Tabu Areas* at Beqa shark feeding site, Royal Davui, Naceva, and Raffle Range (no anchor zone for Laucala)
- *Proposed Habitat/Species Management Area* in Nukutubu for mangrove farming and restoration
- *Proposed Forest Reserve* at Togalevu (IBA)
- *Proposed Water Catchment Areas* for Veisari River and Togalevu
- *Proposed Cultural Heritage Sites* at Lomanikoro Mission, Lomanikoro-Nailili (first Catholic missionary), gun site, Navakavu (2 sites yet to be confirmed), Nukulau and Makaluva Islands, Mosquito and Orchard Islands, RFNZ site in Laucala, and Borron House heritage building

Some of the challenges and limitations discussed include:

- Current poor land use practices;
- Unsustainable logging practice;
- Overpopulation;
- Overfishing and illegal fishing; and
- Poor waste management from squatter settlements, municipal centres, industrial areas and manufacturing centres.

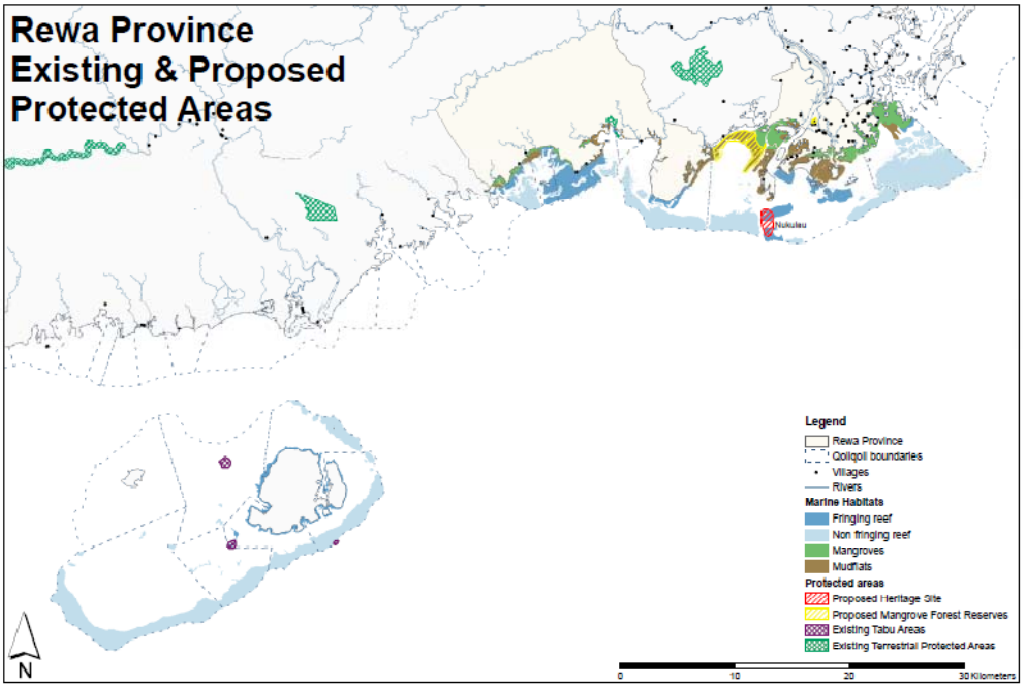


Figure 23. Map of proposed and existing protected and managed areas for Rewa.

Tailevu

Outcomes from discussions for Tailevu include (Figure 24):

- *Proposed LMMAs* at Namena, Kubuna, Dawasamu, Sawakasa, and Namalata
- *Proposed Mangrove Habitat Management Area* at Bau/Nakele/Buretu/Tokatoka
- *Proposed Nature Reserve* at Dawasamu/Sawakasa (ensure connectivity between land and sea)
- *Proposed Water Catchment Areas* at Nomau, Dawasamu and Sawakasa

Some of the challenges and limitations discussed include:

- Heavy land use;
- Need more awareness and resources for consultation;
- Government is pursuing commercial agriculture and there is lack of communication between the Ministry of Agriculture and Department of Environment;
- Crab companies attempting to lease entire mangrove area

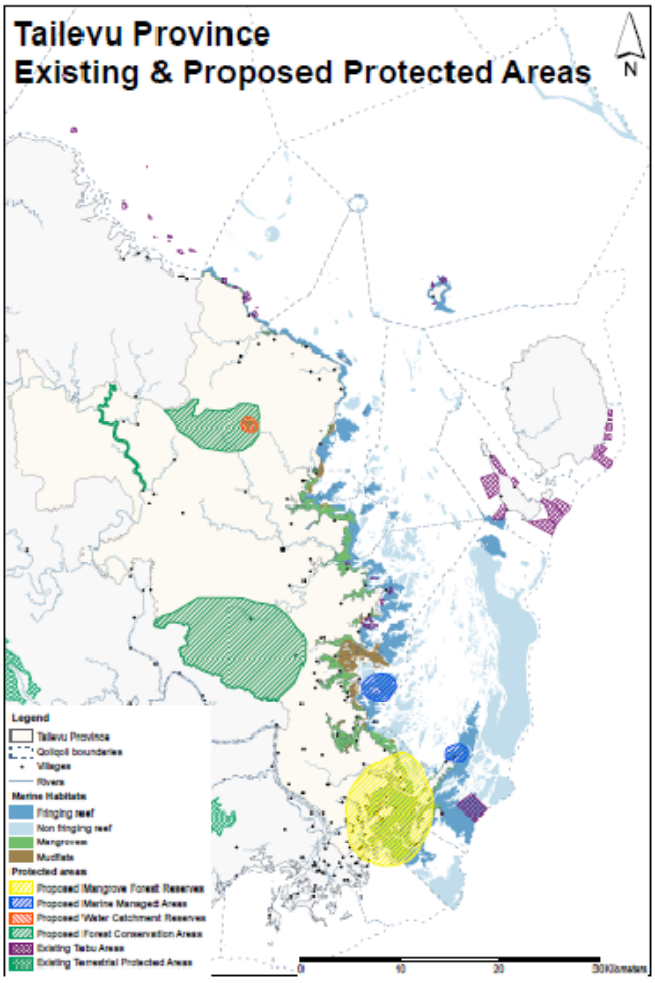


Figure 24. Map of existing and proposed protected and managed areas for Tailevu.

Conclusions and Recommendations

The Nadave workshop represents the first time the PAC has engaged provincial administrators in a coordinated fashion to discuss opportunities and challenges for expanding Fiji's national protected area network. While a large number of candidate sites were put forward for consideration by stakeholders, there is a strong need to reconcile the proposed protected area categories into a confirmed scheme that will allow for international recognition as well as fit the socioeconomic and governance conditions in Fiji. In order to provide the legal authority to implement and enforce regulations across all categories, new protected area legislation needs to be developed and existing legislation may need to be amended.

In 2011, the PAC will work with the Fiji Environmental Law Association (FELA) to conduct a legislative gap assessment to determine the scope of new protected area legislation and regulations, which will be housed with the Department of Environment. Some potential focal areas should include: providing legal recognition of local resource management committees' community management plans that meet set criteria for Community Forest Parks and Locally Managed Marine Areas; and provisions for specific habitat or species management areas to allow for the protection and management of critically threatened species and ecosystems. Furthermore, as certain provinces (e.g. Lau) have already expressed interest in establishing open ocean protected areas outside of qoliqoli boundaries, there is a unique opportunity for the PAC to work with existing regulatory bodies (e.g. within Department of Fisheries) to declare offshore MPAs.

In order to ensure that the positive momentum from the Nadave workshop is not lost, the PAC should work closely with Provincial Offices in 2011 to: (1) organize and seek financing for participatory stakeholder discussions at priority sites; (2) assist local communities and government to develop holistic management, monitoring and enforcement plans for each site; and (3) provide capacity building and management support to local communities and governance bodies at those sites.[9] Although it will not be possible to provide assistance to all of the candidate sites identified from the workshop, site selection can occur both opportunistically at high priority sites where funding and resources are immediately available and through more top-down planning processes that seek to optimize conservation gains while minimizing opportunity costs to resource users when working within a limited budget. To this end, the PAC will be working with a research team from the University of Queensland to build on a model developed for the Coral Triangle region (Klein et al. 2010) with higher resolution data for Fiji to identify where management actions will optimize return on investment for biodiversity conservation and land-sea connectivity.

Furthermore, following stakeholder consultation in each respective province, the confirmed list of priority sites should be mapped and distributed to government ministries to guide decisions for development. This approach is currently being taken by Papua New Guinea under their PoWPA where management partners have identified conservation priority areas which will allow the PNG Department of Environment and Conservation to "quickly identify areas where

[9] Activities identified in the the PoWPA Early Action GEF-UNDP grant to the PAC.

nationally significant development proposals must be subject to careful assessment of impacts on identified conservation targets and specific measures to attenuate and offset those impacts if the development takes place" (Lippsett-Moore et al. 2010).

Yet while national-scale planning and prioritization can identify hot spots to focus efforts, optimal strategies for biodiversity conservation will necessarily have to be adjusted or rescaled to meet community objectives and fit local governance scales (Mills et al. in press). One real opportunity to mobilize conservation and management efforts across district and provincial boundaries is to raise awareness of the links between environmental health and public health. Thus, areas with high biodiversity value within overlapping ecological (e.g. catchment), governance and nursing zone boundaries should be rated highly for management implementation. In cases of mis-matched boundaries, efforts will need to be taken to inform and include stakeholders from upstream and downstream communities, regardless of whether they are located in different districts or provinces (Jupiter and Jenkins 2010). Furthermore, site-based awareness should be coupled with national campaigns to improve public awareness of the benefits of protected areas in terms of improvements to ecosystem services such as food and water security and human health.

References

Atherton J, Olson D, Farley L, Qauqau I (2005) Fiji watersheds at risk: Watershed assessment for healthy reefs and fisheries. Wildlife Conservation Society, Suva, Fiji, 41 pp

Clarke P, Gillespie T (2008) Legal mechanisms for the establishment and management of terrestrial protected areas in Fiji. IUCN Regional Office for Oceania, Suva, Fiji

Clarke P, Jupiter SD (2010) Law, custom and community-based natural resource management in Kubulau District (Fiji). Environmental Conservation 37:98-106

DoE (2007) Fiji National Biodiversity Strategy and Action Plan. Fiji Department of Environment, Suva, Fiji

Dudley N (2008) Guidelines for applying protected area management categories. IUCN, Gland, Switzerland x + 86 pp

Dudley N, Parish J (2006) Closing the gap. Creating ecologically representative protected area systems: A Guide to conducting the gap assessments of protected area systems for the Convention on Biological Diversity. Technical Series no. 24. Secretariat of the Convention on Biological Diversity, Montreal, Canada, 108 pp

Dudley N, Parrish JD, Redford KH, Stolton S (2010) The revised IUCN protected area management categories: the debate and ways forward. Oryx 44:485-490

GOF (1993) The National Environment Strategy. In: Watling D, Chape SA (eds). IUCN - World Conservation Union, Suva, Fiji

Govan H, Tawake A, Tabunakawai K, Jenkins A, Lasgorceix A, Schwarz A-M, Aalbersberg B, Manele B, Vieux C, Notere D, Afzal D, Techera E, Rasalato ET, Sykes H, Walton H, Tafea H, Korovulavula I, Comley J, Kinch J, Feehely J, Petit J, Heaps L, Anderson P, Cohen P, Ifopo P, Vave R, Hills R, Tawakelevu S, Alefaio S, Meo S, Troniak S, Malimali S, Kukuian S, George S, Tauaefa T, Obed T (2009) Status and potential of locally-managed marine areas in the South Pacific: meeting nature conservation and sustainable livelihood targets through wide-spread implementation of LMMAs. SPREP/WWF/WorldFish-Reefbase/CRISP, Suva, Fiji 95 pp + 95 pp annexes

Jenkins AP, Jupiter SD, Qauqau I, Atherton J (2010) The importance of ecosystem-based management for conserving migratory pathways on tropical high islands: A case study from Fiji. Aquatic Conservation: Marine and Freshwater Ecosystems 20:224-238

Jupiter S, Jenkins A (2010) Challenges and opportunities for catchment management in Fiji to conserve biodiversity and improve human health Eco-Health Forum, Suva, Fiji

Jupiter S, Mills M, Comley J, Batibasaga A, Jenkins A (2010) Fiji marine ecological gap assessment: interim progress report. Wildlife Conservation Society, Suva, Fiji, 26 pp

Klein CJ, Ban NC, Halpern BS, Beger M, Game ET, Grantham HS, Green A, Klein TJ, Kininmonth S, Treml E, Wilson KA, Possingham HP (2010) Prioritizing land and sea conservation investments to protect coral reefs. PLoS ONE 5:e12431. doi:12410.11371/journal.pone.0012431

Knight AT, Smith RJ, Cowling RM, Desmet PG, Faith DP, Ferrier S, Gelderblom CM, Grantham H, Lombard AT, Maze K, Nel JL, Parrish JD, Pence GQK, Possingham HP, Reyers B, Rouget M, Roux D, Wilson KA (2007) Improving the key biodiversity areas approach for effective conservation planning. BioScience 57:256-261

Langhammer PF, Bakarr MI, Bennun LA, Brooks TM, Clay RP, Darwall W, De Silva N, Edgar GJ, Eken G, Fishpool LDC, Fonseca GABd, Foster MN, Knox DH, Matiku P, Radford EA, Rodrigues ASL, Salaman P, Sechrest W, Tordoff AW (2007) Identification and gap analysis of key biodiversity areas: targets for comprehensive protected area systems. IUCN, Gland, Switzerland, 116 pp

Lippsett-Moore G, Game E, Peterson N, Saxon E, Sheppard S, Allison A, Michael J, Singadan R, Sabi J, Kula G, Gwaibo R (2010) Interim national terrestrial conservation assessment for Papua New Guinea: Protecting biodiversity in a changing climate. Pacific Island Countries Report No. 1/2010 Papua New Guinea Department of Environment and Conservation, The Nature Conservancy and the UNDP, Brisbane, Australia, 92 pp

Locke H, Dearden P (2005) Rethinking protected area categories and the new paradigm. Environmental Conservation 32:1-10

Margules CR, Pressey RL (2000) Systematic conservation planning. Nature 405:243-253

Masibalavu VT, Dutson G (eds) (2006) Important bird areas in Fiji: Conserving Fiji's natural heritage. BirdLife International Pacific Partnership Secretariat, Suva, Fiji

Mills M, Jupiter SD, Pressey RL, Ban NC, Comley J (in review) Incorporating effectiveness of community-based management strategies in a national marine gap analysis for Fiji. Conservation Biology

Mills M, Pressey RL, Weeks R, Foale S, Ban NC (in press) A mismatch of scales: challenges in planning for implementation of marine protected areas in the Coral Triangle. Conservation Letters:doi: 10.1111/j.1755-1263X.2010.00134.x

Minter A (2008) Compliance and enforcement for coastal fisheries management in Fiji. IUCN Regional Office for Oceania, Suva, Fiji, 61 pp

Mueller-Dombois D, Fosberg FR (1998) Vegetation of the tropical Pacific islands. Springer-Verlag, New York, USA

Olson D, Farley L, Patrick A, Watling D, Tuiwawa M, Masibalavu V, Lenoa L, Bogiva A, Qauqau I, Atherton J, Caginitoba A, Tokota'a M, Prasad S, Naisilisili W, Raikabula A, Mailautoka K, Morley C, Allnutt T (2009) Priority forests for conservation in Fiji: landscapes, hotspots and ecological processes. Oryx 44:57-70

Parks J, Salafsky N (eds) (2001) Fish for the future? A collaborative test of locally-managed marine areas as a biodiversity conservation and fisheries management tool in the Indo-Pacific Region. World Resources Institute, Washington, D. C., USA

Scott DA (ed) (1993) A Directory of Wetlands in Oceania. IWRB and AWB, Slimbridge, UK

Veitayaki J, Aalbersberg B, Tawake A, Rupeni E, Tabunakawai K (2003) Mainstreaming resource conservation: the Fiji Locally Managed Marine Area Network and its influence on national policy development. Resource Management in Asia-Pacific Working Paper No. 42. Research School of Pacific and Asian Studies, The Australian National University, Canberra, Australia, 13 pp

Watling D (1985) Mangrove Management Plan for Fiji, Phase 1. Government Printer, Suva, Fiji

Woodroffe CD (1987) Pacific Island mangroves: distribution and environmental settings. Pacific Science 41:166-185

WWF (2004) Setting priorities for marine conservation in the Fiji Islands Marine Ecoregion. WWF South Pacific Programme, Suva, Fiji, 79 pp

Appendix A. Nadave Workshop Agenda

Day 1, 20 September

8:00	Registration	
8:45	Devotion	
9:00	Opening	CEO, iTAB
	Overview of Gap Analysis	
9:15	Introduction to Gap Analysis	Elizabeth Erasito, NTF
9:35	Terrestrial Gap Analysis results	Kasaqa Tora, NTF
9:55	Marine Gap Analysis results	Morena Mills, JCU
10:15	*Morning Tea*	
	National Prioritization Processes	
10:45	Introduction to Conservation Planning	Rebecca Weeks, WCS
11:00	KBAs/Evolution of Terrestrial PA network	Sefa Nawadra, CI
11:15	Endemic plant species	Marika Tuiwawa, Herbarium[10]
11:30	IBAs (land and sea)	Mark O'Brien, BirdLife International
11:45	Fiji Islands Marine Ecoregions	Kesa Tabunakawai, WWF
12:00	Mangroves	Dick Watling, NFMV[11]
12:15	Connectivity Areas	Stacy Jupiter, WCS
12:30	Endemic Fish and Wetlands	Aaron Jenkins, WIO
12:45	Evolution of FLMMA network	Ron Vave, FLMMA
	Lunch	
2:00	Overview of Maps	Kasaqa Tora, NTF; Rebecca Weeks, WCS
2:20	Break out groups by province	
3:30	*Afternoon tea*	
4:00	Continue with break out groups by province	
5:00	Close of day	

Day 2, 21 September

9:00	Devotion	
9:15	Continue with break out groups by province	
10:30	*Morning tea*	
11:00	Continue with break out groups by province	
11:30	Report back on issues and conclusions	
1:00	*Lunch*	
2:00	Techniques to communicate results to province/communities	Thomas Tui & Alumeci Nakeke, Seaweb
3:30	*Afternoon tea*	
4:00	Strategy and timeline for taking action	Thomas Tui & Alumeci Nakeke, Seaweb

[10] Was not available to present (presented by K. Tora)
[11] Was not available to present (presented by S. Jupiter)

Appendix B. Nadave Workshop Participants

No.	Name	Ministry/Dept/Organisation
1	Sitiveni Lalibuli	Roko Tui Macuata
2	Misiwaini Qereqeretabua	iTaukei Affairs Board
3	Kalivatu Tauvoli	Roko Tui Bua
4	Alifereti Raisuni	Senior Assistant Roko Tui Ra
5	Mesake Draniatu	FLMMA Confederacy Representative: Kubuna
6	Etonia Sepu	Roko Tui Ra
7	Joeli Nageia	Senior Assistant Roko Tui Lau
8	Timoci G. Kacanavesi	Senior Assistant Roko Tui Rewa
9	Waisake Tuisese	Senior Assistant Roko Tui Naitasiri
10	Mosese Nakoroi	Senior Assistant Roko Tui Macuata
11	Ana Tagivetane	Senior Assistant Roko Tui Lomaiviti
12	Jasoni Kuruyawa	Senior Assistant Roko Tui Kadavu
13	Vuniyani Dawai	Roko Tui Kadavu
14	Rupeni Kunatuvoga	Senior Assistant Roko Tui Nadroga
15	Niko Yacalevu	Roko Tui Rewa
16	Viliame Burenivalu	Roko Tui Nadroga/Navosa
17	Peni Sekia	Roko Tui Naitasiri
18	Aca Mataitini	Roko Tui Cakaudrove
19	Stacy Jupiter	Wildlife Conservation Society
20	Vanessa Adans	James Cook University
21	Morena Mills	James Cook University
22	Rebecca Weeks	Wildlife Conservation Society
23	Naushad Yakub	Wildlife Conservation society
24	Yashika Nand	Wildlife Conservation Society
25	Ingrid Qauqau	Wildlife Conservation Society
26	Aaron Jenkins	Wetlands International – Oceania
27	Kesaia Tabunakawai	WWF
28	Mark O'Brien	BirdLife International
29	Solomoni Q. Nagaunavou	Ministry of Primary Industries, Land Use Section
30	Akuila N Raibevu	Ministry of Primary Industries, Land Use Section
31	Josefa Toganivalu	Senior Assistant Roko Tui Tailevu
32	P.Velitokadudua	Roko Tui Lomaiviti
33	Joape Nalatu	Roko Tui Tailevu
34	N.Gucake	iTaukei Affairs Board
35	Jese Volau	iTaukei Affairs Board
36	Kaminitu Nabalarua	FLMMA Kadavu YMST/ Fisheries Dept
37	Waisale Siganisucu	FLMMA Koro YMST
38	Laisiasa Naigulevu	FLMMA Lau YMST

39	Simione Tuimalega	Dept National Heritage, Culture and Arts
40	Rota Lenati	NLTB
41	Thomas Tui	SeaWeb
42	Alumeci Nakeke	SeaWeb
43	Mere Wavu	iTaukei Affairs Board
44	Semi Rogoyawa	iTaukei Affairs Board
45	Alifereti Tawake	FLMMA/IAS
46	Margie Vakalalabure	FLMMA/Fisheries
47	Samisoni Seru	FLMMA Lomaiviti YMST
48	Jason Tutani	National Trust of Fiji
49	Vaseva Cerelala	Conservation International
50	Elizabeth Erasito	National Trust of Fiji
51	Kasaqa Tora	National Trust of Fiji
52	Jone Niukula	National Trust of Fiji
53	Josefa Ravuso	National Trust of Fiji
54	Meli Namasi	FLMMA Cakaudrove YMST
55	Miliano Ravuso	BirdLife International
56	Apolosi Silaca	FLMMA Confederacy Representative: Tovata
57	Kemueli Masikerei	Lands Dept
58	Akasio Yavala	Lands Dept
59	Vananalagi I Vesikula	Roko Tui Ba
60	Jolame Sikolia	FLMMA Confederacy Representative: Burebasaga
61	Hans Wendt	IAS-USP
62	Eleni Tokatokadua	Dept of Environment
63	Aminiasi	Dept of Environment
64	Sakuisa Karavaki	Roko Tui Namosi

Appendix C. Preliminary Register of Sites of National Significance

Extracted from Attachment 5 of Fiji's National Biodiversity Strategy and Action Plan (2007). Includes only sites of biological, geological, geomorphological, and landscape significance listed by Division (GOF 1993)

CENTRAL DIVISION			
Site	**Site #**	**SIGNIFICANCE**	**TENURE**
Wailotua	C/1	Limestone ecosystem and cave	Native (NLTB/landowners)
Naqali	C/2	*Neovetchia storkii* palm habitat	
Savura Creek	C/3	Catchment protection, rainforest	Gov't (Forestry/Lands Depts)
Sovi Gorge	C/4	River gorge of high scenic value	Native (NLTB/landowners)
Mt. Korobaba	C/5	Rainforest, 5 endemic plant species, recreation	Gov't (Lands Dept?)
Naulu Lokia Swamp	C/6	White-browed rail habitat	Native (NLTB/landowners)
Nasinu Cave	C/7	Cave system	Native (NLTB/landowners)
Vatu-i-Lami	C/8	Seabird nesting colony	Native (NLTB/landowners)
Mubulau	C/9	Seabird nesting colony	Gov't (Lands Dept)
Suva Reef	C/10	Marine habitat and recreation area	Gov't (Lands Dept)
Batiwai Forest	C/11	*Gulubia microcarpa* palm habitat, forest reserve	Gov't (Forestry Dept)
Sovi Basin	C/12	Rainforest, wilderness area, high scenic valley	Native (NLTB/landowners)
Suva Point	C/25	Feeding site for migratory waders	Gov't (Lands Dept)
NORTHERN DIVISION			
Matagi Island	N/1	Beach forest, flooded volcanic caldera	Private freehold?
Waisali Reserve	N/2	Dakua rainforest, Amenity Reserve	Native (National Trust / NLTB / landowners)
Rokosalase	N/3	Buabua forest (*Fragraea gracipilles*)	Native (NLTB/landowners)
Kioa Island	N/4	Island environment	Freehold (Tuvaluan Council)
Naselesele Falls	N/5	Waterfall systems	Native (NLTB/landowners)
Salt Lake	N/6	Unique formation	Freehold
Vunivia Catchment	N/7	Lowland dry zone forest	Native (NLTB/landowners)
Vunivia Mangroves	N/8	Intact mangrove system	Gov't (Lands Dept)
Ravilevu Nature Reserve	N/9	Wet rainforest habitat, mongoose free	Gov't (Forestry Dept)
Cobia Island	N/10	Beach forest, geological formation	Native (NLTB/landowners)
Taveuni Island	N/11	Potential World Heritage nomination	Native/Gov't/Freehold
Qelelevu Atoll	N/12	Atoll habitat	Native (NLTB/landowners)
Namena Barrier Reef	N/13	Barrier reef, marine ecosystem	Gov't (Lands Dept)
Namenalala Island	N/14	Seabird nesting colony, beach forest	Native/Gov't (Lands Dept)
Great Sea Reef	N/15	Barrier reef, marine ecosystem	Gov't (Lands Dept)
Tunuloa Forest	N/16	Rainforest, Vanua Levu silktail habitat	Native (NLTB/landowners)
Rainbow Reef	N/17	Patch reef, marine ecosystem	Gov't (Lands Dept)
Nasinunaqeandae	N/18	Geological site - marine notch	

NORTHERN DIVISION (cont.)			
Site	**Site #**	**SIGNIFICANCE**	**TENURE**
Urabuta Point	N/19	Anchialine - red prawn pool	Native (NLTB/landowners)
Lavena	N/20	Geological site - sea stack	Native (NLTB/landowners)
Savasi	N/21	Geological site - rock type	Native (NLTB/landowners)
Bakabaka Island	N/22	Geological site - rock type	Native (NLTB/landowners)
Nanuca	N/23	Geological site - rock type	Native (NLTB/landowners)
Cikobia	N/24	Seabird nesting colony	Native (NLTB/landowners)
Vunimoli Nature Reserve	N/25	Rainforest, Forest Reserve	Gov't (Forestry Dept)
Nukubasaga	N/26	Seabird nesting colony	Native (NLTB/landowners)
Nukusimanu	N/28	Seabird nesting colony	Native (NLTB/landowners)
Vetaua	N/29	Seabird nesting colony	Native (NLTB/landowners)
Nanuku Island	N/30	Turtle nesting area	Native (NLTB/landowners)
Nukutolu	N/31	Turtle nesting area	Native (NLTB/landowners)
Rotuma	N/32	Unique island, geological feature	Rotuman Council
Hofliua Island	N/33	Seabird nesting colony	Rotuman Council
Hatawa Island	N/34	Seabird nesting colony	Rotuman Council
Uea Island	N/35	Geological features, beach forest	Rotuman Council
Nanuku Island	N/36	Turtle nesting area	Native (NLTB/landowners)
Yadua Taba	N/37	Crested iguana sanctuary	Native (NLTB/National Trust/landowners)
EASTERN DIVISION			
Duff Reef	E/1	Turtle nesting site	Gov't (Lands Dept)
Cakaulekaleka Reef	E/2	Marine ecosystem	Gov't (Lands Dept)
Yabu Island	E/3	Seabird nesting colony	Native (NLTB/landowners)
Fulaga Bay of Islands	E/4	Spectacular lagoon, *Pritchardia thurstoni* habitat	Native (NLTB/landowners)
Sovu Island	E/5	Seabird nesting colony	Native (NLTB/landowners)
Ogealevu	E/6	Makatea forest, Ogea flycatcher habitat	Native (NLTB/landowners)
Tubou Cave	E/7	Island cave system	Native (NLTB/landowners)
Gau	E/8	Endangered Fiji petrel nesting habitat	Native (NLTB/landowners)
Qilaqila Bay of Islands	E/9	Coastal formations, marine ecosystem	Native/Gov't (Lands Dept)
Masimo Bay	E/10	Coastal environment	Native/Gov't (Lands Dept)
Wailagilala Atoll	E/11	Atoll, seabird nesting colony, marine ecosystem	Native/Gov't (Lands Dept)
Taqua Island	E/12	Seabird nesting colony	Native (NLTB/landowners)
Mt. Bukelevu (Washington)	E/13	Petrel breeding site, unique landscape	Native (NLTB/landowners)
Great Astrolabe Reef	E/14	Marine lagoon ecosystem	Gov't (Lands Dept)
N. Astrolabe Reef	E/15	Marine lagoon ecosystem	Gov't (Lands Dept)
Makogai Island and Reef	E/16	Beach forest, cycad dominated, coastal / marine ecosystem	Gov't (Lands/Agriculture/Fisheries Depts)
Cakau Momo Reef	E/17	Marine ecosystem	Gov't (Lands Dept)
Wakaya Island	E/18	Coastal-marine ecosystem	Freehold
Vutua	E/19	Geological site - rock type	Native (NLTB/landowners)
Yawica Island	E/20	Geological site - rock type	Native (NLTB/landowners)

EASTERN DIVISION (cont).			
Site	**Site #**	**SIGNIFICANCE**	**TENURE**
Naiabo	E/21	Seabird nesting colony	Native (NLTB/landowners)
Vanuamasi	E/22	Seabird nesting colony	Native (NLTB/landowners)
Reid Reef	E/23	Seabird nesting colony	Gov't (Lands Dept)
Lateviti	E/24	Seabird nesting colony	Native (NLTB/landowners)
Kibobo Island	E/25	Seabird nesting colony	Native (NLTB/landowners)
Yanuya Is, Ono	E/26	Habitat of endemic *Leilopistma glazon* skink	Native (NLTB/landowners)
Nuku Cikobia	E/27	Turtle nesting area, seabird nesting colony	Native (NLTB/landowners)
Vekai Island	E/28	Seabird nesting colony	Native (NLTB/landowners)
Nukusoge	E/29	Seabird nesting colony, turtle nesting area	Native (NLTB/landowners)
Yasaga Levu Island	E/30	Seabird nesting colony	Native (NLTB/landowners)
WESTERN DIVISION			
Cuvu Beach	W/1	Coastal ecosystem, recreation	Gov't (Lands Dept)
Natadola	W/2	Coastal ecosystem, recreation	Gov't (Lands Dept)/Freehold
Sigatoka Sand Dunes	W/3		National Trust/Freehold/Public Trustee/NLTB
Sautabu Cave	W/4	Limestone cave	Native (NLTB/landowners)
Naqalimare Limestone	W/5	Limestone ecosystem	Native (NLTB/landowners)
Tatuba Cave	W/6	Limestone cave ecosystem	Native (NLTB/landowners)
Nausori Highlands	W/7	Dryzone mountain rainforest	Native (NLTB/landowners)
Coral Coast Reefs	W/8	Marine ecosystem, recreation	Gov't (Lands Dept)
Wainisavulevu Falls	W/9	Waterfall	Native (NLTB/landowners)
Rairaimatuku Plateau	W/10	Mountain rainforest	Native (NLTB/landowners)
Monasavu Dam	W/11	Dam, hydro catchment protection, rainforest	Gov't (Lands Dept)/NLTB
Nakorotubu Vine	W/12	Unique tropical vine thicket	Native (NLTB/landowners)
Nakauvadra Mountain Range	W/13	Dry zone rainforest	Native (NLTB/landowners)
Malamala Island	W/14	Marine ecosystem	Native (NLTB/landowners)
Vatia Vine Thicket	W/15	Unique tropical vine thicket	Native (NLTB/landowners)
Wabu Creek	W/16	Intact Fiji dakua montane rainforest	Native (Forestry Dept/NLTB)
Dreketi Inlet	W/17	Coastal environment, mangrove	Native (Forestry Dept/NLTB)
Koroyanitu (Mt Evans) Range	W/18	Intact dry zone montane rainforest	Native (NLTB/landowners/Gov't (Lands Dept))
White Rock	W/19	Seabird nesting colony	Native (Forestry Dept/NLTB)
Macuata Island	W/20	Crested iguana habitat	Native (Forestry Dept/NLTB)
Nadi Bay Reefs	W/21	Reefs, recreation	Gov't (Lands Dept)
Vaturu Dam Catchment	W/22	Catchment protection, dry zone rainforest	Native (Gov't (Lands Dept?)/NLTB
Kadomo Island	W/23	Shearwater nesting colony	Native (Forestry Dept/NLTB)
Mamanuca Group	W/24	Coastal/marine ecosystem, recreation	Native (Forestry Dept/NLTB)
Vomosewa	W/25	Flying fox camp, island vegetation	Native (Forestry Dept/NLTB)
Monoriki Island	W/26	Iguana habitat, seabird nesting colony, vegetation	Native (Forestry Dept/NLTB)

WESTERN DIVISION *(cont.)*			
Site	**Site #**	**SIGNIFICANCE**	**TENURE**
Monasavu Swamp	W/27	Rare montane swamp community	Native (NLTB/landowners)
Vatu-i-Ra	W/28	Seabird nesting colony	Native (NLTB/landowners)
Qaranibuluti Nature Reserve	W/29	Rainforest, Forest Reserve	Gov't (Forestry Dept)
Nadarivatu Nature Reserve	W/30	Dakua dominated rainforest	Gov't (Forestry Dept)
Saweni Sandflat	W/31	Feeding site for migratory waders	Native (NLTB/landowners)
Gusuniqara Point	W/31	Geological site - marine notch	Native (NLTB/landowners)
Korokune	W/35	*Veitchia johannis* palm forest	Native (NLTB/landowners)
Vanualevu Island	W/36	Geological site - rock type	Native (NLTB/landowners)
Kucuve Point	W/37	Geological site - rock type	Native (NLTB/landowners)
Motokuro Point	W/38	Geological site - rock type	Native (NLTB/landowners)
Koromasoli Point	W/39	Geological site - rock type	Native (NLTB/landowners)
Digio Island	W/40	Geological site - rock type	Native (NLTB/landowners)
Yadua Quarry	W/45	Geological site - rock type	Native (NLTB/landowners?)
Marasiko	W/46	Geological site - rock type	Native (NLTB/landowners)
Viwa Island	W/47	Geological site - rock type	Native (NLTB/landowners)
Nanuyaira	W/48	Seabird nesting colony	?
Vunivadra Island	W/49	Seabird nesting colony	Native (NLTB/landowners)
Tomaniivi Nature Reserve	W/50	Rainforest, Forest Reserve	Gov't (Forestry Dept)
Namataya Bay	W/51	Geological site - rock type	Native (NLTB/landowners)
Vatulaca Island	W/52	Geological site - rock type	Native (NLTB/landowners)
Narosalia Island	W/53	Geological site - rock type	Native (NLTB/landowners)
Yalewa Island	W/54	Geological site - rock type	Native (NLTB/landowners)
Vatulele Cave	W/55	Limestone cave system	Native (NLTB/landowners)
Red Prawn Pool, Vatulele	W/56	Anchialine habitat red prawn pool	Native (NLTB/landowners)

Appendix D. Important Bird Areas for Fiji

Location, area, key bird species, protection status and key existing threats of Fiji's 14 IBAs (Masibalavu and Dutson 2006)

IBA	Location	Island	Area (km^2)	Key species	Protection	Threats
FJ01	Rotuma	Rotuma	42	Rotuman Myzomela	None	Agriculture
FJ02	Wailevu/Dreketi Highlands	Vanua Levu	720	Long-legged warbler	Waisali Amenity Reserve	Logging, mahogany plantations
FJ03	Natewa/Tunuloa Peninsula	Vanua Levu	180	Silktail	Priority proposed protected area	Logging, mahogany plantations
FJ04	Taveuni Highlands	Taveuni	290	Tahiti Petrel Silktail	Nature reserve, forest reserve and national park	Agriculture, logging
FJ05	Vatu-i-Ra	Vatu-i-Ra	0.02	Black Noddy	None	Hunting
FJ06	Koroyanitu/Vaturu	Viti Levu	170	Friendly Ground-dove	National heritage park and water catchment	Logging, agriculture
FJ07	Greater Tomaniivi	Viti Levu	180	Red-throated Lorikeet Long-legged Warbler	Nature reserve and forest reserve	Rats, logging, agriculture
FJ08	Rairaimatuku Highlands	Viti Levu	290	Long-legged Warbler Pink-billed Parrotfinch	Priority proposed protected area	Rats, logging, agriculture
FJ09	Sovi Basin	Viti Levu	410	Long-legged Warbler Pink-billed Parrotfinch	Priority proposed protected area	Rats, logging
FJ10	Viti Levu Southern Highlands	Viti Levu	690	Long-legged Warbler Pink-billed Parrotfinch	Navua Gorge Ramsar Site and Savura water catchment	Rats, logging, agriculture
FJ11	Gau Highlands	Gau	52	Fiji Petrel Collared Petrel	None	Rats, cats
FJ12	Nabukelevu	Kadavu	29	Kadavu Shining Parrot	None	Agriculture, rats, cats
FJ13	East Kadavu	Kadavu	78	Kadavu Shining Parrot	None	Agriculture, fire
FJ14	Ogea	Ogea	28	Ogea Monarch	None	Unknown

Appendix E. Priority Forest Areas for Fiji

Location, name, justification and identification as priority in FNBSAP, IBA or KBA processes. See full references for studies for each forest in Table 2 of Olson et al. (2009)

Region	Priority Forest	Justification	FNBSAP	IBA	KBA
Viti Levu	1. Sovi Basin & Korobasabasaga	Largest block of extant lowland forest, surrounded by steep ranges, remote forest, endemism foci. Landowner negotiations advances and funding prospects good	Yes	Sovi Basin	Yes
Viti Levu	2. Mt. Evans/ Koroyanitu Abaca	High local endemism, scenic landscape & steep terrain. Good existing protection & landowner interest	Yes	Koroyanitu/ Vaturu	Yes
Viti Levu	3. Waimanu	High local endemism and richness, relatively intact watersheds. Waimanu Forest Reserve established by landowners	Yes	Viti Levu southern highlands	Korobaba
Viti Levu	4. Tomainiivi/ Wabu	High forests, high local endemism. Critical watershed for Sigatoka and Wainimala rivers	Yes	Greater Tomainiivi	Yes
Viti Levu	5. Nadrau Plateau	Plateau of highland forest, many endemics	Yes	Rairaimatuku highlands	Yes
Viti Levu	6. Eastern Serua	Largest block of remaining forest, likely foci for endemism. Logging & degradation increasing. Critical watershed for Navua.	No	Possible additional IBA	E portion of Serua Forest Wilderness
Viti Levu	Nakauvadra	Large block of wet-dry transitional forest. Important watershed for Vatu-i-Ra coral reefs	No	No	Yes
Ovalau	8. Ovalau	Highland block of forests without mongoose impact	Yes	Possible additional IBA	Yes
Viti Levu	9. Nakorotubu	Unusual transition forests, some karst forest. Important watersheds adjacent to Vatu-i-Ra coral reefs	No	No	Yes
Viti Levu	10. Vatia	Largest remaining block of Viti Levu dry forest with good restoration potential and community interest	No	No	Yes
Viti Levu	11. Macuata Island	Driest form of highly threatened Fiji dry forest. Last known population of Viti Levu form of Critically Endangered crested iguana	No	No	No
Taveuni	12. Taveuni Forest Reserve & Bouma National Heritage Park	One of two remaining large forested landscapes in the Oceanic Pacific that extends from the mountains to the sea	Yes	Taveuni highlands	Yes
Taveuni	13. Qamea & Laucala	Well -forested islands next to Taveuni with distinct populations of several bird species	No	No	Laucala only
Vanua Levu	14. Tunuloa/ Natewa	Relatively distinct biota from rest of Vanua Levu. Distinct races of endemic birds	Yes	Natewa / Tunuloa	Natewa
Vanua Levu	15. Dogutuki	Largest relatively intact watershed in Vanua Levu. Adjacent to globally significant Cakaulevu Reef	Yes	No	Vunivia
Vanua Levu	16. Saqani	Rugged mountains with interesting plant endemism	No	No	No
Vanua Levu	17. Dikeva	Rugged mountains. Representative moist forest with local plant endemism	No	No	No

Region	Priority Forest	Justification	FNBSAP	IBA	KBA
Vanua Levu	18. Koroalau	Large block of forest acting as corridor between Dikeva & Delaikoro. Important watershed for Savusavu and Natewa bays. Local plant endemism	No	No	No
Vanua Levu	19. Delaikoro	Large block of forest in mountainous terrain. Very high species richness. Important watershed for Savusavu Bay	No	Wailevu-Dreketi Highlands	Waisali
Vanua Levu	20. Vatuvonu (Tavea-Valili)	Highest known single-site tree richness for Vanua Levu. Important watershed for globally significant Namena Reefs	No	No	Mt Kasi
Vanua Levu	21. Kubulau	Highest invertebrate richness for Vanua Levu. Rich plant communities. Important watershed for Namena Reefs	No	No	No
Vanua Levu	22. Navotuvotu	High montane forest in Bua	No	No	Mt. Navotuvotu
Vanua Levu	23. Rokosalase	Good example of Vanua Levu dry/transition forest. High conservation interest of landowners	Yes	No	No
Vanua Levu	24. Naicobocobo	Largest & most intact block of Vanua Levu Fiji dry forest	No	No	Naicobocobo
Lomaiviti Group	25. Gau	Large, single block of moist forest with wide altitudinal range. High endemism. Fiji petrel breeding ground	Yes	Gau highlands	Gau
Lomaiviti Group	26. Kuitarua, Koro	High invertebrate distinctiveness	No	No	No
Lomaiviti Group	27. Namenalala	Intact small island forest	Yes	No	No
Lomaiviti Group	28. Makodroga	Intact small island forest	Yes	No	No
Lomaiviti Group	29. Yadua Taba	Protected. Good example of Fiji dry forest. Home of largest remaining population of Fijian crested iguana. Landowner interest	Yes	No	Yes
Kadavu	30. Delaivuiivi (Nabukelevu)	Montane forest with known endemics	Nabukelevu	Yes	Nabukelevu
Kadavu	31. Koronibanuve	Largest block of intact forest & watersheds on island. Good populations of endemics	Yes	East Kadavu	No
Lau Group	32. Vuaqava	Relatively intact forest with low threat	No	No	Yes
Lau Group	33. Vatu Vara	Intact high island with good populations of Endangered banded iguana	No	No	No
Lau Group	Ogea Levu & Ogea Driki	Ogea monarch flycatcher restricted to these islands. Relatively intact forests	Yes	Ogea	Ogea Levu
Yasayasamo-ala Group	35. Moala	Representative forest block. Locally endemic invertebrates	No	No	No
Mamanuca-i-Cake Group	36. Monuriki & Mono	Last dry forest remnants of Mananuca Group. Dwindling populations of Fijian crested iguana	Yes	No	Monuriki
Yasawa Group	37. Sawa-i-Lau	Threatened Fiji dry forest. Karst landscape. High landowner interest.	No	No	No
Yasawa Group	38. Kuata	Threatened small island dry forest	No	No	No
Yasawa Group	39. Devuilau	Last good example of Yasawan dry forest with remnant population of Fijian crested iguana	No	No	No
Rotuma	40. Rotuma	Isolated island with several endemic species and populations	Yes	Rotuma	No

Appendix F. Wetland Sites of National Significance

List of Fiji's wetlands of national significance, as updated from Scott (1993).

Site ID	Wetland Name	Site ID	Wetland Name
BM.679.10	Bilo / Muaivusa Mangrove	MF.679.15	Muanikau Foreshore
BR.679.20	Ba River Delta & Mangroves	MK.679.6	Mount Koroyanitu Range
BS.679.24	Bonatoa Swamp	MM.679.44	Muanicula Marsh
BS.679.39	Balawa Swamp	MS.679.30	Moturiki Swamp
BV.679.19	Bai ni Vualiku	MS.679.5	Melimeli Swamp
DL.679.45	Delaimoala Lake	NB.679.25	Mangroves of Nadi Bay
DR.679.32	Dranoubaba River	NLL.679.41	Navesiwaka Lake
DS.679.1	Drano Sinu Salt Lake	NM.679.4	Nasoata mangrove islet
DS.679.35	Doidoi Swamp	NS.679.26	Nadrau Swamp
DT.679.34	Drano Tagane & Drano Yalewa	NS.679.33	Nairirileka Swamp
FB.679.17	Fulaga Bay of Islands	PD.679.38	Ponds along Dreketi River
FI.679.13	Floating Island of Nubu	RD.679.3	Rewa Delta Mangroves
FW.679.43	Freshwater pond Nadivakarua	RR.679.16	Rewa River Watershed
GA.679.9	The Great Astrolabe Reef	SM.679.21	Saweni Mangroves
GS.679.40	Gasauva Salt Lagoon	TL.679.46	Tuvuca Lakes
KF.679.2	Kuta Freshwater Lakes (Vanua Levu)	TP.679.46	Taketakelo Pond
LD.679.27	Labasa Delta Mangroves	UD.679.36	Upper Dreketi River Swamp
LD.679.47	Lake Drano	UN.679.7	Upper Navua Conservation Area
LN.679.18	Lokia-Naulu Swamp	VC.679.12	Vunivia Catchment Area
LR.679.31	Lake Rovurovu	VD.679.11	Vaturu Dam
LS.679.42	Lake on Sogatiri River	VP.679.29	Vatulele Pools
LT.679.8	Lake Taginoucia and swamp	VS.679.14	Vuaguava Salt Lake (Kabara, Lau)
MD.679.22	Monasavu Dam	VS.679.23	Vunimoli Swamp
		WP.679.28	Waidradra Palms

Appendix G. Fiji Islands Marine Ecoregions of Significance

List of Fiji Island Marine Ecoregions of global, national and sub-national significance (WWF 2004).

Name	FIME Category	Description
Great Sea Reef, Macuata	Global Significance	3rd longest barrier reef in the world
Southern Lau	Global Significance, National Significance	Isolated limestone and oceanic atoll islands
Namena Marine Reserve	Global Significance	Barrier reef influenced by two oceanic parts. Habitat for cetaceans and turtles
Rotuma	Global Significance	Isolated volcanic island west of main Fiji group. High endemism
Lomaiviti Triangle - Vatu-i-Ra Channel - Ovalau/Makogai/Wakaya Channel	Global Significance	Deep waters with high coral and fish diversity. Known whale breeding and migratory route
SE off Minerva Reef, Southern Lau	National Significance	Isolated reef fringed on the farther southern boundaries of Fiji's EEZ. Upwelling areas. Migratory and aggregation site for pelagics
Great Astrolabe Reef, Kadavu	National Significance	Nutrient rich area provides spawning and aggregation conditions for inshore and offshore fisheries
Vatulele	National Significance	Brackish tidal pools (habitat for red prawn *Arteseomorpha folieacea*). Known nesting site for turtles and white-tailed tropic bird
Seamounts between Ba Province and Yasawa Islands	National Significance	Conditions associated with high productivity provides habitat for pelagics such as tuna and sharks
Nadi-Mamanuca Bay	National Significance	Group of islands provide habitat for nesting turtles. Dry coastal vegetation supports distinct assemblage of birds and terrestrial fauna
Ba Delta and Patch Reefs	National Significance	Extensive mangroves support productive fisheries
Beqa Lagoon	National Significance	Biodiversity rich and important for eco-tourism
Mabualau, Southern Lau	National Significance	Seabird nesting area. Sea snake hibernation and nesting area
Gau	National Significance	Extremely deep lagoon bound by extensive barrier reef. Important nesting site for seabirds and turtles. Grey reef shark pupping ground.
Yadua Island and Passage Reefs	National Significance	Known resilient site to coral bleaching. Habitat of endemic crested iguana *Bracylophus vitiensis*
Vanuabalavu, Lau	Sub-regional Importance	Large variable stretch of barrier reef with offshore pinnacles and promontories. Spawning aggregation for grouper and coral trout. High giant clam and lobster populations.
NE of Duff Reef, Lau	Sub-regional Importance	Seamount area supporting spawning aggregations for big eye tuna and deepwater snapper
Outer atolls, Lau	Sub-regional Importance	Upwelling areas important sites for billfish and sailfish feeding and breeding

Cikobia Island, Macuata	Sub-regional Importance	Isolated volcanic island. Cetacean migratory route. Turtle nesting/feeding. High coconut crab population
Koro Sea Pelagic Region, Lomaiviti	Sub-regional Importance	Seamount and barrier reef support known spawning sites for tuna. Cetacean migratory route.
Kadavu Plateau	Sub-regional Importance	Upwelling conditions support major fisheries
Vanuavatu Island, Lau	Sub-regional Importance	Limestone island. High fish diversity and biomass.
Udu-Nakusa, Macuata	Sub-regional Importance	Diverse habitat range of sandflats, mangroves, seagrass and coral reefs
Savusavu Bay, Vanua Levu	Sub-regional Importance	Fiji's largest inland salt lake connected to ocean by river. Oyster beds in areas
Bua Mangroves and Associated Reefs, Vanua Levu	Sub-regional Importance	Network of nearshore reefs and intact mangroves which act as source sites for fisheries of Bligh Waters
Rewa Delta, Viti Levu	Sub-regional Importance	Diverse and representative area of mangroves and mudflats. High diversity of estuarine and freshwater fish species
Yaqara Reef Complex, Ra	Sub-regional Importance	Distinct range of barrier and patch reefs with extensive mangrove systems
Southern (Northern?) Yasawa, Ba	Sub-regional Importance	Extensive coral reef system with underwater caves. Seagrass beds. Known turtle breeding ground. Resident dolphin population.