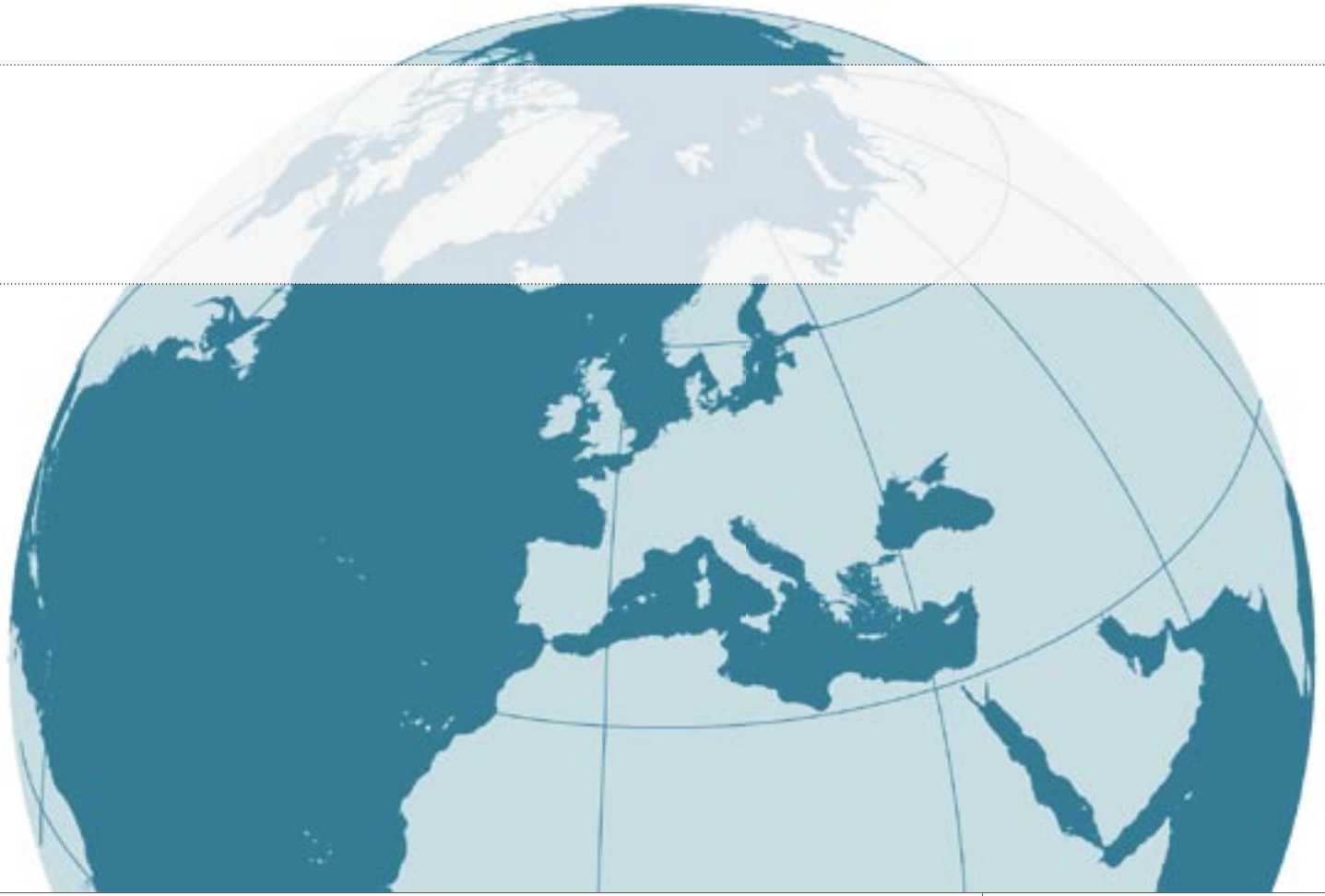
Corine Land Cover 2000

Mapping a decade of change

European Environment Agency



Corine Land Cover 2000 (CLC2000) is produced by the European Environment Agency (EEA) and its member countries in the European environment information and observation network (Eionet). It is based on the results of IMAGE2000, a satellite imaging programme undertaken jointly by the Joint Research Centre of the European Commission and the EEA.

From satellite data to environmental information in your neighbourhood

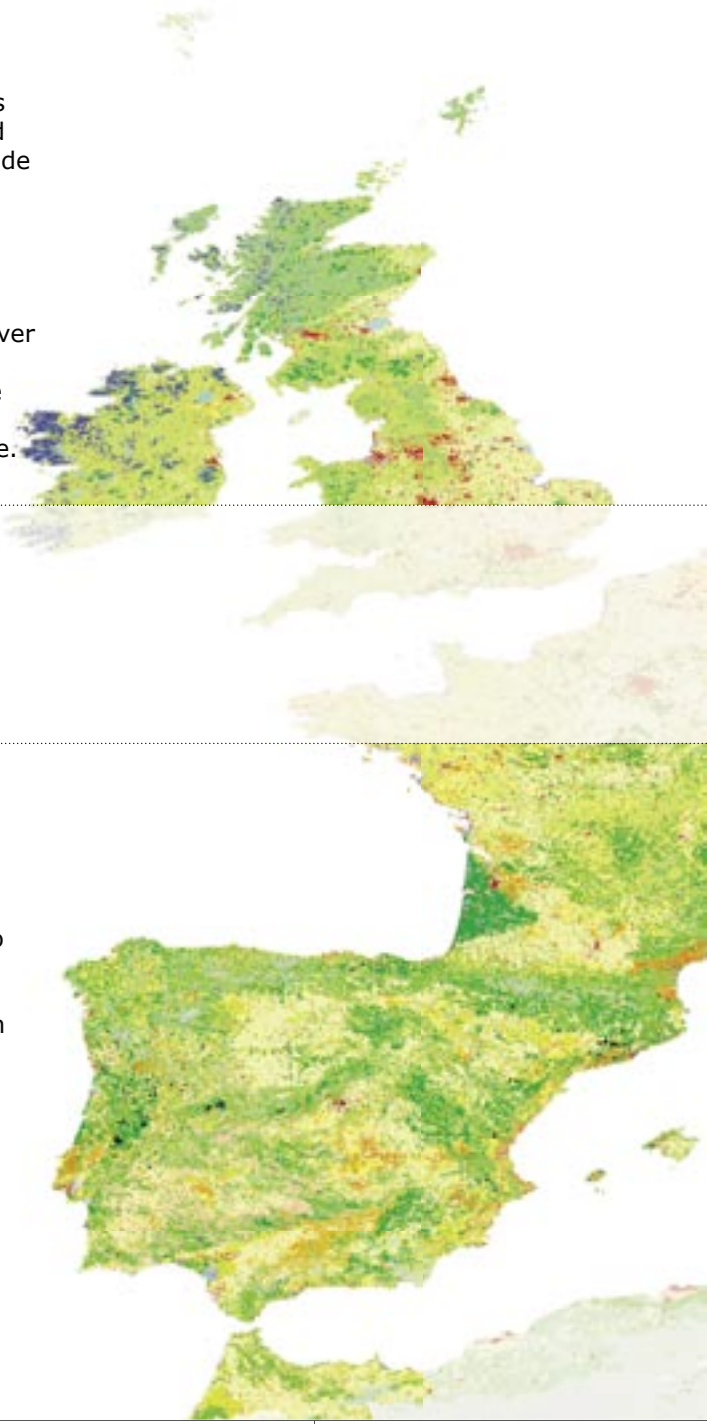
Extract from IMAGE2000 Denmark showing the Greater Copenhagen Area (based on Landsat 7 ETM+ ©ESA 2000 distributed by Eurimage)

Corine Land Cover 2000

Mapping a decade of land cover changes

Corine Land Cover 2000 (CLC2000) is an update for the reference year 2000 of the first Corine Land Cover database which was finalised in the early 1990s as part of the European Commission programme to COoRdinate INformation on the Environment (Corine). It provides consistent information on land cover and land cover changes during the past decade across Europe.

CLC2000 is based on the photo-interpretation of satellite images by the national teams of the participating countries. The resulting national land cover inventories are further integrated into a seamless land cover map of Europe. The resulting European database is based on standard methodology and nomenclature.



CLC2000 shows the land cover changes in ecosystems such as forests, lakes, pastures etc. and the impact of human activities (such as housing, food production, transport etc.) on land use. Forty-four land cover classes are used to map changes over time, all of which tell their own story of how decisions made across Europe have led to alternations in the landscape.

THE PRODUCT

Corine Land Cover provides consistent information on land cover and land cover changes across Europe. Today 29 countries and over 100 organisations are involved in the production and dissemination of the CLC2000 data.

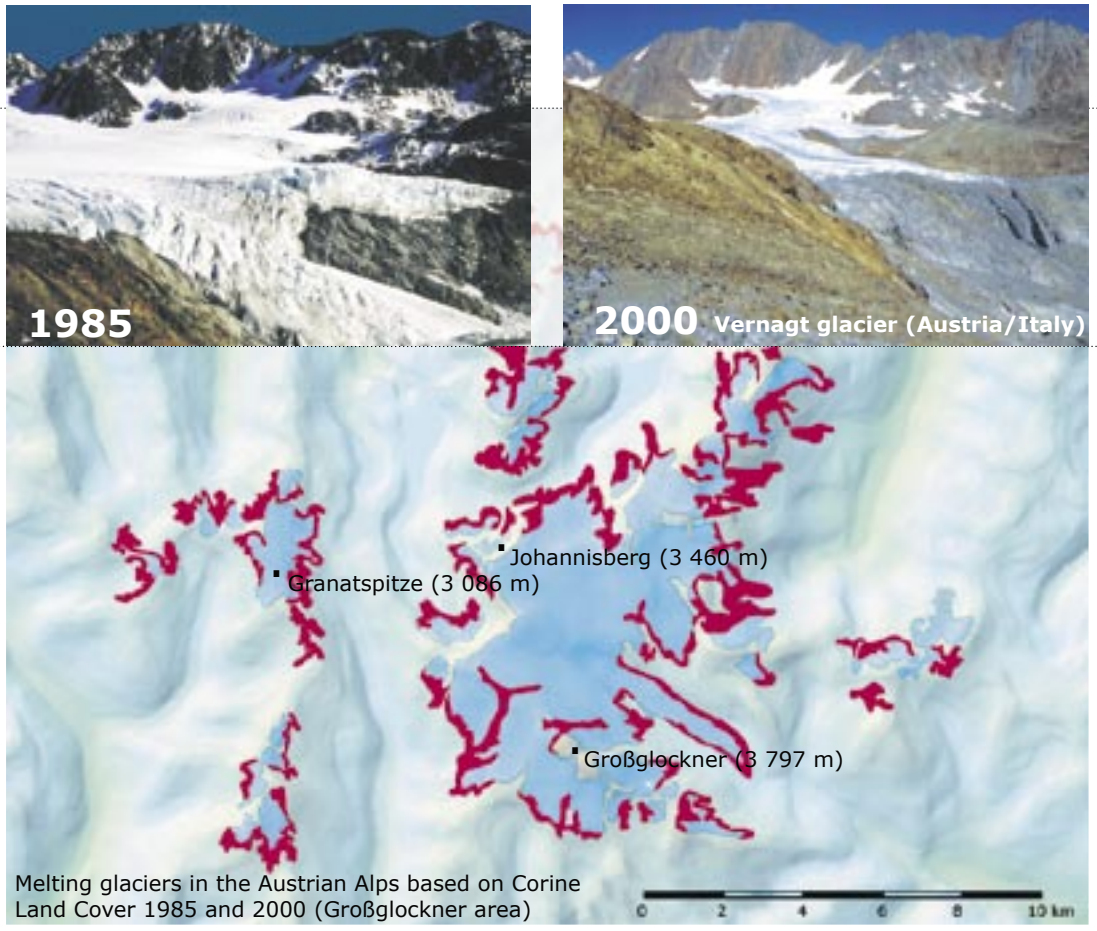
Corine Land Cover map Europe

Tackling climate change

Assessing the impacts of climate change

Since 1980, Alpine glaciers have lost about 20–30 % of their remaining ice. It is likely that by 2035 one half, and by 2050 as much as three quarters, of the present-day glaciers in Switzerland will have disappeared. Glacier retreat might have adverse impacts on regional water resources.

Source text: 'Impacts of climate change in Europe: An indicator-based assessment', EEA, 2004 (http://reports.eea.eu.int).



Melting glaciers in the Austrian Alps based on Corine Land Cover 1985 and 2000 (Großglockner area)

GLOBAL

Most European glaciers are retreating and losing mass and extent. Information on changes in the extent of glaciers and perpetual snow can be extracted from Corine Land Cover data.

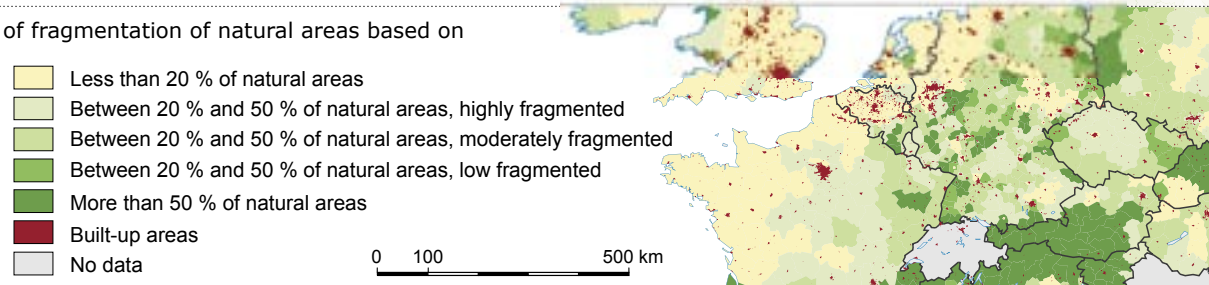
Sustainable spatial development

Mapping territorial diversity in an enlarged Europe

'… it is no less important to prevent any further deterioration of the environment in natural or semi-natural areas where human activity is progressively encroaching or which are being abandoned and becoming either increasingly fragmented or lacking protection for their natural resources. These aims, in consequence, need to be an integral part of economic development strategy across the EU to ensure that development is sustainable.' Corine Land Cover data is used to map the degree of fragmentation of natural areas.

Source text and map: Third Report on Economic and Social Cohesion: 'A New Partnership for Cohesion', CEC Regional Policy, February 2004 (http://europa.eu.int/comm/regional_policy).

Territorial diversity — degree of fragmentation of natural areas based on Corine Land Cover



Land fragmentation (the Netherlands)

A tool to assess the effectiveness of agricultural policy

Landscape, land cover and land use are identified as important components of the agri-environmental indicators listed in the Commission's Communication to the European Parliament 'Statistical information needed for indicators to monitor the integration of environmental concerns into the common agricultural policy' (COM(2001)144). With the help of the CLC2000 data, it will become possible to analyse the impact on the agricultural rural landscape of different reforms since the early 1990s. Changes in diversity are compared between 1990 and 2000. Negative developments are highlighted in red whereas the positives are highlighted in green. On average, the index diversity increased by 0.4 % over the past decade (Shannon index[1], preliminary results).

Source text and map: 'Temporal development of landscape indicators', joint publication JRC, DG AGRI, DG ENV, Eurostat, DG RTD, EEA (in preparation for 2005).

Changes of countryside diversity (changes 1990–2000 as % of 2000)

Agricultural land with natural vegetation (UK)

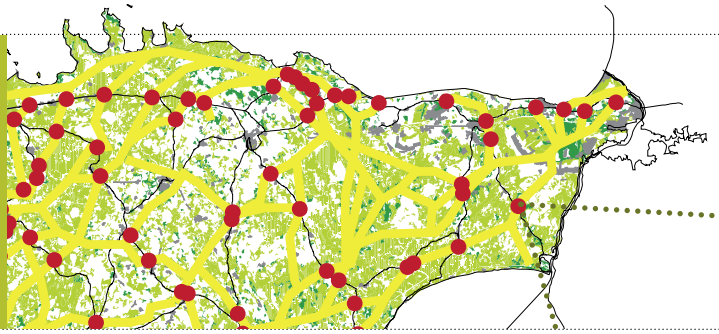
[1] Shannon index = quantifies the diversity of the countryside based on two components: richness and evenness.

Halting loss of biodiversity

Designing future green corridors

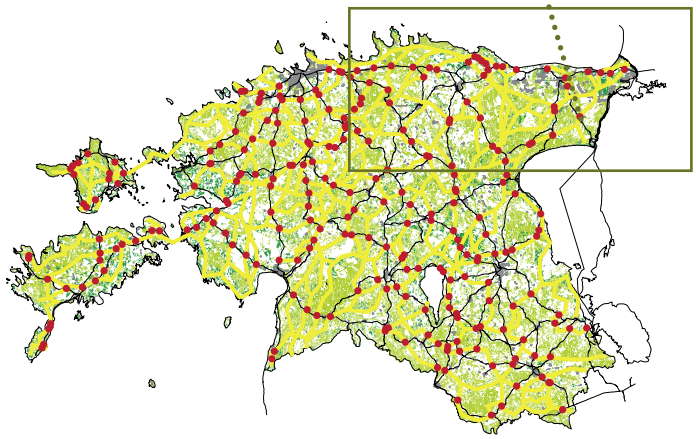
'*Over the past 20 years the number of passenger cars in Estonia increased more than three times. Impacts of transport infrastructure development are for example the direct loss of habitat, its fragmentation and the degradation of the habitat quality*'. CLC2000 is used in Estonia in association with other datasets to develop the 2010 Green Network, which illustrates the development of an ecological corridor network to reduce the possible conflicts between animal movements and traffic. The ultimate objective of the Green Network is to guarantee sustainable development for the whole country.

Source text and maps:
Klein, L., Estonian Environment Information Centre, 2004; Sepp, K., Jagomägi, J., Kaasik, A., Gulbinas, Z., Nikodemus, O., 2001. National Ecological Networks in the Baltic Countries. In: Hedegaard, L. and Lindström, B. (eds), North European and Baltic Sea Integration Yearbook 2002, Jongman, R. H. G., Pungetti, G., Ecological Networks and Greenways Concept, Design, Implementation, 2004, ISBN: 0521827760.



Elks on the road (Estonia)

- Possible conflict points of migratory network and basic road
- Possible migratory network for species living in broad-leaved forest
- Broad-leaved forest
- Artificial surfaces
- Coniferous and mixed forest



Estonia 2000 potential conflicts

- Core areas of international importance
- Core areas of national importance
- Protected areas
- Main road cutting into a core area
- Main 'green corridors'
- Areas with intense impact of human activity

Estonia 2010 Green Network

NATIONAL

CLC2000 is used in Estonia in association with other datasets to develop the 2010 Green Network

Protecting human health and quality of life

Mapping the impact of environmental disasters

Many coastal ecosystems (dunes, sand and pebble beaches, cliffs, etc.) were damaged by the *Prestige* disaster in 2002. More than 1000 beaches in Spain alone were covered by oil tides, from which more than 20 % still remain affected. Specially protected areas can also be found among the coastal ecosystems affected to help assess the impact of the disaster on the Atlantic coastal environment. Corine Land Cover data was used in association with socio-economic data such as fishery, demography, and employment.

Source text and map: 'Mapping the impacts of recent natural disasters and technological accidents in Europe', EEA, 2004 (http://reports.eea.eu.int).

Cleaning work on the Galician coast (Spain)

Impact of *Prestige* accident on the coastal environment

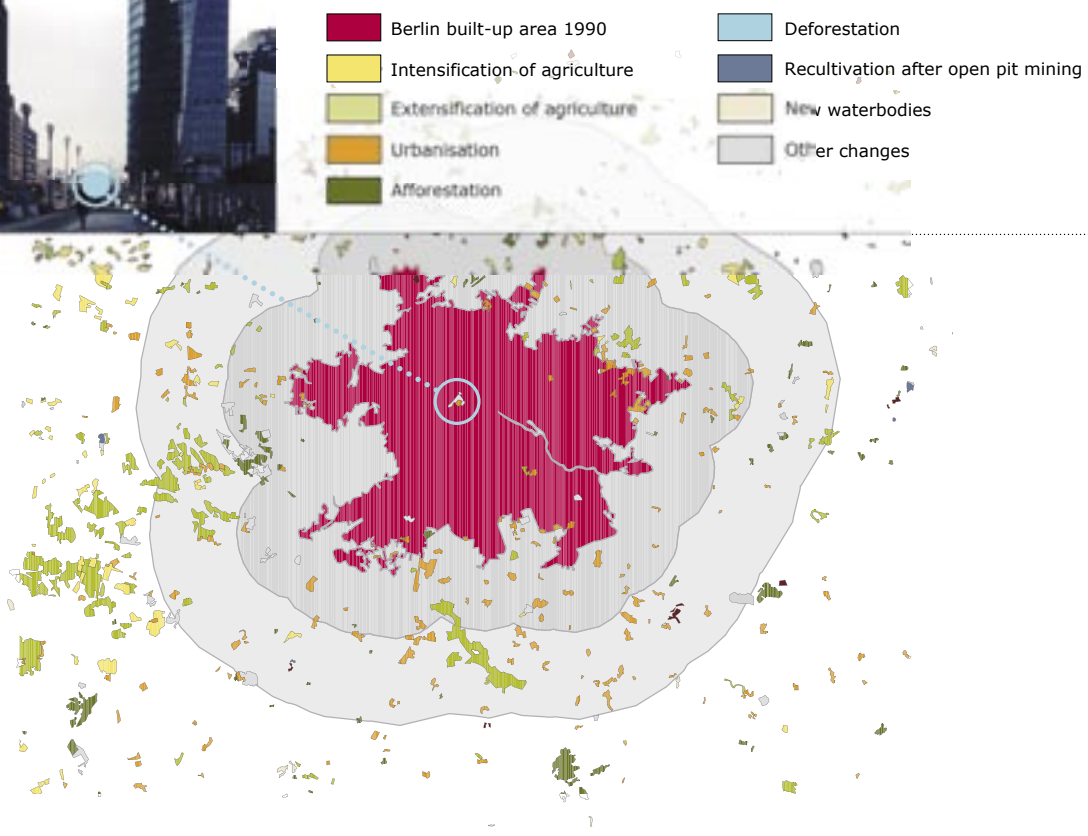
Monitoring urban development

Since the early 1990s important changes in land use and land cover have been detected and mapped in the new federal states of Germany. These changes partly reflect the political and economic development following German reunification. A significant part of the changes consist of enlargement of settlements and commercial areas associated with new transport infrastructure especially at the periphery of larger towns. Corine Land Cover data was used to map these changes, as shown here for the Berlin region.

Source text and map: CLC2000 in Germany and Europe and its use for environmental applications, UBA/DLR, 2004 (www.umweltbundesamt.de).

Potsdamer Platz, 2000

Land use changes in the Berlin region between 1990 and 2000



Data dissemination

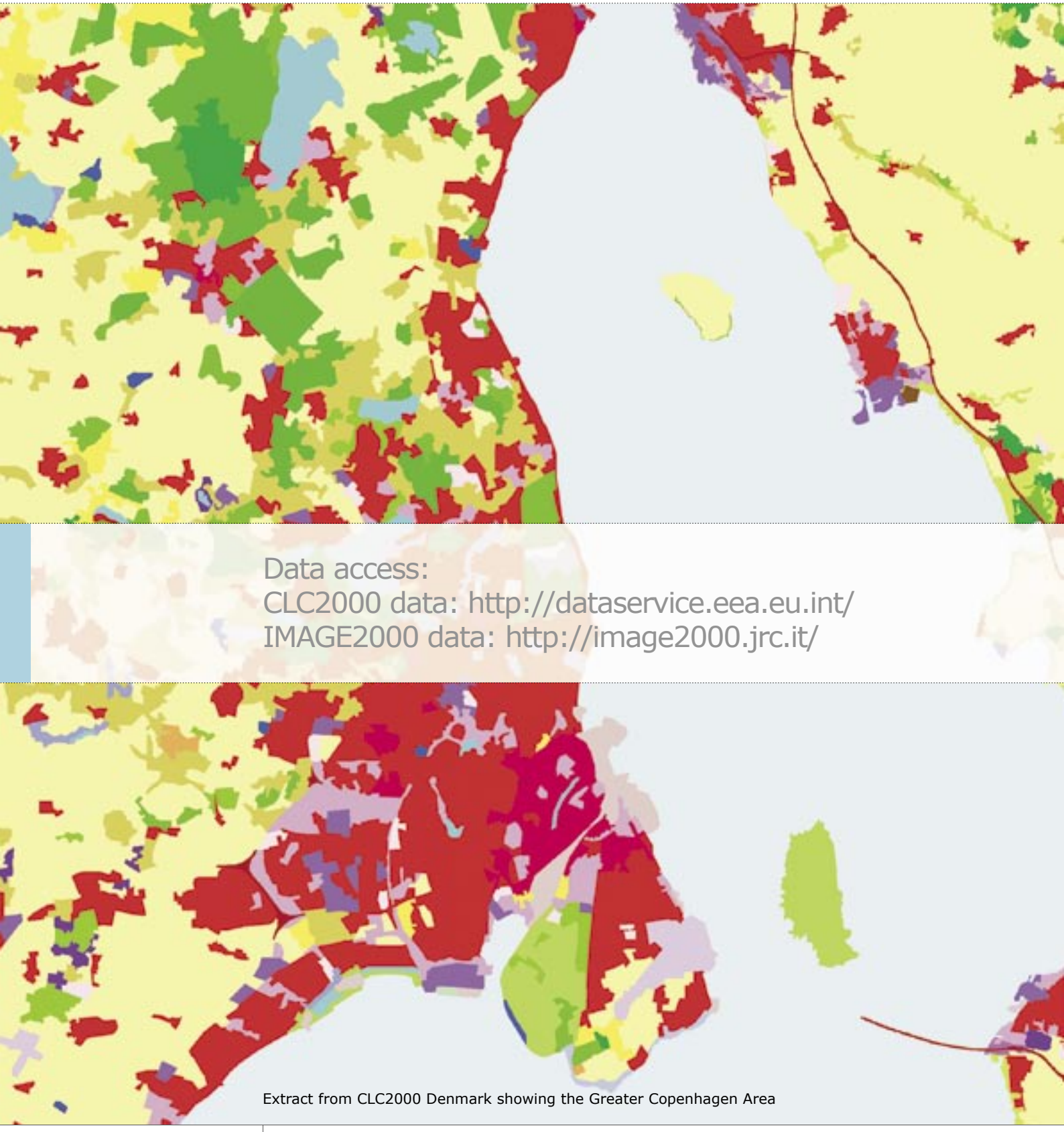
The European environment information and observation network (Eionet) is a partnership network of the European Environment Agency (EEA) and its member and participating countries. It consists of the EEA itself, a number of European Topic Centres and a network of around 900 experts from 37 countries in over 300 national environment agencies and other bodies dealing with environmental information. The Corine Land Cover network is one of the oldest and most active components of Eionet.

National organisations in charge of production and dissemination

Austria	Federal Environment Agency
Belgium	National Geographic Institute
Bulgaria	Bulgarian Executive Environment Agency
Croatia	Ministry of Environmental Protection and Physical Planning
Cyprus	Ministry of Agriculture, Natural Resources and Environment
Czech Republic	Ministry of Environment
Denmark	National Environment Research Institute
Estonia	Estonian Environment Information Centre
Finland	Finnish Environmental Institute
France	French Institute for Environment
Germany	Federal Environmental Agency
Greece	Ministry of Environment Physical Planning and Public Works

Verification of national CLC2000 (Finland)

Hungary	Ministry of Environment and Water
Ireland	Environmental Protection Agency
Italy	Agency for Environmental Protection and Technical Services
Latvia	Latvian Environment Agency
Liechtenstein	Agency for Forest, Nature and Landscape
Lithuania	Environmental Protection Agency
Luxembourg	Ministry of Environment
Malta	Malta Environment and Planning Authority
Netherlands	Alterra
Poland	Chief Inspectorate for Environmental Protection
Portugal	Institute for Environment
Romania	National Institute for Research and Development Danube Delta
Slovak Republic	Slovak Environment Agency
Slovenia	Ministry of the Environment, Spatial Planning and Energy
Spain	National Centre for Geographic Information
Sweden	Lantmäteriet, National Land Survey
United Kingdom	The Natural Environment Research Council



Data access:
CLC2000 data: http://dataservice.eea.eu.int/
IMAGE2000 data: http://image2000.jrc.it/

Extract from CLC2000 Denmark showing the Greater Copenhagen Area

TH-62-04-195-EN-C

Map acknowledgements:
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Page 4: EEA-ETC/TE, 2004 based on Corine Land Cover and on Global land cover map, European Commission JRC, 2003
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Page 10: Lauri Klein, EEIC 2004; National Spatial Plan, MoE 2001, based on Corine land cover map, Estonian base map at original scale 1:50 000
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Page 13: UBA/DLR, 2004 based on Corine Land Cover changes 1990–2000
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