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CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE
AND NATURAL HABITATS

Carpathian Workshop on Large Carnivore Conservation

(Organised in co-operation with the Romanian Ministry of Agriculture, Food and Forestry

and the Large Carnivore Initiative for Europe, LCIE)

Brasov (Romania) 12 – 14 June 2003

MEETING REPORT

prepared by
the Directorate of Culture and of Cultural and Natural Heritage

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Contents

The Standing Committee is invited to:

1. **take note of the report of the Carpathian Workshop on Large Carnivore Conservation, including the conclusions of workshops;**
2. **examine and, if appropriate, adopt the draft recommendation (page 5).**

Summary report

1. Background

"The Carpathian Workshop on Large Carnivore Conservation" was 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 and the Large Carnivore Initiative for Europe (LCIE).

Meeting was followed by the excursion (12 June) organized by ICAS Wildlife Unit.

One of the aims of the meeting was to start the elaboration of the Carpathian Action Plan for the Large Carnivores, which would present a very pragmatic and proposing concrete solutions, based on population, scientific and ecoregional approach. Such document and followed by it activities are especially important as the implementation of the Framework Convention on the Protection and Sustainable Development in the Carpathians, signed in Kiev on 22 May 2003.

Article 4 of the Convention ("Conservation and sustainable use of biological and landscape diversity") states in the § 1: "The Parties shall pursue policies aiming at conservation, sustainable use and restoration of biological and landscape diversity throughout the Carpathians. The Parties shall take appropriate measures to ensure a high level of protection and sustainable use of natural and semi-natural habitats, their continuity and connectivity, and species of flora and fauna being characteristic to the Carpathians, in particular the protection of endangered species, endemic species and large carnivores".

Mr Ovidiu Ionescu, Secretary of the State in the Ministry of Ministry of Agriculture, Food and Forestry opened the meeting and welcomed the numerous participants. Mr Eladio Fernández-Galiano welcomed on behalf of the Council of Europe and the Bern Convention Secretariat, Mr Christoph Promberger welcomed on behalf of the LCIE.

The draft agenda, as set out in appendix 2, was adopted.

The list of participants appears in appendix 1.

2. Plenary meeting

The first day of the conference, a number of presentations were given, divided into four sessions:

1. Introduction – general information on large carnivore conservation and international cooperation
2. Status and monitoring of large carnivores
3. Conflicts between large carnivores and human interests
4. Socio-economic aspects of the large carnivore conservation.

The contributions by participants (abstracts of the oral presentations and posters) appear in appendix 3 to this document.

Although there were no formal conclusions at the end of the first day, the following points seemed to receive the consensus of most participants:

- there is a strong need for cooperation between governmental, non-governmental and scientific institutions in the Carpathian region, where the healthy and viable populations still exists in the and suitable and well conserved habitats;

- appropriate conservation and management of large carnivores requires good and possibly unified methods of monitoring and estimating the status of populations;

- large carnivores still cause conflicts and damages to the livestock, thus there is a need to provide governments, livestock owners, hunters and foresters with good examples of functioning prevention methods and methodologies;

- the human dimension approach in order to find a compromise between all the interests groups should be promoted;

3. Workshops

On the second day of the conference participants attended and actively participated in the three workshops sessions held in the morning:

1. Monitoring of large carnivore populations - building on the existing system of official population estimates (facilitated by John Linnell and Henryk Okarma)
2. Socio-economic approach for large carnivore conservation in the Carpathians / Carnivore damage prevention methods and policy (facilitated by Alistair Bath)
3. National management plans (facilitated by Eladio Fernández-Galiano, Christoph Promberger and Jonathon Hornbrook)

The aim of the meeting was to start, as a final of plenary and workshop sessions, the elaboration of the Carpathian Action Plan for the Large Carnivores. In the framework of the newly adopted Convention on the Protection and Sustainable Development in the Carpathians, such plan presenting regional approach based on populations, presenting pragmatic and concrete actions and solutions, could be a good tool for Carpathian governments to draft the national strategies.

Meeting participants welcomed this initiative and as a conclusion of the three workshops (summeries of the workshops can be found on pages 6, 8 and 10) it was clearly stated that there is a need to prepare a coherent strategy for the conservation of large carnivores in the Carpathians. Bern Convention Secretariat will invite Governments to meet and start the process and co-operation, inviting also supra-national organizations (LCIE, WWF DCPO, UNEP, Carpathian Convention Secretariat) to initiate and facilitate the process providing with assistance and expertise.

Groups discussed also monitoring and socio-economic issues. The Carpathian populations of large carnivores are still strong and large, yet there is a need to continually monitor their development, because only good monitoring data will allow a flexible management of the population. Therefore, taking into account the difficulties and local conditions, monitoring programs and the methodologies should be coordinated in the region. Coexistence with people is still a crucial point in large carnivore conservation. The Group discussed how to improve human attitudes toward carnivores, how to integrate regional and local development into carnivore conservation in the Carpathian region, how to promote good examples of damage prevention methods, appropriate policies and possible advantages for local people, living in coexistence with large carnivores.

4. Recommendations

The draft of the recommendation on the conservation of large carnivores in the Carpathians will be presented to the Standing Committee to the Bern Convention, during the meeting on 1 – 4 December 2003.

Convention on the Conservation
of European Wildlife and Natural Habitats

Standing Committee

Draft Recommendation No. … (2003) of the Standing Committee (examined on 4 December 2003) on conservation of large carnivores in the Carpathians

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

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

Recalling its Recommendation No. 59 (1997) on the drafting and implementation of action plans of wild fauna species;

Recalling its Recommendation No. 74 (1999) on the conservation of large carnivores;

Referring to the Action Plans on wolf, Eurasian lynx and brown bear, presented by the Large Carnivore Initiative for Europe *["Nature and Environment Series" Nos. 112, 113 and 114]*;

Welcoming the signature of the Framework Convention on the Protection and Sustainable Development in the Carpathians and noting the specific reference to large carnivores and their conservation;

Wishing to maintain and restore, in coexistence with people, viable populations of large carnivores as an integral part of ecosystem and landscapes in Europe;

Acknowledging the transboundary character of conservation measures for large carnivores in neighbouring countries and wishing to promote a harmonious management of these species in the Carpathians,

Recommends the Czech Republic, Hungary, Poland, Romania, Slovak Republic and Ukraine and invites Serbia and Montenegro to:

1. co-operate to jointly prepare a Carpathian Action Plan for conservation and management of large carnivores, promoting involvement of the appropriate regional organisations and taking due note of the Action Plans for wolf, lynx and bear prepared by the Large Carnivore Initiative for Europe and referred to in recommendation 74 of the Standing Committee;

2. in the context of the exercise above, draft and implement national action plans for large carnivores;

Furthermore recommends Ukraine to:

3. re-examine present control means for wolf in the Ukrainian Carpathians, aiming to policies that take into account the status of this species in whole Carpathians; closely monitor wolf in the Ukrainian Carpathians.

Conclusions of the workshop "National management plans – elaboration of the Carpathian Action Plan for the large carnivores"

facilitated by Christoph Promberger, Jonathon Hornbrook and Eladio Fernández-Galiano

Where are we?

- ✓ Six countries (CZ, Slovakia, Poland, Ukraine, Romania, Serbia + Hungary and Austria)
- ✓ In some countries strategies/action plans/management plans on the way
- ✓ Nowhere implementation of these plans, management so far focussed on hunting
- ✓ Government tradition is not for openness and for involvement of the public sector, but this is changing
- ✓ Governments are open to conventions and international co-operation
- ✓ Expertise exists in the area
- ✓ Tradition of co-existence of humans and large carnivores in most of the area

What should it do? What we want to address?

- → prepare a frame for work in the Carpathian region (LC Action Plan and a concept of the coherent Concept of the projects for the LCs in the Carpathians – project should involve all Carpathian countries, should include a complex and wide range of transboundary and local activities and projects; it could be coordinated by DCP from "logistic" and financial side and LCIE from scientific, technical and advisory side, and would be realized by GOs, NGOs and scientific institutions)
- → integrate LC issues to different sectors and policies - integrate LC into habitat conservation, ecological networks and land-use and management planning
- → formulate concrete conservation actions, give answers to what? how? why? , with timetable for short and long term; possibly trigger new conservation actions
- → achieve acceptance of the hunters, farmers and forest owners through flexible management
- → provide framework of communications / cooperation between countries – compile and synergise national action / management plans
- → strengthen the link between national and international NGOs and GOs – make GOs aware that they are part of the bigger picture (regional context above the national actions)
- → provide a mechanism to prevent / resolve conflicts with humans
- → improve, harmonise and coordinate monitoring at the national level - building network of specialists
- → provide the background for financing, attract new potential donors (healthy competition)

How do we get it? – A draft preliminary "road map" of the process

1. using the Carpathian Convention as a tool, organize a meeting with GOs and NGOs where we start to work on the frame of the Carpathian Action Plan for the large carnivores: Bern Convention invites Governments to meet and start the co-operation, with LCIE, WWF DCPO, (UNEP, Carpathian Convention Secretariat) – Bern Convention with LCIE will start the process, DCPO helps as requested, Romanian Government takes an important role. Supra-national organisations (UNEP, Bern Convention, LCIE, DCPO) initiate and facilitate the process providing with assistance and expertise.
2. concept for the Bucharest donors conference (October / November 2003) – present outline of the whole process, and package of concepts of the concrete project proposals (LCIE is responsible for the preparing a concept proposal for the Carpathians). If possible identify potential donors (industry, business, national governments, hunters associations, ..., ...).

3. identify interest groups and key-institutions, form a group of experts to discuss and approve the draft prepared by LCIE, consult research into conservation issues and means (state of the art)
4. distribute and speak with GOs, hunting associations, environment and nature conservation groups
5. provide and strengthen interaction between local, national and international level (communication)
6. (GOs should decide) what legal status this document should have

Conclusions of the workshop "Monitoring of large carnivores in the Carpathians: resources available and required".

facilitated By John Linnell And Henryk Okarma

What do we have?

At present there is a system of "official population estimates" whereby the local forestry or hunting units report annually on the estimated numbers of individuals of a range of species present in their unit. These data are then complied and reported through to a central ministry or agency. This represents an incredible system of observers, and may well provide an adequate system for following general tendencies in the population, which may be suitable for general management. However, there are reasons to question the interpretation of the real number of carnivores that are derived from the observations. For example, the methodology is often poorly described and is not standardized, there is a large possibility for double counting, and there is no independent control of the quality or accuracy of the data. In some countries where the large carnivores are not regarded as being "game" species (HU, CZ) the collection of data follows similar pathways but is organized by individual researchers rather than the state forest services. The challenge is to build on this incredible system to obtain data that is solid.

Where do we want to go?

Although the Carpathian population of large carnivores is very large, there is a clear need to continually monitor its development. This is because many of the populations are being harvested, and also poaching pressure is locally high. The existence of good monitoring data will allow adaptive management of the population, such that actions can be taken to reverse undesired trends. Although much management can be conducted with simple indices of trend, there is a need to have a good idea of the actual numbers of animals as well.

How do we get there?

The challenges are great because of the size, number of countries, and general socio-economic situation of the Carpathian ecoregion. Therefore the ambition level of any monitoring program will need to be set accordingly. However, this needs to be balanced by the enormous responsibility that fall on the region for conserving Europe's large carnivores.

We propose a two-tiered system of monitoring.

(1) **Total area.** Throughout the region we propose that the present system should continue as it provides a foundation for local management of the various species and is well established. However, we would like to see a set-up that allows concrete records of species presence (tracks in the snow, shot animals, depredation events on livestock, animals killed in traffic collisions, direct observations) to be recorded (with time and location) on special data-sheets and transmitted directly to a central, independent agency within each country. From here the data should be entered into a national database and made available for ecoregional level reporting. From this data it will be possible to extract a detailed overview of distribution (on a 10x10km grid) (similar to the SCALP system). Distribution data can be used to monitor gross changes in population size, and is very useful for conservation planning. Using knowledge of species home range size it will also be possible to obtain some approximate estimates of the number of animals present within the distribution area. It would be desirable to separate between observations of reproductive units and of single animals. Knowledge of distribution is the most basic level of knowledge that could be regarded as being acceptable.

(2) **Reference areas.** It would be highly desirable to augment this total area monitoring with more detailed data from a network of reference areas that represent the diversity of habitats from the ecoregion. Within these areas it would be possible to set up some index monitoring systems (for example track counts) along a fixed network of transects and to obtain more accurate counts or estimates of species density. For lynx and wolves the application of intensive snow-tracking can be accurate and cost-effective, and DNA based analysis of individual identity from scats can be especially useful for bears (and the other species). The interpretation of data from these reference areas could also

be helped if some small-scale telemetry studies were conducted. As well as building the foundation for a time series to follow changes over time, the availability of accurate density estimates from a range of sites would aid the extrapolation from distribution area to possible total population size.

SMART Objectives

1. Identify and obtain funding for a responsible coordinator in each country to organise the collection and analysis of data. We could investigate the potential to translate and adapt a Norwegian online database for this work (ROVBASEN);
2. Design a simple data sheet suitable for the individual forestry / hunting units as well as instructions for their use. This would require obtaining a detailed GIS based map of all units in the Carpathians if each unit's datasheet is to be accompanied by an individual map to mark the location of observations;
3. Establish data flow procedures for each country;
4. Develop simple field instructions for the reference areas, presenting a range of methods that can be used under various conditions;
5. Identify a lab capable of conducting DNA analysis from scats and obtain funding for it to work;
6. Organise and coordinate the network of reference areas into a database;
7. Organise all national efforts into an ecoregion level reporting system.

Conclusions of the workshop "Socio-economic approach for large carnivore conservation in the Carpathians / carnivore damage prevention methods and policy".

facilitated by Alistair Bath

Goal: To understand and address socio-economic issues in the Carpathian region
Vision: To develop a coherent strategy for LC conservation in the Carpathian Region

What are socio-economic issues?

Social:
- ✓ Emotions
- ✓ Traditions – cultural difference
- ✓ attitudes and beliefs

Economic:
- ✓ Tourism
- ✓ Damage
- ✓ Hunting
- ✓ Timber harvesting, privatisation of forests
- ✓ Land ownership
- ✓ Agriculture
- ✓ Infrastructure development
- ✓ Economic growth
- ✓ Land-use changes

Direction to address threats and build on assets

- ✓ Land-use planning
- ✓ Education
- ✓ Economics
- ✓ HD research
- ✓ Livestock conflicts
- ✓ Eco-tourism
- ✓ Public involvement

Partners: Hunters, farmers, governments, children, teachers, families, ecotourism sector, researchers, local people, business/industry, foresters

The Group identified a number of potential threats, needs and possible solutions**.**

1. Lack of consideration for conservation issues in land-use planning
- ✓ Understanding of decision-making process
- ✓ What information does the process need?
- ✓ Need good documentation of quarry issue
- ✓ Land-use ministry need to understand
- ✓ Address issues – public support
- ✓ Look for other success stories in the region and outside

2. Lack of knowledge/value of nature
- ✓ Study of public values
- ✓ Existing information on values and hierarchy

3. CAP reform
- ✓ Going to force farmers away from tradition of small-scale production
  - → Legal background/strategy – What possibilities exist for ascension countries?

- → Perception of what is happening in EU
- → Link with WWF policy group in Brussels
- → Study – value of small-scale rural agriculture, healthy food etc.
- → Need a strategy to deal with CAP issues, e.g. market Romanian products
- → EU subsidies for nature

4. LC income (Hunters)
- ✓ No accurate data on economic impacts of LCs
  - → Bear value, income from trophy hunting, damage, ecotourism
  - → Dead bear worth more?
  - → How does this system influence decision-making?
- ✓ Lack of independent monitoring
  - → Numbers of LCs, trust and credibility
  - → Hunters attitudes – ecotourism opportunities
  - → Quota issues

5. Children grow-up – how to reach families, teenagers? Lack of interest.
- ✓ Broader issues of "puberty" need to be addressed – social stress
- ✓ Outreach program – e.g. theatre
- ✓ Involve teenagers in what and how to deliver the messages in "their language"
- ✓ Festivals / entertainment activities to reach families

6. Need to reach children (LC years) – first impressions – difficult to reach
- ✓ Revive the tradition "plant a tree for birth"
- ✓ Learn and adopt tradition that exist in each country
- ✓ Rural and urban children – issues of knowledge (e.g. Romanian – urban more knowledge than rural)
- ✓ Educational tourism "family days", excursions

7. Carnivores do "bad" things - How to tell these things if at al
- ✓ Activities – solutions
  - → package – conflicts and solutions
- ✓ Children exchanging ideas with other children – need contacts
- ✓ Web pages, e-mail, direct contact
- ✓ Network that successfully communicate

8. EU will bring changes in lifestyle
- ✓ balance between rural, traditions and western benefits
- ✓ Educational efforts must include knowledge issues in EU changes

9. Don't understand how much and how long?
- ✓ Should test what is working
- ✓ Evaluation of programs required

10. Shepherds can not afford preventive measures – strong emotional attachment to sheep
- ✓ Study shepherds – socio-economic point of view
  - → Different scale
  - → Different situations across Carpathians must need to understand emotions (personal attack)

11. Possible behaviour inappropriate with bears
- ✓ Increase awareness change behaviour

12. Lack of knowledge about access to market and financial funds
- ✓ Training sessions for operators (how to sell market?)
- ✓ System to replicate Zarnesti model and develop good practices
- ✓ Authorities need to know meaning of ecotourism concept

→ Identify authorities, existing knowledge and work with them
✓ Need criteria system – ecotourism

13. Need more success stories (not a lot)
✓ Need pilot projects

14. Lack of financial mechanisms for money to go from ecotourism to conservation
✓ Conservation / development fund concept (Zarnesti)
✓ Understand and explore other options

15. Industry does not understand ecotourism
✓ Real things to do "guest house adopts a dog"
✓ Awareness of concept

16. No compensation scheme across Carpathians – explore advantages and disadvantages
✓ Effects on LCs

17. Damage prevention
✓ Requirements in the field
✓ LCIE need agricultural person in the Core Group
✓ Better preventative measures needed across Carpathians

18. Infrastructure development will negatively affect habitat, agricultural practices, LCs
✓ Minimize impact – green bridges
✓ Distribute LC habitat info
✓ How it will be developed? – roads and etc.
→ Pro-active addressing development (learn from Poland)
✓ Be involved in this process
✓ Organize conference with EU Development
✓ Approach Ministry of Transport/Development

19. E.I.A. lacking some steps (Public Involvement) in Carpathians
✓ Increase knowledge about existence, use, regulations
✓ Participate in projects (LCIE expertise)
✓ Increase public involvement in process
→ Create experts to address issues
✓ Pro-active – be at beginning of the process

20. Lack of good environmental education efforts in schools
✓ Sharing of information within region (e.g. green pack)
✓ Printing and dissemination of products to wider region
✓ Programs with teachers, school authorities, Ministry of Education
✓ Need ecosystem broader info. Cooperation with parks
✓ Context of LCs within bigger system
✓ Common strategy, coordination of activities

21. Difficult to balance tourism and LC conservation
✓ Local municipalities to develop one land use plans
✓ Integrate with "Initiative for Ecotourism" (GIE)

22. No knowledge, experience on economic situation within Carpathian region
✓ Involve economists and economic valuation studies

23. Lack of integration of social approach / involvement in planning
✓ Forest management plan includes social (recreation, tradition, etc. – when? where?)

A P P E N D I X 1

Strasbourg 4 June 2003
[Carpathians(2003)01-list of participants.doc]

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List of participants

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A P P E N D I X 2

Strasbourg 3 June 2003
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CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE
AND NATURAL HABITATS

Carpathian Workshop on Large Carnivore Conservation

(Organised in co-operation with the Romanian Ministry of Agriculture, Food and Forestry

and the Large Carnivore Initiative for Europe, LCIE)

Brasov (Romania) 12 – 14 June 2003

DRAFT AGENDA

prepared by
the Directorate of Culture and of Cultural and Natural Heritage

Agenda of the meeting

June 12th

Excursion for the meeting participants

LCIE Core Group meeting

June 13th

Plenary meeting

Welcome addresses 09:00 – 09:20					
	Ionescu	Ovidiu	Romanian Ministry of Agriculture, Food and Forestry	On behalf of the Romanian Government	
	Fernández-Galiano	Eladio	Council of Europe	On behalf of the CoE	
	Promberger	Christoph	Large Carnivore Initiative for Europe	On behalf of the LCIE	
Introduction 09:20 – 11:00					
	Ionescu	Ovidiu	Romanian Ministry of Agriculture, Food and Forestry	LC conservation and management actions in Romania - collaboration between EU programs and World Bank for large carnivore conservation	15’
	Predoiu	George	ICAS Wildlife Unit	PIN MATRA program - Buidling an Ecological Network in Romanian Carpathians (based on key habitats for large carnivore).	10’
	Finne	Anja	European Commission, DG IX – Environment	European Commission policy and attitude toward LC conservation	15’
	Olszanska	Agnieszka	Large Carnivore Initiative for Europe	LCIE – its projects, achievements and challenges for future.	15’
	* *(to be confirmed)*		*Large Carnivore Initiative for Europe*	*Council of Europe / LCIE large carnivore Action Plans*	15’
	van de Vlasakker	Joep	Large Herbivore Initiative	LHI – international cooperation and actions for conservation of large herbivores	15’
	Hornbrook	Jonathan	Danube-Carpathian Programme Office	Large carnivore conservation programs of Danube-Carpathian Programme Office	15’
Coffee break					
Status and Monitoring of large carnivores 11:20 – 13:00					
	Linnell	John	Norwegian Institute for Nature Research (NINA NIKU)	Monitoring systems for large carnivores management and conservation	20’
	Salvatori	Valeria	Institute of Applied Ecology, Italy	Mapping environmental suitability for large carnivores in the Carpathians	20’
	Männil	Peep	Estonian Ministry of the Environment	Conservation requirements on large carnivores – efficient or not in Northern Baltic. Status, monitoring and management of large carnivores in Estonia	15’
	Tsingarska – Sedefcheva	Elena	BALKANI Wildlife Society	Wolf Study and Conservation Program in Bulgaria	15’
	Langowski	Andrzej	Polish Ministry of Environment	Implementation of European Action Plans in Poland	15’
	Gula	Roman	International Center for Ecology, Polish Academy of Sciences	Bieszczady Wolf project - progress report	15’

☺ **Lunch break** ☺					
Conflicts between large carnivores and human interests 14:00 – 15:40					
	Linnell	John	NINA NIKU	CDP Newsletter	15’
	Mertens	Annette	Carpathian Large Carnivore Project	Recommendations to reduce carnivore-livestock conflicts, based on a 5-years analysis in Romania	20’
	Gula	Roman	International Center for Ecology, Polish Academy of Sciences	Socio-economic aspects of wolf depredation to the livestock in the Bieszczady Mts, Poland	15’
	Baars	Gerard	ALERTIS fund for bear and nature conservation	Model for approach of man-bear conflicts	15’
	Okarma	Henryk	Institute of Nature Conservation, Polish Academy of Science	Challenges of LC management in the Polish Carpathians	15’
	Rigg	Robin	Slovak Wildlife Society	Perceptions and reality in conflicts over large carnivores in Slovakia: Who’s afraid of what?	15’
Coffee break					
Socio-economic aspects of the large carnivore conservation 16:00 – 18:00					
	Bath	Alistair	Memorial University of Newfoundland, Canada	Human dimension research in Europe	20’
	Balciauskas	Linas	Institute of Ecology, Lithuania	Public acceptance of large carnivores in Lithuania	15’
	Majic	Aleksandra	Memorial University of Newfoundland, Canada	Attitudes of Croatian public toward brown bears and brown bear management	20’
	Promberger	Christoph	Carpathian Wildlife Foundation	Rural economic development through Large Carnivores - the Carpathian Large Carnivore Project as a case study	20’
	Promberger - Fuerpass	Barbara	Carpathian Wildlife Foundation	The Carpathian Large Carnivore Center – tourism enhancement, education and conservation	15’
	Buretea	Simona	Carpathian Large Carnivore Project	School programme about large carnivores	15’
	Blumer	Andrei	Initiative for Ecotourism (Romania)	Ecotourism as a tool for conservation. CLCP approach extended to the Romanian Ecotourism Association	15’

June 14th

Plenary meeting with workshops

1. **Monitoring of large carnivore populations - building on the existing system of official population estimates** – LC populations surveys – what kind of research do we need? What more we have to know to successfully protect LC in the Carpathians? Facilitated by John Linnell and Henryk Okarma

2. **Carnivore damage prevention methods and policy; compensation and subsidy systems** – what are the problems? What can we propose? What are the most efficient compensation systems? Facilitated by Christoph Promberger

3. **Socio-economic approach for large carnivore conservation in the Carpathians** - how to integrate regional and local development into the LC conservation in the area; human dimension approach; education and information campaign. Facilitated by Alistair Bath

4. **National management plans**. Facilitated by Eladio Fernández-Galiano & Ovidiu Ionescu

As a final of plenary and workshop sessions

5. Elaboration of Carpathian action plans for large carnivores and herbivores, facilitated by Alistair Bath (summarizing the morning sessions - what are the key issues and key elements that an action plans should address? How to prepare such plan, who and for whom?)

Poster session

Name	Organization	Poster title
Rigg, Robin	Slovak Wildlife Society	The use of livestock guarding dogs to protect sheep from bears and wolves in Slovakia
Kecskes, Atilla	"Milvus Group" Association	A case study with wolf livestock depredation in hilly country, Transylvania
Márkus, Márta; Szabó, Ádám; Szemethy, László	Dept. of Wildlife Biology and Game Management, St Stephen University	First results of large carnivore monitoring in Hungary
Ioja, Cristian et al.	University of Bucharest	The role of socio-economic assessments in the large carnivore conservation plans. Case study: Vrancea country.
Rozylowicz, Laurentiu et al.	University of Bucharest	The large carnivore populations from Vrancea county, related to habitat status.
Popescu, Viorel et al.	University of Bucharest	Gaps between large carnivore distribution and protected areas in Vrancea county.
Paunovic, Milan	Natural History Museum, Belgrad	The elements of South-Carpathian large carnivore populations in pericarpathian Serbia - status and perspectives.
		Phenomenon of Golden Jackal (*Canis aureus* L.) expansion in Serbia.
Taylor Cedrowen, Peter	ETHOS-UK	Cores, corridors and carnivores: the potential for rewilding large areas in the British landscape.
Zlatanova, Diana	Sofia ZOO	The past, the present and the future of the lynx in Bulgaria

A P P E N D I X 3

Strasbourg 4 June 2003
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CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE
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Presentations abstracts

prepared by
the Directorate of Culture and of Cultural and Natural Heritage

ORAL PRESENTATIONS

LC conservation and management actions in Romania – collaboration between EU programs and World Bank for large carnivore conservation

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PIN MATRA Program - Buidling a Regional Network in Romanian Carpathians (based on key habitats for large carnivore).

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The project aims to elaborate a GIS Map and a Management Plan for a Regional Ecological Network in Romanian Carpathians. The design of the network will be based on the data regarding large carnivore distribution and their habitats.

In order to achieve its goal, the project carries out the following activities: GIS data collection, field surveys, establishing partnerships and promote the ecological corridors concept in Romania. These activities are carried out by ICAS Wildlife Unit (RO), A&W Ecological Consultants (NL) and Fundatia Carpati (RO), together with Romanian institutions.

During the first 6 months of the project, the main result achieved is the Romanian existing data inventory regarding large carnivore and their habitats (GIS maps regarding large carnivore distribution, protected areas, virgin forests, land use and transport infrastructure). The next step is the GIS analysis of the available data (including field surveys) and elaboration of a GIS Network Map. The map will be a working tool for communication with Romanian responsible institutions in order to design and implement a Network Management Plan at regional scale.

One of the main goals of future actions is to integrate this project in the national and regional initiatives regarding Carpathians and to provide a basement for developing the Romanian Ecological Network. In this respect, the project is supported by the MAPM – Ministry of Water and Environmental Protection and by the MAAP – Ministry of Agriculture, Food and Forests.

European Commission policy and attitude toward LC conservation

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Large Carnivore Initiative for Europe – its projects, achievements and challenges for future.

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The political development within Europe, particularly within the European Union, created new, encouraging opportunities for large carnivore management and conservation on a wider, pan-European scale. In response to this challenge, WWF International, together with partner organizations and experts launched the Large Carnivore Initiative for Europe (LCIE) in June 1995 [http://www.large-carnivores-lcie.org]. The LCIE is an advisory, international and interdisciplinary board consisted on scientists, researchers, conservation and law specialists from all over Europe, made up of among the best available expertise in its field. The LCIE consists of two main bodies - a Core Group and the wider LCIE Network.

The LCIE goal is, since the very beginning of the Initiative, "*to maintain and restore, in coexistence with people, viable populations of large carnivores as an integral part of ecosystems and landscapes across Europe*". The aim of the LCIE is to support and build on existing initiatives or projects across the continent, avoid duplication of effort and make the most efficient use of the available resources.

The LCIE has produced the number of reports, studies and methodologies, covering many issues related to carnivore conservation, such as human dimension studies in various European countries, the guidelines for wildlife conservation field projects and European and regional action plans, the Carnivore Damage Prevention News. All the Action Plans, reports, articles and other materials are available and downloadable from LCIE's webpage http://www.large-carnivores-lcie.org. The LCIE supports various projects and networks – Carpathians Large Carnivore Project, BalkanNet's activities, the Baltic Large Carnivore Initiative, SCALP activities.

An important indicator of the Initiative's importance, as well as that of the rapid increase in people involved, is the political platform given through the active involvement of the Council of Europe through the Bern Convention Secretariat.

LCIE has already produced a scientific basis and background for the carnivore protection and conservation. Now it stands before another challenge – to implement, through marketing and communicating, the work that has already been produced, by supporting the regional Initiatives that have been set up and by expanding its human dimensions work. Furthermore there will be an increased focus on working more with the EU accession process and on concentrating on the most endangered species and populations, within the European regions.

Council of Europe / LCIE large carnivore Action Plans

* (*to be confirmed) Large Carnivore Initiative for Europe*

LHI – international cooperation and actions for conservation of large herbivores

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Large carnivore conservation programs of Danube-Carpathian Programme Office

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Monitoring large carnivores over large areas: a Norwegian case study

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Monitoring large carnivores is difficult at any scale, especially when you have to try and produce accurate numbers at a national level on a more or less annual basis, under the physcial conditions that characterise a large country like Norway (324000 km2). During the last 5 years we have been developing a National Monitoring Program for Large Carnivores in Norway. The program covers all four species, lynx, wolf, bear and wolverine, and uses different methods for each species, but concentrates on reproductive units. Monitoring of the few wolf packs is done through the use of radio-telemetry and intensive snow-tracking. Wolverines are monitored using counts of natal dens, with supplemental data collected through DNA analysis of faeces. Lynx are monitored using track count indices and counts of family groups based on tracks observed in the snow. The system for bears is still under development, but will be built around observations of females with cubs and DNA methodology. Developing the administrative aspects to ensure the organisation and flow of data has been just as important as developing field methods.

Mapping environmental suitability for large carnivores in the Carpathians

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The environmental suitability of the Carpathian Mountains was mapped for bears, lynx and wolves. Nearly half of the Carpathian Ecoregion is highly suitable for each of the three carnivores, and most of the extent of occurrence of the large carnivores extends over highly suitable areas. The suitability maps were validated with newly collected presence data, reaching 70% of locations falling in highly suitable areas and none in the unsuitable ones.

The areas highly suitable for the three species at once accounted for up to 40% of the Carpathian territory. Areas of high and very high biodiversity value included 11.3% and 9.4% of highly suitable areas for the three carnivores, suggesting the protection of suitable areas for large carnivores may also benefit biodiversity conservation.

Only 17.7% of the extent of highly suitable areas is currently under any kind of protection, including 22% and 48% of high and very high biodiversity value. The distribution of protected land is not even across the Ecoregion and the effort of establishing new protected areas should be guided by the location of highly suitable areas for large carnivores.

Conservation requirements on large carnivores – efficient or not in Northern Baltic. Status, monitoring and management of large carnivores in Estonia

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Estonia will access the EU in 01.May 2004. Requirements for large carnivore conservation will get and should get harder. But there are not always considered the regional differences. Conservation strategies in regions with high or low densities of large carnivore populations and various natural and sociological conditions should be different to be more efficient. Estonia is sample country with abundant large carnivore populations, suitable habitats and diverse food base, having at the same time low level of depredation and relatively positive attitudes of the people towards large carnivores.

Wolf, lynx and brown bear are dispersed nearly all over Estonia and are rather high in numbers. After the last peak in nineties the population numbers has been reduced by intensive hunting and are stabilized during last years. The density of large carnivores is currently close to expected level and our strategy is keep it there.

Last year Estonia implemented new methodology and established network for large carnivore monitoring. The system is methodologically close to Finnish as well as Swedish and Norwegian one and is based on year-round 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.

To minimize the risks of legal over hunting, the Ministry of the Environment sets the yearly hunting limits 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 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 over hunting.
The positive changes in hunting legislation during last years clearly shows the serious turn in official policy towards large carnivores, especially towards wolf.

Wolf Study and Conservation Program in Bulgaria

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The Wolf Study and Conservation Program in Bulgaria has been implemented since 1997. Its priorities are: analysis of species status and population trends in the country; collection of data about its ecology

and biology; decreasing the conflict between wolves and humans; public awareness and education about large carnivores; lobbying for improvement of the species legal status.

Some data about wolf ecology in a study area have been collected, like: territory use; number of pack members; diet; activity towards livestock, etc.

School education program has been implemented for second time, during the school year 2002/2003. A questionnaire was spread among pupils before and after the implementation of the education activities. The results of the questionnaire show the effect of the education program.

Livestock guarding dogs have been given to farmers to protect their livestock. This is a traditional method lost to a high degree during the socialist time. The process and the results are monitored.

The Law for Hunting and Conservation of Game and the Regulations for its implementation have been changed. The legal status of predators in Bulgaria was changed to more favorable for these species. However, the last decision of the Hunting Council with the Ministry of Agriculture and Forests points that the amount given as a price for a killed wolf will be four times higher than the one until now.

Implementation of European Action Plans in Poland

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Brown bear (*Ursus arctos*), Eurasian lynx (*Lynx lynx*) and wolf (*Canis lupus*) are strictly protected on whole territory of Poland. Brown bear has been protected since forty years. During this period number of bears increased to 123 individuals. The situation of lynx and wolf was different. Ten years ago these species were the game species. They are protected on whole territory of Poland since few years, e.g. lynx from 1995 and wolf from 1998. In spite of the total protection of wolf and lynx, in the recent years the number of individuals on few regions of Poland shows declining tendency.

Carpathian Mountains play very important role on maintenance of brown bear, wolf and lynx on territory of Poland. Brown bear in Poland occurs only in the Carpathians. Approximately every third polish wolf and lynx lives in the Carpathians. The estimated wolf number for the entire area of Polish Carpathians is 291. The lynx number was estimated on 104 individuals.

Wolf, lynx and brown bear are strictly protected in Poland. But the situation of populations of these species in Poland is insufficient. Development of populations of these species is stopped by many factors such as loss of habitats, industrial barriers crossing migratory routes and illegal hunting. According to Recommendation No 74 (1999) of the Standing Committee to the Bern Convention "on the conservation of large carnivores" national strategies of protection of these species have been prepared in Poland. Strategies pay particular attention to the co-ordinated management of population and to their maintenance in a favourable conservation status, including management of transboundary population.

Bieszczady Wolf Project - progress report

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The Bieszczady Wolf Project has been launched in the fall of 2000 and aimed at general ecology of the species as well as the management issues of this population. The initial tracking survey which covered the entire Podkarpackie province revealed that we are dealing with approximately 250 wolves distributed over 5 500 square kilometers. Since than the project was focused on three major activities: (1) collecting of occasional information/material on wolves from entire province, (2) monitoring of wolf depredation to the livestock and (3) wolf population survey located in the Lower Bieszczady Mountains. The Lower Bieszczady Mountains have been a target area for intensive monitoring of three wolf packs and their habitats (Paniszczew, Stebnik and Łodyna) by means of snow-tracking, radio-tracking, DNA analysis, diet analysis and GIS habitat analysis. Monitored packs, composed of 4 to 7 wolves had relatively small territories (up to 170km^2). Despite of several sheep farms within pack' home ranges, wolves prey here mostly on wild ungulates, when the livestock is killed infrequently.

The packs' territories are composed of a mosaic of clusters of the forest, fields, pastures, and rural settlements. The areas suitable for wolves are intersected with the settlements and roads used quite heavily (up to 2800 cars per day). Thus the cohesion of wolf territories depends on the existence of narrow corridors covered with woody vegetation , necessary for an undisturbed, frequent translocations. As a consequence the survival of the wolf population in this area depends on development patterns of new settlements, road improvement and increase of traffic, which may destroy the continuity of wolf pack territories. We consider this threat as a major hazard for the long-term wolf population survival in the majority of the Podkarpackie Province, except less populated areas situated along the major Carpathian ridge (i.e. Bieszczady National Park).

Carnivore Damage Prevention Newsletter

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Throughout the world large carnivores come into conflict with human activities. These include livestock, beehives, crops, domestic dogs, the transfer of disease and sometimes the direct killing of people. During the millenia of human evolution we have developed many techniques and methods to minimise these conflicts, and we continue to do so as technology develops even further. However, in many areas carnivores are returning after an absence of centuries so that these methods have been forgotten, and in other areas the news about the latest developments has not yet penetrated. The role of the this newsletter, established by the LCIE in 2000 is to communicate the latest information about carnivore damage and the methods to prevent it. A newsletter is especially important on this topic as this type of information rarely finds its way into scientific journals. Only through the effective adaptation of human activities to carnivore presence can co-existence be achieved.

Recommendations to reduce carnivore-livestock conflicts, based on a 5-year analysis in Romania

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In Romania 5000 bears, 3000 wolves and 2000 lynx live on the same range with 4,5 million sheep and 1,5 million cattle. Thus, large carnivore predation on livestock does occur to a certain extent. Our objective was to investigate the amount of damage caused by large carnivores and to identify effective management methods to reduce the damage. Kill rates averaged 1.2% of all sheep, for an average of 5.33 sheep/camp. 99.6% of the damage was caused by wolves and bears. The number of wolf kills in the camps increased with increasing flock size, and with decreasing numbers of shepherds and livestock guarding dogs in the camps. Bear kills increased and with increasing distance from roads, the correlation being particularly strong for paved roads. Both, wolf and bear kills were higher at night and if the sheep were freely ranging rather than being penned. Kill ratios increased with decreasing distance from the border of the forest. We have tested the effectiveness of electric fences and we have seen that in three years, in 21 camps that had electric fences set up, only 3 sheep have been killed, for an average of 0.14 sheep/camp. This suggests that these fences are can be an effective tool to reduce the damage if properly used. We therefore recommend 1.) to use electric fences or 2.) to keep the sheep in pens at night, 3.) to place the camps as far away as possible from the border of the forest and, where possible, avoid remote areas 4.) particularly where wolves are the major threat, to have a sufficient number of shepherds and livestock guarding dogs watching the sheep.

Socio-economic aspects of wolf depredation to the livestock in the Bieszczady Mts, Poland

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We studied wolves' depredation to the livestock in Podkarpackie Province since 1998, when the wolf status has been changed from game to fully protected animal. The Province covers 17 900 km^2 in total and holds about 250 wolves distributed over the 5,500 km^2. There were 33 to 111 depredation cases recorded annually. Wolves predominantly attacked sheep (95-203 annually) while goats, cattle and horses were killed sporadically. Since the introduction of wolf protection in 1998 there was no visible trend in the numbers of attacks, however the ratio of animals killed to the number of cases decreased from its maximum of 3.15 in 1999 to 1.27 in 2002. The geographical distribution of sheep farms and depredation cases shows that wherever wolves have access to the sheep they occasionally kill them, however the livestock constitute only 0.7% of the biomass consumed by wolves. While analysing the farm size, structure, and livestock protection measures we revealed that total depredation level in the region is related to the high number of small farms, which owners could not effort costs of any protection of their livestock against wolves. The existence of such farms is promoted by state founded subsidy system, which is giving financial assistance for owners of the flocks consisting of only 15 sheep - at minimum. The vulnerability of particular sheep farm to the wolf depredation is linked to the presence and the type of protection system of the sheep flock, the access of the wolves to the pasture, and the breed of sheep.

Initiative for a model for approach of MAN-BEAR conflict

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Who is ALERTIS ?
It's a Dutch based NGO fouded in 1993 and worked till 2003 under the name of International Bear Foundation. Alertis was an initiatve of Ouwhenad Zoo in Rhenen and the main focus was the development of a 2 ha semi wilderness for misteated bears,like dancing bears-circus bears and lately nuisance bears. In 1995 Alertis asked why so many bears directly came from natural habitat regions? Most dancing bears from the streets in Istanbul came from Georgia.

What is the pattern we recognize:
- bear populations cause problems
- bears should be limited [Slovenia]
- problematic bears should be moved away or killed

What are the repetative questions ?
- can we catch the bear and remove the bear to a new spot ?
- if not – the bear will be offered to a ZOO/circus (if there is no place the bear will be killed)

There are 4 parties involved:
- governments
- owners of the bears home ranges
- regional players[farmers-hunters etc.]
- NGOs

This pattern is shown world wide and we, as LCIE, should use the icons of nature and species conservation as a model for protection

What can be done:
- legislation – top down
- instruction and information
- local training
- cooperation

This model should be flexible for some adjustment for local situations and work in all countries.

Challenges of LC management in the Polish Carpathians

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Poland shares with other Carpathian countries populations of brown bear, wolf, and Eurasian lynx. All three species are strictly protected in Poland, however, they very much differ concerning management and conservation problems. Compensation for damage caused by these species is paid by regional nature conservation authorities.
Brown bear number is relatively stable (about 100 individuals) and human attitude towards the species is at least neutral. Cases of aggression to humans are very rare. Bear damage was registered in about 50% of forest inspectorates inhabited by this species, but the scale of damage is relatively small (about 10,000 euros per year). Wolf number in the Polish Carpathians is about 250 individuals and the population decreases. The attitude of hunters is rather negative. Mainly sheep are killed by wolves and the amount of compensation paid is about 15,000 euros. Eurasian lynx population has recently decreased to less than 150 individuals. Lynx do not cause any damage to livestock and local inhabitants and hunters are quite indifferent towards the species.
Major problems:

- lack of cooperation of management between neighboring countries (Poland, Ukraine, Slovakia)
- negative attitude of hunters towards wolves resulting in poaching
- poaching ungulates in snares which cause high mortality of Eurasian lynx
- decreasing density of ungulates, carnivores' prey base, due to over hunting

Perceptions and reality in conflicts over large carnivores in Slovakia: Who's afraid of what?

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The brown bear (*Ursus arctos*), wolf (*Canis lupus*) and lynx (*Lynx lynx*) are highly emotive species. The perceptions people commonly hold of them can be at considerable variance to apparent reality. For example, predation on livestock, and particularly surplus killing of sheep by wolves, is often sensationally publicised in the media and cited by hunters as evidence that wolves are "over-populated" in Slovakia. In fact, wolf numbers have been declining since the mid 1990s and the population density is lower than in Poland, Ukraine and Romania. Large carnivores kill less than 0.3% p.a. of all sheep in Slovakia at a total estimated replacement value of c.€50000, which is low compared to a number of areas in Europe with carnivore-livestock conflicts. Scat analysis has found livestock to be a minor component of wolf and bear diet. Hunters' views of the wolf are largely coloured by its predation on red deer (*Cervus elaphus*) and wild boar (*Sus scrofa*), which they tend to view as under their care and so belonging to them. The brown bear, like the wolf, is widely regarded as over-populated, having recovered since the 1930s from near-extermination by intensive hunting. Knowledge on bear safety and preventive measures to avoid problems with nuisance bears is greatly lacking. In response to this situation, The Slovak Wildlife Society has developed The B.E.A.R.S. Project (Bear Education, Awareness and Research in Slovakia). The lynx is the most accepted large carnivore species in Slovakia, but in recent years it has been blamed by many for the sharp decline in the Tatra chamois population, although there is no evidence available to support this view. In 2001 permission was given to remove 4 lynx from the Tatras National Park; none was caught. Large carnivore holidays hosted by The Slovak Wildlife Society since 2000 have been bringing c.€20000 p.a. to Slovakia. Together with bear-watching holidays run by various other organisations, the revenues of such ecotourism initiatives could, if targeted to local people, off-set many of the financial costs of having large carnivores present. Preliminary results of a questionnaire survey which we are currently conducting indicate strong agreement with the statement, "Bears, wolves and lynx belong in the wild in Slovakia". Among both town and village residents there was disagreement with allowing hunting in national parks and agreement with the statement, "National parks should be areas where all animals are protected all year round." Hunters tended to have more utilitarian views, summed up by one who wrote, "Nature should be protected *for* Man, not *from* him."

Human dimension research in Europe

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Public acceptance of large carnivores in Lithuania

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Human dimensions survey on wolf and lynx was carried out in 2000-2003, covering ca. 1600 respondents in the age from 10 to 87 years. Sex structure of respondents was biased towards woman (2/3 answers). Social groups with various level of education and wellbeing were represented – including schoolchildren, students, workers, employees, businessman, retired and unemployed people. Hunters (with hunting experience from 1 to 43 years) comprised ca. 7% or respondents. Some of them even managed to hunt wolves or even lynxes (hunting in Lithuania has been forbidden since 1976). Stakeholder groups – foresters and land owners – also were covered. Farmers/land owners group was insufficiently covered, as co-operations with their association failed.

Positive valuation of the presence of wolves in Lithuania was given by 68% of respondents (lynx – 63%), neutral valuation – 25% and 30%, negative – 7% for both species. In the scale "like – dislike", wolf is accepted by 38%, treated indifferently by 38%, and rejected by 24% of respondents. For the lynx, according numbers are 46%, 39% and 15%, thus, lynx being more accepted than the wolf. Generally, in Lithuania large carnivores are believed to be dangerous: 8.6% respondents are afraid of bears, 4.9% – lynxes, 3.4% – wolves and 63.5% – of all large carnivores. More than 70% of respondents regard wolves as aggressive and dangerous. For the lynx according numbers are 53.5% and 66%.

Knowledge of population numbers is far from sufficient: 26% of respondents did not answer question "how many wolves there are in Lithuania?". From those who answered, just 22% of respondents have a sufficient knowledge on wolf numbers, while about 27% of them are underestimating and about 19% overestimating or highly overestimating the wolf population. 27% of respondents think that the species is decreasing, ca. 18% – increasing, 9% – stable.

For lynx, knowledge is not better. Just 16% of respondents have a sufficient knowledge on lynx numbers, about 16% are underestimating and more than 27% overestimating the lynx population (at the time lynx is included into national Red list!). Knowledge of real population trends for lynx is better.

At the same time, knowledge of species biology is quite bad or insufficient in most respondent groups. "Appetite" of carnivores was overestimated, as well as possibilities for breeding. Rural inhabitants are more informed about species biology. Despite of imagination, about 1/3 of respondents have no fear of both species, emotional valuations are quite positive, and they fully accept present status of wolves and lynxes.

Personal attitude of Lithuanian people towards large carnivores is positive. In some cases it even goes too far, for example, approving the need for strict protection of the wolves. Some people believe that being abundant, both wolves and lynxes attack humans or that lynxes kill domestic cattle. Attitude for the direct extermination of both species is mainly negative, though some respondents would like even extermination of the species (9% are against wolves and 7.6% – against lynxes).

I will present data on public acceptance of large carnivores with regard to several circumstances: (1) EU accession and consequent requirement of the wolf protection, (2) significant increase of wolf numbers and decreasing numbers of lynx in the last decade, (3) damage done by wolves, and (4) different opinion of the various stakeholder groups to the population management and species protection requirements.

Attitudes of Croatian public toward brown bears and brown bear management

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Study of public attitudes towards brown bears (*Ursus arctos*) and brown bear management was done by mailing-out of the questionnaires with prepaid return postage to the randomly selected representatives of the general public. Study area has included the entire bear range in Croatia. The area was divided into two zones. One was “core zone” of the bear range in which bears are traditionally managed as a game species. The other was "peripheral zone" of the bear range, in which bears are believed to be present occasionally and are not managed as a game species. The peripheral zone is perceived as having a higher bear - human conflict rate than the core zone. The hypothesis was that the attitudes toward bears and bear management differ in the two zones. All the data were collected during the spring of 2003. Response rate of around 40% was within acceptable boundaries.

Respondents from both zones have expressed positive attitudes toward the bears. For example, when asked whether it is good, bad or not important to have bears in Croatia, 96% of the respondents from the core zone and 91% from the peripheral zone have answered with good. When asked similar question - whether it is good, bad or not important to have bears in their respective regions, 90% of the respondents from the core zone responded with "good" thus staying consistent with the previous item, whereas in the peripheral zone considerably less respondents have answered with “good” (66%).

Crombach’s Alpha reliability estimate for the attitudes toward bears items was 0.8854 thus allowing grouping of 6 attitudinal items into a score. Comparison of the scores has revealed that there is a significant difference in attitudes toward bears among the two zones (sig. = 0.012) with core zone being significantly more positive than the peripheral zone.

Majority of the respondents from both zones have agreed with increasing the number of bears in Croatia as well as specifically for their respective regions. In order to further explore public attitudes towards potential increasing of bear numbers in Croatia a score was calculated out of 4 relevant items (Crombach's Alpha reliability estimate = 0.8440). There was no significant difference among the two zones (sig. = 0.840), thus reassuring that there is a willingness among the general public in both zones to tolerate more bears.

Rural economic development through Large Carnivores - the Carpathian Large Carnivore Project as a case study

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Romania hosts the largest European populations of large carnivores, brown bears, wolves, and lynx west of Russia. From 1993 to 2003, the Carpathian Large Carnivore Project (CLCP) tried to establish a community-based conservation of large carnivores and their habitat in a model region in the southern Carpathians through an integrated management approach. Integrated management means to include all social, political, environmental and economic factor into the solution finding.

As a consequence, the CLCP developed activities in the field of research, conservation and management, rural development, and public awareness. This presentations deals mainly with the rural development component and its effects upon conservation. In 1997, the first international visitor groups came as part of the “Wolves, Bears, and Lynx in Transylvania” tourism programme to the area around Piatra Craiului mountain. By then, hardly any infrastructure existed on the local level and the area was not targeted by international visitors. Throughout the years, the tourism programme extended with growth rates of between 50% and 120% annually, and today, a broad infrastructure with guesthouses, cafeteria, trained guides, travel agency, horse riding facility, horse cart taxis, bike rental and handicraft production exists in Zarnesti. The tourism programme has created approximately 150 jobs in the city, which otherwise has only lost employment opportunities due to the restructuring of the Romanian economy.

The tourism programme was substantial to stop the development of a big quarry north of Piatra Craiului, since the programme showed that eco-tourism is more viable than quarrying. Other advantages for conservation is a highly increased awareness of large carnivores in the area and the set-up of a Community Conservation and Development Fund for Zarnesti. With this Fund, projects in the

field of conservation and development of an infrastructure for eco-tourism in a magnitude of 1.4 billion lei (app. 38,000 Euro) have been approved in the first year of its existence.

The Carpathian Large Carnivore Center – tourism enhancement, education and conservation

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The current tourism programme of the Carpathian Large Carnivore Project alone will not reach enough visitors to have a relevant economic input on the community of Zarnesti. This requires a special attraction, such as the Large Carnivore Centre.

The objectives of the Large Carnivore Centre (LCC) are threefold. In the first place, it will act as a major tourism attraction for the area around Piatra Craiului National Park. With a considerable increase of visitors, large carnivore based tourism can offer a significant economic alternative. Secondly, the centre will also be an important tool for environmental education. A permanent exposition, special education programmes, and a close-up experience with the animals in an enclosure zone, will objectively inform a broad public about large carnivores and problems they cause. Finally, the LCC will support nature conservation by creating income for the Community Conservation and Development Fund. This fund is offering half of it's money for nature conservation projects and half for eco-tourism infrastructure development in the community of Zarnesti.

The facility will consist of an interpretative centre with an exhibition about large carnivores and their interactions with people in the Carpathian eco-system, lecture hall, and study rooms. In addition, an enclosure zone will exhibit the native large mammal fauna and will be designed to provide good conditions for the animals and special attractions for visitors. The total initial investments for this facility is estimated at 1.4 Mio Euro. Funding will come from several international foundations, the German government, and corporate sponsorship. Starting from its first year of operating the LCC is predicted to be financially self-sustainable and be administrated as a Foundation with a president and a board of directors that includes local and regional administrations as well as NGOs and donors.

School programme about large carnivores

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Ecotourism as a tool for conservation. CLCP approach extended to the Romanian Ecotourism Association

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POSTERS

First results of the large carnivore monitoring system in Hungary

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Hungary is on the edge of European area of wolf (Canis lupus) and lynx (Lynx lynx). These species were listed among the extinct ones in the Hungarian Red Data book since the beginning of the 20th century. Than sporadic occurences appeared in 1980-90: a spontaneous repatiation has begun. As there

were only few data about the animals, long term mail-questionaire survey have been started among hunters to determine the occurences in 1989.
As the occurences became step by step more frequent, to gain more reliable information we developped a field monitring system in 2001 supported by the LIFE Nature.
Due to the the scarcity of the traces and life-signes, the implementation of methods used in other countries often could not be realized: more deatiled and organized examination was necessary. Due to the very rare occurences, all possible information had to be collected so the monitoring system has three level of collecting data:
1: Regular examination by qualified people: direct field survey on previously assigned transects by special experts 6 times during the year. Not only the footprints but also remains of preys, faeces, hairs are collected.
2: Other observations in the area of qualified or professional people: occasional observation of foresters and hunters living in the area.
3: Information from other sources, not /or cannot be/ verified: any kind of information from any sources: amateur birdwatchers, tourists.
All of the records are registered and analysed in a GIS datadase.
The results of the monitoring support the questionnaire-survey, but a bit moderately: there is a stabil but low numbered population of wolves at Aggtelek regio /beside the Slovakian border/ and there are sporadic occurences in the other parts of the mountain. (8 observation in level 1, 10 in level 2) Occurences of lynx were more sporadic and sometimes unverifiable (any observation in level 1, and only 2 in level 2) More detailed survey are needed.
The effectiveness of the system is still not satisfying. We tend to increase effectiveness of this monitoring by different supplementary methods: by scent stations, hair traps, or automatic cameras.

The Use Of Livestock Guarding Dogs To Protect Sheep From Bears And Wolves In Slovakia

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Livestock guarding dogs have been used in Eurasia for millennia to guard domesticated animals against wild predators, stray/feral dogs and human thieves. The tradition was abandoned in Slovakia due to socio-economic changes during Communism and/or low levels of losses after large carnivores were virtually extirpated. By the late 20th century wolf, bear and lynx populations had recovered and predation on livestock increased. The overall level of losses is, however, still low: wolves and lynx reportedly killed 353 head of livestock in 1999, causing c.£6700 worth of damage; compensation paid for sheep, goats and cattle "damaged" by bears totalled c.£6000 in 2000. Nevertheless livestock depredation is frequently given as justification for killing large carnivores. The Protection of Livestock and Conservation of Large Carnivores project, launched in spring 2000, aims to reintroduce the traditional system of raising livestock guarding dogs. Fourteen pups were bought in 2001 and raised with sheep. Behavioural observations are testing whether two selected breeds (Slovensky cuvac and Caucasian ovciak) retain the key traits of trustworthiness, attentiveness and protectiveness; scat analyses will estimate the proportion of livestock in the diet of wolves and bears in the Western Carpathians.

Rewilding initiatives in the British landscape: ecosystem restoration and the potential reintroduction of large carnivores.

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There are a number of landscape scale conservation initiatives in Britain that involve the creation of core areas of wild land and the restoration of indigenous vegetation in the form of forest-habitat-networks. The largest schemes involve cooperation between various non-governmental organisations, as well as some government funding, in targeted land purchases. In addition to these core area schemes, government agencies are grappling with problems facing uneconomic livestock husbandry in the uplands. We outline new conservation thinking on linking core areas with mosaics of wildlife-friendly corridors, the return of the native herbivore guild, and the potential for re-introducing large carnivores to Britain.

The role of socio-economic assessments in the large carnivores conservation plans. Case study: Vrancea country.

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The paper presents the preliminary results of the ***LIFE project In situ conservation of the large carnivore in Vrancea county***. The two teams (the *Elaboration of the Management Plan of the Ecological Network in order to Protect the Large Carnivores in Vrancea county* and *the Assessment of the Setlements and Sheepfolds from the Large Carnivore Habitats in Vrancea County*) highlight the ecological, social and economical issues that characterize the western part of Vrancea county and their reflection in the quality of the large carnivore habitats.

Phenomenon of Golden Jackal (*Canis aureus* L., 1758) Expansion in Serbia

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In spite of its wide distribution throughout Eurasia and a part of Africa, the present range of this species in Europe includes only a small number of Middle European and Mediterranean countries.

However, during the 1970-ties, the picture of Golden Jackal distribution was quite different. Only in late 1970-ties Golden Jackal was "discovered" in northeastern Serbia, and in that time, it was extremely rare. According to literature, in that time it was known for the Balkans only in eastern Bulgaria, southern Macedonia, in Dalmatia and southeastern parts of Romania. At a somewhat later date, an isolated population was discovered in Lower Srem, Vojvodina, Serbia.

After the WWII, the organized poisoning of wolves had a devastating effect on Golden Jackal population numbers in Serbia. With the ceasing of intensive poisoning, an increase in population numbers was noted, and closely after that a noticeable dispersion and spontaneous recolonization of primary range. For example, during the last decade, about 500 specimens of Golden Jackal were shot in vicinity of Negotin in northeastern Serbia.

Two cited areas – northeastern Serbia and lower Srem, represent centres of Golden Jackal distribution in Serbia, where this species has always existed. In northeastern Serbia, populations were especially large in vicinity of Negotin and Bela Palanka. Spreading from these nuclei was in direction of west and northwest, that is, into the valley of river Velika Morava. The population in Lower Srem spread to the east down the banks of river Sava, and to the north toward the western slopes of Fruška gora. All the other records for the territory of Serbia can be so far considered to be vagrants.

This paper presents data on position of Golden Jackal within hunting and environmental protection laws in Serbia, relationship of humans and this species, hunting pressure, as well as suggestions for redefining the Golden Jackal's status and needs of protection and conservation.

The elements of South-Carpathian large carnivore populations in pericarpathian Serbia - status and perspectives.

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The strong faunistic influence of great South-Carpathian massif can without doubt also be observed in adjacent pericarpathian parts of northeastern Serbia. Here, in a relatively small area characterized by extreme diversity of biomes and habitats, met rarely elsewhere in Europe, there are four species of large carnivores. Depending on their habitat preference, populations of Lynx, Brown Bear, Wolf and Golden Jackal obtain a different status, size, distribution as well as distribution directions in pericarpathian parts of Serbia.

This paper presents a chronology of state and trends of populations of large carnivores and their potential communication with corresponding populations in Southern Carpathians. Also presented are the hunting status and environmental protection status, as well as the analysis of threat factors and relationships between humans and carnivores. There are estimates and explained perspectives of conservation of these species as well as the need to maintain stronger international relationships and communication in area of management and conservation.

A case study with wolf livestock depredation in hilly country, Transylvania

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In the local televison news in 20 october 2002 there have been mentioned a significant wolf damage in livestock. According to the news, 30 sheeps were killed near Mura Mare village (Mures county, central Transilvania) and another 60 in a nearby village.
In the 26th of October 2002 four members of the Milvus Group visited the place. The only sheepfold of the village was situated about 600 m from the village. 5 shepherd dogs guard it and it contains sheep from three nearby villages (Mura Mare, Ilioara and Iara), which leaded the press to the conclusion that there has been a wolf attack in Iara, too. According to the personal communication of the sheperd and his wife the wolf-attack has passed off in the following way:
- in the 7th of October, 03 a.m., in a cold rainy wheater, wolfes were attacking the flock of sheeps
- the sheeps were not in the sheepfold, so the wolves could drive them in 3 directions
- the damages were: - one ram was killed and eaten, 14 sheeps were killed and another 19 injured seriously, so the veterinarian ordered them to be killed. Near the sheepfold we found the remains of the sheeps.
The main causes, why this unfortunate event could take place was that the sheeps were inclosed in a sheepfold during the night.
Between 26 october and 12 of March we did regular inspections in the surrounding area (apr. 50 sq.km) looking for wolfs (tracks, signs, etc.) and to collect data about other wolf-attacks. During these trips, we concluded the following:
- there were no other wolf attack in the area
- in this hilly area the sheep are not inclosed in a sheepfold during the night, sheperd are considering that the dogs can protect them even like this
- the sheperds have a positive attitude toward the wolves, they say that wolves are "visiting" the flock of sheeps generally every two weeks/month, but are not causing any harm. Even the flock of sheeps from Mura Mare were "visited" by wolves many times later without any problem
- during the winter only one from the seven flocks of sheeps remained in the area and was not "visited" by volves
- we could not detect any wolf-track in the area, in spite of using wolf-urine as decoy
- the number of roe deers and of reed deers were quite low but the number of small carnivors were quite high
- roe deer, hare and wild boar are illegaly hunted in large numbers

- we found stray dogs in the woods

The large carnivore populations from Vrancea county, related to habitat status.

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The assessment of the large carnivore species' habitats in Vrancea County, Romania is part of the Life Nature project „*In situ conservation of large carnivore in Vrancea County*". This action is conducted through GIS technologies, telemetry and expert-based models. The GIS-generated models are most common in the assessment of large carnivore species' habitats. The GIS software ArcView 3.2, ArcGIS 8.1, ERDAS Imagine 8.5 and PATCH 1.0 were used. The preliminary data, presented in this study were obtained on the basis of the topographic maps 1:25,000, Landsat 7 satellite image and the Forestry Management Plans and Maps. There was realized an empirical model of the habitats, based on the following terrain characteristics: elevation, slope, aspect, terrain ruggedness, distance to nearest drainage, water bodies' density, roads density and pseudohabitat map. This empirical model will be used in the next analysis of telemetry data, which will be conducted mainly with the RANGE 5 software.

Gaps between large carnivore distribution and protected areas in Vrancea county.

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The study aims to apply a widely spread method of assessing biodiversity conservation - the GAP analysis (Gap Analysis Program) for the western part of Vrancea County. The purpose is to assess the efficiency of the existing protected area network on the preservation of large carnivore species (*Ursus arctos, Canis lupus* and *Lynx lynx*). The analysis requires accurate maps (as shapefiles for ESRI's ArcGis software) of land use, land stewardship (categories of biodiversity management) and spatial distribution maps of each species. From the over position of the layers will result the correlation between areas with high density of exemplars and areas with good biodiversity management. The result will lead to the improvement of the large carnivore species management, by highlighting areas with rich density for each species. These areas shall be included in an ecological network for protecting large carnivore species, which is the main purpose of the LIFE project.

The past, the present and the future of the lynx in Bulgaria

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The last officially recorded lynx in Bulgaria was killed in 1941. Since then only unofficial reports exist. Up to the last 5-10 years the lynx was considered a legend. In the last 5 years more and more reports for seen or illegally killed lynx are gathered from different sources. The idea for possible presence of the species in Bulgaria is supported by the fact that the lynx has been rapidly recovering in Eastern Yugoslavia (specimens coming from the Carpathian population in Romania across Danube River) along the border with Bulgaria following the natural spread of Stara Planina mountain. Moreover, Kosovo crisis, NATO bombing and later on - the Macedonian crisis (which happened in the heart of so called Balkan lynx population and was proved to be a serious pressure to the fauna), could possibly push specimen from that Balkan population to move to the 'more quiet' mountains of South-West Bulgaria. A project was initiated by group of scientists for gathering more data on the recovery of

the species in Bulgaria and for studying and solving of the potential problems that may incur in the future.