BEST OF THE WILD: WILDLIFE CONSERVATION SOCIETY and the

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Stretching across the channel that links Fiji’s two main islands is a blue-green jewel of forest and reef. Called Vatu-i-Ra, its vibrant seas are laced with coral reefs, masses of colorful reef fish, and sea turtles, while the adjoining landscape of coastal forests is alive with crested iguanas, tree frogs, and sea birds.

This extraordinary 7,500 square mile mosaic of forests, mangroves, seagrass meadows, reefs, deep channels, and seamounts is one of the Pacific’s last great wild places. It is home to the largest population of nesting hawksbills in Fiji as well as green and loggerhead turtles. It is one of the few remaining sanctuaries for the highly prized but globally endangered humphead wrasse, which animates the reef alongside bumphead parrotfish and white tip reef sharks. Local people thrill to frequent sightings of resident pilot whales and dolphins as well as humpback whales passing through on their annual migrations. Strong currents run through the deep Vatu-i-Ra channel, nourishing a magnificent diversity of more than 300 species of corals. These, in turn, sustain breeding colonies of frigate birds, black noddies, and red-footed boobies.

Vatu-i-Ra’s intact forests boast many species unique to Fiji – crested iguanas, tree frogs, and more than 120 endemic plant species. Free-flowing rivers connect the forest to the reef, allowing small but spectacularly colorful goby fish to migrate from upland streams to the coast and back.

Like most of Melanesia, the residents of the coastal villages around Vatu-i-Ra hold formal tenure rights over their land and traditional fishing rights over their coastal waters. Fisheries are a major source of food and income to these communities, as are revenues generated by Vatu-i-Ra’s world-renowned dive tourism. However, growing demands on the Land/Seascape—from unsustainable fishing to logging to expanding agricultural activities—combine to threaten its forests, rivers, and reefs as well as the vital connections between them and the services they provide to human and wildlife communities.

The Wildlife Conservation Society (WCS) and our local partners are engaged in an ambitious effort to mobilize science and traditional knowledge to achieve our 10-year vision for Vatu-i-Ra: healthy, resilient forests that are connected to and sustain rivers, mangroves and coral reefs, and where coral reefs teem with whales, turtles, sharks, humphead wrasse, and abundant food fishes that are managed to support livelihoods and Fijian culture. New investments of $6.9 million in the work of WCS will allow us to realize this vision and secure this biodiversity treasure.
The future of Vatu-i-Ra is at risk: land is increasingly being converted for agricultural use, land-owners are tempted by lucrative logging propositions, and limited livelihood options encourage coastal communities to fish unsustainably.

Traditional fishing grounds have long-sustained coastal communities, but human population growth, increased market demand, new fishing methods that encourage over-exploitation, and encroachments by outsiders on Vatu-i-Ra’s fishing grounds combine to severely deplete reef fish and sharks. One-quarter of Fiji’s most intact and unique forests lie within Vatu-i-Ra, yet most of them are being logged without careful planning or consideration for impacts on the full Land/Seascape. This deprives wildlife of habitat, fragments the landscape, and reduces water quality. Freshwater fish are stressed as they face competition from non-native tilapia in Vatu-i-Ra’s rivers, while their migratory pathways from forest to sea are jeopardized by forest cutting that allows rivers to become choked with silt.

National environmental policy and governance systems often surrender biodiversity considerations to economic growth. Fisheries legislation is weak, market channels for live reef fish are expanding with little oversight, timber and mineral extraction is poorly regulated, roads and infrastructure are inadequately planned, and agriculture expands unchecked. At the same time, traditional management practices are eroding, and there is little local and national capacity to lessen the impacts of unsustainable resource extraction.

Climate change looms large for Vatu-i-Ra: predicted sea level rise, warming seas, and extreme climate events are likely to exceed the coping capacity of coral reefs, seagrass meadows, mangroves, forests, and the wildlife and local livelihoods they support. Fiji’s leaders and coastal communities face the challenge of planning for climate change to build ecosystem and economic resilience and maintain the Land/Seascape, livelihoods, and cultural practices they inherited from stewards past.
WCS’s vision for the Vatu-i-Ra Land/Seascape is healthy, resilient forests that are connected to and sustain rivers, mangroves and coral reefs, and where coral reefs teem with whales, turtles, sharks, humphead wrasse, and abundant food fishes that are managed to support livelihoods and Fijian culture.

Our vision directly supports the Fiji government’s 2005 commitment to protect 30% of its marine areas and 40% of its remaining natural forest. To attain this vision, we shall hold ourselves accountable for the following ten-year conservation objectives:

- Populations of humphead wrasse, bumphead parrotfish, white tip reef shark, and vesi tree are maintained at least at their present abundance.
- Highly migratory freshwater gobies are maintained at current levels.
- Size and abundance of commercially important blue-spotted coral trout and giant clam increase by 20%.
- There is a 10% increase in frequency of sightings of humpback whales and green and hawksbill turtles, bolstered by formal protection of their migratory pathways.
- Marine areas under no-take protection increase by ten times and cover 30% of eight large fishing grounds of Vatu-i-Ra.

Highly threatened turtles, whales, sharks, humphead wrasse, bumphead parrotfish, and vesi trees are powerful icons of Fijian culture. Their presence is a strong measure of the health of this ecosystem, while gobies, migrating from the highest mountain streams all the way to the sea, highlight intact connections across the Land/Seascape. WCS will measure success by the status of these key species over the coming decade.

We will have realized our vision when:

- Locally managed networks of representative and interconnected protected areas effectively conserve priority species and sites across Vatu-i-Ra.
- Fiji’s government and extractive industries apply knowledge based on WCS research to policy, legislation, and best practices.
- Vatu-i-Ra is sustainably financed and the benefits of conservation are shared equitably.
- Communities are empowered to be effective stewards of Vatu-i-Ra through environmental education and capacity building.
Major opportunities exist to conserve Vatu-i-Ra, with legal recognition of customary land tenure and fishing rights, national leadership to strengthen protected areas, and village commitment to sustainable management.

To ensure that locally managed networks of protected areas protect wildlife and improve livelihoods, WCS will:

- Apply field research to prioritize areas for protection, identify social and ecological vulnerabilities to climate change, and promote informed planning.
- Help communities establish at least eight locally managed protected area networks across Vatu-i-Ra which include no-fishing zones, gear restrictions, and adaptive management protocols.
- Improve governance of locally managed protected areas by training village resource management committees in monitoring, compliance, and enforcement.

To ensure that science guides policy, legislation, and industry practices, WCS will:

- Support fisheries legislation reform and development of protected area legislation that is informed by science.
- Promote national policy to halt unsustainable logging and conversion of forest to agriculture in critical connectivity and riverside areas.
- Improve national oversight of extractive industries, particularly logging and fishing, to eliminate unsustainable, and promote best, practices.
- Engage aquaculture industry and government to prevent the spread of exotic fish species, particularly tilapia, from areas that sustain native freshwater fish.

To ensure that Vatu-i-Ra is sustainably financed and conservation benefits are shared, WCS will:

- Identify and cultivate livelihood opportunities, seed funding sources for environmentally friendly businesses, and market opportunities.
- Develop payment and financing mechanisms such as user-fees and trust funds to compensate communities for conservation action.
- Work with partners to establish a conservation trust.
- Conduct pilot programs for reduced emissions from deforestation and degradation (REDD) to preserve intact forest.

To ensure that communities are empowered as stewards of Vatu-i-Ra, WCS will:

- Build conservation leadership through field training, educational support, and professional mentorship.
- Provide technical assistance to village resource management committees.
- Create environmental education teaching materials and train teachers.
- Train resource managers to apply “ridge to reef” planning approaches (box, p. 9).

Clockwise from top: Massive gorgonian sea fans dwarf divers in the Namena Marine Reserve, one of the 20 marine protected areas that WCS has helped the communities of Kubulau district establish since 2005. Income to Kubulau generated from user fees from Namena helps fund scholarships and enforcement activities. An example of the causal relationships underlying WCS’s conservation strategy for acting (in yellow) to counteract threats (in red and orange) to achieve explicit conservation targets (in green).
‘RIDGE TO REEF’ is a holistic conservation and management approach that links conservation action across watersheds and adjacent coastal ecosystems. Wildlife depend on vital connections between land and sea, and this approach applies science-based management across the land/seascape, from forested ridges downstream to rivers and estuaries and further along to coastal mangroves, seagrass meadows, and coral reefs. Ridge to reef conservation is most successful when communities and government collaborate to develop management interventions that address key threats to wild places and wildlife of both land and sea—for healthy people and ecosystems.

Diversify fishing- and forest-based livelihoods

Ensure protected areas are sustainably financed & benefits shared

Protect key habitats with new protected areas network

Apply science to forest and fisheries management and industry practices

Few livelihood options available to coastal communities

Overfishing

Logging of forests

Conversion of riverside & forest areas to agriculture

Intact, connected, & resilient habitats from ridge to reef

Abundant populations of reef fish, whales, sharks, turtles, gobies, and vesi trees

Weak national and local policy
Building on Fiji’s strong culture of traditional management, WCS has provided scientific leadership to shape the conservation agenda and illuminate how the linkages between ecosystems, species, and society drive successful conservation.

WCS’s team of Fijian staff helped Vatu-i-Ra’s Kubulau district to implement a network that includes 20 community-managed marine protected areas where sustainable fishing is allowed plus three offshore no-fishing areas. This network features Fiji’s first no-fishing protected zone and is the only one in Fiji to protect 30% of its traditional management area. Nearby, WCS helped to identify the site for a proposed priority forest reserve, supporting the government’s commitment to protect 40% of its remaining natural forest and highlighting the linkages between healthy forests and healthy reefs. With partners, we developed a comprehensive ‘ridge to reef’ management plan for Kubulau—the first of its kind for Fiji—that has been endorsed by the Kubulau Council of Chiefs, which is vested with authority over the Seascape’s traditional fishing area (see box, p. 9).

WCS leverages additional support for Kubulau through conservation finance, business management, and enforcement initiatives. WCS and partners have helped communities generate new revenues by establishing diver entrance fees for the Namena Marine Reserve within Kubulau. With partners, we have also provided training, equipment, and vessels to strengthen enforcement of the new protected area regulations.

Building Fijian conservation leadership is a cornerstone of WCS’s work in Fiji. In addition to providing scholarships to rising Fijian scientists, WCS hosted the inaugural Fiji Conservation Science Forum in 2009 and has supported the use of protected area fees to fund local scholarships.

With many reef areas still intact and thriving, Fiji faces the challenge of deploying its conservation resources in a cost- and conservation-effective way. WCS’s research has helped the government and communities identify national priority reefs, forests, and ecosystem connectivity sites. Our research is contributing to Fiji’s new National Biodiversity Strategy and Action Plan, an obligation to the Convention on Biological Diversity which lays out a road map for wildlife conservation in Fiji over the next two decades.
WCS IS GRATEFUL TO THE FOLLOWING FOR LEADERSHIP SUPPORT OF OUR WORK IN THE VATU-I-RA LAND/SEASCAPE:

Anonymous Donor
The David and Lucile Packard Foundation
Gordon and Betty Moore Foundation
National Oceanic and Atmospheric Administration
The Tiffany & Co. Foundation

WCS’S SUCCESS IN THE LAND/SEASCAPE CAN BE ATTRIBUTED IN PART TO OUR STRONG PARTNERSHIPS:

American Museum of Natural History
Australian Museum Trust
Australian National University
Birdlife Fiji
Bishop Museum
Boston University
Conservation International
Coral Reef Alliance
Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ)
Environmental Law Association of Fiji
Fiji Government
Fiji Locally Managed Marine Area (FLMMA) network
Fiji National Environment Council
Foundation of the Peoples of the South Pacific International
GEF Small Grants Program
Greenforce
International Union for the Conservation of Nature (IUCN), Oceania
James Cook University
Kubulau Resource Management Committee and communities
Mainstreaming of Rural Development Innovations (MORDI)
National Trust of Fiji
Native Land Trust Board (NLTB)
Nature Fiji – Mareqeti Viti
Pacific Blue Foundation
Pacific Islands Round Table for Nature Conservation
Partners in Community Development Fiji (PCDF)
Protected Areas Committee (Fiji)
SeaWeb
Secretariat of the Applied Geo-Science Commission of the Pacific (SOPAC)
Secretariat of the Pacific Community (SPC)
South Pacific Regional Environment Program (SPREP)
University of Auckland
University of Maryland
University of Miami
University of Queensland
University of the South Pacific
University of Western Australia
U.S. Embassy, Suva
Wetlands International - Oceania
Whale and Dolphin Conservation Society
World Wildlife Fund, South Pacific Program

OCTOBER 2009

For further information please contact:

Wildlife Conservation Society
Marine Program
2300 Southern Boulevard
Bronx, NY 10460-1099
(718) 741-8212