

Key Messages:

Preservation of functional integrity of Fiji's eco-scapes through multiple stakeholder management.

- Successful 'ridge-to-reef' management depends on broad stakeholder input
- Inland and coastal communities need to manage their actions and resources together
- 'Ridge-to-reef' management protects habitat for all stages of life
- The success of protected areas for conservation and livelihoods relies on combining bottom-up community engagement with top-down planning
- Public health and livelihoods depend on environmental health
- Healthy ecosystems are the best defense against climate change impacts to livelihoods

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Completing an Adaptive Management Cycle in Kubulau



In a rapidly changing world, managers try to implement strategies for protecting biodiversity and natural resources that can be flexibly modified when environmental shifts occur. Ideally, we measure environmental conditions and resource availability, detect a change, and then respond by changing our management policies and practice to better suit the new conditions.

In countries with large bureaucracies, it may take many years before government is able to respond to changing environmental conditions with updated policies for management implementation. By contrast, in Fiji and other Pacific islands with strong traditions of resource tenure and use rights, there are unique opportunities for quickly modifying local management in response to changing conditions or when new information becomes available to improve management effectiveness.

Since 2005, the Wildlife Conservation Society (WCS) has worked with partner organizations to help the communities of Kubulau District in Bua Province, Fiji, establish a network of protected areas to help conserve natural resources into the future. The initial network was informed with baseline biological data on reef and forest condition, as well as extensive consultation with the communities about optimum placement of the protected areas. The outcome of these consultations was a network of 3 large, district-wide no-take marine protected areas (MPAs), 17

smaller, periodically-harvested marine closures (*tabu* areas), 1 island nature reserve and 1 large proposed forest reserve. There were no freshwater areas placed under protection, though some of the *tabu* areas included parts of estuaries. By 2009, the village chiefs endorsed the Kubulau Ecosystem-Based Management (EBM) Plan, Fiji's first ridge-to-reef management plan covering rules and regulations for all of the habitats in the district from forests to the sea.

Two years after the endorsement of the plan, new information has become available which suggested that it would be wise to review and adapt the current Kubulau EBM plan. This information included:

- A synthesis of the current state of knowledge on potential impacts to Fiji's communities from climate hazards;
- An assessment of the effectiveness of current MPAs in the Kubulau traditional fisheries management area to increase fisheries resources;
- New data collected from Kubulau's reef habitats on factors related to reef resilience that may promote long-term persistence of Kubulau's reefs;
- New data on factors related to declines in freshwater fish species, with important implications for management; and
- Business proposal developments by the newly formed Kubulau Business Development Committee (KBDC), with input from the Coral Reef Alliance (CORAL).

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Between 27-28 July 2011, WCS hosted a workshop with participants from the Kubulau Resource Management Committee and representatives from each village to present the new information with other key stakeholders and discuss possibly ways to adapt the Kubulau EBM Plan. Key stakeholders included CORAL, SeaWeb, KBDC, Department of Fisheries, Department of Forestry, Social Empowerment and Education Program (SEEP), Fiji Locally Managed Marine Area (FLMMA) network, National Disaster Management Office (NDMO), Partners in Community Development Fiji (PCDF).

As a result of the workshop, 3 of the villages (Nakorovou, Waisa, Natokala) indicated that they will increase the size of their existing tabu areas and 1 village (Kiobo) proposed a new tabu area. In addition, the participants collectively agreed to place a 500 m no-fishing buffer zone around the existing 3 district MPAs. Two other

villages (Navatu and Nasasaivua) will conduct follow up consultations in their respective villages to determine if they will make any changes. With respect to freshwater and terrestrial areas, 1 village has proposed to designate a freshwater tabu area, 3 villages have proposed to protect catchment areas at the headwaters of streams, while discussions also took place on modifying the boundaries of the proposed forest reserve. In addition, 2 villages proposed to consider two scenic sites as potential eco-tourism opportunities.

Over the next two months, WCS, CORAL and the KBDC will conduct follow-up consultations with Kubulau chiefs and decision-makers to finalize all proposed changes to the Kubulau EBM Plan, including incorporating new strategies for coping with climate change hazards. Once the revised plan is endorsed, pamphlets and posters will be prepared to communicate the changes to the broader community.

TNC Reef Resilience ‘Training Of Trainers’ workshop

A Reef Resilience workshop was held from the 3rd – 7th of July 2011 in Koror, Palau. It was organized by The Nature Conservancy (TNC) in partnership with the Great Barrier Reef Marine Park Authority and NOAA Coral Reef Conservation Program. The training was designed for coral reef managers, creating an atmosphere of knowledge exchange. It led to the development of problem solving skills for participants, and each participant left with a specific training plan for their region.

This workshop focused on reef resilience (the ability of a system to either bounce back from or resist disturbance), and the types of resilience biological resilience and social resilience. The two types of resilience are related because to have a resilient ecosystem, community support and effort is required.

There were six major concepts discussed at the workshop including climate change, reef resilience basics, MPA designs, incorporating the concept of resilience into MPA networks, bleaching response and communication. The trainers were expected to broaden the scope and effectiveness of reef resilience partnerships and also build capacity amongst reef managers to better address the impacts of climate change.

We looked at some interesting concepts of reef resilience training. Reef managers from all over the Pacific came as either participants or mentors. Participants were from Fiji, Guam, Solomon Islands, Samoa, American Samoa, Federal State of Micronesia and the Northern Marianas (Saipan). Everyone had a chance to share their experience working with different communities in the Pacific.

MPA design was one of the highlights of the workshop as the lessons taught the participants about the importance of planning when setting up protected areas. This session also focused on the

incorporation of reef resilience MPA design to improve the management strategy.

Outside of the training, we had a chance to explore the beautiful island of Palau. Palau is a small island that has the famous “Rock Islands” and “Jellyfish Lake”. The Rock Islands are composed of about 70 small raised limestone islands that have a high biodiversity. Jellyfish Lake is one of the most attractive places in Palau. According to the tour guides there are about 7 jellyfish lakes in Palau and only one is open for tourists while the other 6 are being conserved. One of the most interesting things about this jellyfish lake is that the jellyfish have lost their stinging ability. The reason behind this evolution lies in the history of the limestone islands. When the islands rose out of the sea, the marine jellyfish were trapped inside. In the absence of their natural predators, the jellyfish lost their stinging cells, which act as their defence mechanism.

Another interesting underwater destination in Palau is Clam City – dominated by giant clams that are quite rare to see elsewhere in the Pacific. The Milky Way is also very interesting since it has a really white, smooth silt substrate under clear blue waters. As soon as you jump in the water you can feel the white silt. The Sunset Reef is a major attraction to tourists due to its biodiversity and is important for coral reef managers due to its rapid recovery from an almost dead state that occurred over a period of only a few years.

I will now be passing this knowledge learned at this workshop on to others by training Fiji partners within the Locally Managed Marine Area network on the concepts of reef resilience in a workshop scheduled for later this year.

Written by Yashika Nand, WCS Fiji

Left: Jellyfish lake

Centre: Clam City

Right: Yashika experiencing Jellyfish lake



WWF South Pacific implements EBM in Gau

Better Land Use Information for Sawaieke District Communities

All the eight communities in the Sawaieke district, in Gau, will now be better informed on best practices for management following a recent land use survey by representatives from the Department of Environment and WWF South Pacific Programme. The land use survey was conducted as part of the initial baseline data collection for Sawaieke, which is the latest Ecosystem Based Management project site for WWF South Pacific, funded by WWF Austria.

The land use survey had three components. The first component was to match the present land use activities on the ground such as farming, mangrove planting and forestry, with images taken a few years ago. This is to determine the changes these activities have brought to the land.

The second and third components of the land use survey focused on land classification and capability assessments which determined the class and suitability of the land. This information along with the Land Use Act will help the villagers in deciding what the land can be used for, such as which crops can be planted in what soils.

The land use survey was conducted by a team from the Land Use Department with assistance provided by the local land care community group. This also builds the villagers capacity and technical knowledge on the issue.

The preliminary results from the survey will be presented to the communities in the form of maps and will feed into the Sawaieke Districts land use plan, guiding the community to use sustainable land use practices in their agricultural and forestry activities. The villagers will first utilize the information on the land classes to determine which plants in their nursery plants will grow best in each location.

Similar surveys will be conducted in Navukailagi and Vanuaso, the other 2 districts in Gau, to complete the land use surveys for the entire island.

Fresh Water Ecosystem Health Monitoring Survey: Sawaieke District Communities Monitor the Condition of Their Creeks

A team of graduate students from the Fiji National University's School of Applied Science, together with Sawaieke community representatives conducted a survey to determine health of their community creeks.

The Freshwater Ecosystem Health Monitoring Survey, carried out in the 7 creeks of Sawaieke District, was done to establish the current health status of creeks and will allow conclusions to be drawn from the results on whether unsustainable land use practices are happening upstream causing soil erosion or whether pesticides, weedicides and fertiliser are seeping into the creeks.

Initial survey observations identified one of the creeks running adjacent to Levuka-i-Gau village as unhealthy, with evidence of severe soil erosion as a result of no standing trees on buffer zones. For the other creeks, invertebrates, which are indicator species, were found and collected for further laboratory identification and analysis.

Having that information will help WWF South Pacific Programme to encourage communities to better practice sustainable farming practices. Some such practices include having buffer zones or riparian zones, which entail having trees growing next to the creeks or riverbanks.

Currently there is government legislation [Forest Decree 2010] for the protection of creeks that requires 10 metre buffer zones on each side of the creeks that are less than 10 metres wide. Buffer zones prevent erosion on the banks of the creeks by having trees planted on either side of the creeks which act as a sieve.

Articles and photos supplied by WWF—South Pacific



Above: Beach surveying in Nawaikama



Above: Community members take part in the mangrove survey



**FOR MORE
INFORMATION, QUERIES
OR TO SUBMIT ANY
FUTURE EBM ARTICLES
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2nd Fiji Conservation Science Forum

Confronting the Climate-Biodiversity Crisis • Suva • September 14-16, 2011

The main theme of the 2nd Fiji Conservation Science Forum is "Confronting the Climate-Biodiversity Crisis." Over the three days conservationists working in Fiji and the South Pacific will be presenting their work and highlighting challenges, outcomes and future conservation priorities. There will be over 50 presentations, discussions and a social program. Further details are available online at www.conservationsscienceforum.wcsfiji.org

The event will feature a public panel discussion to be held on Wednesday September 14th from 6-9pm. The topic for the discussion will be: "Climate Change and Biodiversity: Catastrophe or Opportunity?" A well known group of experts will be on the panel to offer their opinions and to answer questions related to Climate Change and Biodiversity issues. Cocktails and finger food will be provided.

To help facilitate this Forum we have selected a range of local, regional and international conservationists who have worked in Fiji. The key note speaker for the Forum is Prof. Ove Hoegh-Guldberg. He is currently Professor of Marine Studies and Director of the Global Change Institute at The University of Queensland.

The three day event will be held at Studio 6 Conference Centre at 1-3 Walu Street, Suva.

Draft Program

***subject to change**

Day 1 - Wednesday 14th September

08:30-09:00	Registration of Participants
09:00-09:05	Opening Prayer
09:05-09:20	Welcome - Permanent Secretary Fisheries & Forestry
09:20-10:10	Keynote Speech - Prof. Ove Hoegh-Guldberg
10:10-10:30	Morning Tea
10:30-12:15	Theme 1: Ecology and Management of Fiji's Watersheds
12:15-13:15	Lunch
13:15-15:00	Theme 2: Terrestrial Species
15:00-15:30	Afternoon Tea
15:30-17:30	Theme 3: Marine Species
17:30-18:00	Welcome Cocktail
18:00	Panel Discussion & Public Forum - "Climate Change and Biodiversity: Catastrophe or Opportunity?"

Day 2 - Thursday 15th September

09:00-10:15	Theme 4: Results from Fiji's Marine Managed Areas
10:15-10:45	Morning Tea
10:45-12:15	Theme 5: Scaling up Local Management to meet National Priorities
12:15-13:15	Lunch
13:15-14:15	Theme 5: Scaling up Local Management to meet National Priorities
14:15-14:45	Afternoon Tea
14:45-17:00	Theme 6: Socio-ecological Tools for Climate Change Adaptation

Day 3 - Friday 16th September

09:00-11:15	Theme 6: Socio-ecological Tools for Climate Change Adaptation
11:15-11:45	Morning Tea
11:45-13:15	Theme 7: Adaptive Management
13:15-14:15	Lunch
14:15-15:15	Theme 7: Adaptive Management
15:15-15:45	Afternoon Tea
15:45-16:45	Discussion and Feedback: Does conservation science in Fiji represent good value-for-money?
16:45-17:00	Forum closing
17:00-21:00	Closing Cocktail