

2020 Field Camp Modules (subject to change):



• *A short talk at Red Crater, Mt. Ngauruhoe in the background*

Module 1: Introduction to Earth Systems Field Skills and Observations in the Bay of Plenty and Mt. Ruapehu

Based in the Bay of Plenty (Whakatane), New Zealand, the goals of module 1 are simply to (1) introduce you to New Zealand and (2) provide you with field skills needed for the course. We will introduce basic geologic and biologic field skills and techniques that you will use throughout the program. This includes how to take field notes, sketch outcrops, identify trees and plants, and conduct marine, coastal and terrestrial ecological surveys. The first portion of the module will be based from [Te Whare Wānanga o Awanuiārangī](#), a New Zealand Indigenous University, where we will also introduce you to the native peoples of New Zealand, the Maori and their concepts of environmental stewardship (Kaitiakitanga). Located near the world famous [Ohope Beach](#), we also plan to swim!!! Following, we will transition to Mt Ruapehu (Mt. Doom) where we will dive into field skills and volcanic hazards!



• *At the Marae with Dan!*

Module 2: Kaitiakitanga, Maori perspectives on natural hazards, resource management, and environmental restoration, Bay of Plenty. Running concurrently with Module 1, we will also be exploring the concept of kaitiakitanga (which loosely translates as 'guardianship'). Kaitiakitanga played a crucial role in traditional Maori society, and is increasingly sought as an environmental paradigm in contemporary settings. As kaitiaki, Maori were responsible for ensuring the viability of land and resources for the following generations. Guidelines and methods were developed to meet the needs and requirements of traditional Maori communities. In this module, we will investigate some of the indigenous methods used and the challenges contemporary societies face when assessing how to implement the principle of kaitiakitanga in the 21st century. Students will be exposed first hand to the concept of kaitiakitanga by investigating various issues facing Bay of Plenty communities. This module will conclude at Waitomo, where we will be introduced to Dr. Hikuroa's family Marea and explore the world famous Waitomo Caves.



• *Curious seals at Ohau point colony were subjected to student surveys*

Module 3: New Zealand Marine and Coastal Ecology, Kaikoura Peninsula. Following our week in the Bay of Plenty, we'll head down to the South Island. Located 180 km north of Christchurch, the Kaikoura Peninsula is home to extensive rocky shores and a marine canyon only 500 m off the Canterbury Coast. It is also central to the forests, rivers and mountains of the Seaward Kaikoura Ranges. Students will begin the week in Kaikoura exploring the flora and fauna of the rocky shore and observing oceanic influences of the peninsula and near shore environment. We will then be introduced to members of Te Korowai o Te Tai Marokura, a local community group, and assess potential avenues for research to complement the implementation of their marine strategy 'Sustaining Our Sea' vision. Next students will venture into the near shore waters on the University of Canterbury boat to collect plankton samples for investigation of the biodiversity within the epipelagic zone near the coast and within the canyon. Finally, we will end the week with the charismatic mega fauna, as we work to identify individual Hector's dolphins and fur seals and record some of their behavior.



• *Bush whacking!*

Module 4: New Zealand Terrestrial Ecology, Southern Alps: In this module, students are introduced to New Zealand unique terrestrial ecology (flora and fauna). We will understand how the biosphere is coupled to the atmosphere, geosphere and hydrosphere by conducting a series of biologic surveys across the southern island. Utilizing skills learning in Module 1, we will begin in the southern alps and be exposed to the alpine ecology of the alpine. We will take an indepth look at Beech forests, Wetas and habitat fragmentation. Following, we transition to Banks Peninsula where we will conduct habitat and vegetation mapping and learn how local non-profits are conserving the land.



• *Southern Alps!*

Module 5: Research Projects: During the final days of field camp, student will collect data utilized for their semester research projects. Students will be presented with a variety of projects. If they choose a project with existing data sets, students will be field assistants during these days and develop their project proposals at night.