

Climate - terrestrial biodiversity investigation in tundra vegetation along an Arctic longitudinal gradient (NRI Licence #: 02 044 18N-M)

Annual Report for 2018

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In early September 2018, two Japanese scientists from National Institute of Polar Research, visited Cambridge Bay to conduct field studies of plants and soil microorganisms. We visited from September 7 to 16, 2018 and stayed at the accommodation facilities of the CHARS campus. Before starting our investigation, we discussed our field survey plans with CHARS field operation support. Due to inclement weather, with wind, snow and low temperatures, we had to change our initial plans.

The CHARS staff kindly showed us some alternative sites, and we have selected 17 investigation sites around Cambridge Bay (Fig. 1). We investigated plant diversity on 1 m² plots at two sites which were not yet snow covered (Fig. 2). We sampled the above-ground parts of plants over 10 x 10 cm areas and collected a small amount of soil samples at the 17 sites. Before we went back to Japan, we discussed with CHARS employees our future collaboration plans. The soil samples which we brought back to Japan were used to identify in laboratory soil microorganism species as well as plant species.



Fig. 1 Seventeen investigation site at Cambridge Bay



Fig. 2 Non-destructive vegetation survey

Table 1 The coordinate and dominant plant species at each study plot.

Plot name	Latitude	Longitude	Dominant vascular plants
CB1	69° 7' 14.50"N	105° 2' 40.80"W	<i>Dryas integrifolia</i>
CB2	69° 7' 14.50"N	105° 3' 55.00"W	<i>Carex</i> sp, <i>Salix reticulata</i> , <i>Dryas integrifolia</i>
CB3	69° 6' 30.30"N	105° 24' 31.20"W	<i>Dryas integrifolia</i>
CB4	69° 6' 29.20"N	105° 24' 23.70"W	<i>Dryas integrifolia</i>
CB5	69° 6' 32.79"N	105° 24' 19.95"W	<i>Dryas integrifolia</i>
CB6	69° 6' 16.80"N	105° 14' 0.32"W	<i>Dryas integrifolia</i>
CB7	69° 6'19.70"N	105° 13' 52.80"W	<i>Dryas integrifolia</i>
CB8	69° 6'18.70"N	105° 13' 35.90"W	<i>Dryas integrifolia</i>
CB9	69° 7'34.70"N	104° 59' 29.80"W	<i>Dryas integrifolia</i>
CB10	69° 7'32.30"N	104° 59' 33.80"W	<i>Dryas integrifolia</i>
CB11	69° 7'31.10"N	104° 59' 26.80"W	<i>Dryas integrifolia</i>
CB12	69° 8' 3.20"N	104° 59' 48.96"W	<i>Dryas integrifolia</i>
CB13	69° 8' 5.00"N	104° 59' 48.90"W	<i>Dryas integrifolia</i>
CB14	69° 8' 4.50"N	104° 59' 52.40"W	<i>Dryas integrifolia</i>
CB15	69° 7' 14.50"N	105° 2' 40.80"W	<i>Dryas integrifolia</i>
CB16	69° 7' 15.20"N	105° 2' 47.10"W	<i>Dryas integrifolia</i>
CB17	69° 7' 14.40"N	105° 2' 45.90"W	<i>Dryas integrifolia</i>

Plans for 2019

We don't plan to similar research in 2019. However, we would like to continue our biodiversity and related terrestrial function study in the future.