



## High Resolution Snow and Ice Monitoring: Persistent Snow Area (raster 20m)

The Copernicus Persistent Snow Area (PSA) product is generated annually for the entire EEA38 and the United Kingdom, based on the Fractional Snow Cover (FSC) information. It provides the extent of the persistent snow cover, i.e. the area where snow is present throughout the hydrological year with a spatial resolution of 20 m x 20 m.

This metadata refers to the PSA product distributed in raster files as tiles aligned with Sentinel-2 (UTM/WGS84) at 20 m x 20 m GSD. It is also available in another projection as tiles aligned with the Pan-European High-Resolution Layers in the European 20 m x 20 m grid (ETRS89 LAEA - EPSG: 3035). It is typically released on an annual basis with a release date in October, after the end of the hydrological year. Each product is composed of two separate files corresponding to the different layers of the product, and another metadata file.

PSA 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.

### Simple

|                                                         |                                                                                                                                                       |                        |                                |                                                                                                                             |                  |
|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------|------------------|
| <b>Date (Creation)</b>                                  | 2020-07-01                                                                                                                                            |                        |                                |                                                                                                                             |                  |
| <b>Date (Publication)</b>                               | 2020-10-14                                                                                                                                            |                        |                                |                                                                                                                             |                  |
| <b>Edition</b>                                          | 01.00                                                                                                                                                 |                        |                                |                                                                                                                             |                  |
| <b>Citation identifier</b>                              | copernicus_r_utm-wgs84_20_m_hrsi-psa_p_2017-now_v01_r00                                                                                               |                        |                                |                                                                                                                             |                  |
| <b>Citation identifier</b>                              | DAT-244-en                                                                                                                                            |                        |                                |                                                                                                                             |                  |
| <b>Point of contact</b>                                 | <b>Organisation name</b>                                                                                                                              | <b>Individual name</b> | <b>Electronic mail address</b> | <b>Website</b>                                                                                                              | <b>Role</b>      |
|                                                         | European Commission                                                                                                                                   |                        |                                | <a href="https://commission.europa.eu">https://commission.europa.eu</a>                                                     | Owner            |
|                                                         | Copernicus Land Monitoring Service                                                                                                                    |                        | copernicus@eea.europa.eu       | <a href="https://land.copernicus.eu">https://land.copernicus.eu</a>                                                         | Custodian        |
|                                                         | European Environment Agency                                                                                                                           |                        | sdi@eea.europa.eu              | <a href="http://www.eea.europa.eu">http://www.eea.europa.eu</a>                                                             | Publisher        |
|                                                         | Copernicus Land Monitoring Service helpdesk                                                                                                           |                        | copernicus@eea.europa.eu       | <a href="https://land.copernicus.eu/en/contact-service-helpdesk">https://land.copernicus.eu/en/contact-service-helpdesk</a> | Point of contact |
| <b>Maintenance and update frequency</b>                 | Continual                                                                                                                                             |                        |                                |                                                                                                                             |                  |
| <b>GEMET - INSPIRE themes, version 1.0</b>              | <ul style="list-style-type: none"><li>Land cover</li></ul>                                                                                            |                        |                                |                                                                                                                             |                  |
| <b>Keywords</b>                                         |                                                                                                                                                       |                        |                                |                                                                                                                             |                  |
| <b>Continents, countries, sea regions of the world.</b> | <ul style="list-style-type: none"><li>EEA38 (from 2020)</li><li>United Kingdom</li></ul>                                                              |                        |                                |                                                                                                                             |                  |
| <b>Keywords</b>                                         |                                                                                                                                                       |                        |                                |                                                                                                                             |                  |
| <b>GEMET</b>                                            | <ul style="list-style-type: none"><li>monitoring</li><li>climate change impact</li><li>snow</li><li>landscape alteration</li><li>land cover</li></ul> |                        |                                |                                                                                                                             |                  |

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|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Spatial scope</b>               | <ul style="list-style-type: none"> <li>• <a href="#">European</a></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>EEA topics</b>                  | <ul style="list-style-type: none"> <li>• Land use</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Temporal resolution</b>         | <ul style="list-style-type: none"> <li>• Annually</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>EEA Management Plan</b>         | <ul style="list-style-type: none"> <li>• 2020 3.6.7</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Access constraints</b>          | Other restrictions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Other constraints</b>           | <a href="#">no limitations to public access</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Use constraints</b>             | Other restrictions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Other constraints</b>           | <p>The Copernicus component is governed by Regulation (EU) No 2021/696 of the European Parliament and of the Council of 28 April 2021 establishing the Union Space Programme and the European Union Agency for the Space Programme and repealing Regulations (EU) No 912/2010, (EU) No 1285/2013 and (EU) No 377/2014 and Decision No 541/2014/EU. Within the Copernicus component, a portfolio of land monitoring activities has been delegated by the European Union to the European Environment Agency (EEA) and the DG Joint Research Centre of the European Commission.</p> <p>The Copernicus land monitoring products and services are made available on a principle of full, open and free access, as established by the Commission Delegated Regulation (EU) No 1159/2013 of 12 July 2013.</p> <p>Free, full and open access to the products and services of the Copernicus Land Monitoring Service is made on the conditions that:</p> <ol style="list-style-type: none"> <li>1. When distributing or communicating Copernicus Land Monitoring Service products and services (data, software scripts, web services, user and methodological documentation and similar) to the public, users shall inform the public of the source of these products and services.</li> <li>2. Where the Copernicus Land Monitoring Service products and services have been adapted or modified by the user, the user shall clearly state this.</li> <li>3. Users shall make sure not to convey the impression to the public that the user's activities are officially endorsed by the European Union.</li> </ol> |
| <b>Spatial representation type</b> | Grid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Distance</b>                    | 20 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Language of dataset</b>         | English                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Character set</b>               | UTF8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Topic category</b>              | <ul style="list-style-type: none"> <li>• Environment</li> <li>• Imagery base maps earth cover</li> <li>• Climatology, meteorology, atmosphere</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Begin date</b>                  | 2017-05-14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

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|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Coordinate reference system identifier | <a href="#">EPSG:32625</a>                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                               |
| Coordinate reference system identifier | <a href="#">EPSG:32626</a>                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                               |
| Coordinate reference system identifier | <a href="#">EPSG:32627</a>                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                               |
| Coordinate reference system identifier | <a href="#">EPSG:32628</a>                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                               |
| Coordinate reference system identifier | <a href="#">EPSG:32629</a>                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                               |
| Coordinate reference system identifier | <a href="#">EPSG:32630</a>                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                               |
| Coordinate reference system identifier | <a href="#">EPSG:32631</a>                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                               |
| Coordinate reference system identifier | <a href="#">EPSG:32632</a>                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                               |
| Coordinate reference system identifier | <a href="#">EPSG:32633</a>                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                               |
| Coordinate reference system identifier | <a href="#">EPSG:32634</a>                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                               |
| Coordinate reference system identifier | <a href="#">EPSG:32635</a>                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                               |
| Coordinate reference system identifier | <a href="#">EPSG:32636</a>                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                               |
| Coordinate reference system identifier | <a href="#">EPSG:32637</a>                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                               |
| Coordinate reference system identifier | <a href="#">EPSG:32638</a>                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                               |
| Distribution format                    | <ul style="list-style-type: none"> <li>GeoTIFF ( 1.0)</li> </ul>                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                               |
| OnLine resource                        | <b>Protocol</b><br><br>WWW:LINK-1.0-http--link<br><br>OGC:WMS<br><br>WWW:LINK-1.0-http--link<br><br>WWW:LINK-1.0-http--link<br><br>WWW:LINK-1.0-http--link<br><br>WWW:LINK-1.0-http--link<br><br>WWW:LINK-1.0-http--link | <b>Linkage</b><br><br><a href="https://cryo.land.copernicus.eu/finder/">https://cryo.land.copernicus.eu/finder/</a><br><br><a href="https://cryo.land.copernicus.eu/wms/PSA?service=WMS&amp;request=GetCapabilities&amp;version=1.3.0">https://cryo.land.copernicus.eu/wms/PSA?service=WMS&amp;request=GetCapabilities&amp;version=1.3.0</a><br><a href="https://cryo.land.copernicus.eu/resto/api/collections/HRSI/search.json">https://cryo.land.copernicus.eu/resto/api/collections/HRSI/search.json</a><br><br><a href="https://www.wekeo.eu">https://www.wekeo.eu</a><br><br><a href="https://land.copernicus.eu/en/technical-library/hrsi-snow-pum/@@download/file">https://land.copernicus.eu/en/technical-library/hrsi-snow-pum/@@download/file</a><br><br><a href="https://land.copernicus.eu/en/technical-library/hrsi-snow-atbd/@@download/file">https://land.copernicus.eu/en/technical-library/hrsi-snow-atbd/@@download/file</a><br><br><a href="https://wekeo-broker.apps.mercator.dpi.wekeo.eu/databroker/ui/">https://wekeo-broker.apps.mercator.dpi.wekeo.eu/databroker/ui/</a><br><br><a href="https://land.copernicus.eu/en/products/snow/high-resolution-">https://land.copernicus.eu/en/products/snow/high-resolution-</a> | <b>Name</b><br><br>Cryo portal<br><br><br><br><br><br>REST API<br><br><br>WEKEO portal<br><br>Product user manual<br><br>Algorithm theoretical basis document<br><br>HDA API (Harmonized Data Access (WEKEO)) |

|                 |                         |                                               |                                       |
|-----------------|-------------------------|-----------------------------------------------|---------------------------------------|
|                 | WWW:LINK-1.0-http--link | <a href="#">persistent-snow-area#download</a> | Download<br>(requires authentication) |
| Hierarchy level | Dataset                 |                                               |                                       |

Conformance result

|                    |                                                                                                                                                                                                          |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Title              | Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services |
| Date (Publication) | 2010-12-08                                                                                                                                                                                               |
| Explanation        | See the referenced specification                                                                                                                                                                         |
| Statement          | Pixels are classified as persistent snow area when snow was observed in at least 95% of the observations (under clear sky conditions).                                                                   |
| Source             | <ul style="list-style-type: none"><li><a href="#">Fractional Snow Cover (raster 20m) 2016-present, Europe, daily, Jul. 2020</a></li></ul>                                                                |

Metadata

|                             |                                                                                                                                                                                                                                          |                         |                  |  |                   |                 |                         |              |                             |  |                   |                  |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------|--|-------------------|-----------------|-------------------------|--------------|-----------------------------|--|-------------------|------------------|
| File identifier             | 54a3d887-5cac-4e70-b441-454459e7c954 <a href="#">XML</a>                                                                                                                                                                                 |                         |                  |  |                   |                 |                         |              |                             |  |                   |                  |
| Metadata language           | English                                                                                                                                                                                                                                  |                         |                  |  |                   |                 |                         |              |                             |  |                   |                  |
| Character set               | UTF8                                                                                                                                                                                                                                     |                         |                  |  |                   |                 |                         |              |                             |  |                   |                  |
| Hierarchy level             | Dataset                                                                                                                                                                                                                                  |                         |                  |  |                   |                 |                         |              |                             |  |                   |                  |
| Date stamp                  | 2024-02-06T16:45:58.533Z                                                                                                                                                                                                                 |                         |                  |  |                   |                 |                         |              |                             |  |                   |                  |
| Metadata standard name      | ISO 19115/19139                                                                                                                                                                                                                          |                         |                  |  |                   |                 |                         |              |                             |  |                   |                  |
| Metadata standard version   | 1.0                                                                                                                                                                                                                                      |                         |                  |  |                   |                 |                         |              |                             |  |                   |                  |
| Metadata author             | <table><tr><td>Organisation name</td><td>Individual name</td><td>Electronic mail address</td><td>Website Role</td></tr><tr><td>European Environment Agency</td><td></td><td>sdi@eea.europa.eu</td><td>Point of contact</td></tr></table> |                         |                  |  | Organisation name | Individual name | Electronic mail address | Website Role | European Environment Agency |  | sdi@eea.europa.eu | Point of contact |
| Organisation name           | Individual name                                                                                                                                                                                                                          | Electronic mail address | Website Role     |  |                   |                 |                         |              |                             |  |                   |                  |
| European Environment Agency |                                                                                                                                                                                                                                          | sdi@eea.europa.eu       | Point of contact |  |                   |                 |                         |              |                             |  |                   |                  |

Overviews

