

Fiordland Assessment of Climate, Environment and Tectonics (FACET): An ICDP workshop to discuss the potential of long sedimentary archives from mid-latitude fjords in Aotearoa New Zealand

August 27 – September 2, 2023: Doubtful Sound and the University of Otago, New Zealand



New Zealand's southern fjords occur at the juncture of the Antarctic Circumpolar Current, the Southern Hemisphere Westerly Winds (SHWW) and the New Zealand plate boundary. Regional tectonics has resulted in a significant mountain range close to the sea that is now dissected by deep fjords partially filled by thick sedimentary sequences. In turn, New Zealand fjords provide an excellent opportunity to develop long, high-resolution sedimentary records of climate and biogeochemical cycling that can constrain key Earth system processes. They also provide an opportunity to study ongoing tectonic processes from a plate boundary known to produce significant earthquakes. Fjord sediment records provide critical context and perspective that can link the changes we observe today with the long-term background and range of variability recorded in the geologic record. Yet, our temporal perspective is relatively short because current sedimentary records only span the last few thousand years or are floating stratigraphies that represent a "snapshot" of late Pleistocene sedimentation.

We invite interested scientists to an ICDP scientific drilling workshop in Doubtful Sound and at the University of Otago to collaboratively develop priorities for long coring in the NZ fjords and strategies for selecting coring sites to address those priorities. In this workshop, we will present site survey data and discuss potential drilling sites to evaluate the timing of deglaciation, sea level incursion, fjord circulation, climate change, carbon burial rates, earthquake frequency and other relevant topics.

We encourage applicants from a range of Earth science disciplines from all career stages to help refine scientific objectives, prioritize coring targets, discuss linking with offshore records, consider appropriate proxies and chronology, advance operational planning and establish scientific communication plans.

Travel support is available to attend the workshop with preference to participants from ICDP member countries. To apply, please send a short (< 1 page) statement of interest and a 2-page CV outlining relevant research activities to chris.moy@otago.ac.nz by May 19th. Successful applicants will be notified by June 1st, with travel assistance covered by ICDP.

Meeting format and activities:

- August 27th: Participant arrival and evening icebreaker in Dunedin
- August 28th: New Zealand Marine Studies Centre at Portobello Marine Lab, University of Otago (introduction to the project and overview of existing data sets; hybrid format)
- August 29th - September 1st: Deep Cove Hostel, Doubtful Sound (site visit and in-person discussions)
- September 2nd (morning): University of Otago, Dunedin (in-person discussions)

Conveners: Chris Moy (Otago), Gary Wilson (GNS Science), Christina Riesselman (Otago), Andrew Gorman (Otago) Greer Gilmer (GNS Science)