

LGP Baseline Measurements 09/10 Season

General Site Description

Site Name: Diamond Glacier



Photo 1: Glacier margin pond on S edge of Diamond Glacier

Geographical coordinates <i>(for camp on S side of glacier)</i>	Latitude and Longitude S79 51.092 E159 3.904	Note if from GPS or Not GPS GPS.
Elevation:	495 m asl	GPS
Slope:	Degrees: Variable	Estimated
Date (s) visited: 24-31 Dec 2009		
Aspect: Glacier trending ENE, into Brown Hills Saddle		
Samples taken? Yes		
Photos taken? Yes		
Aerial Photos available? Yes		
Notes taken by: Jenny Webster-Brown (University of Canterbury)		

Soil Parameters

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

	<input type="checkbox"/> Loose Material <input type="checkbox"/> Glacial <input type="checkbox"/> Fluvial <input type="checkbox"/> Eolic <input type="checkbox"/> Coastal <input type="checkbox"/> Scree Slope, Debris
Surface Texture	20 % Blocks ($\varnothing > 25\text{cm}$) 30 % Pebbles ($5\text{cm} < \varnothing < 25\text{cm}$) 30% Gravel ($0.2\text{cm} < \varnothing < 5\text{cm}$) 20 % Sand and finer material ($\varnothing < 0.2\text{cm}$)

Vegetation

Plants and Lichens:	Not observed
---------------------	--------------


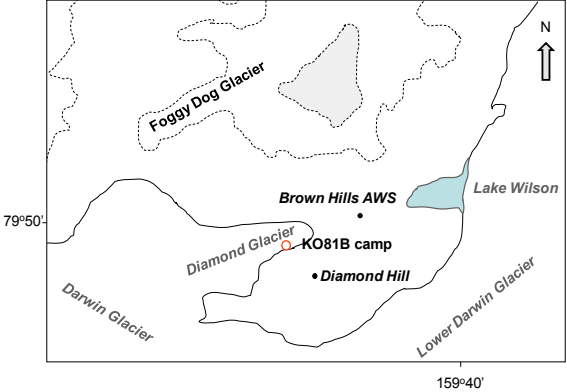
Fauna

Mammals	Just us
Birds	None seen
Invertebrates	None seen

Glacial

Ablation/accumulation	N/A
Ice temperature	N/A
Snow pit measurements	N/A

Aquatic Non-Marine Systems

<p>Types of water bodies:</p> <p>Terrestrial ponds in Brown Hills saddle, cryoconites on the glacier surface and glacial margin ponds on N and S edges of glacier (see Photo 1)</p>	<p>Photo 2. Glacier surface with cryoconites in foreground, and marginal pond behind.</p> 
<p>Sketch/map of water body and immediate catchment. Include orientation.</p> <p>Water bodies on all borders of glacier, cryoconites occurring in patches over glacier surface. Terrestrial ponds between glacier tip and Brown Hills Saddle AWS.</p>	
<p>Size and depth: Cryoconites <1m diameter, glacier margin ponds up to 30x200m.</p>	<p>Estimate or actual: measured</p>
<p>Inflows and outflows (for non running systems): Glacier fed, but no large in or outflows observed.</p>	
<p>Duration and spatial distribution of free water: Semi permanent (?) on glacier margin. Terrestrial ponds may be shorter lived (<5 – 10 yrs?), smaller ponds may even be seasonal. Cryoconite age unknown.</p>	
<p>Evidence of water level variation? Yes - evidence includes discoloured rock, salt precipitation and dried cyanobacterial mat on soil surface around terrestrial ponds and glacier margin ponds</p>	
<p>Isolated habitat or part of a connected network? Terrestrial ponds isolated, glacial ponds connected via glacier or glacier edge flows.</p>	
<p>Proximity to other aquatic systems: Spacing between ponds 500m to 2km (or more)</p>	
<p>Any sign of salt or vegetation accumulation around margins? Yes (see above)</p>	
<p>Range of levels over season (peg or otherwise reference the margin): Not measured.</p>	
<p>Water sources: Terrestrial ponds</p>	<ul style="list-style-type: none"> - 100% Snow - % Glacier - % Non-glacial Ice - % Other

Water sources: Glacial margin ponds and cyroconites ponds	<ul style="list-style-type: none"> - 0% Snow - 100% Glacier - % Non-glacial Ice - % Other
Ice cover: glacial margin ponds (to be recorded at intervals over the season)	<ul style="list-style-type: none"> - Little ice cover in terrestrial ponds - Glacier margin ponds: permanent ice with thin ice or no cover on moat (typically 80% ice cover). Cryconites, ice covered 100%. - Thickness: 1-2m in centre, 12-20cm on moat or cyroconites. - Transparency: permanent ice = opaque with some snow cover, moat ice = transparent
Water properties. (to be recorded at intervals over the season)	<ul style="list-style-type: none"> - Clarity: Close to 100% (estimated) - Colour: None - Foams : None seen - Conductivity (measured): 30-170 uS/cm - Temperature (measured): 0.2 – 3.3°C
Bed characteristics	<ul style="list-style-type: none"> - Substrate (%) <ul style="list-style-type: none"> o Cobbles 50% o Gravel 30% o Sand 20% o Silt 0% - Vegetated (% cover) Variable 0 - 100% <ul style="list-style-type: none"> o cyanobacterial mats <ul style="list-style-type: none"> ▪ Colour – pink and brown ▪ Thickness – 2mm (thin) ▪ Gross morphology (flakey) o Encrusting: No o Mosses - None seen o green algae - None seen
Others	Animal observations (none observed – but detailed examination not undertaken)
Sample collection and preservation	Samples of water, sediment, salt and mats were collected as part of our research. Chemical and biological analysis is being undertaken

Aquatic Marine Systems N/A

Environmental (AWS): Brown Hills AWS the most relevant