The Snow ALbedo eVOlution (SALVO) Campaign
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Overview

This file contains information about the locations of the SALVO datasets we collected near Utqiaġvik, Alaska, during the spring melt season of 2019 and 2022. The sites called ARM and BEO were located on tundra, while the sites called ICE and CHK were located on sea ice. Visits to the sites were daily to every other day. These sites were used between April 1 and June 30, 2019, and again between April 1 and June 30, 2022. In 2019, the CHK site was not used. Access to all four sites was by snowmobile from the northwest. Snow depth as well as albedo measurements were made at each site along a 200-meter-long line on the north edge of each swath with measurements starting at the east end of the line (0 m) and finishing at the west end of the line (200 m). Snow depth measurements were taken every meter (201 measurements) at ~0.5 m south of the line that observers walked along. The snow depth instrument was on a metal rod that the observer extended to the measurement location. Albedo measurements were taken parallel to the snow depth line and at 5-m increments (41 measurements) at ~1.5 m south of the line. The albedo instruments were deployed on a metal arm so that the underlying snow was not disturbed.

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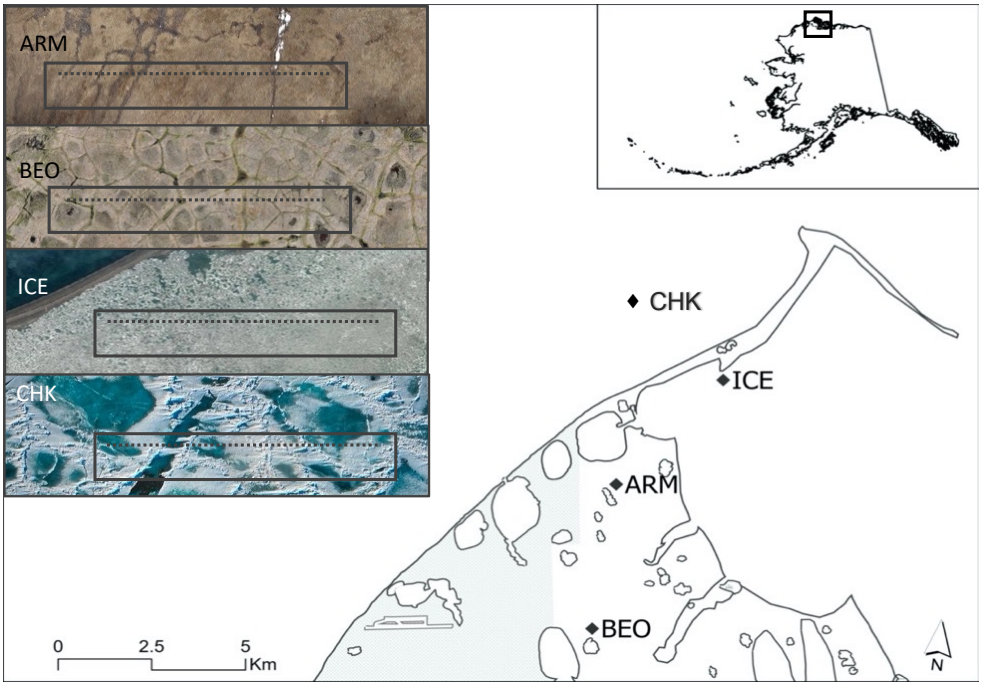
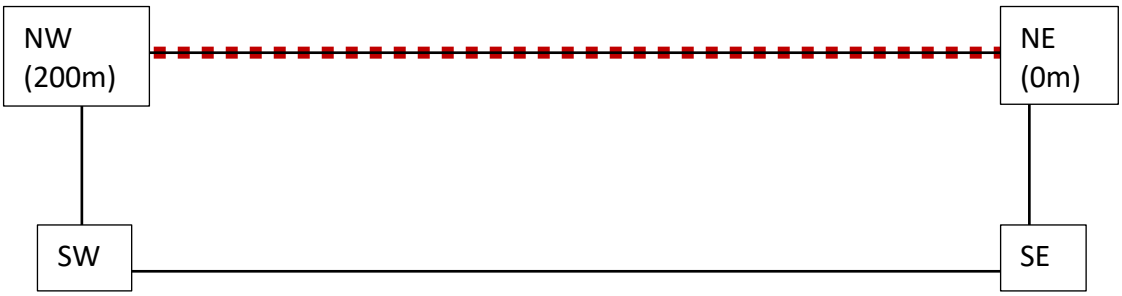


Figure 1: Map showing the location of the sampling sites ARM, BEO, ICE, and CHK. The solid black line indicates the extent of the swath, and the dotted black lines indicate the location of the snow measurement line.

SITE NAMES	LONG NAME
ARM	Department of Energy's Atmospheric Radiation Measurement (ARM) Observatory
BEO	Barrow Environmental Observatory
ICE	Elson Lagoon Sea Ice
CHK	Chukchi Sea Ice



The red dotted line indicates our 200-m measurement line along which we took snow depth and ASD measurements on an almost daily basis. The black rectangle indicates the extent of our measurement swaths, the basis for the snow depletion curves derived from aerial photographs.

SITES	SWATH CORNER LOCATIONS	
	latitude	longitude
ARM		
NE_0m (on line)	71.32176318	-156.6115107
NW_200m (on line)	71.32148303	-156.6170348
NE (swath)	71.32181723	-156.61108809
NW (swath)	71.32151655	-156.61732613
SE (swath)	71.32157283	-156.61097657
SW (swath)	71.32127263	-156.61720483
BEO		
NE_0m (on line)	71.28351635	-156.6321552
NW_200m (on line)	71.28281325	-156.6372848
NE (swath)	71.28354550	-156.63219983
NW (swath)	71.28283453	-156.63736500
SE (swath)	71.28335095	-156.63191123
SW (swath)	71.28263441	-156.63712749
ICE		
NE_0m (on line)	71.34943476	-156.5241255
NW_200m (on line)	71.34892785	-156.5295002
NE (swath)	71.34946608	-156.52377384
NW (swath)	71.34892684	-156.52982393
SE (swath)	71.34923914	-156.52357513
SW (swath)	71.34870104	-156.52963146
CHK		
NE_0m (on line)	71.35816018	-156.5963096
NW_200m (on line)	71.35758434	-156.6016115
NE (swath)		
NW (swath)		
SE (swath)		
SW (swath)		

The coordinates for the east and west end of the line were measured in the field by using a GNSS receiver (Reach RS2 by Emlid). The four corner points of the swath of the respective field sites were derived from the orthomosaic images in QGis.

We acknowledge that the SALVO measurement sites are located on the unceded lands of the Iñupiat and we appreciate that we were able to work there.