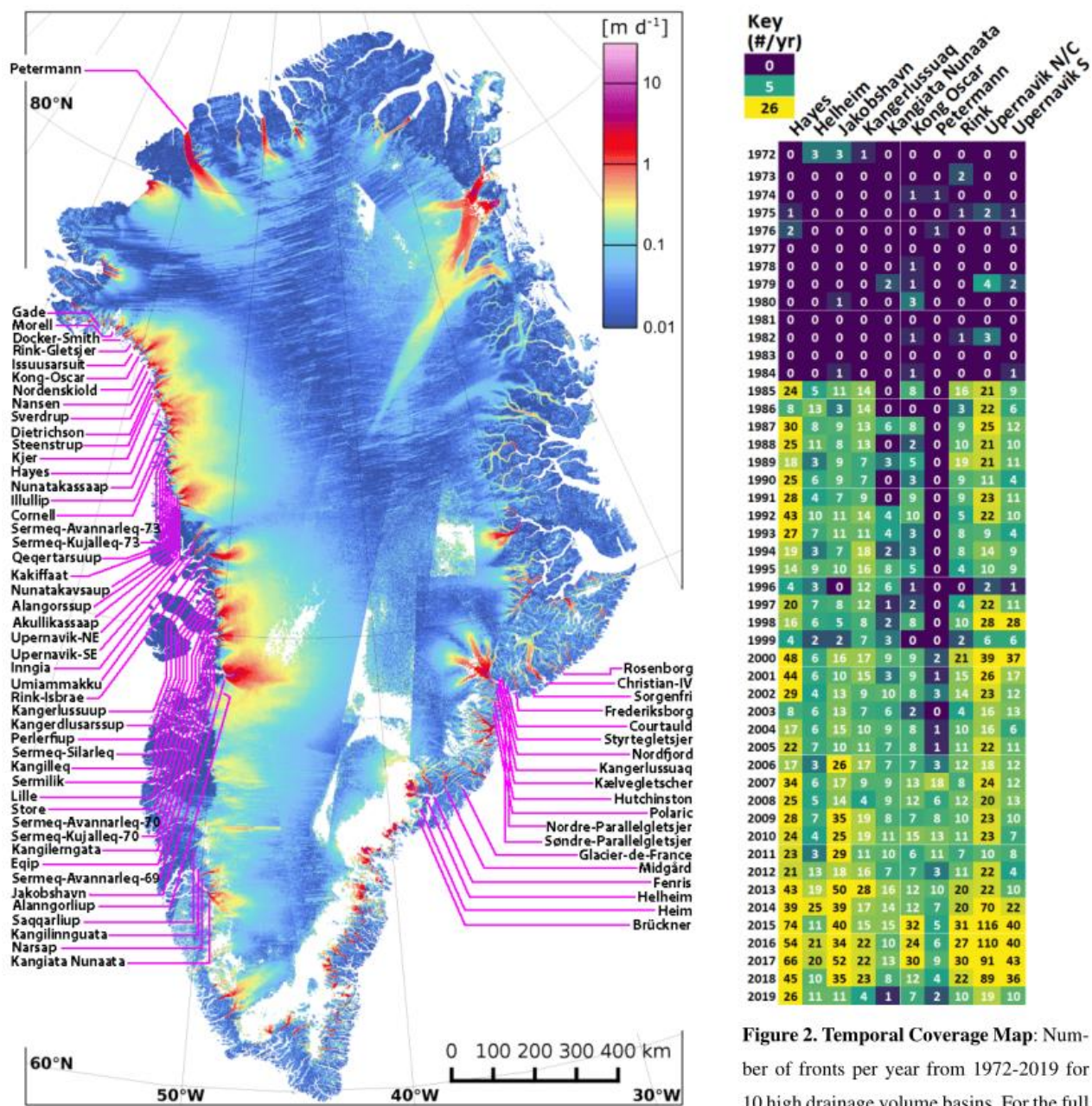


Calving Front Machine (CALFIN): Glacial Terminus Dataset for East/West Greenland, 1972-2019 Usage Notes

Spatio-temporal Coverage



Key (#/yr)	0										
	5										
	26										
	Hayes	Helheim	Jakobshavn	Kangerlussuaq	Kangiata Nunaata	Kong Oscar	Petermann	Upemavik N/C	Upemavik S		
1972	0	3	3	1	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	2	0	0	0
1974	0	0	0	0	0	1	1	0	0	0	0
1975	1	0	0	0	0	0	0	1	2	1	
1976	2	0	0	0	0	0	1	0	0	0	1
1977	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	1	0	0	0	0	0
1979	0	0	0	0	2	1	0	0	4	2	
1980	0	0	1	0	0	3	0	0	0	0	
1981	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	1	0	1	3	0	
1983	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	1	0	0	1	0	0	0	0	1
1985	24	5	11	14	0	8	0	16	21	9	
1986	8	13	3	14	0	0	0	3	22	6	
1987	30	8	9	13	6	8	0	9	25	12	
1988	25	11	8	13	0	2	0	10	21	10	
1989	18	3	9	7	3	5	0	19	21	11	
1990	25	6	9	7	0	3	0	9	11	4	
1991	28	4	7	9	0	9	0	9	23	11	
1992	43	10	11	14	4	10	0	5	22	10	
1993	27	7	11	11	4	3	0	8	9	4	
1994	19	3	7	18	2	3	0	8	14	9	
1995	14	9	10	16	8	5	0	4	10	9	
1996	4	3	0	12	6	1	0	0	2	1	
1997	20	7	8	12	1	2	0	4	22	11	
1998	16	6	5	8	2	8	0	10	28	28	
1999	4	2	2	7	3	0	0	2	6	6	
2000	48	6	16	17	9	9	2	21	39	37	
2001	44	6	10	15	3	9	1	15	26	17	
2002	29	4	13	9	10	8	3	14	23	12	
2003	8	6	13	7	6	2	0	4	16	13	
2004	17	6	15	10	9	8	1	10	16	6	
2005	22	7	10	11	7	8	1	11	22	11	
2006	17	3	26	17	7	7	3	12	18	12	
2007	34	6	17	9	9	13	18	8	24	12	
2008	25	5	14	4	9	12	6	12	20	13	
2009	28	7	35	19	8	7	8	10	23	10	
2010	24	4	25	19	11	15	13	11	23	7	
2011	23	3	29	11	10	6	11	7	10	8	
2012	21	13	18	16	7	7	3	11	22	4	
2013	43	19	50	28	16	12	10	20	22	10	
2014	39	25	39	17	14	12	7	20	70	22	
2015	74	11	40	15	15	32	5	31	116	40	
2016	54	21	34	22	10	24	6	27	110	40	
2017	66	20	52	22	13	30	9	30	91	43	
2018	45	10	35	23	8	12	4	22	89	36	
2019	26	11	11	4	1	7	2	10	19	10	

Figure 2. Temporal Coverage Map: Number of fronts per year from 1972-2019 for 10 high drainage volume basins. For the full temporal coverage map, see attached Supplement, Fig. S1.

Data Product Description

We provide two levels of data products.

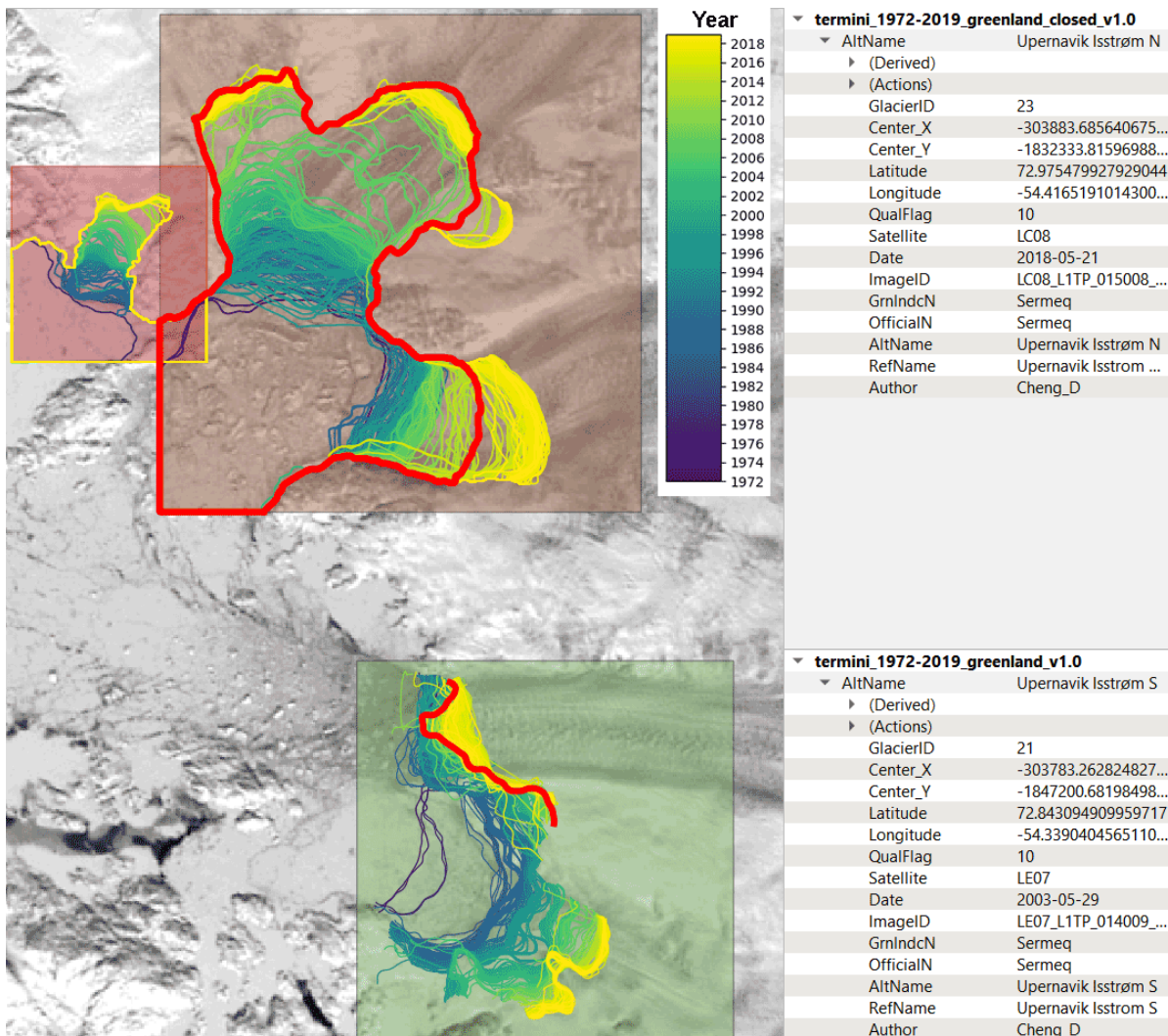
- Level 0 products consist of fjord boundary GeoTiff masks, the domain Shapefiles used for subletting, a glacier names reference Shapefile, and the Landsat scene name ID list.
- Level 1 product consists of LineString Shapefiles with 22678 total features, and Polygon Shapefiles with 17,771 total features. Polygons are ocean masks that are constructed from merged calving front Line Strings, fjord boundaries, and domain boundaries. Both Shapefiles share a feature schema derived from the [MEaSURES glacial terminus positions dataset \(NSIDC-0642\)](#), as detailed in Table S2:
 - level-1_shapefiles-domain-termini-closed.zip
 - Polygon Shapefiles from 1972-2019, separated by glacial domain
 - level-1_shapefiles-domain-termini.zip
 - LineString Shapefiles from 1972-2019, separated by glacial domain
 - level-1_shapefiles-greenland-termini-closed.zip
 - Polygon Shapefiles from 1972-2019, containing all features in one file
 - level-1_shapefiles-greenland-termini.zip
 - LineString Shapefiles from 1972-2019, containing all features in one file

Shapefile Feature Schema Attribute Table

Data Field	Description	Format (Values)
GlacierID	Numerical ID assigned to each glacier (as derived from MEaSURES NSIDC-0642)	# ([1, 246])
Center_X	Mean X coordinate in EPSG:3413.	# ([-463626, 682313])
Center_Y	Mean Y coordinate in EPSG:3413.	# ([-2821269, -906747])
Latitude	Latitude of center.	# ([64.29, 81.24])
Longitude	Longitude of center.	# ([-63.17, -28.21])
QualFlag	Quality flag to indicate digitization conditions	# (0 - Manually digitized, 3 - Manually digitized, w/ L7 SCE, 10 - Automatically digitized, 13 - Automatically digitized, w/ L7 SCE. See MEaSURES NSIDC-0642)
Satellite	Satellite/sensor of the digitized source image	LXSS ([LM01, LC08]) See usgs.gov/faqs/what-naming-convention-landsat-collections-level-1-scenes
Date	Date of the digitized source image	YYYY-MM-DD ([1972-09-06, 2019-06-25])
ImageID	Source image file name.	LXSS_LLLL_PPPRRR_YYYYMMDD_yyyymmdd_CC_TX (LC08_L1TP_026006_20170702_20170715_01_T1, etc.)
GrnIndcN	Greenlandic glacier name	NAME (New_Greenl names from Bjørk et al., 2015 database of Greenland glacier names)
OfficialN	Officially recognized glacier name	NAME (Official_n names from Bjørk et al., 2015 database of Greenland glacier names)
AltName	Alternative, Foreign, Old Greenlandic, or other glacier names	NAME (Foreign_na, Old_Greenl, Alternative names (Bjørk et al., 2015), or other names)
RefName	Reference glacier name, non-authoritative names used in CALFIN to denote grouped/unnamed glaciers	NAME (New_Greenl, Official_n, Foreign_na, Old_Greenl, Alternative names (Bjørk et al., 2015), or other names)
Author	Digitization author's name	LastName_FirstInitial (Cheng_D)

- Both Shapefile types are separated by domain, and share the following schema with that used by [MEaSURES](#):
 - Time Series: Sept. 1972 - June 2019
 - Temporal resolution: sub-seasonal
 - Spatial resolution: 30 meters
 - Spatial accuracy: <90 meters
 - Projection: EPSG:3413 (WGS 84 / NSIDC Sea Ice Polar Stereographic North)

Sample Data Record Usage



Example usage of the consolidated Polygon and LineString Shapefiles in QGIS.