

LGP Baseline Measurements 03/04 Season

General Site Description

Site Name: Cape Hallett (scree slope) Photo: Rachel Brown



Geographical coordinates	72°19.233'S, 170°13.928'E	GPS
Elevation	~ 5 m	By eye
Slope	0° - ~10°	Estimated
Date (s) visited: 13-20 Jan 2004		
Aspect: NW		
Samples taken? Yes – 24 samples of algae		
Photos taken? Yes		
Aerial Photos available? Yes (see www.anta.canterbury.ac.nz)		
Notes taken by: Phil Novis (Landcare Research Ltd, New Zealand)		

Soil Parameters

Geomorphological characteristics	<input type="checkbox"/> Pro-Glacial <input type="checkbox"/> Nival - Chionophilous <input type="checkbox"/> Periglacial <input type="checkbox"/> <u>Fluvial</u> <input type="checkbox"/> Coastal <input type="checkbox"/> <u>Fell-Field</u>	<input type="checkbox"/> Slope <input type="checkbox"/> Plateau <input type="checkbox"/> Valley <input type="checkbox"/> Landslide <input type="checkbox"/> <u>Scree slope</u> <input type="checkbox"/> Rock wall <input type="checkbox"/> Other
Rock Lithology	<input type="checkbox"/> <u>Siliceous rock</u> <input type="checkbox"/> Calcareous rock	Rock type: Basalt?
Soil Typology	<input type="checkbox"/> Soil Absence <input type="checkbox"/> <u>Soil Presence</u>	<input type="checkbox"/> <u>Mineral soil</u> <input type="checkbox"/> <u>Organic soil</u>
Surface Lithology	<input type="checkbox"/> Outcropping Rock <input type="checkbox"/> <u>Loose Material</u>	

	<input type="checkbox"/> Glacial <input type="checkbox"/> Fluvial <input type="checkbox"/> Eolic <input type="checkbox"/> Coastal <input type="checkbox"/> Scree Slope, Debris
Surface Texture (Variable according to particular area of the site)	~10 % Blocks ($\varnothing > 25\text{cm}$) ~20% Pebbles ($5\text{cm} < \varnothing < 25\text{cm}$) ~50% Gravel ($0.2\text{cm} < \varnothing < 5\text{cm}$) ~20% Sand and finer material ($\varnothing < 0.2\text{cm}$)

Vegetation

Plants and Lichens (See other Cape Hallett baseline data)	Species type/name Presence/absence Rare, Occasional, Common, Abundant % cover
--	--

Fauna


Mammals	Absent
Birds	Adelie penguins and skuas. No penguins nesting, just passing through. Study site bordered by approximately 5 skua mounds on N edge.
Invertebrates	Nematode worms; names unsure except <i>Eudorylaimus</i> (one seen); rotifers.

Glacial

Ablation/accumulation	NA
Ice temperature	NA
Snow pit measurements	NA

Aquatic Non-Marine Systems

The intention here is to document the distribution of melt pools, ephemeral streams, ponds and lakes, their melting characteristics and basic limnological features. Required observations combine both one-off and time series and are designed to characterise the pond and its biota as far as is possible without resorting to specialised techniques and equipment (beyond a temperature/conductivity meter).

Type of water body	Streams and small ponds
Sketch/map of water body and immediate catchment. Photo: Phil Novis	
Size and depth	Variable according to snowmelt; 0 cm to ~10 cm in places, total area ~30 m ² at maximum; wettest at E end.
Inflows and outflows (for non running systems) – Most from snowmelt on the site	
Duration and spatial distribution of free water initially almost dry; following snowfall, stayed wet for 4 plus days.	
Evidence of water level variation? See above	
Isolated habitat or part of a connected network? Isolated	
Proximity to other aquatic systems: none except marine inlet	
Any sign of salt or vegetation accumulation around margins? No salt; plenty of cyanobacteria, green algae, and moss	
Range of levels over season (peg or otherwise reference the margin): not known	

Water sources	<ul style="list-style-type: none"> - 100% Snow, - 0% Glacier - 0% Non-glacial Ice - 0% Other
Catchment:	<ul style="list-style-type: none"> - Size: less than 1 km² - Vegetation: coverage (%), type (lichen, mosses, vascular, etc....) to be provided - Geology (see Soils section) - Geomorphology (see Soils section) - Animal influence: strong, from penguins nesting upslope and moving through site, and carcasses dropped by skuas - Snow and Ice: extensive snowslopes upslope from site
Ice cover:	<ul style="list-style-type: none"> - permanent ice (if there are records): None - % of coverage (anchored or loose) highly variable snow cover – 5% on arrival, about 25% on departure - thickness: ~5 – 20 cm - transparency (clear, dirty ice, snow cover, etc.) Snow
Water properties.	<ul style="list-style-type: none"> - Clarity (measured or estimated) 100%, estimated - Colour (measured or estimated) clear, estimated - Foams (e.g. none, slight, abundant) None - Conductivity (measured) 90-230 $\mu\text{S cm}^{-1}$ - Temperature (measured): 9-13°C
Bed characteristics	<ul style="list-style-type: none"> - Substrate (%) See Soil Parameters <ul style="list-style-type: none"> o Cobbles o Gravel o Sand o Silt - Vegetated (% cover): To be provided <ul style="list-style-type: none"> o cyanobacterial mats <ul style="list-style-type: none"> ▪ Colour: black and red-brown ▪ Thickness: 1-5 mm, 3-15 mm ▪ Gross morphology: flat; flat to lift-off o Encrusting (note colour) o mosses o green algae: extensive <i>Prasiola</i> esp. E end
Others	Animal observations (rotifers, crustacea, mites etc) Rotifers and nematode worms seen in sample.
Sample collection and preservation	Numerous samples for water and biota will ideally be collected to characterise the ponds. It is out of the scope of this to describe how to collect these. Guidance from specialists should be sought before embarking on this.

Aquatic Marine Systems

N/A

Environmental (AWS)

See www.lgp.aq under Data Products, Cape Hallett.