EEA geospatial data catalogue

Natural Earth I world cover with shaded relief, water, and drainages - version 1.3, January 2011

Natural Earth is a public domain map dataset available at 1:10m, 1:50m, and 1:110 million scales (1:10m version is stored in the EEA-SDI). Featuring tightly integrated vector and raster data, with Natural Earth one can make a variety of visually pleasing, well-crafted maps with cartography or GIS software. Natural Earth was built through a collaboration of many volunteers and is supported by NACIS (North American Cartographic Information Society), and is free for use in any type of project.

This dataset is composed of satellite-derived land cover data and shaded relief presented with a light, natural palette suitable for making thematic and reference maps.

Simple

Date (Creation)	2011-01-31
Edition	01.03
Citation identifier	ne_r_4326_60_arcsec_ne1-hr-lc-sr-w-dr_p_2011_v01_r03

Point of contact

No information provided.

GEMET - INSPIRE themes, version 1.0	• Administrative units • Hydrography
Keywords	
Keywords	
Spatial scope	• Global
GEMET	• geography
EEA topics	• Water
Use limitation	All versions of Natural Earth raster + vector map data found on this website are in the public domain. You may use the maps in any manner, including modifying the content and design, electronic dissemination, and offset printing. The primary authors, Tom Patterson and Nathaniel Vaughn Kelso, and all other contributors renounce all financial claim to the maps and invites you to use them for personal, educational, and commercial purposes. For further clarification pease see: https://www.naturalearthdata.com/about/terms-of-use/
Access constraints	Other restrictions
Other constraints	no limitations to public access
Spatial representation type	Grid
Distance	0.016666667 deg
Language of dataset	English
Character set	UTF8
Topic category	• Imagery base maps earth cover

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Begin date	2011-01-01T00:00:00
End date	2011-12-31T00:00:00
Coordinate reference system identifier	EPSG:4326
Distribution format	• GeoTIFF ( )

OnLine resource

Protocol	Linkage	Name
EEA:FOLDERPATH	https://sdi.eea.europa.eu/webdav/datastore/public/ne_r_4326_60_arcsec_ne1-hr-lc-sr-w-dr_p_2011_v01_r03/	
WWW:URL	https://sdi.eea.europa.eu/data/8d75bac9-3773-4c1e-97dc-3a4825a601f0	Direct download
WWW:LINK-1.0-http--link	https://www.naturalearthdata.com/downloads/	Natural Earth data downloads

Hierarchy level	Dataset

Conformance result

Date (Publication)	2010-12-08
Explanation	See the referenced specification

Statement

Extracted from http://www.shadedrelief.com/natural/pages/indepth.html

Part 2: Data sources

a) Landcover - Natural Earth landcover derives primarily from Moderate Resolution Imaging Spectroradiometer (MODIS) Vegetation Continuous Fields (VCF), a 500-meter resolution product of the University Maryland, Global Land Cover Facility. NASA's Terra satellite collects the raw data from which MODIS VCF derives.

MODIS VCF is comprised of three data channels, forest, herbaceous, and bare. Assigning flat colors (dark green for forest, light green for herbaceous, and gray for bare) to these channels, which blend into one another, creates an image of Earth that appears natural. To give the bare channel more visual interest (i.e. tonal modulation), a lightened and recolorized version of NASA's Blue Marble image substitutes for flat gray in desert and highland areas, which appear reddish-brown and gray-blue respectively.

For a full discussion of natural-color mapping techniques refer to this article [http://www.shadedrelief.com/shelton/].

Other data used in Natural Earth include:

b) Shaded relief - Downsampled SRTM30 with void-filling enhancements by Natural Graphics, except for Antarctica which derives from GTOPO30.

c) Bathymetry - ETOPO2 obtained from NOAA's National Geophysical Data Center website. Note: only the downsampled (10,800 x 5,400) version of Natural Earth uses bathymetry.

d) Glaciers and Antarctic ice shelves - Digital Chart of the World (DCW) 1:1,000,000-scale vector data originally developed by the US National Geospatial Agency (formerly DMA and, more recently, NIMA). Antarctic ice tones derive from Blue Marble. Greenland ice tones are blue-tinted shaded relief.

e) Arctic pack ice - Digitized from the CIA's Polar Regions Atlas, 1978, page 12. The stylized ice boundary depicts estimated absolute minimum sea ice extent, a theoretical concept rather than an observable geographic location. Use the pack ice overlay only for small-scale and generalized map presentations.

f) Seas, lakes, and rivers - Extracted from MODIS VCF. The eastern one-third of Iceland, arctic areas north of 80 degrees, all of Antarctica, and many mid-ocean islands are not included in the dataset. The water boundary accompanying GTOPO30 elevation data substitutes in the areas not covered by MODIS VCF.

g) International boundaries - ESRI Shapefile provided by the Office of the Geographer, US Department of State. Boundary representation is not necessarily authoritative.

h) AVHRR urban - Extracted from 1-kilometer resolution Global Land Cover Characteristics Data Base Version 2.0 distributed by the USGS.

i) MODIS urban - Extracted from 1-kilometer resolution Binary MOD12Q1 data (a MODIS-based product) obtained from Boston University, Department of Geography.

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Part 3: Data issues

Of the nearly 525 million pixels that comprise Natural Earth, not all are perfect. Although created from satellite data, Natural Earth is a derivative graphical product that includes manual touchups. Use it accordingly.

The following are potential areas of concern for users.

a) Incomplete MODIS VCF landcover coverage - The eastern one-third of Iceland, arctic areas north of 80 degrees, all of Antarctica, and numerous ocean islands including Hawaii, Vanua Levu (Fiji), and the Shetland and Faroe Islands are missing from the data set.

b) Filling the voids in MODIS VCF landcover involved several methods. Polar areas where little vegetation grows were the easiest to manage. Working backward from water and glacier coverages obtained from other sources, all unglaciated terrestrial areas received a bare classification and gray coloration. For eastern Iceland, where measurable vegetation exists, Binary MOD12Q1 landcover substituted for the missing MODIS VCF to show the herbaceous tundra as a pale green tint.

c) Coloring small oceanic islands (most are only a few pixels wide) involved cloning landcover colors from nearby land areas with similar climate and vegetation characteristics. Manual painting in Photoshop using printed vegetation maps as a guide further enhanced the larger Hawaiian Islands.

d) Discolored pixels - Pixels with unexpected colors (typically red-brown and gray) fringe some ocean shorelines and interior water bodies that fluctuate in size, a by-product of merging MODIS VCF and Blue Marble datasets. Filtering and manual cloning with the Clone Tool (rubber stamp) in Photoshop eliminated most of the discoloration.

e) Snow removal - Another unwanted by-product of merged MODIS VCF and Blue Marble data was the appearance of patchy snow in the southern Andes and adjacent Patagonia between 35 and 45 degrees south latitude. Natural Earth depicts glaciers but not temporary snow cover. Sampling landcover colors from adjacent areas free of snow and painting in Photoshop removed the snow. The dramatic shaded relief of the Andes largely obscures this fix.

f) Ghosted shaded relief - The Blue Marble image contains embedded shaded relief. In desert and highland areas on Natural Earth, a faint impression of the shaded relief is visible where recolorized and lightened Blue Marble contributes to the landcover.

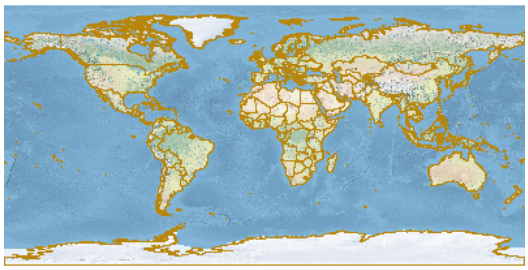
g) Polar areas - Reflecting the accuracy of the global datasets from which it derives, the resolution and general quality of data in polar regions on Natural Earth is less than that of other areas of the world.

	h) Water - Only the largest rivers appear on the water layer provided with Natural Earth, discontinuously. The Aral Sea, Lake Chad, and Great Salt Lake look too large.

Metadata

File identifier	8d75bac9-3773-4c1e-97dc-3a4825a601f0 XML
Metadata language	English
Character set	UTF8
Hierarchy level	Dataset
Date stamp	2024-02-19T14:17:27.727Z
Metadata standard name	ISO 19115/19139
Metadata standard version	1.0
Metadata author	**Organisation name** / **Individual name** / **Electronic mail address** / **Website** / **Role** European Environment Agency / / sdi@eea.europa.eu / / Point of contact

Overviews



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