

South Pacific



The IRCP newsletter - N° 1 January 2014

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The Words of the Director



Serge Planes

The IRCP is just celebrating its first five years. For this special anniversary, I am very pleased to present the first issue of our newsletter: "South Pacific". It aims to reinforce links and ease communication between the IRCP and all those involved in the management of coral reefs in the South Pacific.

These first few years have been very active with the organisation of more than 10 workshops, involving about 400 participants from countries all over the Pacific. These workshops have provided the opportunity to promote discussions between users, associations, managers and scientists related to human-induced contemporary stress on coral reefs. These workshops are key to the IRCP's policy as they enable interaction between French and English speaking countries of the Pacific.

The past five years have also been devoted to favouring young scientists' research on coral reefs in the Pacific. 12 fellowships have been allocated so far, all of which involve work on coral reefs of the Pacific.

In addition to the work that has been highlighted in this newsletter, the IRCP has also been developing an observatory of the coral reefs of the South Pacific, and training some students and teachers training in order to promote the originality of coral reef and the need for conservation perspectives.

Overall these initiatives will continue in the coming year and I am happy to say, that the IRCP will put coral reefs at the centre of concern for Pacific countries. Let me take this opportunity to give you my best wishes for New Year 2014!

The Institute for Pacific Coral Reefs (IRCP) is a French institute of the Practical School of High Studies (EPHE), created on January 21st, 2009 by order of the French Ministry of Higher Education and Research. For the achievement of its objectives, IRCP has strong links with the Insular Research Center and Environment Observatory at Moorea Island, French Polynesia (CRIOBE-USR 3278 CNRS-EPHE).

Objectives of the IRCP

The institute has many different objectives:

- > to promote, over time, and at a regional scale for the South Pacific, the necessary link between fundamental research and politics of conservation ensuring sufficient training of those in the field of coral reefs management;
- > to support topics, which take account of the contribution of the human and social sciences to the sustainable management of coral reefs;
- > to set up a monitoring network of coral reefs;
- > to work in favor of federative projects aimed at the conservation of coral reefs and in doing so to contribute, in the context of sustainable development, to the future of the coral ecosystems and people who depend on them.



Action 1: International Workshop in the South Pacific



Fish monitoring - Solomon Islands



PDF available on www.ircp.pf

The IRCP collaborates with many institutions and scientific organizations within the framework of its works in the South Pacific. Trainings are provided through an range of events, such as seminars which demonstrate the technical skills needed for the management to conservation of coral reefs in countries of the south Pacific.

Workshops always include always a theoretical part in the form of seminars and a practical part in the form of a course where various methods for monitoring and managing coral reefs are presented. These workshops allow the development of regional or international cooperations in bringing sustainable solutions to the countries of the South Pacific.

In September 2013, the IRCP, the University of the South Pacific in the Solomon Islands (USP), the Secretariat of the Pacific Community (SPC) and IFREMER from New Caledonia joined in a partnership to develop and offer the «Different survey methods of coral reef fish, including the methods based on underwater video» workshop. This workshop was funded by the French Embassy (Pacific Fund). There were two key objectives to the workshop: to allow USP students (8 students were involved) to learn the different techniques of fish monitoring and to increase the level of USP, government and NGO staff (20 persons) already involved in fish monitoring, particularly with regards to recent underwater video techniques and data analysis tools.



Group on the field - Solomon Islands



Action 2: Local workshop in French Polynesia

Each year, IRCP proposes various trainings for the Direction of the Secondary Education (DES), the Direction of the Primary Education (DEP), and for the public within the private sector in French Polynesia.

These trainings can be carried out using the structures of the CRIOBE or directly in the concerned establishments.

For example, some training aims to welcome groups of primary school teachers or professors and to provide "internships" in the biology, ecology and the conservation of coral reefs.

Other training aims to welcome NGOs or governmental staff involved in coral reef monitoring with, for example, one week seminars focussing on corals, fish or mollusks with both theoretical and practical parts.

In 2013, coral, mollusk and tropical eels workshops were organized by IRCP at the CRIOBE station.

For example the workshop on tropical eels, which was funded by the Fonds Pacifique, took place the first week of December 2013. The workshop provided an update on the knowledge of tropical eel species in the South Pacific and on the fundamental applied research requirements needed to sustainably manage populations in various territories. Experiments in the field were conducted to show how eel populations can be studied in rivers of the South Pacific countries. This workshop, mainly directed towards stakeholders, was presented by scientists who are considered world authorities in this field. A total of 30 people attended this Workshop coming from many countries including Vanuatu, New Zealand, New Caledonia, Japan and French Polynesia.



Promotion 2013



Tropical eel *Anguilla megastoma*

Moreover the IRCP also gave seminars in all the secondary high schools on Moorea (collège de Pao-Pao, collège de Afareitu, Lycée agricole). The seminars focused on the thematics: «What is a coral: an animal or a plant?»; «Where can we find coral reefs in the world?»; «How to survey coral reefs and their marine Biodiversity?»; «How to manage coral reefs: using the example of marine protected areas around Moorea?» Lastly, the IRCP and CRIOBE staff teach five weeks per year at the Master of French Polynesia University and the Master of EPHE [<http://biodiv-envt-ephe-pre-fig.com/>].

Action 3: IRCP grants for Master, Phd and post-doctorate students

Thanks to funding from Robert WAN (Tahiti Perles group) benefitting the IRCP, each year three to four grants have been given (from 2011 to 2013) to young scientists (PhD, Post-doctorate or degrees of similar levels - < 35 yrs) of any nationality to conduct a scientific project on coral reefs of French Polynesia.

The candidates are selected by the IRCP scientific committee, which includes some members of the Secretariat of the Pacific Community (SPC). Among the three or four candidates selected each year, at least one candidate will come from South Pacific Island States in order to promote training for scientific research in these countries. The sum of each grant will be 4500 € (euros) in order to cover travel expenses to and from French Polynesia, in addition to accommodation and research costs.

Focus on:

Verena Witt , PhD student at Munich University (Germany), working on bacterial diversity and metabolism in tropical coral reef biofilms

Abstract: Water quality in coastal regions around the world is declining in response to global (i.e., ocean warming and acidification) and local (i.e., land-based activities) anthropogenic impacts. Bacterial communities associated with biofilms and sponges shift rapidly in response to changes in water quality and hence may serve as bioindicators for reef health. However, the potential of microbial bioindicators in reef organisms and whether microbial community shifts also alter community functioning remain unexplored.

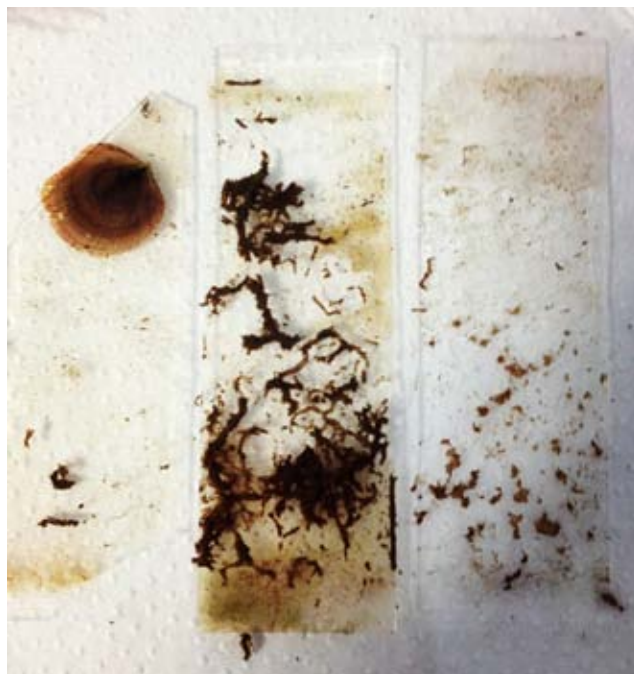
This study will therefore aim to identify microbial target indicator species, investigate the recovery adaption potential of biofilm and sponge-associated microbes and determine potential consequent changes in organism functioning. Biofilms will be established on artificial substrates for 30 days in aquaria and sponges will be collected in situ along a water quality gradient comprising of inshore and off shore sites around Moorea Island.



Verena Witt



Verena on the field



Biofilms after 30 days in the lagoon

Overall, findings may contribute to understanding consequences of terrestrial runoff on ecosystem functioning and resilience, and to the application of microbial biofilms/sponges in long-term water quality monitoring programmes and future coastal management. Understanding qualitative and metabolic responses of biofilms to terrestrial runoff will contribute importantly to understanding coral reef ecosystems and further, may contribute to future coastal management which may be readily adaptable to other tropical regions.

The partnership between the Institute for Pacific Coral Reefs (IRCP) and some private french polynesian firms continues in 2013, with a new partnership (from 2013 to 2015) with Société des Nouveaux Hôtels (SNH) and Société Polynésienne de Développement Durable (SPDD). Thus, four more grants are available in early 2014 to young scientists of any nationality to conduct a scientific project on the French Polynesian coral reefs.

The Last selected candidates:

Jerome Payet, Post-doctorate at Oregon State University (USA): working on ecology and diversity of marine viruses in the surrounding coral reef ecosystems of French Polynesian Islands



Jerome Payet

Rynae Greta Lanyon, Master student at University of the South Pacific (Fiji Islands): working on the variation in brain organization of coral reef fish larvae according to life history traits



Rynae Greta Lanyon

Sarah Davies, PhD student at Texas University (USA): working on the genetic structure of coral symbionts in Moorea



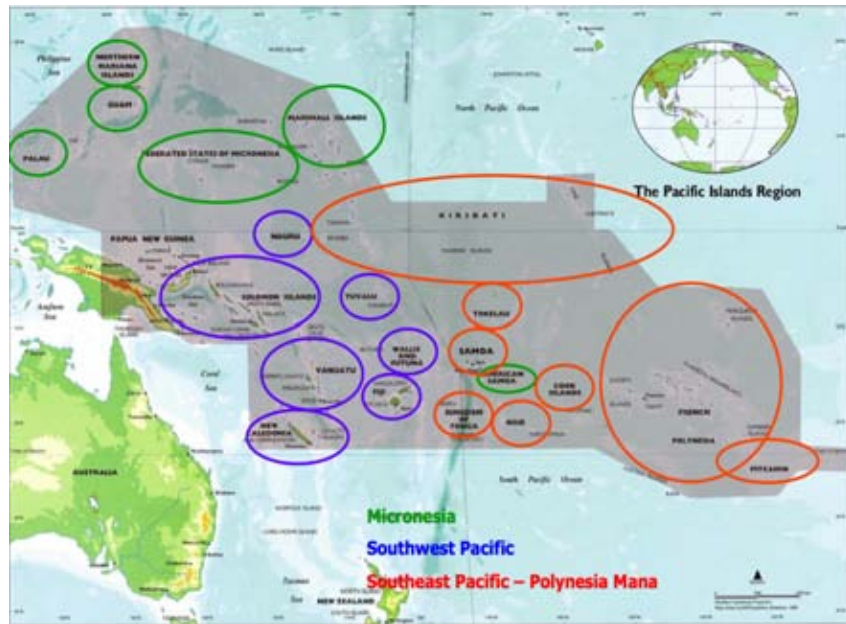
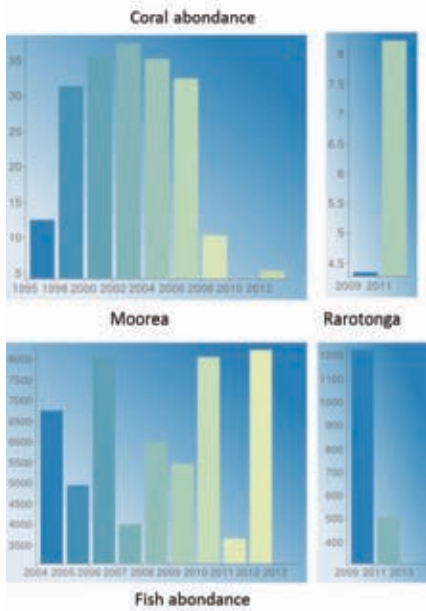
Sarah Davies



PDF available on www.ircp.pf

Action 4: Monitoring network of coral reefs in the South Pacific

One of the essential objectives of IRCP is to set up a monitoring network of coral reefs in the South Pacific. The IRCP relies on the CRIOBE for this as they developed, within the network of Polynesia Mana, a monitoring network of 13 French Polynesian islands about 15 years ago. On each island, a site is set up with temperature sensors and/or multi - parameters sensors. Biological monitoring also occurs at each site biennially (study of coral and fish stocks) [http://biomex.univ-perp.fr/CRIOBEData/].



Polynesia Mana Network

Since 2009, IRCP and CRIOBE have set up new monitoring sites in partnership with other South Pacific organizations. A total of 3 monitoring sites were established in 2009 in nearby countries of the South Pacific: Pitcairn, Tonga, Cook. In 2010 and 2013 two new sites were established, Kiribati and Samoa respectively.

Journal de la Société des Océanistes, 126-127, année 2008-1/2

Photo tow: a new method for estimating coral reef status and changes at large spatial scale. A coral bleaching event case study by Yannick CHANCERELLE, Robert MAURIN, Sébastien POUJADE and Caroline VIEUX

Rev. Écol. (Terre Vie), vol. 63, 2008.

LES RÉCIFS CORALLIENS DE WALLIS ET FUTUNA : SUIVI BIOLOGIQUE, ÉTAT DE SANTÉ ET PERSPECTIVES D'AVENIR Yannick Chancerelle

Pacific Science (2008), vol. 62, no. 3:431-441

A Framework for Assessing Impacts of Marine Protected Areas in Moorea (French Polynesia) Thierry Lison de Loma, Craig W. Osenberg, Jeffrey S. Shima, Yannick Chancerelle, Neil Davies, Andrew J. Brooks, and Rene Galzin



The CRIOBE

Overall, for the achievement of its objectives, IRCP maintains strong links with the Insular Research Center and Environment Observatory at Moorea Island, French Polynesia.



More about the IRCP on the website www.ircp.pf



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