EEA geospatial data catalogue

Land Cover 2015-2019 (raster 100 m), global, annual - version 3

The Global Dynamic Land Cover product offers annual global land cover maps and cover fraction layers, providing a detailed view of land cover at three classification levels. It uses modern data analysis techniques to ensure temporal consistency and accuracy, with the latest version achieving 80% accuracy at class level 1 on each continent. The product also includes continuous field layers, or "fraction maps", that provide proportional estimates for vegetation and ground cover for the land cover types. These features make it a versatile tool for a wide range of applications, including forest monitoring, rangeland management, crop monitoring, biodiversity conservation, climate modelling, and urban planning.

Dynamic land cover maps include transitions of land cover classes over time and hence captures land cover changes.

This Collection 3 includes the global land cover maps, at 100m resolution, for base year 2015 and subsequent years until 2019. These consist of different layers: the base classification with 23 classes, versatile fractional cover (0-100% per pixel) for the main classes, forest type and related quality information (e.g. classification probability, input data density and confidence level for the change detection).

Simple

Date (Creation)	2015-01-01
Date (Publication)	2015-01-01
Edition	3.0
Edition date	2019-05-14
Citation identifier	clms_global_lcc_100m_v3_yearly VITO NV 2020-01-01
Code	10.2909/c6377c6e-76cc-4d03-8330-628a03693042
Other citation details	https://land.copernicus.eu/en/products/global-dynamic-land-cover
Purpose	This product is first designed to fit the requirements of the Global component of the Copernicus Land Service. It can be also useful for all applications related to the environment monitoring.
Credit	Land Cover products were generated by the Global component of the Land Service of Copernicus, the Earth Observation programme of the European Commission. The research leading to the current version of the product has received funding from various European Commission Research and Technical Development programs. The product is based on PROBA-V 100m and 333m data (copyright BELSPO and distribution by VITO NV), as well as renowned external datasets (e.g. World Settlement Footprint by DLR, Global Surface Water by the EC Joint Research Centre, OpenStreetMap).

Point of contact

Organisation name	Individual name	Electronic mail address	Website	Role
European Commission			https://commission.europa.eu	Owner
Copernicus Land Monitoring Service		copernicus@eea.europa.eu	https://land.copernicus.eu	Custodian
European Commission's Joint Research Centre			https://joint-research-centre.ec.europa.eu/	Publisher
Copernicus Land Monitoring Service helpdesk		copernicus@eea.europa.eu	https://land.copernicus.eu/en/contact-service-helpdesk	Point of contact

Maintenance and update frequency	As needed
Update scope	Series
Name	

	GeoTIFF
Version	1.0
Specification	Extension of Tagged Image File Format (TIFF) Revision 6.0 for georeferenced or geocoded raster imagery
EEA topics	• Land use
Spatial scope	• Global
Continents, countries, sea regions of the world.	• World
Keywords	
GEMET - INSPIRE themes, version 1.0	• Orthoimagery
GEMET	• geophysical environment
Theme	• land cover • LC
Place	• Globe
Temporal	• Year
Copernicus Themes	• Vegetation
Copernicus Variables	• Dynamic Land Cover
Access constraints	Other restrictions
Other constraints	no limitations to public access
Use constraints	Other restrictions
Other constraints	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. 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. Free, full and open access to the products and services of the Copernicus Land Monitoring Service is made on the conditions that: 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. 2. Where the Copernicus Land Monitoring Service products and services have been adapted or modified by the user, the user shall clearly state this. 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.
Spatial representation type	Grid
Distance	0.000992063492063 deg

Language of dataset	English
Character set	UTF8
Topic category	• Imagery base maps earth cover • Biota • Environment • Farming

78.25	N	-60.00	S	180.00	E	-180.00	W

Begin date	2015-01-01T00:00:00Z
End date	2019-12-31T23:59:59Z
Coordinate reference system identifier	EPSG:4326
Number of dimensions	2
Dimension name	Row
Dimension size	141120
Resolution	0.000992063492063 deg
Dimension name	Column
Dimension size	362880
Resolution	0.000992063492063 deg
Cell geometry	Area
Transformation parameter availability	No
Checkpoint Availability	Yes
Checkpoint Description	Upperleft corner tiepoint
Point in Pixel	• Center
Distribution format	• GeoTIFF (1.0) **Specification**: Extension of Tagged Image File Format (TIFF) Revision 6.0 for georeferenced or geocoded raster imagery
Fees	Free
Ordering instructions	Products can be viewed, downloaded and analyzed online, with free and open access.
Units of distribution	Per product
OnLine resource	**Protocol**: WWW:DOWNLOAD:GeoTIFF **Linkage**: https://globalland.vito.be/download/manifest/lcc_100m_v3_yearly_geotiff/ **Name**: Copernicus Global Land Service - Global Land Cover viewer

OnLine resource	**Protocol** HTTP	**Linkage** https://zenodo.org/communities/copernicus-land-cover	**Name** Zenodo - Copernicus Land Cover Land Use community
OnLine resource	**Protocol** HTTP	**Linkage** https://developers.google.com/earth-engine/datasets/catalog/COPERNICUS_Landcover_100m_Proba-V-C3_Global	**Name** Google Earth Engine
OnLine resource	**Protocol** DOI	**Linkage** https://doi.org/10.2909/c6377c6e-76cc-4d03-8330-628a03693042	**Name**
Hierarchy level	Dataset		

Conformance result

Title	Validation results
Date (Publication)	2021-04-27
Explanation	Overall accuracy just over 80% (80.6% in 2015, 80.3% in 2019) using a set of 21K independent validation points. More details can be found in the validation report at https://land.copernicus.eu/en/products/global-dynamic-land-cover
Pass	Yes

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	This data set is conformant with the INSPIRE Implementing Rules for the interoperability of spatial data sets and services
Pass	Yes

Conformance result

Title	INSPIRE Data Specification on orthoimagery - Guidelines
Date (Publication)	2010-04-26
Explanation	See the referenced specification
Pass	Yes

Statement	The land cover map is classified from daily surface reflectances of PROBA-V sensor and training data gathered through the GEO-WIKI. Several other products are integrated into the discrete map (LCCS layer) such as World Settlement Footprint (DLR), the Global Surface Water (JRC), OpenStreetMap, the Integrated Multi-satellitE Retrievals for GPM (NASA) and Circum-Polar Arctic Vegetation Map (U.S. CPAVM team). The land cover is provided at 100 m resolution, however the training data is gathered at 10m resolution which has enabled to generate the continuous cover fields and provide per pixel a cover percentage (0-100%) for a set of classes.

Metadata

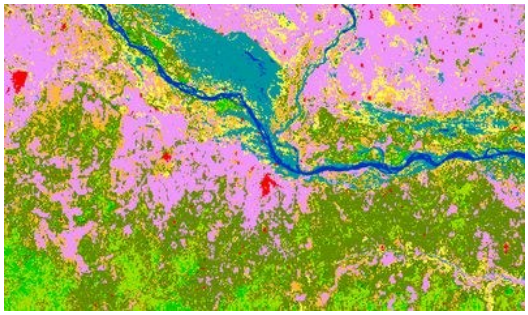
File identifier	c6377c6e-76cc-4d03-8330-628a03693042 XML

Metadata language	English
Character set	UTF8
Hierarchy level	Dataset
Date stamp	2025-04-16T13:42:00.049547Z
Metadata standard name	ISO 19115/19139
Metadata standard version	1.0

Metadata author

Organisation name	Individual name	Electronic mail address	Website	Role
Copernicus Land Monitoring Service		copernicus@eea.europa.eu	https://land.copernicus.eu	Point of contact

Overviews



CGLOPS_LC100_2015.png

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