



South Pacific Island System Programme: Marine Science and Sustainability in the Cook Islands

A New Frontiers Abroad Programme

This is a new field intensive summer abroad programme with a focus on marine science and island sustainability, conservation, and management. Frontiers Abroad proposes an eight credit, six-week programme with an optional two credit, two week extension. The programme is located in the Cook Islands – a protectorate of New Zealand – and is divided into 2 module-style courses.

Start Date

July 2 - August 13, 2011

Overview

The South Pacific Island System Programme is an interdisciplinary field-based programme that focuses on two themes: **Island Resource Management and Sustainability** and **Marine Science and Ecology**. Students begin the programme by analyzing the islands' terrestrial and coastal ecosystems, environment, land use practices, and societal structure to understand the pressing issues faced by the Cook Islands in their struggle to be sustainable. Special emphasis will be placed on management practices of the islands' indigenous population, the Maori. For centuries, Maori have lived in balance with their accustomed environment; however, traditional approaches to environmental sustainability have been compromised by the onset of globalisation. Working alongside Dan Hikuroa, a Maori Earth Scientist, students will determine if these traditional practices can be incorporated into a modern management paradigm to achieve sustainability?

The first part of the programme provides an excellent context for when we then turn our attention to marine science and conservation - with a specific focus on Humpback whales. The Cook Islands' exclusive economic zone is a whale sanctuary that spans more than 2 million square kilometers of ocean. With marine biologist and whale expert Nan Hauser, students will have the rare opportunity to learn and partake in ground-breaking whale research. Nan has lived in the Cook Islands for the past 12 years researching whales and their significance in Maori culture. Along with lectures on marine mammals, students will assist in spotting whales, collecting DNA samples, taking photo ID's of humpback flukes and recording humpback whale song. Data collected and interpreted by the students will be part of The Cook Islands Whale Research Project - a long term conservation effort to protect the humpback whales.

Programme Course Modules

Island Resource Management and Sustainability Module (4 Credits)

Through a combination of lectures, field based exercises, and community engagement, students will explore the Cook Island's Coastal System and current issues that threaten island sustainability. Students will be introduced to island forming processes and coastal ecology, and examine human impacts and resource management practices. First, students will analyse the current measures being taken to mitigate against the effect of human waste on 1) water quality, 2) contamination of lagoon habitats, and 3) degradation of the fringing reefs. Next, students will learn how to conduct their own soil and water contaminant experiments and biodiversity surveys in an effort to help manage the natural resources that local communities once relied upon for their survival.

Marine Science and Conservation Module (4 credits)

This module offers an excellent opportunity for students with an interest in marine science, a commitment to conservation and a spirit of adventure. The curriculum consists of field based activities, illustrated lectures and video presentations, shore watches and boat surveys during whale season, and an introduction to hands-on and ocean-going research. Lectures and videos will focus on general biology, classification, photo-identification, acoustics, genetics, behaviour, satellite tagging, whale migration, politics and conservation issues, and research methodology.

Programme Directors

Nan Hauser: *President and Director of the Center for Cetacean Research and Conservation*



Nan Hauser is the President and Director of the Center for Cetacean Research and Conservation. Her home base is in Rarotonga where she is the Principal Investigator of the Cook Islands Whale Research Project and Director of the Cook Islands Whale Research & Education Centre. Nan has been studying Humpback whales and other cetaceans for over 20 years.

Nan is an Ambassador for Sustainable Seas Trust in South Africa: www.sustainableseasfoundation.org and on the Board of Directors of Ajubatus Marine Mammal Rescue in Cape St. Francis, South Africa.

She has been named as an Earth Ambassador: www.earthambassadors.org

As Founder and Director of the New England Dolphin Outreach Project and CCRC she has taught on a global level for the Dolphin Research Center, The Whale Conservation Institute and other non-profit organizations. For many years Nan was involved with the Ocean Alliance's cetacean research expeditions aboard the R/V Odyssey.

As a Registered Nurse she teaches and practices medicine on Rarotonga and the outer islands.

Dan Hikuroa: *Earth Scientist, Institute of Earth Science and Engineering, University of Auckland, Director of the Frontiers Abroad Earth Systems Programme*



Dan is an expert in environmental science and geology and has a unique ability to blend his scientific knowledge with his Maori heritage. Dan has designed and taught field geology and environmental science courses for Te Whare Wananga o Awanuiarangi in Whakatane and is team leader on several University of Auckland and Frontiers Abroad research initiatives in the Bay of Plenty region on New Zealand. He is currently leading research efforts to integrate indigenous knowledge into modern science practices.

Throughout the Programme Nan Hauser and Dan Hikuroa and will be joined by several academics from New Zealand and the Cook Islands.

Programme Fee

Tuition - \$7,500 USD and Room and Board - \$3,000 USD.