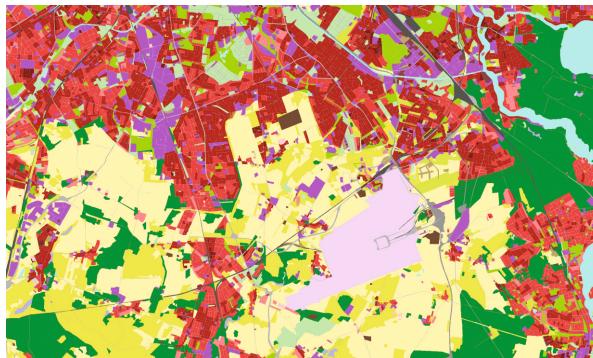


Sample extracts of UA2006 (a), UA2012(b) and UA2006-2012 change layer (c) over the South Berlin area, highlighting the increased thematic detail in the rural areas of urban fringes as well as recent changes, in casu the new airport development.



(a)



(b)



(c)

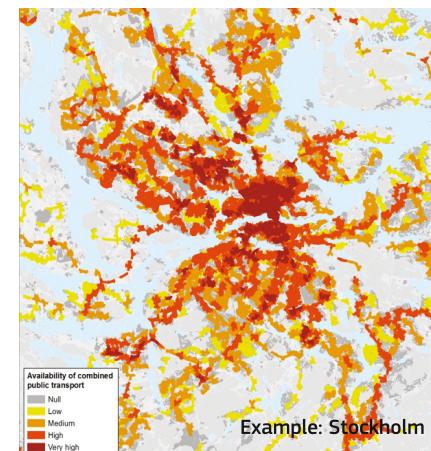
For comments or questions regarding the Urban Atlas, please send an e-mail to: REGIO-GIS@ec.europa.eu or use the online form at: <http://land.copernicus.eu/contact-form>.

Proximity of green urban areas



Results: urban population distribution graphs by surface of green areas in the neighbourhood, or population-weighted median surface of neighbouring green urban areas.

Benchmark of accessibility to public transport using UA and Google transport data



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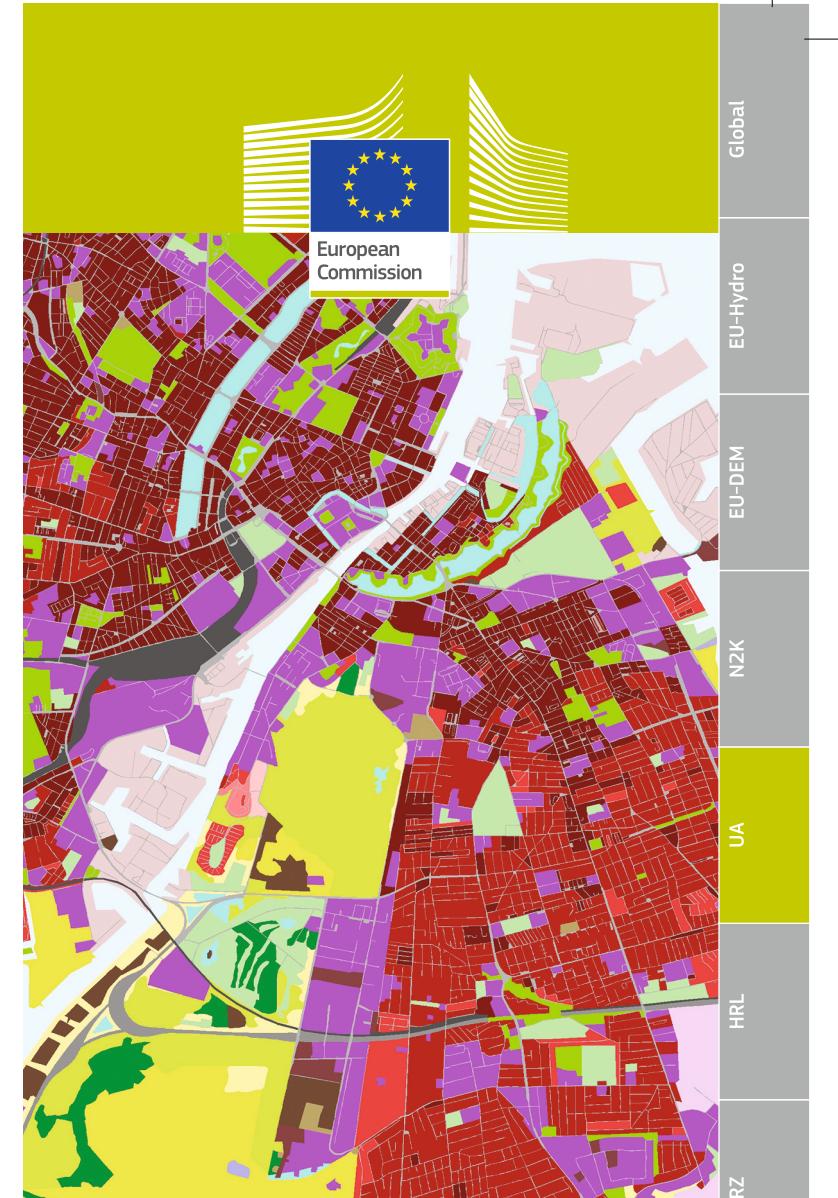
<http://land.copernicus.eu>
<http://copernicus.eu>
<http://www.eea.europa.eu>
http://ec.europa.eu/regional_policy/index_en.cfm



European Environment Agency



May 2017



Copernicus Land Monitoring Service – Local Component: Urban Atlas



HR-VHR Mosaics

Introduction

The Urban Atlas was the first in a series of land monitoring services on so called “hot spots”. It is the first service to create harmonised land cover and land use maps over several hundreds of cities and their surroundings in the European Union and EFTA countries. The Urban Atlas (UA) goes hand in hand with the Urban Audit, in which the European Commission's Directorate General Eurostat collects a wide range of social and economic indicators. The Urban Atlas adds a spatial component to the statistical data, which enables comparison of urban spatial patterns across Europe. In its first exercise, based on Very High Resolution imagery from the reference year 2006, it covered 305 Functional Urban Areas (FUA), typically including cities in Europe with more than 100.000 inhabitants. For the reference year 2012, DG REGIO decided to extend the exercise to nearly 700 larger cities in the EU28 and EFTA countries, thereby applying the commonly agreed nomenclature between the EC and the OECD on definitions of urban areas for the delineation of the areas of interest. The Urban Atlas is about to be extended to cover West Balkan countries and Turkey by early 2018. The Urban Atlas is mainly based on the combination of (statistical) image classification and the visual interpretation of Very High Resolution satellite imagery. Multispectral SPOT 5 & 6, and Formosat-2 pan-sharpened imagery with a 2 to 2.5m spatial resolution is used as input data. The built-up classes are combined with density information on the level of sealed soil derived from the High Resolution Layer imperviousness to provide more detail in the density of the urban fabric. Finally, the Urban Atlas product is complemented and enriched with functional information (road network, services, utilities etc...) using ancillary data sources such as local city maps or online map services.

With 17 classes, the UA2006 focused only on urban areas. As the rural fringe was considered less important, it was represented by just four classes. Feedback from the user community and better insight into the role of the urban fringe in the urban growth processes have led to an extension of the nomenclature for UA2012 to a total of 10 agricultural and semi-natural classes. From 2012 onwards, it also became possible to include a change layer, at least for those FUAs already included in 2006. Furthermore UA2012 has been enriched with a so called street tree layer, i.e. an automated classification of trees along the roads, in parks and gardens.

Most cities have more and more detailed information at local level.

However, the added-value of the Urban Atlas is that it provides harmonised information across all of the mapped FUAs. Local authorities and policy-makers can compare their own city with others across the EU. Having a harmonised information source on spatial patterns in urban areas helps in monitoring urban policies across Europe. It can serve as a tool for comparative benchmarking between European cities. For European policies, the Urban Atlas provides a better insight into cities and their structure, thus facilitating evidence-based policy-making. This is critical for identifying and underpinning the most appropriate European policy initiatives in the urban domain, in areas ranging from public transport infrastructure development over flood risk assessments to understanding the urban ecosystem and many more.

Characteristic	Ua2006	Ua2012
Nr. of FUAs	305	695
Total area	640.500 km ²	1.015.600 km ²
Minimum Mapping Unit (MMU)	0.25ha in urban areas, 1 ha in rural areas	0.25ha in urban areas, 1 ha in rural areas
Min. Mapping Width	10m	10m
MMU change layer		Class 1 to class 1 = 0.1 ha Class 2 - 5 to class 1 = 0.1 ha Class 2 - 5 to Class 2 - 5 = 0.25 ha Class 1 to Class 2 - 5 = 0.25 ha
Positional accuracy	+/- 5m	+/- 5m
Nr. of classes	21	27
Min. overall accuracy for “artificial surfaces” classes	85%	85%
Min. overall accuracy (all classes)	80%	80%

The Urban Atlas is a Copernicus land monitoring service, a joint initiative of the Directorate-general for Regional Policy and the Directorate-general for Enterprise and Industry, with the support of the European Environment Agency.

Urban Atlas	2006	2012
Legende Code	Nomenclature	
11100	Continuous Urban Fabric (S.L.>80%)	
11210	Discontinuous Dense Urban Fabric (S.L.: 50% - 80%)	
11220	Discontinuous Medium Density Urban Fabric (S.L.: 30%-50%)	
11230	Discontinuous Low Density Urban Fabric (S.L.:10%-30%)	
11240	Discontinuous Very Low Density Urban Fabric (S.L.<10%)	
11300	Isolated Structures	
12100	Industrial, commercial, public, military and private units	
12210	Fast transit roads and associated land	
12220	Other roads and associated land	
12230	Railways and associated land	
12300	Port areas	
12400	Airports	
13100	Mineral extraction and dump sites	
13300	Construction sites	
13400	Land without current use	
14100	Green urban areas	
14200	Sports and leisure facilities	
20000	Agricultural + Semi-natural areas + Wetlands	
21000	Arable land (annual crops)	
22000	Permanent crops	
23000	Pastures	
24000	Complex and mixed cultivation patterns	
25000	Orchards	
31000	Forests	
32000	Herbaceous vegetation associations	
33000	Open spaces with little or no vegetations	
40000	Wetlands	
50000	Water bodies	