

High Resolution Snow and Ice Monitoring: Daily cumulative Gap-filled Fractional Snow Cover (raster 60m)

The Copernicus Daily Cumulative Gap-filled Fractional Snow Cover (GFSC) product is generated in near real-time for the entire EEA38 and the United Kingdom, based on radar satellite data from the Sentinel-1 constellation and on optical data from the Sentinel-2 constellation. The product uses Copernicus FSC (Fractional Snow Cover), WDS (Wet/Dry Snow) and SWS (SAR Wet Snow) products along with DEM data as input to form a spatially complete composite of snow conditions, to reduce observational gaps due to clouds and lack of sensor coverage on a daily basis. The product provides the extent of the snow cover per pixel as a percentage (0% – 100%) with a spatial resolution of 60 m x 60 m.

The GFSC product is distributed in raster files covering an area of 110 km by 110 km with a pixel size of 60 m by 60 m in UTM/WGS84 projection, which corresponds to the Sentinel-2 input L1C product tile. Each product is composed of four separate GeoTIFF files corresponding to the different layers of the product, and a metadata file. The GF layer provides the gap-filled fractional snow cover, while the QC layers (AT, QCFLAGS, QC) provide information on the quality of the GF layer at the pixel level.

The GFSC is one of the products of the pan-European High-Resolution Snow & Ice service (HR-S&I), which are provided at high spatial resolution (20 m x 20 m and 60 m x 60 m), from the Sentinel-2 and Sentinel-1 constellations data from September 1, 2016 onwards.

Read more about the GFSC product here: <https://land.copernicus.eu/en/products/snow/high-resolution-gap-filled-fractional-snow-cover>.

Simple

Date (Creation)	2021-09-01			
Date (Publication)	2021-09-01			
Edition	01.00			
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No information provided.

Maintenance and update frequency	Continual
GEMET - INSPIRE themes, version 1.0	Land cover
Keywords	
Continents, countries, sea regions of the world.	- EEA38 (from 2020) - United Kingdom
Keywords	
	ice

GEMET	• monitoring • climate change impact • landscape alteration • snow • land cover
Spatial scope	• European
EEA topics	• Land use
Temporal resolution	• Daily
EEA Management Plan	• 2020 3.6.7
Access constraints	Other restrictions
Other constraints	no limitations to public access
Use constraints	Other restrictions
Other constraints	Access to data is based on a principle of full, open and free access as established by the Copernicus data and information policy Regulation (EU) No 1159/2013 of 12 July 2013. This regulation establishes registration and licensing conditions for GMES/Copernicus users. Free, full and open access to this data set is made on the conditions that: 1. When distributing or communicating Copernicus dedicated data and Copernicus service information to the public, users shall inform the public of the source of that data and information. 2. Users shall make sure not to convey the impression to the public that the user's activities are officially endorsed by the Union. 3. Where that data or information has been adapted or modified, the user shall clearly state this. 4. The data remain the sole property of the European Union. Any information and data produced in the framework of the action shall be the sole property of the European Union. Any communication and publication by the beneficiary shall acknowledge that the data were produced "with funding by the European Union".
Spatial representation type	Grid
Distance	60 60 m
Language of dataset	English
Character set	UTF8
Topic category	• Environment • Imagery base maps earth cover • Climatology, meteorology, atmosphere

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Begin date	2016-09-01		
Coordinate reference system identifier	EPSG:32625		
Coordinate reference system identifier	EPSG:32626		
Coordinate reference system identifier	EPSG:32627		
Coordinate reference system identifier	EPSG:32628		
Coordinate reference system identifier	EPSG:32629		
Coordinate reference system identifier	EPSG:32630		
Coordinate reference system identifier	EPSG:32631		
Coordinate reference system identifier	EPSG:32632		
Coordinate reference system identifier	EPSG:32633		
Coordinate reference system identifier	EPSG:32634		
Coordinate reference system identifier	EPSG:32635		
Coordinate reference system identifier	EPSG:32636		
Coordinate reference system identifier	EPSG:32637		
Coordinate reference system identifier	EPSG:32638		
Distribution format	GeoTIFF ()		
OnLine resource	Protocol WWW:LINK-1.0-http--link WWW:LINK-1.0-http--link WWW:LINK-1.0-http--link OGC:WMS WWW:LINK-1.0-http--link WWW:LINK-1.0-http--link	Linkage https://cryo.land.copernicus.eu/finder/ https://www.wekeo.eu/ https://cryo.land.copernicus.eu/resto/api/collections/HRSI/search.json https://cryo.land.copernicus.eu/wms/GFSC?service=WMS&request=GetCapabilities&version=1.3.0 https://land.copernicus.eu/en/technical-library/hrsi-snow-pum/@@download/file https://land.copernicus.eu/en/technical-library/hrsi-snow-s1-atbd/@@download/file	Name Cryo portal WEKEO portal REST API Product user manual Algorithm Theoretical Basis Document

	WWW:LINK-1.0-http--link	https://wekeo-broker.apps.mercator.dpi.wekeo.eu/databroker/ui/	HDA API (Harmonized Data Access (WEkEO)
	WWW:LINK-1.0-http--link	https://land.copernicus.eu/en/products/snow/high-resolution-gap-filled-fractional-snow-cover#download	Download (requires authentication)
Hierarchy level	Dataset		

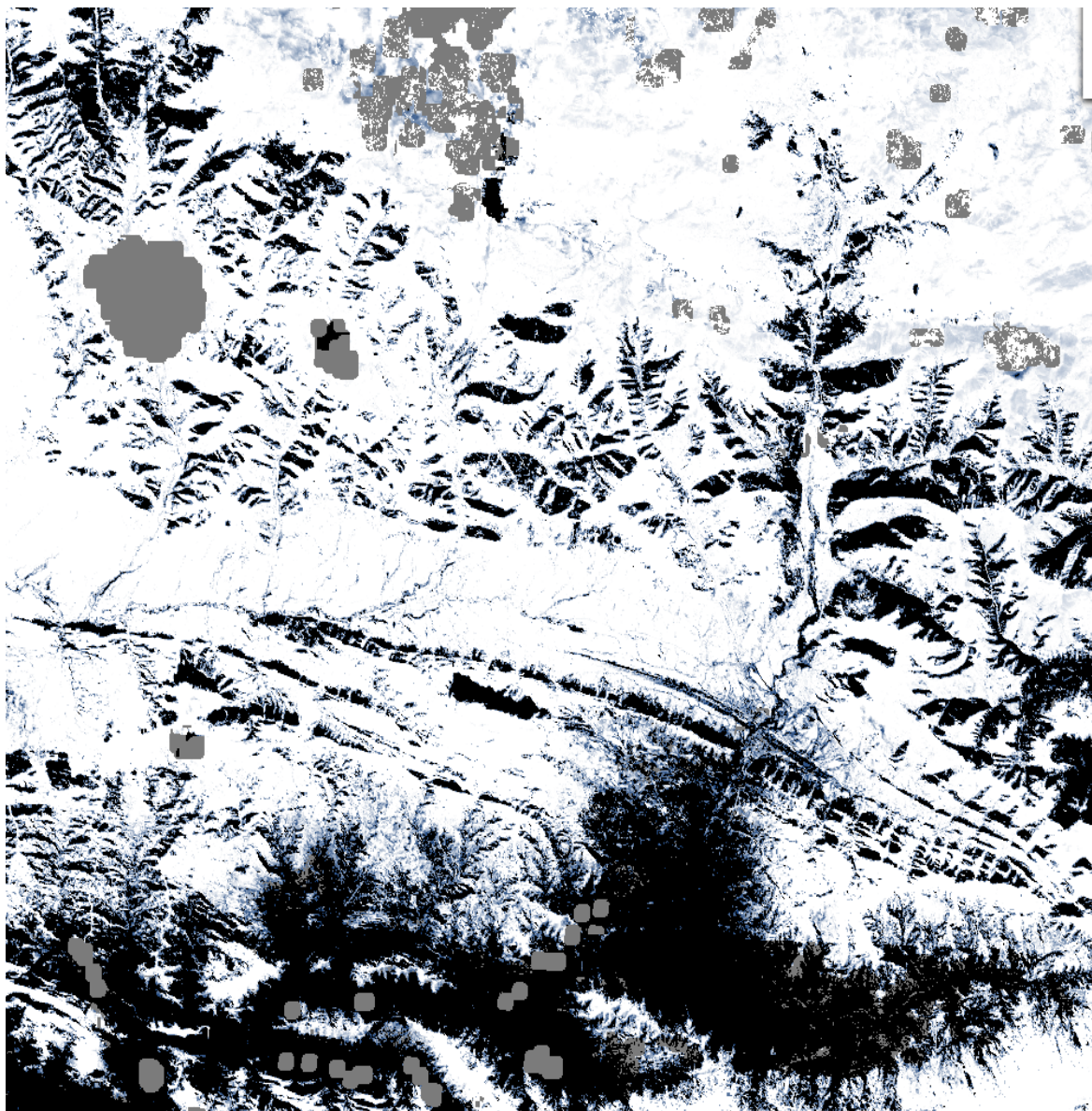
Conformance result

Date (Publication)	2010-12-08
Explanation	See the referenced specification
Statement	The algorithm for GFSC retrieval is fully described in the Algorithm Theoretical Basis Document: https://land.copernicus.eu/en/technical-library/hrsi-snow-s1-atbd/@@download/file. Its validation is described https://land.copernicus.eu/en/technical-library/hrsi-snow-qar-s1-s2/@@download/file.
Source	

Metadata

File identifier	befca22b-af37-4cd2-8e99-e09b3330fdc1 XML				
Metadata language	English				
Character set	UTF8				
Hierarchy level	Dataset				
Date stamp	2024-02-06T16:44:55.414Z				
Metadata standard name	ISO 19115/19139				
Metadata standard version	1.0				
Metadata author	Organisation name		Individual name	Electronic mail address	Website Role
	European Environment Agency			sdi@eea.europa.eu	Point of contact

Overviews



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