EEA geospatial data catalogue

Corine Land Cover 2000 (vector) - version 18, Mar. 2016

CORINE Land Cover (CLC) was specified to standardize data collection on land in Europe to support environmental policy development. The reference year of first CLC inventory was 1990 (CLC1990), and the first update created in 2000. Later the update cycle has become 6 years. The number of participating countries has increased over time currently includes 33 European Environment Agency (EEA) member countries and six cooperating countries (EEA39) with a total area of over 5.8 Mkm2. Ortho-corrected high spatial resolution satellite images provide the geometrical and thematic basis for mapping. In-situ data (topographic maps, ortho-photos and ground survey data) are essential ancillary information. The project is coordinated by the EEA in the frame of the EU Copernicus programme and implemented by national teams under the management and quality control (QC) of the EEA. The basic technical parameters of CLC (i.e. 44 classes in nomenclature, 25 hectares minimum mapping unit (MMU) and 100 meters minimum mapping width) have not changed since the beginning, therefore the results of the different inventories are comparable.

The layer of CORINE Land Cover Changes (CLCC) is produced since the second CLC inventory (CLC2000). CLCC is derived from satellite imagery by direct mapping of changes taken place between two consecutive inventories, based on image-to-image comparison. Change mapping applies a 5 ha MMU to pick up more details in CLCC layer than in CLC status layer. Integration of national CLC and CLCC data includes some harmonization along national borders. Two European validation studies have shown that the achieved thematic accuracy is above the specified minimum (85 %). Primary CLC and CLCC data are in vector format with polygon topology. Derived products in raster format are also available. The seamless European CLC and CLCC time series data (CLC1990, CLC2000, CLC2006, CLC2012 and related CLCC data) are distributed in the standard European Coordinate Reference System defined by the European Terrestrial Reference System 1989 (ETRS89) datum and Lambert Azimuthal Equal Area (LAEA) projection (EPSG: 3035). Results of the CLC inventories can be downloaded from Copernicus Land site free of charge for all users.

CLC data can contribute to a wide range of studies with European coverage, e.g.: ecosystem mapping, modelling the impacts of climate change, landscape fragmentation by roads, abandonment of farm land and major structural changes in agriculture, urban sprawl, water management.

Simple

Date (Creation)	2016-03-10
Date (Publication)	2016-03-10
Date (Revision)	2016-03-10
Edition	18.00
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Status	Obsolete

Point of contact

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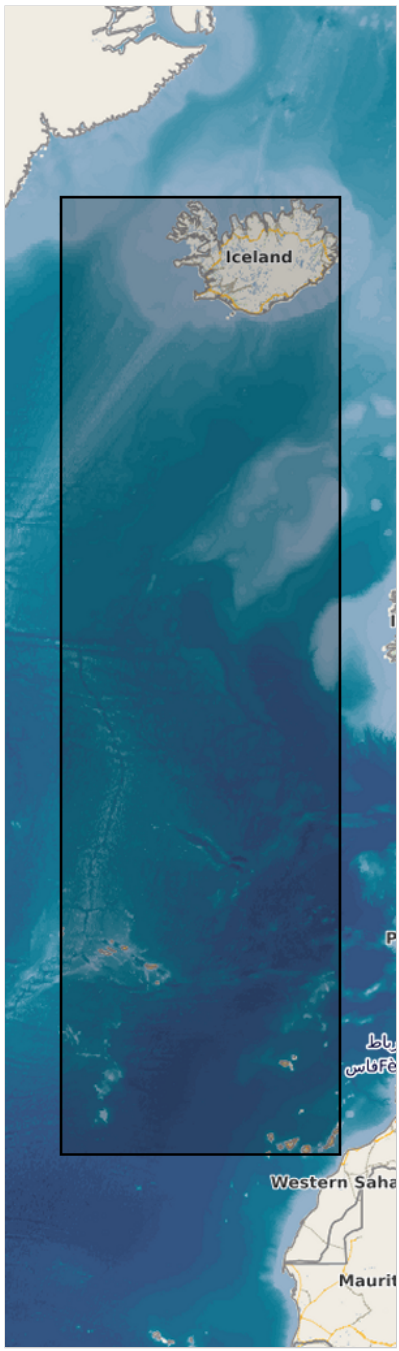
Point of contact

No information provided.

Maintenance and update frequency	Continual
GEMET - INSPIRE themes, version 1.0	• Land cover
GEMET	• land use • land cover • landscape • landscape alteration

Keywords	
Continents, countries, sea regions of the world.	• EEA39
Keywords	
Spatial scope	• European
EEA topics	• Land use
Use limitation	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”.
Access constraints	Other restrictions
Other constraints	no limitations to public access
Spatial representation type	Vector
Distance	100 m
Language of dataset	English
Character set	UTF8
Topic category	• Environment • Imagery base maps earth cover
Begin date	1999-01-01
End date	2001-12-31

66.57	N	27.64	S	-13.42	E	-31.27	W



71.19	N	34.56	S	44.82	E	-10.62	W



Additional Information	Spatial Resolution information: The Minimum Mapping Width is 100 m
Coordinate reference system identifier	EPSG:3035
Distribution format	• GDB (9.3) • Spatialite (3.8.11)

Distributor

Ordering instructions	This dataset is no longer accessible from the website of the Copernicus Land Monitoring Service. You can request access to this dataset by contacting the service desk of the Copernicus Land Monitoring Service at copernicus@eea.europa.eu .
Hierarchy level	Dataset

Conformance result

Date (Publication)	2010-12-08
Explanation	See the referenced specification
Statement	Version 18 (V18) Release date: 19-09-2016 (see V18_5_1) Main purpose of the release: Publication of the final, corrected CLC 2012 data. The 4th CLC inventory for the reference year of 2012 was produced under the Copernicus Initial Operations (GIO). It has the shortest production time in history of CLC. Two high-resolution satellite image coverages (IRS Resourcesat-1/2, SPOT-4/5, RapidEye constellation) taken in 2011-2012 provided multi-temporal information to support the update. Computer Assisted Photointerpretation (CAPI) was the prevailing methodology applied in interpreting of satellite images. FI, DE, IC, IE, NO, ES and SE applied a semi-automatic methodology. UK has turned from semiautomatic processing to CAPI because no national hi-res dataset was available for 2012. Most of the QC was conducted in remote verifications. IT and ES were verified by regions. In producing the European products, a simplified border matching was applied (see Version 15). An independent validation of CLC and CLCC for CLC 2012 was carried out in 2016 and the results are available at https://land.copernicus.eu/user-corner/technical-library/clc-2012-validation-report- 1. Changes from previous main release (Version 17): • Inclusion of CLC 2012 layers for all the EEA39 countries. • Production of CLC 2006 for Greece (in V18_3) and all CLCs for Channel Islands (V18_1). • Revised CLC 2000 and CLC 2006 layers were made available (V18_5). • Change in rasterization algorithm (V18_2).

Known problems:

• Some redundant lines between neighbouring polygons with the same code are still present, but only as result of persisting ‘adaptive tilling’ procedure (limitation of ESRI ArcGIS technology for large datasets).

• Polygons <25 ha can be present along national borders and along 'adaptive tilling' tiles boundaries.

See https://land.copernicus.eu/user-corner/technical-library/clc-country-coverage-v18.5 for full information about the coverage of this version .

See https://land.copernicus.eu/user-corner/technical-library/clc-and-clcc-release-lineage for full information about all sub-versions of this version .

Minimum Mapping Width: 100 m

Version 17 (V17)

Release date: 02-12-2013

Main purpose of the release: Maintenance / Increased European coverage of CLC time series data.

Changes from previous release (V16):

• Full CLC and CLCC data time series (from CLC 1990 to CLC 2006 including all CLCC datasets) has been included for the Autonomous Region of the Azores (PT).

Version 16 (V16)

Release date: 15-04-2012

Main purpose: Maintenance / Increased and improved European coverage of CLC time series data.

Changes from previous release (V15):

• CLC 1990 coverage: TR has been delivered CLC 1990 and CLCC (1990, 2000) data. Still missing CLC 1990 data: AL, BA, CH, CY, FI, IS, MK, NO, SE, UK and the XK.

• CLC 2000_revised layer covering 27 countries was included (CLC 2000 data revised during production of CLC 2006).

• Shift in MT geographic position has been corrected. All CLC layers for MT have been re-projected.

• A few coding inconsistences were corrected.

Version 15 (V5)

Release date: 20-07-2011

Main purpose: Publication of final CLC2 006 data.

The 3rd CLC inventory for the reference year of 2006 was produced under GMES Fast Track Service on Land Monitoring. The CLCC database was considered as the primary product, and a uniform change mapping methodology was agreed. Dual date satellite imagery (SPOT-4/5 and IRS P6) taken in 2005-2007 provided enhanced change mapping capabilities. Some of the countries newly entering CLC have produced CLC 2000 datasets also during the project time frame. Scanned topographic maps and digital aerial ortho-imagery have become commonly available. CAPI was the prevailing method applied in interpreting of satellite images. Nevertheless, FI, IS, NO, SE and the UK applied a semiautomatic methodology. Most of the European QC was conducted by visiting national teams (see Version 2). In some cases, remote verification was applied (without mission to countries). ES and IT were verified by regions.

Changes from previous release (V14 (V4)):

• CLC 2006 data covering Great Britain (part of UK) and TR were delivered. Thus, CLC 2006 European coverage includes 38 countries of the EEA39. Still missing CLC 2006 data for Greece.

• A simplified border matching was applied for countries new in CLC: XK, NO, CH and Türkiye: 1) <25 ha polygons along the borders are not removed systematically; 2) sliver-like polygons (area < cca. 5 ha) are generalised to largest or thematically most similar neighbour.

• For the rest of CLC 2006 countries a simple border-matching was applied. Code differences along two sides of borders are not changed. Only polygons with area 0,1 ha (sliver polygons) are eliminated.

• Data dissemination: CLC data become freely accessible from the EEA to any person or legal entity.

Version 14 (V4)

Release date: 25-10-2010

Main purpose: Maintenance / Increased European coverage of CLC 2006 and CLC 2000 data.

Changes from previous release (V13 (V3)):

• CLC 2006 European coverage includes 37 full countries of EEA39. New data for Northern Ireland (part of the UK), Madeira Islands (part of PT), CH, IS and TR were added to CLC 2006 data. Still missing CLC 2006: GR and the UK (except Northern Ireland).

• New data for Madeira Islands (PT), CH and IS were added into the European CLC 2000 coverage, which includes already the EE39. However, CLCC (1990, 2000) is available for 28 countries only.

• New data for Madeira Islands (PT) were added into CLC 1990 and CLCC (1990, 2000). Still missing CLC 1990 data: AL, BA, CH, CY, FI, IS, MK, NO, SE, TR, UK and XK.

The seamless European database has been further improved addressing feedback from the EEA on V13 (V3):

• No-data buffer (code 999) outside of valid data area was deleted.

• Small gaps identified in V13 were corrected by tolerance adaptation in ArcGIS v10 geodatabase.

• Remaining neighbour polygons with the same code were resolved by additional dissolve operation.

Version 13 (V3)

Release date: 02/2010

Main purpose: Publication of initial European coverage of CLC 2006 data.

Changes from previous release (V2):

• Version numbering was changed to harmonise vector data (V3) and derived raster data (V13) releases.

• First seamless release in ESRI Geodatabase format.

• Initial coverage of CLC 2006 including 35 countries and Northern Ireland (part of the UK). Missing countries in CLC 2006: GR, CH, TR and the UK (except Northern Ireland).

• Two updates added to CLC 2000: a new version for NO and the first CLC dataset for TR.

• Sea buffer around land has been introduced (15 km as proxy to 12 nautical miles' sea zone).

Version 2 (V2)

Release date: 09/2009

Main purpose: Publication of final CLC 2000 coverages.

The 2nd CLC inventory for the reference year of 2000 (CLC 2000) was carried out in the frames of I&CLC 2000 project. A single date Landsat-7 ETM satellite imagery taken in 1999-2001 was provided by JRC. The technology of drawing the interpretation on transparencies was discarded and replaced by CAPI (computer-assisted photo-interpretation). Prior to mapping changes CLC 1990 data had to be corrected: 1) bulk geometric mistakes removed and residual geometric errors >100 m and coding mistakes were corrected; 2) polygons smaller than the 25 ha MMU were generalised. European QC was conducted by visiting national teams (usually at the start and towards the end of the project). Computer-assisted verification has provided written, geo-located explanations regarding the mistakes and supported harmonized production of the database all over Europe.

Changes from previous release (V1):

• It was to deliver a single seamless layer, but was not feasible in ESRI environment. Therefore, seamless ESRI ArcInfo Librarian map tiles were produced again (but free of tiling artefacts reported in V1).

• New country deliveries integrated into European CLC 2000 ME, RS (incl. XK), IS and NO. Simple harmonization along national borders of these countries was done (small artefacts cleaned only).

• CLC 2000 data for MT have been updated to reflect changed geometry in CLC 2006 delivery.

• The dissemination and use of products was defined in an agreement between the EEA, the EC and the participating countries.

Version 1 (V1)

Release date: 08/2005

Main purpose: Publication of initial European coverage of CLC 2000 and CLCC (1990, 2000) data.

Changes from previous release (V0):

• The first consolidated version of European CLC data have been produced as integrated and harmonised seamless layer in ESRI ArcInfo Workstation Librarian map tiles.

• The production of the first CLCC database has started, but no consolidated methodology was available.

• Initial CLC 2000 coverage included 32 countries: AL, AT, BE, BA, BG, CY, CZ, DE, DK, EE, ES, FI, FR, GR, HR, HU, IE, IT, LV, LI, LT, LU, MK, MT, NL, PL, PT, RO, SI, SK, SE and the UK. Missing countries in CLC 2000: CH, IS, ME, NO, RS (including XK) and TR.

• CLC 1990 for most of the countries has been replaced by revised CLC 1990. Some additional countries have produced CLC 1990. Still missing in CLC 1990 European coverage: CY, LI, MT, SE and UK.

• Full harmonization (visual re-interpretation by keeping the 25 ha MMU) inside a 5-km wide strip along national borders was done including 32 countries for CLC 2000 and 24 countries for CLCC (1990, 2000).

• Semi-automatic harmonisation of 2-km wide strip along national borders was done for CLC 1990.

• Vector to raster conversion: “cell centre” method was applied.

• The 25 ha MMU is considered as hard limit. Polygons <25 ha were generalised.

• Dual ownership of CLC and CLCC data (EEA and the country) was introduced.

Version 0 (V0)

Release dates: up to 12/2000

Main purpose: Distribution of country-level CLC 1990 data and creation of European raster products.

The period of the first CLC inventory was rather long (1985-1996) and 1990 is considered as reference year. CLC 1990 data delivered by countries became part of GISCO database. Releases were provided bi-annually. Following political changes in Central and Eastern Europe 10 additional countries joined. The methodology was visual photointerpretation by drawing the CLC map on transparency, placed on top of satellite image hardcopy at scale 1:100.000.

• CLC 1990 vector and raster data were initially available for 12 countries: AT, BE, DE, DK, ES, FR, GR, IE, IT, LU, NL and PT. Raster only data were available for FI and UK.

• The EC Phare programme supported the implementation of CLC 1990 in 11 countries of Central and Eastern Europe between 1992 and 1998: BG, CZ and SK, EE, LV, LT, HU, PL, RO and SI.

• Integrated European vector dataset was available as ESRI ArcInfo Librarian and derived raster products as ESRI grids in 100m and 250m resolution.

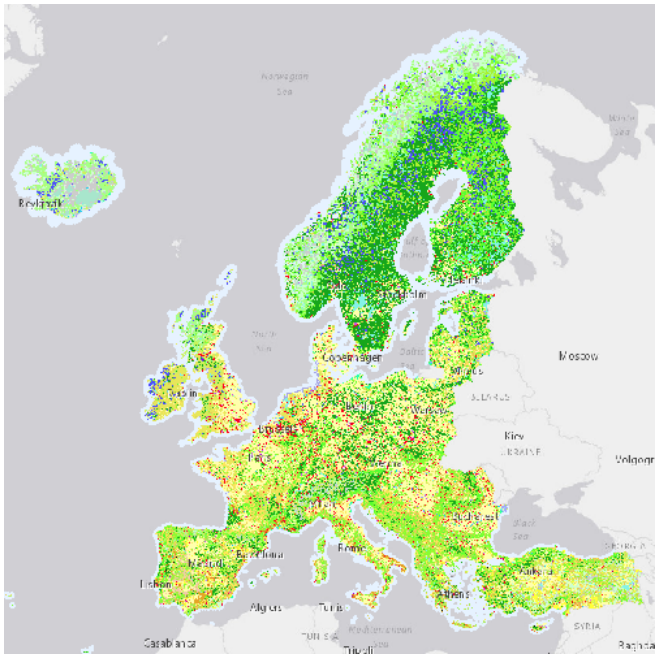
• Data dissemination policy was unclear.

Metadata

File identifier	50240990-015a-47f0-863b-b131412c9047 XML
Metadata language	English
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Hierarchy level	Dataset
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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



Provided by

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