

# Frederique Olivier, PhD

## Summary

Originally trained in France as an environmental engineer with a strong background in media and communication, Fred has been involved as a marine scientist in a variety of remote field based projects ranging from tropical reef monitoring to Antarctic ecology in a broad range of fields. Fred's PhD research focused on monitoring signals of climate change in the breeding habitats of Antarctic seabirds and gave her a wealth of experience with the (Sub-)Antarctic environment and operations, with 8 consecutive summers and a winter. In parallel, she worked as an environmental engineer, wilderness photographer, expedition guide, lecturer and commercial skipper. She became involved in documentary production as logistic support/camera/sound, all projects field based as she enjoys the challenge of being autonomous in remote conditions and recently returned from skippering a 4 month Pacific yacht expedition for BBC to participate in Antarctic resupply operations.

born: 1976  
Australian/French citizen



730 Summerleas  
Road, Fern Tree  
TAS 7054  
mob: + 61 (0) 400 511 800  
email: pagodroma@gmail.com

## Field logistic support and Documentary production

### Recent projects

AAD Watercraft operator (Barge/IRB)  
for major Antarctic cargo resupply

Jan-March 09



BBC NHU 5 parts series  
"South Pacific"  
4 months as charter  
skipper/2nd camera in  
the Solomon Islands



Nov 07-July 08

Field logistics on Sub  
Antarctic Macquarie  
Island, 2 months



### Logistic support /sound recordist / 2nd camera

Oct 06



BBC Science  
presenter- driven  
geological series  
"Earth -  
a biography"

Filming the historical reenactment  
of Mawson's 500km epic survival  
journey back to Commonwealth  
Bay and support it with an icecap  
skiddoo traverse expedition



Nov 06- March 07

**Sound recordist**

March-May 06



Solomon Islands  
**3-part series for SBS.**  
Australian police helps  
restoring and maintain-  
ing peace in pacific  
neighbouring countries.

**Sound recordist/logistics**

The flight of the swamp ghost.  
A group of American aviation  
enthusiasts rescue a famous WWII  
plane wreck out of a remote swamp  
in North East Papua New Guinea.



May-June 06

Nov 04-Nov05



**BBC Natural History Unit.** Field assistant/biologist wintering at Mawson station, Antarctica. Digital video, stills and sounds for the ground breaking documentary series "Planet Earth". Collection of scientific data on Emperor populations and GPS surveys.

**Logistic support - Camera assistant - photographer**

Southern Right

Whale monitoring project, GIS Consultant. Building information layers to analyze historic and current habitat selection by Southern Right Whales Australia wide. Field identification and matching of animals using telephotography.



Jan-Apr 06

**GIS Consultant**

Dec 03-Feb 04



**Expedition staff**

Quark expeditions Guide-Lecturer - zodiac driver onboard Antarctic tourist icebreaker Kapitan Khlebnikov. Several visits to the Ross Sea area and New Zealand/Australian Sub Antarctic islands.

# Research and Engineering

## Field Antarctic ecology

2002-2005



**ACE-CRC.** PhD project involving differential GPS field surveys of snow petrel and Wilson's storm petrel nesting areas at Casey and Mawson. Modeling distribution and abundance of nesting seabirds in relation to habitat characteristics to help monitoring signs and potential effects of climate change.

2003



**Australian Antarctic Division, AMLR Program.** Experimental work on mitigation measures limiting seabird bycatch in the Southern Ocean by longline fisheries. Field work onboard New Zealand boats.

2001-2003



**2 summers at Casey.** Study on long term trends in Adelie penguins populations ; monitoring of several petrels species for plastic ingestion ; systematic collection of rubbish escaped from two Antarctic stations for a waste management study. Mapping of moss beds. Participation in Weddell behavioural studies on human disturbance. Seabird and marine mammals observations at sea.

2000-2001



**Summer at Davis** Collection of lake invertebrates in the Laresemann and Vestfold Hills. Aerial surveys and ground counts of Weddell seals along 250 km of coast west of Davis.

**AAD Human Impacts Branch** - Research Assistant. Fuel composition and sediment invertebrate biota and metal analysis

1999-2001



**Marine biologist.** Sea ice coring for Dimethyl Sulfide and phytoplankton measurements (spatial survey in the pack ice, 160 ° E - 70 ° E). Looking at the relationships between the production of Sulphur compounds (cloud formation nuclei) in seawater and zooplankton grazing rates helps understanding global climate issues. Seabird and mammal observations (pack-ice seal surveys, APIS program) at sea.

## Tropical Marine Science

2000



**James Cook University/Australian Institute of Marine Science, Townsville.**

**Research fellow (Australian European Awards Program)** investigating the fate of Cadmium in North Queensland coastal ecosystems involving the use of bioindicators (oysters, fish, macroalgae), ultratrace metal water analysis (voltammetry, GFAAS, ICP MS) and survey methods.

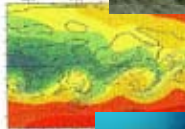
1999



Fish monitoring studies in reef and mangrove ecosystems: recruitment, bioindicator species, etc..

**Consultant** to set up a collaborative study on the impacts of mining on benthic fauna of reef ecosystems in New Caledonia.

1998



**MSc Marine Biogeochemistry.** Carbon and Nitrogen cycling in the central equatorial Pacific Ocean - a review of oceanographic studies

1997



**Scientific Diver** - Ecological study on the nutrient status of reef macro algae and sediment substrate in the central section of the Great Barrier Reef. " Can algae be good bioindicators of reef eutrophication status ? "Project involved field surveys and sampling, chemical analyses and statistical interpretations.

## Environmental Engineering

1998 - 8 months



**CIRAD FLHOR, Martinique. French West Indies. Environmental engineer.** Diagnosis on the human environmental impacts and sustainability of banana cropping systems in the French West Indies. Managed teams of local technicians collecting data for crop research and environmental monitoring to contribute to an island scale management system (set up a G.I.S. and other monitoring tools).

1995 - 5 months



**CIPCRE, Cameroon. Environmental engineer.** Cameroonian Non Governmental Organisation funded by the French cooperation. Sociologic study of tropical agricultural systems through the management of agronomic project with farming communities in Western Cameroon. Work followed by a 600 km solo trek through the Western Ranges - youngest woman sponsored by the "Guilde Europeenne de l'Aventure".

# Skills and qualifications

## Practical tickets

### Marine



- OH&S at Sea
- Marine Radio operator's licence
- Coxwains and Master V internationally recognized skipper certificate (boats up to 24 m)
- MED 3
- sea time on fishing, re-search, expedition vessels, icebreaker, cargo and own 12m sailing yacht

### Diving



- Scientific diver (over 300 hours) and instructor (French level III – FFESSM - Decompression) + PADI Dive-master (Commercial Level 1 equivalent)
- Oxygen resuscitation
- Underwater photography

### Other



- First aid Workplace Level II
- Firefighting
- Glacier travel
- Search and Rescue Training
- Helicopter operations: passenger briefings and handling
- Experienced in rock climbing, kayaking, ski touring, cold environment survival, river guide

## Academic records

- 2006 **PhD** **UNIVERSITY of TASMANIA** Institute of Antarctic and Southern Ocean Studies. Antarctic ecology / nominated for Dean's Commendation Award.
- 2000 **MSc** **JAMES COOK UNIVERSITY** Townsville. French-Australian Collaborative research project in marine environmental sciences/biogeochemistry under a fellowship awarded by the highly selective Australian European Awards Program.
- 1999 **MSc** **MARSEILLE INSTITUTE of OCEANOGRAPHY**, France. "General Oceanography and Marine Environment Biogeochemistry".
- 1995-998 **MSc** **NATIONAL INSTITUTE OF AGRONOMY**, Paris. Engineer of the I.N.A, the leading Agronomy University in France. Master's degree in Environmental Sciences and engineering specialized in Spatial Analysis (GIS) systems. Courses in ecology, statistics, environmental management, media and communication, complex systems problem solving, conflict resolution, economics, sociology, etc.
- 1993-995 **BSc** **LYCEE SAINT LOUIS**, Paris, France. Many intensive courses in general and marine biology, zoology, botany, ecology, geology, chemistry, physics, mathematics, languages, philosophy,.. in preparation for competitive selection to Engineering Schools.

## Services

- Field support/logistics
- Commercial Skipper (up to 25m)
- Antarctic ecology and marine biology
- High quality digital and film photo/videography
- Location sound recording
- Web and Graphics design
- Environmental consulting: spatial surveys
- Accustomed to be self-sufficient in order to conduct work in isolated places with a team of people and demonstrated ability to manage a field project in extreme conditions.
- Experienced team project management from engineering background and efficient communication skills with various media.

# Publications

## Research Papers

- Olivier F, Wotherspoon SJ (2005) In Press Nest selection by snow petrels in East Antarctica. Validating habitat selection models at the continental scale. *Ecological Modelling*
- Robertson G, McNeill M, Smith N, Wienecke B, Olivier F (2006) Fast sinking (integrated weight) longlines reduce mortality of white-chinned petrels (*Procellaria aequinoctialis*) and sooty shearwaters (*Puffinus griseus*) in demersal longline fisheries. *Biological Conservation* 132:458-471
- Olivier F, Wotherspoon SJ (2006) Distribution and abundance of Wilson's storm petrels *Oceanites oceanicus* at two locations in East Antarctica: testing habitat selection models. *Polar Biology* 29:878-892
- Olivier F, Wotherspoon SJ (2005) Modelling habitat selection using presence-only data: case study of a colonial hollow nesting bird, the snow petrel. *Ecological Modelling* 195:187-204
- Olivier F, and Wotherspoon SJ (2005) GIS based applications of resource selection function to the prediction of snow petrel distribution and abundance in East Antarctica: comparing models at multiple scales. *Ecological Modelling* 189: 105-129
- Olivier F, van Franeker JA, Creuwels J, Woehler EJ (2004) Breeding performance variability of snow petrels *Pagodroma nivea* at Casey (East Antarctica) in relation to large scale environmental factors. *Polar Biology* 28: 687-699
- Olivier F, Lee AV, Woehler EJ (2003) Distribution and abundance of snow petrels *Pagodroma nivea* in the Windmill Islands, East Antarctica. *Polar Biology* 27: 257-265
- Olivier F, Ridd M, Klumpp D (2002) The use of transplanted cultured tropical oysters to monitor metal Cd levels in North Queensland coastal waters (Australia). *Marine Pollution Bulletin* 44(10):1051-1062
- Jones GBJ, Mercurio P, Olivier F (2000) Zinc in fish, crabs, oysters, and mangrove flora and fauna from Cleveland Bay. *Marine Pollution Bulletin*, 41(7-12):345-352

## Reports

- Olivier F, (2002) A report on the collection of rubbish at Casey during the 2001-2002 summer. Internal AAD report for the Environmental management unit. 15 p
- Olivier (2000) Activity report for the Australian European Awards Program addressed to the French Ministry of Foreign Affairs and the Australian Embassy in Paris and for the Australian Department of Education in Canberra. 30 p
- Olivier F (2000) Biomonitoring of cadmium using oysters in North Queensland coastal waters. Report for the Great Barrier Reef Marine Park Authority, Townsville. 67 p
- Olivier F, Fernandez C (1999) Carbon and Nitrogen cycling in the central equatorial Pacific Ocean: a review. Research Report. University of Marseille, France, 52 p.
- Olivier F (1998) Diagnosis on environmental impacts and sustainability of banana plantations in the French West Indies. CIRAD internal report addressed to Martinique and Guadeloupe Islands management councils.
- Olivier F (1996) Sociological study on farming communities in Western Cameroon, Report for the CIPCRE Cameroon, INAPG consultant, Paris
- Olivier F (1996) Exploitation and conservation of peatlands in Ireland. Report for Dublin's Conservation Council. 23 p.

## Maps and Metadata

- Olivier F (2003) Detailed information on 196 grid sites used for snow petrel and Wilson's storm petrel surveys in the Windmill Islands during the 2002/2003 season , Australian Antarctic Data Centre - SnoWhite Metadata (<http://wwwaadc.aad.gov.au/metadata/>).
- Olivier F (2005) Detailed information on the location and characteristics of Wilson's storm petrel nests found during systematic surveys in the Mawson and Casey regions. Australian Antarctic Data Centre - SnoWhite Metadata (<http://wwwaadc.aad.gov.au/metadata/>).
- Olivier F (2003) Snow Petrel activity on Reeve Hill: long term monitoring data set (1984-2003) Australian Antarctic Data Centre - SnoWhite Metadata (<http://www-aadc.aad.gov.au/metadata/>)
- Olivier F (2003) Marine Debris Bibliography Australian Antarctic Data Centre - SnoWhite Metadata (<http://www-aadc.aad.gov.au/metadata/>)
- Olivier F (2002) Rubbish collection around the Casey area Australian Antarctic Data Centre - SnoWhite Metadata (<http://www-aadc.aad.gov.au/metadata/>)
- Olivier F (2002) Number and characteristics of dead bird specimens and remnants in the Casey area Australian Antarctic Data Centre - SnoWhite Metadata (<http://www-aadc.aad.gov.au/metadata/>)
- Olivier F (2001) Zooplankton grazing experiments conducted at Davis in 2000/01 Australian Antarctic Data Centre - SnoWhite Metadata (<http://www-aadc.aad.gov.au/metadata/>)

## Magazine Articles

- Predicting snow petrel nesting habitats in Antarctica. *Australian Antarctic Magazine*. 9 – Spring 2005.

## Abstracts and Posters

- Olivier, F, Wotherspoon, S. (2004) Modelling habitat selection by snow petrel in Antarctica, a tool for better population estimates ? Poster presented at the IAPC, August 2004 and ACE Symposium. Sept 2004.
- McCook, L. Olivier, F. (1997) Are algae good bioindicators of reef nutrient status? Abstract in: 1997 ACRS conference.