



# South Pacific

Newsletter of the Institute for Coral Reefs in the Pacific

N°4 - January 2017



Established in 2009 by France's École Pratique des Hautes Études (EPHE), the Institute for Coral Reefs in the Pacific (IRCP) delivers cutting edge coral reef research to those with the capacity to make a positive difference for communities in the Pacific Islands and beyond.

## Message from the Associate Director, David Lecchini

"2016 was an important year for coral reefs worldwide: the El Niño phenomenon, which contributed to making 2015 the hottest year on record, led to a mass bleaching event that severely impacted coral reefs. The IRCP monitoring team responded to this event and deployed its members around several islands in French Polynesia to collect data and to document the effects of this El Niño on local reefs. In the Pacific Islands, the effects of climate change are real, and we need to find solutions to protect reefs and the vital resources they provide. This year, the IRCP provided training to local resource managers in Moorea in a workshop focused on techniques in coral restoration. This work applies results from work done by CRIOBE/IRCP researchers, and translates it into tangible solutions for restoring coral reefs.

Looking forward, 2017 is set to be a very busy year. This year the CRIOBE/IRCP will host the 10th Indo-Pacific Fish Conference (<https://ipfc10.criobe.pf/>). In October, more than 500 scientists and stakeholders involved in research, management and conservation in Ichthyology will come to Tahiti to present research findings and to discuss the challenges facing fish communities in the Indo-Pacific. We are thrilled to host this international community of experts, and even more energised about the collaborations and impacts that this conference will have for the coral reefs of French Polynesia and for the Pacific at large."

"The IRCP wishes you a Happy, Healthy and Successful New Year!!" David



### Coral Bleaching in French Polynesia

IRCP scientists collected data throughout French Polynesia in response to the recent widespread coral bleaching event, and early analyses reveal that the bleaching began in the Marquesas and was most intense in the Tuamotus. Surveys conducted during the bleaching event on Moorea's reefs revealed widespread bleaching, and six months later, we documented the first signs that reefs were beginning to recover. Data analyses are currently undergoing and further investigations are required to assess the overall health of Moorea's reefs, particularly after such a strong bleaching event. See page 4



### Tara Pacific Visits Moorea

Moorea's school children were treated to a visit aboard the Tara Pacific, during the expeditions' stopover in Tahiti this past October. The children were thrilled to be able to spend time on the boat, to engage with IRCP/CRIOBE scientists and Tara's crew and to, for a moment, live the life of a marine scientist on the mission of a lifetime. They learned about coral reefs and their fragility in the face of climate change, as well as the role that science can play in helping to improve management efforts to protect vital marine resources for Polynesian people. <http://oceans.taraexpeditions.org/>



### IRCP-CRIOBE : 35 years of coral reef monitoring / IRCP's Director Serge Planes welcomed the President of French Polynesia, the French Overseas Minister, and the President of the Assembly to the CRIOBE during the early part of 2016 and presented results from more than four decades of research and monitoring on the coral reefs of the South Pacific. The dignitaries were impressed by the magnitude of the work that had been done, the implications of the results for coral reefs globally, and applauded the CRIOBE/IRCP for their leadership in helping to sustain healthy reefs for the people of French Polynesia.

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# Action 1: Sharing Science with future leaders & resource managers in the Pacific

## Eels of the Pacific

In June, with financial support from the Fonds Pacifique, the CRIOBE/IRCP and the Pacific Community organised an international workshop focused on tropical eels in the



South Pacific. The workshop was in collaboration with the University of the South Pacific and the Fijian Ministry of Fisheries and Forests and was held in Suva, Fiji. Here, experts from Japan, French Polynesia, Fiji and the Samoan Islands came together to discuss topics like population distribution, status of the eel fishery, private sector perspectives and the link between eels and culture in the Pacific. The workshop helped to strengthen research partnerships and resulted in clear priorities for future research across the Pacific, to help ensure the sustainable management of Pacific eel populations.

**NEXT IRCP WORKSHOP: Monitoring Coral Reefs for Global Change, mid-2017.** In collaboration with the University of the South Pacific, the Pacific Community, SPREP and IUCN, CRIOBE/IRCP will host a coral reef monitoring workshop that will help to build the capacity of stakeholders to monitor reefs as part of the development of a long-term monitoring plan for the South Pacific.



# Action 2: Local workshops in French Polynesia

## Coral restoration trainings in Moorea



IRCP's Antoine Puisay demonstrating how to make a coral cutting

This year the IRCP lead in Moorea coral restoration workshops in partnership with two locals associations, *Te Mana o te Moana* and the *Vairao Surf Club*, to share practical skills with locals wanting to actively protect coral reefs. For the *Vairao Surf Club* coral reefs are vital to the sport of surfing, as reefs facilitate the formation of waves. As such, members of their club were eager to get involved and to participate in the workshop.

IRCP researchers trained association members to take advantage of coral fragments that are naturally broken by waves, and to collect them for use as 'fragments of hope' in the IRCP coral restoration program. Coral grows in two ways – through cloning (asexual) and through sexual reproduction. If a coral colony is broken into two pieces, each one of these pieces can grow on its own, and eventually can reach a state of maturity where it can reproduce sexually. The IRCP restoration program uses this ability of corals to create gardens, where coral fragments are farmed until they reach a size big enough to be transplanted into the wild.

# Action 3: IRCP Early-Career Grants Program

In 2011, IRCP launched a competitive early-career grants program for Masters, PhD and Post Doctoral Researchers under 35 years of age. The grant is designed to attract up-and-coming coral reef researchers to French Polynesia, where they will conduct research and share their expertise within the Pacific Island community.

*"I first learned about the IRCP Grants Program in 2011. I was a masters student, trying to get more involved in conservation. I was awarded the IRCP grant on Post-larval Capture and Culture and this project brought me to French Polynesia and in many ways, launched my career.*

*I was then competitive for a great 3-year position as technical advisor at the IUCN. In 2015 I was given the opportunity to continue my career in scientific research in Japan, where I was offered a PhD in aquaculture".*

Viliame Waqalevu - Phd in wrasse aquaculture and fisheries



## IRCP Grant Recipients – 2016

**Dr. Arjun Chennu (Germany)**

Research scientist / Max Planck Institute for Marine Microbiology

The Digital Reef: mapping the biodiversity and bedform of coral reefs with HyperDiver



**Marlène Degremont (Nouvelle-Calédonie)**

Doctoral student in anthropology / IRD

Globalisation and the Conservation of nature : An anthropological study of governance with respect to marine biodiversity in the South Pacific



**Shubha Singh (Fiji Islands)**

Master's Student / University of the South Pacific

A study of pocillopora larval stages and the reponse of symbiodinium clades to thermal stress in Fiji and French Polynesia



**Dr. Sue-Ann Watson (Australia)**

Postdoctoral Research Fellow / James Cook University

Behavioural effects and acclimation capacity of marine invertebrates to ocean acidification



**Le MERIDIEN**  
Société des  
Nouveaux Hôtels (SNH)  
et la Société Polynésienne de  
Développement Durable  
(SPDD)

## Applications for IRCP GRANTS

4 grants are available each year to early career French and International scientists (< 35 yrs) for research on French Polynesia's coral reefs.

Candidates must submit an application form to the IRCP scientific committee which details their plans for research project in French Polynesia.

Each grant of 4500 euros supports travel, accommodation and research expenses.

For more information  
see the website [www.ircp.pf](http://www.ircp.pf) or [@IRCPacifique](https://twitter.com/IRCPacifique)

# Action 4: Long-Term Monitoring of Coral Reefs in the South Pacific

The IRCP, in collaboration with CRIOBE and France's Observation Service 'CORAIL' (CNRS-INSU), is **responsible for maintaining the Polynesia Mana monitoring network**, which is part of the Global Coral Reef Monitoring Network (GCRMN) and consists of monitoring sites around Moorea, French Polynesia's archipelagos and small neighbouring island states and territories in the Pacific.

## The 2016 El Niño and its impact on the coral reefs of French Polynesia

The IRCP coral reef monitoring team came together in November 2015 for a special mission – to monitor the effects of the El Niño event – the strongest in 50 years – and its effects on the reefs of French Polynesia. *"In May, the bleaching had already hit many of the reefs that we regularly monitor, as part of the GCRMN Network and there were white corals everywhere!"* according to Cécile Berthe, scientist at the IRCP. *"Many of the Pocillopora, a major reef building species in Moorea, were just starting to bleach, and sadly, if these corals die, our reefs and animals who live on them, will be in very big trouble."* In October, in partnership with the Tara Expedition, IRCP gathered data from 15 islands across French Polynesia.



While the data is currently being analysed, according to Laetitia Hédouin – CRIOBE/IRCP coral reproduction expert – *"the long term effects of this bleaching event will vary depending on where they are in French Polynesia, as each island seems to tolerate the stress differently. All of the islands we sampled were heavily impacted by the bleaching. While in Moorea, reefs are already showing encouraging signs of recovery, in the Tuamotu islands, corals are not recovering as well and we estimate that there is more than 30% mortality from this recent coral bleaching event."* The IRCP has an important role to play in French Polynesia, as it provides the scientific expertise to track the long-term health of coral reefs and uses this information to bring awareness of coral reefs to the people who rely on them.

**IRCP dataset advances methods in coral reef monitoring.** A CRIOBE/IRCP research team recently tested the value of sound – or, 'the acoustical marine landscape' – as a tool to assess the health of the coral reefs. They recorded sound from Moorea's outer reef and compared this data with data found in the IRCP SO CORAIL and found that **acoustics have the potential to be a very important tool in coral reef monitoring and conservation.** The results from this study were recently published in Scientific Report.

Reference : Bertucci, F. et al. *Acoustic indices provide information on the status of coral reefs: an example from Moorea Island in the South Pacific.* Sci. Rep. 6, 33326; doi:10.1038/srep33326 (2016) [www.observatoire.criobe.pf](http://www.observatoire.criobe.pf)

## Indo-Pacific Fish Conference 2017 - Tahiti

In October, CRIOBE/IRCP will host the 10th IPCF in Tahiti, French Polynesia. This international conference is held every four years, and has been attracting world-class scientists and delegates from around the globe since its inception in 1981. The 2017 IPCF will gather more than 400 scientists and stakeholders in ichthyology (including elasmobranchs and teleost fishes) from more than 30 countries. For 33 years the conference has facilitated international collaboration among scientists and managers in the field of ichthyology in the Indo-Pacific.

<https://ipfc10.criobe.pf/>



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