



THE LATITUDINAL GRADIENT PROJECT (LGP) CONTRIBUTING TO EVOLUTION AND BIODIVERSITY IN THE ANTARCTIC (EBA)

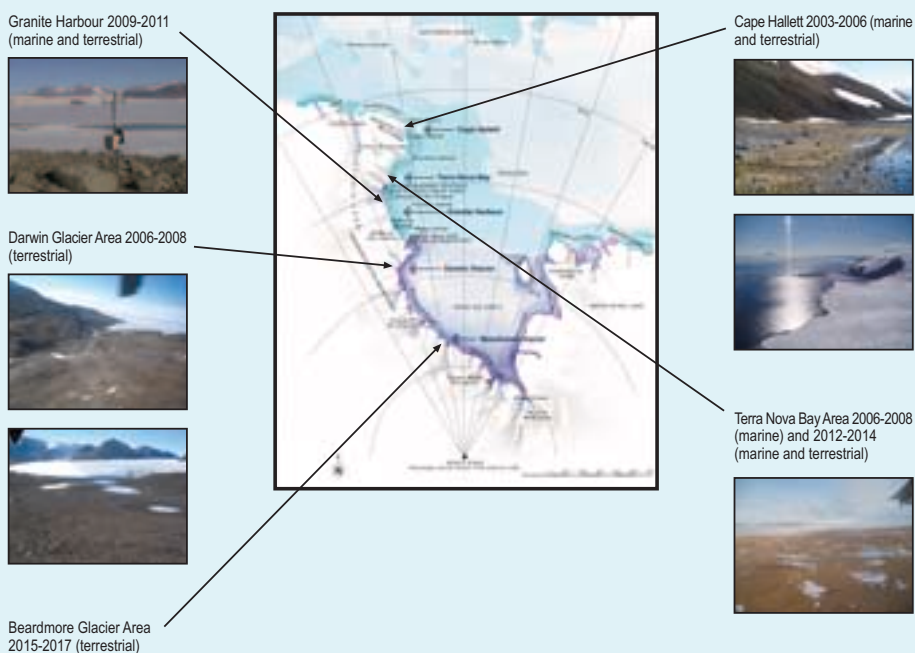
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Context

- The Latitudinal Gradient Project (LGP) aims to increase our understanding of the complex ecosystems that exist along the Victoria Land coast of the Ross Sea region, and determine the effects of environmental change on these ecosystems.
- The LGP is a scientific and logistic framework for interdisciplinary and international collaboration prompted by Antarctic scientists who identified the need for coordinated research along the latitudinal gradient.
- Antarctica New Zealand is the project facilitator for the New Zealand portion of the LGP and is providing the logistical capabilities for research camps to be located at specific sites along the Victoria Land coast.
- This provides the opportunity to work at particular locations in collaboration with other scientists from various disciplines and national Antarctic programmes.
- To date, a camp at the northernmost site, Cape Hallett, has operated for three seasons supporting NZ and US research teams. Terrestrial research in the Darwin Glacier area, and marine research in the Terra Nova Bay area are planned for the 06/07 and 07/08 seasons.
- The US and Italian Antarctic programmes have also been supporting discrete projects that work towards the goals of the LGP.

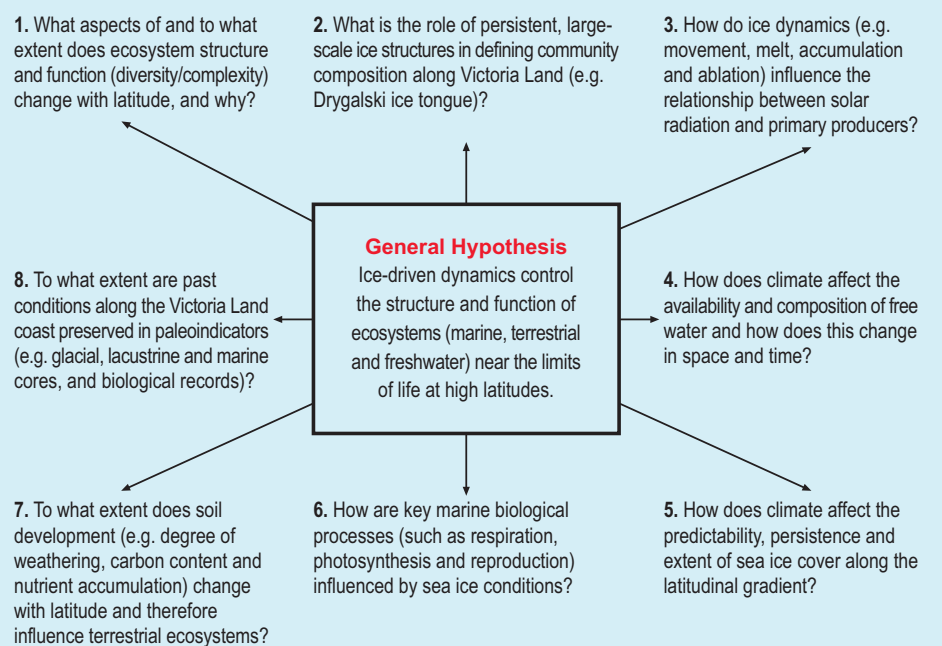
Proposed Study Sites and Dates

Five areas along the Victoria Land coast have been selected for intensive study over the project's lifetime.



Purpose

A general hypothesis and 8 key questions have been defined that encompass the work undertaken within the LGP.



LGP Contributing to EBA

The LGP key questions are directly aligned with two of EBA's key areas of research:

#4: 'Patterns and diversity of organisms, ecosystems and habitats in the Antarctic, and controlling processes' with particular attention to how marine, terrestrial and limnetic diversity varies along latitudinal gradients. Victoria Land in particular is an area highlighted as an important region to study.

#5 'Impact of past, current and predicted future environmental change on biodiversity and ecosystem function' with the examination of how environmental changes are driving evolution and the prediction of future outcomes.

Previously LGP has been working closely with RiSCC by contributing research from the Victoria Land coast to the Antarctic Environmental Gradient model. Baseline data has been taken using the guidelines set out in the RiSCC manual.

Participants and Disciplines

Marine

- Gene Drift in Ross Sea Organisms** (Craig Marshall, University of Otago, NZ)
- Patterns in the Abundance of Ross Sea Meroplankton** (Mary Sewell, University of Auckland)
- Sea Ice Algal Productivity** (Ken Ryan, Victoria University of Wellington, NZ)
- Coastal Aquatic Ecosystems** (Vonda Cummings, National Institute for Water and Atmosphere, NZ)
- Benthic Community Structure and Dynamics** (Riccardo Cattaneo-Vietti, University of Genoa, Italy)
- Echinoderm and Mollusc Ecology** (Mariachiara Chiantore, University of Genoa, Italy)
- Adélie Penguin Population Dynamics** (Phil Lyver, Landcare Research, NZ & David Ainley, H.T. Harvey & Associates, USA)

Terrestrial

- Natural Spatial Subsidies in Soils** (Ashley Sparrow, University of Canterbury, NZ)
- Soils of Ice-Free Regions** (Jackie Aislabie, Landcare Research, NZ)
- Soil Biodiversity** (Diana Wall, Long Term Ecological Research project, USA)
- Inland Aquatic Ecosystems** (Ian Hawes, National Institute for Water and Atmosphere, NZ)
- Evolution and Dispersal of Algae** (Phil Novis, Landcare Research, NZ)
- Biodiversity and Performance of Lichens and Mosses** (Allan Green, University of Waikato, NZ)
- Biology of Antarctic Springtails** (Brent Sinclair, University of Nevada, USA)
- Vegetation Community Monitoring** (Nicoletta Cannone, Università Milano Bicocca, Italy)
- Physical Rock Weathering** (Christine Elliott, University of Canterbury, NZ)
- Ecosystem Functioning of Terrestrial Microorganisms** (Roberta Farrell, University of Waikato, NZ & Robert Blanchette, University of Minnesota, USA)
- Terrestrial Biodiversity of southern Victoria Land** (Ian Hogg, University of Waikato, NZ)

Climate

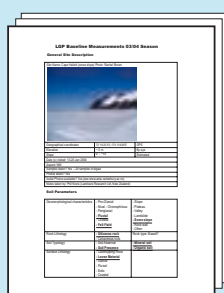
- NZ International Trans Antarctic Expedition** (Nancy Bertler, Victoria University of Wellington, NZ)
- Snow Pit and AWS analysis** (Berry Lyons & Thomas Nysten, Long Term Ecological Research project, USA)
- Various AWS projects** (Italy, US, NZ)

Outputs

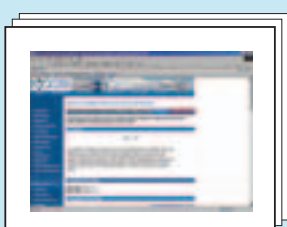
1. **Special edition of Antarctic Science** devoted to LGP related publications. Due December 2006.



2. **Baseline Data sheets** for all sites visited.



3. **Metadata** submitted to Antarctic Master Directory for each event.



4. LGP website: www.lgp.aq. Outlines the project hypothesis and goals, contains links to information about each site, metadata, researchers, baseline data, Automatic Weather Station data, meetings and conferences, publications.