

Key EBM Messages:

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

- Successful EBM relies on cross sectoral planning and management
- Inland and lowland communities need to manage resources together
- EBM protects habitat for all stages of life
- Improving land and fishing practices helps protect natural resources
- Public health and livelihoods depend on environmental health

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FIJI EBM PARTNERSHIP NEWSLETTER

Volume 2, Issue 1

February 2010

A guide to ecosystem based management

The WCS Fiji team will be releasing an Ecosystem Based Management (EBM) guide for the EBM practitioners in the Tropical Western Pacific, which is based on lesson learnt from four years of researching and implementing ecosystem based management in the Western Pacific.

The guide is designed for use by conservation practitioners, particularly in developing nations where EBM approaches used in industrialized countries may not be feasible or appropriate. It shares experiences with implementing EBM from Fiji (Kubulau, Macuata, and Kadavu), Bird's Head (Indonesia) and Babeldaob (Palau).

The guide includes:

- Definitions of EBM
- Key characteristics of EBM and the distinctive features of the tropical Western Pacific
- Brief case studies from EBM practitioners in Fiji, Indonesia and Palau
- Outline of key steps in the management planning process
- Experiences using EBM tools
- Scaling up EBM initiatives

Key lessons include:

- Top-down approaches to EBM are unlikely to succeed in the tropical Western Pacific given high levels of reliance on coastal marine resources, limited government management capacity and strong traditions of community based natural resource management.
- Ecosystem management processes must respect needs, interests, rights and aspirations of local communities, and contribute to local conservation and development goals, not just national and international targets.
- EBM provides opportunities for integrating local and traditional knowledge with scientific



The cover of the newly compiled EBM guide

knowledge about ecosystem functions and processes.

- An iterative and adaptive approach is necessary: however, limited financial, human and technical resources often make sophisticated large-scale management unrealistic in the region.
- Ecosystem-based adaptation is a cost-effective strategy for reducing vulnerability to climate change.
- Successful implementation of EBM relies on collaborative partnerships and effective communication through culturally appropriate technologies and media.

Partners in the production of the guide include: Wetlands International-Oceania, WWF, The Nature Conservancy, Conservation International, University of the South Pacific, and Palau Conservation Society. The Guide is being produced with support from the David & Lucile Packard Foundation.

WCS hopes to officially launch the Guide with Fiji Government at the Convention on Biological Diversity's Conference of Parties 10 in October 2010 in Japan to celebrate the International year of Biodiversity.

Ecosystem based management course

From January 25 to 5 February 2010 in Rarotonga, Cook Islands, there was an ecosystem based management (EBM) course held in the Cook Islands which aimed at teaching participants about: 1) planning for EBM; 2) operating within the policy and regulatory framework; and 3) sustaining ecosystem based management.

This course was attended by participants from Fiji, Papua New Guinea, Solomons, Tuvalu, Samoa, Vanuatu, and Marshall Islands. The Fiji delegates were represented from

Wildlife Conservation Society (WCS), Department of Environment, Department of Fisheries, and Mamanuca environment society. The short course also taught participants about integrating contemporary and traditional coastal ecosystem management in the Pacific.

Most of the learning was based on a case study from Rarotonga, Cook Islands, focusing on lesson learnt from the development of the Takitumu Lagoon management plan. This plan was developed to address the threat



A group photo for the participants at the recent ecosystem-based management course (source <http://www.cinews.co.ck/2010/February/Wed10/environment.htm>).

of sediments from improper land development adjacent to the marine system. This workshop was organized in partnership by the University of Queensland's Coral Reef Targeted Research (CRTR) program and the Cook Islands Marine Resources Institutional Strengthening Project (CIMRIS).

Namena in the top 10 best island reefs in the world

In the recent edition of Islands magazine, Namena reef has been named as one of the best reefs of the world. According to the magazine, the reefs were ranked for responsible travelers based on sustainable opportunities to snorkel, dive, and explore.

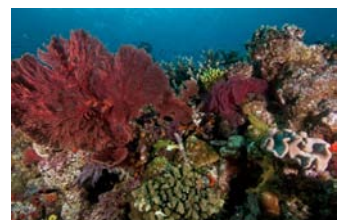
The research was done by the editors of the magazine, Ty Sawyer and Jad Devenport, with reef conservation groups, international authorities, local dive operators, and the magazine readers. Rick MacPherson, conservation programs director of the Coral Reef Alliance, describe outer reefs of Namena Marine Reserve as "the marine equivalent of the Serengeti". He adds, "from swirling schools of hundreds of jack, barracuda and fuseliars to big mature groupers tucked in coral nooks, Napoleon wrasse,

bumphead parrotfish, sleeping whitetip sharks, big patrolling gray reef sharks, the entire food chain are on display".

The Namena Marine Reserve success story comes in part from a community managed no-take marine protected zone that was informally established by the Kubulau District back in the 1990's in response to heavy overfishing by commercial vessels. Back then tourists were asked to pay a dollar per dive. This initiative was developed through successful partnership between CORAL, the Wildlife Conservation Society (WCS), local dive operators and the Kubulau community in 2003 to introduce a user fee system based on the Bonaire Marine Park model. Through funds generated by

users of the Namena Marine Reserve, a scholarship fund has been set up. Tags are sold through local supporting dive operators and funds deposited into a community managed account. Funds are also managed by the people of Kubulau for activities to ensure the on going protection of the Namena Marine Reserve through activities such as regular patrolling.

In addition to these financial benefits, the on-going scientific work being conducted by WCS suggests that long-term no-take areas, such as Namena Marine Reserve, have higher abundance and diversity of important food fishes. The principle behind setting up managed areas is that in time these areas will act as pools for sustaining marine fisheries stocks.



Namena reef with Namenalala island nestled in between (top), Namena's healthy marine life has led to it being referred to as the 'Mecca' of diving (middle and below) (photos by Lill Haugen © 2009).

Youths call for sustainable future for island life

The last Asia Pacific Forum for Environment and Development Panel discussion was held in November 2009 at University of the South Pacific. The major aim for this annual event is to generate discussion between stakeholders on important environmental and development issues for Asia and the Pacific.

During the last meeting, youths raised their voices for a sustainable future for island life. Youth representative of Econesian Society Luse Tareguci said “if we can protect our island life, including its biodiversity and ecosystems, then we will stand a chance against the negative impacts of climate change”.

She emphasized that “our everyday decisions, cultural observances and traditions and spirituality are seen as inseparable from our terrestrial, freshwater and marine ecosystems rather than as separate external entities”. “We recognize the interconnectedness and intimate association that Pacific Islanders have with their land, water, sea, air, ocean, plants and animals”, commented Luse.

This intimate connectivity is important for the Pacific Islanders and has led sustainable resource management by communities through traditional practices stretching back hundreds of years.



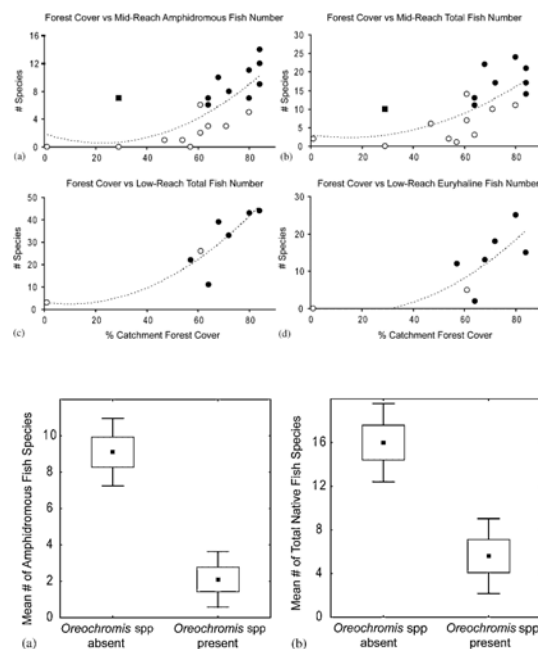
Luse Tareguci during the 2008 Marist Sevens tournament with Econesian poster display.



Maintaining freshwater-marine migration pathways

There are several factors that contribute to species declines in native fish, with forest loss and poor catchment management as major contributors. Loss of forest in catchments, in particular around river banks (riparian vegetation), results in increases in sedimentation, heating of the water, loss of food sources and increased susceptibility to pollution. Such changes can have both direct and indirect effects on native fishes. These are the major findings of the study published by Wetlands International –Oceania (WI-O) and Wildlife Conservation Society (WCS), which have led to the recommendation that there needs to be a maintenance and preservation of the connectivity between terrestrial and marine systems in Fiji. While the importance of tilapia as a food source for many inland rural communities are acknowledged, tilapia can survive in a large range of environmental conditions and are fast growing and rapid breeding, which

make the fish excellent candidates for aquaculture. However, it is exactly these characteristics that allow them to establish populations rapidly in the wild if they escape from ponds or other enclosures. “We aim to assist the Fisheries Department and SPC to continue to promote responsible aquaculture for food security while also promoting conservation of the remaining pristine areas in Fiji and across the Pacific”, comment Aaron Jenkins, lead researcher from WI-O. He also commented that “we also hope that the important aspects of catchment management including managing forest buffer zones adjacent to streams and rivers are considered in the future with an emphasis on “ridge-to-reef” management”. Ultimately, both holistic environmental management and responsible aquaculture working together will yield the best results for the future food and water security of Fiji’s people.



Relationships between catchment forest cover and species number for (above) Mean differences in fish species number where *Oreochromis spp.* is present and absent (below).

**THE SUBMISSION
DEADLINE OF
ARTICLES FOR NEXT
ISSUE IS MAY 11TH
2010**

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FIJI EBM PROJECT OVERVIEW

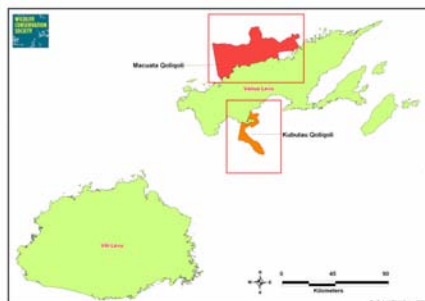
The Wildlife Conservation Society (WCS), in partnership with WWF and Wetlands International-Oceania (WI-O), are working directly with communities and government towards the vision of protecting the Vatu-i-Ra and Cakau Levu Reefs Seascape using Ecosystem-Based Management (EBM) principles and approaches.

Science-based marine protected areas (MPAs) have been demonstrated to protect exploited marine resources, may increase coral reef ecosystem resilience, and are considered an essential tool for the long-term management and conservation of high priority seascapes around the world. Recognizing the connectivity between terrestrial and marine systems has led to

a more holistic approach that also includes terrestrial processes and their potential impact on marine habitats. For example, sedimentation and nutrient enrichment have been found to be key threats to the health of nearshore marine ecosystems and therefore understanding the potential impacts of runoff from watersheds on the adjacent marine areas is vital.

Our research and advocacy as part of this EBM project is building an applied understanding of how terrestrial and marine systems are connected in terms of fauna and habitat quality, and what the implications are for conservation management in a tropical high island setting. The areas we are investigating include the aquatic fauna that

utilize "wet" ecosystem types during different life stages (living connections between the land and the sea), spatial patterns of perceptions of ecosystem change, community resource use, potential influence of terrestrial nutrients and run off on near shore environments, the effects of intensive harvesting of a traditional MPA on reef fish communities, fish community responses to management in Fiji, a low cost resource mapping approach for Pacific Islands, the connectivity of marine habitats, including understanding the movement ranges of adult reef fishes from MPAs, and priority conservation regions (Ecoscapes) for Fiji Islands to preserve ecosystem connectivity.



The Fiji Ecosystem Based Management (EBM) project has two focal sites, Macuata and Kubulau, on the island of Vanua Levu. This is the second largest island in Fiji (5,538 km²). Macuata is made up of four districts, including 37 villages with a population of approximately 10,000, while Kubulau is made up of one district, encompassing 10 villages and 1 settlement with a population of approximately 1,000. Macuata has a total *qoliqoli* (traditional fisheries management region) area of 1,349 km² out of which 112 km² is currently protected through a network of 25 marine protected areas (MPAs). Kubulau, with a total *qoliqoli* size of 260 km² has a network incorporating 20 MPAs (79 km²) and 1 proposed forest reserve (0.8 km²).



The Fiji Ecosystem-Based Management project is primarily funded by the David and Lucile Packard Foundation and the Gordon and Betty Moore Foundation, which started in 2004. It is led by WCS, with the partners WWF and WI-O.