

## High Resolution Snow and Ice Monitoring: Aggregated River and Lake Ice Extent

The Copernicus Aggregated River and Lake Ice Extent (ARLIE) product is a spatially aggregated information on surface water conditions of rivers and lakes. ARLIE information is stored in a geodatabase, enriched every day from the River and Lake Ice extent products (RLIE S1, RLIE S2 and RLIE S1+S2) for the entire EEA38 and the United Kingdom. It provides percent coverage of snow-covered or snow-free ice on lakes and on 10 km river sections described by the EU-HYDRO river and lake network database.

The ARLIE products are stored in a PostGIS persistent geodatabase. They can be retrieved by using a specific REST API. Users can query ice sheet summary information of river segments and lakes (ARLIE statistics) together with the geometry and characteristics of the features on which these statistics were estimated. All geometry features are delivered in the ETRS89 LAEA (EPSG:3035) coordinate reference system.

ARLIE 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.

You can read more about ARLIE product here: <https://land.copernicus.eu/en/products/water-bodies/high-resolution-aggregated-river-and-lake-ice-extent> .

### Simple

<b>Date (Creation)</b>	2021-07-01			
<b>Date (Publication)</b>	2021-07-01			
<b>Edition</b>	01.00			
<b>Citation identifier</b>	copernicus_v_3035_50_k_hrsi-arlie_p_2016-now_v01_r00			
<b>Citation identifier</b>	DAT-244-en			
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### Point of contact

No information provided.

<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>snow</li> <li>land cover</li> <li>climate change impact</li> </ul>

	<ul style="list-style-type: none"> <li>• landscape alteration</li> <li>• ice</li> <li>• monitoring</li> </ul>
<b>Spatial scope</b>	<ul style="list-style-type: none"> <li>• <a href="#">European</a></li> </ul>
<b>Temporal resolution</b>	<ul style="list-style-type: none"> <li>• Irregular</li> </ul>
<b>EEA topics</b>	<ul style="list-style-type: none"> <li>• Land use</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>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.</p> <p>Free, full and open access to this data set is made on the conditions that:</p> <ol style="list-style-type: none"> <li>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.</li> <li>2. Users shall make sure not to convey the impression to the public that the user's activities are officially endorsed by the Union.</li> <li>3. Where that data or information has been adapted or modified, the user shall clearly state this.</li> <li>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".</li> </ol>
<b>Spatial representation type</b>	Vector
<b>Denominator</b>	50000
<b>Language of dataset</b>	English
<b>Character set</b>	UTF8

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<b>Begin date</b>	2016-09-01		
<b>Coordinate reference system identifier</b>	<a href="#">EPSG:3035</a>		
<b>Distribution format</b>	<ul style="list-style-type: none"> <li>Postgis ( )</li> </ul>		
<b>OnLine resource</b>	<b>Protocol</b>	<b>Linkage</b>	<b>Name</b>
	WWW:LINK-1.0-http--link	<a href="https://land.copernicus.eu/en/technical-library/hrsi-ice-pum/@.download/file">https://land.copernicus.eu/en/technical-library/hrsi-ice-pum/@.download/file</a>	Product user manual
	WWW:LINK-1.0-http--link	<a href="https://land.copernicus.eu/en/technical-library/hrsi-ice-s1-atbd/@.download/file">https://land.copernicus.eu/en/technical-library/hrsi-ice-s1-atbd/@.download/file</a>	Algorithm theoretical basis document
	WWW:LINK-1.0-http--link	<a href="https://cryo.land.copernicus.eu/arlief/get_arlie">https://cryo.land.copernicus.eu/arlief/get_arlie</a>	REST API to retrieve ARLIE data
	WWW:LINK-1.0-http--link	<a href="https://cryo.land.copernicus.eu/arlief/get_geometries">https://cryo.land.copernicus.eu/arlief/get_geometries</a>	REST API to retrieve geometry data
	WWW:LINK-1.0-http--link	<a href="https://github.com/eea/clms-hrsi-api-client-python-arlief">https://github.com/eea/clms-hrsi-api-client-python-arlief</a>	Python client to download ARLIE products
	WWW:LINK-1.0-http--link		Download (requires authentication)
<b>Hierarchy level</b>	Dataset		

## Conformance result

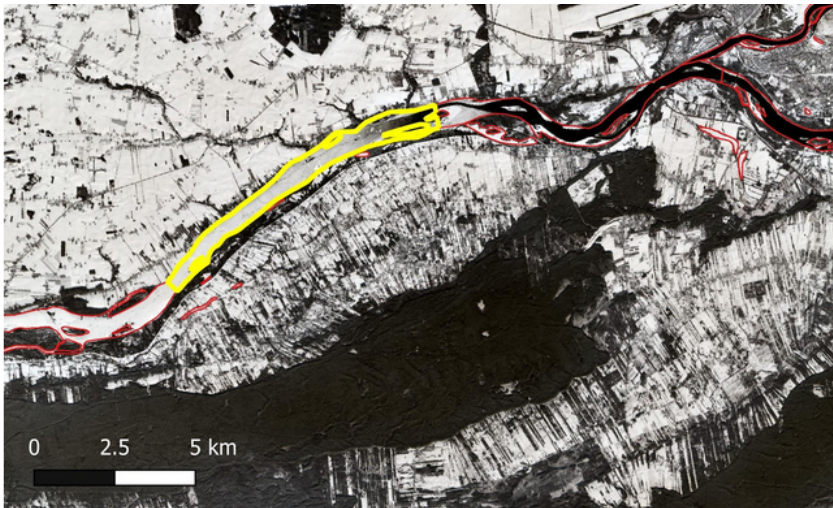
<b>Date (Publication)</b>	
<b>Explanation</b>	See the referenced specification
<b>Statement</b>	<p>The algorithm for ARLIE retrieval is fully described in the Algorithm Theoretical Basis Document:</p> <p><a href="https://land.copernicus.eu/en/technical-library/hrsi-ice-s1-atbd/@.download/file">https://land.copernicus.eu/en/technical-library/hrsi-ice-s1-atbd/@.download/file</a>. Its validation is described <a href="https://land.copernicus.eu/en/technical-library/hrsi-ice-qar/@.download/file">https://land.copernicus.eu/en/technical-library/hrsi-ice-qar/@.download/file</a>.</p>
<b>Source</b>	<ul style="list-style-type: none"> <li></li> </ul>

## Metadata

<b>File identifier</b>	219a6cd4-edfe-4982-8470-39b60421ed74 <a href="#">XML</a>
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Metadata language	English		
Character set	UTF8		
Hierarchy level	Dataset		
Date stamp	2024-02-06T16:45:02.692Z		
Metadata standard name	ISO 19115/19139		
Metadata standard version	1.0		
Metadata author	<b>Organisation name</b> European Environment Agency	<b>Individual name</b>	<b>Electronic mail address</b> sdi@eea.europa.eu  <b>Website Role</b> Point of contact

## Overviews



id	object_nam	river_km	basin_name	eu_hydro_id	area
346527	Vistula	380	Vistula		5946111.52921436

id	river_km_id	datetime	water_perc	ice_perc	other_perc	cloud_perc	nd_perc	qc	type
100323	346527	2021-02-06T09:56:18.000	26	0	2	68	4	0	Sentinel-2
106629	346527	2021-02-11T09:56:16.000	5	9	9	74	3	0	Sentinel-2
116921	346527	2021-02-18T09:46:22.000	6	88	4	0	2	0	Sentinel-2
119869	346527	2021-02-20T16:19:25.000	10	88	0	0	2	0	Sentinel-1 Sentinel-2
120737	346527	2021-02-21T09:56:59.000	0	0	0	98	2	0	Sentinel-2
124492	346527	2021-02-22T10:15:59.000	21	76	0	0	3	0	Sentinel-1 Sentinel-2

Provided by

