

Landscape assessments: Natura2000 areas

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Introduction

(Theano)

Sustainable production functions of landscape include:

- Economic viable activities
- Ecological stability
- Expression of place of identity
- Historical dynamics
- Recreational activities



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Introduction

Ecological stability is realised when:

- Activities do not pose large pressure on the environment
- No irreversible changes occur

For this, it is important that areas which are considered very valuable, or representative for natural areas and natural landscapes, are protected from human interventions.

Here starts the argument for conservation of natural areas, reserves, landscapes etc.

History of nature conservation

Protected areas are not new

Various sacred places (Greece monasteries, oak trees NL, mountain tops Nepal)

- 1079 New Forest (England)
- 1838 Žofínský prales (Czech Republic)
- 1861 Fontainebleau (France)
- 1872 Yellowstone National Park (USA)
- 1921 Białowieża National Reserve (Poland)
- 1951 Beinn Eighe NNR (Scotland)

Not always for biodiversity...

History of nature conservation

... Early protected areas were often not for wildlife

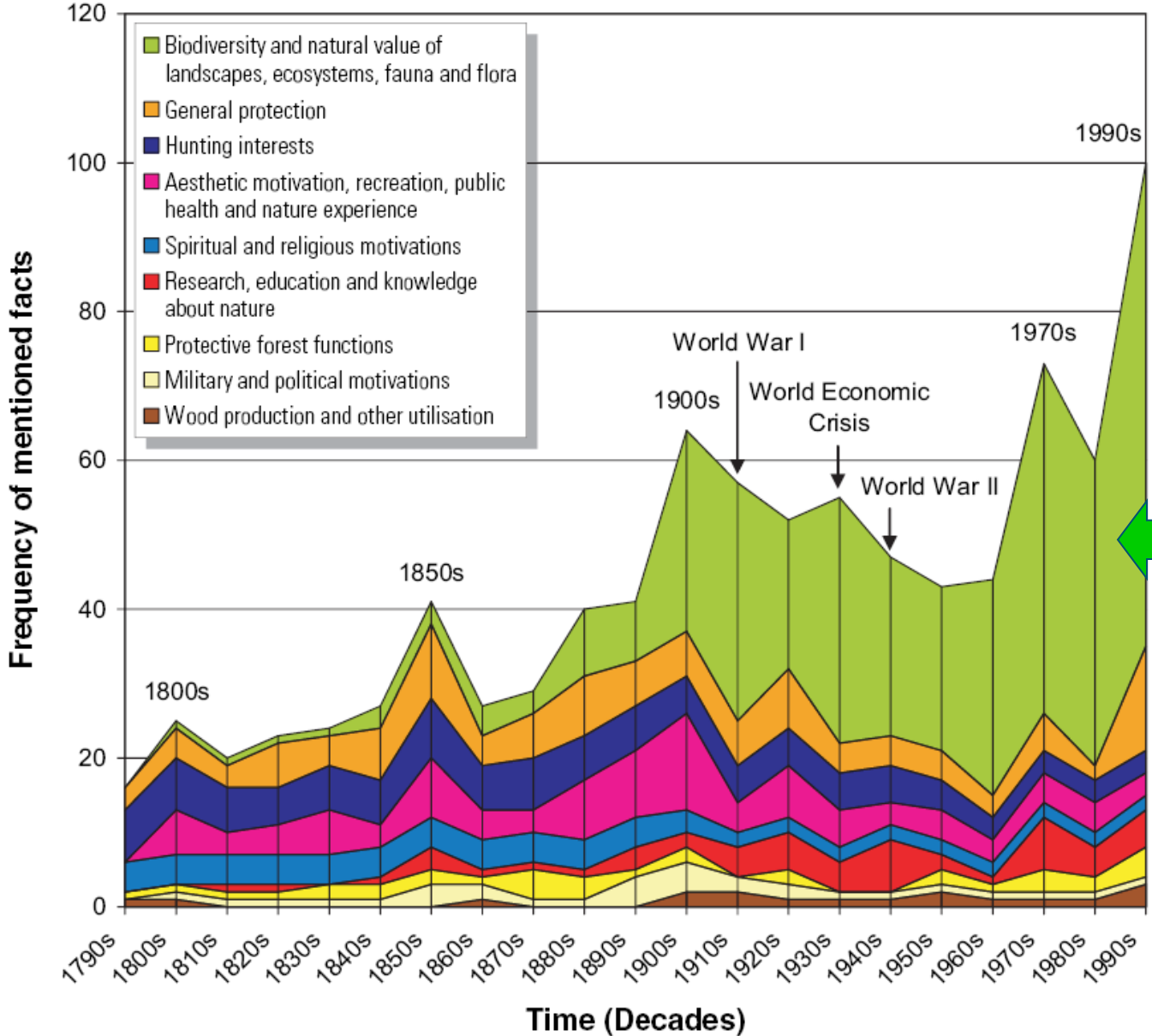
1861

Réserve artistique de
Fontainebleau

(now also Natura 2000)



Un jeune homme dans la forêt de Fontainebleau
Pierre Auguste Renoir (1886)



Motivation for Forest Protection

Biodiversity

Frank *et al* (2007) COST Action E27 Protected Forest Areas in Europe – Analysis and Harmonisation (PROFOR): Results, Conclusions and Recommendations

History of nature conservation

Increasing awareness of Environmental issues

For example-

1963 First IUCN Redlist

Limits to Growth (1970)

United Nations Stockholm conference on the environment (1972) – UNEP starts

1973 First 'oil crisis'

IUCN Red List Categories

Prepared by IUCN Species Survival Commission



THE LIMITS TO GROWTH



THE STOCKHOLM CONFERENCE



ONLY ONE EARTH

AN INTRODUCTION TO THE POLITICS OF SURVIVAL

FRIENDS OF THE EARTH



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History of nature conservation



UNESCO's Man and the Biosphere Programme (1970)



Ramsar Convention (1971)
Protection of internationally important wetlands



Bonn Convention (1979)
Protection of migratory species



Berne Convention (1979)
Conservation of European Wildlife and Natural Habitats



Convention on Biodiversity (1992)
(The Rio 'Earth' summit)



History of nature conservation



In the European Union:

1973 - 1976

The first Environmental Action Programme

1985

Single European Act gave the EU a formal role in environmental issues



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Natura 2000

Birds Directive & Habitats Directive



Birds Directive adopted in 1979 (before the Single European Act) – agreed by all 12 Member States



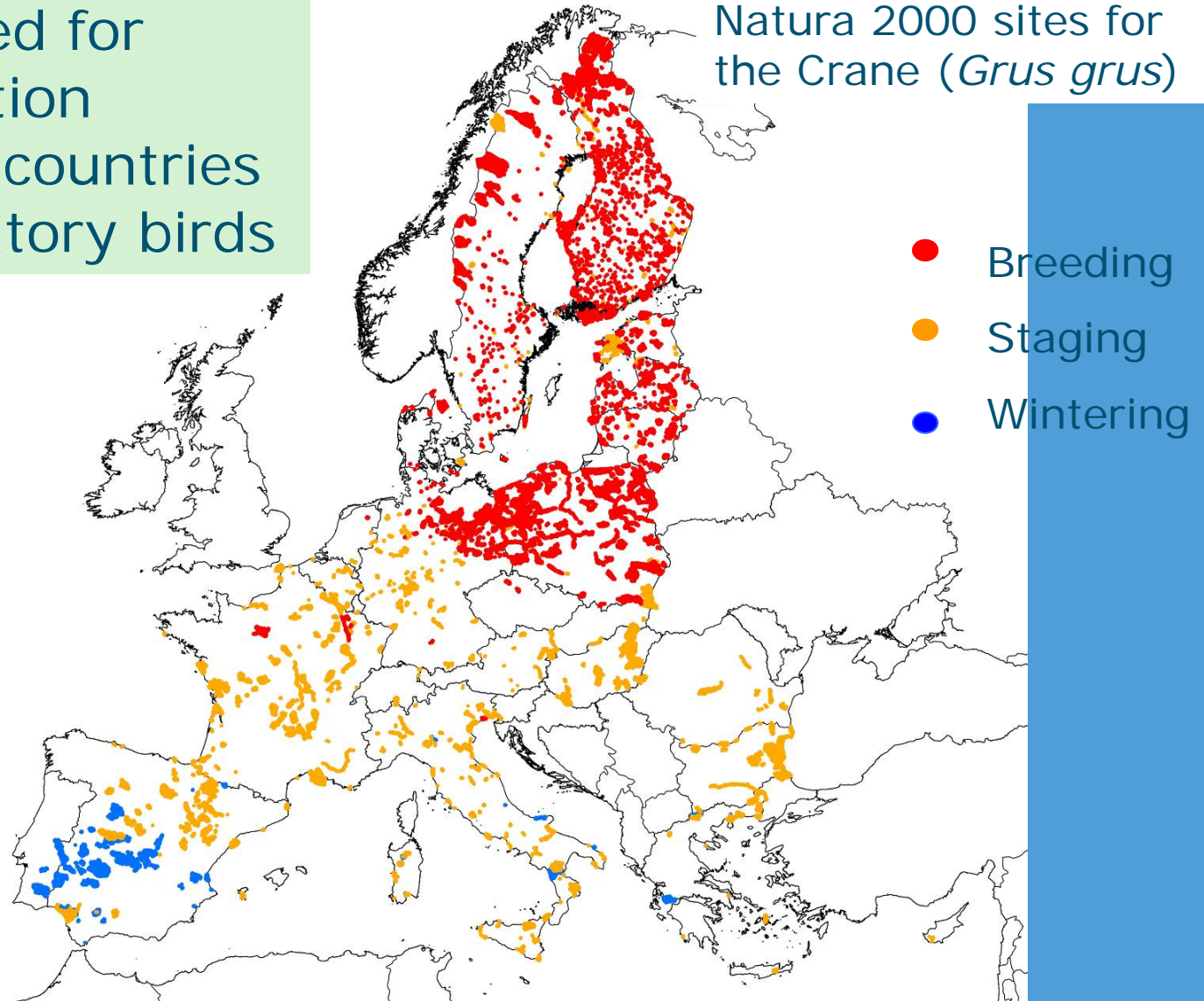
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Natura 2000

Clear need for coordination between countries for migratory birds

Natura 2000 sites for the Crane (*Grus grus*)



Natura 2000

CO-ordination of INFORMATION on the Environment

Initially 1985-1990

- CORINE Air
- CORINE Biotope
- CORINE Land Cover
- CORINE Water

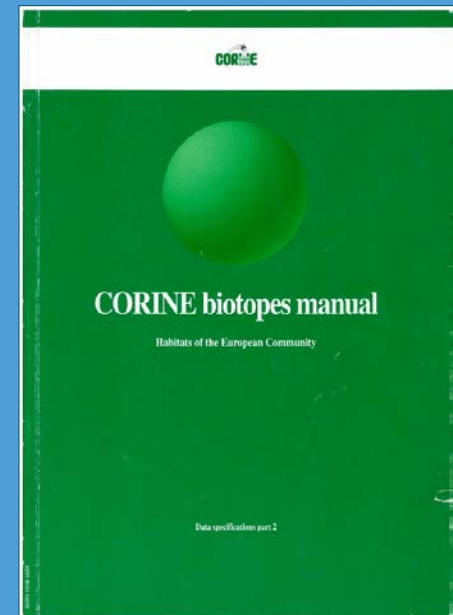


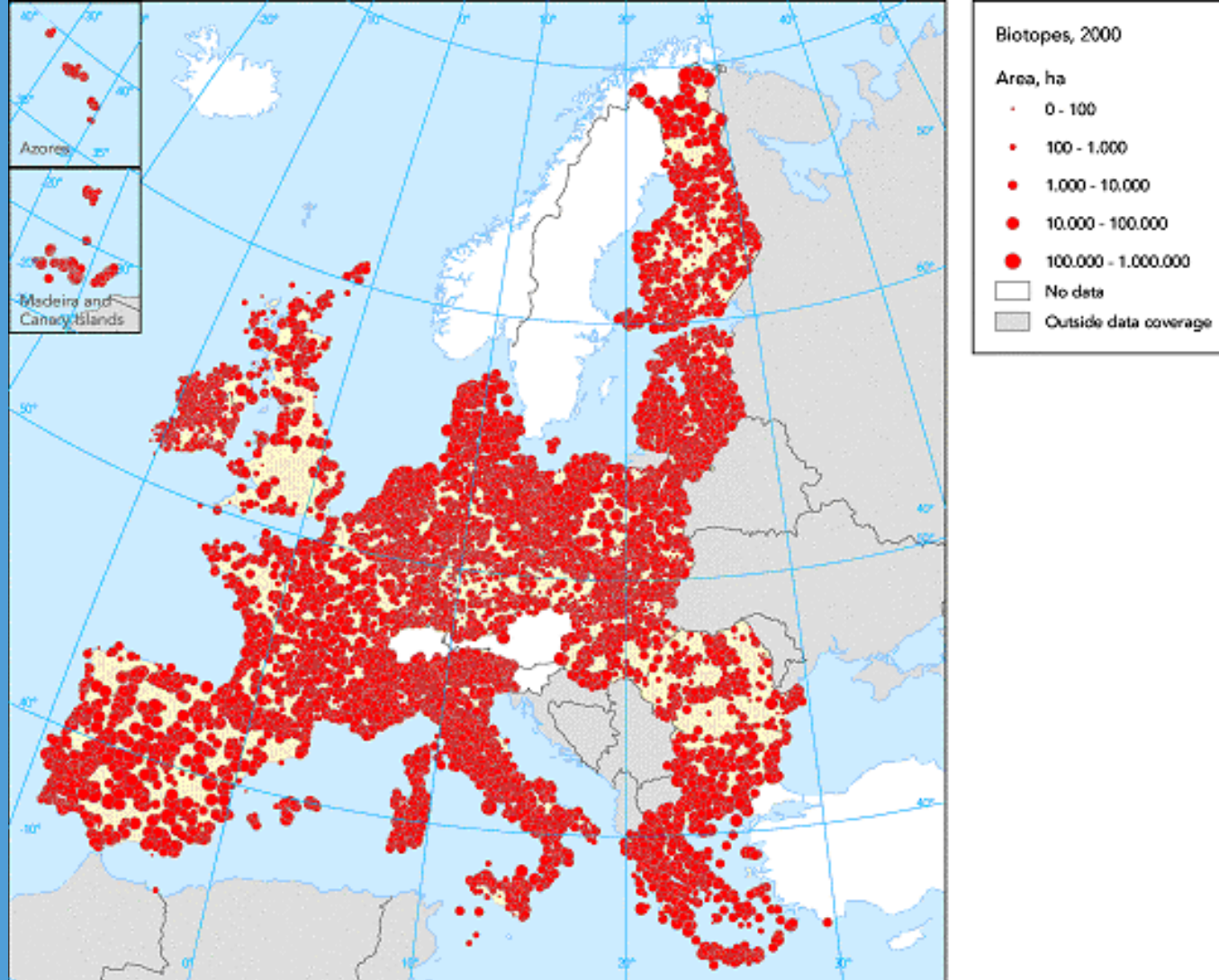
Can be considered as a step towards the creation of the EEA

Natura 2000

CORINE Biotopes

- Inventory of Sites (Database)
- Biotope Classification (no suitable classification available)





Database available from

<http://www.eea.europa.eu/data-and-maps/data/corine-biotopes>

The Habitats Directive

- Discussions started mid 1980s
- An EU implementation of the Bern Convention
- First draft published in 1988
- Adopted 1992
- Includes a timetable for implementation



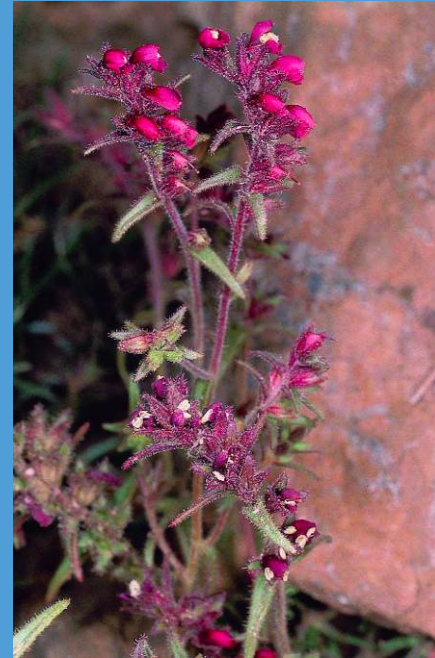
Natura 2000

A European heritage but each country, region and site has particular responsibilities



Blanket bog

99% of EU area
is in the British
Isles



Odontites granatensis

Endemic to one site
(Sierra de Nevada, Spain)

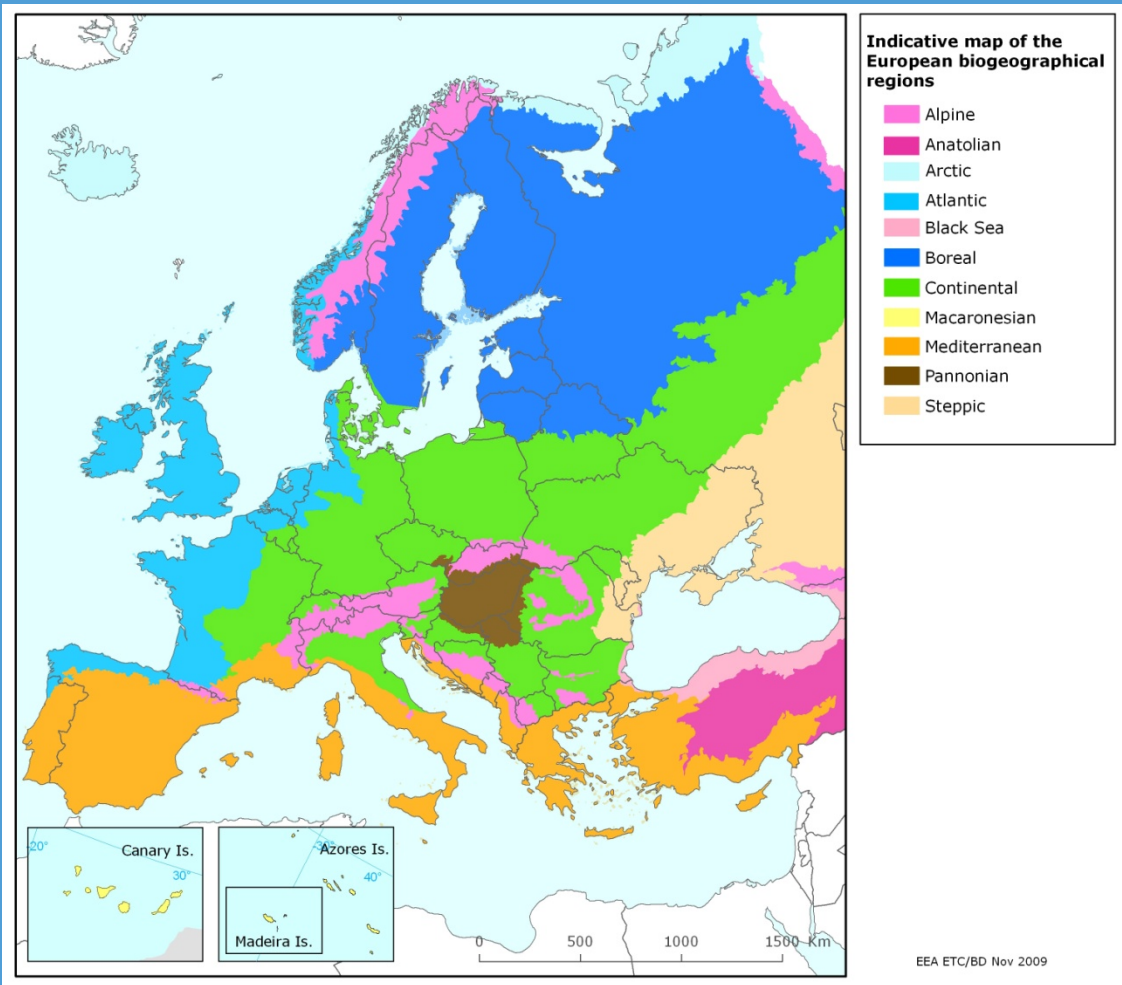
[photo from 'Atlas y Libro Rojo de la Flora
Vascular Amenazada de España']



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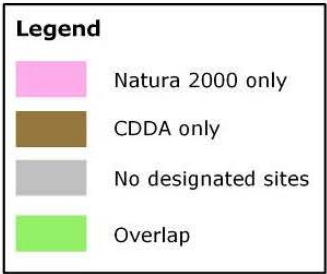
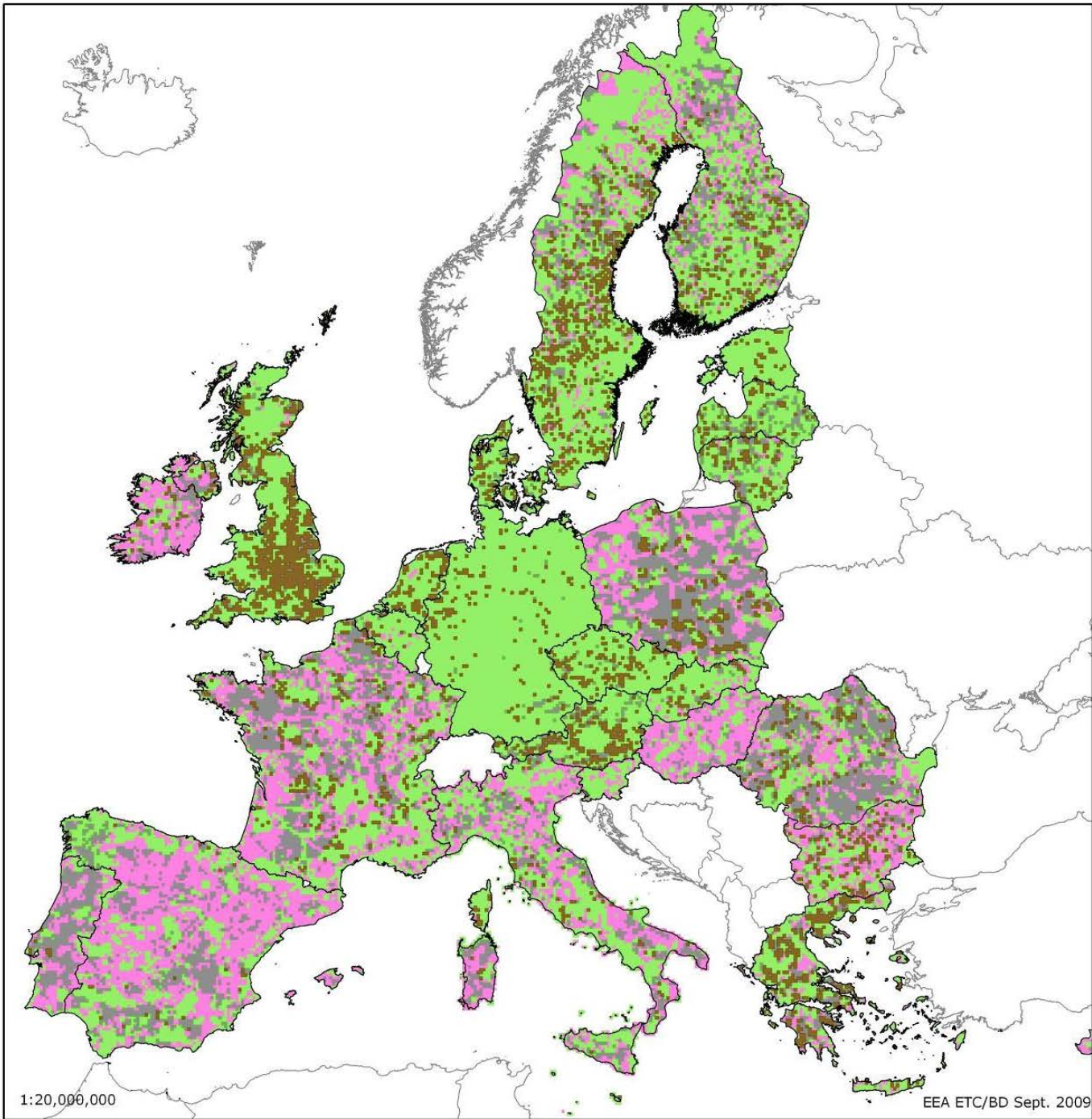
Natura 2000



Habitats Directive is

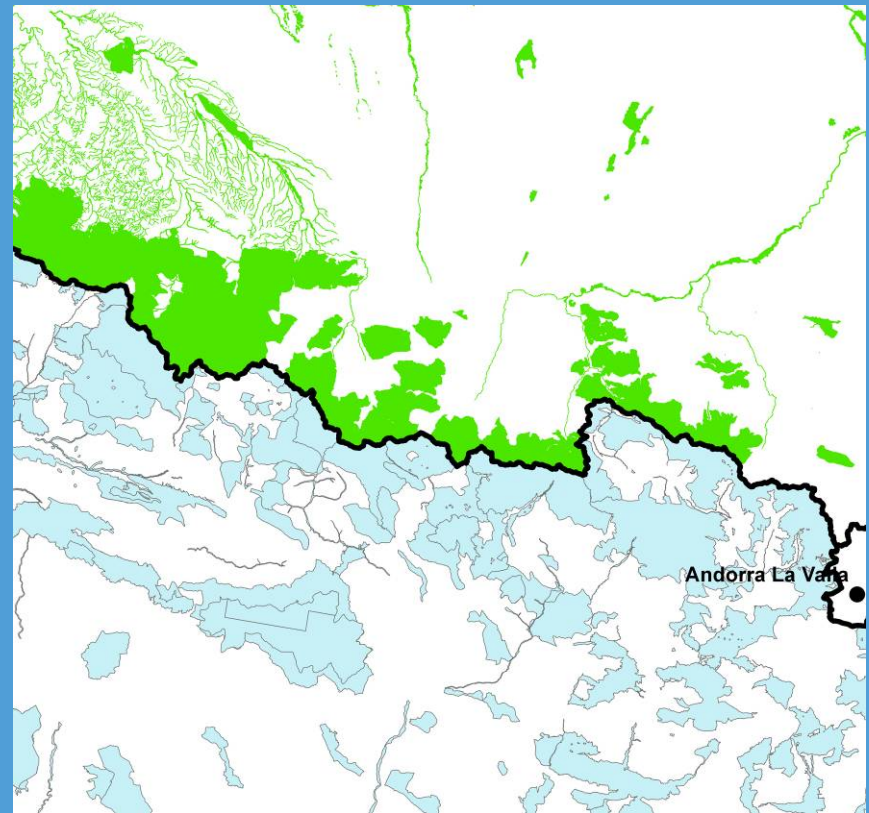
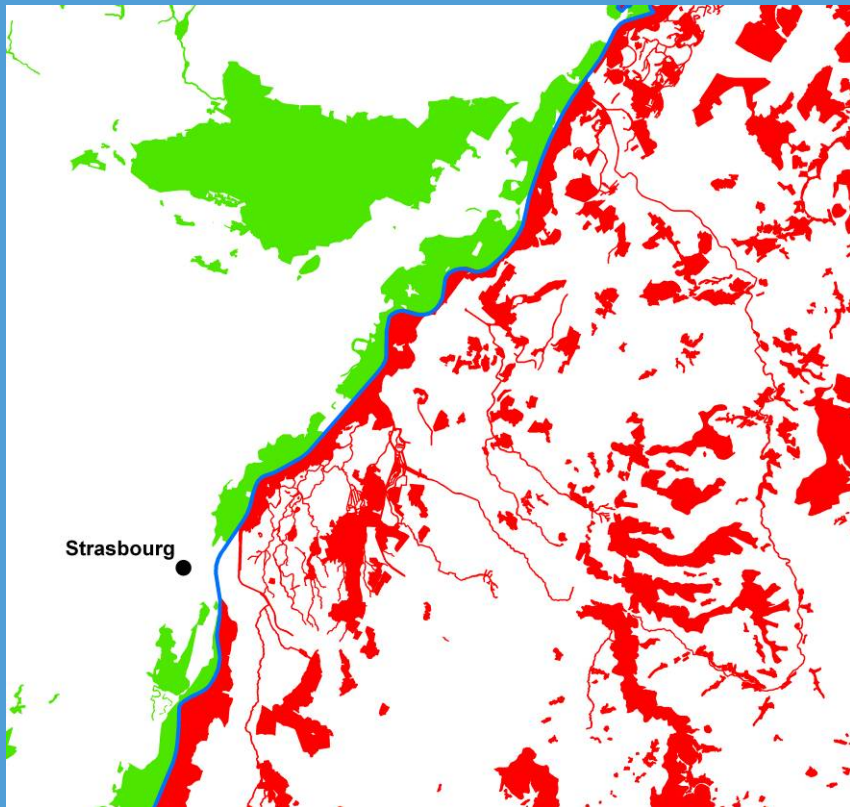
- the first EU directive to introduce biogeographical regions
- based on different landscapes of Europe
- HD is an early example of sustainable development in legislation

A framework for assessing the network and for reporting



**In some countries
Natura 2000
sites are mainly
also 'national'
sites**

Natura 2000



Nature does not respect political boundaries, Natura 2000 is a network across frontiers



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Natura 2000

A directive gives aims & objectives but methods are left to Member States leading to a diversity of approaches in site selection and management

France & Germany have a similar percentage of terrestrial area but in general France has few large sites and Germany has very many small sites



Habitats and landscapes

The Habitats

- List of 231 habitat types considered rare, threatened or typical of a biogeographical region
- Mainly plant communities (based on phytosociological syntaxa) but also landscapes & abiotic features
- Definitions given in a manual with links to several European and national classifications



Habitats and landscapes

Main reasons for habitat selection:

1. Threatened habitats
2. Unique species
3. Representative habitats of biogeographic regions
4. Characteristics of habitats (discussed later)

Reference lists (Annex I and Annex II)

For each country

For each biogeographical region



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Habitats and landscapes

Alpine
Anatolian
Arctic
Atlantic
Black sea
Boreal
Continental
Macaronesia
Mediterranean
Pannonian
Steppic



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Habitats and landscapes

	<i>countries</i> <i>EU27</i>	<i>habitat types</i>	<i>species</i>	
			<i>fauna</i>	<i>flora</i>
Boreal	5	83	53	51
Atlantic	9	127	81	52
Alpine	12	99	98	63
Continental	13	134	109	55
Pannonian	4	54	119	46
Black Sea	2	--	--	--
Steppic	1	--	--	--
Mediterranean	5	141	145	242
Macaronesian	2	--	--	--



Habitats and landscapes

Example: comparison The Netherlands - Romania

Netherlands

Habitat types	51
Birds	90
Fauna Annex II	30
Mammals	8
Fish	10
Herpetofauna	2
Evertibrates	10
Flora Annex II	5

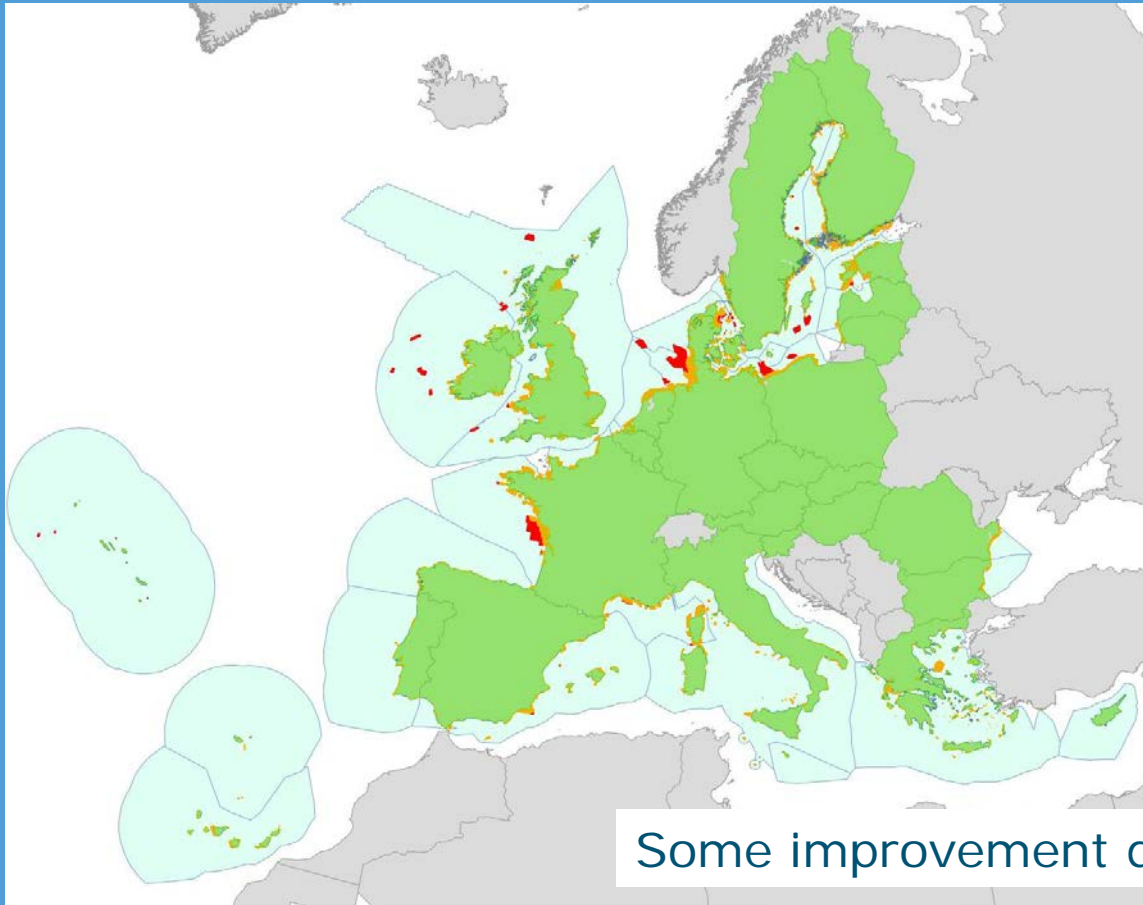
Romania

Habitat types	64
Birds	--
Fauna Annex II	126
Mammals	28
Fish	29
Herpetofauna	12
Evertibrates	57
Flora Annex II	49



Marine Natura 2000

Marine SCIs (July 2009)

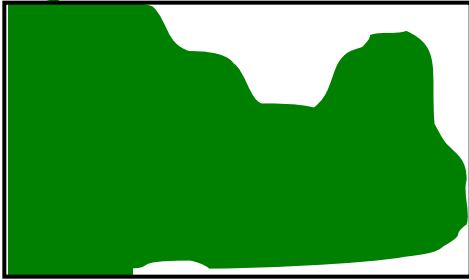


Offshore SCI

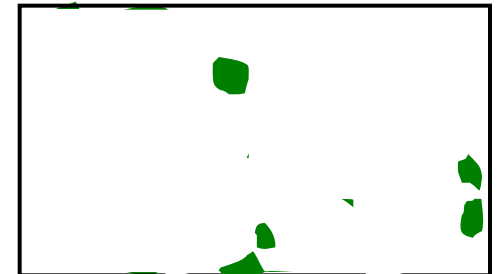
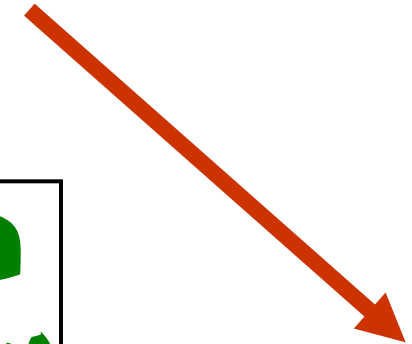
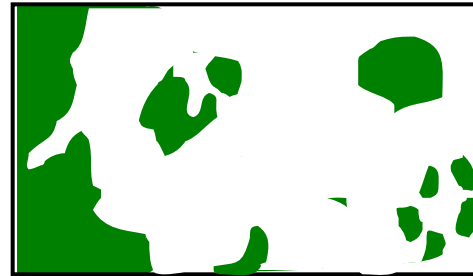
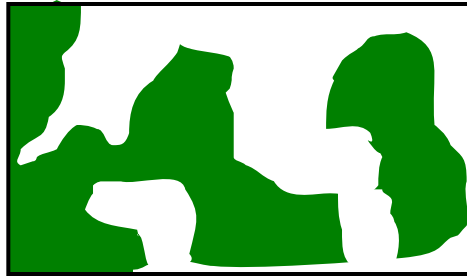
region	%SCI
ATLANTIC	5
BLACK SEA	0
BALTIC	3
MACARONESIA	1
MEDITERRANEAN	0

Some improvement during 2010

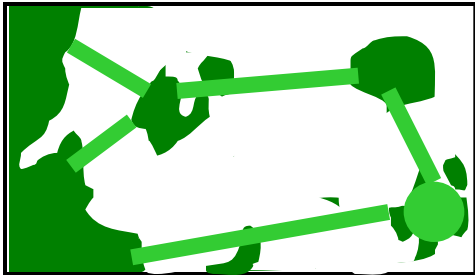
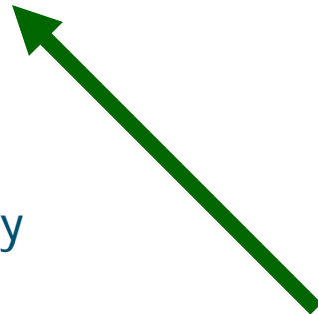
Land use changes



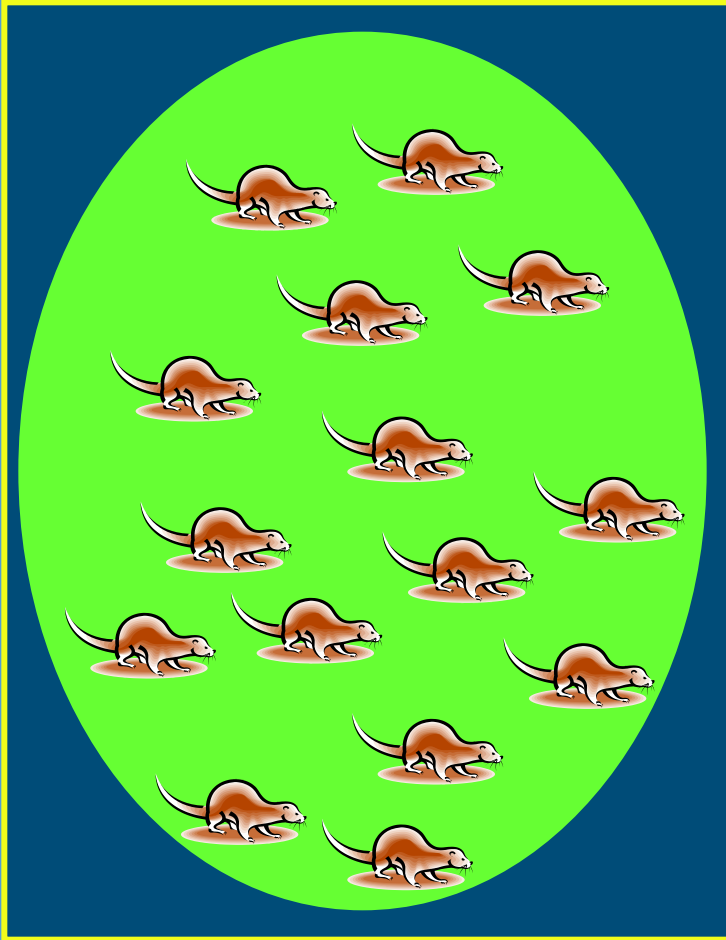
Land use intensity: loss of biodiversity



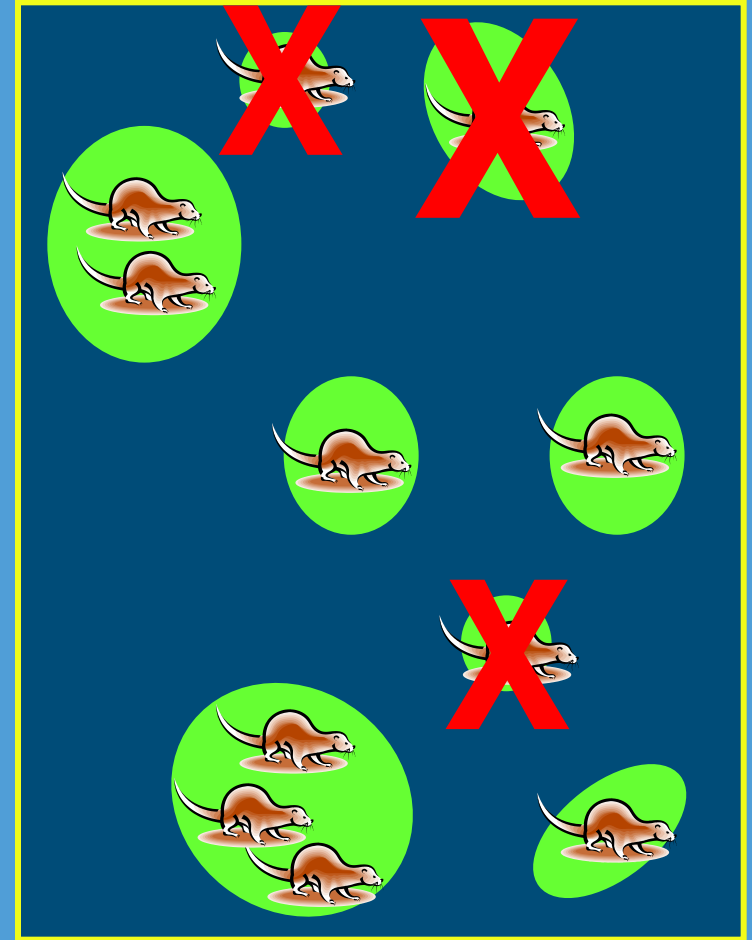
Towards sustainability



From fragmented...



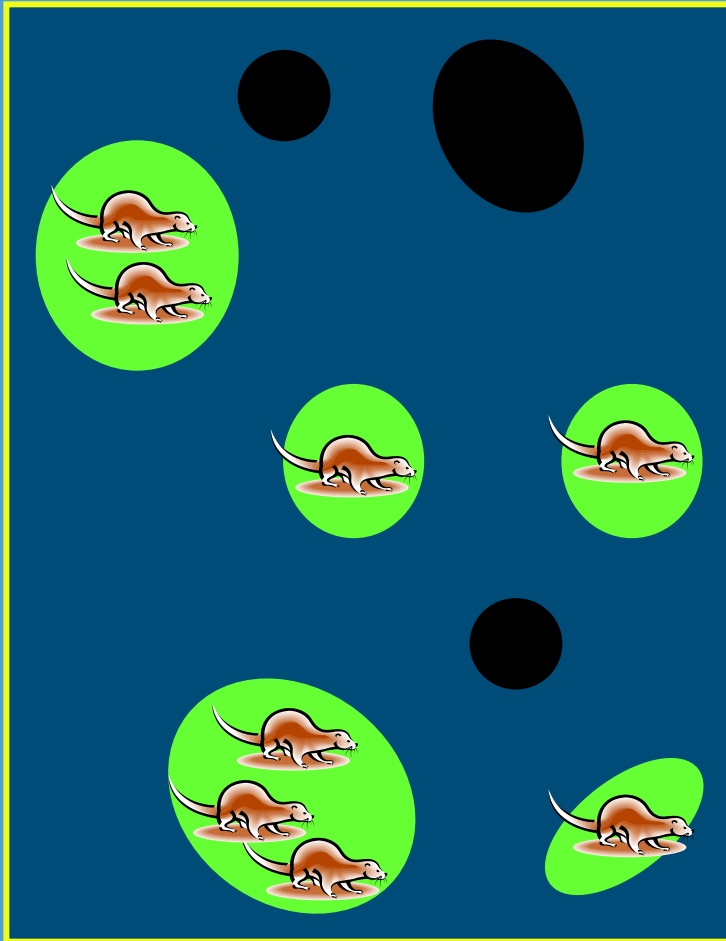
In the past



At present

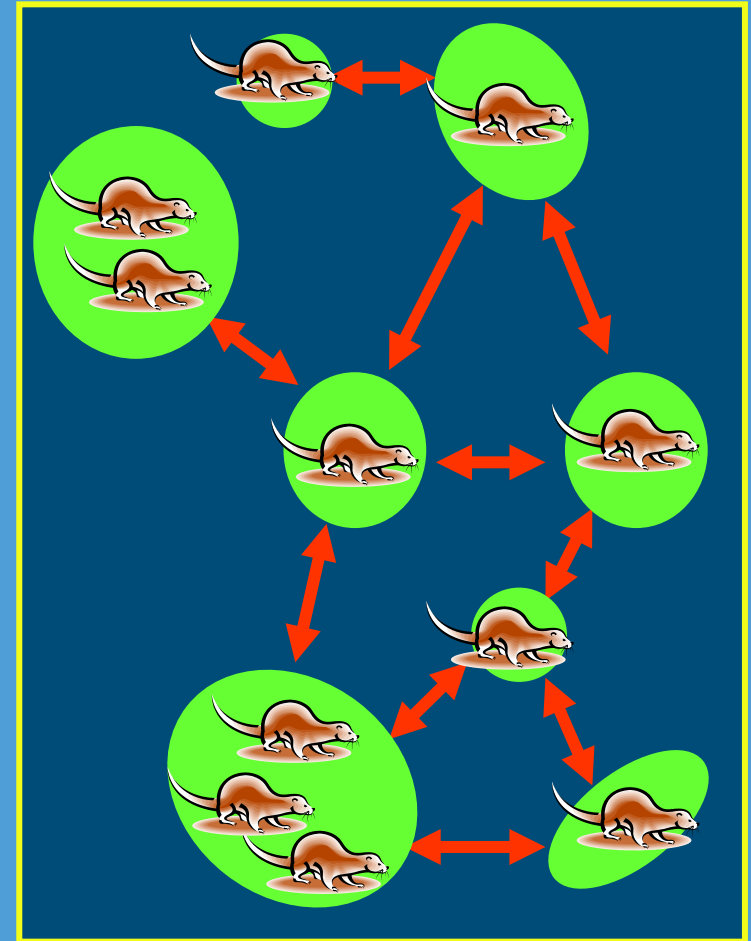


.... To defragmentated



Not connected

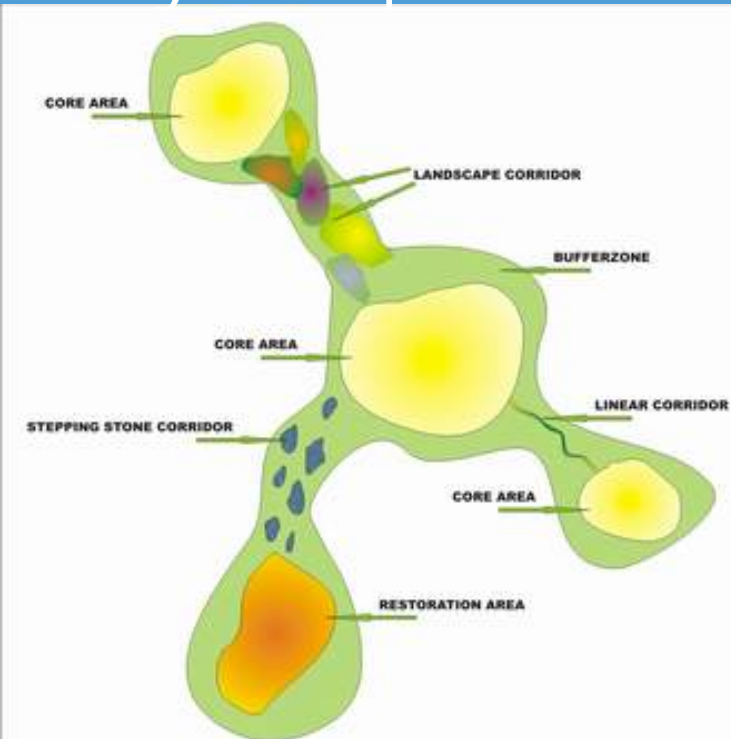
Ecological
Networks,
Corridors!



Connected / 'Defragmented'

Development of ecological networks...

An ecological network might consist of core areas, buffer zones, corridors, and in some cases restoration areas. The core areas might form the backbone of the ecological network, the corridors the veins, whereas the buffer zones form a protective layer and restoration areas the areas for recovery or expansion.



Example: Kornati Archipelago, Croatia



Kornati Archipelago – mapping habitats

ANNEX I Priority habitats for Kornati

NATURAL HABITAT TYPES OF COMMUNITY INTEREST WHOSE CONSERVATION REQUIRES THE DESIGNATION OF SPECIAL AREAS OF CONSERVATION

<i>Habitat type</i>	<i>Code</i>	<i>Remarks</i>
<i>Posidonia beds</i>	<i>1120</i>	<i>Marine</i>
<i>Reefs</i>	<i>1170</i>	<i>Marine</i>
<i>Thermo-Mediterranean and pre-desert scrub</i>	<i>5330</i>	<i>Terrestrial</i>
<i>Pseudo-steppe with grasses and annuals of the Thero-Brachypodietea</i>	<i>6220</i>	<i>Terrestrial</i>
<i>Calcareous rocky slopes with chasmophytic vegetation</i>	<i>8210</i>	<i>Terrestrial</i>
<i>Caves</i>	<i>8310</i>	<i>Terrestrial</i>
<i>Submerged or partially submerged sea caves</i>	<i>8330</i>	<i>Terrestrial</i>



Kornati Archipelago – mapping habitats

Mapping of priority habitats

<i>Thermo-Mediterranean and pre-desert scrub</i>	<i>5330</i>	<i>Terrestrial</i>
<i>Pseudo-steppe with grasses and annuals of the Thero-Brachypodieta</i>	<i>6220</i>	<i>Terrestrial</i>
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Kornati Archipelago – mapping habitats

Mapping of priority habitats

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Kornati Archipelago – mapping habitats

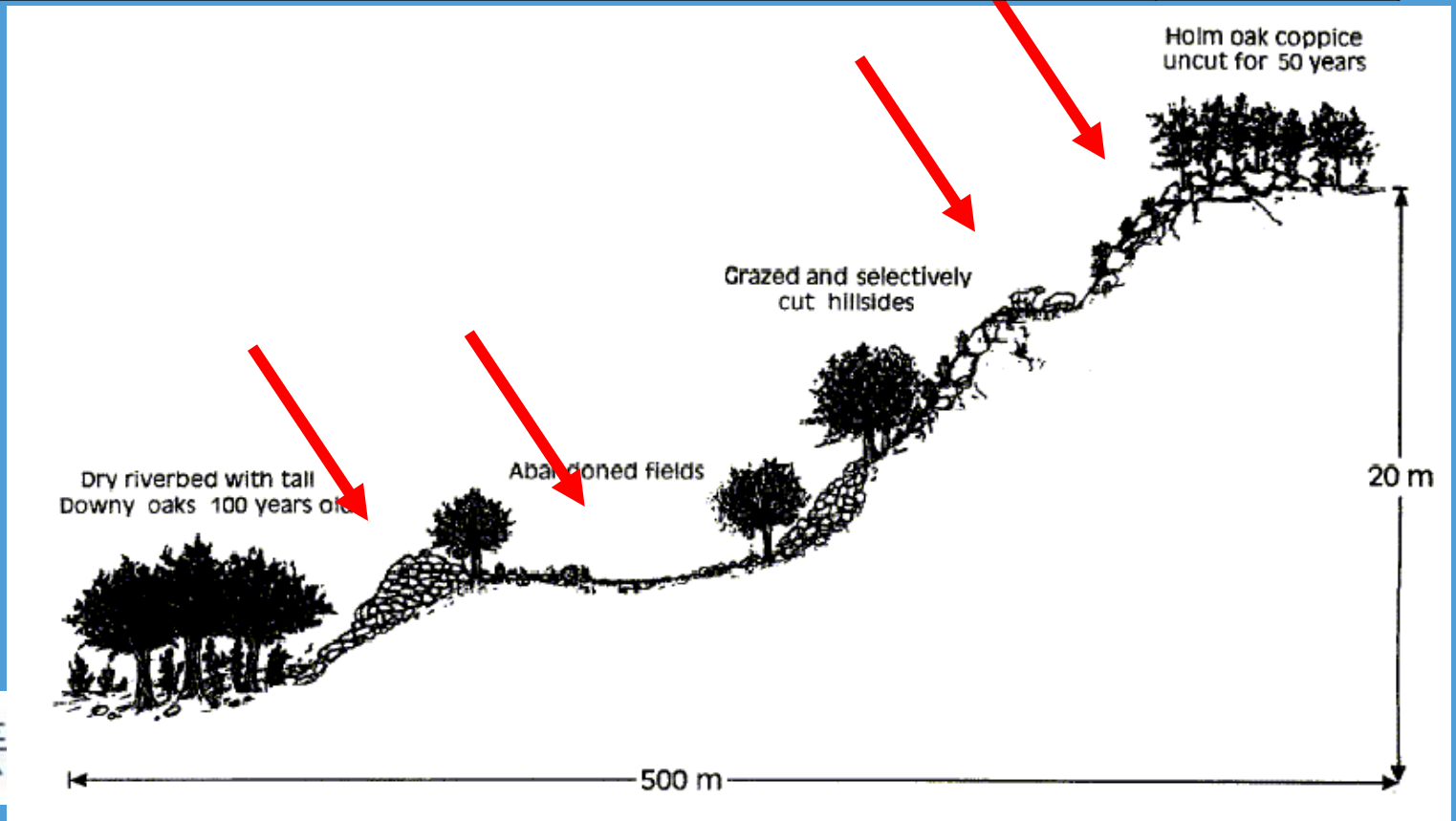
Mapping of priority habitats

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Kornati Archipelago – mapping habitats

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Monitoring priority habitats

- Maintain or enhance favorable conservation status (through development of management plans)
- Reporting to EU – every six years
- Report about:
 - Areal extent of priority habitat type
 - Quality of priority habitat
 - Quality of vegetation communities



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Kornati Archipelago – monitoring

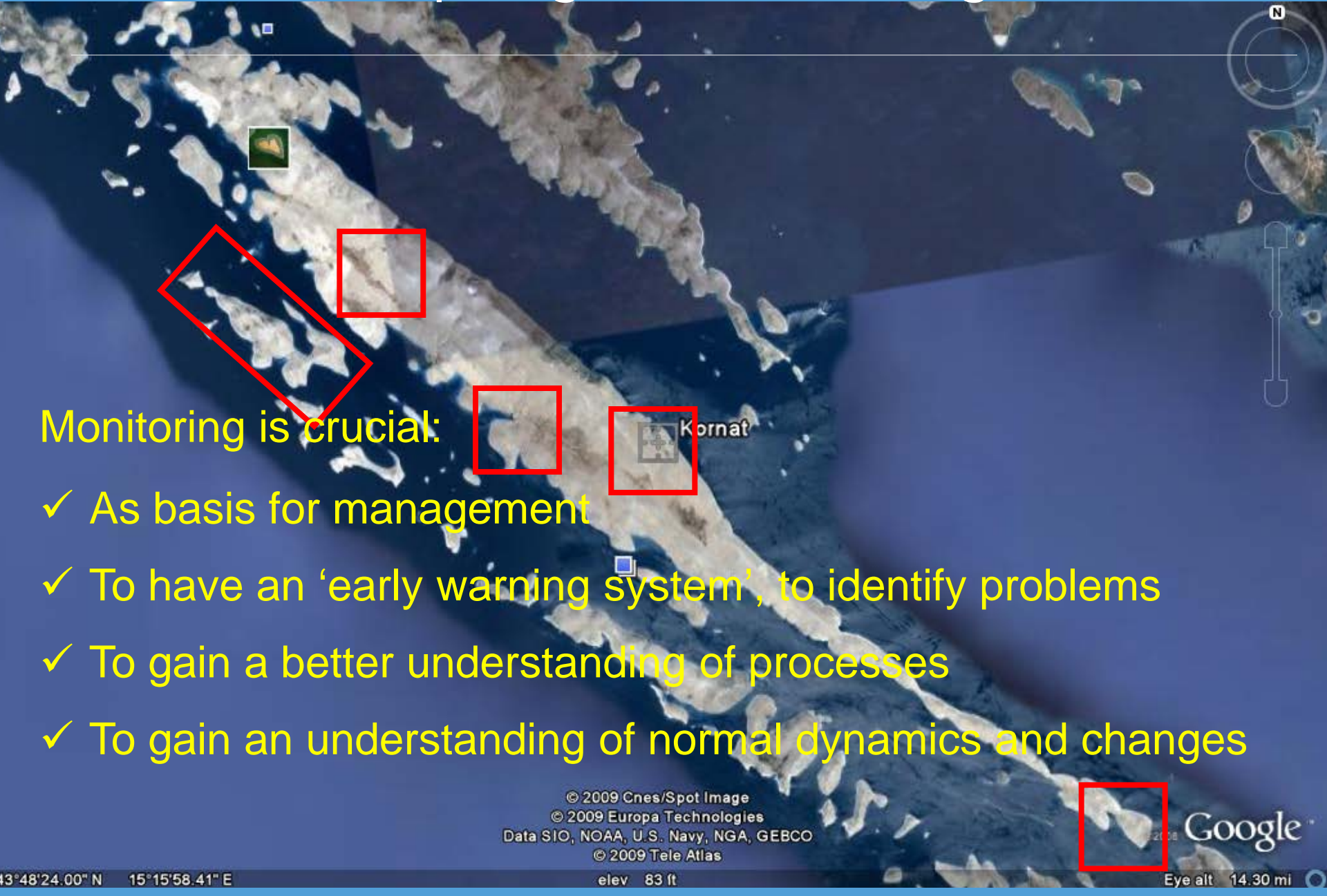
- Frequency of monitoring
- Area selected for monitoring
 - Select an area of at least 0.25x0.25 km (up to 1x1 km)
 - Same area is mapped
 - Mark corners of your area in the field
 - GPS coordinates



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Kornati Archipelago – monitoring



Monitoring is crucial:

- ✓ As basis for management
- ✓ To have an 'early warning system', to identify problems
- ✓ To gain a better understanding of processes
- ✓ To gain an understanding of normal dynamics and changes

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Data SIO, NOAA, U.S. Navy, NGA, GEBCO
© 2009 Tele Atlas

Google

43°48'24.00" N 15°15'58.41" E

elev 83 ft

Eye alt 14.30 mi

Conclusions

- Long history of protection of areas, for various regions (cultural, historical, religious, resource protection, biodiversity)
- Conservation of nature coincides partly with landscapes (biogeographical regions)
- Natura2000 is a concept which connects protected areas and landscapes over Europe
- Still there is diversity in ways how areas are selected and protected
- Landscape, although not mentioned as such, is an underlying concept of conservation



Thank you!

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