

Study #: GRTE-00519
Permit #: GRTE-2021-SCI-0020
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Environmental gradient in Garnet Canyon

Sampling scheme

During August 2021, microbial samples were collected along a watershed in Garnet Canyon. The sampling occurred in streams observed to flow out of a snow field (i.e. Cloudveil Dome) and a glacier (i.e. Middle Teton Glacier).

Stream biofilm microbes and streamwater geochemistry sample collection

At each stream site in Garnet Canyon, streambed rocks were collected and used for biofilm collection. The rocks selected for biofilm collection were observed to be completely submerged in water at the bottom of the stream bed. After pulling the rocks from the stream, all sides of the rock were scrubbed with an ethanol soaked plastic toothbrush. The scrubbing dislodged the biofilm from the surface of the rock and was rinsed from the rock surface using 40 mL of stream water into a plastic ziplock container. The combined biofilms were collected as a 'slurry' in the ziplock and then aliquoted into respective tubes for analysis. Three vials were filled with 2 mL of RNALater and 1 mL of biofilm slurry, each, for DNA extraction. Rocks are carefully placed back in the stream after collection. Three 15 mL vials were used to collect biofilm for ergosterol quantification. 15 mL cryovial was used to collect biofilm for C/N analysis of the biofilm. Samples were stored away from the sun and placed in a backpack during active field work and collection. Upon completing field work for the day, samples were placed in a cooler on ice until transport to the lab.

Streamwater geochemistry samples were collected at each site in Garnet Canyon. Streamwater was pulled into a triple rinsed 120 mL plastic syringe. Water was filtered through a 0.22 μm filter and collected into vials for anions, cations, nutrient spectrophotometry, DIC, D/H isotopes, dissolved organic carbon, and dissolved organic matter. Water samples were fully consumed upon analyses. Solid samples are consumed during analyses (for DNA extraction and C/N analyses).

Snow microbes and geochemistry sample collection

Two snow samples were from Garnet Canyon. The first snow sample collected was from the snout of the Middle Teton Glacier. Three vials were filled with 2 mL of RNALater and 1 mL of snow, each, for DNA extraction. Snow was added to the RNALater slowly and shaken in between additions to dissolve snow to 1 mL. Three 15 mL vials were used to collect snow for ergosterol quantification. A 5 mL cryovial was used to collect snow for C/N analysis of the snow. After collecting smaller volume samples, I collected snow in a acid washed dark bottle Nalgene. The Nalgene was stored away from light and placed in the cooler on ice until melted. Afterwards, the melted snow was measured for pH, ORP, conductivity, and dissolved oxygen using the Hach Multimeter and respective probes at base camp. Finally, melted snow was pulled into a 120 mL syringe, filtered and collected as above. Water samples were fully

consumed upon analyses. Solid samples are consumed during analyses (for DNA extraction and C/N analyses).

GPS coordinates for each sample are provided in the following table

Sample ID	Latitude	Longitude
SH210810F	N 43.725	W 110.796
SH210808G	N 43.84	W 110.755
TLP210810I	N 43.729286	W110.78647
TLP210810J	N 43.728992	W110.798206
TLP210810K	N 43.729086	W 110.796390
TLP210810L	N 43.727968	W110.796191
TLP210810M	N 43.726437	W110.794748
TLP210810NSNO	N 43.724884	W 110.797107
TLP210810N	N 43.724884	W 110.797107
TLP210811P	N 43.725526	W110.791303
TLP210811Q	N 43.725241	W110.791321
TLP210811R	N 43.725365	W110.791523
TLP210811S	N 43.725708	W110.790215
TLP210811T	N 43.724959	W110.786062
TLP210811U	N 43.724772	W110.781852