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CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE  
AND NATURAL HABITATS

## **Seminar on Transboundary Management of Large Carnivore Populations**

Osilnica, Slovenia, 15-17 April 2005

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# **Report**

Secretariat Report  
produced in collaboration with

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The Standing Committee is invited to:

- Take note of the report of the Seminar;
- Thank the Slovenian authorities for the excellent hosting of the Seminar and the Large Carnivore Initiative for Europe and the Austrian LIFE Project for their excellent work as co-organiser;
- Examine and, if appropriate adopt, the draft recommendation on regional action plan for large carnivore populations.

## INTRODUCTION

More than 100 participants representing countries from across Europe gathered in the small rural area of Osilnica, Slovenia for two days of discussion to understand and address the key issues facing trans-boundary cooperation and management of large carnivore populations (a list of participants is found in appendix 1 of the report). The Council of Europe under the Bern Convention and the Convention on the Conservation of European Wildlife and Natural Habitats initiated the meeting. The seminar was organised in co-operation with the Ministry of the Environment and Spatial Planning of Slovenia and the IUCN Large Carnivore Initiative for Europe (LCIE) Task Force in association with the Austrian LIFE project on bears. The Slovenian authorities officially opened the seminar followed by welcome addresses by the Council of Europe and the IUCN LCIE Task Force Chair.

Dr. Alistair Bath facilitated the two-day seminar on behalf of the Council of Europe. After an introductory presentation on the management of large carnivores in Slovenia, the seminar began with a working session where participants were divided into eight groups and asked to identify the key obstacles to trans-boundary cooperation on large carnivore populations. This opening exercise, in addition to getting participants to interact with other participants from various countries, provided a context for invited speakers to discuss how they addressed these obstacles within their own case studies of transboundary co-operation.

Presentations were organised into various regional initiatives where speakers from various countries within the region discussed the efforts made to effectively address the challenges of trans-boundary cooperation on large carnivore populations. The regional initiatives sharing experiences included:

- *SCALP*, where focus on common monitoring, data analysis and standardisation of data methods were emphasised,
- *Bear conservation and management in the Alps*, where strong co-operation between forest, wildlife and park authorities were deemed as essential to ensure successful conservation,
- *Carpathian Mountains*, where discussion turned to how to effectively implement the recent Carpathian Convention,
- *Wolf management in France, Italy and Switzerland*, where radio telemetry data clearly illustrated that wolves travel across country boundaries,
- *Baltic Large Carnivore Initiative*, where data clearly illustrated the importance of border lands for large carnivores and hence the need for co-operation,
- *Scandinavian Large Carnivore Management and Monitoring*, where speakers emphasised while there was information sharing between the Nordic countries of Finland, Sweden and Norway, there were very different government policies making co-operation at a political level challenging,
- *Dinaric-Pindos/Rila-Rhodope Mountains*, where the challenges of just meeting together was evident as speakers from Bosnia-Herzegovina, Serbia and Montenegro, “FYR of Macedonia”, and Albania were unable to attend to give their presentations,
- In addition, presentations were given regarding lynx in the Palatinate Forest and the status conservation and management of large carnivores in Turkey.

A detailed programme is found as appendix 2 to the report. Summaries of reports presented are found in appendix 3 to the report.

## OBSTACLES TO TRANSBOUNDARY CO-OPERATION RESULTS

Participants were divided into eight groups to address the issue of key obstacles facing trans-boundary cooperation on large carnivore populations. Many groups identified similar obstacles illustrating the common ground between participants.

Group 1 identified these obstacles: lack of political will, different legislation in border countries, fragmented regional policy within some countries (e.g., Spain, Germany), different economic standards of living between countries, different cultures and traditions, lack of human capacity,

language in some regions. Group 2 identified the following obstacles: no tradition to cooperate, cultural barriers, political differences and conflicts, different legislation, economical problems are higher priorities, lack of will to cooperate because of national pride, language/communication problems, lack of experts in administration creating institutional weaknesses at the government level, different hunting laws and a lack of international standards in hunting, lack of incentives to cooperate across boundaries, problems of the perceived “weaker partner” (e.g., Germany and Poland on wolf cooperation), difficulty identifying who the partners should be and what their interests are, and financing cooperation. Group 3 identified ten obstacles: administrative boundaries, differences in population status, number of countries involved, language, differences in priorities, different administrative competencies, different legal status of species, lack of experience of co-operation, lack of population awareness in decision-making, lack of will and perceived lack of urgency. Group 4 identified similar obstacles: state sovereignty, action plans do not deal with trans-boundary cooperation, not all countries bound by EU law, cultural differences, language, different situations that lead to different priorities, political relations, national versus population approach, and confusion within administrative structures.

Groups 5 through 8 also identified similar obstacles. Group 5 highlighted: different national policies, lack of communication, difference in legislation, who takes responsibility, lack of concern at the highest political level, different accessibility to funding sources, different scientific capacity, decentralization of powers, and repartition of roles among competent authorities. The following obstacles were stated by group 6: political reasons, administrative differences, jealousy, lack of knowledge, lack of experts, language barrier, finances, different goals, attitude of local people, and lack of interest at government, NGO, and technical (i.e., scientific) levels. Group 7 focused their discussion on: different historical management practices, different interests of policy makers and technicians within and between countries, different political situation, different languages, and the challenge of translating cooperation to a political level. The final group identified eight obstacles: differences in legal status of the species, lack of willingness to cooperate by the governments, different priorities in different countries, lack of communication within the country and across countries, different regional development strategies creating different political climates, lack of funding, the actual border, and obstruction due to personal interests and conflicts.

In summary, a common ground matrix (Figure 1) was constructed which clearly illustrates the similarities between all groups and overall the most important obstacles. Each group was asked to identify the biggest obstacle to trans-boundary cooperation.

**Figure 1: A Common Ground Matrix on Issues of Trans-Boundary Cooperation**

Key Issues	1	2	3	4	5	6	7	8
Lack of political will.	X	X	X		X	X	X	
Different legislation in border countries.	X	X		X	X	X		X
Fragmented regional policy within some countries	X		X	X	X	X		
Different economic standards of living between countries.	X	X						
Different cultures and traditions	X	X		X				X
Lack of human capacity	X	X	X		X	X		
Language in some regions	X	X	X	X		X	X	
No tradition to cooperate		X	X		X			X
Political differences and conflicts		X		X	X		X	X
Different hunting laws and a lack of international standards in hunting		X	X		X		X	X
Lack of incentives to cooperate across boundaries		X		X			X	
Problems of the perceived “weaker partner”		X						
Difficulty identifying who the partners should be		X			X			
Financing cooperation		X			X	X		X
Differences in population status			X	X				
Number of countries involved			X					
Lack of population awareness in decision making			X	X				
Perceived lack of urgency			X	X		X	X	X

## RECOMMENDATIONS AND CONCLUSIONS

Successful trans-boundary co-operation could be generalized simply into the six “C”s: common, coordination, communication, cooperation, create, and copy. Countries require a **common** understanding of the issue. Successful co-operation also begins with a sharing of data and common data analysis, data entry and data collection. Countries need to have a single vision, common goals and objectives. The monitoring methods put in place should exist forever.

**Coordination** is required at all political levels for such a project to occur. While many countries do not have a tradition of working together governments need to be encouraged to work together. Governments could be invited to a meeting to encourage large carnivores become a priority within their respective countries. These governments should be encouraged to form regional working groups to listen to each other about key issues and work toward common solutions. The Baltic States, the alpine countries, the Nordic countries and the Dinaric Range are a few examples of geographic coordination. Coordination also begins within the country by avoiding administrative fragmentation.

**Communication** is the art of listening. As we are born with two ears and have only one mouth, governments should be listening to the viewpoints of various interest groups at least twice as much as talking to them. All interest groups must be a part of the decision-making process. Communication also refers to the transmission of ideas through written publications. Council of Europe could provide experts to assist in facilitating such interest groups and help in the development and storage of any new works.

**Co-operation** requires trust, credibility and a willingness to share information and ideas in a constructive forum. Web site links could be encouraged between large carnivore and large herbivores thus indicating the cooperation between prey and predator. Governments could be encouraged to host on a regular basis workshops where true cooperation can translate into working ideas and solutions.

**Create** networks that support information sharing from scientists, various levels of government, and between interest groups. Create stepping-stones in the landscape to help bridge gaps between various countries. Create mechanisms and legislative frameworks to facilitate transboundary cooperation such as the Carpathian Convention. Create funding opportunities for countries to engage in cross-cultural exchanges to learn more about the other’s country.

Occasionally it also pays to **copy** the success stories from neighbouring countries. Effective monitoring techniques and equipment used in other countries could be duplicated for use. Standardising equipment and methods across borders may considerably increase the ease of determining population status.

Individual governments may lack the political will to work with other countries especially in areas where traditionally there was little to no tradition. In these cases the Council of Europe may act as a facilitator to encourage country representatives to speak to each other. Large carnivores may never be high priorities in countries with socio-economic problems. It will be important for Council of Europe to aid countries in other areas, demonstrating the value of the large carnivore species, and providing where necessary funding to encourage co-operation.

## PROPOSALS TO THE STANDING COMMITTEE OF THE BERN CONVENTION

The five European Action Plans on five large carnivores (bear, wolf, lynx, Iberian lynx and wolverine) drafted by LCIE and endorsed by the Bern Convention established clear guidelines for the elaboration of national action plans on these species. Although regional workshops were held in the past 5 years (on the Carpathians, on the Baltic states, on Fennoscandia, on lynx in the Alps, on Iberian lynx, on lynx in the Balkans) to promote regional co-operation and substantial work was carried out by LCIE, there is still the impression in participants that there is a need for re-inforced co-operation between neighbouring states for the management of some populations.

It is thus suggested the elaboration of “population action plans” where the species lives in a transboundary context or where, because of small population numbers, all available stock has to be managed in an integrated way.

As a result of the seminar, participants proposed states to support the work of LCIE and to gather the political will to elaborate more detailed action plans.

A draft recommendation (see appendix 4) is presented for Bern Convention Parties for possible adoption.

## Appendix 1

### ***LIST OF PARTICIPANTS / LISTE DES PARTICIPANTS***

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## Appendix 2

### DRAFT AGENDA OF THE MEETING

The seminar will be held in **English only**. Discussions will be developed in round tables to be conducted by a Chair for each topic, including case-studies dealing with regional initiatives in large carnivore conservation.

#### Suggested topics

- Comparison of large carnivore management systems and practices at a national level in some European countries aiming at strengthening a common strategy addressed to those countries sharing LC populations.
- Towards a “population oriented” Action Plans: implementation of the European Action Plans for LC: challenges, difficulties, future actions?
- Practical problems in running conservation actions in different states aiming at co-ordinate the management of transboundary populations. The role of international organisations and programmes
- National hunting policies and conservation strategies in neighbouring countries. Coordination of hunting management with CITES and other international requirements
- Human dimension: public acceptance and awareness campaigns concerning LC in Europe
- Status, research projects and monitoring practices in the framework of a regional co-operation
- Connecting core areas through corridors and migration routes between populations occupying habitats on the borders of some European countries. Ecological corridors and natural reserves in the framework of the Emerald Network and Natura 2000
- Optimal habitat: review spatial frames of the core protective areas
- National strategies to prevent habitat fragmentation and other threats
- Re-colonisation or reintroduction of LC in order to connect core populations in neighbouring countries
- Conflicts between migration requirements and social acceptance of high-density populations of large carnivores
- Administrative levels of the legal protection of large carnivores: how to reach common management principles among national and regional GOs dealing with conservation issues
- Influence of EU accession for some European countries. How to co-ordinate efforts for conservation and management of large carnivore populations in non-EU and EU countries in the following sectors : agriculture, forestry, hunting policies, infrastructure, etc

Preliminary timetable and suggested case studies

**Wednesday 13 April & Thursday 14 April**

LCIE Core Group meeting

**Friday, 15 April**

**9. 30 a.m.**

Opening by the Slovenian authorities

Welcome addresses by Council of Europe and LCIE Chair

Working methods of the seminar: Facilitator and Council of Europe

Introductory speech: **Management of Large Carnivores in Slovenia:** success, future plans, co-operation with neighbouring countries

*Cases Studies*

**10.30 a.m. – 12.15 a.m. 1<sup>st</sup> case study (1h 45 min)**

<i>Regional initiative</i>	<i>Countries</i>	<i>Experts</i>	<i>Organisation</i>
<b>SCALP:</b> - The population approach: how to improve its efficiency (success, gaps); - The Pan-Alpine Conservation Strategy (PACS) as an example of co-operation in the management of regional LC population: monitoring of the implementation, future actions needed to improve regional co-operation  <i>Chair: Anja Molinari – Jobin/ Urs Breitenmoser</i>	<b>France</b>	Eric Marboutin Pierre Yves Quenette	Office national de la chasse et de la faune sauvage
	<b>Switzerland</b>	Christine Breitenmoser-Würsten; Urs Breitenmoser	KORA
	<b>Italy</b>	Paolo Molinari	Italian Lynx Project
	<b>Austria</b>	Jens Laass	Univ.f. Bodenkultur Wien (BOKU)
	<b>Germany</b>	Manfred Wölfl	Naturpark Bayerischer Wald
	<b>Slovenia</b>	Ivan Kos	University of Ljubljana

**Transboundary action plan for the lynx in the Palatinate Forest / Vosges du nord**

Mathias Herrmann & Nina Klar

**12.20 a.m. – 12.40 a.m. 2<sup>nd</sup> case study (20 min)**

<i>Regional initiative</i>	<i>Experts</i>	<i>Organisation</i>
<b>Bear conservation and management in the Alps</b>  <i>Chair: Piero Genovesi</i>	Piero Genovesi  and  Claudio Groff	Istituto Nazionale per la Fauna Selvatica (National Wildlife Institute)  / Provincia Autonoma di Trento - Servizio Foreste e Fauna
	Andrea Mustoni and Filippo Zibordi	Parco Naturale Adamello-Brenta

**2.15 p.m. – 3.45 p.m 3<sup>rd</sup> case study (1h 30min)**

<i>Regional initiative</i>	<i>Countries</i>	<i>Experts</i>	<i>Organisation</i>
<b>Carpathian Mountains:</b> - Actions foreseen in the framework of the Carpathian Convention; - Implementation of the Bern Convention: Action plan for Conservation of Large Carnivores in the Carpathians  <i>Chair: Agnieszka Olszanska</i>	<b>Romania</b>	Ovidiu Ionescu	Romanian Ministry of Agriculture, Food and Forestry
	<b>Ukraine</b>	Volodymyr Domashlinets ( <i>excusé</i> )	Wildlife Protection Department Ministry of Environmental Protection
	<b>Slovakia</b>	Martin Kassa	Director, State of Nature Protection
	<b>Poland</b>	Agnieszka Olszanska	Institute of Nature Conservation, Polish Academy of Science
	<b>Czech Republic</b>	Jaroslav Cerveny	Institute of Vertebrate Biology, Czech Academy of Sciences
	<b>Hungary</b>	Laszlo Szemethy	St Stephen University, Dept. of Wildlife Biology and Game Management

*Coffee break*

**4.00 p.m. – 5.10 p.m. 4<sup>th</sup> case study (1h 10 min)**

<i>Regional initiative</i>	<i>Countries</i>	<i>Experts</i>	<i>Organisation</i>
<b>Wolf Management in France, Italy, and Switzerland</b>  <i>Chair: Luigi Boitani</i>	<b>France</b>	Michel Perret	Direction de la Nature et des Paysages, Ministère de l'Ecologie et du Développement Durable
	<b>Italy</b>	Francesca Marucco	Progetto Lupo Regione Piemonte Parco Naturale Alpi Marittime
	<b>Switzerland</b>	Christoph Jäggi	Bundesamt für Umwelt, Wald und Landschaft (BUWAL)

**5.10 p.m. – 5.40 p.m. 5<sup>th</sup> case study (30 min)**

Status, Conservation and Management of Large Carnivores in Turkey  
 Özgün Emre Can, WWF-Turkey, Ankara

**Saturday, 16 April**

**9.30 a.m. – 10.40 a.m. 6<sup>th</sup> case study (1h 10min)**

<i>Regional initiative</i>	<i>Countries</i>	<i>Experts</i>	<i>Organisation</i>
<b>Baltic Large Carnivore Initiative</b>  <i>Chair: Linas Balciauskas</i>	<b>Estonia</b>	Peep Männil	Centre of Forest Protection and Silviculture
	<b>Latvia</b>	Janis Ozoliņš	State Forest Service, Riga
	<b>Lithuania</b>	Linas Balciauskas	Institute of Ecology, Vilnius

*Coffee break*

**11.00 a.m. – 12.10 a.m. 7<sup>th</sup> case study (1h 10min)**

<i>Regional initiative</i>	<i>Countries</i>	<i>Experts</i>	<i>Organisation</i>
<b>Large Carnivore Management and monitoring in Fennoscandia</b>  <i>Chair: Lotta Samuelson</i>	<b>Norway</b>	Yngve Svarte Morten Kjorstad	Directorate for Nature Management
	<b>Sweden</b>	Robert Franzén	Swedish Environmental Protection Agency
		Ann Dahlerus	Swedish Carnivore Association
	<b>Finland</b>	Christian Krogell	Ministry of Agriculture and Forestry of Finland

Afternoon

**2.15 p.m. – 4.15 p.m. 8<sup>th</sup> case study(2h)**

<i>Regional initiatives</i>	<i>Countries</i>	<i>Experts</i>	<i>Organisation</i>
<b>Dinaric –Pindos/ Rila-Rhodope Mountains</b>  <i>Chair: Djuro Huber</i>	<b>Austria</b>	Norbert Gerstl	WWF-Austria
	<b>Slovenia</b>	Miha Adamic	UNI Ljubljana, Biotechnical Faculty, Dept.Forestry and Renewable Forest Resources
	<b>Croatia</b>	Josip Kusak	University of Zagreb
	<b>Bosnia-Herzegovina</b>	Vlado Soldo <i>(excusé)</i>	J.P. "Sume H-B" Mostar
	<b>Serbia and Montenegro</b>	Bratislav Grubac <i>(excusé)</i>	Institute for Protection of Nature of Serbia
	<b>FYR Macedonia</b>	Dimitar Rolevski <i>(excusé)</i>	Ministry of Environment and Physical Planning
	<b>Albania</b>	Ferdinand Bego <i>(excusé)</i>	Tirana University, Museum of Natural Sciences
	<b>Greece</b>	Yorgos Mertzanis	NGO "CALLISTO"
	<b>Bulgaria</b>	Diana Zlatanova	Environmental Education and Research Center / Sofia ZOO

*Coffe break*

**4.45 p.m. – 6 p.m. Conclusions and recommendations**

Facilitator: Alistair Bath

**Sunday, 17 April**

Excursion

**Appendix 3**

**-- National reports --**

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7. Germany / Allemagne
8. Greece / Grèce
9. Hungary / Hongrie
10. Italy / Italie
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12. Lithuania / Lituanie
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18. Switzerland / Suisse
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## BOSNIA AND HERZEGOVINA / BOSNIE-HERZEGOVINE

### Points for country report:

	<b>Bear</b>	<b>Wolf</b>	<b>Lynx</b>
<b>Presence</b>	yes	yes	Yes
<b>Population size compared to 2002</b>	Slightly increasing (400-600)	Big increasing (300-400)	Same (30-40)
<b>Distribution (range) compared to 2002</b>	Same	Slightly increasing	Same
<b>New colonization</b>	none	Southern part of BIH (Municipal Ljubiski, Neum, Ravno)	None
<b>Reintroductions</b>	none	none	none
<b>Management plan</b>	Yes	No	No
<b>Public acceptance</b>	good	bad	Unknown
<b>Conflicts by sectors:</b>			
<b>1. Agriculture</b>	Tolerant	Big with livestock	Negligible
<b>2. Forestry</b>	Negligible	None	None
<b>3. Hunting</b>	None (beneficial)	Big with ungulate	Big with ungulate
<b>4. Infrastructure</b>	None	None	None
<b>Legal status</b>	game	unprotected	unprotected
<b>If game: quota, season</b>	Unknown (assessment 40-60)	Unknown (assessment 80-100)	Unknown (assessment 3-5)
<b>Eventual limitations for transboundary management</b>	unknown	unknown	Unknown
<b>Corridors</b>			
<b>1. National</b>	No limitation	No limitation	No limitation
<b>2. International</b>	No limitation	No limitation	No limitation
<b>Natural reserves in LC range</b>	National parks 172 sqkm Nature parks 323 sqkm	National parks 172 sqkm Nature parks 323 sqkm	Nature park 323 sqkm
<b>Natura 2000</b>	No	No	No
<b>Monitoring</b>	By hunters	By hunters	By hunters
<b>Research projects</b>	None	None	None
<b>International projects</b>	None	None	None
<b>Eventual specific threats</b>	Unknown	Unknown	Unknown
<b>Immediate plans</b>	None	None	None

## **BULGARIA / BULGARIE**

### **Presentation on Bulgaria's Large Carnivore Status and Management**

*Diana Zlatanova and Alexander Dutsov,*

#### **Background information**

Current status of the wild population of the three species – bear, wolf, lynx, based on data collected through study projects so far.

Level of knowledge on the current status of the LC and missing data

Level of implementation of the European LC Action Plans in Bulgaria – practical issues and comments

#### ***Current legislation affecting LC populations***

The Bulgarian government has adopted almost all international conventions and agreements such as CITES, the Bern Convention (signed with reserves for the wolf, brown bear and wild cat), and the EU habitat directive 92/43 EEC.

**Bear** – a protected species since 1992 by order of the Ministry of Environment and Water, with exceptions for the problem bears (so-called bloodthirsty animals) hunted with hunting permits issued both by Ministry of Agriculture and Forestry and the Ministry of Environment and Water, usually used as a target game for international hunting tourism. More recently (2002) the Bulgarian government adopted the national Biodiversity Conservation Act which changed the status of the Brown bear in Bulgaria to a totally protected species and the bear was removed from the game species list by the Hunting and Game protection Act, again with the exceptions for the problem bears, hunted as before.

**Wolf** – not protected, hunting allowed throughout the whole year, bounty of 100 Lv. (~ 50 Euro) and 2 cubic meters timber material paid for each killed specimen. Only approved hunters may shot them outside of the hunting season.

**Lynx** – officially pronounced as 'Extinct' since 1941. Last legal status – protected. According to the new data there is need of revision of the conservation status based on more profound research.

#### ***LC management in Bulgaria***

**National conservation strategies** – There is a lack of coordination on various administrative levels for the management of the large carnivores. Legal base exists and is targeted for new development, but there is low enforcement of the current one. The new EU accession of Bulgaria in 2007 obliges the country for preparation and enforcement of LC management plans.

**National hunting policy** – several main points to discuss: lack of realistic monitoring system on carnivores and herbivores (as prey base); lack of a proper management of carnivores on hunting grounds; hunting as a financial instrument for generation of interest and successful managing with poaching (both on carnivores and herbivores), etc.

#### ***Practical problems in running conservation actions***

**Human dimension aspects** – attitudes and believes of local to the LC distribution people, target groups affected by LC, contradictions generated by the conservation status (bear , lynx) and inadequate damage compensation systems (wolf, bear), past and current studies on the attitudes, etc.

**Damage compensation systems** – lack of common approach and availability of small good practices.

**Status, research projects and monitoring practices** in the country

- bear- several small scale projects with different durations, a bigger project started in January 2005 aiming gathering more realistic data and initiation of Bear Management Plan. Bear Working Group with all interest groups to be established within that project and beyond.

- wolf – study projects running since 1997 by Balkani Wildlife Society, regional small scale studies by different NGOs are done through the years in different regions; data not available for all interest groups. Wolf Working Group planned but not established so far.
- lynx – sketchily gathering of data during the running of other projects by different teams without proper exchange of data, funds not yet found for running of more serious study.
- National Monitoring System is under development at the moment.
- Few NATURA 2000 site designation projects are executed the last 2 years and more are planned for the coming years.

**Status, research projects and monitoring practices in the framework of a regional co-operation** – consistent exchange of information and other support with Greece, partial and inconsistent cooperation with Macedonia, Serbia and Romania.

**The influence of EU accession of Bulgaria in 2007** – the obligations and contradiction to the traditional management practices.

**CROATIA / CROATIE**

Points for country report:

	Bear	Wolf	Lynx
Presence	Yes	Yes	Yes
Population size compared to 2002	Same (600-1000)	Same (129-170)	Same (40-60)
Distribution (range) compared to 2002	Slightly increasing	Increasing by individual animals	Same
New colonization	Islands Krk and Cres	By individual animals	None
Reintroductions	None	None	None
Management plan	Yes	Yes	Yes
Public acceptance	Good	Medium	Unknown
Conflicts by sectors: 1. Agriculture 2. Forestry 3. Hunting 4. Infrastructure	Negligible <b>Potential (sapwood)</b> None / beneficial Highways (mitigated)	Big with livestock None Big with ungulates Highways (mitigated)	Negligible None Big with ungulates Not observed
Legal status	Game	Protected	Protected
If game: quota, season	80, spring and fall	(15)	(2)
Eventual limitations for transboundary management	Bosnia and Herzegovina has no clear authorities None with Slovenia	Bosnia and Herzegovina has no clear authorities None with Slovenia	Bosnia and Herzegovina has no clear authorities None with Slovenia
Corridors 1. National 2. International	Highways (mitigated) No limitations	Highways (mitigated) No limitations	Highways (mitigated) No limitations
Natural reserves in LC range	National Parks 566 km <sup>2</sup> Nature Parks 2479 km <sup>2</sup>	National Parks 566 km <sup>2</sup> Nature Parks 2479 km <sup>2</sup>	National Parks 566 km <sup>2</sup> Nature Parks 2479 km <sup>2</sup>
Natura 2000	In process	In process	In process
Monitoring	By hunters and genetic	By researchers	By researchers
Research projects	Ministry of science	Ministry of science	Ministry of science
International projects	LIFE COEX	LIFE Wolf	Applied to INTERREG
Eventual specific threats	Garbage conditioning	Low prey density	Low prey density, maybe genetic problem
Immediate plans	Implementation of management plan	Implementation of management plan	Implementation of management plan

Additional note (e.g. specific regional initiatives):

## **CZECH REPUBLIC / REPUBLIQUE TCHEQUE**

### **Large carnivores: wolf, brown bear, and lynx in the Czech Republic**

**Jaroslav Červený, Petr Koubek** (Institute of Vertebrate Biology, Czech Academy of Sciences); **Pavel Marhoul, Petra Nová, Ondřej Volf** (Czech Agency of Nature Conservation); **Dana Bartošová** (Landscape Protected Area Beskydy), **Luděk Bufka** (National Park Šumava), **Jaromír Bláha** (Friends of the Earth – Czech Republic)

In the past, large carnivores were totally exterminated in the territory of the Czech Republic, as well as in the nearly whole central Europe. Re-colonisation has been associated with increasing migration from Slovakia after 1945. First individuals came back to northern Moravia, especially to the Moravskoslezské Beskydy Mts. in 1945. The first wolf was recorded in 1947, brown bear in 1946, and lynx in 1945. Lynx population rapidly increased after release of 5 – 9 animals from Slovakia into the Bayerischer Wald Mts. (1970 – 1972) and 17-18 animals in the Šumava Mts. (1982 – 1989). Thus, development of the Carpathian populations of all the three species has the greatest impact upon the situation in the whole Czech Republic. Right management and migration of individual from neighbouring Slovakia and Poland are therefore crucial moments for the future of large carnivores, especially wolves, in the country.

### **Recent activities**

Monitoring of population changes becomes very important in the connection with the present expanding of large carnivores. The basic method of monitoring is winter snow tracking in the Beskydy Mts. and the Šumava Mts. regions. The tracking is mostly repeated twice a year, usually one or two days after snowfall, and more than 100 professionals and volunteers are involved. Snow tracking in the Labské Pískovce Mts. (Northern Bohemia) and in the Jeseníky Mts. (Northern Moravia) occurs less frequently. The second method is questioning the occurrence of carnivores. The questionnaires have been distributed since 1996 periodically every two years to all 5,576 hunting grounds in the whole Czech Republic and to 39 bodies of Nature Conservancy (Local Administrations, National parks and Landscape Protected Areas). Direct observations, finding of killed prey, footprints or other traces, of both adult and young animals, are recorded. Return efficacy of fulfilled questionnaires is 64% - 86% in hunting grounds and 46% - 95% in the bodies of Nature Conservancy. The results of spring census and hunting statistics reported by hunters are also used to express the population changes. Since 1996, 15 lynxes were tagged with radio collars, and altogether 3,542 locations of tracked animals were obtained in the Šumava Mts region. Other activities are focused to research (e.g. morphology, spatial organization, behaviour, feeding ecology, genetics, parasitology, sociobiology).

### **Recent distribution in the period 2000 – 2003**

The known occurrence of the wolf covers 4,030 km<sup>2</sup> of the territory of the Czech Republic, out of which 1,480 km<sup>2</sup> are sporadic records, 940 km<sup>2</sup> irregular, and 1,610 km<sup>2</sup> regular occurrence. The total size of wolf population is estimated to amount 5 to 17 individuals (mostly in the Beskydy Mts. region).

The known occurrence of the brown bear covers 3,360 km<sup>2</sup>, out of which 2,280 km<sup>2</sup> are sporadic records, 540 km<sup>2</sup> irregular and another 540 km<sup>2</sup> regular occurrence. There are probably no more than 5 individuals (only in the Beskydy Mts. region).

The known occurrence of the lynx covers 24,860 km<sup>2</sup>, out of which 1,0750 km<sup>2</sup> are sporadic records, 4,840 km<sup>2</sup> irregular and 9,270 km<sup>2</sup> regular occurrence. The abundance of the lynx in the Czech Republic culminated in the years 1996 – 1998, when the population amounted to 100 – 150 individuals. Currently, population size is estimated to only 70 – 120 individuals. Permanent population in the Beskydy Mts. region is estimated on 15 – 20 individuals.

### **Treats and limiting factors**

Major treats to large carnivores in the Czech Republic are poaching and unfavourable public opinion. Genetic isolation, traffic, fragmentation and urbanization of habitat, re-colonisation of forest or mountain areas and direct disturbance represent less important treats. Deforestation of habitat, decrease of prey abundance and diseases are only potential treats.

## **Legal status**

All the "Big Three", wolf, brown bear, and lynx are game species, but hunting them is prohibited according to game legislation from 2002. According to the legislation of nature conservation from 1992, wolf and brown bear are specially protected and critically endangered species, lynx is classified as endangered. The same classification is according to National IUCN Red list. Damage caused by large carnivores on human health and livestock (in bear also on apiculture, crops, and enclosed properties) are compensated by the state since 2000.

## **Natura 2000**

Proposal of pSCI areas was prepared for all the three species of large carnivores according to their occurrence, suitability of habitat and possibility to ensure an effective protection. Two European important areas were selected: regions of the Beskydy Mts. and the Šumava Mts. Both areas are shortly before coming in force, but borders are still discussed.

## **Management plan**

In the period 1998 – 2000, the rescue programme for the lynx was in force, but it was not respected, mainly by the hunters. Now, the National management plan for all large carnivores is prepared by the Czech Agency of Nature Conservation, Institute of Vertebrate Biology, Czech Academy of Sciences, and the NGO "Friends of the Earth – Czech Republic". This management plan should be published during 2006. Main objectives are as followed: public awareness campaign, improvement of legislation, habitat conservation, monitoring and information system, and cooperation with neighbour countries.

The public awareness campaign aims to change public opinion so that illegal hunting is not tolerated and large carnivores are seen as natural and important part of the Czech forest fauna. The local public in communities in the areas where the endangered species occur will be the key target group of the campaign. Specific attention will be given to specific groups such as local opinion leaders, animal farmers, hunters, tourists and tourist service providers. Nationally, the aim is to create atmosphere which has no tolerance for illegal hunting and this is considered unacceptable. The campaign combines direct (debates, lectures in schools etc.) and indirect (e.g. media, publications, movies) contacts. Its strategy is based on experience gained so far, where direct work with local community opinion makers, public discussions in communities, media campaign and the so called 'wolf patrols' of volunteers guarding the mountains in order to create impression of control.

## **Conclusions:**

1. Poaching is the most serious threat of the large carnivore populations.
2. The strict legal protection alone is ineffective.
3. The only way to protect (or manage) large carnivore populations is to educate a new generation of game managers and foresters as well as other public.
4. National management plan will be a legal document of large carnivore protection.

This contribution was supported by AS CR grant S6093003 and grant of the Czech Ministry of Environment VaV 620/1/03.

## **ESTONIA / ESTONIE**

### **Large Carnivores and LC management strategy in Estonia**

Peep Männil

Estonia is the northeast Baltic state, having land boundary with Latvia in south and Russia in east side of the state. Estonia is rather small country, reaching a little more than 45 000 square kilometres in its size and approximately 50 % of the land is covered by forest. Inhabitants are less than 1,5 million.

Estonia has viable populations of three large carnivore species – brown bear, wolf and lynx. Comparing with the other EU member states, Estonia has the densest lynx population and one of the densest bear population. Wolf density is on satisfied level in most Estonian regions, but the distribution should be improved to increase the number.

None of the large carnivore populations is isolated, the migration between Estonia and neighbouring countries exists and is scientifically proved.

There is not so far existing large carnivore damage compensation system in Estonia. Increased amount of damages caused by large carnivores in last year and followed complains gave rise to establish it. Improved draft of Nature Conservation Law will offer state compensation for large carnivore damages and for damage prevention works since 2006.

Two years ago Estonia implemented methodology and established network for large carnivore`s monitoring. The system is methodologically close to Finnish as well as Swedish and Norweign one and is based on year-round specimen and track observations by dense net of observers. The observations are described and mapped. After data management works the location and size of family groups are separated as a result. Important data collected from hunted individuals as well as observations of damages and results from winter snow tracking transects are additionally used to evaluate the state of populations. The monitoring methodology was elaborated in close co-operation with Finnish researchers.

Overharvest is evaluated to be a main potential threat for large carnivores survival in Estonia. To minimize the risks of legal overhunting, the Ministry of the Environment sets the yearly hunting limits for each species by regions. The sustainable limits are based on monitoring results and decisions are maid in co-operation with large carnivore advisory group. The advisory group consists officials, researches and representatives of different interest groups, like conservationists and hunters. The Estonian hunting system is based on large (min 5000 ha and 13 000 ha on average) hunting districts, which are given to use by state by permit in proof of right to use hunting district. Such a system makes easier to manage populations on state level and terminates the possibilities for locally organized legal overhunting.

In 2004 the total population size of brown bear was at least 500. In 2004 53 different female bears with cubs of-the-year were observed. During the last years the number has been slowly increased. Bear is strictly protected species by EU legislation (Annex IV of the Habitats Directive). By Estonian legislation bear is on the list of hunting species but since last year it could be hunted only in regions were damages occurred and only for the purpose of damage avoidance. Ministry of the Environment divides the maximum allowed harvest rate by counties. County Environmental Departments issues the hunting licences to hunting districts if the applications are reasoned. In 2004 only 12 bears were shot although the maximum allowed harvest rate was 34. In 2003, before the additional restrictions, 29 bears were shot when the limit was 34.

Estonian lynx and wolf populations are listed into Annex V of the Habitats Directive. Lynx number in 2004 was assessed to be at least 730 in Estonia. 134 different reproductions were observed in winter 2003/2004. Lynx population has been increased during last three years. Ministry of the Environment sets the yearly hunting limit and divides it by counties to keep or reach the optimal density and maximum distribution of lynxes. During last hunting season 83 licences from 110 issued ones were used.

Wolf is an only species of large carnivores, which number has been under expected minimum after implementation of new policy towards large carnivores in 2002, when national large carnivore management plan was compiled. First monitoring data in 2003 showed only 8 wolf reproductive packs and altogether 60-80 wolves living in Estonia although official census gave the number 170. Shortened hunting season and small hunting limit (17) were effective and in 2004 the number was reached to 90 (11 reproductive packs) before breeding season. Wolf harvest limit for last hunting season was 40 and 37 wolves were shot. When just two years ago wolf could be hunted all year round, now the open season is shortened to three winter months.

Having rather good overview of localisation, size and internal structure of wolf packs, the harvest limit was divided by packs for last hunting season. It seems to be the most efficient way for wolf management, allowing to direct the intense harvest to packs causing damages and to keep untouched or sustainably harvested other packs for purpose to favour the level distribution. Current wolf management strategy is effective on present circumstances, where wolf density is relatively low and remarkable positive migration from neighbouring countries doesn't exist. The present situation is totally different from middle of nineties, when 302 wolves were shot in 1995 and when the positive migration played an important role for population dynamics.

Similar monitoring methodology and common management strategy should be initiated and implemented in Baltics for longer perspective although present situation doesn't require it. Operational info flow and co-ordinated management activities should be strengthened between boundary areas of Estonia and Latvia to ensure the good state of populations in that strategically important area. Better communication and operative data flow between Estonia and Russia should be initiated.

BLCI and ongoing transboundary large carnivore research project (Baltics, Norway and Poland) are good examples of co-operation.

## **FRANCE / FRANCE**

### **Séminaire sur la gestion transfrontalière des grands carnivores Plan d'action loup 2004-2008 – France**

Michel Perret, MEDD/DNP

Le retour du loup en France constitue un enrichissement du patrimoine naturel français en matière de diversité faunistique. L'espèce est intégralement protégée sur l'ensemble du territoire national.

Comme dans d'autres pays, le retour de cette espèce pose des problèmes en particulier pour l'élevage extensif.

Dans ce contexte, le plan d'action loup, établi conjointement entre les ministères chargés de l'écologie et de l'agriculture, a pour objectif d'assurer à la fois la conservation du loup dans un état favorable au sens des dispositions internationales et communautaires et de permettre la poursuite des activités pastorales, elle-mêmes élément fondamental de l'entretien de la montagne, favorable à la conservation de la diversité biologique qui y est rencontrée.

Le plan met l'accent sur le développement des mesures de protection des troupeaux en permettant un soutien financier au gardiennage des troupeaux, à l'acquisition de chiens de protection et de moyens de protection physique tels les parcs de rassemblement nocturne.

Il vise à un suivi biologique performant des populations de loups, permettant d'apporter des réponses précises à l'ensemble des parties concernées par la présence du loup.

Sur ce point, la coordination transfrontalière est un enjeu capital : celle-ci permet une vision partagée et homogène de la situation biologique de l'espèce sur son aire de répartition naturelle ; elle est source d'échanges entre les pays en vue d'un meilleur partage des expériences et d'une meilleure compréhension réciproque des mesures prises à l'échelon national.

Le plan soutient également les études en vue d'une meilleure compréhension de la prédation afin d'améliorer l'efficacité des mesures de protection.

Conformément à la directive habitats, le plan envisage également, la réalisation de prélèvements de loups dans la population lorsque trois conditions sont réunies : état de la population le permettant, intérêt pour la protection des activités d'élevage, absence d'autres solutions satisfaisantes.

A l'heure actuelle, la population française peut être considérée comme une petite population en extension ; son taux de croissance annuelle se situerait entre 10 et 20 % ; le nombre de zone de présence permanente du loup s'est régulièrement accru depuis le retour du loup en France.

S'agissant de la protection des troupeaux, une évaluation préliminaire en début de programme permet d'établir que par zone de présence permanente du loup, le coût des mesures de protection et d'indemnisation est passé de 50000 euros en 1994 à 130000 euros en 2004.

Ce développement important des mesures de protection doit être poursuivi dans le cadre du plan.

Il est également utile de préciser que le nombre de victimes rapporté au nombre de zones de présence permanente, est stable d'année en année (environ 200) ; un tel phénomène en apparence contradictoire si l'on considère la forte croissance des actions de protection des troupeaux peut s'expliquer par la progression du loup dans des zones où il était absent, le report de prédation sur des troupeaux non protégés, l'efficacité relative des mesures de protection en particulier quand tous les types de protection ne sont pas mis en œuvre.

Dans ce contexte, les prélèvements de loups (deux animaux réalisés l'an passé), autorisés après une évaluation de l'état et de la dynamique de la population, contribuent, dans les conditions prévues par le droit européen, à diminuer les effets d'une prédation qui localement peut rester importante.

## GERMANY / ALLEMAGNE

### Transboundary action plan for the lynx in the Palatinate Forest / Vosges du nord

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The European lynx (*Lynx lynx*) was reintroduced in the Southern Vosges mountains in 1983. In the northern part of the Vosges mountains and in the Palatinate forest, first evidences of lynx were registered in 1993. Since 1993 every year 15 to 30 reliable evidences on the presence of the lynx were registered. This small population was founded on migrants from the southern Vosges as well as animals escaped or released.

A transboundary biosphere reserve was confirmed by the UNESCO in 1998 uniting the French and the German part of this large forested area. The lynx is the most popular flagship species in this transboundary biosphere reserve.

Since 1996, when OEKO-LOG was involved first in this subject, several important parts of a conservation concept were realized.

1. Monitoring of the lynx population by regional reporters in both parts (French and German) of the biosphere reserve and a scientific evaluation of the data.

2. Local reporters are educated regularly and take care of all kinds of local activities such as examining kills and tracks, as well as informing locals about the lynx.

3. An initiative group of representatives of all parties touched by the theme “lynx”, such as conservationists, forest staff, hunters, shepherds, scientists and government representatives meets on a regular base

4. A “communication strategy” was established

In 2004 OEKO-LOG was asked to organize the transboundary actions for the lynx. Main actual problems are:

- The fragmentation through barriers in the landscape within and surrounding the transboundary biosphere reserve
- The small number of animals (possibly below 5 individuals)
- The high risk of poaching

To solve these problems we decided to focus on the following topics in the near future:

- public relations to improve the acceptance
- study on suitable habitat and fragmentation testing and improving the model of SCHADT (2002) on a smaller scale
- implementation of solutions to reduce the habitat fragmentation
- preparing release of individuals to bring the very small number up to a level where the population has a good chance to survive
- conference with the main topic “fragmentation of habitats and lynx populations” to discuss all problems in January 2006

## GREECE / GRECE



### **Dinaric –Pindos/ Rila-Rhodope Mountains: cases of regional & trans-border cooperation on LC conservation and management in the S. Balkans: a short review.**

*(by Yorgos Mertzanis, NGO “Callisto” – Greece)*

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The following short report is focusing on two relevant topics among those mentioned in the draft agenda of the seminar:

- I. Status, research projects and monitoring practices in the framework of a regional co-operation
  - II. Connecting core areas through corridors and migration routes between populations occupying habitats on the borders of some European countries. Ecological corridors and natural reserves in the framework of the Emerald Network and Natura 2000
- I. Projects emphasizing on trans-border cooperation for LC conservation in the S. Balkans : a brief retrospective:
    1. **Project “TEDDY”** (title: «Awareness raising in European Bear - Hosting Areas»), contract No 95/S/57-27290/FR. Duration was 1.1.96 - 30.9.97. Main aim: creation of a network for awareness raising and conservation of wildlife and natural habitats in European countries that are hosting bear populations. Targeted countries: Greece, Albania, FYROM and Bulgaria. Country project leader: Greece. Half of the project’s budget was funded by the European Commission, with the financial contribution of the Greek Ministry of Environment, Physical Planning, and Public Works.

Main tasks of the project:

- *Building a Balkan network of co-operation between state and non-state organisations.*
- *Awareness raising on environmental issues amongst the Greek authorities and stake holders with interests interfering with the existence of wild bear populations.*
- *Awareness raising amongst the authorities in neighbouring Balkan countries and setting up action plans.*

Project outputs-milestones :

- *First networking between 6 NGO’s and 5 GO’s from the targeted countries*
  - *Poster issue on bear damage compensation system in Greece*
  - *Issue of pamphlet on illegal bear traffic issues targeting Police and Customs personnel*
  - *Edition (book) titled : «Comparative study on the legislation for the conservation of natural environment with emphasis on the brown bear conservation in the four targeted countries ».*
  - *First field survey (based on common questionnaire) of trans-border brown bear populations and habitats between:Albania, Bulgaria, Greece and FYROM.*
2. **Project « BALKAN NET 1»** (Title : «Elargissement du réseau «Balkan net» pour la sensibilisation et la conservation durable des écosystèmes et de la vie sauvage dans certaines régions d’ Europe»), contract No 96/443/3060/TS/A3/MM. Duration 1.1.97 - 30.9.98. Continuation of the former project. Targeted countries: Greece, Albania, Former Yugoslav Republic of Macedonia, Bulgaria, Serbia & Montenegro. Country project leader: Greece.Main

aim: to enlarge the network of Environmental GOs and NGOs, which was created by “TEDDY” project. (funding: 50%EC contribution).

- *Further networking between targeted countries of S.Balkan region*
- *Data update on bear status*
- *Public awareness and education campaigns.*

Project outputs-milestones:

- *Production and dissemination of a common poster on bear conservation needs and issues*
- *Continuation of bear survey through questionnaires in trans-border areas and data compilation*
- *Adaptation of the translated Brown Bear Educational Kit material to be produced and used in each targeted country.*
- *Edition of the first Compendium on brown bear status in the S. Balkans.*
- *Adaptation, re-edition and dissemination in all targeted countries of two guides: guide on “identification of wounds inflicted on livestock by predators”(translated in 5 languages) and guide on identification of brown bear signs” (translated in English).*

3. **Project BALKAN-NET 2 (Conservation of Large Carnivores in Balkans):** (Title: “Extension and operation of the Balkan Large Carnivore Conservation Network (Balkan Net). Duration: June1999-July 2002). Project funded by WWF International through the Large Carnivore Conservation Initiative for Europe. LCIE. Targeted countries: Greece, Albania, Former Yugoslav Republic of Macedonia, Bulgaria, Serbia & Montenegro. Country project leader: Greece. Main aim: Extension of the existent network of Balkan Environmental NGOs, conservation and awareness raising activities.

Main tasks of the projects:

- *Further networking between targeted countries of S.Balkan region*
- *Data update on bear, lynx and wolf status*
- *Media work, education and public awareness.*

Project outputs-milestones:

- *GIS mapping of critical transborder areas for bear conservation between Greece-Albania and Greece – FYROM.*
- *Production and dissemination of Balkan LC Conservation poster in targeted countries.*
- *Adaptation of the translated Brown Bear Educational Kit material to be produced and used in each targeted country.*
- *Issue of the common LC conservation leaflet to be produced in all member countries (except Greece).*
- *Compilation of data on the recent status of large carnivores in member countries.*
- *Collection/update of comparative legislative data on protected areas in the member countries.*

4. **Project LIFE99NAT/GR/006498 :** (Title: “Implementation of management plans in the areas of Gramos and Rodopi”: January 2000-December 2002). Project co-funded by EU/DGENV (D1. LIFE Unit). One of the projects’ tasks aimed at «Ensuring connectivity of targeted priority habitat types and species at a trans-border scale by placing under specific conservation and management status contiguous critical sectors». It was implemented through specific actions that triggered the mobilization of administrative and executive personnel from both the project and NGO’s and public services between Greece and Albania. The following actions contributed to this result:

- 1) **Elaboration of a Specific Environmental Study to prepare the ground for the extension of the borders of two officially protected areas in Morava mountain (Albania).** This study was translated in English and Albanian and has already triggered an official procedure

conducted by the state authorities of the neighboring country in order to examine the extension of the borders of Bosdovetsi National Park as well as the adoption of zoning proposals which were the outcome of the aforementioned study (elaborated in cooperation with NGO's and scientists from Albania).

- 2) **Preparation of trans-border Environmental Education programs in both areas of the project.** This action was based on ex-ante evaluations of pupils' attitudes and was achieved through cooperation between the project and NGO's from Albania and Bulgaria. The outcome was valorized for the development of specific environmental education programs in Greece , but also to prepare the ground for the development of similar programs in the two neighboring countries.
- 3) **Transfer of know-how to neighboring countries, in the field of management techniques and policies for protected areas by using existing relevant experience.** Relevant seminars were organized in Albania, FYROM and Bulgaria and in which the experience acquired by the project was placed in the wider frame of the ongoing efforts to establish and operate the NATURA 2000 and EMERALD networks.

## **II. Projects emphasizing on conservation of ecological corridors relevant to Emerald and Natura 2000 networks:**

5. **Project ECO-NET, DAC/OECD (1<sup>st</sup> & 2<sup>nd</sup> phase):** Title "Creation and enlargement of a network for the legal protection and management of protected areas in the Southern Balkans". Duration 11.01.01 - 31.03.02. Project's long term aim was to achieve the legislative harmonisation and management of protected areas in co-operating Balkan countries. Country project leader: Greece. Targeted countries (project partners): Albania, The Former Yugoslav Republic of Macedonia, Bulgaria, F.R. Yugoslavia and Greece. The project intended to be part of the development of the Pan-European Ecological Network and the Emerald Network in the Southern Europe countries and in particular in the Federal Republic of Yugoslavia and the Republic of Bosnia and Herzegovina.

Main objectives of the project :

1. *Establishment/extension of communication channels and co-operation between NGOs, and experts in the Southern Europe countries.*
2. *Transfer and exchange of legal know-how regarding the E.U. directives, the Bern Convention, the Pan-European Ecological Network, the Emerald Network, as well as international and national legislation for the protection of nature in general, especially that of endangered fauna.*
3. *Registering of the problems related to the enforcement of the aforementioned legislation in protected areas of Greece, supporting the future creation of the Emerald Network and implementation of the Pan-European Ecological Network in the Federal Republic of Yugoslavia and the Republic of Bosnia and Herzegovina*
4. *Contribution to the establishment –as far as possible- of a common strategy for the protection of nature in the Southern Europe countries and especially of a harmonised legislative policy.*

Project main outputs/milestones :

- *Book edition titled : « Protected areas in the S. Balkans : Legislation, Large Carnivores and Transborder areas ».*

The aforementioned project « ECO-NET », had a –one year- extension funded by the CoE. The main output was a comprehensive study report done by Dr. Milan Paunovic (NGO « MUSTELA ») on «*Damages caused by Large Carnivores in Serbia – Compensation and insurance schemes – Implementation of preventing measures* ».

### III. Projects emphasizing on trans-border cooperation between young researchers from neighbouring countries.

6. Project on «Common training course of young people from Greece and Bulgaria for the development of trans-border collaboration in the framework of the “Youth” Programme». Country project leader: Greece. Project partners: Bulgaria, Greece. The course took place from 15-24 July 2003 in Frakto Virgin Forest, in the Greek-Bulgarian border area of Rodopi mts. Funding: Hellenic General Secretariat of Youth.

### IV: Obstacles and constraints overcome:

- Different social & cultural values regarding also wildlife and conservation issues
- Different socio-economic context
- Different priorities based on national policies
- Not the same accessibility to funding tools
- Different existing methodologies and scientific capacity levels
- Long Bureaucratic procedures

In 2004, trans-border cooperation on LC conservation through the Balkan-network and between country partners has undergone a phase of stalemate, which is progressively being resumed.

### V. Next steps:

- Continuation of actions with more concrete and durable achievements (i.e. implementation of action/management plans)
- Added priorities: concerning LC species not taken into account so far but which should be from now on, given their status related to the new EU member and accession countries (i.e. jackal (*Canis aureus*)).
- Further review and set up of common methodologies for comparable data quality & results
- Human and financial resources: figure out new combinations of funding possibilities related to new EU member and accession countries.
- Continuation of and new possible co-operations between countries
- Further improved of communication and information exchange involving more actively GO's and international institutions (CoE , EU).

Points for country report:

	Bear	Wolf	Lynx
Presence	Yes	Yes	Uncertain (officially considered extinct since late '70's). There is recent, scarce and unconfirmed evidence of sightings in the late '80's and '90's.
Population size compared to 2002	Same (130-160) Positive trends locally	Same (500-700)	
Distribution (range) compared to 2002	Slight increase in the southern and eastern part of the range in Pindos-Peristeri mts.	Small increase in southern part of distribution	Sightings have been reported in Pindos-Peristeri-Voras mts., Rodopi mts, Evros mts., as well as in river Nestos delta.
New colonization	Yes (of former range) mainly in Pindos-	Yes in southern part of distribution (Elikonas mnt.)	

	Peristeri mts southwards and eastwards		
Reintroductions	None	None	None
Management plan	Yes but not officially adopted	No	
Public acceptance	Good Negative in re-colonization areas	Medium to low in “traditional” wolf range Very negative in re-colonization areas.	
Conflicts by sectors: 1. Agriculture 2. Forestry 3. Hunting 4. Infrastructure	1. Medium to high (locally): damage on small scale crop and livestock 2. Medium: disturbance of forest roads in denning areas 3. High: illegal mortality related to poaching and wild boar drive hunts. 4. highways (partly mitigated), Hydroelectric Dams	1. Severe with free ranging livestock 2. Small –Indirect: forest roads in breeding areas. 3. Yes: Direct-Severe: Frequent Killing of hunting dogs by wolves. Indirect-Severe: Natural wolf prey in low densities due to uncontrolled hunting. Illegal wolf killing during wildboar hunting 4. Highways	
Legal status	-Totally protected since 1969 under national legislation -Priority species under 92/43 EU “Habitat” Directive (Annex II)	Protected south of 39 parallel.	Totally protected under national legislation (laws of 1937 and 1969).
If game: quota, season	No quota	No quota, but a large number killed illegally	
Eventual limitations for transboundary management	Different priorities in terms of national policies Lack of officially adopted management plan(s)	Different legislation/protection status. Lack of National wolf management	
Corridors (and limitations) 3. National 4. International	1. highways 2. highways (partially) & habitat degradation	1. Highways 2. Highways (partially)	
Natural reserves in LC range	3 National Parks 3,935km <sup>2</sup>	6 National Parks (very small)	
Natura 2000	National list submitted to the EU-bear present in 25 pSCI's	National list submitted to the EU Wolf present in 83 Natura 2000 sites	
Monitoring	NGO's & individual researchers	NGO's and Individual researchers	none
Research projects	Yes, regional	Yes, regional	
International projects	INTERREG III	INTERREG III	
Eventual specific threats	1. Ongoing habitat fragmentation due to highway expansion	1. Very low natural prey density in most of wolf distribution	

	2. Illegal killing (poaching, poison baits, resentful farmers).	2. Overall reduction on human related wolf food sources (garbage dumps & livestock) 3. Ongoing habitat fragmentation due to highway expansion 4. Poison baits, poaching 5. Combination of above threats (1-4).	
Immediate plans	Attempts (on behalf of NGO's) to officialise and implement Management plan	Attempts (on behalf of NGO's) to officialise Management plan	Clarification of presence and status

## **HUNGARY / HONGRIE**

### **Specialities of the Hungarian population**

At the beginning of the last century the wolf and lynx were general animals in the country, but since then because of hunting intensively and the changing the habitat, they disappeared.

At the 80's and 90's the observations became more and more frequent so we can say a natural reintroduction had begun. Since then both animal is strictly protected, but there are only non-systematic and not countrywide surveys on where they lives exactly or how big and how stable is the population.

In the framework of a LIFE Nature project titled "Funding the base of long term large carnivore conservation in Hungary" (LIFE00NAT/H/7162) - the department of Wildlife Biology and Game Management of Saint Stephen University wants to answers the questions arose parallel with the reintroduction. First we had to collect all kind of information which exists. To maintain these unsystematic data we developed a unified GIS based database system which can include all kind of data existing about large carnivores and can draw a distribution map by taking into consideration the reliability of them.

### **Data from the past**

As the wolf and lynx were "disappeared animals" of country there where not any regular data collection about them for a while.

**Non scientific data:** As we have not statistic, we looked through all the magazines and papers of nature conservation and of hunting literature for the last 100 years. We counted the seen animals, and shot animals separated, and tried to identify the place of the observations appeared in the articles. We also tried obtained existing reports, and statistics from any state institute. While evaluating data we took special care to avoid the overlappings.

**Scientific data:** The first countrywide systematic survey about the large carnivores in Hungary was carried out in 1986 by the Saint Stephen University Department of Wildlife Biology and Game Management. By this survey a questionnaire was sent to the heads of the game management units asking them about appearance or existence of these animals on the unit's area. Then the data were evaluated in a GIS system identified by the area of the units. This survey repeated 8 till 2005 (almost yearly).

### **Monitoring the recent distribution**

As the Hungarian large carnivore population is the edge of the Carpathian one and that's because is much less numbered an very unstable, we were compelled to make some supplementing to the general used methods.

### **Field monitoring**

By the field monitoring some experts - first of all rangers - go along transects regularly looking for any lifesigns left behind by wolf or lynx. They do it six times a year: monthly in winter and seasonally in spring, summer and autumn always in the middle of the month. They collect and document by a protocol not only footprints, but scats, hairs, preys (etc.) too. There is three levels of this system: first is the scientific survey, observations of the pointed date and transect, second is the observations of experts, third is any other news about large carnivores. This system works since October of 2002.

### **Mail questionnaire survey**

The method is same as written in "scientific data; data from the past" but continued for 2004 and 2005. This survey gives only a superficial review of the distribution of a whole year, so the more detailed and more frequent field monitoring is needed. But data from this survey can confirm or disprove the other data which can be interesting for the research

**New method: Collecting nests**

As the field monitoring is turned out not enough effective for detecting sporadic appearances, we tried to test a new, very different method. This method is based on identifying large carnivore species from hairs. In the field we can find hairs the most easily in the songbird's nest. We tried to collect as much songbird nests from the survey area as it was possible, selected the hairs from them and sent to analyse.

Unfortunately the analyse takes more time than we respected, so actually we have not final results about the effectiveness of the method.

For now 3 145 nests has been collected, 2 874 was selected, and 57 were analysed. Form this last one lynx hair was identified which has high importance because there were not any sure lynx observation since 2001. (see map 4.)

**First results**

After three years of work we can say the main distribution area of large carnivores in the Northern Mountain, (first of all area of Aggtelek,) but there are some sporadic wolf observations in the south part of the country. Releasing data from the past we can say that the wolf did not disappeared from the country because there were one or two shots almost every year from 1900-to 2000. We can not tell the same about the lynx. (see Figure 1.)

Recently the population is very low numbered and unstable, depends on population of neighboring countries. To be able to protect them successfully, we should provide green corridors for them, and realize transboundary researches and conservation actions.

## **ITALY / ITALIE**

### **A. Transboundary monitoring of a recolonizing wolf population in the Western Alps of Italy and France**

Francesca Marucco

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Wolves were widespread in Italy and France until the early 1900's when they were gradually extirpated in the Alps region. The last wolves were killed in the south-western Alps during the 1920-30s, but wolves survived along the Apennines range of central Italy. In the decades that followed, the importance of the wolf as part of a naturally functioning ecosystem came to be recognized. The wolf was legally protected in Italy in 1971, and listed as an endangered and strictly protected species in Europe after the Bern Convention in 1979 and the Habitat Directive in 1992. Today, ecological conditions and conservation efforts in Western Europe are improving and both wild ungulate and wolf populations are increasing. Wolves began naturally recolonizing the southwestern Alps at the beginning of 1990s. Genetic analysis conducted on wolf scat and tissue samples collected in the recently wolf recolonized areas in the Alps proved that wolves arrived through dispersal from populations in central Italy.

When these semi-isolated packs appeared progressively further from source wolf populations, questions arose regarding wolf origin, numbers, distribution, and the impact that these wolves could have on the domestic and wild animals in the Alps. Because of this in France from 1992-1993 the Minister of Environment, the Parc du Mercantour, and the ONCFS started a monitoring program, subsequently funded by two Life-Nature projects (1997-1999 and 2000-2002). At the same time in Italy the Piemonte Region and the European Community funded the "Interreg Wolf Project" from 1999-2001 and from 2002 to 2005 the Wolf Project on the Italian Alps was exclusively funded by the Piemonte Region.

This exceptional extended period of funding allowed the study of the wolf recolonization process and the beginning and strengthening of a strict collaboration between the French and Italian monitoring groups. The transboundary collaboration grew through the years from a sporadic and formal series of meetings to an actual and practical co-ordinated program of monitoring and exchange of data.

The large-scale wolf monitoring is based on a combination of non-invasive methods, using both the more conventional non-invasive techniques such as snow-tracking and wolf-howling surveys, and the data from newly emerging DNA-based techniques. This combination of non-invasive techniques provided an optimal tool to monitor wolf pack dynamics and territories over large areas where radiotracking is not feasible or too expensive.

The overall Italian and French wolf monitoring techniques are similar, but the sampling effort is different. In Italy we developed an intensive wolf monitoring to follow the wolf pack distribution, population dynamics, genetic diversity, food habits, and impact on livestock over the years. In order to gather information on the predator-prey relationship and the success of livestock prevention methods we also recently started a GPS-radiotracking monitoring program. In France the extensive monitoring over the state do not allow for such detailed information, and the main goals are to determine presence-absence of the species and the estimation of population size over a large-scale. Therefore, the Italian and French monitoring programs can be considered complementary.

The natural expansion of wolves in the Alps is a great challenge for conservation biologists and wildlife managers of both countries because we try to achieve the goal of having a viable population, while minimizing the conflict that the species might generate. Such complex, large management issues require an understanding of the spatial and temporal dynamics of the wolf population. How large a population of wolves in the Alps must be to be viable and whether it is possible to allow any removal of wolves for damage control purposes on the French side of the Alps is controversial. Therefore these transboundary research and monitoring programs will provide quantitative understanding of the genetic, demographic, and territorial aspects of this Alpine wolf population, and will be fundamental to building an effective management strategy that will consider the Alps wolf population as a unique population.

## **B. TOWARD A COORDINATED POLICY ON BROWN BEAR CONSERVATION IN THE ALPS**

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Ricolonisation of the Alps by the Brown bear is a priority for conservation in Europe and requires good biological data, effective control of mortality, development of public support and understanding and intense management of conflict sources over large areas. In particular, it is critical to develop effective monitoring, and coordinated measures of damage prevention and compensation, prevention of risks to people, effective information and communication and involvement of the societal sectors in the decision process. Despite the considerable technical work carried on by scientific institutions and NGOs in the last decades for identifying the most effective management options for bear conservation (in particular regarding conflict management and human dimensions), the actual enforcement of these measures by the responsible governmental organisations is still scarce in many areas and implementation is often not coordinated at an adequate scale.

The measures adopted in the Central Alps for the translocation of the Brown bear (carried on since 1999 by the Natural Park Adamello-Brenta, the Province of Trento and the Istituto Nazionale per la Fauna Selvatica) provide an useful basis for developing a coordinated bear conservation policy at a wider, pan-alpine, scale. In Trentino, prevention measures are funded with public money, damage are fully and rapidly compensated, an emergency team (specifically trained to intervene in dangerous situation) was formed, a program for training of staff has been developed, there is a coordinated communication strategy, a monitoring program by non-invasive genetic methods (supported by the local hunters organisation) has been carried on in the last 3 years, providing key information on population status and trends. As a result, so far the results of the reintroduction are very encouraging and the public opinion strongly supports bear conservation measures and the use of public money for this purposes.

In order to promote a coordinated policy by all the authorities of the alpine area, a memorandum of understanding, supported by the Italian Ministry of Environment and the Protection of Landscape, has been adopted by all the responsible authorities of Central and Eastern Alps (Lombardia, Trento, Bolzano, Veneto, Friuli Venezia-Giulia). Scope of the memorandum is to coordinate the actions carried on by the responsible GOs on all the different aspects of bear conservation, including monitoring, circulation of information, prevention and compensation measures, criteria and procedures of the emergency team activity, training of staff and operators, communication, international contacts. The Istituto Nazionale per la Fauna Selvatica will supervise the scientific and technical aspects of the initiative.

Although this initiative focuses on the role of GOs, it is critical to ensure the involvement in it of universities, protected areas, museums and other scientific institutions that have been active in bear conservation in the Alps in recent years; the success of this project will in fact largely depend on the adequateness of the scientific and technical ground of the discussion.

## LATVIA / LETTONIE

### „Appearance from the other side” – strengths and weaknesses of large carnivore management system in Latvia

by Jānis Ozoliņš

Conservation and management actions of the three large carnivores (LC) in Latvia are prescribed and initiated accordingly national action plans adopted by the Minister of Environment (*Lynx lynx*: 2002; *Canis lupus*: 2003; *Ursus arctos*: 2003). Contrary to the major part of the former Soviet Union, in Latvia the brown bear has been protected since 1977. The new policy does not change its species status considerably. A sudden break was achieved in status of European lynx and wolf. Since December 2003, both species are harvested under a system of annual quoting or bag limits and open seasons for hunting are shortened. These restrictions are appointed not because of certain identified threats to populations but rather to establish a system for diminishing or banning harvest as soon as any threat would appear. Such approach should enable Latvian authorities to maintain populations at favourable conservation status if the temporal plenty of habitats would shrink. So far, both wolf and lynx distributions exceed 20-30% of the national territory and LC-s are not limited by the lack of habitats.

Management of wolf and lynx takes its place on the basis of permanent monitoring. National authority responsible for the monitoring and controlled use of LC is the State Forest Service (SFS). SFS consists of the central office in Riga, 26 head offices in regional districts and 197 local forestry offices employing more than 800 local foresters. The foresters are trained in game biology and field techniques. The two social groups most interested in carnivore control are sport hunters and livestock breeders. A majority of inhabitants even including many hunters are quite tolerant of LC and likely support their conservation.

Three monitoring actions are considered. First, records on LC occurrence and rough estimates of their numbers within ranges of local state foresters are gathered. Second, surveys of annual hunting bags enable to compile data on place, dates and circumstances of killings as well as to collect samples of carcasses and skulls. Third, voluntary reported (farmers who suffered are temporarily not provided with compensations) assaults to livestock are investigated and documented.

Since the LC-s are not evenly distributed, several practical problems in monitoring arose due to the lack of transboundary cooperation. A bias may be caused by all kind of borders – both terrestrial frontier and internal borders among districts. Problem of overestimation numbers in census of LC is well known when reference territories or sample plots are too small compared to home ranges. In order to minimize bias, a simultaneous snow tracking was organized in all (833) local forester ranges. The foresters had to find and report only fresh (up to one day old) tracks of wolves and lynx. Results obtained in 2004 showed that wolf tracks were found by 324 (39%) and lynx tracks by 254 (30.5%) foresters within relevant ranges. However, 39% of all reported wolf tracks and 43% of all lynx tracks were discovered either just on the border or next to (below 5 km distance) the borders of local forestry districts. Furthermore, 4% wolf tracks and 5.5% lynx tracks were located in the border land of frontiers (mainly with Russia and Estonia). Also other records on LC are quite largely related to various border areas and such trend maintains for all period of our study. An opinion that “carnivores suddenly appear from the other side” is quite common to hunters and SFS experts investigating damage to livestock husbandry. Does it mean we should reduce estimated numbers at least by some 20% (a half of the double recorded signs) to get the true picture of LC abundance? Rather, we can not be sure that animals have crossed the border only once. A transboundary cooperation, e.g. surveying of larger territories surrounded by natural borders, would be solution but it is too expensive measure for a regular monitoring. In described case, we continue use of our system and estimates of the numbers are only one of the indices for population status. Nevertheless, the data obtained by monitoring are supported by results from other studies: telemetry, faecal analyses etc.

Our studies led us to a hypothesis that transboundary approach has been of bilateral crucial importance in LC – man relationships, at least in Latvia and Baltic region. The main factor limiting

LC populations for centuries and millenniums was human hunting. Suitable habitats were comparatively evenly distributed and less important for the pattern of LC distribution. Humans in their turn have always respected for the borders of their own land and hunting actions across the border were problematic. Consequently, chance to survive was better for those carnivores living next to a border and the animals might adapt themselves behaviourly to such circumstances. Also today, the hunter teams in Latvia without a formal coordination procedure are not allowed to cross the borders of their grounds as well as those of local forestry districts, to say nothing of the borders of head forestry districts or state frontiers. Successful hunting of wolves and lynx often requires long persecution and the borders may save them from extirpation.

### **Conclusions**

1. Despite opinion dominating in Latvia, that LC “appear” from adjacent territories, there exist individuals and groups inhabiting just border lands and crossing the borders frequently.
2. The spatial structure of LC populations seems to be well adapted to recent pattern of administrative borders.
3. Transboundary approach is essential for improvements of LC monitoring methods and data analysis.
4. Discussing opportunities of transboundary cooperation in LC management, prevailing public attitudes should be considered too, because such collaboration among hunters could lead to over-harvesting.

## LITHUANIA / LITUANIE

### LARGE CARNIVORES IN LITHUANIA: NO MANAGEMENT STRATEGY SO FAR

By Linas Balčiauskas

Lithuania is in the south of three Baltic countries, having a border with Latvia in the north and Byelorussia, Poland and Russia in the south. Forest area is just over 30% of the country, and agriculture land cover is biggest out of the three. Forests are heavily fragmented. Currently some of the most productive forests are under Natura2000 sites. Density of settlements is far bigger than in Estonia – we have over 3 millions of inhabitants.

Only one species of the three large carnivores has fully viable population in the country – this is wolf. Wolves now inhabit all Lithuania. The only limitation of the wolf hunting is time (hunted from 1<sup>st</sup> of August till 1<sup>st</sup> of April). No licensing system is used no limits are imposed. In the last years, number of wolves was severely reduced. According to official data of 1999 and 2002, number of wolves is less in 30 administrative districts of Lithuania, the same – in 4 districts, and bigger in 10 districts. Thus, in 68% of the country abundance of wolves is reducing.

Brown bear has no permanent population in the country and is included into Red Data Book as category 0 (extinct species). In the last years, several visits of brown bears to southeastern part of Lithuania were registered, but this species has no perspectives, as it has no suitable habitats, especially because of intensive forestry and disturbance.

Lynx population is very small and heavily fragmented. Lynx is under strict protection in the country, not hunted since 1979, included into a new redaction of Red Data Book, category 3 (rare). Species was never abundant in the country: up to 1948 there were only single specimens, up to 1969 number reached 140 individuals. Maximum number of lynxes was registered in 1988 – 217 individuals, but in five years it decreased twice – till 106 individuals – and remained at this level for 10 years. Survey in 2003 was incomplete, and in 2004 experts examined 52 forests. Just 32 lynxes were surveyed in 18 out of 52 forests, so conclusion about the critical situation was made (Bukelskis et al., 2004).

From the other Baltic countries Lithuania differs by the absences of population management plans – not only for large carnivore populations, but also for other protected species. Moreover, after 2002 Lithuania has no official survey of large carnivores. Survey data in 2003 were incomplete. In 2004 survey was ordered by Ministry of Environment to some experts, and was done by so-called team, including students. Survey did not cover significant part of the country, but some conclusions were made and published, mainly on the critical situation of wolves and lynxes in the country.

There is no damage compensation system in Lithuania. Damage for cattle owners is compensated only in animals were covered with insurance. According our estimation, damage in some previous years was in the level of 1000 heads of cattle, and in 2004 it was obviously less. No damage from lynxes was ever registered.

Monitoring of large carnivores was done by Institute of Ecology (now Institute of Ecology of Vilnius University) and staff of several protected areas. It is heavily underfinanced; in 2004 financing for monitoring of wolves and lynxes hardly reached 1000 Euros. It was done in 24 forests (rotation, not all of these forests monitored every year), with 12 km route per forest, and done by experienced observers. In 2004/2005 results of monitoring show insignificant decrease of wolves and in the same time insignificant increase of lynx. Thus, we concluded that status of populations of both species is stable.

Natura2000 project was targeted mainly to lynx populations, and several territories for protection of the species were established in productive forests. Quite strict regulations were imposed, and this triggered discontent and claims from the foresters. When speaking about Natura2000 in Lithuania, there are several unaccountable things. On one hand, country is obviously ignoring it's obligations (for

example, European bison), but on the other hand, some measures were overdone. For example, territory for lynx was established in the northern part of Lithuania (Birzu Giria), but in the neighboring areas of Latvia lynxes were hunted in 2004. I certainly see a need of international/transboundary coordination of these activities.

I also would like to mention insufficient, or, to be honest, non-existing communication of scientists with Ministry of Environment. The only financing sources for carnivore research are foreign grants. We were not able to sue out preparation of population management plans for large carnivore species. Currently, international project "Large Carnivores in the Northern Landscapes: an Interdisciplinary Approach to Their Regional Conservation" financed by the Research Council of Norway (Norges forskningsrad) and NINA, is main financing source, covering questions on distribution of carnivores, their acceptance by society, and partly of the damage made. What I clearly see, that is international influence, from LCIE as well as EU bodies, to prepare and implement management plans, monitoring system which will be compatible with other Baltic countries, and re-analyze species conservation measures in the country, balancing not only blind implementation of Natura2000 requirements, but also scientific basis for species evaluation, carnivore acceptance by society and also needs of the forestry. For the further implementation of wolf protection measures, compensation system on the state level should be prepared and implemented.

## **NORWAY / NORVEGE**

### **Management and monitoring of large carnivores in Norway**

Management of large carnivores in Norway has been debated three times by the Norwegian Parliament since 1991, and there are produced three white papers by the Parliament. The last white paper was produced in 2004, and is giving the framework and goals for current management in Norway. The management policy is to establish sustainable management of all the four large carnivores in Norway. Within this main goal, it is also a goal to reduce the conflicts with other society interests, and especially reduce the number of livestock and semi domestic reindeer killed by large carnivores.

There are approximately 2.1 million unguarded, free-ranging, domestic sheep distributed throughout Norway, and depredation is widespread. Each year approximately 30.000 domestic sheep are compensated as killed by large carnivores and golden eagles. In addition, approximately 10.000 – 15.000 of 180.000 semi domestic reindeer are compensated as depredation cases each year. The total budget for carnivore management in 2004 was approximately 125 million Nkr (19.2 mill USD/14.9 mill EURO). Budgets go mainly to compensation and preventive measures; in 2004 a total of 75 million Nkr was used for compensation for domestic sheep and semi domestic reindeer killed by large carnivores and golden eagles, and 26.5 million on preventive measures.

The goals, establish sustainable management of large carnivores and reduce conflicts and depredation, are clearly in conflict with each other, and may seem impossible to achieve at the same time. The management is based on two main strategies:

1. Area zonation
2. Carnivores' causing excessive damage runs the risk of being killed.

With these main strategies as foundation, the Norwegian Parliament has taken some untraditional decisions; The Parliament have established exact national goals for how many yearly reproductions there shall be for each of the large carnivore species and for golden eagle. Further, the Parliament has divided Norway in to eight geographic regions for management of large carnivores, and the national goals are distributed at these regions. Seven of eight regions have goals for one or several species. These goals are determined with basis in present distribution of the species. Region one in south-vest of Norway has none national goals for occurrence of large carnivores or golden eagles. The reasons for this are that this area of Norway has very high density of free-ranging domestic sheep, and there is no fixed incidence of any of the large carnivore species in this area today.

For each region it is established a committee composed of politicians at regional level. The committees have authority to decide how money granted from the Parliament shall be used to prevent damage on livestock and semi domestic reindeer, and can also give money to measures with the purpose to reduce fear for large carnivores. If the national goal for yearly reproductions for one or several species is fulfilled in a region, the committee also has management authority for those species. The committee then make decisions regarding to hunting, for instance quota for hunting, geographic area for hunting inside the region, number of hunters allowed and so on. If national goals not are fulfilled, the management authority is the Directorate for nature management. Ministry of the Environment can review decisions done in the committees, and of the Directorate for nature management.

Management is based on a principle of area zonation, and for wolf, the Parliament have established a wolf zone. Inside the zone wolf shall be allowed to establish reproducing units – and the goal is three yearly reproductions on Norwegian territory within the zone. Outside the wolf zone, individual wolves will be allowed shot on a relatively low level of depredation on livestock. Also pair and family-groups established outside the wolf zone will be allowed shot if the national goal on three early reproductions are fulfilled. Wolf packs that have their territory cross-border Norway and Sweden are not counted within the Norwegian goal, and possible management decisions about these packs will be taken in cooperation between the two countries.

Important cues in Norwegian management of large carnivores today are; national control over populations, local/regional involvement and authority, public involvement, predictability, area zonation and damage control.

### **Monitoring of large carnivores**

Effective monitoring of large carnivore numbers is regarded as being a prerequisite for ensuring the sustainability of their management in human-dominated landscapes. However, monitoring the status of rare and elusive carnivores over large areas presents a number of methodological and logistical challenges. In order to meet the needs of knowledge in management, a national monitoring program for the four large carnivores was implemented in 2001. From 2005 golden eagle will also be included in the program. The program is operated of the Norwegian institute for nature research under contract with the Directorate for nature management. This program produces minimum counts of the numbers of reproductive units of the five species for all of Norway each year.

All data collected through the national monitoring program is stored in a national database called Rovbasen. The database is the main working tool for the management, and the data is also available for research institutions for science purposes and for Swedish management authorities. The database is not available for the public because data can be used in illegal purposes. We therefore have made an internet-version that does not contain vulnerable data, and this version is available for everybody with access to internet.

As far as we know, our monitoring program is one of the first national monitoring programs for large carnivores in the world. Five years into the monitoring program things appear to be function well. The fact that methods are more or less similar in Scandinavia allows estimates to be made on the Scandinavian level which corresponds more closely to the biological population structure than if estimates were made within administrative borders. The national monitoring program is now under evaluation done by an expert group composed of persons from Norway, Sweden and Finland, with competence on international level. The Directorate for nature management has taken the initiative for the evaluation, and our purpose is to make the monitoring program even better.

There is today a great deal of cooperation between the management authorities in Norway, Sweden and Finland regarding our transboundary populations of large carnivores. This cooperation involve frequent meetings, exchange of information, mutual inquiry and discussions of management issues, common funding and priority of research projects, common monitoring methods, mutual access to databases etc. Since 1991 there has also been a large carnivore working group composed of management experts from the northernmost counties in Norway, Sweden and Finland; The large carnivore working group of the North Calotte Environmental Council.

## POLAND / POLOGNE

### Poland and the transboundary management of large carnivores populations in the Carpathians

Agnieszka Olszanska, Institute of Nature Conservation Polish Academy of Sciences, Krakow,

Carpathian Mountains are one of the most important areas for brown bear (*Ursus arctos*), wolf (*Canis lupus*) and lynx (*Lynx lynx*) populations in Europe. Poland shares its large carnivore populations in the Carpathians with Czech Republic, Slovakia and Ukraine. Yet, it is hard to give any good example of transboundary management of wolf, lynx or bear between those countries.

There are lots of differences between the countries: in legal obligations of the countries, in legal status of the species and hunting laws, management policies, monitoring methodologies, main conflicts. Poland, Slovakia and Czech Republic are since a year members of the European Union, whereas Ukraine is not. In Poland wolf, lynx and bear are strictly protected, in Slovakia they are hunted species in special hunting seasons, in Ukraine only lynx is protected, wolf and bear are hunted year round, and still there are bounces for wolf killing.

There are no joint research project between Poland and any of our Carpathian neighbours. Poland has not management plans for any of carnivore species, so it is hard to propose and conduct any transboundary management strategies or even priorities.

As one of the conclusions of the “Carpathian Workshop on Large Carnivore Conservation” held in Poiana-Brasov (Romania) on 12-14 June 2003 (organized by the Council of Europe, in co-operation with the Romanian Ministry of Agriculture, Food and Forestry, ICAS Wildlife Unit and the Large Carnivore Initiative for Europe (LCIE); *T-PVS (2003) 5*), participants agreed that there is a strong need for a coordinated approach and a cooperation between governmental, non-governmental and scientific institutions in the Carpathian region. Consequently, the LCIE and WWF Danube-Carpathian Programme Office proposed the elaboration of a **Carpathian Large Carnivore Conservation Programme**. It was aimed on presenting a pragmatic programme with concrete solutions, based on a population, scientific and ecoregional approach. In the framework of the Convention on the Protection and Sustainable Development in the Carpathians, such plan and coherent strategy, with regional approach based on populations could be a good tool for Carpathian governments to draft the national strategies coherent with the regional plan. This initiative has been presented to the participants of the “Multistakeholder workshops” in Brasov (Romania) and to the Bern Convention Standing Committee in Strasbourg, yet project has not been realised.

**Table below presents status of the brown bear, wolf and lynx populations in Poland (and Polish Carpathians), monitoring and research projects, main threats and problems.**

POLAND	bear	wolf	lynx
Population size	70-120 (whole range in the Carpathians)	460-560 (180-220 in the Carpathians)	190-220 (90-100 in the Carpathians)
Legal status	strictly protected	strictly protected	strictly protected
Distribution (range) compared to 2002	stable	stable	slightly decreasing
New colonization	by individual animals	by individual animals	no
Management plan	no	no	no
Monitoring	yes (PAS)	yes (PAS)	yes (PAS)
Natura 2000	in process	in process	in process
Research projects	yes	yes	yes
International projects	no	no	no

Conflicts by sectors: 1. Agriculture 2. Forestry 3. Hunting 4. Infrastructure	1. conflicts with livestock breeders, bee-hives and orchards owners 2. – 3. – 4. conflicts can occur with infrastructure development (transport, etc.)	1. serious conflicts with livestock breeders (especially in S-E Poland) 2. – 3. serious conflicts with hunters, who claim that wolf should be game species 4. conflicts can occur with development of infrastructure (transport, etc.)	1. – 2. – 3. – 4. conflicts can occur with development of infrastructure (transport, etc.)
Eventual specific threats	habitat fragmentation	poaching and habitat fragmentation	poaching, low prey density (roe-deer) and habitat fragmentation
Immediate plans	Elaboration and implementation of management plan	Elaboration and implementation of management plan	Elaboration and implementation of management plan

## SLOVAKIA / SLOVAQUIE

### Slovakia and the transboundary management of large carnivores populations within of Carpathians

(Martin Kassa, State Nature Conservancy of the Slovak Republic, Banska Bystrica)

The Carpathian Mountains cover an area of over 200,000 square kilometres and extend into six Central and Eastern European countries – the Czech Republic, Hungary, Poland, Romania, Slovakia and the Ukraine. Nearly three-quarters of Slovakia falls within the Carpathians, proportionately the greatest of the six countries.

The Carpathians are particularly important in terms of endemic flora and fauna. For example, Slovakia harbours over a hundred endemic animal species – predominantly invertebrates – and in the entire ecoregion about 200 endemic plant species have been identified. The last remaining stands of primary beech forest in Europe can also be found in the region, covering a total of about 20,000 hectares.

The Carpathians are the last remaining region in Central and Western Europe to support viable populations of the brown bear (*Ursus arctos*), the wolf (*Canis lupus*) and the lynx (*Lynx lynx*) and it is one of the last European refuges of the wild cat (*Felis silvestris*).

Slovakia plays the keynote role as a heart of West Carpathian population of all three species of large carnivores – bear, wolf and lynx.

Large carnivores populations in Poland (except wolf), Czech Republic (except lynx) and Hungary fully rally on they populations dynamic in Slovakia.

### Large carnivores populations in Slovakia in 1990 – 2003

(based on official hunting statistic – Forest Research Institut, Zvolen)

year	wolf ( <i>Canis lupus</i> )			lynx ( <i>Lynx lynx</i> )			bear ( <i>Ursus arctos</i> )		
	number	hunted	carcasses	number	hunted	carcasses	number	hunted	carcasses
1990	750	115	-	871	-	11	835	-	-
1998	1233	54	3	1007	22	3	1382	46	8
1999	1238	69	13	1003	4	2	1287	28	13
2000	1287	118	6	1046	0	3	1475	31	6
2001	1113	93	3	968	0	6	1350	26	10
2002	924	113	-	883	0	-	1211	39	-
2003	973	112	-	915	0	1	1318	13	7

### Nature protection status and hunting status of Large Carnivores in Slovakia

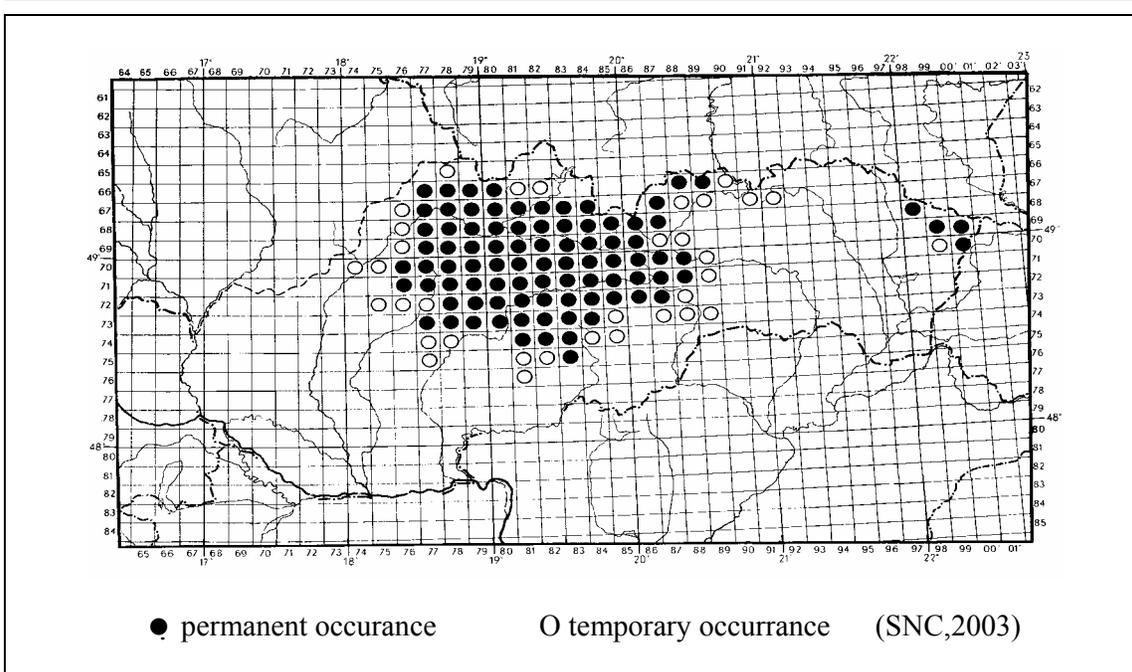
species	Nature Protection Status	Hunting Status
<b>Brown bear</b>	<ul style="list-style-type: none"> <li>- protected species of european importance</li> <li>- protected species, whose conservation requires the designation of protected areas</li> <li>- listed in Red list of Mamals in Slovakia – LR:cd</li> <li>- exception of nature protection –Ministry of Environment (MoE)</li> <li>- nature conservation value – 80 000 .- SK/individual (2000 Euro)</li> </ul>	<ul style="list-style-type: none"> <li>- game species</li> <li>- year- round protected game</li> <li>- exception of game protection – Ministry of Landuse (MoL)</li> <li>- damages compensated by state (Regional Forest Offices)</li> <li>- planed regulation hunting based on yearly quotas set by MoE (growth rate to 10 % of population)</li> <li>- case by case hunting of nuisance bear</li> </ul>

<p><b>Wolf</b></p>	<ul style="list-style-type: none"> <li>- partly protected species of european importance (16.1.- 31.10.)</li> <li>- partly protected species, whose conservation requires the designation of protected areas</li> <li>- listed in Red list of Mamals in Slovakia – LR: nt</li> <li>- two areas of year-round conservation; there the damages including the game are compensated by state (Regional Environment Offices)</li> </ul>	<ul style="list-style-type: none"> <li>- game species</li> <li>- hunting season- 1.11.- 15.1.</li> <li>- no quotas during the hunting season</li> </ul>
<p><b>Lynx</b></p>	<ul style="list-style-type: none"> <li>- protected species of european importance</li> <li>- protected species, whose conservation requires the designation of protected areas</li> <li>- listed in Red list of Mamals in Slovakia – EN</li> <li>- exception of nature protection MoE</li> <li>- the damages are compensated by state (Regional Environment Offices)</li> <li>- nature conservation value – 80 000 .-SK/individual (2000 Euro)</li> </ul>	<ul style="list-style-type: none"> <li>- game species</li> <li>- year- round protected game</li> <li>- exception of game protection– MoL</li> <li>- no planed regulation hunting</li> </ul>

Population of **brown bear** in Slovakia represents about 700 individuals (official hunting statistic – about 1 400 individuals). Brown bear settles mainly core mountains of the Slovak part of the Carpathian Mountains, while naturally spreading to the west in the area of the Beskids (Czech Republic) and to the south to area of the Slovakian Karst (border with Hungary). Poland population represents conection with Eastern Carpathian part of bear population. Size of population is stabil.

By preparation of national list of the proposed SCI ( Natura 2000), there were identified 61 areas covering more than 411 000 ha, for bear protection. The biggest areas are p.SCI Nizke Tatry – zapad (46 610ha) , Velka Fatra (43 600 ha), Nizke Tary – vychod (36 222 ha), Mala Fatra ( 21 928 ha) and Muranska planina (20 315).

**Distribution of the Brown bear (*Ursus arctos*) population in Slovakia**



Bear is in Slovakia the protected species and regulation of bear population is based on following principles:

- concentration of the hunting in areas of high and repeated damages to livestock and beehives,
- preferential shooting of nuisance bears,
- creation of continuous connection between the western and the eastern population,
- supporting of the natural spreading to Morava and Hungary.

For sustainable hunting management of bear population nature conservancy applies the following conditions:

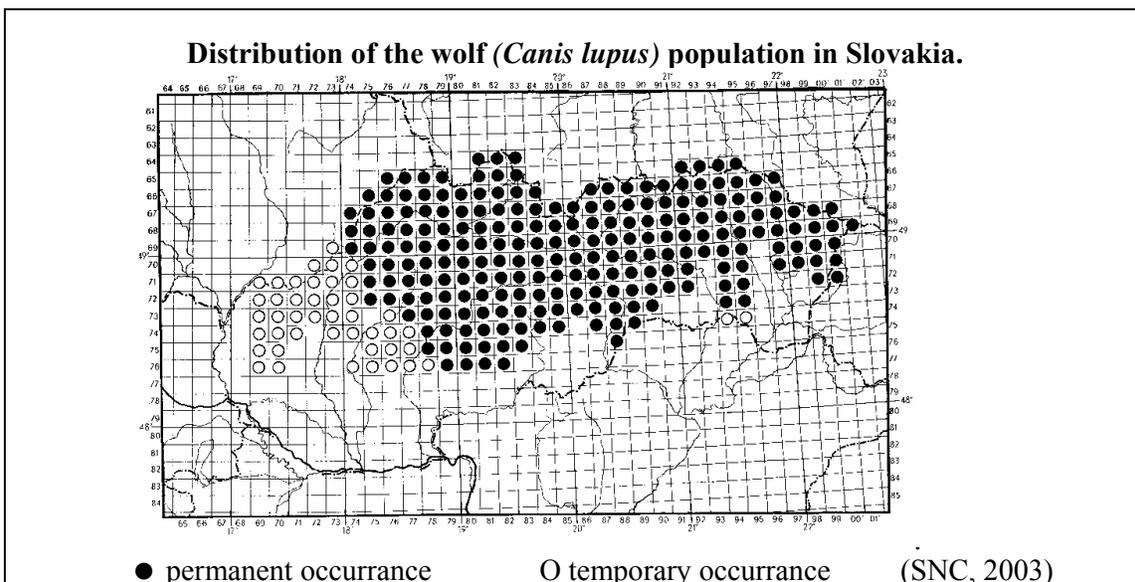
- yearly hunting bag represents max.10 % of population number,
- hunting season is limited since 1.7. to 15.12.,
- the weight of hunted bear is limited up to 100 kg,
- no meat used as bait,
- hunting is not permitted in protected areas (National parks and Natural reserves),
- each hunted bear is measured by the staff of NP or PLA administration .

Due to this condition and nature conservancy staff supervising the efficiency of the bears hunt reached no more than 50 % of the yearly hunting quota.

**Efficiency of the brown bear regulation hunting in Slovakia.**

Year	Permitted	Hunted	%
2000	80	31	38,8
2001	72	26	36,1
2002	76	39	51,3
2003	70	13	18,6
2004	61	22	32,8

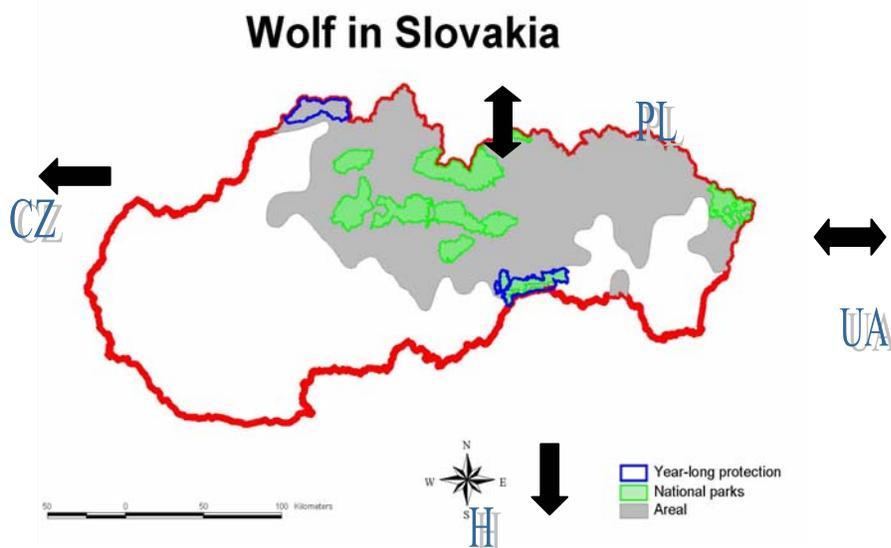
**Wolf (*Canis lupus*)** is the autochthonous species of the Slovak fauna. At present it lives in the woody, core Carpathian Mountains in the north and the northeast of Slovakia. Its abundance is approximately 400 – 500 individuals. The population size is less-more stabil.



Wolf in Slovakia is partially protected species- since January 16 till the October 31, except two region at the border with Czech Republic and Hungary. These areas, with year-round protection represent migration corridors of natural spreading of wolf population west- and south- wards.

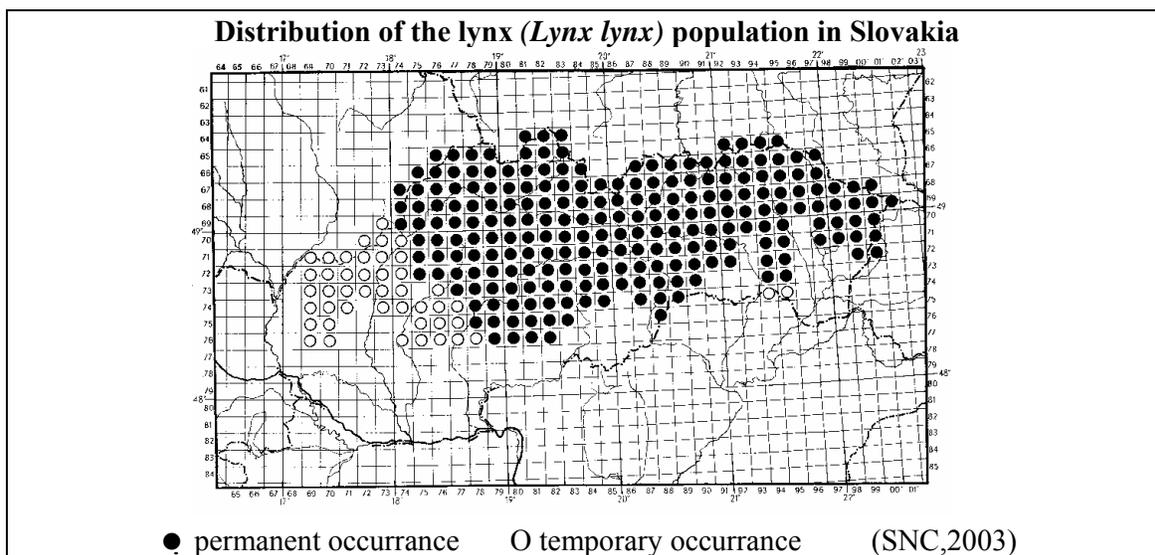
By preparation of national list of the proposed SCI (Natura 2000) there were identified 72 areas covering more than 428 000 ha, for wolf protection. The biggest areas are p.SCI : Tatry ( 61 735 ha), Nizke Tatry – zapad (46 610ha) , Velka Fatra (43 600 ha), Nizke Tatry – vychod (36 222 ha), Strazovske vrchy ( 29 367 ha) and Mala Fatra ( 21 928 ha.)

Corridors and migration areas of the wolf between Slovakia and neighbouring countries.



**Lynx** (*Lynx lynx*) is distributed, as well as wolf, mostly in forested mountain biotops in northern and eastern part of Slovakia. Optimum of its distribution is located in altitude 800 - 1000 m. Lynx prefers the area with huge vertical dissection. Size of population is estimated about 400 individuals ( official hunting statistic - 915 individuals in 2003). The population size is decreasing.

By preparation of national list of the proposed SCI (Natura 2000) there were identified 77 areas covering more than 448 000 ha, for lynx protection. The biggest areas are p.SCI Tatry ( 61 735 ha), Nizke Tary – zapad (46 610ha) , Nizke Tary – zapad (36 222 ha) and Velka Fatra (43 600 ha).



## **SLOVENIA / SLOVENIE**

### **Slovenia, the carnivore bridge between the Alps and Dinara-Pindus mountains - will it sustain?**

Miha Adamič, University of Ljubljana, Biotechnical Faculty, Večna pot 83. 1000. Ljubljana,

The backgrounds for the conservation management of European brown bear in Slovenia have been intensively studied in post-1990 period. In June 1992, the conference *Brown bear in the Alps-Adria countries*, attended by the bear people from Austria, Croatia, Germany, Italy and Slovenia, took place in Ljubljana. The main goal of the conference was to find the ways for support of the recovery of brown bear in the Alps. A petition on future options of trans-boundary management of brown bear was addressed to the Governments in the region Alps-Adria. But despite it, no official management strategies have been adopted.

In 1998 the proposal for spatial extension of core management area for brown bear in Slovenia for additional 2500 km<sup>2</sup> was addressed to the Ministry of Slovenia for Agriculture and Forestry (Adamič 1998). The main goal of the proposal was to strengthen the preservation of existing suitable habitats, as well enable the bears to expand towards west and northwest. The Strategy of brown bear management in Slovenia (the Ministry of R.Slovenia for Agriculture and Forestry), adopted in 2002, dealt with the ranking of brown bear habitats, taking also into account the chances for trans-boundary management and the expansion of the species.

Zonation of sheep farming out of carnivore core conservation areas is among still unresolved, but important problems of future carnivore conservation in Slovenia. First legally established conservation area for brown bears, with the surface of about 3500 km<sup>2</sup> was designed in south-central Slovenia in 1966. Since then the bears expanded their range, which currently extends over about 6000 km<sup>2</sup> and is also settled by the wolf and the lynx. A great part of today bear range is either settled, or used for human economies. The stock of sheep in Slovenia increased from about 50.000 in 1995 to about 150.000 in 2004. Sheep farming is widely supported by the State agencies, and the plans for further expansion of pasture areas have been launched.

In newly occupied areas where, according to crude estimations less than 20% of bear population is to be found, the compensations for brown bear damage in 1994-2000 period represented about 71% of total reimbursement on State level (Jonozovič, Adamič 2002). Slovenian Alps, with only 5-6% of bears, but with about 67% of reported damages, represent a very particular problem. Previous studies of bear habitat suitability in western half of Slovenia proved that the Alps have poor characteristics of optimal, reproductive habitat (Kobler, Adamič 2000). According to the results of yearlong monitoring of bear population in Slovenia, carried since 1993 on, the females with cubs of the year have been seldom registered in wider alpine area until now. Local communities in pre-alpine and alpine parts of Slovenia are vigorously opposing the expansion of the bears over their territories. Consequently, the expansion of bears in Slovenia became a political problem. But despite it, the areas with traditional pasturing of livestock should be carefully analyzed, before final decisions about their (un-)suitability for the bears would be adopted.

South-central Slovenia with about 80% share of bear population, but with only 26% of reported damage, faced different problems. Yearlong supplemental feeding is believed to affect the behavior of the there bears. Many of them lost their shyness, when approaching the villages and houses and posing threats to local people. Although few cases of direct conflicts with humans took place after the protection of bears in 1993, local communities expressed their negative attitudes towards conservation management of bears at any official occasion.

Due to increasing negative attitudes toward brown bears in Slovenia, the Government of Slovenia authorized the Slovenia Forest Service to prepare the Action plan for brown bear on the level of the State. It is believed that only such a document with wider consensus of local communities, will help to resolve existing problems, to ensure the conservation of the species in future and to establish the chances for further trans-boundary migrations of the bears from Slovenia to adjacent areas in Italy and Austria, too.

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## Points for country report: Slovenia

	Bear	Wolf	Lynx
Presence	Yes	Yes	Yes
Population size compared to 2002	Stable (N= )	Slow increase (N= )	Stable (N= )
Distribution (range) compared to 2002	Unchanged	Unchanged	Slow decrease(?)
New colonization	None	None	None
Reintroductions	None	None	None
Management plan	yes	In preparation	In preparation
Public acceptance	Yes- few interests	Partly -few interests	No informations
Conflicts by sectors: 1. Agriculture 2. Forestry 3. Hunting 4. Infrastructure	Agriculture  Infrastructure -traffic	Agriculture  Hunting	Agriculture (few cases)  Hunting (traditional aversion)
Legal status	Protected (population control - quota system)	Protected (population control)	Protected
If game: quota, season	Fully protected, but yearly quotas (N= ) are proposed as population control by Slovenia Forest Service	Quota N=?	Quota N=?
Eventual limitations for transboundary management	None	None	None
Corridors (limiting movements) 5. National 6. International	1. National-highways Croatia no limitation IT-AU-limited by national corridor?	1. National Croatia no limitation IT-AU-limited by national corridor?	? Croatia no limitation
Natural reserves in LC range	Yes (small scale surfaces) (N and size?)	Yes (small scale surfaces)	Yes (small scale surfaces)
Natura 2000	State proposal to EU	State proposal to EU	State proposal to EU
Monitoring	Yes	yes	yes

Research projects	Yes	Yes	Yes
International projects	LIFE III Natura	LIFE-in preparation	INTERREG applied
Eventual specific threats	none	poaching	poaching
Immediate plans			

Additional note (e.g. specific regional initiatives):

## SWEDEN / SUEDE

### A. Transboundary Management of Large Carnivore Populations in Sweden

Robert Franzén, Wildlife management section, Swedish Environmental Protection Agency

#### Abstract

The large predators in Sweden are protected, wolf (since 1966), wolverine (since 1969), lynx (since 1991), and brown bear (since 1995). The brown bear was also protected between the years 1913-1942 and the lynx between 1928-1942. Extensive hunting for wolf and wolverine occurred in Sweden before these species were protected, and the state even paid bounties.

In 2001, the Swedish Parliament decided to ensure the long-term survival of Sweden's large carnivores and the golden eagle in a Coherent Predator Policy. This programme includes predator surveys, grants to prevent and compensate for damages, controlled hunting, delegated decision making, research, enforcement of hunting legislation, dialogue, and communication on predators. The aim of this policy is to increase the knowledge and understanding for the predators as well as to establish and continue research, compensate for predator damage etc.

Further the policy settles that predators are allowed to spread within the limits of their natural range. Today most large carnivores inhabit the forests of central and northern Sweden. They ought to be able to colonise forested areas in southern and central Sweden where they went extinct in the 19th century due to extensive hunting. The management of predators in the northern parts of Sweden will be organised so that reindeer husbandry can continue.

The parliament has concluded several targets for the size of the predator populations, for brown bear and lynx minimum levels are set. The size of populations are expressed as the number of reproductions, i.e. females producing young yearly. The minimum level for brown bear is 100 reproductions, which represents approximately 1 000 individuals, whereas the minimum level for lynx is 300 reproductions, representing approximately 1 500 individuals.

The number of wolves and wolverines are low in Sweden and long-term survival is not assured. Hence, the parliament has set interim objectives for these species, 20 reproductions of wolves, which represents approximately 200 individuals, and 90 reproductions of wolverine representing 575 animals. When those targets are achieved, the situation will be re-evaluated.

**Table 1. Number of reproductions in 2004 compared with targets**

	2004	Targets
Brown bear	220	100
Lynx	250	300
Wolf	70	90
Wolverine	11	20

The County administration is responsible for the monitoring program of big predators in Sweden and is regulated in ordinance. The total cost for the monitoring was in 2004 over 2 million €.

The conflicts we have today are involving hunters and particularly reindeer husbandry. For instance there may be problems to hunt with free running dogs in areas with wolf. The main conflict takes place in the reindeer husbandry area which includes most part of northern Sweden. Conflicts with livestock and human anxiety are rather small in a national view.

The Parliament has decided that it should be few reproductions of wolf in the reindeer herding area and most lynxes should inhabit areas outside these areas. Almost the whole wolverine population should exist within the reindeer herding area.

The compensation system for large carnivores within the reindeer herding area was initiated 1996. This system compensates the reindeer herders for presence of carnivores and not for dead reindeer. Each reproduction of lynx and wolverine gives the reindeer herders compensation of more than 20 000 €. Each reproduction of wolf results in compensation of more than 50 000 €. Outside the reindeer herding area killed livestock are compensated. In 2004 the compensation system in the reindeer herding area cost 5 million € and 0.5 million € outside this area.

The situation for wolf has changed substantially during the last three decades. The wolf became protected in 1966 and the first reproduction after 1966 was in 1978, (in northern Sweden). The next reproduction was observed in 1983 in the middle part of Sweden close to the Norway border. During the following seven years one reproduction occurred in the same area in at least six years. After 1993 the reproductions slowly increased and in 1997 there was five in Sweden and also the first in Norway. In 2004 eleven reproductions were found in Sweden.

In Scandinavia the wolf, wolverine and bear populations move across the nation boundaries.

A good example is a six month old wolf which got a GPS-collar in December 2002 in central Norway. First the wolf moved towards the north of Norway and in October 2003 it crossed the boundary to Sweden. During the winter 2003/2004 the wolf inhabited the reindeer herding area but few reindeer damages were reported. In March 2004 no radio signal was given (due to lack of batteries) and no information about the route was given. One year later (1st of March 2005) the wolf was shot in a reindeer herding district in northern Finland close to the boundary of Russia more than 1000 km as the crow flies away from the initial site of marking.

The different countries Sweden, Norway, and Finland have different ambitions in the management of the large predators and there are different conflicts within the countries. In Sweden we must accentuate to the fact that borders exist both within and between countries. We have a strictly borderline between the reindeer herding area and outside. There is a large distinction in strategies of management of predators connecting these areas.

## **B. Wolf management in Sweden and Norway**

The Swedish Carnivore Association 050416

Sweden and Norway (Scandinavia) share the same large carnivore populations (wolves, wolverines, bears and lynx) since all species move and mate across the borders. The Scandinavian populations are however, to a large degree isolated from populations towards the east, in Finland and Russia. While Finland has an inflow of animals from Russia, Norway has an inflow from Sweden. However there is not much of an inflow to Sweden from Finland since most Finnish carnivores are located in the middle and southern parts of the country and mostly towards the Russian border.

Sweden and Finland are members of the EU and are bound by the Habitats Directive – while Norway is not. However all three countries have ratified the Bern Convention. Nevertheless – policies, population goals and management principles are quite different between the three countries.

The purpose of this presentation is to provide an example of some differences and problems related to differences in the management of a trans boundary population. For this purpose I will focus on the Swedish – Norwegian wolf population presented from a Swedish perspective. It is no secret that Sweden is unhappy about the Norwegian wolf policies and even Swedish environmental ministers have expressed concerns on several occasions.

### ***Conservation status of Scandinavian wolves***

The Scandinavian wolf population is small (120 wolves) and has been in a bottleneck situation since it was founded in 1983. The population is reproductively isolated from other populations in the east and inbreeding is heavy, which has resulted in a recently confirmed inbreeding depression with smaller litters than normal. From a conservation perspective the wolf population is very vulnerable and sensitive to all kinds of deliberate decimation. In a report from 2003 scientists from both Scandinavia and the US, including highly qualified population geneticists, made qualified estimates of how many wolves are needed in Scandinavia with regard to the genetic situation. The recommendations were two. 1) First - a minimum of 200 wolves – if – the genetic flow from Finland is secured on a regular basis. 2) Second - if the population continues to be isolated, the recommendation was a minimum of 800 wolves.

### ***National policies and population goals***

In Sweden a national policy was adopted in 2001 in which national conservation goals were established. In Norway three consecutive national policies have followed in recent years, with the last one in 2003-2004 establishing conservation goals. As we see it the policies have become increasingly restricted for carnivores in Norway, and especially for the wolf.

Sweden's conservation goals: 20 annual reproductions of wolves (approx 200 wolves) as a preliminary goal, 90 annual reproductions of wolverines (approx 550 wolverines) as a preliminary goal, a minimum level of 300 annual reproductions of lynx (approx 1500 lynx) and a minimum level of 100 annual reproductions of bears (approx 1000 bears). Norway's conservation goals: 3 annual reproductions of wolves, 15 annual reproductions of bears, 39 annual reproductions of wolverines and 65 annual reproductions of lynx.

### ***Scientific estimates of viable populations***

Sweden has made attempts to undertake scientific viability analyses of how many animals are required to meet the conditions of viable populations, while Norway has made no such attempts to our knowledge. Norway does not seem to pay any realistic attention to scientific estimates, since references to scientific viability analyses and suggestions of how large the populations need to be - in order to be biologically viable and meet up with conservation requirements - are essentially lacking.

### ***Areas of distribution***

According to the Swedish carnivore policy wolves are free to establish themselves in 60% of the country. However wolf presence is very restricted in the reindeer herding area in the northern 40% of the country and wolf reproduction is prohibited in the reindeer's year round grazing lands (23% of the

country). Norway has established quite a minimal management zone for wolves in a small area bordering Sweden. The wolf zone has successively become smaller and smaller – and comprises today of only a small fraction of total Norwegian territory, thus excluding wolf establishments in most of Norway. As a consequence of the zoning policy - wolves residing outside of the management zone generally risk to be shot on a continuing basis – but so are even wolves inside the management zone, when the modest goal of 3 reproductions is reached. Wolves residing outside of the zone, however, appear to be subject to regulation even before the goal is reached as demonstrated by a recent cull of 5 wolves in 2005. Therefore it seems inevitable that more culls of Norwegian wolves are to be expected on a more or less regular basis from now on.

### ***Hunting practices***

A total of 3 wolves has been shot legally in Sweden during the past six years out of a population of an approximate mean of some 70 wolves during the same years.

In Norway - a total of 22 wolves has been shot legally during the past six years with a population of an approximate mean of some 20 wolves during the same years. Twice since 2001 Norway has undertaken major culls of wolves. In 2001 nine animals were shot, one third of the entire Norwegian population. The recent cull in 2005 of 5 wolves eliminated 25% of Norway's wolves, of which 3 were alfa wolves and 2 a territorial pair, diminishing Norway's potential breeding units from 3 to 1 just before the breeding season in 2005.

Recently Norway introduced a new hunting regime – “lisensjakt” (licence hunting) - for wolves in its policy framework with the specific purpose to manage the wolf “more along the lines of ordinary game species”. Species which exists in abundance compared to the 20 wolves. According to Norwegian definition “lisensjakt” aims at regulating population growth, and is only applicable in areas where a carnivore population is estimated to be long term viable. What puzzles us is if Norway actually regards its wolf population as long term viable? According to scientific estimates taking into account the isolation and genetic problems - the population is not viable even in the short term - even if Swedish wolves are included.

Norwegian politics and management practices defies the precautionary principle and are contradictory to wise management of an isolated, inbred and critically endangered species in the northernmost parts of Europe. We feel that any deliberately decimation of the already small and bottlenecked population, other than single events in exceptional cases, obstruct the necessary and fragile recovery process.

### ***Implications for Sweden***

Both culls in 2001 and 2005 was decided without consulting with Sweden and effectuated in spite of the Swedish governments protests. Norway transfers most of the responsibility for the Scandinavian wolf population on to Sweden while at the same time commonly including Swedish wolves when referring to the status of the wolf population. Sweden *also* faces challenges and problems and the Norwegian sheep practices do not justify that Norway unilaterally put most of the responsibilities to Sweden.

Norway has almost monopolized the space for management action and the very small margins there are for using the exception rules to shoot wolves in Scandinavia. Norway's policies also risk to drain the Swedish population of wolves as they run a great risk to get shot when passing the border. If Norway continues to cull wolves on regular basis, it effects Sweden's possibilities to accomplish the objective of a viable wolf population due to the critical situation for Scandinavian wolves.

We are interested in hearing if other countries have similar problems and how they deal with them.

In the end we hope that Sweden and Norway eventually can come to a mutual agreement on the division of responsibilities between the countries concerning the shared obligation to host a viable wolf population in our countries.

## SWITZERLAND / SUISSE

### A. The Wolf in Switzerland

JÄGGI CHRISTOPH, Swiss Agency of the Environment, Forest and Landscape, CH-3003 Bern; [christoph.jaeggi@buwal.admin.ch](mailto:christoph.jaeggi@buwal.admin.ch)

In 1995, two wolves were observed in Switzerland. Genetic analyses has shown that at least 11 more wolves from the Italian-French population have immigrated into the Southern Alps of Switzerland since 1998. In summer 2005, there were two single males and one female living in Switzerland. The last one lives in the border region to Italy during winter months. In 2004, some observations (Q 3, according to SCALP criteria) indicated that there might be wolves in the Jura Mountains. However, no hard facts could be found so far. Furthermore, there is no indication of any wolf reproduction or pack in Switzerland.

Damages to livestock are low (less than 50 sheep or goats in each of the last two years), due to damage prevention measures and a rather high abundance of natural prey.

Nevertheless, the reported presence of wolves and the damages to livestock caused a political debate and the development of a management plan, which was adopted in July 2004 (Concept Loup Suisse, Strategia Lupo Svizzera, Konzept Wolf Schweiz). It was developed by a national working group consisting of regional wildlife managers, NGO's (hunter, sheepbreeder, nature conservation) and scientists. The goal of the management plan is to minimize conflict between human activities and the presence of wolves in Switzerland. Therefore, it contains guidelines for damage prevention measures, compensation for livestock losses and for the elimination of individual wolves that cause considerable damages.

On a technical level, Switzerland has been involved with several actions in transboundary wolf management, including its participation at all Alpine Wolf Workshops, its support of transboundary genetic studies, and the exchange of information and experiences in monitoring and damage prevention measures. Unfortunately, some cantonal authorities refused to join Interreg projects so far. However, for Switzerland, it is clear that the wolf population must be managed together with France and Italy. Therefore, the national authorities, who are responsible for wolf management, accepted an invitation of France and attended a meeting together with Italy in March 2003. More meetings are planned, with the goal to reach agreements for a common management of transboundary wolf populations.

To further improve transboundary co-operation, it is also important that the cantonal authorities join these processes. Effective transboundary management can only be achieved when there is trust between those involved (e.g. all relevant information relating to wolf presence or reproduction in border areas is readily transmitted to the other countries). Furthermore, transboundary management must be pragmatic, where the elimination of a single wolf does not lead to debates in every case. In spite of not belonging to the EU and government budget cuts, Switzerland wishes to participate in transboundary projects concerning monitoring and damage prevention.

Even with the challenges facing wolves in Switzerland, it is just a matter of time until there are wolves living in Switzerland as a new part of the today's French-Italian population. Time is a critical factor, which should be given to everyone: the sheepbreeders to adapt their practice, the hunters to accept a competitor, and also to the government (and politicians) to learn to deal with conflicts between wolves and people. To accomplish these goals, it is important that the wolf gradually becomes a „normal“ species in Switzerland, without the emotional reactions that exist today to the issue.

For the management plan, see [www.wild-schweiz.ch](http://www.wild-schweiz.ch). For the damage prevention program, see [www.herdenschutzschweiz.ch](http://www.herdenschutzschweiz.ch) and [www.kora.ch](http://www.kora.ch), where you also can find information about the situation of wolves in Switzerland.

## **B. SCALP (*Status and Conservation of the Alpine Lynx Population*)**

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The lynx (*Lynx lynx*) has been eradicated throughout the Alps during the 19<sup>th</sup> and early 20<sup>th</sup> centuries. Nowadays, the lynx and its habitat are protected by international treaties and by national laws in all Alpine countries. However, legal protection alone was not able to bring the lynx back to the Alps. Re-introduction programmes in the 1970s have resulted in two populations, one in the north-western Alps (Switzerland, stretching into France and Italy) and one in the eastern Alps (Slovenia, stretching into Austria and Italy). These programmes were not coordinated and no monitoring system was set up. Today, the two populations are still small and isolated.

The SCALP (*Status and Conservation of the Alpine Lynx Population*) was established in the early 1990s in the recognition that no Alpine country alone can host a viable lynx population and that international co-operation is essential for the conservation of this species. Therefore, scientists from all Alpine countries formed an expert group to survey the status of the lynx in the Alps and to propose and co-ordinate further actions.

**Activities:** The SCALP promotes an Alps-wide view of the phenomenon lynx in the Alps. The joint monitoring system is a crucial part of the SCALP. The first country-based status reports reviewed the development of lynx from re-introductions until 1995 and were published in *Hystrix* (1998). This was the first time that an Alps-wide map of the lynx distribution was presented. From this map it became obvious that a monitoring strategy with unanimous data interpretation throughout the Alps was needed. The Expert Group has therefore defined common standards for the interpretation of monitoring data, and general recommendations on how to assemble them. The second country-based status reports from 1995-1999 were published in *Hystrix* (2001). This map allowed for the first time an interpretation of the status of the lynx over the whole Alps, as it was based on comparable data and data interpretation. The status reports of the next pentad (2000-2004) are in preparation. To evaluate the conservation success 25 years after the first re-introduction, the first SCALP conference was held in 1995 in Engelberg, Swiss Alps (The Reintroduction of the Lynx into the Alps, Environmental Encounters, No. 38, 1998, Council of Europe Publishing, Strasbourg). Besides dealing with monitoring, the SCALP has proposed a Pan-Alpine Conservation Strategy for the Lynx (PACS) to the Standing Committee of the Bern Convention. The PACS aims to secure the survival of the lynx in the Alps through the merging of the extant populations by means of a network of local populations and has been adopted in 2001. In order to advance the conservation strategy, present progress and identify problems, and to improve international co-operation a second SCALP conference was held in Amden, Swiss Alps in 2003. Since, the SCALP has organised two regional meetings (Malborghetto, Italy and Windischgarsten, Austria) to discuss monitoring and management possibilities in the respective regions. Status reports and conference proceedings can be downloaded from <http://www.kora.unibe.ch/en/proj/scalp/index.html>.

After a review of the SCALP process, the SCALP experts from the respective countries gave an update on recent activities regarding SCALP. In France a new monitoring method is being tested using hair traps with a promising attractant. In Switzerland, the lynx translocation project of 2001 and 2003 aimed to build up another stepping stone towards the connection of the western with the eastern lynx occurrence. For Liechtenstein, the cross-border approach is obviously very important. As in Italy the monitoring is still mainly based on voluntary work, the SCALP should help to find sponsorships. In Germany, the SCALP acts as a model for the CELTIC, a network connecting the Bavarian/Bohemian lynx population with the Carpathians. In Austria, the SCALP is needed to get (local) governments to realize that actions (monitoring, law enforcement, human dimension work) are needed to preserve the presumably small occurrence of the Austrian Alps. The Slovenian representative stressed the importance of the political independence of SCALP and that SCALP helped to objectify the lynx management in Slovenia.

From the point of view of a strategic planning in the conservation of the lynx in the Alps, cross-border cooperation is a must. A viable population will ultimately stretch over several countries, and hence a common conservation and management approach is needed. Furthermore, the two extant populations need to be merged for genetic reasons – both populations are small and have been created from few founders. However, the different languages, legislations, and cultural habits in wildlife management and hunting make an international cooperation a complicated task. To establish an expert group to discuss scientific aspects was the easiest part. Then, it took several years to develop the common monitoring standards. Conservation NGOs have always emphasised both the importance of and their will for an international co-operation, but different priorities have hampered the practical collaboration. Although since the first SCALP conference in 1995, the Bern Convention – through its recommendations – was facilitating the co-operation between the authorities of the Alpine countries, none of the GOs ever took the initiative. For most of the national authorities in charge, the Alps are not a focal area, and conservation and wildlife management is mainly a matter of the local and regional authorities. Different administrative cultures, the problem of languages, unlike priorities and the general lack of tradition regarding the international co-operation in nature conservation and landscape and wildlife management further hinder the process. Today, the SCALP is known and generally recognised as a model for an Alps-wide consideration of a conservation topic, and more and more not only scientists and private conservation organisations, but also governmental agencies join the process. But it must be remembered that this is the result of a more than ten-years effort of the expert group.

## TURKEY / TURQUIE

### Recommendations for Conservation of Large Carnivores in Turkey<sup>1</sup>

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#### 1. Background

The problem facing Turkey in conservation of large carnivores such as gray wolf, brown bear and lynx is multifaceted. There have been technical, personnel, institutional, and political limitations for effective conservation and management historically. Swift and Holloway (1967) examined the efforts spent for conservation of wildlife and concluded that “effort to conserve Turkey’s wildlife is most inadequate”. Unlimited and uncontrolled hunting resulted in the depletion of wildlife resources and brought some species on the edge of extinction (Turan, 1984). Swift and Holloway (1967) stated that “the danger is that the attention given to wildlife resources has the appearance of being too little and too late”. After 35 years, the National Report on Sustainable Development (2002) still states that “one of the most important threats to biodiversity is the excessive and illegal hunting of wolves, brown bears, Eurasian lynx and wild goat”.

#### 2. Carnivores and Their Prey Species in Turkey

Turkey has several species of carnivores that are ecologically, economically, and scientifically important. In addition to wolf (*Canis lupus*), brown bear (*Ursus arctos*), striped hyena (*Hyaena hyaena*), Eurasian lynx (*Lynx lynx*), some of the other carnivores species in Turkey are as follows: Caracal (*Caracal caracal*), jungle cat (*Felis chaus*), wild cat (*Felis silvestris*), badger (*Meles meles*), jackal (*Canis aureus*) and fox (*Vulpes vulpes*). The Caspian tiger (*Panthera tigris virgata*) and the Anatolian leopard (*Panthera pardus tulliana*) are big cats that once had a distribution in the country. The Anatolian leopard is Critically Endangered and Caspian tiger is Extinct according to World Conservation Union (IUCN 2003). The large herbivore species which form the prey base for carnivores are red deer (*Cervus elaphus*), roe deer (*Capreolus capreolus*), fallow deer (*Dama dama*), goitered gazelle (*Gazella subgutturosa*), chamois (*Rupicapra rupicapra*), wild goat (*Capra aegagrus*), mouflon (*Ovis gmelinii*), and wild boar (*Sus scrofa*) (Swift and Holloway 1967; Huş, 1974; Turan 1984; Üstay 1990; Demirsoy 1996; Pani, 1998; Can & Togan, 2004).

#### 3. Review of Information Available on Carnivores of Turkey

Scientific information on large carnivores of Turkey is very limited. For example, Turkey is not even mentioned in recent compilations or action plans for brown bears worldwide (Servheen et al. 1999, Swenson et al. 2001, Zedrosser et al. 2001). The information presented on carnivores from Turkey in international publications has been misleading. For example Asiatic lion (*Panthera leo persica*) and Asiatic wild dog (*Cuon alpinus*) have been listed as carnivores still present in Turkey (2003 IUCN Red List of Threatened Species. <[www.redlist.org](http://www.redlist.org)>. Downloaded on 28 October 2004.). In fact, Asiatic lion and Asiatic wild dog do not have distribution in Turkey. Misleading information has been presented to the Council of Europe, as seen in Delibes (1990) about wolf in Turkey and in Council of Europe Seminar on the Management of Small Populations of Threatened Mammals (1993) about presence of Asiatic wild dog in Turkey.

#### 4. History of Carnivore Research in Turkey

Among the Turkish researchers, there has been a growing interest on small mammals but the same is not true for the large mammals (Kurtonur, 1996). The first information on the mammals inhabiting Turkey is found in the book of Usáma ibn Munkiz (1096-1188) and for the next seven centuries only incidental observations by various travelers are available (Kryštufek & Vohralík, 2001). C. G. Danford explored southern Turkey, northwestern Turkey and Central Turkey in 1875 and 1876

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<sup>1</sup>Presented at “Seminar on the transboundary management of large carnivore populations. Osilnica, Slovenia, 15-17 April 2005”.

and as probably one of the first Turkish scientists, A. Vehbi reported on the biology of wild goat in Turkey in 1931 (Kumerloeve, 1986).

Although the research on mammal fauna has increased during the last 10 years, the research on large mammals is still limited in Turkey (Kurtonur, 1996). The studies of Kaya (1991) on Anatolian wild sheep, Oğurlu (1997) on red deer, Başkaya and Terzioğlu (1998) on chamois, Can (2000) on wolf, Can (2002; 2003) on striped hyena and Can and Togan (2004) on brown bear are first practical attempts in the field to study large mammals in Turkey. Wildlife is a low profile issue in Turkey without the relevant education and training in biology departments in universities. According to the Directorate, universities fail to provide the necessary expertise that can contribute to the large mammal management and conservation efforts of the Directorate (Mustafa Akıncioğlu, Deputy Director, Nature Protection and National Parks General Directorate, Ankara, Turkey, personal communication, 2004).

## **5. Legal Basis for Carnivore Conservation and Management**

The Constitution, various laws, regulations and international conventions regarding nature conservation, make up the legal framework for the conservation of biodiversity in Turkey (National Report on Sustainable Development, 2002). The general approach in the Turkish legislation is to protect natural resources without specific reference to sustainability (National Report on Sustainable Development, 2002). Terrestrial Hunting Law of 2003 is the principal law related with wildlife protection, management and conservation in Turkey. Nature Protection and National Parks General Directorate of Ministry of Environment and Forestry is the responsible government organization from all aspects of wildlife protection, management and conservation. There have been technical, personnel, institutional, and political limitations related with this directorate and national wildlife leadership in government at all levels rests on few people.

Turkey has taken concrete steps for the conservation of biodiversity. Turkey has participated in the Pan-European Process on Protection of the Forests and ensured national coordination of Strasbourg, Helsinki and Lisbon decisions, signed the Convention of Biological Diversity in 1992 and ratified it in 1996. The European Landscape Convention and Cartagena Protocol on Biosafety were signed. Turkey became a party to Convention to Combat Desertification, Ramsar Convention, Convention on the Protection of the Black Sea against Pollution and to Basel Convention on the Control of the Transborder Movements of Hazardous Waste and Their Disposal. Turkey is a member of the Bern Convention, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), all of which are relevant to carnivores. However, there is neither a management plan nor a monitoring program for any of the carnivores in Turkey. Although Turkey has numerous laws, regulations, and programs that favor conservation, the implementation of these guidelines requires increased commitment and vigilance (Kaya and Raynal 2001).

## **6. Major Threats to Carnivores in Turkey**

Wildlife is a valuable resource and it may be utilized in a sustainable way by carefully planned tourism, which will include trekking, fishing, bird watching, wildlife observation, nature photography etc. However, in Turkey wildlife is only considered for its value in consumptive use. With few exceptions, the populations of large mammals have been declining in Turkey since 1950s. One of the main reasons for that is obviously the depletion of wildlife species by excessive hunting (Swift & Holloway, 1967; Turan, 1984; Can 2001; National Report on Sustainable Development, 2002). Large carnivore populations in Turkey are most likely negatively affected by large-scale forest fragmentation and by the degradation that has occurred during the last 50 years. Unsustainable forestry practices and unsustainable development in some areas have largely affected carnivores and their prey base. Turkey's human population has increased from 13 million in the 1920s to approximately 62 million in 1997. This has put tremendous pressure on land, water resources, and the environment. The combined effects of rapid urbanization and industrialization and associated economic activities have resulted use of natural resources above sustainable levels.

## **7. Public Awareness and Nature Conservation Non-Governmental Organizations**

Environmental education activities are predominantly conducted by nongovernmental organizations (National Report on Sustainable Development, 2002). The number of such organizations has increased during the last years but they conduct projects particularly with international financing

and the current capacity of non governmental organizations working on environmental education is limited in project development, project implementation and assessment of success (National Report on Sustainable Development, 2002). Today, Turkish people recognize the need to maintain a healthy environment and are concerned about the degradation of ecosystems and loss of species that result from human activities.

### 8. Recommendations for Carnivore Conservation and Management in Turkey

The first specific recommendations for carnivore conservation and management at the national level were made by Can (2001). Later, Can (2004) reviewed the status of large carnivores in Turkey and made 37 specific recommendations for achieving effective carnivore conservation and management in Turkey. Can (2004) explained the overall goal of those recommendations as “to maintain and restore, where possible, in coexistence with people, viable populations of wolf, brown bear, lynx, striped hyena and other carnivores as an integral part of ecosystems and landscapes in Turkey”. Among the 37 recommendations he proposed, the top 5 priority actions can be listed as follows.

1. Re-structure the General Directorate of Nature Protection and National Parks and establish the General Directorate for Wildlife as a separate independent government organization directly under the Prime Minister’s office.
2. Re-structure the Central Hunting Commission so that the number of members from hunting groups, universities, nature conservation organizations should be at least equal. Review the hunting regulations including areas, quota seasons and methods.
3. Develop where appropriate bilateral or multilateral contacts with other countries for scientific and conservation purposes. For trans-border management of large carnivores and their prey, coordinate research and projects between neighboring countries such as Georgia, Syria and Iran.
4. Coordinate scientific research on large carnivores in Turkey and maintain a close link with researchers working elsewhere in the world. Encourage research on all the aspects of the biology and ecology of the large carnivores. Coordinate the regular gathering of all necessary data to monitor the management, conservation and biological conditions of large carnivores, their habitat and prey in Turkey. Identify the needs for specific actions (reintroductions, managing hunting seasons and quotas, artificial feeding, habitat restoration).
5. Enforce the Terrestrial Hunting Law and relevant legislation in Eastern Turkey and Southeastern Turkey. The current strong and credible fines for poaching of brown bear, lynx and hyena should be strictly enforced on the ground. Investigate the possibility of General Command of Gendarmerie’s taking over the full responsibility of hunting control in Turkey.

### 9. Conclusions

Turkey is currently a candidate country for European Union membership and it is expected that more funds will be available for nature conservation. If conservation donors consider the wildlife management and conservation –an issue totally neglected until now– as a top priority and nothing short of top level attention of Turkish Government is attracted to the issue, we can change the current trend in hyena, lynx, brown bear, and wolf populations as well as in the prey populations (Table 1). The final efforts must be spent to reveal the presence of last individuals of leopard and Caspian tiger although there seems to be no viable populations.

**Table 1. Status of large carnivores in Turkey (Table adopted from Can, 2004).**

Species	Population Size (individuals)	Estimation Method	Densities/ 100km <sup>2</sup>	Population Trend	Legal Status	Presence of Monitoring Program	AP/MP	Institution in Charge
Wolf	5000-7000	ES, DE	2.2-2.8	Decreasing	Game species	No	None	MofEF
Brown bear	<3000	ES	1	Decreasing	Partially protected	No	None	MofEF

Striped hyena	<500	ES, QU	?	Decreasing	Protected	No	None	MofEF
Eurasian lynx	?	-	-	Decreasing	Protected	No	None	MofEF
Leopard	?	-	-	?	Protected	No	None	MofEF
Caspian tiger	?	-	-	?	-	No	None	MofEF

(?)= data unknown or poor

Estimation methods: ES=expert estimates, DE=density extrapolation, QU=questionnaires

Abbreviations: MofEF=Ministry of Environment and Forestry, AP= action plan, MP=management plan

Challenge of conserving large carnivores is complex and dynamic, involving ecological, economic, institutional, political and cultural factors and although no single agency, organization and single plan or strategy can be completely comprehensive and correct as a guide (Boitani, 2001). Large carnivores such as wolf, brown bear and lynx need large areas of relatively wild habitat and these species play important ecological roles and the effects of carnivores in community structure and diversity can be great (Noss, et. al., 1996). They serve as protective umbrella species for other wildlife species since their habitat area requirements encompass the habitats of many other species and conservation of such areas that support populations of large carnivores are likely to include many other species and natural communities (Noss, et. al., 1996; Machado, 1997; Boitani, 2001). Therefore, conservation and sound management of wolf, brown bear, lynx and hyena will also contribute to the conservation of Turkey's nature. Because Turkey is a European Union (EU) candidate, national authorities should use this opportunity to appear committed to carnivore conservation during the EU integration process. As suggested by Can (2004), the preparation of the "Large Carnivore Action Plan for Turkey" and submitting the plan to be discussed and formally approved by the Bern Convention could be the first step in achieving the conservation goals set in both the European and International legislation related with carnivores.

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**Appendix 4**

Convention on the Conservation  
of European Wildlife and Natural Habitats

Standing Committee

**Draft Recommendation No. ... (2005) examined on ... December 2005 on the conservation and management of transboundary populations of large carnivores**

The Standing Committee of the Convention on the Conservation of European Wildlife and Natural Habitats, acting under the terms of Article 14 of the Convention,

Having regard to the aims of the convention to conserve wild fauna and its natural habitats;

Wishing to promote co-existence of viable populations of large carnivores with sustained development of rural areas in appropriate regions;

Aware that the drafting and implementation of Action Plans may be a useful tool to redress the situation;

Recalling its Recommendation No. 59 (1997) on the Drafting and Implementation of Action Plans of Wild Fauna Species;

Recalling its following Recommendations:

- Recommendation No. 74 (1999) on the conservation of large carnivores;
- Recommendation No. 82 (2000) on urgent measures concerning the implementation of Action plans for large carnivores in Europe;
- Recommendation No. 89 (2001) on the conservation of the European lynx in the Alps;
- Recommendation No. 94 (2002) on urgent measures for the conservation of the Iberian lynx;
- Recommendation No. 100 (2003) on the conservation of large carnivores in the Carpathians;
- Recommendation No. 101 (2003) on the implementation of the Pan-Alpine Conservation Strategy for Lynx (PACS);

Considering that some co-ordinated Action plans, such as the Pan-Alpine Conservation Strategy for Lynx are excellent examples of how states can co-operate to survey and manage a threatened population;

Wishing to see more co-ordination between states in the conservation and management of transboundary populations of large carnivores;

Considering these Action plans as guidelines for competent national authorities;

Recommends that Contracting Parties to the Convention consider to jointly draft and implement (or, if appropriate, reinforce) Action plans for the following transboundary populations of large carnivores:

- Bear in the Alps;
- Lynx in the Alps (re-inforcing of PACS);
- Bear, wolf and lynx in Estonia, Latvia, Lithuania and Poland;
- Bear, wolf and lynx in Finland, Norway and Sweden;
- Bear, wolf and lynx in the Carpathians;
- Wolf in France, Italy and Switzerland;
- Bear, lynx and wolf in the Dinaric-Pindos Range;
- Iberian lynx (re-inforcing of co-operation for captive breeding and re-introduction).