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CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE
AND NATURAL HABITATS

**Group of Experts on
the Conservation of Large Carnivores in Europe**

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**NATIONAL REPORTS
ON THE STATUS OF LARGE CARNIVORES**

*Document prepared by
the Directorate of Democratic Governance, Culture and Diversity*

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1. BULGARIA

Status of Large Carnivores

BEARS in Bulgaria

SPECIES: Ursus arctos

COUNTRY: Bulgaria

POPULATION: East Balkan

COMPILER: Ruslan Serbezov – state expert, Ministry of Environment and Water

General information

One of the best bear habitats in Europe are located in Bulgaria. They are situated in the mountain massifs – Rhodopa, Stara planina, Rila, Pirin, Vitosha. The size of the bear population is assessed of being around 550 samples in 2010, 510 – 520 in 2011.

Legal status

Until 1992 the bear had been a game target. By Order №1023 dated 31.12.1992 of the Ministry of Environment and Water the species has been declared protected, in compliance with the Nature protection act. This status has been kept also after the Biodiversity act has passed in 2002.

The Habitat directive requires a strict protection of the species and declaration of special protected areas for conservation of its habitats.

The following is prohibited for the species: All forms of intentional catch or killing of samples by using any instruments, tools and methods; chase and disturbance, especially during the breeding periods, raising youngsters, hibernation and migration; taking of samples found dead; possession, breeding, transportation, export, trade and offering for sell or exchange of samples taken from the nature; taxidermy, possession, exposure to the public, transportation, export, trade and offer for sell or exchange of taxidermied samples.

Exceptions from the imposed bans are allowed especially for bears in the following cases: in favor of the protection of species from the wild flora and fauna and for conservation of nature habitats; **for prevention from serious damage of agricultures, cattle, forests, rivers, breeding ponds, game farms and other properties; under reasons of primary public interest, including such of social or economic character or consisting in exceptionally favourable consequences for the environment;** for the aims of the scientific investigations and education, under introduction or secondary introduction of species and artificial plant cultivation

ACTION PLAN FOR THE BROWN BEAR IN BULGARIA - 2008

With the participation of consultants from Large Carnivore Initiative for Europe (LCIE), Brown bear IUCN group, Alertis-Fund for Bear and Nature Conservation, Veterinarski fakultet, Zagreb, Harvatska and all interested parties in Bulgaria, an Action Plan has been elaborated for the brown bear in Bulgaria. Under the application of the Action Plan, MOEW collaborates with NGO's and scientists from BAS. Joint projects with organizations from Greece and Italy are carried out. Good contacts on regional level are maintained through the Balkan network for the large carnivores.

According to Action plan derogation can be up to 10 bears per year.

According to the Hunting and Game Protection Act (amendment 2010) 17 bears are determined for killing (2011 - 17, 2012 - 17), which is around 3 % of the population size. The population size is 550 bears – 2010 and 520 – 2011.

All the killing permits were not been used, which is favorable for the population.

National commission for brown bear (According to Action plan)

According to Action plan for the brown bear in Bulgaria formed a permanent National Commission for the brown bear population management in the country, derogation, situation for problem bears and etc.

The main habitats of the bear in Bulgaria are included in the ecological network NATURA 2000. For the purposes of protection of the habitats and the management of the network NATURA 2000 a mapping and determination of their environmental status is carried out in the frame of project under Operating program environment. The acquired information will be used for elaboration of plans for management of the protected areas, populations of the species as well as for regulation of the investment projects therein.

Measures undertaken for protection and decreasing the conflicts

- The species is protected according to Biodiversity act
- The habitats of the species are included into large protected areas such as the national and nature parks, which in turn are part of the ecological network NATURA 2000
- Object of protection of the so called “biocorridors”, connecting the main habitats in Stara Planina, Rila, Pirin and Rhodope. An action plan for the species is elaborated, which determines the main measures and activities for protection of the bear population.
- Projects are implemented, aiming the following:
 - giving training to the concerned parties for overcoming the conflicts between the large carnivores/bear and the people
 - increasing the public knowledge about the bear
 - prevention from attacks (electric shepherd)
 - monitoring of the population aiming adequate measures for its management
 - creation of databases for the species

A policy regarding the species

The bear is a large carnivore, which inhabits both territories with no settlements, (such as national parks), and also regions where people live and there is economic activity. Therefore MOEW is searching for a balance between the protection of the species and the development of the regions where it is found, aiming a balanced policy, which is to enable the species conservation and decreasing the conflicts with the people.

Regulative mechanisms are envisaged when it makes troubles

- MOEW pays yearly compensations for losses, caused by bears to apiaries, cattle and agricultures
- Shooting of trouble bears (meat-eating bears, or such without fear of people)
- Regulation/decreasing the numbers by shooting limited number of species.

Damages from bears

Since 2007, in compliance with the Act for Hunting and Game Protection, the indemnity for damages caused by bear is paid by MOEW. The registered damages have been caused on apiaries, cattle and agricultures. Over the years an increasing of the registered damages is observed, which is due to the better knowledgeability of the people regarding the possibility to get indemnity as well as to the elucidatory campaign, aiming better coexistence between people and the bear in the common inhabited regions.

Bear – man conflict

Generally the bear avoids any contact with the human. The analysis of the conflicts shows that the attacks of the bears have been in cases when the human had not considered the peculiarities of the species or had

ignored elementary rules, which are necessary under coexistence in common territories, which in turn provokes changes in the behavior of the bears.

Most frequently it occurs in cases of the following:

- unprotected objects, where the bear can easily find a food:
 - racks for game or storehouses with food for feeding game.
 - Unfenced and unprotected apiaries
 - Unfenced corrals, cattle-shed, places for repose of the cattle.
 - Cattle left without shepherd and unguarded by shepherd dogs during pasture;
 - Fruit-tree gardens or plantations with berry cultures
- hunting, when a strong disturbance arises in the habitats due to people, shooting and hunting dogs, thus the bear takes behaviour of selfdefence. Such cases are when a bear attacks people during hunting.
- Defence of youngsters upon meeting people or due to improper behaviour of people regarding the youngsters, which the bear considers as direct threat
- In the past 2 years had incidents of attacks on people from bears, which led to injuries and fatal: on 17.05.2010 bear's attack killed 65 year-old, on 14.07.2010 injured 64 year-old woman.

Management activities in respect of the brown bear in Bulgaria

For monitoring the bear population, the most modern methods of observation and interpretation of results are applied (including photo traps, GPS-GSM collars and etc.), to achieve reliable information about the population of this species, which to be used in its best way to determine the policy for the species.

To minimize conflict in jointly occupied areas, our approach includes targeted state policy, coordinated actions between the concerned parties - government institutions, local authorities, NGOs, hunting organizations and readiness at any moment to respond appropriately to any specific situation.

In connection with the incidents which had occurred in 2010, some short-term measures were identified and implemented, so the bear-human conflict to be reduced. They are aimed at:

- Increase the security of people resident in bear habitat
- Provision of preventive protection of apiaries, livestock and property
- Increasing awareness of people's behavior when confronted with a bear
- Improve the procedure for compensation for damage caused by bears
- Improving information and knowledge about the number of bears and their behavior

Also in the annual program, concrete measures were taken to ensure protection of the population and their property from bear attacks in the conflict areas. Our efforts are directed towards effective implementation of practical measures in the areas inhabited by bears.

- 22 meetings were carried out with the population in the region;
- An informational campaign, related to awareness of bear behavior and how a person to react if he have met one, was carried out.
- Informational brochures and specific guidelines for people living in bear habitat were produce and distribute among the population of the region;
- Bear deterrent pepper sprays were purchased and provided to the mayors, to be given to the population, in the most problematic locations;
- Photo-traps were purchased for observation of the brown bear population;
- A special monitoring was carried out, to establish the number of the bear population in the region;

In addition to the above, in 2011.:

- Bear Emergency Team (BET) was established and trained to deal with problem bears and damage assessment for the region of Smolyan. Such teams are created in other regions of the country in which there is habitat for bears;
- 85 electric fences are provided, free of charge, to assist local farmers to secure their property from bear attacks. Another 90 units are Delivered, to be distributed and installed in 2012;
- A Project under Operational Programme "Environment 2007-2013" - "Sustainable Management of brown bear species and reduction of damage caused to agricultural property in the region of responsibility of RIEW - Smolyan", was approved.
- When the above measures do not provide the required effect of reducing tension in the population, measures for control of the bear population are implemented, by derogations in accordance to the provisions of Directive 92/43 EEC.
- The bears designated for shooting are from areas with increased presence of this species.
- GPS-GSM collars, UHF terminal for downloading data from the GPS-GSM collars, receivers and antennas for VHF telemetry and photo traps for tracking the bear population were purchased;
- Pneumatic guns are provided for immobilization of the bears in problem situations;
- Information and warning boards were installed in brown bear habitats;
- Specialized equipment has been provided (GPS units, binoculars, night vision devices, radios, compasses, etc.) for the controlling bodies and the BET located in Smolyan;
- Additional experts have been appointed to the emergency team in RIEW Smolyan

Systematic work with people and local authorities is carried out, through cooperation between the Regional Inspectorates of Environment and Waters, the executive Forestry Agency, NGOs and hunting groups, to avoid conflict situations with bears.

- Awareness rising about safe behavior in the habitats of the species is carried out.
- A special public awareness project with the participation from NGOs and with financial support of the Ministry is carried out;
- All proven damages caused by bears are paid to the owners:
 - Domesticated animals;
 - Agricultural products (fruits);
 - Property;
 - Hives;
- Jointly work with the Ministry of Agriculture is carried out, to implement long-term policy for improvement of the food base, through planting of appropriate forest-fruit species to compensate deterioration of the food conditions due to increasing of the bear population and the objective conditions of habitats.

MONITORING OF THE BROWN BEAR IN BULGARIA

Ministry of Environment and Waters start of changed methodology. Two teams are working on determining the population size: the team of National Museum of Natural History – prof. dr. Nikolai Spassov and Geko Spiridonov and the mix team: Ruslan Serbezov - Ministry of Environment and Waters, assoc. prof. Todor. Gurov, and assoc. prof. Emanouil Atanassov, Institute of Information and Communication Technologies, Bulgarian Academy of Sciences.

Results were similar of two teams: **the population size is 550 bears – 2010 and 520 – 2011.** These results refer to the population of the country.

We present the summary report of research and analysis.

SUMMARY REPORT

Assoc. prof. Todor. Gurov, and assoc. prof. Emanouil Atanassov, Institute of Information and Communication Technologies, Bulgarian Academy of Sciences,
Ruslan Serbezov - Ministry of Environment and Waters.

SUBJECT: Assessment of the size of the population of brown bear in Bulgaria based on data received from the monitoring carried out on 26-27 October 2011, through mathematical, statistical and biological analysis

1. Assessment of the brown bear population by using the monitoring carried on 26-27.11. 2011

The analysis of the population of brown bear (*Ursus arctos*) is based on data collected from the recent National monitoring in the West Rhodope

1.1 Assessment of the brown bear population in the West Rhodope

Methods for assessment of the brown bear population

Route method: collection of traces of brown bear on predefined set of routes and analysis to determine the unique trace (subjectively of a terrain).

Monte Carlo method. [1,2,3]

The least squares method. [4].

In determining the uniqueness of the track errors subjectiveness is possible. Therefore we apply a statistical method - Monte Carlo method [1,2,3] to reduce error and subjective determination of a wider perimeter of unique traces for a given confidence interval β , see Table 2.

In table 1 it is applied to the practice ordinary Monte Carlo method [1,2] for sample size 48, which corresponds to the number of routes. We have an assessment for the average number of unique tracks on the route - 1.021739. The mathematical expectation of the number of unique traces is 49.04 (Table 1). The variance (dispersion) is 1.10499. In each row of the table is specified the average quadratic deviation of each route.

Forest administrative unit (forest farm)	Routes	Number of unique traces a route	Dispersion $\sum_{i=1}^{48} (x_i - \bar{x})^2 / 47$	$\bar{x} = \sum_{i=1}^{48} x_i / 47$
Asenovgrad	Kosovo 1	0	1.043950851	1.021739
	Mostovo 1	0	1.043950851	1.021739
	Bor 2	0	1.043950851	1.021739
Chekeritsa	Sredniya	0	1.043950851	1.021739
	Ropki / Dutsov	4	8.870037807	1.021739
	Riba dere / Ivory. pladnishta	1	0.00047259	1.021739
	Beliya kamak	1	0.00047259	1.021739
	Chakalski dol	1	0.00047259	1.021739
Batak	Route №1	0	1.043950851	1.021739
	Route №2	1	0.00047259	1.021739
Belovo	Route №1	0	1.043950851	1.021739
	Route №2	0	1.043950851	1.021739
	Route №3	2	0.956994329	1.021739
Peshtera	Route №1	1	0.00047259	1.021739
	Route №2	0	3.02457E-06	1.021739

	Route №3	0	3.02457E-06	1.021739
Selishte	Route №1	2	0.956994329	1.021739
	Route №2	0	1.043950851	1.021739
	Route №3	0	1.043950851	1.021739
Alabak	Route №1	2	0.956994329	1.021739
	Route №2	0	1.043950851	1.021739
Beglika	Syutka	2	0.956994329	1.021739
	Groba	3	3.913516068	1.021739
	Kulata	1	0.00047259	1.021739
Borovo	Route №1	1	0.00047259	1.021739
	Route №2	2	0.956994329	1.021739
	Route №3	2	0.956994329	1.021739
Rakitovo	Pashino bardo	3	3.913516068	1.021739
	Karkaria	0	1.043950851	1.021739
Rodopi	Route №1	2	0.956994329	1.021739
	Route №2	1	0.00047259	1.021739
Chepino Chehlyovo	Route №1	1	0.00047259	1.021739
	Route №2	0	1.043950851	1.021739
	Route №3	1	0.00047259	1.021739
	Route №4	0	1.043950851	1.021739
	Route №5	1	0.00047259	1.021739
	Route №6	2	0.956994329	1.021739
	Route №7	4	8.870037807	1.021739
	Route №8	0	1.043950851	1.021739
	Route №9	1	0.00047259	1.021739
	Route №10	2	0.956994329	1.021739
	Route №11	0	1.043950851	1.021739
Shiroka polyana	Route №1	1	0.00047259	1.021739
	Route №2	1	0.00047259	1.021739
	Route №3	1	0.00047259	1.021739
Yundolau	Route №1	0	1.043950851	1.021739
	Route №2	0	1.043950851	1.021739
	Route №3	0	1.043950851	1.021739
	48	47	1.10499	48 * 1.021739 = 49.0

Table 1: The variance and the mathematical expectation of the number of unique traces

The standard deviation is obtained, as a squart value of the dispersion. In Table 2 we have a wider range of unique tracks, as we have used three levels of significance ($x_{\beta}=3.00$, 1.67 and 0.6745) in which confidence interval β is 99.7 % , 95% and 50 %.

Standard deviation	Minimum deviation	Mean value	Maximum deviation	Rounding	Level of significance x_{β}	confidence interval β %
1.051182881	45.89	49.04	52.19	45-53	3.00	99.7%
1.051182881	46.98	49.04	51.10	46-52	1.67	95%
1.051182881	48.33	49.04	49.75	48-50	0.6745	50%

Table 2: Number of unique tracks by confidence interval β .

The results obtained show that the maximum permissible unique traces with a probability above 95% for the monitoring are of the order of 52-53, which is a maximum number of different bears, observed on the routes. For the most accurate estimate for the number of different bears, observed on the routes, the number 49-50 can be accepted.

1.2 Assessment of the brown bear population in Bulgaria

To assess the population of brown bear in Bulgaria using data of Zlatanova, D. 2010 [5] for species suitable area (sq. km), which saw a temporary or permanent presence of the brown bear and use of the least squares method [4]. The dissertation of Zlatanova [5] thorough analysis was made of the attendance areas of the bears, as the areas are divided into groups of 4-forests (deciduous forests, mixed forests, coniferous forests and other land cover) for forest farms. In 3 table are the summary areas in square kilometers for four types of forests in forest farms where she met a unique trace. We use the least squares method to find the 4 coefficients which gives us the relationship between the population of brown bears and forest type in the farms where traces are found. The system consists of five equations with four unknowns, which in vector form is written as follows: $Ax = b$. Matrix A consists of five lines and four pillars and the matrix elements correspond to the types of forests (in sq. km) of Table 3. The vector $b = (4, 8, 11, 9, 15)$ consists of a unique bear traces in the consolidated area in farms. To calculate the coordinates of the unknown vector $x = (x_1, x_2, x_3, x_4)$ introducing the following additional conditions: $x_4 > x_3 > x_2 > x_1 > 0$. Conditions: deciduous forests are most suitable habitat, and other land covers are most inappropriate.

The linear system is solved programmatically with methods of quadratic programming and coefficients were given the following values:

$$x_1 = 0.008858, x_2 = 0.017987, x_3 = 0.035792, x_4 = 0.053508.$$

With the resulting coefficients we can do check how unique are the traces by multiplying the coefficients of the areas of the 4 types of forests in the last row of Table 3;

$$0.008858 * 271.72 + 0.017987 * 835.99 + 0.035792 * 399.51 + 0.053508 * 343.73 = 50.14$$

This response corresponds to the estimated number of unique traces obtained using the statistic Monte Carlo method

Forest administrative unit (forest farm)	Other land cover	Coniferous forests	Mixed forests	Deciduous forests	Уникални следи
Chekeritsa / Plovdiv / Peshtera	96.71	84.71	118.04	151.54	8
Belovo / Alabak	51.29	84.90	101.23	87.07	4
Beglika / Selishte / Shiroka polyana	55.54	287.83	28.84	1.77	11
Borovo / Rodopi / Batak	46.51	195.60	54.05	50.06	9
Chepino / Chehlyovo / Rakitovo	21.67	182.95	97.34	53.29	15
Total	271.72	835.99	399.51	343.73	

Table 3: Four types of forests (in sq. km.) Grouped by forest farms.

The resulting coefficients we can use to get an estimate of the population in other regions where there is presence of the brown bear. Again using data areas for the 4 types of forests as per thesis of Zlatanova and consolidate areas in 4 regions of the country, Table 4.

Regions of the country	Other land cover	land	Coniferous forests	Mixed forests	Deciduous forests	Общо
Smolyan, Kardjali	671.28		988.36	609.92	447.53	2717.09
Pazardjik, Plovdiv	351.6185		896.9119	452.226	448.6128	2149.37
Stara Planina Sredna gora	1166.775		97.62576	939.3577	3126.486	5330.24
Rila, Pirin, Vitosha	2477.969		1710.457	971.3462	1689.925	6849.70
Regions of the country	Other land cover	land	Coniferous forests	Mixed forests	Deciduous forests	Общо
СМОЛЯН, КЪРДЖАЛИ	603.34		965.12	609.92	447.53	2625.91
Pazardjik, Plovdiv	351.6185		896.9119	452.226	448.6128	2149.37
Stara Planina Sredna gora	566.23		49.01	939.36	3126.49	4681.08
Rila, Pirin, Vitosha	1880.50		1437.03	971.35	1689.92	5978.80

Table 4: Four types of forests (in sq. km) in regions of the country.

Table 4 consists of two parts:

in the first part includes all areas of permanent and temporary presence in the 4 types of forests.

In the second part of the table are excluded areas with temporary presence of forest type, "other land cover" and "coniferous forests". The reasons are that they are both poorer than soynost food and rarely visited. On the other hand the coefficients of the calculations were made on forests in Pazardzhik region, defined as areas with a permanent presence.

The results for the brown bear population in the country and thus identified regions are given in Table 5.

Regions of the country	Other land cover	land	Coniferous forests	Mixed forests	Deciduous forests	Общо
Smolyan, Kardjali	5.95		17.78	21.83	23.95	69.50
Pazardjik, Plovdiv	3.11		16.13	16.19	24.00	59.44
Stara Planina Sredna gora	10.33		1.76	33.62	167.29	213.00
Rila, Pirin, Vitosha	21.95		30.77	34.77	90.42	177.90
Общо	41.34		66.44	106.41	305.66	519.85
Regions of the country	Other land cover	land	Иглолистни гори	Mixed forests	Deciduous forests	Общо
Smolyan, Kardjali	5.34		17.36	21.83	23.95	68.48
Pazardjik, Plovdiv	3.11		16.13	16.19	24.00	59.44
Stara Planina Sredna gora	5.02		0.88	33.62	167.29	206.81
Rila, Pirin, Vitosha	16.66		25.85	34.77	90.42	167.69
Total	30.13		60.22	106.41	305.66	502.42

Table 5: Brown bear population in the country by region and type of forest.

After rounding to an integer shows that the population is in the range of 502 to 520 bears. This estimate differs from the assessment received last year (550) by 5.7% which is within the statistical error and partly due to improved methodology.

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Wolves in Bulgaria

SPECIES: Canis lupus

COUNTRY: Bulgaria

POPULATION: East Balkan

COMPILER: Ruslan Serbezov – state expert, Ministry of Environment and Water

General information

One of the best bear habitats in Europe are located in Bulgaria. They are situated in the mountain massifs – Rhodopa, Stara planina, Rila, Pirin and ect.

Legal status

This status has been kept also after the Biodiversity act has passed in 2002 and The Hunting and Game Protection Act. Ministry of Agriculture and Food is responsible for management. Now listed as partially protected in the Biodiversity Act (2002), but in practice not implemented.

Wolf population

Official estimation given by Executive Forest Agency (EFA)/Ministry of Agriculture and Food: 2006- 2312; 2007 – 2107; 2008 – 2479; 2009 - 2282

The population is maybe around 700 -800 wolves. In Bulgaria there is no recognized scientific data on the population size.

Pay as heads wolf killed was stopped by law in Bulgaria in 2010

Year	2006	2007	2008	2009	2010	2011
Number of killed wolves - by hunters as part of a hunting season	372	353	389	403	?	?

Comments: Most of the hunters, killing wolves did not report them officially. So there are no official figures on the number of wolves killed there.

Recent genetic studies in Bulgaria prove that there is hybridization of wolves with domestic dogs. The newest data show even hybridization of wolf with golden jackal. Attempts are made to clarify what is the level of this hybridization.

Important note concerning numbers of killed wolves: the wolf project team has been collecting data from killed wolves (body measurements, samples for DNA analysis, etc.). Photos and some DNA results prove that often killed animals, which are announced to be wolves are actually pure dogs. DNA analysis proved that also some killed golden jackals are declared to be wolves. Therefore, the above given official numbers of killed wolves per year is not fully correct.

Recently developed wolf management plan for Bulgaria, will bring positive changes: in communication between stakeholders, of the species legal status, etc.

Action plan for the wolf.

At this time there is no plan for action. Ministry is involved with preparations of Management Plans for the wolf through organized public hearings. Wolf Management Plan is in preparation (almost complete), but not officially adopted yet.

According to the Biodiversity Act, the species can be put under regime of protection in different areas if proven that it is not in a favourable cons. This year there is an agreement to enter a period of protection during the breeding wolves that come into action plan. Now Hunted all year round, with no quota or other

limits. According to the new Management Plan (after it is adopted) the species is going to be protected for three months (April, May, June) in the whole country.

Damages from wolves

According to the Law of Hunting and Conservation of Game, for each damage caused by game species (the wolf is a game species) the one who manages the respective land where certain damage occurred, should pay compensation to the owner. For example in lands managed by hunters, they should pay compensation to a farmer for a killed livestock. However, this compensation system doesn't work in practice. There are no cases of compensated damages by wolves.

2. CROATIA

Status of Large Carnivores

1. Brown bear

Legal status: Game species but will have to be declared “strictly protected” when Croatia joins EU on 01. July 2013. Hunting quota of 100 per year, about 85 do get hunted.

Population size and trend: 1000, increasing

Range: about 12000 km², stable

2. Gray wolf

Legal status: Strictly protected since 1995. Quota of about 20 allowed to be shot per year.

Population size and trend: 230, increasing or stable

Range: about 17000 km², stable

3. Eurasian lynx

Legal status: Strictly protected since 1982. No quota allowed.

Population size and trend: 50, decreasing?

Range: about 12000 km², stable

2. Main concerns/conservation actions

1. Brown bear

It is managed through Management plan since 2004 that includes and implements a list of conservation actions.

The main concern is the refusal of EC for the exemption for bear from Annex 4 by moving it to Annex 5 = species that may be managed as a game (“hunnable species”). In the Decision of EC on 20 January 2011 this has been refused with the following argumentation: *The Commission and the Member States will not be able to support the request for exemption of Ursus arctos from the Annex IV of the Habitats Directive. If necessary, derogations can be used. Bear will have strict protection status under the Art. 12 and Annex IV of Directive.*

Arguments why the current system in Croatia is functioning

- 1. Bears have been hunted as game in Croatia since 1960s and the population grew from less than 100 to over 1000.
- 2. Currently all those bears (1000) together produce in average cost of only 6000 EUR of damages per year. That is incomparably less than any other carnivore in any country that does pay the damages.
- 3. Trophy hunting of bears provides substantial income to local hunting units and makes them interested to maintain the good population.
- 4. Public attitude towards bears is very positive. It has been seriously surveyed in 2002 and 2008.
- 5. There is very little bear poaching.
- 6. Croatia has functioning continuous population monitoring through Bear management plan, yearly Action plans, functioning Bear management committee, and functioning Bear emergency team.

Expected consequences of change:

- When listed as protected species the current number of bears will be promptly felt and publicly declared as too big. The social carrying capacity will go down.
- The damages will have to be paid from the budget what will cause the requests for compensations to grow exponentially.
- The public attitude will turn to negative.

- Poaching will likely explode.
- The number of bears shot will certainly not be lower than under current regime.

2. Gray wolf

It is managed through Management plan since 2004. Damages on livestock are compensated following the expert inspection at kill site but the owner has to wait over one year to get the compensation. The wild prey killed by wolf is not compensated what leads to complains by hunters and illegal killing. The limited quota of wolves to be shot is allowed in the first place to mitigate the animosities.

3. Eurasian lynx

It is managed through Management plan since 2004. The whole population started with 3 pairs reintroduced to Slovenia from Slovakia in 1973. Now the population is heavily inbred and adding new individuals is the main needed conservation action.

3. Cooperation with neighbouring states

All LC populations in Croatia are transboundary. The immediate neighbours are Bosnia and Herzegovina on south-east and Slovenia on north-west.

In Bosnia and Herzegovina there is no adequate legal and personal capacity for cooperation. We are actively seeking to start cooperation and need the help of Bern Convention.

In Slovenia there is intensive research of all three species and we fully cooperate with researchers. On political level there is an expressed willingness but implementation is slow.

3. CZECH REPUBLIC

Lynx

The Red List of Vertebrates in the Czech Republic lists the Eurasian Lynx as a threatened species. Pursuant to Act No. 114/1992 Coll., on the nature and landscape protection, and related Decree No. 395/1992 Coll., the Eurasian Lynx is defined as a specially protected species and classified as strongly threatened. Under Act No. 449/2001 Coll., on game management, the species is understood as game that may not be hunted.

Wolf

The Red List of Vertebrates in the Czech Republic lists the Grey Wolf as a critically threatened species. Pursuant to Act No. 114/1992 Coll., on the nature and landscape protection, and related Decree No. 395/1992 Coll., the Grey Wolf is defined as a specially protected species and classified as critically threatened. Under Act No. 449/2001 Coll., on game management, the species is understood as game that may not be hunted.

Bear

The Red List of Vertebrates in the Czech Republic lists the Brown Bear as a critically threatened species. Pursuant to Act No. 114/1992 Coll., on the nature and landscape protection, and related Decree No. 395/1992 Coll., the Brown Bear is defined as a specially protected species and classified as critically threatened. Under Act No. 449/2001 Coll., on game management, the species is understood as game that may not be hunted.

According to Act No 115/2000 Coll., on compensation for damage caused by selected specially protected species of fauna and related Decree No. 360/2000 Coll. could one request for damage compensation caused by each of the three large carnivore species.

Nature Conservation Agency of the Czech Republic (NCA) organizes monitoring of large carnivores each year. It is held mainly in the areas known to be occupied by target species. These areas lie mainly in mountainous regions along Czech border and are usually designated as Protected Landscape Areas - Česky les, Krušné hory, Králický Sněžník, Jeseníky and Bílé Karpaty; and Novohradské hory Mts.) or Military training areas Libava and Hradiste. The core areas are also designated as Sites of Community Importance (SCI's) proposed for conservation of large carnivores - Šumava, Boletice, Blanský les, Beskydy. Monitoring is being under way mainly during winter season including searching for footprints, tracks, scats and other signs. Field monitoring lasts approximately for 60 days each year. All the data are stored in NCA's central database.

Current status of large carnivores in the Czech Republic

The only area where all three large carnivores occur regularly is Beskydy Mts., which is situated to eastern part of the country along borders with Slovakia. Results from this year monitoring from Beskydy indicate that population of all three species is rather declining. The small Lynx population is estimated up to 10 individuals, the Wolf is estimated up to 5 individuals and signs of two Bear's individuals were observed this spring. This area is fully dependent on migrating individuals from the source Carpathian population in Slovakia and Poland. Main threatening factors are habitat fragmentation due to linear structures and other industrial infrastructure, urban sprawl and illegal hunting. The overall Lynx population is estimated to be 80 – 100 individuals in the whole country.

2. Main conservation action

Research project “*Assessment of landscape migration permeability for large mammals and proposal of protective and optimization measure*” took place in years 2008 – 2010. Silva Tarouca Research Institute for landscape and ornamental gardening, Evernia Ltd. and NCA participated on this project.

Main output of the project was to propose net of migration corridors for the whole territory of the Czech Republic. Target species were Lynx, Bear, Wolf, Moose and Red Deer. Long-distance migration corridors (LDMC) are the main structure that helps to maintain sustainable landscape migration permeability for large mammals. They are linking suitable areas both on national and international scale. These areas also host large mammals permanently or temporarily. They also represent areas, where the large mammals’ migration should take place at higher rate. Its density is proposed to represent minimum area for long-term migration possibility, necessary to maintain large mammals’ population existence. LDMC are provided through web based application to people who are also responsible for urban and landscape planning. LDMC is linear shapefile layer, which is meant as LDMC axis. Corridor width is delimited to 500 m. The corridor width could be narrower in places, where there is the overlap between the corridor buffer zone and the existing continuous settlement.

During intensive field inspections along all corridors were checked to identify the migration barriers (main roads, railways, settlement, large watercourses, forest free areas and fencing). Problematic sections for migration along corridors were identified and mitigation measures were proposed there. This layer called: “Barrier sections of the long-distance migration corridors” is also provided. This layer is derived from the long-distance migration corridors layer. It contains sections of the corridors, which defines existing significant conflict with migration barriers on long-distance migration corridor.

The concept of significant areas for migration was already introduced before this project was started. Significant areas for migration comprise relatively wide areas, which are suitable for migration as well as for permanent occurrence of focal species. The main aim of above mentioned project was to precise significant migration area into well-defined migration corridors.

PDF publication in English “Protection of landscape connectivity for large mammals” summarizing the issues of large mammals migration and methodology of the project is available for download at web pages of the Nature Conservation Agency of the Czech Republic (available [online](#)¹).

3. Projects in transboundary areas

Monitoring large mammals’ population in SCI Beskydy (2011-2014) funded by EU – ERDF funds.

The only area where all three large carnivores occur regularly is SCI Beskydy, which is situated to eastern part of the country and borders along with Slovakia. The main aim of this project is to monitor large carnivores by field monitoring (searching for footprints, foot tracks and scats). Other monitoring methods comprise installation of 30 camera traps and “hair traps” to collect and then extract DNA from well preserved hair samples. Twelve samples were determined by DNA analyses as the Lynx. Eight collected scats were determined by the mean of food analysis as the Wolf and one scat was determined as the Bear. Up to now it was confirmed that the population of the Lynx is estimated up to 10 individuals. One Lynx female is continuously tracked by mean of GPS/ radio collar for more than one year. One of the final outputs will be drafting of the document describing and setting specific conservation measures for large carnivores in SCI Beskydy also in relation to transboundary management of large carnivore’s population.

Finished project Tracking Lynxes in the Bavarian Forest and Šumava National Parks 2007 – 2013.

¹<http://webportal.nature.cz/wps/wcm/connect/d8d78d804782c1a5be4bbe5f0e47bd98/KOR+ENG+final+web.pdf?MOD=AJPERES&CACHEID=d8d78d804782c1a5be4bbe5f0e47bd98>

NGO Friends of the Earth Olomouc is focused more on education and large carnivores monitoring. They organize so called “Wolf patrols” in the SCI Beskydy and “Lynx patrols” in the Šumava with the aim to raise large carnivore awareness and prevent illegal hunting.

4. ESTONIA

1. Status of Large Carnivores

1. Brown bear

Legal status: game species. Mean number of hunted individuals is 45 (27-57) during the last five years period (2007-2011).

Population size and trend: 700 (autumn 2010), increasing.

Range: about 35 000 km², increasing.

2. Wolf

Legal status: game species. Mean number of hunted individuals is 115 (40-156) during the last five years period (2007-2011).

Population size and trend: 230 (autumn 2010), stable.

Range: about 37 000 km², stable.

3. Lynx

Legal status: game species. Mean number of hunted individuals is 140 (76-184) during the last five years period (2007-2011).

Population size and trend: 790 (autumn 2010), stable.

Range: about 42 000 km², stable.

2. Main concerns/conservation actions

Large carnivores are managed following the national management plan since 2002. Damages made by bear, wolf and lynx are compensated by state since 2008. Allowed maximum quotas are set annually by state and are based on relatively robust monitoring results. Quotas are distributed by regions to keep the range at least stable and density more or less equal in all suitable habitats. Target population sizes are set in the management plan for 2012-2021: at least 60 reproductions (females with cubs-of-the-year) of brown bear, 15-25 reproductive packs of wolf and 100-130 reproductions of lynx.

1. Brown bear

Hunting is allowed only in areas of damage occurred and for the purpose of damage prevention. Stricter distribution of licences in regions at the edge of range supports the continuous expanding of geographical range towards south. Main potential threat is increased mortality of young due to selective harvest and disturbance in denning sites.

Main research topic – genetics.

2. Wolf

Zoning of habitats to different harvest regime: more intense hunting in regions of higher human density and livestock breeding, keeping at the same time untouched or slightly regulated the packs living in bigger natural habitats.

Main potential threat is increased legal and/or illegal harvest due to increased negative attitudes towards wolf.

Main research topics – genetics (incl. hybridization), diet, territoriality.

3. Lynx

Main potential threat is decreased reproduction and increased legal and/or illegal harvest at the same time due to sudden decrease of main prey - roe deer population size.

Main research topics – territoriality, diet and impact on prey populations, genetics.

3. Cooperation with neighbouring states

All large carnivore populations in Estonia are transboundary. The direct neighbours are Latvia in the south and Russia in the east.

There are close contacts with several researchers in Russia, we get irregularly data about population trends in Russia on regional level. Unfortunately there are no regular information change with managers of neighbouring Russian regions.

We have good cooperation with Latvian researchers and management agency (State Forest Service) changing regularly data of monitoring and harvest and initiating common research like wolf and lynx genetics.

There is common ongoing project between WWF Poland and Estonian Fund for Nature to restore the local lynx population in North-Western Poland (Piska forest) with reintroductions from Estonian wild population (so far two males and one female are translocated). Estonian and North-Western Polish lynx belongs to one Baltic population.

5. FRANCE

1. STATUT DES GRANDS CARNIVORES EN FRANCE

A la demande des ministères en charge de l'écologie et de l'agriculture qui en assurent la tutelle, l'Office National de la Chasse et de la Faune Sauvage a en charge le suivi des populations d'ours brun, de loup et de lynx en France (Contrat d'Objectif 2012-2014).

L'OURS BRUN

La politique conduite au cours des quinze dernières années, toujours orientée vers la restauration de la population ursine pyrénéenne, dont la France partage la responsabilité avec l'Espagne et Andorre, a permis la sauvegarde de cette population, en engageant une dynamique favorable : ce sont les renforcements de population conduits par la France (trois ours en 1996/1997 ; cinq ours en 2006) qui ont permis d'éviter que la population ne disparaisse du massif pyrénéen, tant sur le versant français qu'espagnol.

La dynamique positive est établie par l'augmentation des animaux au cours des dernières années et par de nouvelles naissances constatées depuis 2009, avec une situation toutefois très contrastée entre les Pyrénées centrales et occidentales, puisque le noyau des Pyrénées atlantiques ne comporte plus que deux ours mâles, et que le dernier ours de souche pyrénéenne a disparu en 2010. Tous les ours présents sur le massif sont donc issus des animaux introduits par la France (un seul possède une origine à la fois autochtone et slovène).

La politique conduite par la France vise à soutenir cette dynamique jusqu'à l'atteinte d'un état de conservation favorable, en conformité avec les engagements communautaires et internationaux. Il s'agit donc pour la France de soutenir le croît de la population ursine pyrénéenne, en collaboration avec l'Espagne et Andorre.

En 2011, 22 individus au minimum ont été détectés sur l'ensemble du massif, répartis à la fois sur les versants français et espagnols. Les diverses méthodes d'identification individuelle (analyse génétique de poils ou de fèces, appareil photo automatique, observations visuelles) ont permis de mettre en évidence la présence de 6 femelles et 6 mâles adultes, 2 femelles de 3 ans, 4 subadultes de 2 ans (3 femelles et 1 mâle) et 4 oursons de l'année (sexe à déterminer). La dernière analyse de viabilité (Quenette, Chapron et Gimenez 2010, non publié) tend à montrer que cette population, bien qu'en augmentation, a encore néanmoins un statut précaire.

L'aire de répartition de la population en 2011 couvre environ 3 000 km² sur le versant français, répartie en deux noyaux, mais elle déborde largement en Espagne.

LE LOUP

Réapparu et détecté pour la première fois en 1992, la population a été fondée à partir de 6 à 12 individus (estimation réalisée à partir de la diversité génétique mesurée et comparée à celle de la population souche italienne). Depuis, la population augmente progressivement avec une aire de répartition essentiellement alpine, même si des individus ont colonisé de rares zones dans le Massif Central, la partie orientale des Pyrénées ainsi que le Sud des Vosges.

Grâce à l'identification génétique individuelle (analyse génétique de poils ou de fèces) l'ordre de grandeur des effectifs totaux (environ 230) est estimé par application de modèles mathématiques visant à tenir compte de la probabilité de détecter les animaux forcément inférieure à 1. L'aire de répartition de la population est déduite de la collecte d'indices de présence par un réseau d'observateurs formés à cette tâche. Le bilan 2011 montre un processus de colonisation spatiale annuelle toujours à l'œuvre (de l'ordre de +10%).

LE LYNX

Suite au retour de l'espèce sur le territoire français à partir des années 1975-80, l'ONCFS organise le suivi de la population de lynx, et des dégâts occasionnés au cheptel domestique. Ce suivi, conduit sur toute l'aire de

répartition, vise à renseigner le statut global de conservation de l'espèce en France. L'analyse est également déclinée à l'échelle de chaque massif oro-géographique (Alpes, Jura, Vosges) pour tenir compte des spécificités spatiales de dynamique des populations de Lynx (cf. § infra).

Par ailleurs, ce suivi s'intègre activement au niveau international, dans le groupe de travail « SCALP » (www.kora.unibe.ch/en/proj/scalp ; Status & Conservation of Alpin Lynx Populations), pour ce qui est de la contribution française au suivi du statut de l'espèce sur l'arc alpin, ou bien encore dans le cadre du programme ELOIS (www.kora.unibe.ch/en/proj/elois/; Eurasian Lynx Online Information System).

L'aire de répartition régulière détectée augmente légèrement (+ 6%) à l'échelle de l'ensemble de la population, mais avec des cinétiques contrastées selon les massifs de présence : la surface classée en présence régulière a diminué de -10% dans le massif vosgien, elle est stable (-3%) dans les Alpes, et elle a progressé de +13% dans le massif jurassien. L'aire de présence récente n'augmente entre les deux dernières périodes triennales d'évaluation (2008-2010 / 2005-2007) que sur les Vosges.

2. ENJEUX DE CONSERVATION / MESURES DE PROTECTION CES 5 DERNIERES ANNEES

L'OURS BRUN

Le principal enjeu concernant l'ours repose sur l'acceptation de la présence de l'espèce par le monde agricole, et essentiellement avec l'élevage ovin, en zone de montagne.

Un autre enjeu réside dans la gestion de la chasse en zone à ours afin de limiter les risques d'accident qui peuvent nuire à la dynamique de la population notamment lorsqu'il s'agit de femelle adulte (3 cas de destruction directe non intentionnelle en 1994 -1997-2004). Une stratégie d'information et de sensibilisation des chasseurs sur la conduite à tenir en zone à ours a été mise en place (Charte Etat - Fédérations Départementales des Chasseurs, film vidéo réalisé en 2011 à l'attention spécifique des chasseurs, réunions annuelles avec les chasseurs en zone à ours). Des mesures réglementaires sont également prises. Dans certains cas la chasse peut être suspendue (selon le département, soit de façon consensuelle soit par arrêté préfectoral) dans des secteurs limités (femelles accompagnées d'oursins de l'année, tanières actives détectées).

Statut de protection

- Protection nationale par arrêté ministériel du 23 avril 2007
- Inscrit à l'annexe II de la Convention de Berne de 1979 ratifiée en France en 1989 (loi 89-1004)
- Inscrit aux annexes II et IV de la Directive européenne « Habitats – Faune – Flore » CEE 92/43 du 21/05/92
- Inscrit à l'annexe II de la CITES (Convention Internationale sur le Commerce des Espèces en Danger - 1973)
- En *préoccupation mineure* sur la liste rouge mondiale IUCN mais *en danger critique d'extinction* sur la liste nationale.

Le ministère en charge de l'écologie a piloté un plan de restauration de l'ours dans les Pyrénées pour 2006-2009. Ses principales actions sont depuis reconduites chaque année. Un plan de soutien à l'économie agro-sylvo-pastorale pyrénéenne (PSEM) 2007-2013, financé notamment par le ministère en charge de l'agriculture et les collectivités vise à dynamiser les structures et filières. Il intègre les moyens de protection contre la prédation, mais est indépendant du plan ours. L'indemnisation des dommages est également assurée par le ministère en charge de l'écologie.

Il a été décidé au terme du plan 2006-2009 que la question de l'ours devait être abordée dans le cadre plus large de la biodiversité pyrénéenne et de son avenir. Une stratégie pyrénéenne de valorisation de la biodiversité (SPVB) a ainsi été élaborée et validée en janvier 2012. Il s'agit de renforcer les atouts que la biodiversité pyrénéenne constitue pour l'ensemble des activités liées à la montagne : pastoralisme, loisirs, tourisme, exploitation forestière... Cette stratégie comportera un volet « ours », élaboré dès la fin du premier semestre 2012, et les mesures prises pour restaurer la population d'ours s'inscriront dans ce cadre général.

LE LOUP

Le principal enjeu concernant le loup est lié à ses interactions avec le monde agricole, et essentiellement avec l'élevage ovin, qui plus est en zone de montagne où les pratiques locales de transhumance estivales se traduisent par plusieurs centaines de milliers de têtes exposées au risque de prédation. Les attaques ont augmenté ces cinq dernières années (753 en 2006, 1416 en 2011). Une forte corrélation est constatée entre la variation annuelle de ce nombre d'attaque et la variation de l'aire de présence du loup. Cette extension de l'espèce à de nouveaux territoires aux systèmes d'élevages et aux paysages différents nécessite de revoir les modalités de traitement des interactions du loup avec ces élevages.

Un autre enjeu réside dans l'exploitation conjointe des ongulés sauvages en tant que proies par le loup et en tant que ressource à vocation cynégétique par les chasseurs. Toute la question repose sur la capacité des populations d'ongulés à développer un taux de croissance annuel permettant un prélèvement durable à la fois par l'activité cynégétique et par la prédation naturelle. La mesure de l'impact démographique, mais aussi comportemental, de la pression de prédation par le loup sur les proies sauvages est en cours d'étude, dans le cadre de la réalisation d'un programme prédateur-proies mobilisant plusieurs partenaires.

Statut de protection

- Protection nationale par arrêté ministériel du 23 avril 2007
- Inscrit à l'annexe II de la Convention de Berne de 1979 ratifiée en France en 1989 (loi 89-1004)
- Inscrit aux annexes II et IV de la Directive européenne « Habitats – Faune – Flore » CEE 92/43 du 21/05/92
- Inscrit à l'annexe II de la CITES (Convention Internationale sur le Commerce des Espèces en Danger - 1973), ainsi qu'à l'annexe A de son règlement d'application européen
- Classé *vulnérable* sur la liste rouge IUCN France.

Le « *plan d'action national sur le loup 2008-2012, dans le contexte français d'une activité importante et traditionnelle d'élevage* », établi en 2008 repose sur les bases suivantes :

- Une organisation de la concertation rassemblant toutes les parties concernées aux niveaux national et local ;
- Un suivi rigoureux de l'évolution de l'espèce, permettant d'évaluer annuellement son état de conservation ;
- Des mesures de protection des troupeaux domestiques contre la prédation, permettant la mise en place de gardiennage, le financement de clôtures mobiles, l'achat et l'entretien de chiens de protection, l'analyse de vulnérabilité du troupeau à la prédation.
- Un système d'indemnisation des dommages dus aux loups, qui permet d'indemniser l'éleveur au titre des animaux tués ou blessés ; au titre des pertes dites « indirectes » (stress subi par les animaux, pertes de production ou avortements consécutifs aux attaques...) ; au titre des animaux disparus du fait de l'attaque.
- Un dispositif réglementaire interministériel qui définit les conditions et limites dans lesquelles peuvent intervenir des opérations d'effarouchement, de tirs de défense ou de prélèvement.

L'élaboration du prochain plan interviendra au cours du dernier trimestre 2012, afin de permettre son démarrage opérationnel dès le début 2013. Dans cet intervalle sera conduite une évaluation de la mise en oeuvre des objectifs contenus dans le plan 2008-2012 ainsi que des actions conduites dans ce cadre. Un des objectifs du futur plan est de prendre en compte les nouveaux contextes d'élevage.

LE LYNX

Le principal enjeu concernant le lynx a historiquement été les interactions avec l'élevage, quasiment uniquement sur le massif jurassien. Les dommages sont indemnisés. Depuis plusieurs années désormais, le niveau des attaques sur troupeaux domestiques est très modéré, avec seulement quelques rares cas, mais récurrents d'année en année, de foyers d'attaques sur 2 à 3 exploitations.

Depuis 3 ans, des questions viennent du monde cynégétique quant à l'impact du lynx sur les cinétiques de populations de chevreuils et/ou de chamois, avec une suspicion d'abondance plus importante du félin. Une collaboration scientifique a été mise en place depuis 2010 entre l'ONCFS et des partenaires locaux (dont les fédérations départementales de chasse) pour mesurer de façon fiable la densité de lynx sur des zones de référence. Grâce à l'application de la démarche technique élaborée par l'équipe du KORA, il a pu être

démontré que la densité de l'espèce n'était pas différente des chiffres mesurés ailleurs, en Suisse par exemple.

Statut de protection

- Protection nationale par arrêté ministériel du 23 avril 2007
- Inscrit à l'annexe III de la Convention de Berne de 1979 ratifiée en France en 1989 (loi 89-1004)
- Inscrit aux annexes II et IV de la Directive européenne « Habitats – Faune – Flore » CEE 92/43 du 21/05/92
- Inscrit à l'annexe II de la CITES (Convention Internationale sur le Commerce des Espèces en Danger - 1973), ainsi qu'à l'annexe A de son règlement d'application européen
- Classé *en danger* sur la liste rouge IUCN France.

3. COOPERATION TRANSFRONTALIERE

L'OURS BRUN

Suite à la déclaration d'intention signée le 22 mai 2006 entre les trois ministres français, espagnol et andorran en charge de l'environnement, et organisation la collaboration transfrontalière sur l'ours et d'autres espèces d'intérêt commun, un comité technique s'est constitué qui regroupe les équipes techniques des trois pays en charge du suivi de la population d'ours. Ce comité se réunit au moins une fois par an et a pour objectif de partager les expériences en termes de suivi et de gestion, de coordonner le suivi transfrontalier et de faire en commun chaque année un bilan sur le suivi de la population. Il est animé par l'ONCFS.

Des documents d'information en français et en espagnol sur la localisation des ours sont réalisés conjointement chaque mois par les équipes techniques.

Parallèlement les administrations centrales et régionales des trois pays se réunissent régulièrement pour évaluer l'évolution du dossier, prendre des décisions en commun ou poursuivre la logique d'échange continue d'informations. La dernière réunion de ce type a eu lieu à Toulouse le 11 avril 2012. La collaboration est désormais étendue dans le cadre de la SPVB.

LE LOUP

Un groupe technique (Wolf Alpin group) s'est constitué depuis 10 ans pour définir en commun des méthodes de suivi de population, et réaliser des bilans transfrontaliers. Ce groupe se réunit quasiment annuellement et, depuis la signature d'un accord tripartite (Italie, Suisse, France) entre les ministères chargés de ce dossier dans leurs pays respectifs, il fournit selon un format standardisé (évolution des nombres de meutes selon qu'elles sont transfrontalières, italiennes, françaises) un rapport sur le statut de la population dite « ouest alpine » (au sens des Guidelines de la LCIE).

Une collaboration informelle, mais efficace sur le plan technique en matière d'harmonisation des protocoles, a aussi été mise en place avec les structures d'Etat catalanes espagnoles pour ce qui est du suivi des individus situées dans la partie orientale des Pyrénées.

LE LYNX

Un groupe technique (Status and Conservation of the Alpine lynx populations) s'est constitué depuis 15 ans et a défini une catégorisation commune des informations relatives à la présence de l'espèce, et réalise des bilans transfrontaliers, dans le cadre d'une stratégie internationale avalisée par le Conseil de l'Europe. Ce groupe se réunit quasiment tous les deux ans, sous la coordination du KORA (suisse), et fournit selon un format standardisé (évolution de l'aire de présence transfrontalière) un rapport sur le statut de la population dite « alpine ». Ce groupe produit aussi, sous l'impulsion de sa coordinatrice (A. Molinari) des publications à caractère scientifique.

De manière informelle, et à la faveur de réunions internationales, des échanges et synthèses de données ont aussi lieu entre équipes suisses et allemandes. Depuis 2 ans, l'estimation de la densité de lynx sur le massif jurassien se fait de façon simultanée avec l'équipe du KORA, et en prenant en compte les animaux transfrontaliers.

6. ITALY

The Brown bear

The Brown bear is present in Italy with two distinct populations, one in the Central Apennine and one in the Central-Eastern Alps.

The Apennine brown bear. This population, occurring in the central Apennine Mountains, is extremely small and isolated. The estimated size in 2004, in the core area of its distribution range (Abruzzo, Lazio and Molise National Park), is of 40 individuals (95% CI: 37-52), corresponding to an estimated density of 3.3 ind/1000 km². The Apennine brown bear population appears to be declining or stable at best (AA.VV., 2011). The low number of animals estimated suggests that the size of this population might be below the minimum threshold required to guarantee the survival of this species on the long-term. The species is fully protected, damage prevention measures are supported through incentive policies while economic losses caused by bears are fully compensated. Problem bears have been subject to aversion techniques (rubber bullets).

The Alpine brown bear. This population has a disjoint distribution, including two separated sub-populations: one is located in the Central Alps (provinces of Trento and Bolzano; eastern Lombardia, Northern Veneto) while the other is found in the eastern Alps (Friuli-Venezia-Giulia Region). The former is the result of an introduction project, carried out between 1999 and 2002 in the Adamello-Brenta Natural Park (Project "Ursus" - LIFE NAT/IT/007131-), while the latter is due to animals coming from Slovenia (belonging to the Dinaric-Balkan population). The population occurring in the Central Alps is increasing in size and range [33-36 bears recorded in 2011 and the average annual growth rate recorded between 2002 and 2011 was approximately 14% (Groff et al., 2012)] while the far eastern population contains only few animals [7-13 bears were estimated to be present in the period 2004-2007 in Friuli-Venezia-Giulia Region (Fattori et al., 2010)]. In February 2012, a roaming young male (M13) left the Trento province and was then captured by the staff of the hunting and fishing office of the Canton of Graubünden not far from the borders of Val Venosta (Bolzano province) and Austria and fitted with a VHF-GPS radiocollar. Although the sub-population of central Alps is growing steadily, its conservation status remains precarious because of the small size as well as the isolation from the Dinaric-Balkan area, which did not allow any gene flow between the two populations to date. The species is fully protected and damage prevention measures are supported through incentive policies while economic losses caused by bears are fully compensated. Problem bears are closely monitored through radiotracking, and are subject to aversion techniques (e.g.: rubber bullets); in two cases problem individuals have been captured and moved to a suitable enclosure.

The Wolf. The Alpine population appears increasing in size and range (spreading towards the west, north and east). In the Piedmont (western Alps) 14-18 packs and 61-70 wolves were recorded during the winter season of 2010-2011 (Marucco e Avanzinelli, 2012) while in central and eastern Alps the presence of wolves is still occasional. The genetic continuity with the Apennines population has been recently assessed at 1-2.5 individuals on average per generation, all of them moving from the Apennines to the Alpine population (Fabbri et al., 2007). In 2005, a young radio-marked wolf dispersed more than 1000 km from Parma to Nice, providing evidence of the natural dispersal along the northern Apennines range (Ciucci et al., 2009). However, in winter 2012, a male captured and fitted with a GPS-GSM radiocollar in Slovenia, arrived in an area on the border between Veneto and Trentino and it has settled there. This wolf is constantly monitored in strict contact with Slovenian researchers from the University of Ljubljana (SLOWOLF Project LIFE 08/NAT/SLO/000244 "Conservation and surveillance of the conservation status of the wolf (*Canis lupus*) population in Slovenia"). This may represent the first contact registered between the Alpine-Apennines and the Dinaric-Balkan population. Though the Alpine population is increasing, it is still numerically small and it has limited genetic and demographic contacts with the

adjacent population of the Apennines meaning that it is qualified as a subpopulation under European IUCN Red List and assessed in category “Endangered”. The Apennines population is estimated to be 500-800 individuals (LCIE, 2007) even though densities can fluctuate widely at local level. In the northern Apennine (between Emilia-Romagna and Tuscany) at least 30 packs were estimated to be permanently present in the area within the period 2002-2009, corresponding to a minimum of 120–180 wolves, excluding transient and dispersers (Caniglia et al., 2011). In spite of a general increase in numbers and range, the Apennines population is still subject to local extinctions, caused by human action (illegal poisoning, illegal shooting, car accidents). Moreover, it shows limited exchanges with the population of the Western Alps (recent genetic evidence indicates a flux of genes only in the direction toward the Alps; Fabbri et al., 2007) and appears isolated from the Dinaric-Balkan population. For all these reasons it is assessed in category “Vulnerable” in the European Red List of IUCN (LCIE 2007). The species is fully protected and no wolf has been subject to legal control interventions up to now. Damage prevention measures are supported through incentive policies while economic losses caused by wolves are fully compensated.

The Lynx. Italy does not host any breeding population: less than 20 lynxes are estimated to be present in the Italian Alps (Molinari et al., 2006), with a more stable presence in Friuli-Venezia-Giulia Region (eastern Alps) where 5-15 individuals are estimated to be present. This subpopulation consists of animals coming from Austria and Slovenia, ranging from the far eastern Alps to the Dolomites (Molinari e Genovesi, 2006; Fattori et al., 2010) as also confirmed by two adult males captured and fitted with GPS radiocollar in 2007-8 and in 2011 in the Carniche Alps. According to Molinari et al. (2010) the only reproductive event recorded in Italy dates back to 2003 and was observed in Friuli-Venezia-Giulia Region. In 2008, a young male captured and fitted with a GPS-GSM radiocollar in the Swiss National Park, arrived in Trentino, where it has been established since then (Brugnoli et al., 2008). It was constantly monitored in strict contact with Swiss researchers and its radiocollar was replaced in 2010 (Brugnoli, 2010) thanks to the dedicated effort of the Forest service of the autonomous province of Trento in collaboration with KORA (Koordinierte Forschungsprojekte zur Erhaltung und zum Management der Raubtiere in der Schweiz), and again in February 2012. Current numbers and the absence of a breeding population suggest that the survival of the species in the long term may be questioned. The species is fully protected and no lynx has been subject to legal control interventions. Damage prevention measures are supported through incentive policies while economic losses caused by lynxes are fully compensated.

2. Main concerns

The Apennine brown bear

Population size; the very small population size appears of main concern for the long term conservation of this population. This also in respect to the limited number of reproductive females, that is probably still decreasing. The small size also raises concerns on the genetic variability of this population (AA.VV., 2011; Randi et al., 2003; Lorenzini et al., 2004).

High rate of human-caused mortality; despite the conservation measures applied so far, the mortality remains very high (2.5 ind/yr in the 1991-2002 period). Human caused mortality accounts for 84% of the losses. Illegal killing (poisoning, snares, shooting) remains a severe problem; it is related to (i) conflicts over livestock depredations, (ii) reaction/demonstration against the authority of the Park and (iii) increasing level of hunting (and poaching) pressure, especially on the wild boar (*Sus scrofa*).

Other concerns include: risks of transmission of pathologies from livestock; low dispersal; habitat fragmentation; scarce awareness on the conservation risks; scarce information level in the local communities; scarce information level in the stakeholders (AA.VV., 2011).

The Alpine brown bear

Population size; though it is rapidly increasing, the very small population size appears of main concern for the long term conservation of this population. This also in respect to its genetic isolation: the absence of gene flow with the population of the Dinaric-Balkan areas may affect its the genetic variability.

human-caused mortality; despite the incentives to enforce prevention measures and the effective management of the problem bears, conflicts with several human activities (livestock breeding, beehives farming, agriculture) are increasing, potentially facilitating illegal killing (no illegal killing has been recorded so far in this area). Vehicle as well as train collisions are an additional threat to the population.

The Wolf

Population size; although both the Alpine and Apennines populations show an increase in numbers and range, they remain vulnerable to (i) risk of inbreeding and reduction of heterozygosity (ii) local extinction from human pressures (iii) hybridisation with domestic dogs.

High rate of human-caused mortality; despite the conservation measures applied so far, illegal killing (poisoning, snares, shooting) remains a severe problem. It is mainly related to (i) conflicts over livestock depredations and to (ii) increasing level of hunting (and poaching) pressure, especially on the wild boar (*Sus scrofa*). Also accidental killing (e.g., vehicle or train collisions) represent a documented causes of mortality, due to habitat and forests fragmentation (the occurrence of extensive road networks, fenced highways, absence of proper wildlife crossing and human development). Uneffective damage management policies (absence of credible enforcement and damage-verification procedures, high transaction costs and long time lags) and changes in livestock husbandry (free-ranging cattle and flocks with little, if any, control - no shepherd, livestock-guarding dogs, night-time recovery in enclosures) contribute to increasing conflicts with farmers and livestock breeders, and also affect wolves behaviour promoting a dependence on livestock and livestock carcasses, when largely available and accessible year-round (Ciucci and Boitani, 2010; Boitani et al., 2010). Though an unbiased assessment of the impact of illegal killing on the wolf population in Italy is lacking (Ciucci et al., 2007), the recent positive trends in the wolf numbers and range indirectly suggest that total mortality levels are sustainable at a national scale and in the long-term (Boitani et al., 2010).

Presence of free-ranging, stray dogs may causes (i) onset of competition (ii) worsening of conflicts with humans as a result of predation on domestic livestock carried by dogs and blamed to wolves (iii) risk of hybridization and loss of genetic identity of the wolf. With regard to this latter problem, the **lack of adequate management policies concerning hybrids** (which are not recognized in any national or Community legislation) makes conservation interventions more complicated (Randi, 2011).

The Lynx

Population size; the lack of a breeding population and the very low and scattered presence of independent lynx in the Italian Alpine Regions appears of main concern.

high rate of human-caused mortality; illegal killing, related to (i) conflicts with hunting activities and (ii) conflicts over livestock depredations is considered to be the main limiting factor for the survival of the few lynx in the Italian Alps.

3. conservation action in the last 5 years and on-going cooperation with neighbouring States in managing transboundary population of Large Carnivores.

Under the Italian legal framework, conservation of species of EU concern is a responsibility of the Ministry of Environment, that works with the constant technical support of ISPRA. The local administrations (regions, and autonomous provinces) enforce the general policies on large carnivores and

in many cases have actively supported monitoring activities, such as projects based on non-invasive genetic sampling.

National Action plans

The Italian Ministry of Environment has established, with the technical support of ISPRA, national action plans on the Brown bears in the Alps, the Brown bears in the central Apennines and the wolf. Under the Italian legal frameworks national action plans do not have a formal legal power; however, in the case of the action plan for the Brown bear in the Alps, the document has been formally adopted by all local administrations either with regional laws, or with formal decisions.

“Inter-regional Action Plan for the Brown Bear Conservation in Central and Eastern Alps (PACOBACE)” (2010). The pan-alpine action plan was formally endorsed by the Ministry of Environment and the Regions and the autonomous Provinces of the Central Eastern Alps (the Autonomous Province of Trento, the Autonomous Province of Bolzano, Lombardy the Region of, Veneto Region, the Region Friuli-Venezia Giulia). Moreover, the autonomous provinces and regions involved have also formally adopted the text with their own resolutions, providing the Action Plan with actual juridical significance. The public administrations committed themselves to enforce coordinated measures on damage prevention/compensation, management of problematic bears, promoting communication and information, training of staff, coordinating monitoring activities.

“Action Plan for the protection of the Apennines Brown Bear (PATOM)” (2011). This action plan is the reference document of the regions, provinces, protected areas and local authorities to implement a series of initiatives for the conservation of the Apennines Brown bear. It has been signed by 24 administrations, including all national, regional and provincial administrations and ONGs involved in Apennine brown bear conservation.

“National Action plan for the conservation of the Wolf” (2002). The action plan has been formally presented at the Standing Committee of the Bern Convention, and to the European Commission. It provides the formal Italian policy on the species, which is based on a stringent protection regime, support to damage prevention measures, and full compensation of economic damage.

LIFE Projects

IBRIWOLF Project (LIFE 10/NAT/IT/000265) "Pilot actions to reduce the loss of genetic heritage of the wolf in central Italy" The project's objective is to counter the loss of genetic identity of the wolf in an area of central Italy, where the presence of wolf-dog hybrids has been established. The activities are an example of best practices, involving the authorities (responsible for the management of the wolf) and the general public (which is the source of stray dogs entering the territory).

ARCTOS Project (LIFE 09/NAT/IT/000160) “Brown Bear Conservation: Coordinated Actions in the Alpine and Apennine Range” aims at developing a series of structural interventions, both in the Alps and Apennines, consistent with the action plans developed for bear’s conservation.

WOLFNET Project (LIFE 08/NAT/IT/000325) “Development of coordinated protection measures for Wolf in Apennines”. The main objective of the project is to develop and apply, in a co-ordinated way, ideal models for wolf protection and management within the Apennines context (to reduce wolf-livestock conflict, to prevent the phenomenon of illegal killings, to reduce the sanitary risks for the wolf populations,

ANTIDOTO Project (LIFE07/NAT/IT/000436) “A new strategy against the poisoning of large carnivores and scavenger raptors”

EX-TRA Project (LIFE 07/NAT/IT/000502) “Improving the conditions for Large Carnivores conservation – A transfer of best practices –”. The aim of this project is to improve the know-how of conservation actors in what concerns activities for the conservation of wolves and bears, about essential issues of carnivore conservation: biological and ecological aspects, interactions with other species, conflict management and stakeholder involvement.

Interreg Projects

Interreg III A Italia-Slovenia 2000-2006 “Cross-border sustainable management of wildlife resources”
The project was carried out between 2004 and 2008.

Protocols

Establishment of an Alpine International standing committee for the management of the wolf in the Alps, through a memorandum of understanding among Italy, France and Switzerland (2007). The aims of this agreement is to promote the coordination of management policies of the alpine population of wolves and encouraging more efficient exchange of information and personnel. An opening meeting was organized in Piedmont, Italy, and several working groups were formed with the aim of ensuring an exchange of technical and scientific information. Since then, these groups have cooperated at assessing the size of the transboundary population and to exchange data on policies of damages, prevention and compensation.

Establishment of a platform on large carnivores and wild ungulates (WISO) under the Alpine Convention.

Research Project

“The Wolf in Piedmont: actions to acquire knowledge, to preserve the species, to prevent damages to livestock and to implement a regime of stable coexistence between wolves and economic activities” (1999-2010).

“Large Carnivore”. A 5-year research and conservation project, started in 2006 and funded by the Wildlife Conservation Society (through a private US donor). The project was carried out as a cooperative effort between the University of Rome, the Abruzzo National Park (PNALM), the Forestry Service, and other research and management institutions.

“Mapping and monitoring the presence and dynamics of wolves in the Apennines”. A project funded by the Emilia-Romagna region and provinces aimed at monitoring the wolf population in the Apennines by means of non-invasive genetic sampling and snowtracking (2001-2009). The LIFE project “Actions for the wolf conservation inside 10 Sites of Community Importance of three Parks in Emilia-Romagna (LIFE00/NAT/IT/7214)” was part of this larger project.

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7. LATVIA

by Jānis Ozoliņš and Vilnis Bernardis

Three large carnivore species inhabit Latvia: grey wolf, Eurasian lynx and brown bear. All carnivores inhabiting Latvia belong to the Baltic populations which are relatively big and probably most viable ones in Europe due to their continuous range stretched far over European Russia, Belarus and North Ukraine. A common characteristic describing conditions of all carnivore species in Latvia over last five years is favourable status of their habitats. Abundance of food (prey populations) and shelter (woodland) had increased.

The brown bear is most rare carnivore with as few as 10-15 individuals recorded annually. There is still no evidence of its breeding in the territory of Latvia though existing population status is stable not just for last five but nearly 50 years. According to the Species and Habitat Protection Law (05.04.2000) and to Annex I of the Regulations No. 396 of the Cabinet of Ministers „Regulation on the species list of especially protected species and of species of limited use” (14.11.2000), brown bear is a specially protected species. The fine for killing or injuring a brown bear is 40 minimum salaries (Regulations of the Cabinet of Ministers No. 281 on 24.04.2007). Regulations No. 778 (22.11.2007) “The order in which land users are compensated for damages caused by specially protected non-game and migrating species” ensure that the damage caused to livestock or beehives by bears should be compensated however this opportunity is suspended in 2011 because of budget recession. Bear occurrence is monitored within network of Natura 2000 sites.

Direct disturbance by humans involved in drive hunting, outdoor sports, recreation and mushroom- or berry-picking particularly during season when the bears are searching for the sites of winter dens is considered as main threat. Concern for future is the perspective that Latvia seems developing its transport infrastructure as a transport transit country significantly. Then the main motorways would divide west and south parts of the country from the core range of the Baltic bear population (Russia, Estonia). This influence can be already observed to less extent in wolf and lynx populations (Ozoliņš et al. 2011). No increasing threats to the bear population however are detected in the past five years.

Recent conservation actions are aimed to support natural recovering of the Baltic brown bear population in the territory of Latvia. Natural dispersal of bears is considered by national scientists and conservation experts as most suitable way of species return underlining importance of their acceptance by the public while at the same time not undertaking any special measures in order to artificially increase bear distribution in Latvia or to establish a local breeding population. The Action Plan for the Conservation of Brown Bear (2003) has been updated in 2009. At that time, a year-long public awareness campaign on the brown bear was organised by the Latvian Natural History Museum in Riga. A successful initiative was started by the former administration of a biosphere reserve in cooperation with UNDP. They distributed within protected territories along the border with Estonia and other areas of local bear range the leaflets for the general public that explain how to behave if one meets a bear in the wild.

Eurasian lynx has an increasing demographically viable (Ozoliņš et al. 2008) and genetically diverse (Schmidt et al. 2009) local subpopulation in Latvia. Estimated population size is 500-600 individuals however another figure obtained by official summing up reports from hunting grounds exceeds 1,600 individuals. Legally lynx has status of a protected species that can be exploited to a limited extent by sport hunting. The hunting season is open from the 1st December until the 31st of March. Quotas are set and controlled by the State Forest Service. According to circumstances, quota can be generally used for entire territory either divided into local sub-quotas following uneven population densities. As soon as the general quota is fulfilled, lynx hunting is stopped in the whole country until the next season. So far, hunting had been limited up to 150 individuals and no negative consequences to population status were recorded. The fine for poaching (incl. if a hunted animal is not reported in the line with Hunting Regulations) is 5

minimal monthly wages or 10 minimal monthly wages if poaching occurred during the closed season or in a protected area. Problems with damages to livestock are absent or minor. Attitudes based on hunters' observations that lynx is their competitor for ungulates, mostly roe deer (Valdmann et al. 2005) and especially during deep snow conditions (actually winters in 2009 and 2010) are main reason for predator control. The problem needs permanent mitigation using broad methods of raising public awareness and involvement of hunters in research activities. National Action Plan for the Conservation of the Lynx (2002) has been updated in 2007. Increasing threats to population are not detected, rather Latvian hunters seem having accepted conservation measures and contribute voluntary to population monitoring.

The wolf is least protected large carnivore in Latvia since the Baltic countries had not identified any actual threat to population and got a geographic exemption concerning requirements of Habitat Directive, namely it is added to Annex V species which can be hunted using methods not banned by the Directive. Latvia hosts about 200-300 wolves before and at least 500 wolves after annual breeding. Legal harvest reduces regularly the subpopulation by 150-200 individuals whilst other mortality factors are documented too. The fine for poaching a wolf is administrative and amount depends on circumstances of violation.

On a long term, population is stable that can be confirmed by permanent distribution pattern and demographic structure that demonstrates undisturbed population recruitment. The Wolf Conservation Plan (2002) was updated in 2008. Population management system is adaptive, i.e. harvest quotas are predicted in line with the changes in species abundance and main goal is to preserve the population at favourable conservation status. Wolf control is demanded for the same reasons as in case of lynx just strain in public about wolf predation both on game and domestic animals (Žunna et al. 2009) is more pronounced and founded.

Cooperation among states sharing the Baltic carnivore populations takes place at level of individual experts (see the names in Jedrzejewski et al. 2010) and decision makers rather than within regularly acting framework. National differences are in techniques of population status assessment (monitoring methods), conception of target population as well as decision making procedures. However, these differences do not affect common status of Baltic carnivores considerably. Most recent step towards calibration of conservation and management approaches was done in 2011 by organizing the 8th Baltic Theriological Conference in Lithuania. The program of this meeting was devoted to various studies of large carnivores. A workshop on wolf management in three Baltic countries was attended by representatives from scientists, relevant state authorities and NGOs.

Basic principles of carnivore conservation at population level are included in all operative carnivore conservation plans as well as those elaborated for protected areas.

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8. POLAND

1. Status of Large Carnivores

1. Ursus arctos

Legal status: strictly protected since 1952

Population size: 130

2. Canis lupus

Legal status: Strictly protected since 1998 (throughout the country).

Population size: 750

3. Lynx lynx

Legal status: Strictly protected since 1995.

Population size and trend: 200

Currently there are two legal acts regulating the conservation of these species:

- ❑ The Nature Conservation Act of 16 April 2004 (Journal of Laws of 2009 no. 151 item 1220, as amended)
- ❑ Regulation of the Minister of the Environment of 12 October 2011 on wildlife animal species under protection (Journal of Laws of 2011 no. 237 item 1419)

All three species are listed in the appendix 1 of the a.m. Regulation as a strictly protected species and appendix 5 as wild species for which protected areas (500 metres around breeding places) are placed.

2. Main concerns/conservation actions

The implementation of the project *Preparation of the Management Plans for Selected Endangered and Conflict Species in Poland* is underway. The project is managed by Warsaw University of Life Sciences and financed from the funds coming from Operational Programme Infrastructure and Environment and the National Fund for Environmental Protection and Water Management. The aim of the project is to prepare national strategies for the management of six selected animal species, among others: wolf, lynx and brown bear for which the need of such measures is particularly urgent. These species represent different groups of problems in the fields of conservation and population management. Such projects are prepared during special workshops with active participation of scientists, representatives of local and central administration, NGOs, foresters, land owners, environmental protection services and other entities having positive or negative experiences with a particular species.

The project should result in obtaining information on the populations of lynx, wolf and bear, preparing code of conduct to ensure conservation of national population of these carnivores, identification of solutions to prevent conflicts and facilitating reintroduction of wolves into the western parts of the country.

3. Cooperation with neighbouring states

Different protection statuses of bear, lynx and wolf in Poland's neighbouring countries are a slight obstruction in the development of the co-operation. In Slovakia bear and lynx are under protection, yet wolf is a species which can be hunted between 1 October and 31 January. In Ukraine and Belarus wolf is treated like a vermin and can be hunted during the whole year.

In December 2010 Poland put forward a proposal for co-operation on large carnivore transboundary populations management, especially populations of wolf and bear, to the Minister of Environment of the Republic of Slovakia.

On 14-15 March 2011 in Cracow General Directorate for Environmental Protection together with Regional Directorate for Environmental Protection organized Polish-Slovakian conference which aimed at working out a statement and directions of works development in the field of wolf and bear populations management rules in the transboundary area. The conference was attended by representatives of Polish and Slovakian governmental administration and environmental organizations. The conclusions of the conference were presented on XVII meeting of Polish-Slovakian Intergovernmental Commission for Cross-Border Cooperation. The conference was held on 7-8 April 2011 in Warsaw. During the meeting the working group for nature conservation and forest economy presented an initiative to form an Experts Team for species protection of large carnivores which will start works on the improvement of large carnivore transboundary populations conservation in the key transboundary areas. The Commission accepted the proposal to form Experts Team for species protection of large carnivores.

In addition Poland develops co-operation with Slovakia and Ukraine within the framework of International Biosphere Reserve "Eastern Carpathians" founded in 1992 concerning the improvement of nature conservation methods in this part of Carpathians. This co-operation is largely facilitated by the works of international conference "Conservation of Natural Resources of International Biosphere Reserve – Eastern Carpathians" which is annually organized in Scientific-educational Centre of Bieszczady National Park in Ustrzyki Dolne. The conference enables full exchange of information and experiences. To promote the scientific knowledge on this topic Bieszczady NP issues "Roczniki Bieszczadzkie" which, among other things, contains materials from the conference. The last conference was held on 23-25 September 2010 and was devoted to the following topic: "Influence of current management methods on preserving natural resources in Carpathians".

The Czech Republic also put forward a proposal for trilateral meeting with Poland and Slovakia on the issue of large carnivores which was to be held at the end of 2010. Currently, there is no information on the precise date of the meeting.

In addition Poland is planning to organized international conference about protection of large carnivores in December 2012. We are planning to invite the representatives of all the countries neighboring with Poland (both government, scientific institutions and non-governmental organizations). The aim of the conference will be the exchange of experience in the field of protection and managed populations of large carnivores in the individual countries and draw attention to the fact that the migratory species require a coherent policy management and protection.

Brown Bear

Existing since many years, the co-operation between Polish and Slovakian Tatra National Park is very important for the conservation of large carnivores in the transboundary area of Poland and Slovakia. It concerns mainly the conservation of preying and wintering sites of bears (*Ursus arctos*) and animals count as well as the boiling issue of synantropization of Tatra bears.

It has to be also mentioned that Regional Directorates for Environmental Protection on whose territories bears live, the Institute of Nature Conservation of Polish Academy of Sciences, other institutions and bodies interested in the topic are planning to form Bear Intervention Team. The team would act in such cases as: finding an injured or dead bear, bear appearance in the vicinity of human residences and other. With reference to this topic, two meetings were held in Cracow (one of them attended by Croatian specialists). The proposal to form such a team is also included in the project of the strategy for bear population management in Poland. One of the motion put forward by meeting participants concerned the necessity of starting a close co-operation with neighbouring countries on taking intervention actions.

Wolf

Many years of works performed by Polish scientific institutions and NGOs resulted in publishing in 2005 a guide “Analysis of types and dimensions of damage caused by wolves and applying solution methods in conflict situations”.

Poland acts together with Germany in the field of transboundary protection of wolf (*Canis lupus*). During the bilateral meeting which was held on 13 July 2009 in Dresden the Minister of Environment showed his support to form Polish-German working group for wolf protection.

According to *Guidelines on Large Carnivore Initiative Europe* a shared, transboundary wolf population exists and both countries are responsible for its preservation and conservation. Wolves in Germany and Poland exert similar influence on prey and farm animals, thus in order to solve the existing issues it is necessary for both countries to keep register and manage wolf population in transboundary context. The aim of the working group for wolf protection works is to examine the possibility of future co-operation, using the experiences collected by both countries. Close monitoring supported by scientific research (genetic research, perhaps radiotelemetry) is essential in this case.

The first meeting of the working group for wolf protection took place on 19 January 2010 in Berlin, the next on 11 October 2010 in Szczecin and the last on 25 March 2011. The next meeting is planning on 10 July 2012 in Szczecin. The main topic of this meeting will be discussion about the study “Review of wolf population management methods in Poland and Germany and recommendations for future transboundary co-operation in this field” which is to be developed. The aim of this project is to review the wolf population management methods in Poland and Germany and evaluate the possibility of shared management of the transboundary population of the species. The financial study is prepared from the funds of the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU). The execution of the project is performed by “Biuro Lapus” from Germany and the subcontractor (the part of study concerning Poland) – Association for Nature „Wolf”.

9. “THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA”

I. Brown bear

1. Distribution and population number estimates

The present distribution of the brown bear population in the Republic of Macedonia according to all hard evidence (dead bear, scat, pawprint, hair, cam-trap photo and sighting) is mainly in the mountains in western, south-western and southern parts of Macedonia (Shar Planina, Korab, Bistra, Deshat, Stogovo, Karaorman, Jablanica, Galichica, Pelister, Nidze, Bigla, Ilinska and Plakenska Mts). So far there is no hard evidence from the areas in central Macedonia (Jakupica, Suva Gora and Babuna Mts.) but there are indications that these areas are constantly occupied by brown bear. The situation in the north-eastern, eastern and south-eastern parts of the country is completely different. In most of the areas the Brown bear is not present at all, except for the region of Maleshevski Planini, Plachkovica and Osogovo, where the Brown bear occurs temporarily as a result of the migration of some individuals from the Bulgarian population.

Taking into account the size of the habitat and the existence of three national parks, it was assumed that about 160-200 bears live in Macedonia (Protected areas in the southern Balkans, Arcturos 2002.).

2. Trend

The population trend was assessed by asking the local people for their personal judgment of the population dynamics during the last 5 years. In general results show that the trend is stable, but there are indications in some areas for strong decline due to poaching. The trend was hard to be assessed in Eastern Macedonia due to bear's temporal presence and the lack of knowledge of the local people.

3. Legal status

The Brown bear has been protected by the Law on Hunting since 1996 (Official gazette of RM 20/96). According to Articles 9 and 13 of the new Law on Hunting adopted in 2009, the bear is considered as a protected game species and its hunting is permanently prohibited. Nevertheless, there is an exception. Hunting might be allowed with permission from the Ministry of Agriculture, Forestry and Water Economy (MAFWE) and the Ministry of Environment and Physical Planning (MEPP) for scientific and educational purposes, for zoos and natural history museums, for breeding and the prevention of contagious diseases, as well as when the species is causing damage (Articles 15, 16 par. 5).

4. Main concerns/conservation actions

So far, the literature data (Melovski and Godes, 2002; Arcturos, 2002; Ivanov et al., 2007; Keçi et al., 2007) and field experience have identified illegal hunting (poaching) as one of the biggest threats to the bear's existence. The proof for this is the actual distribution: the bear is best distributed in the protected areas because there is no poaching, or at least it is not significant. The second main threat is forest management in the country. The way the forests are managed is not suitable for the large carnivores. For example, the oak forests are clearcut every 35-45 years, not allowing the forest to mature and produce nuts, an important food resource for many species, including bear.

Due to the lack of funds and capacities not many conservation actions have been undertaken so far. Rising of public awareness in Macedonia and Albania is most constant, mainly within the Balkan lynx recovery program (BLRP). A trilateral (Macedonia, Albania and Greece) management plan for the brown bear was created for the area of Prespa basin (Prespa national park), initiatives for proclamation of new protected areas.

II. Wolf

1. Distribution and population number estimates

Wolf as one of the permanently present large carnivores in Macedonia is least researched. It is widely distributed across the county as resident or dispersal individuals. Official numbers of the State statistical office of the Republic of Macedonia say that wolf population in Macedonia counts around 300 individuals. The figure is rather underestimated if we take into account local people's knowledge whose believing is based on resent ban on wolf hunting (2007-2009).

2. Trend

Wolf trend cannot be truly estimated because no continuous monitoring was conducted. According State statistical office of the Republic of Macedonia population number is in decline and according local people's knowledge it is increasing.

3. Legal Status

Wolf is under protection by the law in Macedonia. There was a 2 years (2007-2009) ban on its hunting but with the new law on hunting in 2009 the ban was removed and its hunting continued. It is still considered as a pest animal and a bounty of 1300 or 3300 denars (20 to 50 Euros) is paid by the relevant ministry for each killed wolf.

4. Main concerns/conservation actions

Main concerns are direct hunting and poaching of wolf and poisoning. There are no conservation actions except for the mentioned rising of public awareness within the BLRP project. With no legal protection, and the negative attitude of people toward wolf its population number strongly fluctuates and one day may reach alarming low level. Unfortunately with no monitoring or any other research on wolf in the country, many population parameters will remain unknown.

III. Lynx

1. Distribution and population number estimates

Lynx occupies mainly hardly accessible mountain areas in Western Macedonia. The Area of Occupancy inside the country has been divided in the Maximum (AOOmax) and Minimum (AOOmin) value in regard to which category is taken into account. If only Category 1 and 2 (SCALP criteria) data are considered (AOOmin – 2110km²) then this value is multiplied by 0,80 individuals per 100km² and divided by 100 to reach number of individuals. For the AOOmax, the area where Category 3 data are found as well, the population density is taken for its minimal value (0,49 individuals per 100km²), multiplied by the AOOmax (5736km²) and divided by 100 to reach population number. Both of these numbers are summed and divided by 2 in order to reach the mean number of individuals in the whole country. If we take into consideration previous mentioned the number of lynx in Macedonia should be around 23 adult individuals (juveniles and subadults are excluded while calculating the density/100 km²).

2. Trend

According to the Baseline Survey (BLRP), the population trend of the lynx in Macedonia is strongly decreasing with no evidence pointing out an increase of the population trend in any regard (strong or weak). There is weak evidence representing strong or stable trend but mostly people are reporting a general decline. Sometimes the population trend could not be assessed which indicates inconsistency in peoples' opinion.

3. Legal status

Lynx in Macedonia is protected and its hunting is permanently banned since 1949. The old law on hunting (Official Gazette 20/96) and the new one from 2009 also protect the lynx. The same exception as with the bear, lynx hunting might be allowed with permission from the Ministry of Agriculture, Forestry and Water Economy (MAFWE) and the Ministry of Environment and Physical Planning (MEPP) for scientific and educational purposes, for zoos and natural history museums, for breeding and the prevention of contagious diseases, as well as when the species is causing damage (Articles 15, 16 par. 5).

4. Main concerns/conservation actions

Biggest threat to lynx survival in Macedonia and generally on the Balkans is poaching. And not only lynx poaching but also poaching of its main prey species – large ungulates. We are also concerned of the low interest of Macedonian authorities for conservation of the critically endangered Balkan lynx. Habitat fragmentation and low population numbers (inbreeding) need also to be considered.

Some of the conservation actions to be mentioned implemented within BLRP project are: rising of public awareness, preparation of conservation action plan and strategy, initiatives for proclamation of new protected areas etc.

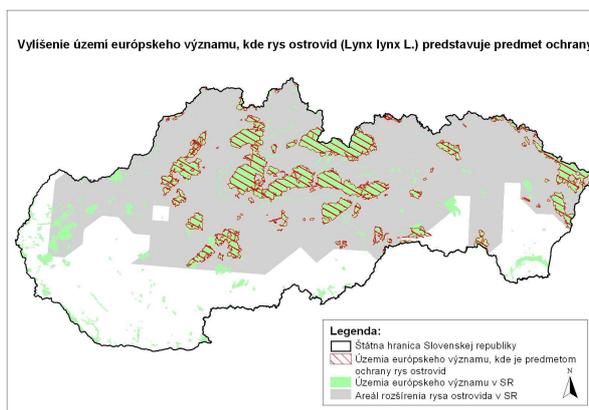
10. SLOVAK REPUBLIC

1. Number and the status of large carnivores in Slovakia

All three large carnivore species are according to the national legislation included in the list of game species, even lynx and brown bear is a protected species, while wolf has only partial legal protection.

Lynx (*Lynx lynx L.*)

Lynx is the strictly protected species, for which also Natura 2000 sites (sites of Community importance – SCIs) are designated.



The map with SCIs designated for the protection of lynx in Slovakia (with indication of the species areal)

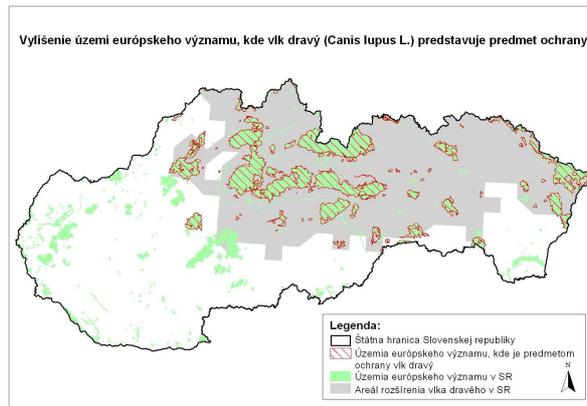
According to expert estimations, the trend of the population of lynx in Slovakia is slowly increasing and the population number is estimated to cca 500 individuals. According to official hunting statistics, which is highly overestimated is population number in 2001 estimated on 1 724 individuals.

Wolf (*Canis lupus L.*)

Wolf is according to the national legislation included in the list of the species with partial protection. Slovak Republic has made reservation on wolf with respect to the Bern Convention as well as the geographical restriction with respect to the Annex IV of the Habitats Directive. Anyway SCIs have been designated for its protection (the species is listed in the Annex II of the Habitats Directive).

The wolf has two localities, where it is strictly all year protected and which has to protect the migration routes to Czech Republic and Hungary. These two areas are on the state borders (National Park Slovenský kras in Slovakia/National Park Aggtelek in Hungary and Protected Landscape Area Kysuce in Slovakia/Protected Landscape Area Beskydy in the Czech Republic). In other parts of Slovakia, wolf is protected from January 16th to October 31st. In other dates, is should be hunted according to Hunting Act except for the most strict protected areas.

The national annual hunting quota is issued by the Ministry of the Land Use and Rural Development of SR and is annually around 100 – 150 individuals. The population and number of culled animals is given in the table below. The expert estimation do not exceed 500 individuals, the population status is stable.



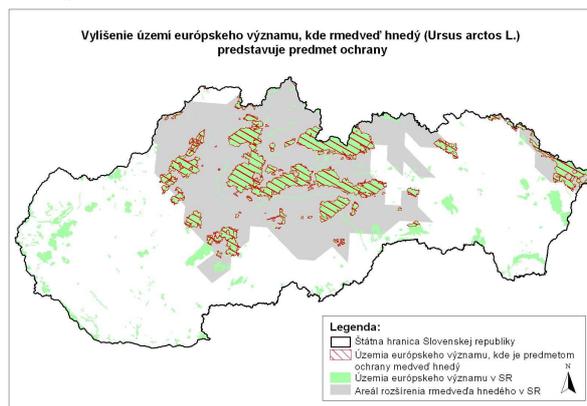
The map with SCIs designated for the protection of wolf in Slovakia (with indication of the species areal)

Population number and number of culled wolf in years 1990 – 2011 (based on the data from Forest Research Institute Zvolen)

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	
Number	752	744	817	849	833	1 028	1 250	1 330	1 079	1240	1 281	
Culled	115	130	152	139	116	157	24	74	54	69	118	
Died	0	0	0	0	0	0	0	0	3	13	6	
Culled + died	115	130	152	139	116	157	24	74	57	82	124	
Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	
Number	1	113	924	973	1 158	1 165	1 219	1 322	1 563	1 698	1 823	2 065
Culled	93	113	112	86	74	91	123	121	130	149	138	
Died	3	3	3	2	2	1	3	1	2	6	7	
Culled + died	96	116	115	88	76	92	126	122	132	155	145	

Brown bear (*Ursus arctos*)

Bear is also a strictly protected species, for which SCIs are designated.



The map with SCIs designated for the protection of bear in Slovakia (with indication of the species areal).

The Ministry of the Environment of SR is annually issuing special permissions (derogations) for shooting of problematic individuals, which are causing damages or other human – bear conflicts. These are subject to the reporting on derogation biennially submitted to the European Commission. The Slovak Republic

has made reservation on brown bear with respect to the Bern Convention. According to the expert estimation there are cca 800 individuals, the hunting statistics are higher.

Number of derogations on bear (requested, issued, used) in Slovakia in years 200 – 2011

Year	Number of derogations			
	requested	approved	actually used	% from approved
2000	134	80	30	37,50
2001	104	72	25	34,72
2002	131	76	39	51,32
2003	128	79	13	16,46
2004	128	76	33	43,42
2005	114	77	35	45,45
2006	136	77	16	20,78
2007	123	83	25	30,12
2008	163	59	31	52,54
2009	70	42	25	59,52
2010	160	78	46	58,97
2011	117	13	5	38,46
Spolu	1 508	799	323	40,77

2. Main activities and success in the protection of large carnivores in last 5 years

The State Nature Conservancy of the Slovak Republic has prepared and is already realizing project from EU funds “Research and monitoring of large carnivores and wild cat populations in Slovakia”. The project consists of many activities aimed on the monitoring and research of all four species – radiotracking, DNA sampling and analyzing, ethology research, health status research, damage prevention measures,

Annual and regular monitoring schemes on some selected protected areas, where such research is in charge for long period. In some areas already for 5 years. In 2007 the Slovak Republic submitted the national report according to the Article 17 of the Habitats Directive including the evaluation of the status of all the species of Community interest. Information is available on http://ec.europa.eu/environment/nature/knowledge/rep_habitats/index_en.htm.

In 2008 the seminar was organized by the Ministry of the Environment of the Slovak Republic with the Czech ministry and the consultant in charge of EU guidance for large carnivores. All the presentations are available on <http://www.soprsr.sk/natura/index1.php?p=5&lang=sk>.

In 2011 the expert group on large carnivores was established at the Ministry of the Environment of the Slovak Republic with the aim to tackle both the urgent issues (conflicts between brown bear and the man) and strategic solutions on improved knowledge and management.

3. Cooperation with bordering countries

The Slovak Republic has long term cooperation in transboundary protected areas aimed mostly on the monitoring of large carnivores.

1. Czech Republic – cooperation on monitoring of transboundary individuals, in preparation – INTERREG project for the satellite tracking of brown bears.

2. Poland – cooperation of national parks, exchange of knowledge, monitoring of transboundary population, data sampling.
3. Hungary – consultation, started discussion on possible reintroduction of lynx to Hungary.

Ongoing discussion of the hunting management of all species is in charge, with the aim to identify possible conflicts in the protection of the species on both sides of the border and to establish strictly protected zones where no hunting will be allowed in bordering regions.

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11. UKRAINE

1. Status of Large Carnivores

1. Brown bear

Legal status: Listed in the Red Data Book of Ukraine since 2003. Hunting for the species is prohibited. Brown bear listed in Appendix II of the Bern Convention and Appendix II to CITES to which Ukraine is a Party.

Population size and trend: 300, tend to increasing.

Range: The species occurs mainly in Carpathians and sporadically in Polissya.

2. Gray wolf

Legal status: Hunting species. Ukraine has ratified the Bern Convention with a reservation with regards to wolf. According to the reservation it is possible to regulate wolf numbers to prevent its negative impact on populations of other species and serious harm to domestic stock. According to Law of Ukraine "On Hunting and Hunting Activity" hunting for wolf is allowed from October to February. Hunting for wolf on protected areas usually is not allowed.

Export-import of wolf specimens is made according to CITES regulations.

Population size and trend: Up to 3000, increasing or stable.

Range: all the territory of Ukraine.

3. Eurasian lynx

Legal status: Listed in the Red Data Book of Ukraine since 1980. The species is listed in Appendix II of the Bern Convention and CITES to which Ukraine is a Party.

Population size and trend: 430–490. Fluctuating or stable.

Range: Carpathian (350–400) and Polissya (80–90).

2. Main concerns/conservation actions

1. Brown bear

Main concerns are range fragmentation, intensive exploitation of forests which are the habitats for bear, recreation activities, disturbance, and poaching.

According to Joint order of the Ministry of Environmental Protection of Ukraine and State Committee for Forestry of Ukraine No. 232/164 of 08.05.2007 Conservation Action Plan for Brown Bear was adopted. According to the Plan research was conducted in Carpathian with regards to brown bear ecology, behavior, population range and trends, level of brown bear – human conflicts. Public awareness company was conducted. A number of recommendations with regards to enhance brown bear conservation have been elaborated.

In 2011 a rescue and rehabilitation center for bears confiscated from their owners because of their cruel treatment in captivity has been constructed on the territory of Synevir National Park (Carpathian region).

2. Gray wolf

There is no wolf management plan adopted at national level. Wolf numbers used to regulate by local hunters. There is no quota system for wolf in Ukraine.

National and local environmental NGOs press the Government to enhance wolf protection. As a response the Law of Ukraine "On Hunting and Hunting Economy" was amended to limit hunting period for wolf.

Recently a draft Law was submitted to Verkhovna Rada of Ukraine (Parliament) aimed at to exclude wolf from the list so called "harmful" species.

3. Eurasian lynx

Main concerns are habitat degradation, reducing food base and poaching. There is no management action plan at national plan for that species. However some local conservation actions are performed on protected areas in Carpathian and Polissya region.

3. Cooperation with neighbouring states

All LC populations in Ukraine are transboundary, therefore cooperation with neighbouring countries is desirable and appreciated.

In 2011 the Ministry of Ecology and Natural Resources of Ukraine and VIER PFOTEN International (Austria) has signed a Memorandum of Understanding aimed at cooperation in the sphere of providing aid for tamed and rescued brown bears and their rehabilitation in Ukraine and to ensure activities of the respective rehabilitation centres for brown bears.

Ukraine is a Party to the Framework Convention on the Protection and Sustainable Development of the Carpathians. According to p. 1 of Article 4 of the Convention 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.

Objective 3 of Strategic Action Plan of the Implementation of the Protocol on Conservation and Sustainable Use of Biological and Landscape Diversity (Bucharest, 2008) to the Framework Convention On The Protection And Sustainable Development Of The Carpathians (Kyiv, 2003) is conservation and sustainable use of species of flora and fauna, conservation of endangered species, including endemic species and large carnivores of the Carpathians.

According to action 3.1, paragraph a), of the Strategic Action Plan the Parties should identify and assess current and potential future threats to the conservation status of the flora and fauna species native to the Carpathians, in particular endangered species including endemic species and large carnivores, within the national territory of each Party in the Carpathians.

The Strategic Action Plan also foresees implementation of conservation measures with the objective to ensure the long- term conservation or sustainable use and recovery of endangered species, including endemic species of flora and fauna and large carnivores (Action 3.2, paragraph g)) and in border areas in particular (Action 8.1, paragraph b)).

Recommendation No. 100 (2003) on conservation of large carnivores in the Carpathians, adopted by the Standing Committee of the Bern Convention on 4 December 2003 recommends the Czech Republic, Hungary, Poland, Romania, the Slovak Republic and Ukraine, and invites Serbia and Montenegro, to cooperate to jointly prepare a Carpathian Strategy 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 No. 74 of the Standing Committee

Above provides a good basis for continuing joint work with neighbouring states on large carnivores' issues and Ukraine is willing to establish relevant long-term cooperation.