Protocol “Nature conservation and landscape planning” - Article 12

“The contracting parties take adequate measures to establish a network of existing national and transboundary protected areas, of biotopes and other protected elements or those to be protected. They commit themselves to harmonize the objectives and applicable measures in transboundary protected areas.”
Protected areas in the Alps

Recognize the heterogeneous character of nature

The global - Alpine reality is that most protected areas are isolated from adjacent protected areas or that habitats are located in fragmented landscapes.
Climate Change and Biodiversity
Genetical differences over the Alps

Thiel-Egenter, 2007
The butterflies’ connectivity problem
The lynx connectivity problem
The lynx' connectivity problem
The theory for both species...

http://www.alpine-ecological-network.org
Project of ETC Alpine Space Programme and co-funded by ERDF
Total budget: 3.198.240,00€.

The partnership is composed by sixteen partners from six Alpine countries

**Austria**
- University of Veterinary Medicine Vienna, Research Institute of Wildlife Ecology (Lead partner)
- National Park Hohe Tauern
- Federal Environment Agency
- National Park Gesäuse
- University of Innsbruck, Institute for Ecology

**Italy**
- Alpe Marittime Nature Park
- Autonomous Region of Valle d'Aosta
- European Academy of Bozen
- Ministry for the Environment
- WWF Italy

**Liechtenstein**
- International Commission for the Protection of the Alps (CIPRA)

**Germany**
- National Park Berchtesgaden

**France**
- CEMAGREF
- Council of Department of Isère
- Task Force Protected Areas – Permanent Secretariat of the Alpine Convention

**Switzerland**
- Swiss National Park
The Results

1. Vision
2. Pilot Regions
3. Scale
4. Functional and structural connectivity
5. Legal Analysis
Econnect is a network per se

Local and Alpine-wide

Enhances and extends existing cooperations
Result

What was the project actually trying to achieve?

Agreement concerning the conservation objectives
Vision

ECONNECT envisions an enduringly restored and maintained ecological continuum, consisting of interconnected landscapes, across the Alpine Arc region, where biodiversity will be conserved for future generations and the resilience of ecological processes will be enhanced.
Active adaptive management and governance of resilience must not be limited to individual elements of an ecological network (corridors, core zones), but must necessarily be applied to the entire territory (matrix) and across all sectors of society, while enabling nonexclusive, multi-functional spaces for sustainable economic and recreational activities Alpine communities.

http://www.alpine-ecological-network.org
How to concatenate all spatial levels, overcome the corridor approach and the funct. and struct. thinking?
Functional and structural connectivity

CSI
„The landscape approach“

SMA
„The species approach“

CARL
„The network approach“
Econnect’s response to spatial permeability

JECAMI
Joint Ecological Continuum Analysis and Mapping Initiative

A platform to analyze and visualize ecological connectivity in the Alps from local scale to global scale, for functional and structural connectivity and for all parties of the society
„Mapping relevant factors“

CSI
„The landscape approach“

SMA
„The species approach“

CARL
„The network approach“
Objectives of the landscape approach

- General definition of the structure of an ecological continuum/ the connectivity
- Defining suitable criteria for an assessment of the space
- Definition of the scale: Provide global, alpine-wide analysis (>100 km²) as well as local analysis (<1 km²) in the municipalities
  - high spatial precision and resolution of data is appreciated
- Mapping on the web - broad access for all interested parties without specific and expensive software
10 Indicators

Population
Landuse
Landuse Planning
Altitude and Topography
Fragmentation
Infrastructure
Landscape Heterogenity
Edge density
International Protected Areas
Ecological Measures
Data processing

7    Pilot regions
Many Political regions
A few Coordinate systems
A bunch of Datasets

1    Coordinate system
10   Indicators (raster datasets)
The CSI web service
A step into real environments and real scales
A step into real environments and real scales
“Mapping relevant factors”

CSI
„The landscape approach“

SMA
„The species approach“

CARL
„The network approach“
Selected species for terrestrial models

- Black grouse
- Griffon vulture
- Lynx
- Brown bear
- Wolf
- Red deer

Copyright: touristik.freepage.de (grouse), naturschutzbuero-zollernalb.de (vulture), fullmoons.ch (wolf), maxwaugh.com (bear), naturfotografen-forum.de (lynx), new-forest-national-park.com (red deer)
Workflow:
Identification of habitat needs, search for observation records and/or species specific models

Identification of habitat suitability (Maps of potential distribution)

Categorisation of Habitat into Core area, corridors and isolated habitat patches (morphological spatial pattern analysis, MSPA, Software GUIDOS)
Ecological Measures

Local Networks

Common-Methodology

Implementation of Measures
(see implementation guidelines)
Platform Large Carnivores, Wild Ungulates and Society (WISO)
The Protection of Ecological Connectivity: Analysis of the Principal Legal Instruments.

Comparisons between Swiss, French and Italian Jurisdictions.
Final Documents

Policy Recommendations
Final booklet
Synopsis
Implementation recommendations
RECOMMENDATION 01

Valorise ecological connectivity for Alpine society and economy...

... which would provide a solution to the growing fragmentation of the Alpine space especially as an adaptation strategy to climate change.
RECOMMENDATION 02

Establish a legal framework to realise ecological connectivity measures at various scales ...

... in order to increase the chances of success, which are imperative to identify legal opportunities and obstacles for the feasibility of every project.
Integrate the concept of ecological connectivity into all spatial planning instruments at all scales (local to international) using an inter-disciplinary approach ...

... is essential for biodiversity conservation and for enhancing the resilience of ecological processes in the face of global anthropogenic changes in the multi-functional Alpine landscape.
RECOMMENDATION 05

Make data which has been collected with public funds openly available through a joint data management system at a European scale ... in order to reduce time and money spent for data acquisition and management.
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