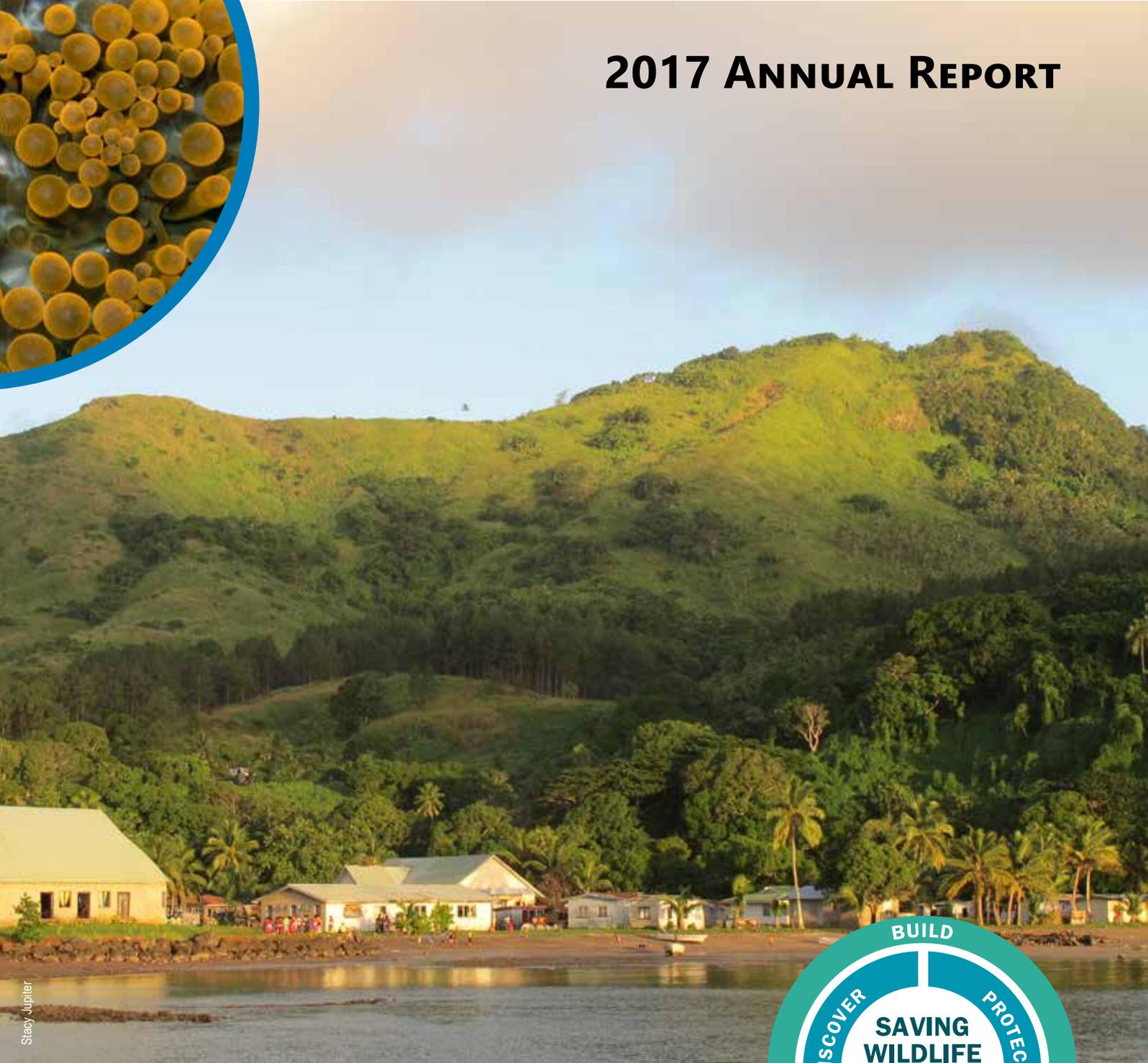




# WCS Melanesia

A Wildlife Conservation Society Program

## 2017 ANNUAL REPORT



Stacy Jupiter



HIGHLIGHTS FROM OUR DISCOVERY SCIENCE, CONSERVATION INITIATIVES, OUTREACH AND CAPACITY BUILDING PROGRAMS AND GROWING PARTNERSHIPS MEASURED AGAINST THE WCS MELANESIA 2020 STRATEGY

# Providing evidence-based guidance that informs species conservation and ecosystem management

## LAND ACTIONS IMPACT CORAL REEFS

New science published by WCS and our partners suggests that the abundance of certain coral reef fish on which local people depend for food and income is negatively affected by high turbidity linked to upstream catchment land use. The model, parameterized with fish and benthic data collected by WCS's Fiji Program at over 150 sites, indicates that poor water quality affects coral reef habitat that in turn impacts some fish groups. WCS has used the outcomes of the model to inform the development of an integrated coastal management plan for Bua Province, Fiji, and we are now incorporating aspects of the model into our work on Kolombangara Island, Solomon Islands.

*Funded by the Science for Nature and People Partnership Ridge to Reef Fisheries working group (<https://snappartnership.net/teams/ridges-to-reefs-fisheries/>) and the Australian Research Council*

*Full citations: Brown CJ et al. (2017) Habitat change mediates the response of coral reef fish populations to terrestrial runoff. *Marine Ecology Progress Series* 576:55-68  
Brown CJ et al. (2017) Tracing the influence of land-use change on water quality and coral reefs using a Bayesian model. *Scientific Reports* 7:4740, DOI:4710.1038/s41598-41017-05031-41597*

## BIOCULTURAL APPROACHES IMPORTANT FOR LOCAL SUSTAINABILITY AND WELL-BEING

Pacific Island communities face unprecedented challenges in conserving natural resources and maintaining human well-being. Gaining a better understanding of the factors driving community resilience and the supportive management practices and policies is urgent. However, frameworks to measure aspects of resilience have often been designed using western cultural worldviews that do not always mesh with how Pacific Islanders self-define resilience. This mismatch can potentially lead to misdirection of resources, ineffective policies and harm to local and indigenous peoples. In 2017, WCS and our numerous partners from the American Museum of Natural History, University of Hawaii and elsewhere published two papers that call attention to these issues and promote the use of biocultural approaches to development of resilience and well-being indicators, through which local perspectives and worldviews drive goals and indicator creation.

*Funded by the U.S. National Science Foundation and the Science for Nature and People Partnership Biocultural Indicators working group (<https://snappartnership.net/teams/assessing-biocultural-indicators/>)*

*Full citations: Sterling EJ et al. (2017) Biocultural approaches to well-being and sustainability indicators across scales. *Nature: Ecology & Evolution* 1: 1798-1806  
Sterling E et al. (2017) Culturally grounded indicators of resilience in social-ecological systems. *Environment & Society: Advances in Research* 8:63-95*



## ASSESSING THE EFFECTIVENESS OF LOCALLY-MANAGED MARINE AREAS

The term locally-managed marine areas (LMMAs) was coined in the Pacific, where organised community-based fisheries management has taken off and spread to other regions of the globe. Despite the rapid uptake of LMMAs in the Pacific region, there have been few studies of their effectiveness to achieve ecological and human well-being outcomes. Over four years, WCS and numerous collaborators undertook extensive investigations to assess the effectiveness of periodically harvested closures (PHCs), one of the main forms of management within Pacific LMMAs. We found that, on average, PHCs are able to increase populations of targeted fish and invertebrates, and that these benefits are greater when PHCs are larger and closed for longer periods. An in-depth analysis of 8 cases from Fiji revealed several key variables that influence PHC and LMMA outcomes, including: the presence of clear physical and social boundaries; the presence of fish wardens; and whether management rules were linked to the state of the resource base.

*Funded by the David and Lucile Packard Foundation*

*Full citations: Jupiter SD et al. (2017) A social-ecological systems approach to assessing conservation and fisheries outcomes in Fijian locally-managed marine areas. *Society and Natural Resources* 30:1096-1111  
Goetze J et al. (2017) Demonstrating multiple benefits from periodically harvested fisheries closures. *Journal of Applied Ecology* DOI:10.1111/1365-2664.13047*



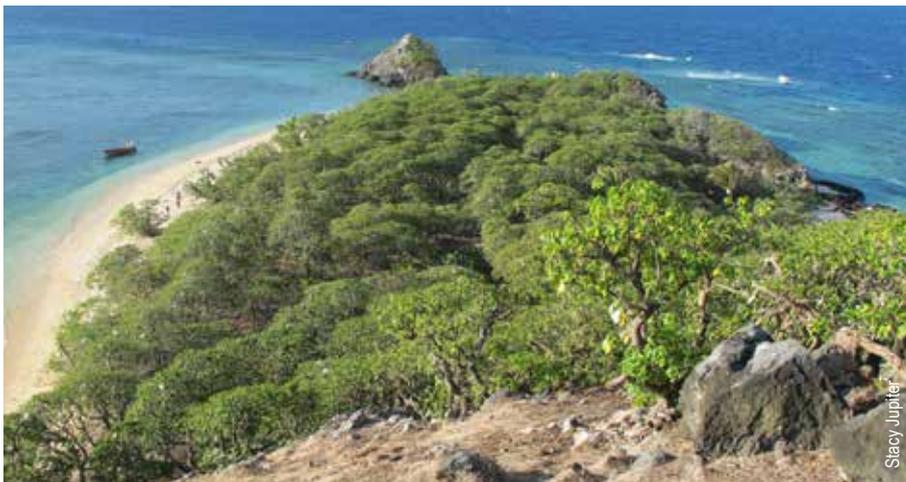
# Protecting important land and seascapes across Melanesia

## VATU-I-RA CONSERVATION PARK MANAGEMENT PLAN DEVELOPED

A management plan was finalised for the Vatu-i-Ra Conservation Park, a community-managed conservation initiative established by communities within Nakorotubu District in Ra Province, Fiji, covering 105.3 km<sup>2</sup>. The Park includes highly diverse coral reefs that are popular amongst international divers and a regionally significant population of seabirds on Vatu-i-Ra Island that is free from rats and other invasive species. The plan establishes a voluntary payment mechanism through innovative partnerships with the tourism sector that will ensure the sustainable financing of the Conservation Park, while supporting the sustainable development of local communities.

Funded by the John D. and Catherine T. MacArthur Foundation and the French Development Agency (AFD) and French Global Environment facility (FFEM)'s RESCCUE project, implemented by The Pacific Community

Full citation: Mangubhai S, Billé R (2017) Marine conservation agreements as innovative financial mechanisms for biodiversity conservation and sustainable fisheries in the Pacific: The Vatu-i-Ra Conservation Park in Fiji. SPC Fisheries Bulletin 151: 12-14



# PROTECT

## COMMUNITIES DEVELOP FISHERIES MANAGEMENT PLANS



Within New Ireland Province, Papua New Guinea, WCS has worked with 5 communities within the Tsoi Islands and 3 from the Bangatan-Salipiu island complex to draft village-level community fisheries management plans and we facilitated development of a plan for the communities of Ungalabu Harbour. Once the draft community plan for Nonvovaul Island and integrated fisheries management plan for the Bangatan-Salipiu complex are endorsed, this will represent approximately 5,000 hectares under improved marine management, providing benefits to over 900 people. In Manus Province, WCS has worked with 10 coastal communities around the island region to develop fisheries management plans that will be enforced by locally-elected Marine Management Committees, providing future food security for over 5,000 residents in the region. In Solomon Islands, WCS has worked with over 100 people from the Kalina area on Parara Island in Western Province to develop an ecosystem approach to fisheries management plan for 470 hectares of reefs and lagoonal areas.

Funded by the U.S. National Fish and Wildlife Foundation, Tiffany & Co. Foundation and the Asian Development Bank

## KILAKA FOREST CONSERVATION AREA LEASE SIGNED

In June 2017, WCS signed a 99-year lease agreement with the Fiji iTaukei Land Trust Board to safeguard and ensure the long-term protection of the Kilaka Forest Conservation Area. The landowning unit has been voluntarily protecting its forest since 2006 and is receiving rental payment for 402 hectares under the lease, offering tangible benefits to the local clan who has maintained stewardship over the area. Kilaka Forest is a national biodiversity priority for Fiji that has received the endorsement of the National Protected Areas Committee.

*"The conservation lease signifies a stronger and closer partnership between WCS and the landowning unit Nadicake that holds the tenure for the Kilaka forest. [It] ensures that the native indigenous species of trees in the forests are protected and maintained, clean water is also maintained and sedimentation often caused by logging affecting the coastal areas and reefs downstream is minimised and controlled."* - WCS Fiji Policy Officer Ruci Lumelume



Funded by Harvey and Heidi Bookman

# Moving people to take action through stories and examples



## PASSING OF A CONSERVATION LEADER IN FIJI

WCS acknowledges the deep environmental commitment of the late Ratu Apenisa Vuki, the Tui Kubulau (high chief of Kubulau), who passed away in mid-December 2017. Ratu Apenisa oversaw the development of Fiji's first district-level, ridge-to-reef management plan for Kubulau District that linked together the various conservation activities happening in the district. Ratu Apenisa was particularly concerned about the loss of traditional knowledge and was supportive of WCS's efforts to capture some of the stories from local elders about marine and coastal species to ensure that they were passed on to future generations. His legacy will live on through the ongoing conservation efforts in the district.

## BUILDING MARINE MANAGED AREAS IN KAVIENG DISTRICT FROM THE BOTTOM UP

As part of WCS's efforts to work with the New Ireland Provincial Government in Papua New Guinea to undertake spatial management in coastal waters, in October and November 2017 we completed community consultations across Kavieng District to inform management priorities. WCS staff, joined by community facilitators and Local Level Government (LLG) fisheries officers, reached 168 out of 174 communities in Kavieng District within the two LLG areas of Lavongai and Tikana. As part of this activity, the field teams also conducted general education awareness on basic ecology and biology of marine organisms to empower local communities with knowledge to better manage the habitats and species.

*Funded by the U.S. Department of State, Oceans 5 and the WCS MPA Fund*



## A CONSERVATION VOYAGE ON THE UTO NI YALO

In September 2017, WCS partnered with the Uto Ni Yalo, a replica of a traditional Pacific voyaging canoe, to sail through the Vatu-i-Ra Seascape for 7 days to raise awareness, engage with coastal communities and celebrate achievements towards sustainable fisheries. At each village, discussions were held on the unique biodiversity and important fisheries in the Vatu-i-Ra Seascape, the role of marine managed areas in maintaining connectivity between inshore reefs and offshore areas, and the benefits of managing oceans holistically.

*Funded by the Waitt Foundation*



# Expanding conservation efforts across Melanesia and strengthening our programs



## STRENGTHENING COMMUNITY-BASED ORGANISATIONS IN PAPUA NEW GUINEA

In Papua New Guinea, virtually all land under is owned by local people. In order to improve local natural resource management and strengthen community governance, WCS is helping communities establish their own local organisations to manage natural resources. In the highlands in Chimbu Province, in 2017 WCS ran training workshops on project management and small grant proposal writing for two pre-existing community-based organisations: the Individual Restoration and Reform Movement and KGWan (a name constructed from clan initials). Elsewhere, in the Miruma community of Eastern Highlands Province and the very remote Lolieng community of Mussau Island, New Ireland Province, WCS took two villages through participatory training in order to develop incipient community-based organisations. WCS will be working with all four groups over the coming year to continue to support and develop their organisations.

*Funded by the Darwin Initiative, The Christensen Fund, and the Critical Ecosystem Partnership Fund*

## FIRST FOREST WARDENS GRADUATE IN FIJI

WCS supported Joeli Matai and Jona Cati, members of Kilaka Village, through a year long training course to become Fiji forest wardens, registered by the Ministry of Forests. The pair now has the mandate to patrol for illegal logging in Kubulau District, with a special focus on the newly declared Kilaka Forest Conservation Area, as well as provide awareness to the broader community about the benefits of maintaining a healthy forest.

*Funded by the John D. and Catherine T. MacArthur Foundation*



## WCS EXPANDS ITS WOMEN IN FISHERIES PROGRAM

In 2017, WCS and the Fiji Locally-Managed Marine Area Network partnered with The Crab Company (Fiji), which has a farm on Viti Levu and rears mud crabs for the domestic market. Together, we trained mud crab collectors on mud crab fattening techniques and established pens in mangrove areas in four community fishing grounds in Bua and Ba Provinces. The pens are established in natural clearings that will not impact on the mangroves. To date, 22 mud crab collectors in Bua Province and 43 in Ba Province have been trained on post-harvest handling methods to meet national health and safety standards.

*Funded by the Flora Family Foundation*



# Creating partnerships to extend our impact



## WCS AT THE UN OCEANS CONFERENCE

WCS Fiji Director Sangeeta Mangubhai and Policy Officer Ruci Lumelume participated on the Fiji Delegation to the UN Ocean Conference in June 2017 in New York. As co-host of the event, Fiji showed itself to be a global leader in ocean management by making 17 major voluntary commitments to protect the ocean within their territorial waters. The commitments cover a wide diversity of topics from marine managed areas, integrated coastal management, coastal fisheries, gender and fisheries, grouper spawning aggregations, turtles, sharks, and whales.



## WCS ENGAGES IN THE CORAL TRIANGLE INITIATIVE

In November 2017, WCS formally presented our application to become a development partner of the Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security (CTI-CFF) at the Senior Officials Meeting in Manila. There were no objections and all of the 6 member countries recommended that the Council of Ministers approve WCS's application in 2018. WCS has been engaging regularly in CTI-CFF partner calls and collaborating on proposals for funding.

LEVERAGE



## BUILDING CONSENSUS ON PROTECTED AREA SUSTAINABLE FINANCING

Through our engagement in the Fiji National Protected Areas Committee, WCS has led the collaborative drafting of a policy brief for discussion on how sustainable financing of protected areas could be operationalised in Fiji through the establishment and capitalisation of trust funds. WCS is in the process of investigating complementary pathways for sustainable financing in Solomon Islands and Papua New Guinea, with application from the single site to provincial scale.

### To learn more about our programs, visit

GLOBAL: [www.wcs.org/our-work/regions/melanesia/](http://www.wcs.org/our-work/regions/melanesia/)  
FIJI: [fiji.wcs.org](http://fiji.wcs.org)  
PNG: [png.wcs.org](http://png.wcs.org)



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