



Taihoru Nukurangi



Scientific cooperation in the Pacific Ocean

Geoffroy Lamarche

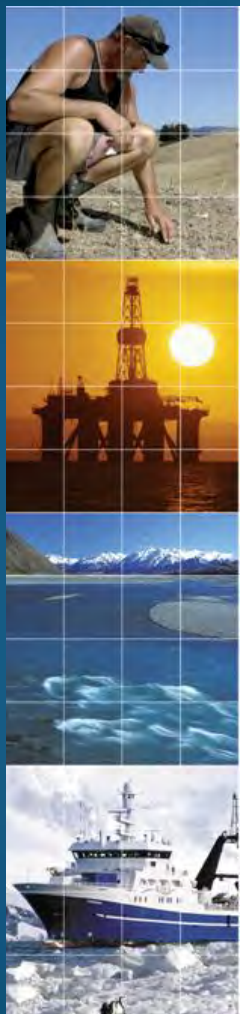
Principal Scientist

National Institute of Water and Atmospheric Research

Wellington

A presentation to the PECC workshop
***The Management of Deep Sea Marine Resources and
Oceans as a Means of Communication***

Auckland 4-5 December 2012

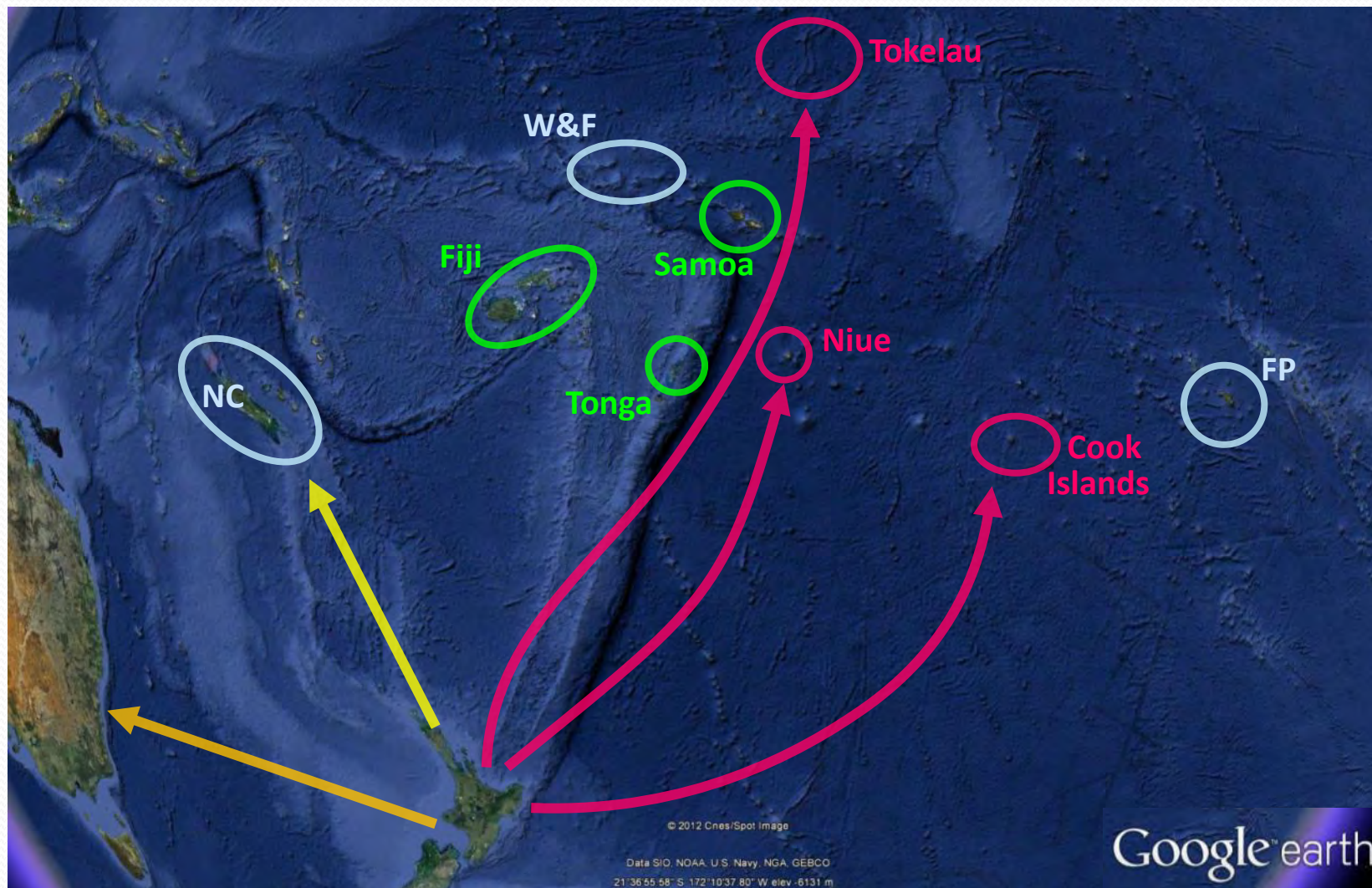


Outline

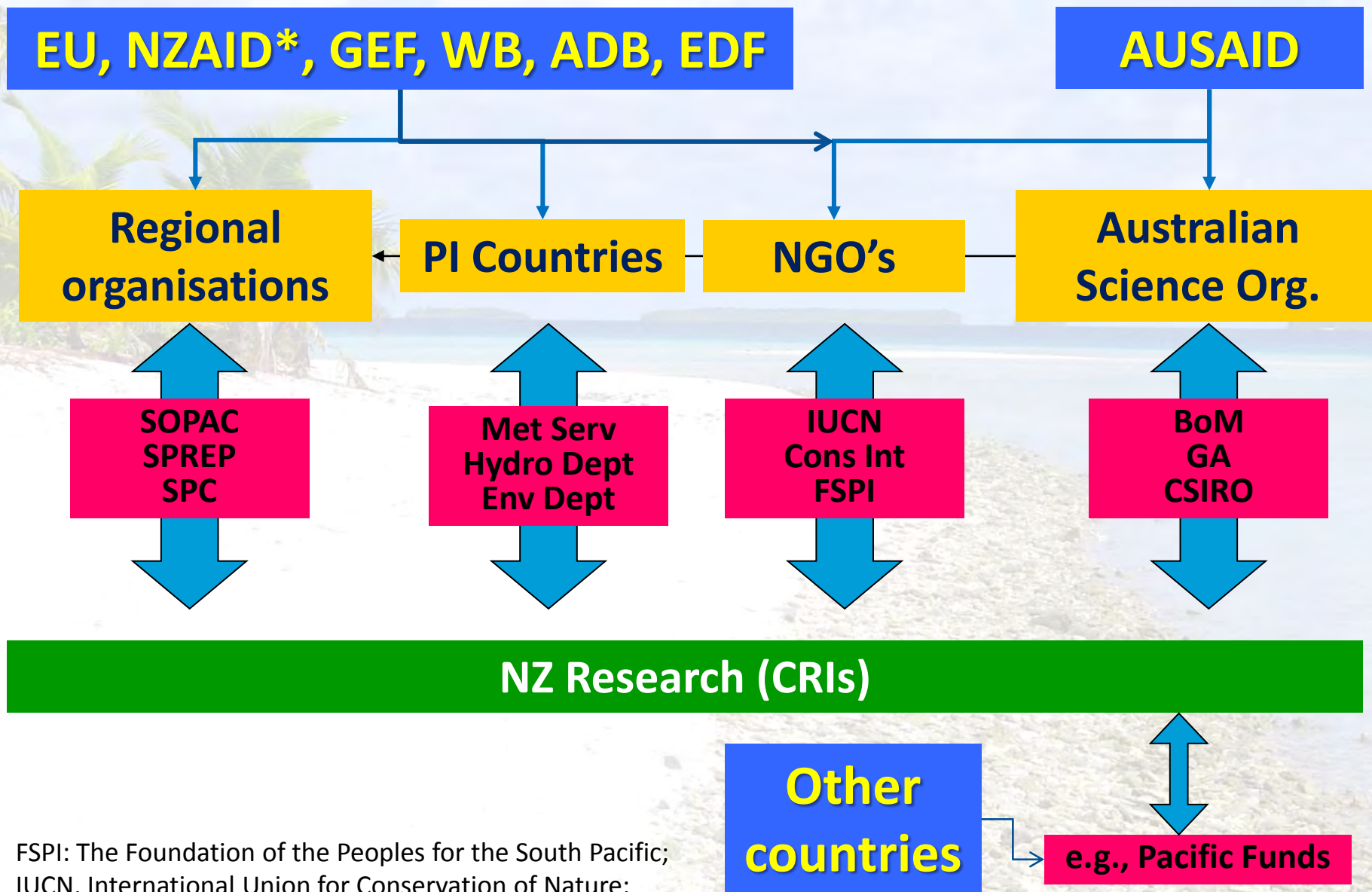
*Emphasis will be on **scientific collaboration** pertinent to **deep-sea marine resources** with a somewhat New Zealand-Aotearoa-France focus!*

- **NZ in the Pacific**
- **International Organisations**
- **NIWA-France collaboration**
- **NIWA Pacific Rim Group**

New Zealand-Aotearoa in the South-West Pacific



Funding



FSPI: The Foundation of the Peoples for the South Pacific;
IUCN, International Union for Conservation of Nature;

*: now MFAT-IDG



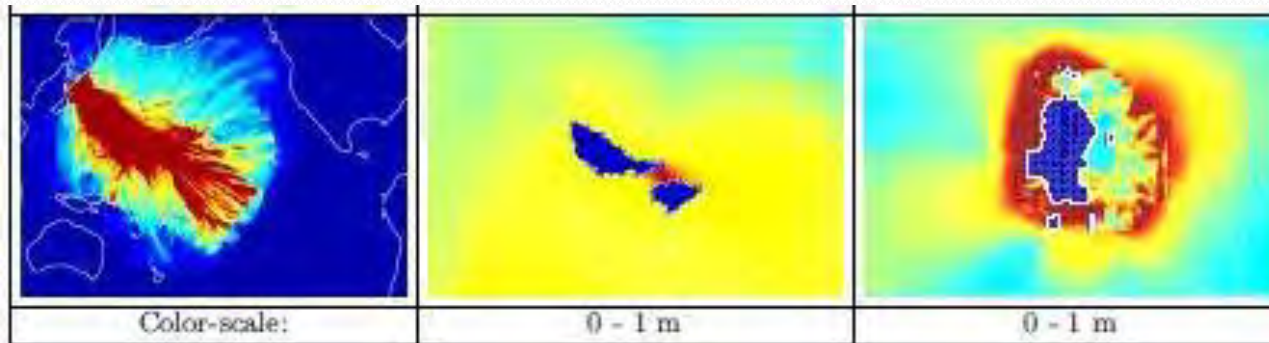
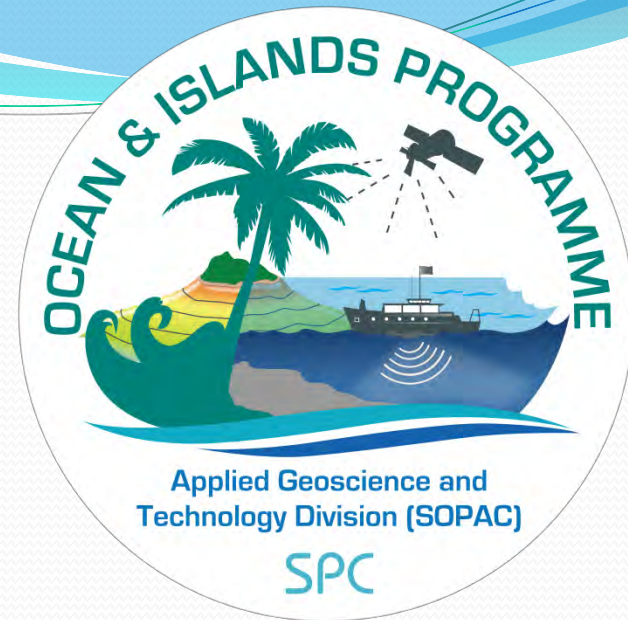
SPC
SECRETARIAT OF THE PACIFIC COMMUNITY
Applied Geoscience and Technology Division (SOPAC)

SPC - SOPAC

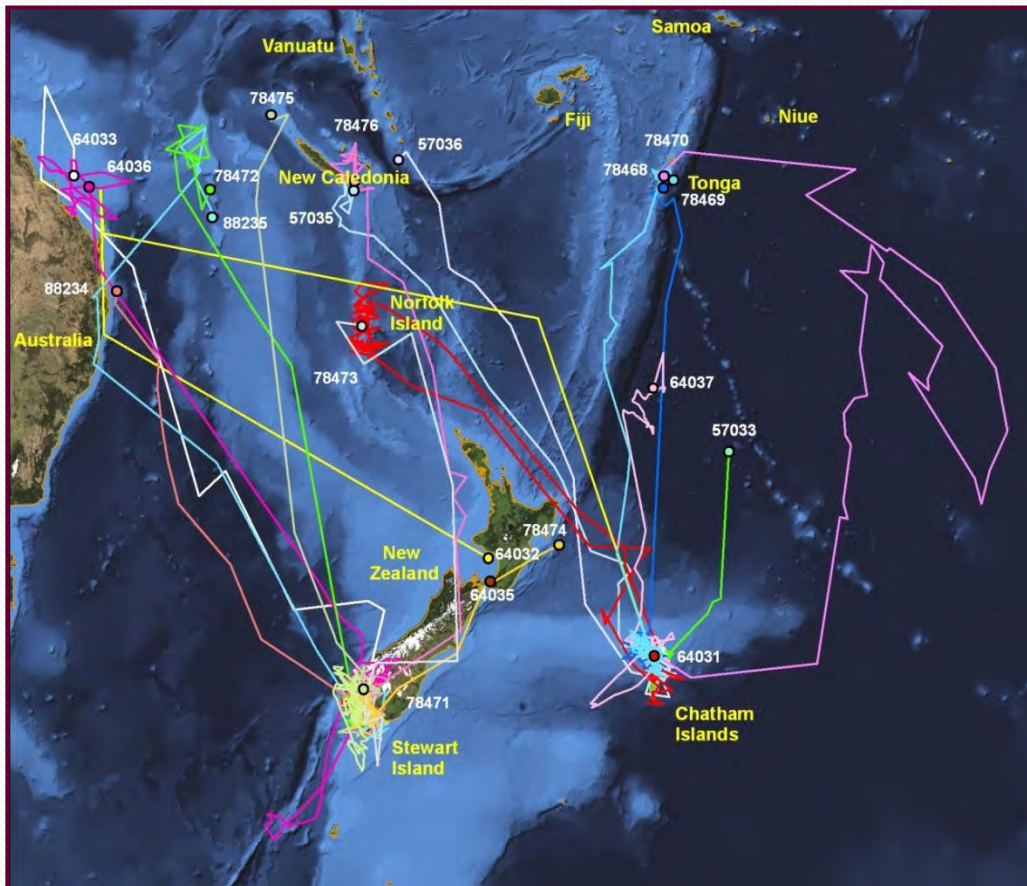
Goal : to apply geoscience and technology to realise new opportunities for improving the livelihoods of Pacific communities.

Science, Technology and Research (STAR) Network

In 2009, under the EU has provided €3.322 million over 4 years to assist NC, FP, W&F and Pitcairn with the implementation of actions to reduce their vulnerability to losses from natural and anthropogenic disasters.



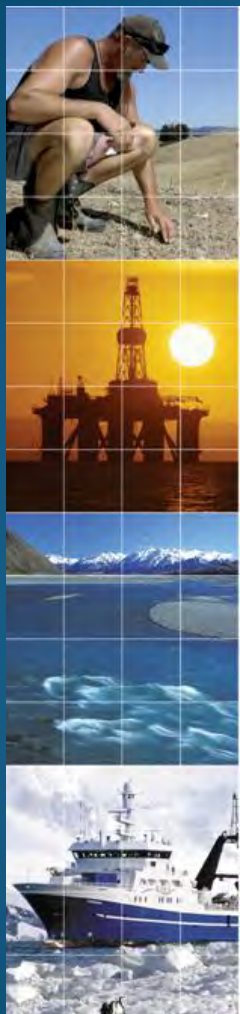
Conservation of NZ's threatened iconic marine megafauna (White shark tracking)



A number of white sharks tagged in NZ have migrated to NC and the Coral Sea.

Tags not attached for long enough to determine whether sharks return to NZ.

Aim to tag white sharks in NC to determine if they make regular return migrations.



International Pacific-Centred Science Organisations

- GOPS (South Pacific Integrated Observatory For Environment And Terrestrial And Marine Biodiversity)
- Circum-Pacific Council
- Pacific Science Congress
- Science, Technology and Research (STAR) network

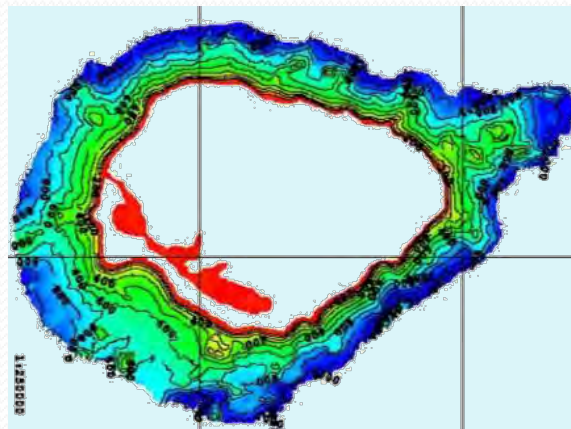


**SOUTH PACIFIC INTEGRATED OBSERVATORY FOR ENVIRONMENT AND
TERRESTRIAL AND MARINE BIODIVERSITY**

**SOUTH PACIFIC INTEGRATED OBSERVATORY FOR ENVIRONMENT AND
TERRESTRIAL AND MARINE BIODIVERSITY**



- Observation & long-term monitoring of terrestrial & marine ecosystems ;
- Consortium of organisations to develop and share resources & large equipment ;
- Support and coordinate joint research programs;
- Participate in tertiary education programs in the South Pacific;





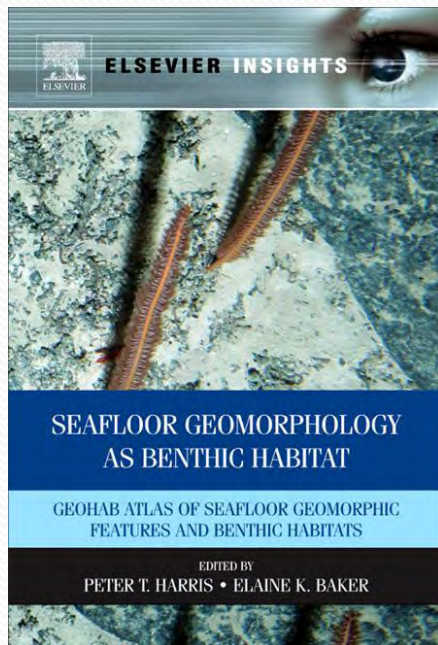
CIRCUM-PACIFIC COUNCIL

www.circum-pacificcouncil.org

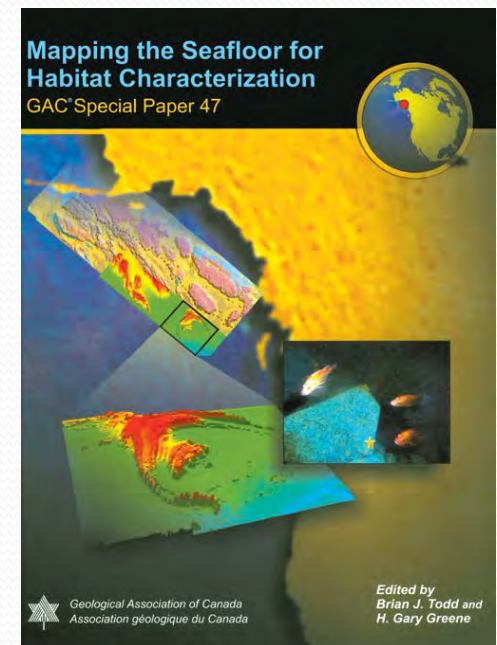
Promoting sustainable utilization of earth resources in the Pacific region since 1972.

An international, non-governmental association of earth scientists and oceanographers from government, industry and academia with interests in the Pacific region

Chair: Prof Gary Greene
NZ Director: Geoffroy Lamarche

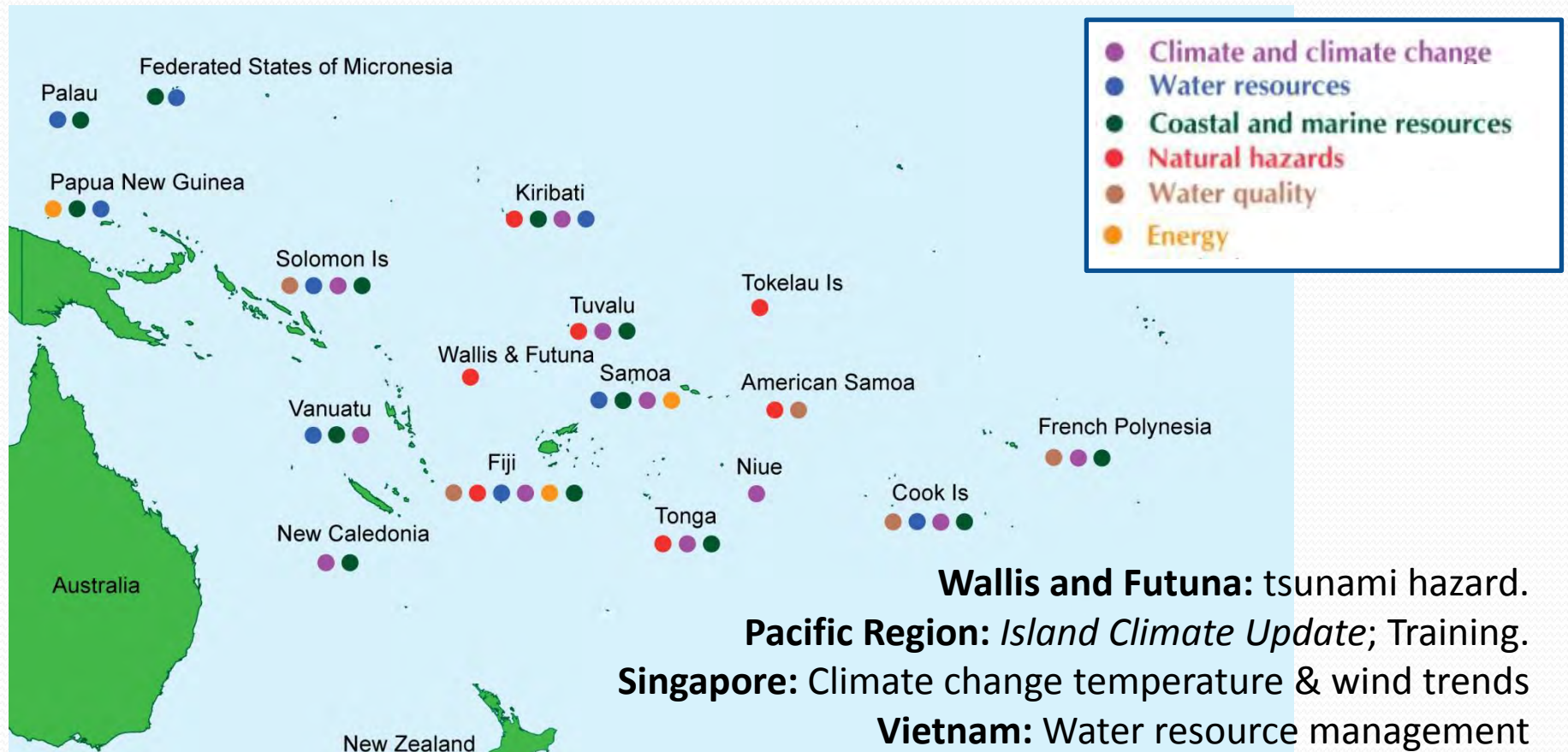


- ✓ 11 conferences, symposia and >20 workshops in different countries;
- ✓ 60 maps & booklets on geologic, tectonic, resources, geohazards, and environmental data
- ✓ Geospatial data in East Asia.
- ✓ 16 volumes in its Earth Science Series
- ✓ Strong link with industry



NIWA Pacific Rim Centre

Developing and maximising opportunities through strengthening partnerships with key organisations in the Asia-Pacific region



Number 85, October 2007

The Island Climate Update

September's climate

- The South Pacific Convergence Zone (SPCZ) over Papua New Guinea to the region south of Tonga; very active and further southwest than normal
- Suppressed convection over Western and Eastern Kiribati and further east
- Record September rainfall in Vanuatu, New Caledonia and parts of Fiji; well below average rainfall in Kiribati, Tuvalu, northern Cook Islands and Marquesas Islands
- Warmer than normal in the subtropical South Pacific, record high temperatures in parts of Fiji

Collaborators

Pacific Islands National Meteorological Services

Australian Bureau of Meteorology

Meteo France

NOAA National Weather Service

NOAA Climate Prediction Centre (CPC)

International Research Institute for Climate and Society

European Centre for Medium Range Weather Forecasts

UK Met Office

World Meteorological Organization

MetService of New Zealand

El Niño/Southern Oscillation (ENSO) and seasonal rainfall forecasts

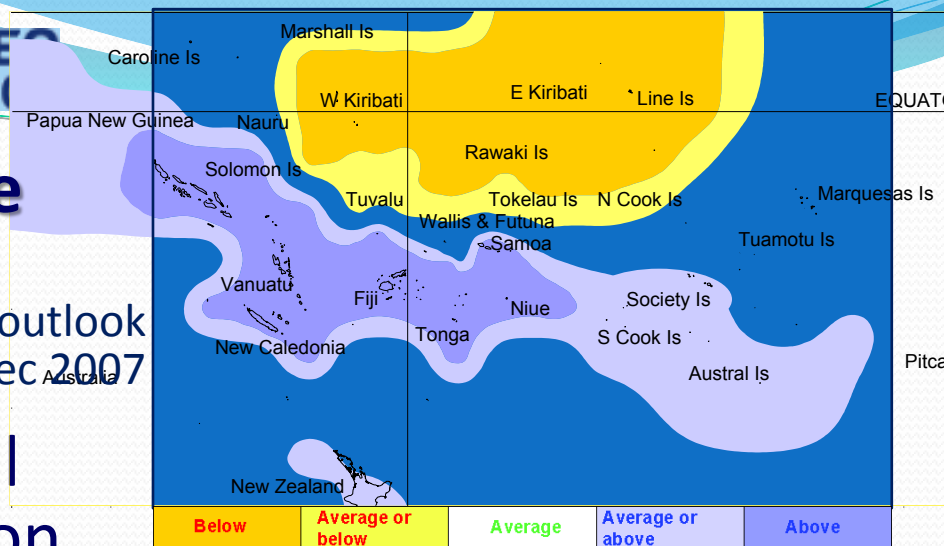
- La Niña conditions have developed in the equatorial Pacific, with a 50% chance of persisting through to February 2008
- Enhanced convection and above average rainfall expected from the Solomon Islands southeast to Niue, including Vanuatu, New Caledonia, Fiji, Tonga, and Samoa
- Below average rainfall likely over Western and Eastern Kiribati



Climate

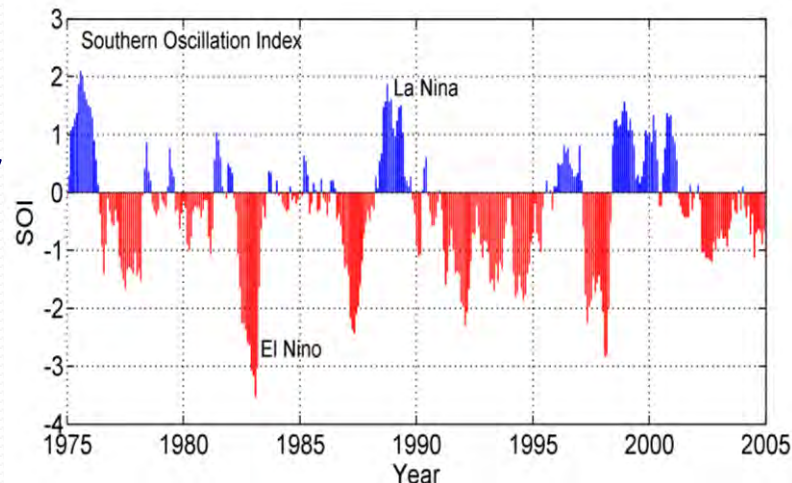
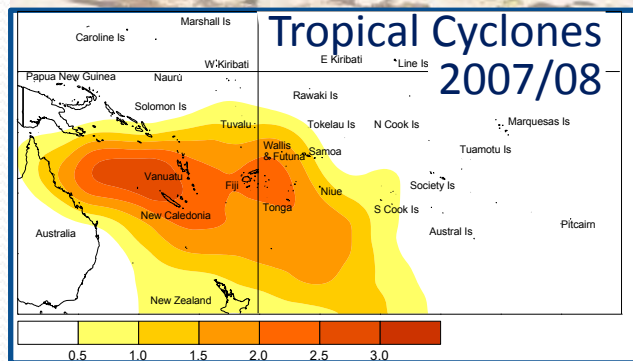
Rainfall outlook
Oct - Dec 2007

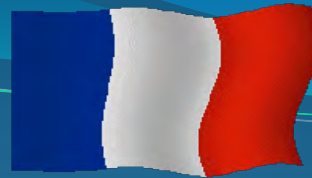
Seasonal Prediction



- 3-month climate outlooks with Meteo-France (Noumea & Papeete)
- Monitor climate, cyclones and the El Niño/Southern Oscillation
- Prepare tropical cyclone guidance

Trends and variability





France-Niwa Collaboration

Research initiatives

Pacific Funds of the French Ministry of Foreign Affairs

Some examples



NIWA-France Collaboration

Sharing Resources

Involve > 50 senior scientists
> 40 exchanges/visits → ~ 80 d/yrs
6 years (cumulative) of secondment and sabbatical
3 years post-doc contract
Participation to ANR programs
>20 tertiary degrees (PhDs, MSc)
6 MSc and Engineer internships leading to 2 full time employments
Co-leading of oceanographic survey (300 days)

Some outputs

- > **50** articles in international journals
- > **15** popular articles and reports
- ~ **100** presentations at conferences
- Software/Methodology development
- Aid/development

Funding

NZ

- MBIE (FRST)
- NIWA
- Royal Soc
- Dumont D'Urville

France

- CNRS
- ANR
- Dumont D'Urville
- Fonds Pacifique

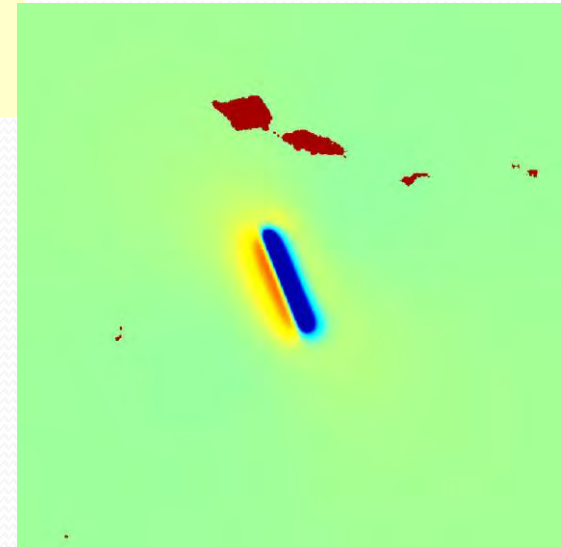
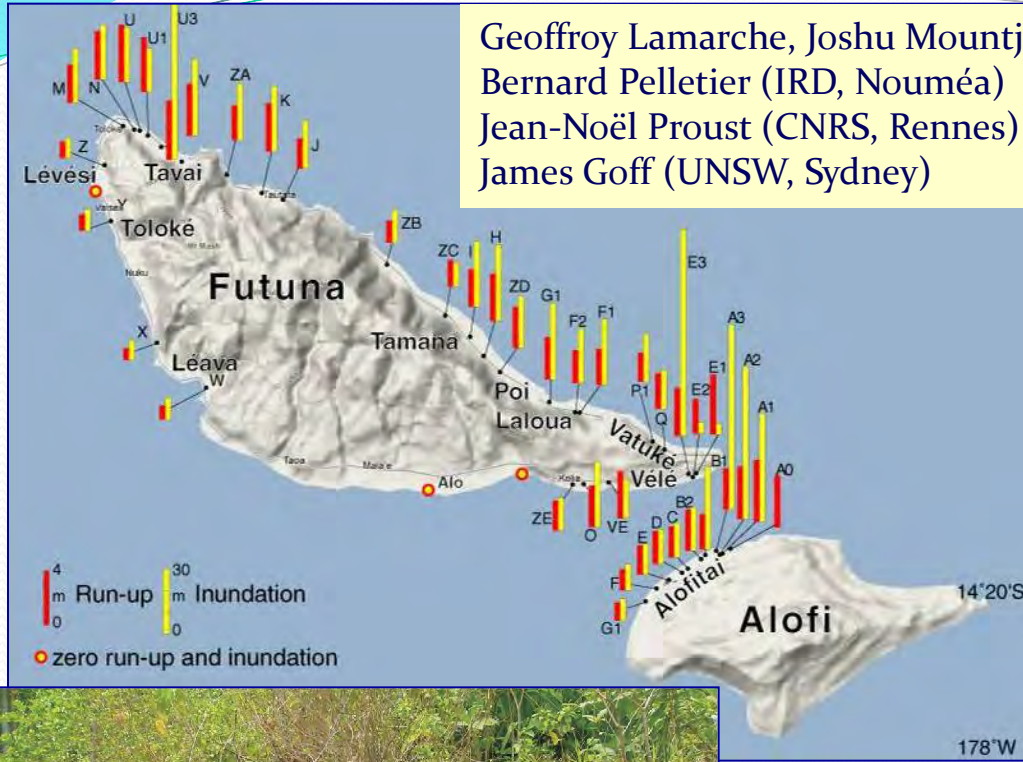
international

- SOPAC
- GEF
- EU – FP9

Paleo-tsunami record & tsunami hazard in Wallis & Futuna

Geoffroy Lamarche, Joshu Mountjoy (NIWA)
Bernard Pelletier (IRD, Nouméa)
Jean-Noël Proust (CNRS, Rennes)
James Goff (UNSW, Sydney)

Pacific Fund projects 2008-2012



IRD
Institut de recherche
pour le développement

Geosciences
Rennes

10.10.2008 11:11

UMR EPOC, Bordeaux

Modelling, experimentation and remote sensing
for sedimentary hydrodynamics



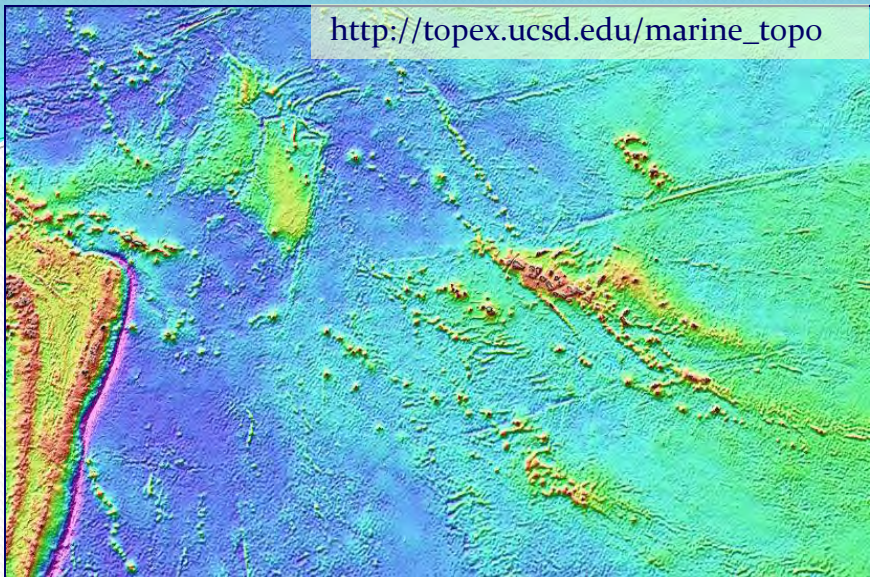
Tairua Beach, Coromandel

Impact of diffuse contamination by herbicides on seagrass

Arnaud Elger (Uni of Toulouse EcoLab);
Isabelle Auby (Uni of Bordeaux);
Fleur Matheson (NIWA)



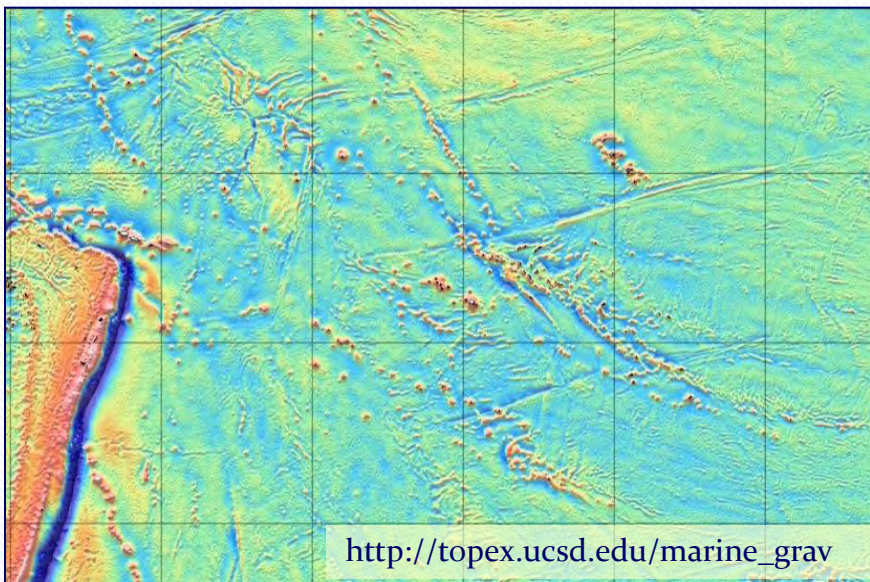
http://topex.ucsd.edu/marine_topo



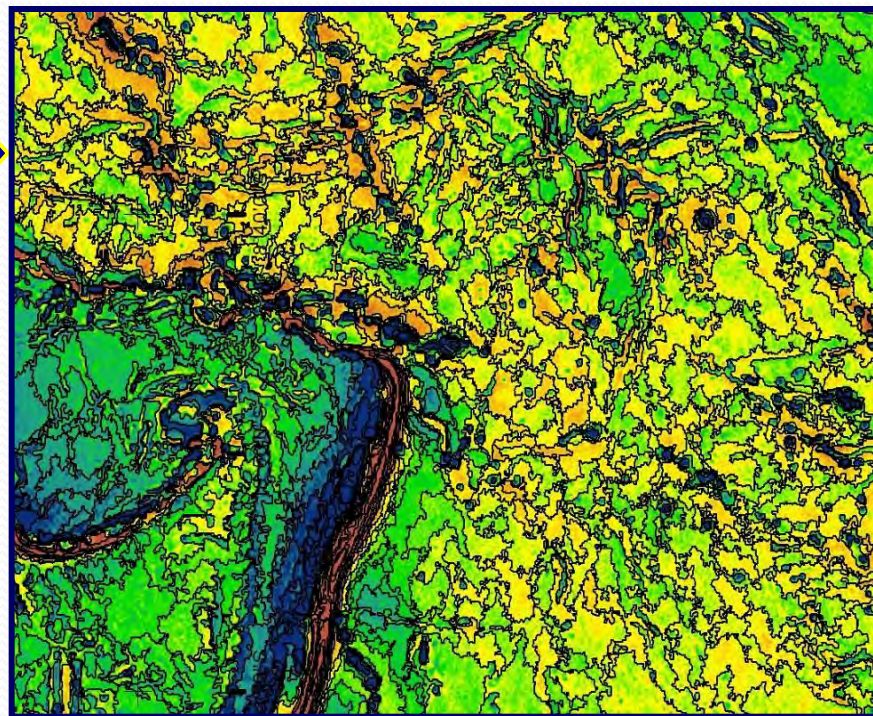
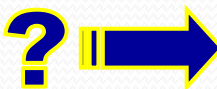
Seafloor Habitat and Resources mapping applied to the Pacific Region?

Can we use remotely sensed data (altimetry, gravity, magnetic,...) to routinely characterized seafloor substrate at the scale of the South Pacific for generating quantitative substrate / habitat maps in order to **underpin management of environmental and seafloor resources**.

Scripps Institution Of Oceanography,



http://topex.ucsd.edu/marine_grav



satellite gravity data segmented on intensity.

Conclusion: What next?



- Identify common priorities
- Develop joint programs
- Encourage/promote industry – research collaboration
- Encourage & fund visiting scientists and secondments
- Encourage & fund joint PhD supervision & post-doctorate fellowships
- Co-fund oceanographic surveys
- Support / recognise co-authorships
- Nurture national & international stakeholders relationships
- Share resources
- Recognition of diploma across borders
- Develop EU projects
- **Improve profile of the PECC**



Science for Human Security &
Sustainable Development in
the Pacific Islands & Rim

12th Pacific Science Inter-Congress
8-12 July 2012, Suva