

# RANGATAHI O TE MOANA

For 11 and 12 Gifted and Talented Māori Students

## PROJECT OVERVIEW

Join a scientific cruise on the University of Otago research vessel, "Polaris II".

Open to any able and enthusiastic young Māori science students in Year 11 or 12 but primarily for those students who previously participated in Te Rauawa o te Pahī or a Year 10 Gifted and Talented Programme at the New Zealand Marine Studies Centre. This programme is designed to extend students' research and interdisciplinary science experiences further. In the style of modern ocean research, we aim to have a large team of scientists on board and maximise the data collection within the restrictions of time and budget.

The primary focus will be exploratory sampling and data collection from surface to seafloor, over deep-water canyons at the edge of the continental shelf. Other areas of marine science may also be investigated depending on the fields of expertise of the project leaders and the kindness of the weather!

The research projects will be lead by Marine Scientists who are experienced in working at sea. The students (as a team) are expected to produce a seminar presentation and a basic scientific report as part of the programme.

Kaitiakitanga, rangatiratanga and a science–social action coupling. As we will be working near or even in the East Otago Taiapure and with proposals for new local protected areas in the pipeline, including mātaiatai, it is appropriate to look into the integration of quantitative and qualitative marine science with the marine cultural health Index, a practical monitoring tool that has been developed by Te Tiaki Mahinga Kai for Te Rūnanga o Ngāi Tahu, and the use of both the conventional science and the cultural health index to provide input into the controversial mauri-o-meter, a general marine ecosystem assessment template.

This will be the first Rangatahi o te Moana expedition, as such where and what is studied is up to you and your science expert mentor. It may be a near shore survey in relation to harbour channel and blueskin bay, it may be an extensive inshore survey near Karitane or it may be an offshore transect in search of a submarine canyon.

The 3 project areas for research are planktonic, benthic and oceanographic.

### Benthic Survey

Little research has been done on the soft sediment biota at depth in the near shore canyons. Although there is survey information from 1979 and 1984, there is definitely a need to further investigate both macrofauna and meiofauna in these locations.

### Oceanography

Investigating ocean masses and their movements aids us in understanding the structure, origins and interactions of the biotic and abiotic conditions in the world's seas. What can physical oceanography tell us about the forces and features that define opportunities and limits for life in Otago waters? What might it tell us about the consequences of human actions in the future?

### Plankton and Benthic–Pelagic Coupling

The deep waters at 300–400m are probably subantarctic mode water, but the bottom ecology is affected by surface productivity. Surface productivity is probably affected by changes in radiation, particularly UV and blue shift, and these changes are associated with climate change. Plankton is a critical component in benthic-pelagic coupling. Plankton are also the minute and miraculous multitude that underpins all life in the oceans of the world. What can we find out about these important lives that might help us understand the health of the seas that surround us?

**FOR MORE INFORMATION PLEASE CONTACT:**

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