

Content of presentation

- Introduction: Changes in Europe
- Why ecological networks?
- European policy on ecological networks
- Ecology of corridors, infrastructure
- Examples corridors
- Conclusions







Introduction: the picture of Europe

Europe at present:

Strongly Urbanised

Fragmented, physically and organisational

ALTERRA



Introduction: the picture of Europe

- 95% of the population is living in urban centres; an urbanising trend in west and central Europe;
- Growing urban mentality, disconnected from the rural;
- Landscape homogenisation and fragmentation;
- Infrastructure results in fragmented natural areas.





We have to deal with fragmentation: Terrestrial wetlands in the Netherlands

- Of importance for 127 bird species
- International responsibility: 91 species
- 55 species: >10% world popula
- 50.000 ha, 1500 sites

>80% is smaller than 10 ha

• Much of the areas that could be used are not used

Model calculations:

Even the "large" marshes are too small for most species, but:

All marshes together are big enough

Problem: Marsh complexes are so far apart that even mobile species cannot bridge the gap



Changes in Southern Europe

- Fast changing ecosystems
- Intensification versus...

ALTERRA WASENINDEN

- Extensification grazing land (Italy, Croatia, Portugal, Spain)
- Loss of traditional land use systems like Dehesas



Changes in Southern Europe

Transhumance in the Mediterranean





Changes in Southern Europe

What remains: Isolated areas of nature





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.

European Ecological networks

- 1992: EU: Natura 2000, Birds and Habitats Directive. Aim: international approach for protecting core areas biodiversity
- 1995: 55 countries decide to develop a European Ecological network (PEEN). Aim: stop further fragmentation, and improve landscape connectivity
- 1997: Expert Committee appointed Secretariat: Council of Europe and European Centre for Nature Conservation (ECNC)

European Ecological networks

Natura 2000 – Birds and Habitats Directive habitat:

The Habitat Directive of the European Union (1992) acknowledges in Article 10 the importance of landscape elements that enhance connectivity ('corridors'). The Directive encourages member states to include those landscape elements in their land-use planning and development policies which they consider appropriate. Furthermore, other global and European policies such as the Bonn and Bern Convention oblige contracting parties to take effective measures in conservation and management of the listed species and habitats.

ALTERRA

Translate metapopulation knowledge into spatial parameters for long-term persistence

De-fragmentation measures

3 8 7 1 1 1			· · · ·	10
which	species	require	corridors	most?

	Dispersal poor	Dispersal good
Small network area is enough	Habitat specialists, poor dispersers	
Large network area required		Large area requirements

Example: robust corridors, design with ecological traits

Pipers 23. 3 decay articles della Piana di Nanilli nue la mir cologica

International challenges: climate change Poland Germany Praha Paris **Czech Republic** Ukraine Austriaw Switzerlan France Budapest Hungary enia Romania grèb èb roatia Beograd Bucuresti ugoslavia Italy

International challenges: climate change

