



Step by step to ecological connectivity

The contribution of municipalities to improve ecological connectivity



Ecological Continuum Initiative

This brochure forms part of the Ecological Continuum Initiative under which ALPARC (the Alpine Network of Protected Areas) has for several years now been supporting the restoration and improvement of ecological connectivity together with CIPRA (the International Commission for the Protection of the Alps) and ISCAR (the International Scientific Committee for Alpine Research).

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Unless otherwise indicated, the quotations from the municipality representatives are from the CIPRA film "For hermits and fire salamanders – How municipalities connect habitats in the Alps".

Some of the above examples were implemented throughout the Alps in the context of the ETC ECONNECT project in the municipalities of the pilot regions involved (results of this project and detailed descriptions of the actions carried out can be found under www.econnectproject.eu)

Further information: www.alpine-ecological-network.org

Foreword

Dear Readers,

A holistic policy for the protection and sustainable development of the Alpine space: that is the aim of the Alpine Convention. Its protocol on nature conservation and landscape management are its central tool in permanently securing for one of the largest connected natural areas in Europe its diversity, its uniqueness and the beauty of its natural and cultivated landscapes. At the same time, too, the interests of the residents of what is both a habitat and an economic space must also be considered. In 2007 the environment ministers of the Alpine states set up a working group, the "Ecological Network" platform, which addresses all the facets of a national and transnational ecological network as previewed by the Alpine Convention in its nature conservation protocol. Alpine municipalities are key partners in the successful implementation of this aim. This brochure gives examples of how municipalities can through simple measures contribute to the improvement of ecological networking.

Everyone can play a part!

Even small measures will add up to a coherent whole if they are integrated into an overall concept.

The Alpine pilot regions, eight areas covering the entire Alpine area in which the first steps have been taken for the local implementation of a joint Alpine-wide network, are now showing the way. Some of the projects realised appear on the following pages. ALPARC, the Alpine Network of Protected Areas, CIPRA and ISCAR, are all international partners who are in a position to offer you active support, as is the case in the pilot regions.

For France and Germany, the creation of the "Ecological Network" in the Alps is central to the implementation of the Alpine Convention: they are thus now working together on this platform with a Franco-German presidency which aims to put special emphasis on actual realisation on the ground.

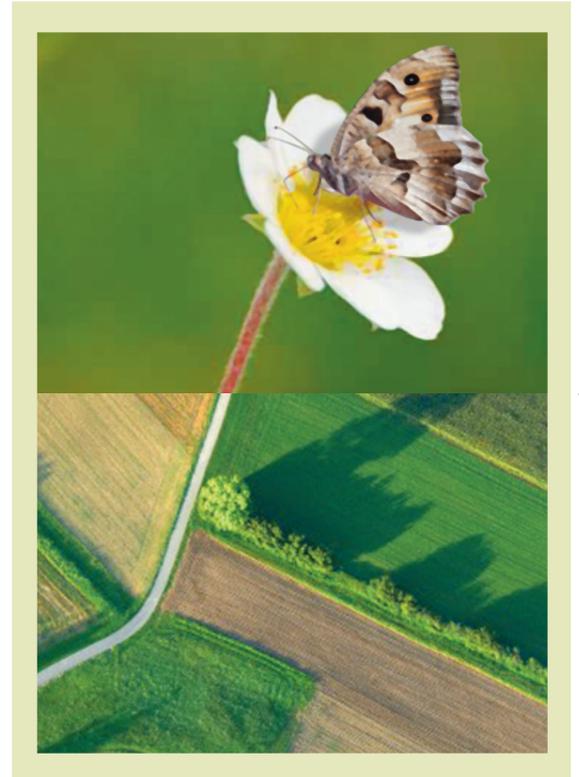
The nature that the Alps contains is precious – it is our capital that we need for life and it deserves protection and conservation! So let us work together to implement the Alpine-wide ecological network, because every individual building block counts.

Marie-Odile Guth,

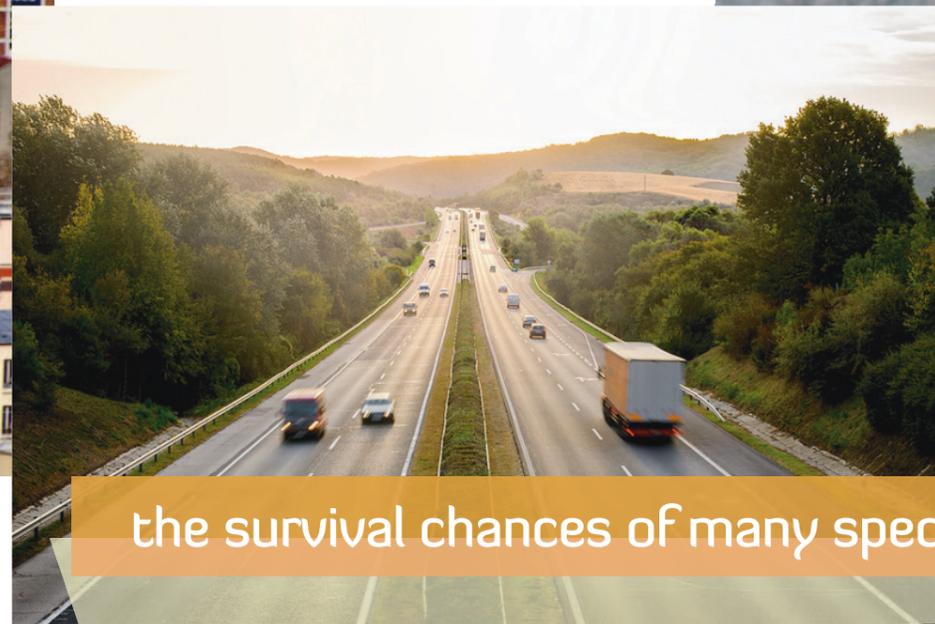
chairwoman of the "Ecological Network" platform of the Alpine Convention;
French Ministry for Ecology, Sustainable Development and Energy

Silvia Reppe,

National Focal Point for the Alpine Convention Germany;
Federal Ministry for the Environment, Nature Conservation and Nuclear Safety



If a habitat becomes too small



the survival chances of many species decrease rapidly

The Alpine landscape is a mosaic of different biotopes. Meadows, woodlands, water courses and open prairie, but also farming infrastructure such as pastures, ditches, terraces and hedges. Incredibly varied spaces occur alongside one another and are inhabited by the most diverse species. Many of these various habitats can often be found in the area covered by just one municipality. In the course of a year or a lifecycle, the different elements of the landscape provide animals with shelter or food, as well as reproduction and wintering sites. During their migrations they have to overcome various obstacles including busy roads, man-made structures to control waterways and areas of intensive agriculture. Therefore linking the different ranges and resources – thus making them accessible – is of key importance for the survival of populations and species.

The intensification of human activities is leading to an ever-increasing fragmentation and urbanisation of the Alpine landscape, particularly in the valleys. The increasing development of scarcely populated or unpopulated areas, new infrastructures, changes in land use (e.g. planting of crops for energy use) and the growing pressure of urbanisation cause habitats to shrink, fragment into smaller, isolated areas, or disappear altogether.

If a habitat becomes too small, or if its connections to other areas are cut off, the survival

chances of many species decrease rapidly since small, isolated populations adapt less effectively to extreme environmental conditions such as those triggered by climate change. This can lead to the disappearance of individual populations.

However, if several small populations are distributed along connecting elements, such as corridors, their survival chances improve, because local extinction can be compensated for by immigration. The danger of genetic impoverishment due to inbreeding can also be counterbalanced through the arrival of single individuals, however sporadic.

The effects of the reduction and fragmentation of the habitats of animals and plants cannot be balanced through the creation of individual connecting elements alone, however. Actions to improve ecological networking, i.e. the accessibility of individual parts of the landscape for various species, must rather be integrated into a properly planned overall concept that is adapted to the local situation and relates to the entire landscape: this means acting within the entire area in a well thought-out, nature-friendly way!

Municipalities have room to act!

Municipalities own and administer large parts of the land area. They can thus exert a critical influence on the shaping of these surfaces and the usages practised on them. On this in turn depends the quality of the existing habitats and the connections between them.

Connected habitats and biotope networks are not only of benefit to plants and animals, but also to people. A livable surrounding area with a varied landscape, suitable for local recreation and high species diversity, increases not only the quality of life of the population, but also the attractiveness of a region in terms of tourism.

Municipalities have numerous tools at their disposal to support the preservation and re-establishment of networked natural areas, for instance space and land use planning, municipal decisions and public works.

Furthermore, municipalities can take steps in the various sectors that fall directly within their competence, for example in forest, land and water management. Each step that a municipality takes is important. The most effective solution is when measures are not taken in isolation but are combined into a holistic strategy to create an ecological network. Of central importance here is land use planning, which should indicate networking axes and priority networking surfaces for consideration in all planning operations.

An appropriate biotope networking concept is a good basis for the targeted implementing of measures to protect and improve the individual elements of an ecological network.

Municipalities can also contribute a great deal by informing their citizens about the matter – because every single person can assist in the creation of ecological networks in the Alps.



Common land – more than just building land

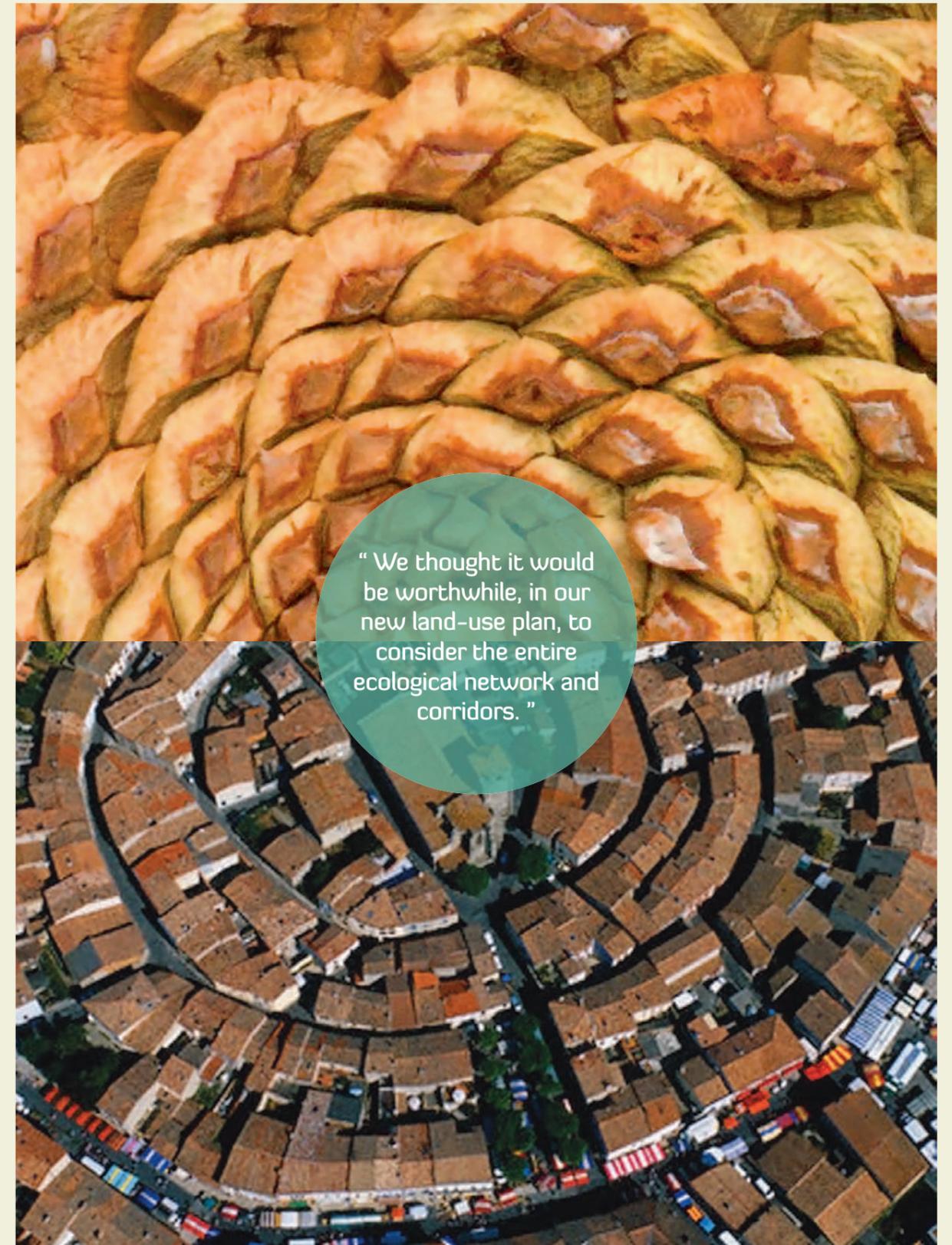
Unfortunately spatial planning in municipalities is still often simply a matter of building zones. Nature protection is limited to individual reserves or objects. Foresters would look after the forest areas and national or regional administrations would provide for agriculture. This separate way of viewing and planning according to protection and use, or according to sector, has created landscapes that risk losing their individuality and from which nature and traditional landscape features are more and more excluded.

Landscape is an important asset for municipalities: it reflects the identity of the locality and makes the municipality attractive for inhabitants and visitors alike. It forms the framework of daily life and should therefore no longer be regarded as the random outcome of various requirements and land-use plans.

A structurally rich landscape is also a varied landscape for the eyes: everyone in the municipality benefits from such diversity! As a rule, where sensitive animal species occur, this is an indicator of the quality of the landscape as a habitat.

“Nature is for different reasons important both to me personally and to my municipality. Fauna and the flora form the bases of our lives. We thought it would be worthwhile, in our new land-use plan, to consider the entire ecological network and corridors. We reclassified surfaces of some 100 hectares lying outside the building zone.”

Bruno Muriene
Mayor of St-Martin-d’Uriage (France)



“ We thought it would be worthwhile, in our new land-use plan, to consider the entire ecological network and corridors. ”



“ The more participants that are involved, the greater the acceptance and support for actions to improve ecological networks. ”

Each municipality has, at local, regional and supra-regional level, a wealth of very different maps and inventories on numerous topics that may be relevant for the ecological evaluation of the local situation, such as inventories of protected animals and plants, or woodland, soil and water maps. These existing maps can be consulted when producing an overall concept of the local ecological network that is specifically adapted to the municipality. Together with the population, models for the further development of the local landscape can then be discussed and selected.

In this way, a vision for the development of a municipality can be produced that has interesting results: more livable settlements, more free-flowing streams, commercial forests grown using the latest techniques, productive agriculture with more flower meadows and hedges on the farmland and therefore more habitats for flora and fauna. This sort of landscape development concept, consistently produced and competently implemented, will make an important contribution to the quality of life of all inhabitants of the municipality.

Ecological networking is a task for the entire community

Everyone can make a contribution: agriculture, forestry, companies, local people, hunters. Activities for promoting and maintaining ecological connectivity in the landscape should have a broad basis. The more participants that are involved, the greater the acceptance and support for actions to improve ecological networks. Motivation is particularly high if people are personally involved in the planned project. Depending on the orientation of the activities, numerous other participants, for example sports associations, churches, schools and kindergartens can also be involved in the project, as well as energy companies or the local building authority.

“An intact mountain region also needs a beautiful and attractive river landscape. Many years ago the population of the Val Müstair decided not to use the River Rombach for power production. We were able to re-nature the Rombach at many places in the valley and thus make the area more attractive. The Rombach was very important in gaining recognition as a UNESCO biosphere reserve and as a regional nature park of national importance”.

Developing visions for the landscape

Aldo Rodigari
Deputy Council Chairman,
Val Müstair (Switzerland)

Extensively used grasslands in the cross-border region of Berchtesgaden

Extensively used grasslands are typical of this cross-border region between Germany and Austria. Traditional cultivated landscapes such as extensively used grasslands in the lowlands and pastures at higher altitudes show a broad spectrum of rare butterflies, grasshoppers and plant species, and are thus highly important for biodiversity conservation. However, in past decades changes in traditional cultivation patterns have become apparent in the region: grassland areas are taken out of use, especially in unfavourable regions where access and cultivation are difficult. Simultaneously, the utilisation of favoured areas is intensified. This leads to a decline in extensively used open meadows and pastures. Hence the support of extensive farming practices helps maintain regional biodiversity and the provision of ecosystem services, while also helping preserve the typical natural scenery with its high touristic potential.

The conservation of the ecological network of open extensive grasslands contributes in this case to the maintaining of the cultivated landscape and regional identity. Connectivity has also been considered within a larger spatial context with a particular focus on the functional integration of the protected areas into their surroundings. This topic has allowed different disciplines to be combined, offering an unusual discussion platform and indicating possible synergies between the activities of different (economic) sectors.

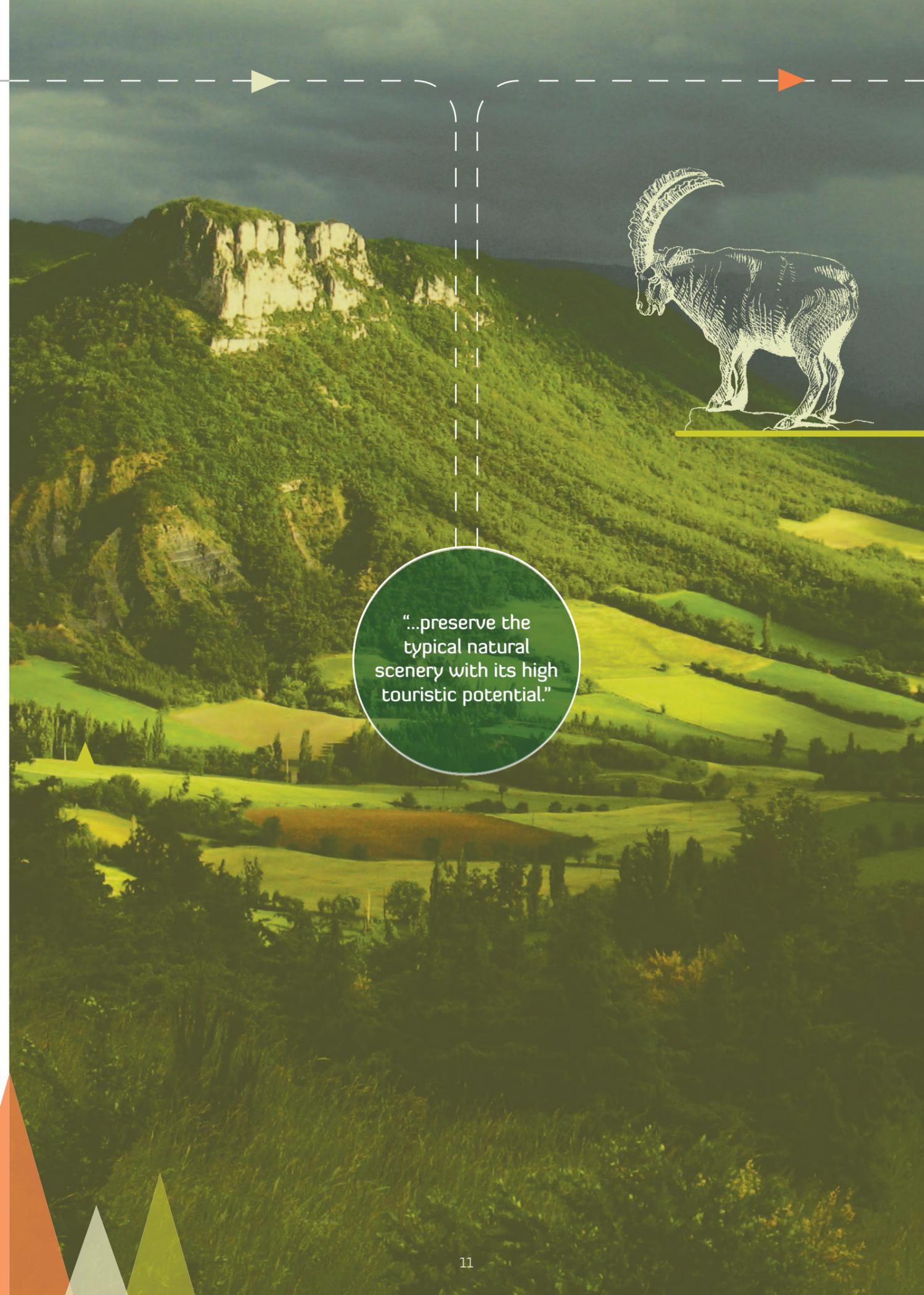


Developing partnerships

Successful implementation will only be possible in close co-operation with local partners. Hunters spend a lot of time outdoors. They know a great deal about nature and have valuable experience of game animals. Hunters are therefore important partners in the networking of habitats. This is because, these days, hunting means the sustainable exploitation of game animals, taking account of ecological requirements and promoting habitats. Hunting is also an important form of land use.

Sustainable hunting contributes to the preserving of biodiversity and the maintaining of the habitats of plants and animals. Gamekeeping also has an important role to play, promoting game stocks that are species-diverse and healthy, as well as supporting the networking of habitats.

Hunters are important partners for the preservation and promotion of ecological networks. With their experience of habitats and the use and support of game stocks, they can for example offer suggestions for the establishment of quiet zones, contribute to developing the aims of protected areas and provide experience for research programmes.



“...preserve the typical natural scenery with its high touristic potential.”



Light in the night

The term “light pollution” denotes the brightening of the night sky caused by artificial light sources whose light is dispersed into the atmosphere. This can have various effects: the growth cycle of plants, for example, may be influenced by an artificially brightened environment. The sensory organs of nocturnal animals are specially adapted to night-time conditions, which makes them particularly sensitive to artificial light. Animals therefore attempt to avoid sources of light, so a well-lit road can therefore constitute a major barrier and contribute to habitat fragmentation.

A large proportion of light pollution comes from poorly constructed or poorly installed light sources and can be avoided without any negative impacts, e.g. as regards road safety. An audit of public lighting can help to identify problem areas and offer appropriate solutions. It is estimated that municipalities can cut their energy costs by 20 - 40% through targeted investment.



Networking gardeners

Settlements are among those areas that may contribute to the fragmentation of the landscape and whose development may contribute to habitat decline. However, it may be possible to mitigate these effects with measures adopted in the gardens and green spaces of towns and villages. The permeability of the areas and, above all, spatial restrictions can be increased, habitats can be created or made more environmentally compatible, and the use of pesticides and herbicides can be dispensed with, etc.

The public can be encouraged to adopt these measures by means of information campaigns and brochures sent out along with building permits, for example. Possible measures include the creation of near-natural hedges from local timber, the permeability of fencing around properties, “insect hotels”, bee forage, etc.

Municipalities can target support for the selection of local plant life for hedges in co-operation with local garden centres, financial subsidies or omnibus orders. Similar possibilities also exist with regard to the planting of fruit trees.

Maintaining roadsides and green areas

Delaying mowing gives plants the opportunity to bloom and form fruits and seeds. In this way, they can provide food and cover for insects and other small animals. The habitat quality of green strips and roadside verges depends on various factors, and mowing is one of the factors that is easiest to influence. By delaying mowing of verges until late summer, or by using mosaic-type mowing techniques, which involves mowing only a small area at a time, habitat conditions can be improved, e.g. for butterflies and various other species.

"Another important action we took was to ban the use of pesticides on roadsides, parks and gardens. Instead of pesticides we now use a different approach, e.g. thermal or manual methods."

Bruno Murienne
Mayor of St-Martin-d'Uriage (France)

As these are roadside verges, they form a network of green spaces that can facilitate migration of plants and animals and, if structured in an environmentally compatible way, can help mitigate fragmentation. Delaying mowing gives plants the opportunity to bloom and form fruits and seeds and thus provide habitats for more fauna, especially insects.

If the managed spaces are integrated into a broader biotope networking strategy, they can act as corridors along roads between core areas.

"We still have a landscape in Ramosch that should at all costs be preserved. The people here too want to support the landscape. That is why we have for some time now been organising Environmental Actions by the Pro Terra Engiadina Foundation. Major companies and school groups are particularly well represented: they stay here 1-2 weeks and help to keep the landscape free of afforestation."

Victor Peer
Municipal Chairman, Ramosch (Switzerland)

Motivating citizens

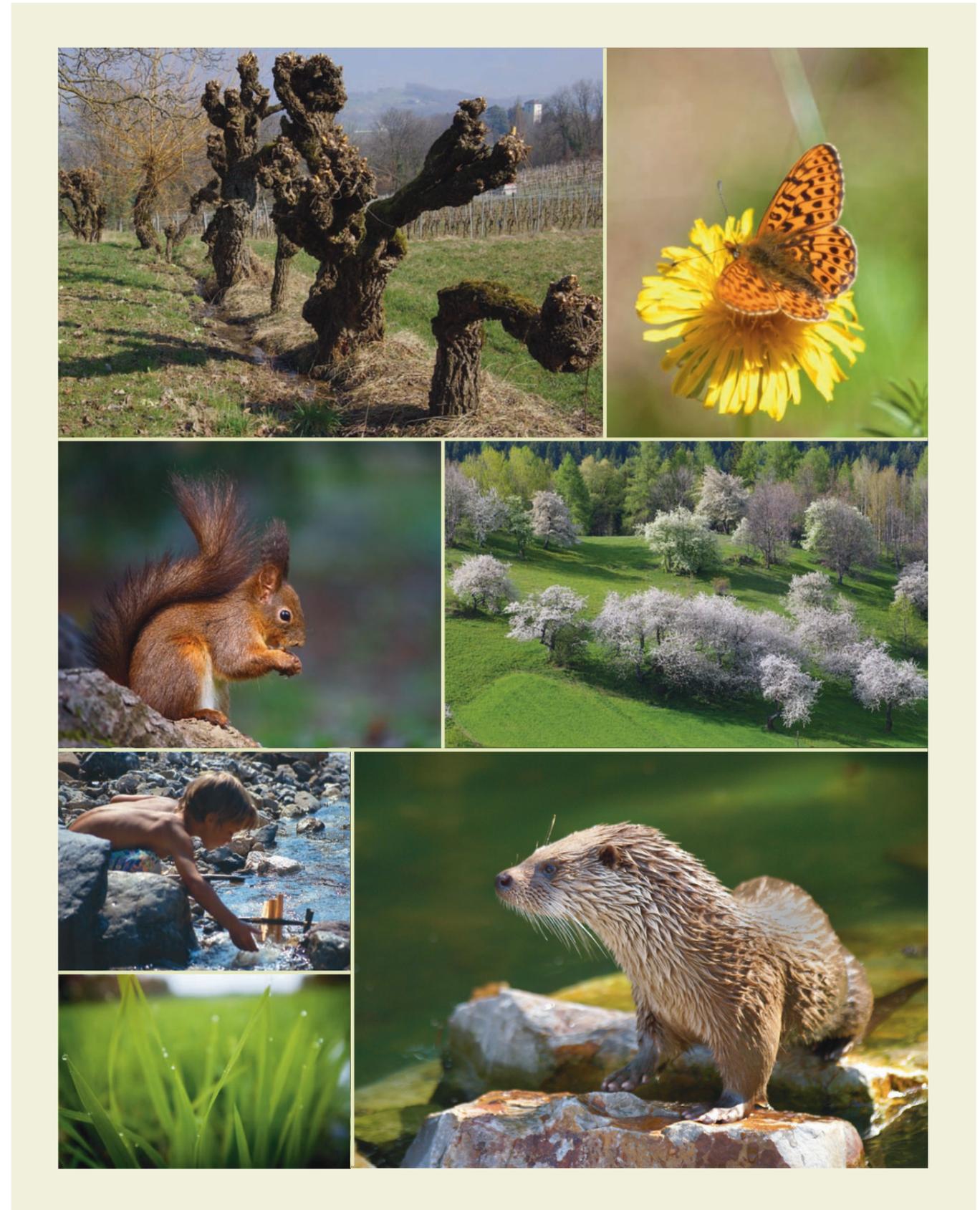
Local authorities are required to play a leading and decisive role in the implementation of measures and thus the realisation of local biotope networking projects. To do this, however, they must ensure the support and co-operation of their citizens.

Local information events and guided tours are a good way of informing these actors (as well as other stakeholders such as farmers, hunters, etc.) about the issue of biotope networks and ecological connectivity and the ways of realising them in practice. What is important in ensuring the success of these initiatives is to prepare summary documentation (e.g. a manual with decision-making aids) and to present the benefits and value-added that such projects can generate at local level (the multifunctionality of corridors, which are significant not only in ecological terms but also perform key social functions as spaces for leisure and recreation as well as economic functions, e.g. through the sustainable management of roadside grass verges).

Awards for particularly interesting actions or the introduction of competitions can motivate citizens to take an active role themselves.

Information boards and educational trails can draw attention to the local biotope network and its features, opening the eyes of inhabitants to their environment and providing a point of interest for tourists.

There are already many interesting educational and information materials available such as games, films and manuals on the topic of ecological connectivity, including materials that are particularly suitable for children and school groups.





Not “just” networking:
networking measures make life
better for animals and plants... and for
people too!



green areas lining a stream contribute effectively to
flood protection;



the re-naturing of water courses can turn jogging or a Sunday
hike into an exciting nature experience;



sustainably managed forests provide effective protection against
avalanches;



in heavily settled valley floors, ecological corridors act as “green lungs”.
They provide better air, attract tourists, and represent ideal recreational
areas;



a well-structured landscape can define the character of an entire
region, as is the case for terraced vineyards or hedgerow landscapes.
They are an unmistakable part of the local identity and play an
important role in tourism.



Connectivity can often be improved with minimal effort in
association with other simple measures. As an example,
postponing roadside mowing allows the growth of
springtime and summer plants, thereby providing
food for bees and other insects.



Useful accompanying material

On these web pages municipalities can find, alongside the film, a two-minute trailer and various
further aids for developing ecological networking, such as a catalogue of possible steps to take,
an expert database and an interactive map showing the networking potential of a particular area.

www.alpine-ecological-network.org

www.econnectproject.eu

