

Glacier snowlines and snowzones 2015-2019

Variable	Explanation
objektType	Object type (from SOSI standard)
linjeType	Line type, category: 1- ice_snow, 2-ice_firn, 3-firn_snow).
metode	Description of method
kilde	Satellite mission or other source
kartlagtNvn	Mapped by (given name + surname)
kildeRef	Reference to source (Scene-ID/Tile/Contract No. or other)
digDato	Date of measurement/ image acquisition
oppdatDato	Date of ingestion in database or update
malemetode	Method of position registration (from SOSI standard)
noyaktighet	Accuracy in cm

Abstract

This product contains transient glacier snowlines and zones as described in the Copernicus Glacier Service report (Andreassen et al., 2021). Snowlines were manually digitized or derived using thresholds of band 8. Pixel values in the band 8 (NIR) of Sentinel-2 were inspected to find the best threshold for differentiating between snow, ice and possibly firn. Due to varying terrain and atmospheric conditions, range of values of snow, firn and ice was found to vary even within a single scene and therefore manual corrections were often necessary.

The snowline product include:

- Transient snowlines and snowzones for among others 10 mass balance glaciers for the period 2015-2020 using best end-of-season imagery. Snowlines and snowzones were manually digitized and images used are the best images closest to the end of ablation season.
- Transient snowlines and snowzones for a selection of glaciers in Lyngen and Kvaløya from 2018 and Hardangerjøkulen from 2019 using manual correction of automatically thresholded result. Transient firnline and firnzone were included for Hardangerjøkulen 2019.
- Transient snowlines and snowzones for a selection of glaciers in Jotunheimen. Snow zones were mapped using automatic thresholding for multiple dates in 2019.

Owner

Norwegian Water Resources and Energy Directorate (NVE)

References and citation

Andreassen, L.M. (ed.), G. Moholdt, A. Kääb, A. Messerli, T. Nagy and S.H. Winsvold. 2021. Monitoring glaciers in mainland Norway and Svalbard using Sentinel. NVE Rapport 3-2021, 94 p.