Large carnivores in the Alps and Carpathians

Living with the wildlife

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Large carnivores and protected areas

Dr. Michael Vogel, President of ALPARC[1]

Until the 20th century, the bear, wolf and lynx were hunted in central Europe because they were perceived as competition by humans. Initially the large carnivore populations were able to survive by retreating to inaccessible «wild areas», but they did disappear from regions that were inhabited and farmed by man. Nowadays, the returning carnivores are especially at risk from human infrastructures and illegal shooting. Another major problem is the isolation of small sub-populations, which have become so separated as to rule out the possibility of genetic and population exchanges. These populations are too small and isolated to survive.

The large carnivores – bears, wolves and lynxes – constitute part of the natural heritage of the Alps. The Alpine countries appreciate the value of their return, as has been demonstrated through national legislation and the EU Habitats Directive, but also in the recommendations of the Berne Convention, the Alpine Convention and the Convention on Biological Diversity. In Europe, however, there is hardly any wilderness left. The small number of protected areas that we have is not enough to provide the space needed by bears, wolves and lynxes. If we want to preserve these species in Europe, we will have to do so by allowing the animals to share the space where we live, work and spend our leisure time. This calls for a strategy based on man and nature coexisting rather than being separated. Conservation and wildlife management is therefore a socio-political mission.

Consequently, wildlife management needs to have an impact on people and their activities, wild animals and their habitats. Wildlife management is a process that considers both human social environments and ecological factors that have an impact on animals. This is the only way to develop sustainable solutions – solutions that will necessarily result in cross-border protection measures.

Although the current ecological conditions for bears, wolves and lynxes in the Alps are far better than when they were seen as a threat to be eliminated, these animals are coming back to a world that is very similar to one hundred years ago. Woodlands have been allowed to expand again and the natural food supply has improved. But at the same time, the Alps are the most popular mountains in the world. Natural living spaces are increasingly being fragmented by intensive valley use and infrastructure that has been developed in the interests of traffic and tourism.

The general public might indeed cherish the return of the large carnivores, but ultimately the crucial element is the attitude of the people who live alongside the animals in these areas. The return of any species of large carnivore brings with it a host of challenges – challenges that we need to learn to deal with.

The Alpine countries will work together to establish a cross-border approach to conservation and management. Cooperation will include pooling information, standardising monitoring, maintaining shared databases and agreeing to adapt national measures to reflect changed circumstances in other countries. The Alpine protected areas will have a leading role to play in achieving this goal.

[1] *Berchtesgaden National Park (D)*

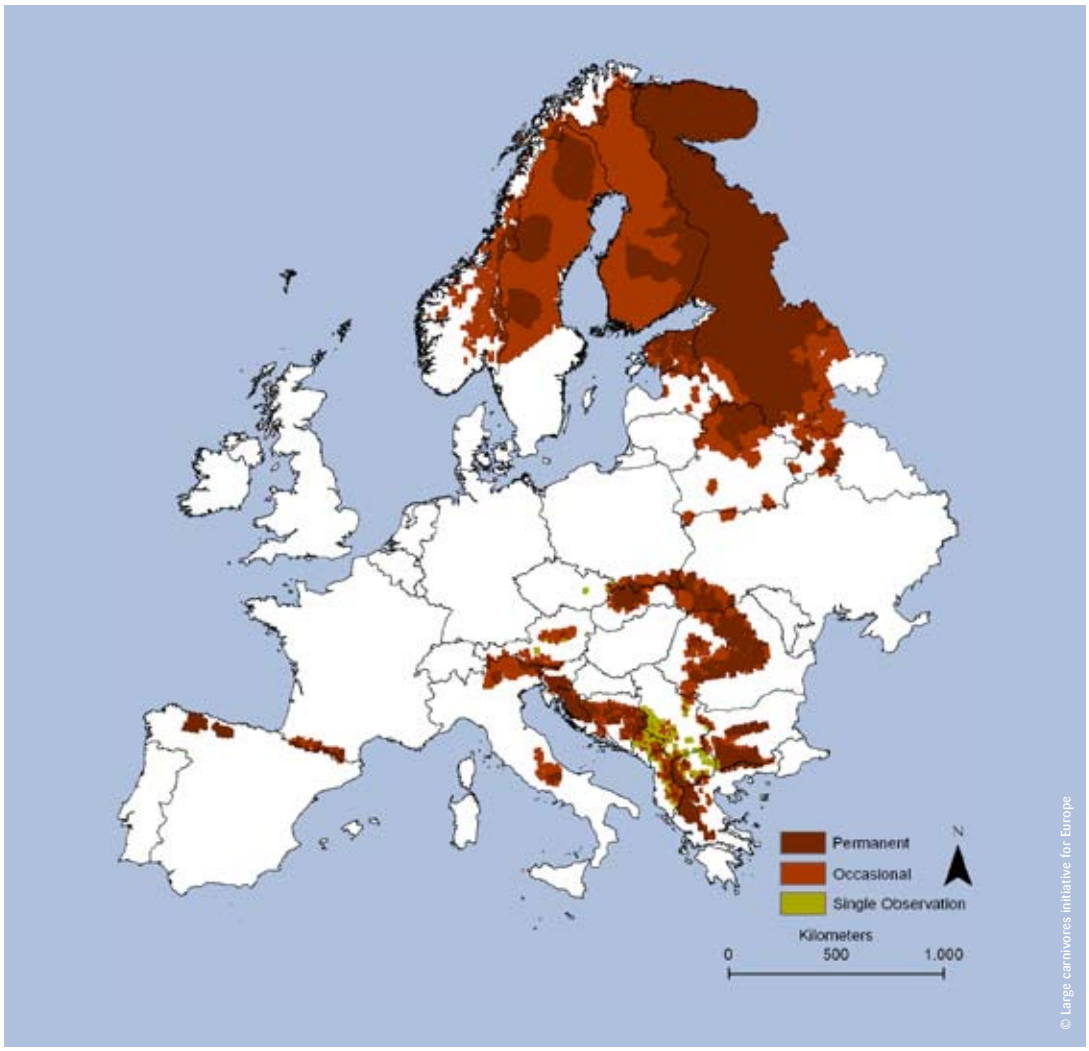
Large Carnivores in Carpathian Mountains

Ovidiu Ionescu [1], Georgeta Ionescu [2], Jurj Ramon [3], Claudiu Pasca [4], Marius Popa[5]

Large numbers of brown bears, wolves and lynxes still inhabit the Carpathian Mountains. However, population density in the different countries varies considerably. Generally speaking, Romania and Slovakia are home to the largest populations, Poland and Ukraine have medium-sized populations, while the Czech Republic and Hungary have the smallest number of individual animals.

Brown bears:

Distribution of the bear (Ursus arctos) populations in Europe



The protected status of brown bears in the Carpathians as a whole is satisfactory. The species is strictly protected in some countries and where hunting is allowed, it is based on a relatively accurate estimate of population numbers and therefore appears to be sustainable. The official estimate of the brown bear population in the Carpathians is about 7,000 individuals.

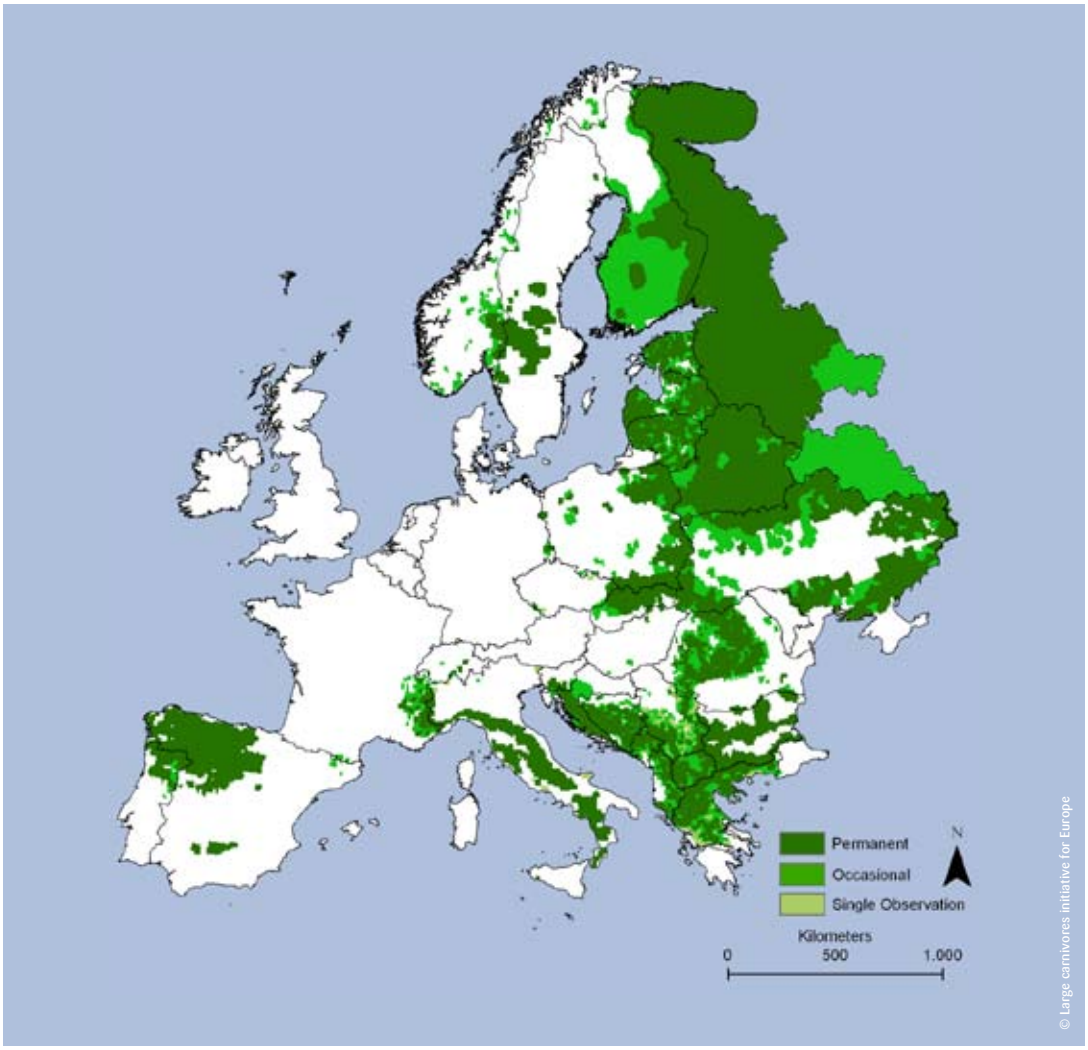
Population numbers in the region are either stable or on a slight uptrend (see Table 1). The main threats to brown bears across the Carpathians are poaching (especially in Ukraine), habitat changes (privatisation of forests, road construction), and recent adverse changes to hunting arrangements (hunting areas are too small, no modern hunting legislation).

Table 1 - Assessment of national brown bear population size and trends in the Carpathian region.

Country	Population size (official data)	Experts' assessment	Trend
Czech Republic	Occasional	Accurate	
Slovakia	1,100 – 1,200	Inflated, probably 700-800	Stable
Poland	100	Accurate	Stable
Ukraine	400	Probably accurate	Stable
Hungary	Occasional	Accurate	
Romania	> 6,000	Accurate	Stable

Wolves:

Distribution of the wolf (Canis lupus) populations in Europe.



The official estimate for the total Carpathian wolf population is around 5,500 individuals. This figure is probably overinflated: national experts put the figure at just 3,900 animals. Only the official figures in Ukraine are believed to understate the reality. The regional population is either growing or stable, although a slight decrease has been reported in Slovakia (see Table 2).

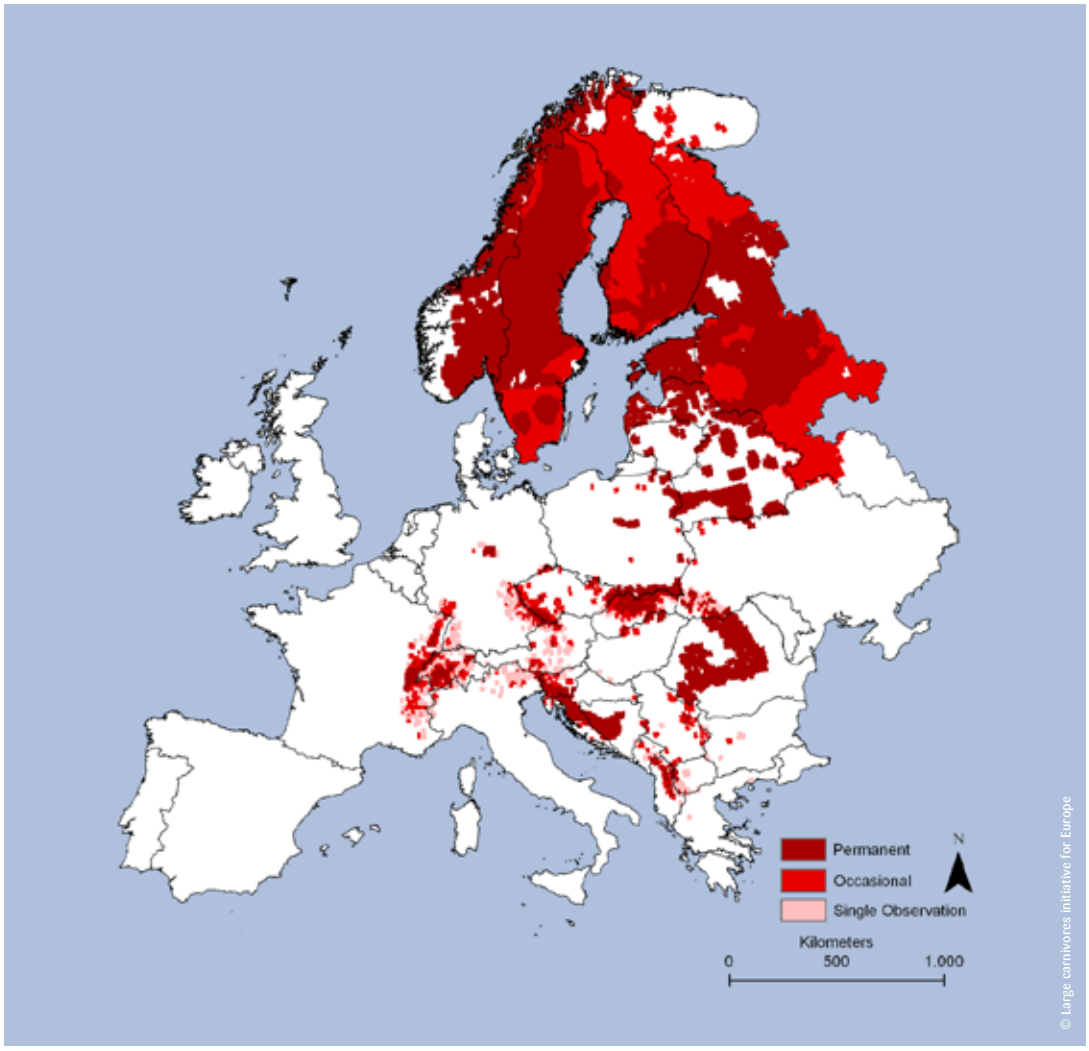
The potential threats for wolves in the Carpathians are: over-hunting, poaching, the decline of natural prey populations, adverse changes to hunting arrangements (hunting areas are too small, no modern hunting legislation), the lack of or ineffective compensation laws, and the lack of management cooperation between neighbouring countries.

Table 2 - Assessment of national wolf population size and trends in the Carpathian region.

Country	Population size (official data)	Experts' assessment	Trend
Czech Republic	No data	< 5	
Slovakia	1,000	Inflated, probably 400-500	Stable
Poland	100	Accurate	Stable
Ukraine	350	Probably accurate	Stable
Hungary	No data	< 5	
Romania	> 2,500	Accurate	Increasing

Lynxes:

Distribution of the lynx (Lynx lynx) populations in Europe.



Generally, the protection status of the lynx in the Carpathian region appears to be quite satisfactory. However, national experts indicate that the lynx should be considered the most vulnerable large carnivore species in the region.

The official estimate outs the total Carpathian lynx population at about 3,400 individuals. This figure is probably a somewhat inflated: national experts have calculated that the population comprises just 2,400 animals. Only the official figures in Ukraine are believed to underestimate actual numbers. Population trends in the region are mostly declining or stable, with Romania the only country to report population growth (see Table 3). Major threats for lynxes in the Carpathians are over-hunting, poaching, falling numbers of natural prey (especially roe deer and chamois), and adverse changes to hunting arrangements.

Table 3 - Assessment of national lynx population size and trends in the Carpathian region.

Country	Population size (official data)	Experts' assessment	Trend
Czech Republic	No data	10–20	Stable
Slovakia	800	Inflated, probably 400	Stable
Poland	250	Accurate	Stable
Ukraine	300	Probably accurate	Stable
Hungary	No data	10-20	Fluctuating
Romania	> 1,500	Accurate	Increasing

Conclusions:

The real threats to conserving large carnivores include recent changes to hunting arrangements (very restrictive hunting areas and hunting laws that focus on ungulate numbers and management), negative attitudes among hunters and wildlife managers, and limited law enforcement.

Any activities that could prove detrimental to large carnivores must only be undertaken after a detailed analysis and the introduction of mitigating measures where such activities cannot be avoided altogether.

The large carnivore populations are shared between the various Carpathian countries. Consequently, there is a need to coordinate management policies at a regional level and between neighbouring countries.

Any proposed changes in national environmental and hunting laws should take into account the requirements of successful conservation of large carnivores.

National management plans for carnivores should be developed in accordance with the guidelines established by the Large Carnivore Initiative for Europe. Ideally, national plans should be devised in conjunction with neighbouring countries. The dynamics of large carnivore populations need to be monitored.

Research is required in order to develop more accurate methods of estimating carnivore numbers. Only accurate research and calculation methods can provide a basis for the effective management of the species.

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Large carnivores in the Alps

Martin Pavlik[1]

Large carnivores in the Alps are unevenly distributed; having experience marked fluctuations in the past, the populations are currently on an uptrend. All three species have almost or completely disappeared from the Alpine mountain ranges and their return in recent years has generated a range of challenges.

History

From folk legends and myths (such as Romulus and Remus), we can see that large carnivores were generally perceived positively in classical antiquity. In the Middle Ages, people were afraid of the animals, which were perceived as uncontrollable forces of nature. From the 16th century onwards, perception changed again, and large carnivores were viewed as a pest to be controlled, resulting in falling numbers of bears, wolves and lynxes throughout Europe. Socio-economic and cultural hunting combined with shrinking habitats saw lynxes and wolves in the Alps become extinct in the late 19th and early 20th century respectively. Small populations of bears survived in Italy (Trentino), Slovenia and southern Austria.

Current situation

Europe's most reclusive large carnivore, the lynx, was reintroduced in the wild in the 1970s. Forty years after their reintroduction, there are now between 100 and 150 individuals in the Alps. Although the lynx currently inhabits just one-fifth of the Alpine region, recent monitoring shows that the lynxes are migrating into new areas.

The largest Alpine predator, the brown bear, is slowly leaving its core habitats and moving into a new areas of the Alps, notably north-eastern Italy, southern Austria and eastern Switzerland. The current brown bear population is made up of 30–35 animals in Slovenia, 10 on the Austro-Italian border, between 25 and 27 bears in Trentino and 2 in central Austria.

Wolves returned to the Alps in the early 1990s, migrating from the Apennines' population, which comprises over 500 individuals. Permanent lupine populations have been established in the western Alps (Piedmont, Italy and France) and the wolves are moving towards the central Alps (Switzerland). We have identified 100-120 wolves, mostly living in packs, with just a few isolated individuals.

Slow progress

The return of large carnivores to the Alps can be interpreted as a sign that environmental conditions have improved, thereby allowing the animals to survive. A shared habitat is not always very hospitable, as human and large carnivore activities often overlap. All large carnivores have an extensive home range and require high-quality habitats but their presence also has a cultural, social and emotional impact on humans.

Although most people would like to see viable predator populations in their country, they do not want the population to live on their doorstep. As large carnivores tend to have low-density populations with low reproduction rates, it will be possible for humans to adapt to their presence by improving local understanding of the animals and by preparing inhabited areas for coexistence. Joint management policies, active conservation projects and public information campaigns should help to increase resident's acceptance of these iconic creatures and allow wild animals and humans to live alongside one another.

[1] *Task Force Protected Areas / Permanent Secretariat of the Alpine Convention (F)*

Bear, Wolf and Lynx

Carnivores and the Role of Protected Areas; a case study carried out in Maramures Mountains Nature Park and Berchtesgaden National Park

Michaela Künzl[1], Costel Bucur[2], Jochen Grab[3], Catriona Blum[4]

Introduction

The presence of bear, wolf and lynx has always spurred discussions and in areas where these species are found conflicts with various stakeholders such as hunters, farmers or tourists are inevitable. Hence, introduction of appropriate, management measures are essential. At the same time the presence of large carnivores influences management strategies of protected areas and is part of all management aspects such as environmental education, communication, research, and visitor guidance. Therefore Berchtesgaden National Park and Maramures Mountains Nature Park carried out a common case study based on different questionnaires to point out what role protected areas can play within the management of large carnivores.

Methods

The first questionnaire was aimed at staff of the Berchtesgaden National Park Administration and of the Maramures Mountains Nature Park. They were asked about their previous experiences with, their knowledge of and feelings about this topic. The second questionnaire was aimed at experts from protected areas in the Alps and Carpathians. The overall aim was to gather information from protected areas where carnivore populations have been present for some time or from areas already preparing for the return of large carnivores. Of particular interest was the question: Which specific tasks arise for general protected area management through carnivore management? A total of 15 protected areas participated in the questionnaires; 9 from the Alps and 6 from the Carpathians:

- France: National Park Mercantour, National Park Ecrins
- Italy: National Park Stilfser Joch, Nature Park Adamello Brenta
- Austria: National Park Gesäuse, National Park Oberösterreichische Kalkalpen, National Park Nockberge, National Park Hohe Tauern
- Switzerland: Swiss National Park
- Poland: Tatra National Park
- Romania: National Park Cheile Bicazului-Hasmas, National Park Buila-Vanturarita, Nature Park Maramures, Nature Park Vanatori Neamt
- Slovakia: Landscape protected area of the Kysuce region

The role of protected areas

Besides questions on basic conditions within and around the protected areas, fields of conflicts and attitudes towards the species, the protected areas were asked to evaluate their role in carnivore management. Managers of all protected areas see education and communication as key points in supporting a successful carnivore management. A further area that protected areas can

get active in is research. The opinion that protected areas are of particular ecological significance to carnivore conservation or play an important role as mediators was seen as less important. Evaluated as least important was the tourism value added to regional development within and around the protected area by the presence of charismatic animals.

1 Wolf (Canis lupus)
2 Sheep in Mercantour
3 Roc Mazilier and a flock of sheep
4 Brown bear (Ursus arctos)
5 Lynx (Lynx lynx)

Conclusion

This survey showed that protected areas do have an important role to play in large carnivore conservation. To protect animals successfully, protected areas must work together. A key message of our common survey is that the fear for potential conflict in carnivore-free areas is assessed over proportionate compared to actual conflicts existing in carnivore-areas. Although there are still knowledge gaps, protected-area staff show a healthy interest to learn more about these animals. An important aspect highlighted by this survey is that closer and more intensive collaboration and exchange between the Alps and Carpathians is desirable. Objective knowledge on species ecology can be exchanged between protected-area staff and communicated to the wider public. Similarly, managers of protected areas must exchange knowledge and expertise to identify areas of conflict, effective management strategies, and important contact persons involved in carnivore research. The cooperative project between Berchtesgaden National Park and Maramures Mountains Nature Park is one such example where closer cooperation can lead to fruitful results.

Original source: *Aßmann, T. & Hatami, M. (2008). Bär, Wolf, Luchs- Karnivoren und die Rolle der Großschutzgebiete am Fallbeispiel des Nationalparks Berchtesgaden (D). Philipps-Universität Marburg*

(1), (3) and (4) Berchtesgaden National Park (D)
(2) Maramures Mountains Nature Park (RO)

Ecological networks to maintain populations of large carnivores

Stanislav Ondrus[1], Michal Adamec[2]

Almost all of the territory inhabited by large carnivores in the Alps and the Carpathians is protected under EU Directive 92/43 on the conservation of natural habitats and of wild fauna and flora, which provides for the creation of so-called Sites of Community Importance. However, large carnivores have very large home ranges and roam extensively. The home range for some animals is over 1,500 km2. Consequently, it is very difficult to use traditional protected areas (NATURA 2000 sites) as a conservation tool. Instead, protection for migratory routes and the creation of ecological networks is of vital importance. Countries with significant numbers of large carnivores need to focus on linking up different protected areas. The current levels of road construction, the development of tourist centres and human activities in habitats used by large carnivores has resulted in the fragmentation of suitable habitats and therefore increased the likelihood of human-animal conflicts.

For example, two-thirds of Slovakia is a suitable habitat for large carnivores, yet habitat fragmentation and the associated loss and destruction of habitats has caused some subpopulations to become isolated. A core area, which offers the best conditions and has the highest density of large carnivores, becomes isolated from other neighbouring areas which in turn makes it impossible for large carnivores to migrate and settle in those areas. This problem is occurring in countries where large carnivore numbers are dependent on stable populations in core areas.

It is extremely important that we identify and create ecological networks designed to protect large carnivores. In the Alps and Carpathians, the European Union and its NATURA 2000 network have a key role to play, but cooperation with non-EU countries, such as Switzerland and Ukraine, is also essential. Unless links between protected areas can be preserved (including stepping stone habitats), it will be impossible to provide protection for large carnivores.

[1] Nizke Tatry National Park (SK)
[2] State Nature Conservancy (SK)

1 Skalka Reserve - typical brown bear habitat in Nizke Tatry

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Management of the Brown Bear Corridor in Upper Posočje, Slovenia - directives and measures

Jurij Dobravec [1]*

In 2008 the Triglav National Park worked together with the municipalities of Bovec and Kobarid to draw up a Management Plan and the attendant technical details covering 6 areas of Upper Poso+je belonging to the Natura 2000 Networking Programme. The areas present differing natural features and different levels, types and trends of human habitation. The management plan considers environmental and human needs on an equal footing.

Although known in the area for centuries, the brown bear is present only periodically. The Central Alps are in fact a major migratory corridor, a feature that has been the cause of conflict with human activities like sheep and goat farming and tourism.

A series of general and specific problems impacting the peaceful coexistence between man and bear in the area were identified. Remedial measures were drawn up by experts together with stakeholders and the local communities.

a) Human Behaviour

As a general rule, bears avoid coming into contact with man. Statistical data recording bear attacks on humans show that the widespread fear of bears in Slovenia is completely unfounded. There may be a problem, however, if bears become used to the presence of man. This can be simply solved by not leaving food or other organic waste that could be a food source for cubs but also adult bears. In 2005, the Forestry Institute published this recommendation along with others in a leaflet entitled "Visiting the Brown Bear".

b) Appropriate Pasture Planning and Prevention

It is essential to introduce adequate pasture planning along with measures to prevent attacks by livestock predators. Adequate protection of pastureland is only right especially in the valleys and in the event of frequent attacks. The measures aim to prevent individual carnivores becoming used to easy prey and so reduce the consequent need to cull "problematic" bears. In recent years public opinion has come out strongly against this solution. One of the preventive measures is to stable or coral livestock at night since the bear is prevalently a night animal.

In areas that cannot be fenced off, especially at higher altitudes where free-range pasturing is the norm, means must be found to divert the bear's passage and increase surveillance of individual animals. Another solution could be the use of shepherd dogs. Still not a common practice in our area and one that is on the decline in the Upper Posočje, the use of guard dogs is in any case not appropriate for free-range pastures in the high mountains.

c) Inter-sectoral Harmonisation

As migratory pathways are co-ordinated, decisions must be taken as to who is to be diverted, man or bear. First of all the corridor allowing the free migration of bears to Italy or Austria must

be established in order to limit damage to farming and the tourist industry as much as possible. Bears should be labelled and monitored so that the local population and tourists may be notified of any danger.

The Management Plan must be drawn up and enforced in accordance with local community development strategies that include tourism and the presence of many trekking itineraries. The Municipality of Bovec especially boasts a long tourist tradition and is one of Slovenia's major tourist resorts. Should there be a real danger of encountering bears, tourists would soon start avoiding the itineraries and the community's economy would suffer as a result.

d) Co-funding of appropriate infrastructure

The State should co-finance preventive operations such as fencing, with subsidies for shepherds, and studies on the training and introduction of shepherd dogs. Introducing solutions after an event like depredation of flocks is much less effective.

e) Changing the damages compensation system

Local communities and their populations have applied to the State to change the current system compensating them for damage caused by bears. The current system does not guarantee compensation for the real damage caused, which furthermore has to be demonstrated by the claimant. It also puts the livestock owner at a disadvantage since compensation is made only for direct loss and not collateral damage such as the scattering of the flock with loss of animals falling down ravines or climbing to unreachable places etc.

f) Introducing a bear monitoring system within the corridor

Management of the brown bear requires further research regarding the area covered by the project. We must have a full understanding of the actual conditions under which the brown bear migrates from its Dinaric habitat. This can only be achieved with the support of Slovenian experts and with the collaboration of other local communities. We must identify the real barriers to the migration of the bear and the concrete solutions to be introduced (underpasses, viaducts, electric fencing along trunk roads and motorways). The corridors used by these predators to pass from the central to marginal areas must be carefully mapped.

g) Encouraging harmonised management with neighbouring countries

Conservation management practices for animals like the brown bear whose habitats extend beyond our country into other states, must apply throughout the entire area concerned.

The brown bear is of European importance and a priority species for the Nature 2000 Programme. The animal's environmental features make an overall, harmonised inter-state strategy a necessity.

Regional and local Management and Enforcement Plans must be grounded on rigorously scientific data on the characteristics of the brown bear and its habitat as well as human activities in the area. First of all conflicts must be identified, analysed and classified. Subsequent management plans must set out realistic and achievable measures. Within the framework of the Palpis project (Interreg IIIa Slovenia – Italy), the Triglav National Park, in collaboration with local partners and stakeholders, has developed a harmonised plan that lays the basis for further activities and applications.

** Alenka Petrinjak (Triglav National Park) and Cecilija Ostan (Municipality of Bovec) helped draw up the Brown Bear Management Plan.*

(1) Triglav National Park (SI)

Managing brown bears (Ursus arctos arctos) with a view to reducing human-bear incidents

Horia Iuncu[1]

The main objectives of Bucegi Natural Park management plan are: conserving biological diversity, the sustainable use of natural resources, and promoting harmonious interactions between man and the natural world. Recently, these objectives have been affected by the frequent incidents involving bears in the Bucegi Massif, particularly close to towns.

Tourist activities and infrastructures developed for the 1,200,000 yearly visitors to the Bucegi Natural Park have resulted in the large carnivores' habitats being reduced and altered. The current population comprises 124 brown bears, which exceeds the ideal population size of 92. The population is unevenly distributed around the area, largely reflecting various certain factors linked to differences in socio-economic development in settlements adjoining the Park..

In order to devise a suitable management strategy, the Park area has been divided in three main zones, each with unique characteristics and requiring specific management measures:

The **quiet zone** is an area that is located a long way from the urban centres. The area makes up almost 56% of the parkland, the bear population density is in the normal range and there have been no incidents involving humans. In the last couple of years, only occasional damage to sheep farms has been recorded, particularly close to the edges of the forest.

1 Bear damages on the beehives

2 Habituated bears

3 Female with cubs looking for garbages

4 Trash bin with protection against bears

5 Capturing a habituated bear

In the **seasonal tourist areas**, most tourist activities are focussed on the summer season and are close to the accommodation facilities. These areas are a sources of food waste and therefore have a high concentration of bears. The bears' presence close to the marked trails and campsites is linked to the fact that they are often fed by visitors. Several instances of attacks on humans and damage to property have been recorded in this area.

The **permanent tourist area** is the third area and is where the majority of problems have been recorded. The area encompasses the Sinaia and Busteni resorts. Regarding the proximity of forests, some brown bears have extended their foraging to include the inhabited areas. There have been serious incidents involving humans in this zone.

The main factors that have contributed to changes in the bears' behaviour, particularly in the permanent tourist areas are:

- The landfill area on Furnica Mountain near Sinaia which operated from 1964 to 2004. The landfill site was closed as part of the management measures implemented in Bucegi Natural Park, effectively depriving the local bear population of their food source.
- The fact that tourist huts often also functioned as a smallholding with domesticated animals and food. These holdings have been closed in recent years.
- Food waste and hut guardians' desire to exploit the bears as a tourist attraction. This practice has ultimately proved disadvantageous for the huts as bears have destroyed food storage facilities and endangered staff.
- The lack of a viable waste disposal system for the tourist accommodation, much of which is located on dirt roads that are not suitable for waste disposal vehicles.
- Changes in tourist preferences, with a shift from mountain huts to camping, which has also seen an increase in the number of camp fires.
- Increasing pressures on local communities caused by urban spread, deforestation, modernisation of the ski resorts and access roads.
- Tourists want to see a large carnivore that frequently appears in Romanian folklore and literature in its own habitat.

Food begged from tourists has become an important source of food for the bears and the park administration estimates that 25 individuals have changed their behaviour patterns (as at January 2009). For this reason, the park administration relocated two brown bears in 2007, but four days later they returned to the area where they had been captured, having walked 45 kilometres.

In order to establish a balance between the scientific importance of the brown bear and the need to ensure the safety of tourists and residents, the park administration, in collaboration with government bodies and NGOs implemented a series of measures to reduce conflict between humans and bears. A project was established that brought together the bear management plan, the park management plan and the visitor strategy. The project's main objectives were to reassess bear habitats, survey the entire bear population, produce an analysis of these indicators and establish an optimal bear population. In addition to relocating bears which display altered behaviour patterns, the park administration has been given legal authorisation to remove aggressive specimens if all other measures have been ineffective.

Public awareness campaigns are an important factor in reducing the number of incidents involving humans and bears, as are communication activities involving all the relevant stakeholders.

- In 2007, the park administration set up a working group to look at how humans and bears could coexist. All the working group meetings and all decisions taken have been publicised in the local and national media.

- Permanent patrols have been established in areas where bears are known to be present. The patrols discuss issues with tourists, provide information leaflets and distribute instructions for visitors to areas frequented by bears.
- Over 400 information and educational posters have been displayed, particularly on roadside hoardings and along tourist trails, at major tourist centres and in huts.
- The park administration has used environmental education activities in schools to stress the importance of local waste management and to explain why the bears are a valuable tourist attraction.
- Information campaigns have been organised to explain «bear issues» to tourists and inhabitants. Audiences are encouraged to support activities designed to reduce conflicts between humans and bears.

In view of the large bear population and the fact that is no single structure for managing the various factors, this issue will remain a priority for the next couple of years.

1 Bucegi nature park's information campaign

2 3 Habituated bears

4 Bucegi nature park's environmental education activities

(1) *Bucegi Nature Park (RO)*

Regulation relating to the large carnivore populations in Slovakia

Martin Kassa[1]

Slovakia has a key role to play as the center of the west Carpathian population of all three species of large carnivores – the brown bear (Ursus arctos arctos), wolf (Canis lupus) and lynx (Lynx lynx).

The dynamics of large carnivore populations in Poland (brown bear and lynx), the Czech Republic (brown bear and wolf) and Hungary are entirely dependent on the Slovakian population.

Large carnivore populations in Slovakia 1990-2003

(based on official hunting statistics published by the National Forest Centre, Zvolen)

	Wolf (Canis lupus)			Lynx (Lynx lynx)			Brown bear (Ursus arctos arctos)		
Year	Pop.	Hunted	Carcasses	Pop.	Hunted	Carcasses	Pop.	Hunted	Carcasses
1990	750	115	-	871	-	11	835	-	-
1998	1,233	54	3	1,007	22	3	1,382	46	8
1999	1,238	69	13	1,003	4	2	1,287	28	13
2000	1,287	118	6	1,046	0	3	1,475	31	6
2001	1,113	93	3	968	0	6	1,350	26	10
2002	924	113	-	883	0	-	1,211	39	-
2003	973	112	-	915	0	1	1,318	13	7

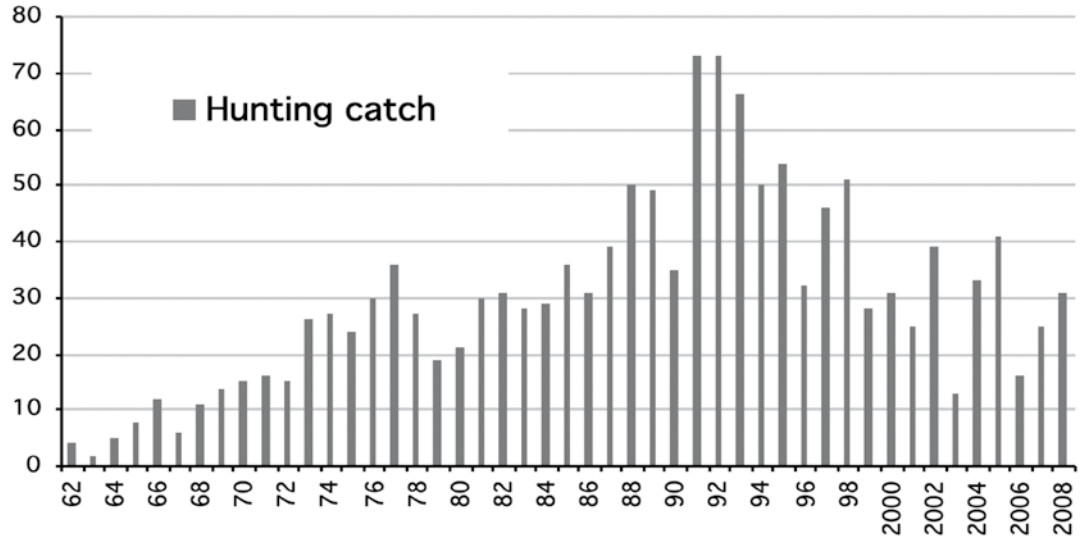
The **brown bear** population in Slovakia comprises around 700-800 animals (official hunting statistics put the figure at around 1,400 individuals). The brown bear mainly inhabits the central mountains of the Slovakian section of the Carpathian Mountains, but the population has spread naturally to the Beskyds (Czech Republic) in the west and the Slovakian karst (Hungarian border) to the south. The Polish population forms the link to the brown bears in the eastern Carpathians. The population is stable.

The national list of the proposed Sites of Community interests (SCI, Natura 2000) identified 61 sites covering over 411,000 ha. that would provide protection for bears. The largest areas are in west of the Low Tatras (46,610 ha.), Velka Fatra National Park (43,600 ha.), Low Tatras (east) (36,222 ha.), Mala Fatra National Park (21,928 ha.) and Muranska planina National Park (20,315 ha.).

Species	Conservation status	Hunting status
Brown bear	- Protected species of European importance - Protected species; conservation includes the designation of protected areas - Listed in Red List of Mammals in Slovakia - Hunting exemption issued by –Ministry of Environment (MoE) - Conservation value: EUR 2,000	- Game species - Year-round protected status - Hunting exemption – Ministry of Land Use (MoL) - State damage compensation (regional forestry offices) - Regulated hunting based on yearly quotas set by MoE (population growth rate of up to 10%) - Hunting of individual problem bears

The bear is a protected species in Slovakia and the population is regulated in accordance with the following principles:

- Hunting is concentrated in areas where there is extensive and repeated damage to livestock and beehives
- Problem bears must be shot
- Creating a continuous corridor between the western and eastern populations
- Supporting the natural population spread to Moravia (Czech Republic) and Hungary.

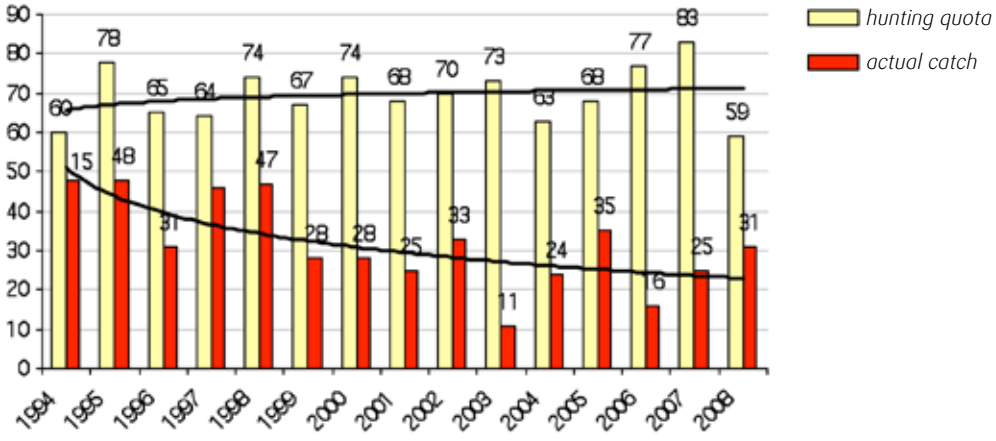


In order to manage the bear population whilst keeping hunting at sustainable levels, the following conditions are applied:

- Annual hunting quota represents no more than 10% of the population
- Hunting season is limited: from 1 July to 15 December
- The weight of the bears hunted is limited to 100 kg
- Meat is not allowed to be used as bait
- Hunting is not permitted in protected areas (national parks and nature reserves),
- Each hunted bear is measured by protected area staff.

As a result of these criteria combined with supervision by protected area staff, bear hunting has never exceeded 50 % of the annual hunting quota.

Regulated brown bear hunting in Slovakia.



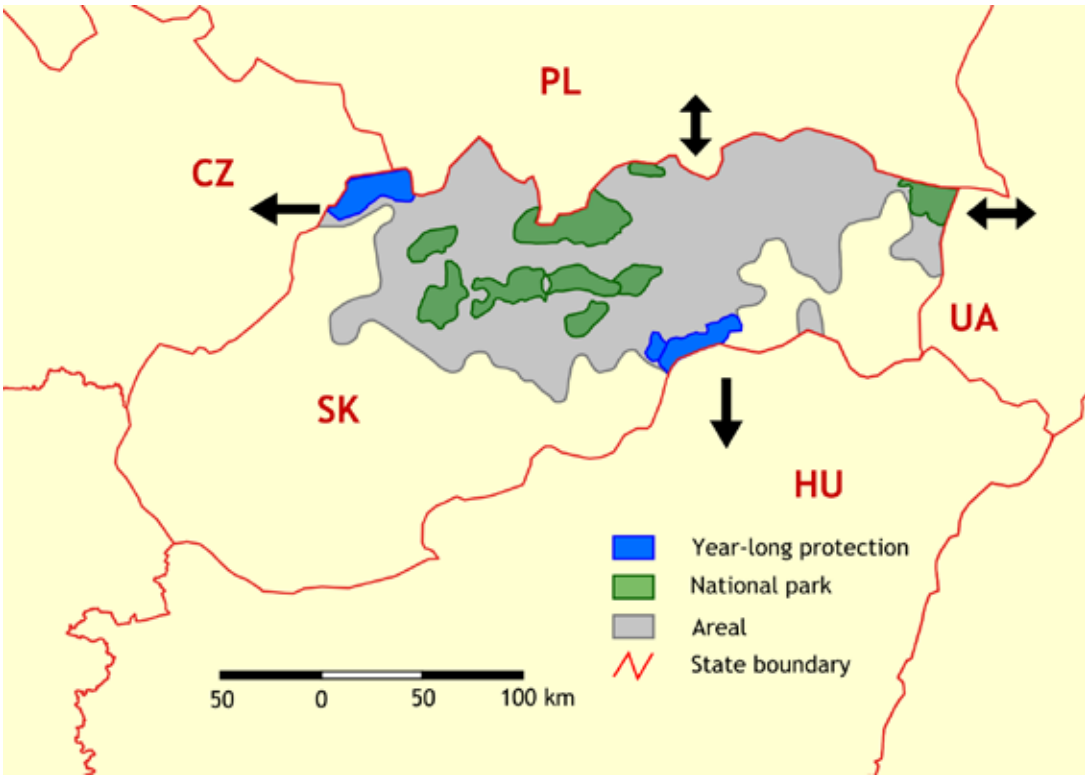
The **wolf** (Canis lupus) is indigenous to Slovakia. At present, wolves inhabit the wooded central Carpathian Mountains in the north and north-east of Slovakia. The population totals between 400 and 500 individuals (official hunting statistics put this figure at over 1,000). The population has declined slightly.

In Slovakia, the wolf is partially-protected species, with protection between 16 January and 31 October, except in two regions bordering the Czech Republic and Hungary. These regions enjoy year-round protection because they are migration corridors used by the wolf population to expand to the west and south.

The national list of proposed Sites of Community interest (Natura 2000) identified 72 areas covering more than 428,000 ha. which provide protection for wolves. The largest areas are Tatras (61,735 ha.), Low Tatras (west) (46,610 ha.), Velka Fatra National Park (43,600 ha.), Low Tatras (east) (36,222 ha.), the Strazov mountains (29,367 ha.) and Mala Fatra National Park (21,928 ha.).

Species	Conservation status	Hunting status
Wolf	- Partially-protected species of European importance (16 January to 31 October) - Partially-protected species: conservation includes designating protected areas - Appears on the Red List of Mammals in Slovakia (near threatened) - Two areas of year-round conservation where any damage caused by the animals is subject to government compensation (regional environment offices)	- Game species - Hunting season runs from 1 November to 15 January - No quotas during the hunting season

Lupine migratory areas and corridors between Slovakia and neighbouring countries.



1 Bears' hunting management

2 3 Habituated bears

Like the wolf, **lynxes** (Lynx lynx) are mostly found in forested mountain biotopes in northern and eastern Slovakia. Most of the population is found at altitudes of between 800 m and 1,000 m. The lynx prefers rugged mountainous areas. The population is estimated to be around 400 individuals (official hunting statistics put the population at over 1,000 animals). The population is decreasing.

The national list of proposed Sites of Community interest (Natura 2000) identified 77 areas covering more than 448,000 ha. that were suitable for lynx protection. The largest areas are the Tatras site (61,735 ha.), Low Tatras (west) (46,610 ha.), Low Tatras (east) (36,222 ha.) and Velka Fatra National Park (43,600 ha.).

Species	Conservation status	Hunting status
Lynx	- Protected species of European importance - Protected species: conservation includes designating protected areas - Appears on the Red List of Mammals in Slovakia (endangered) - Conservation exceptions issued by MoE - Government compensation for any damage (regional environment offices) - Conservation value: EUR 2,000	- Game species - Protected all year round - Exemptions by MoL - No regulatory hunting plan

(1) *State Scientific Library (SK)*

Large Carnivores and Public Awareness Campaigns: The Role of Protected Areas

Filippo Zibordi[1]

Few animals are as integral a part of Alpine cultural traditions as the bear, wolf and lynx. Down the centuries when they occupied the same territory as man, these large carnivores always aroused contrasting emotions in the collective imagination. Attitudes changed with social and cultural developments. Once reviled as dangerous species, enemies and even a threat to man's supremacy over nature, they subsequently became symbols of the Alpine ecosystem, the hallmark of uncontaminated nature. Today they are emblematic of man's renewed rapport with the natural environment.

Whatever the reason for this "love-hate" relationship, old prejudices remain, however, undermining any objective, reasoned approach to the three species. Still today awareness is based more on myth and legend than on biological and environment understanding.

Yet despite their scant knowledge, the general public is nonetheless keenly interested in large carnivores. Their presence rarely goes unnoticed. Indeed, bears, wolves and lynx have become "symbol species", the ideal testimonials of nature-safeguard campaigns.

In light of the above,

It is clear that communication and awareness raising among the general public is key to the safeguard of these three species. Only by countering erroneous, misleading information, often the only message to reach the general public, will local populations develop a sense of responsibility and accept to live alongside these animals.

In short, preservation of large carnivores requires ad hoc communication campaigns aimed at creating acceptance or preparing for the reintroduction of the species. At the same time they provide an opportunity to raise general awareness on the broader issue of ecosystem safeguard policies.

Protected areas have a key role to play. One of their statutory objectives is to be privileged districts where sustainable development models can be experimented. The availability (at least in theory) of greater resources than neighbouring areas should allow roll out of policies to ensure acceptance by local populations that ideally should spread further a field "contaminating" other areas. This should trigger a new approach to balancing the urgent need to preserve biodiversity and the understandable development demands of local residents.

Hence the need to start with the young generations, developing appropriate teaching instruments to create awareness of what it means to share a particular environment with large carnivores. Focus should not only be placed on the biological and environmental specifics of the species in question but also on their exceptional cultural significance.

Since, however, we cannot wait for the younger generation to grow up and usher in peaceful coexistence between man and large carnivores, wider public mobilisation must be sought through meetings, conferences, leaflets and explanatory texts, films, guided excursions, museum and venues.

1 Brown bear (Ursus arctos)

2 Lynx (Lynx lynx)

3 Flock of sheep in Piatra Craiului

4 Wolf (Canis lupus)

5 Retezat national park landscape

The choice of initiative will obviously vary with the particular situation in the given area. Likewise the groups to be targeted may well be prioritised differently depending on the underlying situation. In addition, given the delicate dynamic of which the large carnivores are part, any public awareness campaign should be part of a wider strategic communication plan to be drawn up prior to any re-colonisation project involving one of the three species. The strategic plan should be the result of in-depth analysis and set down a series of useful activities and control measures covering all eventualities arising from the presence of bears, wolves or lynx. Demoscopic surveys, focus groups etc. will allow assessment of on-going strategy outcomes and eventual adjustments to the original plan if necessary.

However, if such endeavours are to meet with public approval and be credible, communication campaigns must be backed up by scientific research. Hard data collected directly in the field are essential for meaningful communication content and greater campaign impact.

Communication, safeguard and scientific research: these are three essential, albeit not exclusive, tasks of the protected areas. These areas are now faced with the difficult job of cooperating in the management of areas where the bear, wolf and lynx are present. On a broader scale, they play an indispensable role in preparing for all future eventualities when we will hopefully see the re-colonisation throughout the Alpine chain of these three native species.

(1) *Adamello Brenta Nature Park (I)*

Bear Conservation in Austria: an ambitious target with implementation problems at local level

Georg Rauer[1]

Very few bears now live in Austria: 1) Carinthia in the south, is known to have a few, exclusively male bears that have travelled long distances from their original Slovenia population; 2) Tyrol and Vorarlberg in western Austria is known to have a few males; they too come from afar, their original population residing in the Italian Trentino region; 3) the northern calcareous Alps of Lower Austria, Upper Austria and Styria in central Austria have what is left of Austria's only breeding bear population. In the period 1989-1993, within the framework of the WWF Austria project, a further three bears were released along the route of a migrating male. Despite successful breeding, the number of bears has never exceeded 12 individuals and today it is highly likely that there are no more than two males living in the area.

Conservation of a bear population in Austria is a clearly stated objective of nature safeguard policy. The brown bear is mentioned in Annexes II and IV of the European Community Habitats Directive. The directive commits member states to ensuring conditions that will permit conservation of the species on the list.

Implementation difficulties are due to: 1) a fragmentary legal situation; hunting and nature protection are the legal responsibility of the 9 Länder and Austria's brown bear management plan is not legally binding upon them; 2) a generally passive attitude to wildlife management issues by the Länder administrations (they have not instituted any wildlife surveillance or monitoring system; brown bear management issues are based on the approved projects and the Länder decline any liability in terms of damage compensation or instituting preventive measures; 3) the considerable legal safeguards covering hunting, land ownership and property rights (bear management measures like population support action, capturing, dissuasive measures and even monitoring are all considered a violation of landowner rights; hunters' associations act as a lobby defending these property rights; 4) bear conservation is associated in the public mind with the WWF, by far the most active player in terms of bear conservation awareness, an association however distrusted by the various vested interest groups and 5) the lack of political will to promote actively the constitution of a bear population in Austria. The official position of the Länder administrations and hunters' associations is that bears are welcome, but not invited.

[1] *Wildlife and Environmental Research Institute, Faculty of Veterinary Medicine, University of Vienna (A)*

1 Hay drying

Austria's Wolf Project Current situation and future prospects for large Alpine carnivores

Heinrich R. Dungler[1]

"A new era has dawned in the history of relations between man and wolf. Only recently have we realised what we have lost by exterminating so many wild species. An old Indian put it this way: If the beasts are gone we will die of loneliness of spirit (Askani 2004)."

The wolf has always inhabited Austria. Many place names testify to the age-old presence of the species in the country. Since its extermination (1882), there have been only rare sightings of the wolf (see Spitzenberger 2001). Still today no wolf population has succeeded in establishing itself.

Almost all neighbouring countries have stable wolf populations that enjoy high protection levels. Wolves are extremely mobile, adaptable animals. Austria has areas that offer ideal habitats such as the network of the Protected Alpine Areas. Recent observations would in fact suggest that the wolf has probably naturally re-colonised some areas (see Dungler 2007; 2009 still to be published).

Austria is of key importance to allow links between the wolf populations of central and southern Europe where the various sub-populations are separated by only short distances. Genetic exchange is necessary to guarantee the health and fitness of the species, making Austria of international importance to ensure this.

Successful wildlife protection depends in large measure on the awareness and attitude of the community at large. Re-colonisation by wolves is the subject of lively debate. Farmers should not suffer unacceptable losses because of the presence of wolves. In addition, new wildlife environmental scenarios pose new challenges for the whole question of hunting. The economic pros and cons also have to be taken into consideration.

All these prerequisites were taken into account when drawing up the objective of the Austrian Wolf Project that should create the right conditions for the possible presence of wolves.

As shown by the many news stories in recent years, the wolf is once again a major topic in Austria. The baseline conditions have been set up and now must be adapted and extended in the future. Since acceptance of wolves in the country depends largely on people's awareness and attitudes, great importance has been given to communication and training. If wolf populations are to have real prospects in Austria, activities must be deployed within a well-coordinated, finely tuned network.

Heinrich R. Dungler coordinates the project promoted by the Federal Ministry for the Environment (Ministry for Life). He has participated in several wolf projects in North America and since 1995 has been concerned with developing and managing wolf populations in the Alps and Carpathians. His particular interest is the complex relationship between man and wolf in areas known for their outdoor sports activities.

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[1] *Ministry of Environment (A)*

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With the support of:

Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit

Heidehof Stiftung

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ALPARC - Alpine Network of Protected Areas
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Realised by:
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Coordination: Guido PLASSMANN
Realisation: Martin Pavlik
Design: Naturaprint
Rewriting: Robyn Hackett
Translation: Alexandra Geese, Lea Caharija, Nicoletta Spinolo, Stephanie Johnson, Nathalie Ferretto, Milena Zocca, Reinhold Ferrari, Claudio Tugnoli, Petra Šajn

Printed on recycled paper with vegetable inks by Naturaprint in August 2009

Realised by: Task Force Protected Areas – Permanent Secretariat of the Alpine Convention

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