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CONVENTION RELATIVE A LA CONSERVATION DE LA VIE SAUVAGE
ET DU MILIEU NATUREL

Groupe d'experts sur la conservation des grands carnivores

Oslo, 22-24 juin 2000

Rapport

Document établi par
la Direction du Développement durable

Le groupe d'experts sur la conservation des grands carnivores de la Convention de Berne s'est réuni pour la première fois du 22 au 24 juin 2000 à Oslo.

Le Comité permanent est invité à examiner le rapport ci-joint et à

1. prendre note du rapport du Groupe et des renseignements sur la situation des grands carnivores dans la péninsule scandinave ;

2. remercier les autorités norvégiennes pour l'excellente préparation de la réunion ;

3. examiner et, s'il y a lieu, à adopter le mandat du Groupe d'experts (annexe 6) ;

4. examiner et, s'il y a lieu, à adopter le projet de recommandation proposé (annexe 7).

Sommaire

1. Ouverture de la réunion par le Secrétariat et par l'Initiative pour les grands carnivores en Europe (LCIE)

Après avoir souhaité la bienvenue aux participants (voir liste à l'annexe 2), M. Eladio Fernández-Galiano, du Secrétariat, présente le mandat du groupe d'experts. Il est particulièrement heureux d'annoncer qu'en décembre 1999, le Comité permanent de la Convention de Berne a adopté sa Recommandation n° 74 (1999) sur les plans d'action pour la conservation des grands carnivores (voir annexe 4). Etant donné l'adoption de ce texte, le Comité permanent a jugé opportune de créer le présent groupe d'experts.

Le délégué du Portugal propose une petite modification du mandat du groupe, qui est acceptée et adressée pour approbation au Comité permanent. Le mandat amendé soumis au Comité permanent figure à l'annexe 6 du présent document.

Le Secrétariat remercie les autorités norvégiennes de leur accueil chaleureux et de l'excellente préparation de la réunion. Il se félicite que l'Initiative pour les grands carnivores en Europe (LCIE) ait participé à l'élaboration du programme.

Le Secrétariat informe le groupe d'experts que les plans d'action du LCIE concernant l'ours, le glouton, le loup, le lynx et le lynx ibérique seront imprimés ces prochains mois par le Conseil de l'Europe.

Le représentant du LCIE, M. William Pratesi-Urquhart, remercie le Conseil de l'Europe pour l'aide qu'il accorde au LCIE, notamment s'agissant de ses cinq plans d'action et de l'organisation de l'atelier de Tale (Slovaquie) en 1998 et de celui d'Oslo en 2000.

2. Election du Président et du Vice-président

M. Ovidiu Ionescu (Roumanie) est élu président et M. Jon Swenson (Norvège) Vice-président. Mme Gunn Paulsen est élue présidente pour la séance du premier jour, qui porte sur les grands carnivores dans la péninsule scandinave.

3. Adoption de l'ordre du jour

L'ordre du jour est adopté tel qu'il figure à l'annexe 3 du présent document.

4. Gestion des grands carnivores dans la péninsule scandinave

Le premier jour de la conférence est consacré à cette question. Les contributions des participants figurent à l'annexe 1 au présent document.

Bien qu'il n'y ait pas de conclusions officielles à la fin de la première journée, les points suivants semblent faire l'objet d'un consensus auprès de la plupart des participants :

- Les grands carnivores, qui sont un élément essentiel du patrimoine scandinave, jouent un rôle capital dans les écosystèmes naturels et semi-naturels de la péninsule scandinave, si bien que les politiques devraient viser à préserver des populations viables de lynx, d'ours, de gloutons et de loups dans la péninsule. Comme elle est nécessaire pour gérer ces populations, la coopération entre la Finlande, la Norvège et la Suède doit être encouragée dans le cadre de la Convention de Berne et d'autres structures appropriées (Conseil nordique, CBD, etc.).
- Les grands carnivores peuvent nuire à l'élevage de moutons et de rennes pratiqué par les Sami, si bien qu'il faut explorer toutes les solutions pour rendre la co-existence possible et minimiser les problèmes. Il faudrait trouver un compromis entre des intérêts divergents, pour lequel toutes les parties (éleveurs et associations d'aide aux carnivores) doivent faire des concessions. La Convention de Berne, qui offre un cadre approprié à cet égard pour dialoguer, doit être interprétée en faisant preuve de souplesse.
- Le Conseil de l'Europe doit protéger l'identité culturelle des Sami liée à l'élevage traditionnel de rennes, car l'Organisation est aussi attachée à protéger la diversité culturelle des peuples d'Europe.
- Le conflit actuel découle de la réussite de la politique visant à faire augmenter les populations de grands carnivores en Finlande, en Suède et en Norvège, mais les dégâts causés aux troupeaux doivent être limités de manière à ne pas nuire à l'intérêt légitime de l'élevage de moutons et de rennes. Il faut donner la priorité aux mesures préventives, le cas échéant, mais l'élimination d'individus causant des dommages intolérables doit aussi être envisagée.

– Une étude approfondie de l'élevage de rennes et de celui de moutons en liberté devrait être réalisée pour évaluer l'effet de ces activités sur les populations actuelles de grands carnivores par comparaison à d'autres facteurs (pertes d'habitats, surpâturage, etc.).

5. Recommandation n° 74 (1999) du Comité permanent

La Recommandation, adoptée par le Comité permanent en 1999, figure à l'annexe 4 au présent document.

Le Secrétariat lit les principaux points de ce texte. Le Président invite les Parties à la Convention de Berne de l'appliquer en rédigeant et en mettant en œuvre les plans d'action nécessaires à l'échelle du pays.

6. Présentation des contributions des Etats sur la mise en œuvre des plans d'action

Divers Etats présentent des rapports sur la situation des grands carnivores sur leur territoire, qui sont joints à l'annexe 5 pour les pays suivants : Albanie, Autriche, Croatie, République tchèque, Estonie, Finlande, France, Hongrie, Italie, Lituanie, Moldova, Norvège, Pologne, Portugal, Roumanie, Russie, Slovaquie, Slovénie, Espagne, Suisse, Tunisie, Ukraine

7. Examen de questions ayant une importance particulière

7.1. Couloirs écologiques pour les grands carnivores

Dans le cadre de la Stratégie paneuropéenne de la diversité biologique et paysagère, le Conseil de l'Europe est chargé de mettre en place un réseau écologique paneuropéen. Ce réseau se composera de zones noyaux, de couloirs et de zones tampons. Les zones noyaux seront celles qui auront été désignées par les Etats pour les réseaux Natura 2000 et Emeraude. Le Conseil de l'Europe souhaite savoir comment la conception des couloirs peut être adaptée en vue de favoriser la dispersion biologique de certaines espèces comme les grands carnivores. Une étude a été demandée à cette fin à M Luigi Boitani *[Document STRA-REP (99) 14]*. M. Boitani présente brièvement l'étude, en soulignant qu'il est nécessaire de préserver des populations de carnivores dans les zones transfrontalières qui doivent servir de couloirs afin de permettre la dispersion et la communication génétique des espèces.

7.2. Migration d'espèces de Slovénie dans les Alpes

Dans le contexte des couloirs, M^{me} Jana Vidic de Slovénie, explique le rôle essentiel que joue son pays pour la dispersion de l'ours et du lynx en Autriche, en Italie et en Suisse. M. Urs Breitenmoser confirme la place particulière occupée par le nord-ouest de la Slovénie, car la population alpine de lynx est maintenant répartie en deux groupes isolés, alors même qu'il serait fortement souhaitable de recoloniser l'est des Alpes. S'agissant de l'ours, la situation est encore plus claire, car les populations d'Autriche dépendent avant tout de migrations en provenance de Slovénie. Malheureusement, la zone qui sert de couloir pour les ours pose de gros problèmes. Bien qu'ils n'y soient qu'en petit nombre, les ours qui s'y trouvent causent 80 % des dommages dus aux ours en Slovénie certaines années, si bien que l'opinion se durcit rapidement contre les ours. Pour maintenir ces couloirs, la Slovénie espère recevoir une aide des pays voisins.

Le groupe décide de faire figurer un paragraphe sur le sujet dans la recommandation qui doit être soumise au Comité permanent en vue d'une adoption éventuelle. Il est aussi proposé que les trois Etats mettent sur pied un projet LIFE concernant la conservation de la population transfrontalière.

7.3. Plan d'action pour le loup en France

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Présentant en détail la colonisation des montagnes par les loups ces dernières années, les délégués de la France expliquent l'importante opposition qu'elle suscite parmi les éleveurs, car les dégâts ont considérablement augmenté.

La France a élaboré un plan d'action pour la préservation du pastoralisme et du loup, qui est présenté pendant la réunion. Le plan révisé vise en définitive à préserver la population de loups en France tout en limitant les dommages qu'ils causent aux éleveurs. Il prévoit de recourir à des mesures préventives et de réduire les populations lorsque les dégâts sont trop importants. Des zones où la préservation du loup sera l'objectif premier seront définies, ainsi que d'autres où la réduction des dégâts aura la priorité.

Le plan révisé tiendra compte de la présence des lieux de reproduction existants, des zones où le pastoralisme est prioritaire d'un point de vue économique et écologique et de l'existence de structures administratives liées à la conservation (trois parcs nationaux et deux parcs naturels).

Le délégué du LCIE présente l'opinion de son mouvement sur le précédent plan d'action pour le pastoralisme et le loup en soulignant que ce serait une mauvaise idée de modifier le statut (protégé/non protégé) du loup dans les différentes zones. Le plan révisé semble plus satisfaisant à cet égard. Le LCIE est disposé à modifier sa position antérieure. Une opinion révisée sera adressée au Secrétariat de la Convention de Berne.

S'agissant des aspects transfrontaliers de la conservation du loup, les participants conviennent que la population des Alpes ne pourra être gérée à bon escient que par une action conjointe des trois Etats concernés (France, Italie, Suisse). Les experts réaffirment l'idée que la population de loups des Alpes doit être gérée comme un ensemble distinct même s'il peut y avoir des contacts génétiques avec la population des Apennins. Il ressort aussi clairement des obligations prises par les trois Etats dans le cadre de la convention (et de la Directive Habitats de l'Union européenne, en ce qui concerne l'Italie et la France) que la population doit bénéficier d'un statut de conservation favorable.

Le groupe reconnaît la volonté et l'action du Gouvernement français qui s'attache, à l'instar de la Norvège, à accepter les populations de loups qui ont recolonisé son territoire et à minimiser les différends avec les éleveurs. Un projet de recommandation est proposé pour adoption éventuelle par le Comité permanent (annexe 7).

7.4. Le lynx en Suisse

Le délégué suisse, M. Hans-Jörg Blankenhorn, présente la situation du lynx dans son Etat depuis sa réintroduction il y a une trentaine d'années. Le lynx a colonisé des habitats plus favorables dans l'ouest et le sud de la Suisse, mais sa progression semble maintenant stoppée en raison de l'absence de couloirs appropriés. L'hostilité à l'animal a été grande (et elle l'est encore), bien que les dégâts soient indemnisés par le Gouvernement fédéral et les cantons. Dans certaines zones, la densité de lynx et l'ampleur des dégâts sont élevées, si bien qu'il a été décidé de prélever des individus et de les envoyer dans l'est de la Suisse, où ils peuvent former de nouvelles populations (et peut-on espérer se propager en Autriche). Il n'est pas exclu de limiter à l'avenir les populations saines par les moyens les plus appropriés afin d'éviter que les dégâts ne soient trop élevés.

M. Breitenmoser, responsable du « Statut et de la conservation de la population de lynx des Alpes » (SCALP) évoque aussi l'opposition des milieux de chasseurs en raison de ce qui est perçu comme une pression excessive du lynx sur les espèces chassées. Cet aspect des choses doit être pris en considération en Suisse.

Le groupe prend note des informations fournies, salue les progrès du SCALP – notamment la réintroduction de l'espèce dans de nouveaux cantons (voir annexe 7) – et souligne qu'une population de lynx dans l'est des Alpes serait capitale pour permettre la colonisation par le lynx d'un espace continu allant de la Slovénie aux Alpes occidentales. Un projet de recommandation en ce sens est proposé.

7.5. Les grands carnivores dans les Etats baltes

Le représentant du LCIE fait savoir au groupe qu'une initiative subrégionale a été lancée dans les Etats baltes. Une première réunion s'est tenue en avril à Riga et une deuxième est préparée pour cet automne.

Selon le groupe, il importe que les régions baltes préservent l'état de conservation favorable des populations de grands carnivores qui prévaut actuellement, étant donné les bonnes perspectives de développement économique de ces Etats pendant les dix prochaines années. Une coopération régionale entre les Etats baltes est fortement recommandée (voir projet de recommandation, annexe 7).

Le groupe souhaite aussi qu'il soit recommandé d'instaurer une coopération analogue dans la région des Carpates (voir projet de recommandation, annexe 7).

Le Secrétariat annonce que, dans le projet de programme d'activités au titre de la Convention pour 2001, une aide est prévue pour définir une stratégie concernant les grands carnivores dans les Etats baltes.

7.6. Le loup dans le sud de l'Espagne

Les représentants de l'Espagne évoquent la situation difficile du loup dans le sud de la péninsule. Alors que dans le nord, le loup vit dans des plaines céréalières et dans la montagne où il y a des habitats favorables pour lui, dans le sud, l'espèce survit dans des zones de collines et de montagne où la plupart des grandes propriétés servent de réserves cynégétiques (abritant pour l'essentiel des cerfs élaphes, des daims et des sangliers). Bien que le loup soit strictement protégé dans le sud, l'espèce, qui n'est pas bien acceptée dans ces propriétés, est souvent la cible de braconnages.

Elle est donc très difficile à protéger, bien qu'un plan de régénération ait été élaboré dans la région de Castille-la-Manche. En Andalousie, les populations de loups apparaissent avant tout dans les régions protégées. Une étude sur l'état des populations et les risques auxquels elle s'expose est réalisée par l'Université de Jaén.

Le groupe prend note des renseignements présentés et formule une recommandation spécifique concernant l'Espagne (voir annexe 7).

7.7. Informations sur les grands carnivores en Albanie et dans « l'ex-République yougoslave de Macédoine »

Le représentant du LCIE évoque l'absence de renseignements sur les grands carnivores vivant dans ces deux Etats. M. Urs Breitenmoser, responsable du projet lynx dans les Balkans, présente brièvement les résultats d'une réunion sur la conservation du lynx dans le sud des Balkans et insiste sur l'importance de préserver une population viable de lynx en Albanie, dans « l'ex-République yougoslave de Macédoine », en Bosnie-Herzégovine et en Yougoslavie si l'on veut que le lynx fréquente le territoire de la Bulgarie et de la Grèce.

7.8. Evolution de la population de lynx ibérique

M. Borja Heredia, délégué de l'Espagne, et M. Alejandro Rodriguez donnent une présentation mise à jour de la situation de l'espèce en Espagne (voir annexe 5). En mars 1998, un atelier d'évaluation de la viabilité des populations s'est tenu en coopération avec l'IUCN. En 1999, une stratégie de conservation du lynx a été approuvée par la Commission nationale de protection de la nature. L'état de l'espèce continue de s'aggraver, si bien qu'elle est devenue l'espèce de félins la plus menacée du monde. La taille des populations était évaluée de 1 000 à 2 000 bêtes en 1990, mais le nombre d'individus a certainement diminué. Les autorités espagnoles ont lancé de nouvelles études et des analyses génétiques, et entrepris de conclure des accords de gestion avec des propriétaires terriens (pour plus de détails, voir le rapport de l'Espagne et la contribution de M. Rodriguez à l'annexe 5).

Bien que de nombreux projets de conservation largement financés aient été élaborés ces dernières années, et que certains soient toujours en cours de réalisation, il y a tout lieu de penser qu'ils n'ont guère servi à améliorer l'état de conservation des populations. Un projet de conservation *ex situ* axé sur la reproduction expérimentale en captivité a été élaboré et sera soumis pour approbation à la Commission nationale de protection de la nature.

Au Portugal, la situation n'est pas non plus favorable. Une étude nationale a mis en évidence l'existence de cinq zones (dont trois transfrontalières) qui accueillent moins de 40 à 50 individus (voir le rapport du Portugal à l'annexe 5).

Le groupe prend note de ce déclin regrettable de l'espèce. Après avoir débattu de certaines questions soulevées par la situation, il élabore une recommandation sur le sujet (annexe 7).

8. Recommandation éventuelle au Comité permanent

Voir projet de recommandation à l'annexe 7.

9. Activités futures du groupe – fonctionnement du groupe d'experts entre les réunions

Le Secrétariat fait savoir que le Comité permanent réexamine les modalités de travail de l'ensemble des groupes de travail. Il encouragerait une coopération plus étroite avec les différents organes de bénévoles. En ce qui concerne le présent groupe d'experts, il est proposé de conclure un mémorandum d'accord entre le Conseil de l'Europe (en qualité de Secrétariat de la Convention) et l'Initiative pour les grands carnivores en Europe (LCIE) de manière à ce que la réunion du groupe d'experts soit combinée à des réunions du LCIE et que celui-ci joue un rôle plus affirmé dans le suivi de la Recommandation n° 74 du Comité permanent. La prochaine réunion du groupe d'experts pourrait ainsi avoir lieu en 2003, lors de la réunion plénière du LCIE. Le travail entre les réunions pourrait être organisé en collaboration avec le LCIE et le Secrétariat du Conseil de l'Europe.

Le groupe espère qu'un tel accord pourra être conclu. Le Secrétariat remercie le LCIE de l'extrême ouverture dont il fait preuve face aux projets lancés par le Secrétariat de la Convention de Berne et annonce qu'il œuvrera avec le LCIE pour conclure un tel mémorandum.

10. Divers

Néant.

A N N E X E 1

Contribution pour le séminaire « Les grands carnivores dans la péninsule scandinave »

1. Welcome

by Mr Jo Stein Moen, Assistant Deputy Minister of the Environment

Chairman, experts and secretariat of the Bern-convention, ladies and gentlemen.

It is a pleasure for me, on behalf of the Ministry of Environment in Norway, to welcome you all to our country. We are proud to host this meeting, and we are eager to make this a valuable experience for all of you. We hope to be able to present some of the challenges and conflicts arising from carnivore management in Scandinavia, with focus on both the biological and ecological aspects, and depredation problems and consequences for sheep farming and reindeer herding. As you all know, carnivores are of nature predators. Usually, if their prey is wildlife populations not utilised by man, carnivores are regarded as a symbol of a sound ecological environment. However, when they turn to other prey, which we either keep for farming, pet animals, or where man is a competing predator through hunting, carnivores very soon become a difficult management issue.

In Norway, the management of carnivores is very much a political question. In 1992 the parliament had a broad discussion on all aspects of carnivore management, and concluded that Norway should strive to establish viable populations of bear, lynx, wolf and wolverines. At the same time we should try to make depredation problems as small as possible, without endangering the population goals. As a consequence of this policy, the carnivore populations have grown throughout the 1990's. And growing populations generate more depredation problems on livestock and semi-domesticated reindeer herded by the Sami-people. The increasing populations and damage problems generated another full parliamentary debate in 1997, where the existing policy of 1992 was confirmed. Since then, single topics in carnivore management have been discussed in the parliament several times a year, but the general policy of 1992, confirmed in 1997, is unaltered.

At this point I should perhaps add that we regard the Norwegian conflict with carnivores partly to be a result of past history of over-exploitation of the populations, and partly a result of our rural district-policy, where we want to keep the tradition of a small-scale diverse farming communities throughout the country. I know that you will be given more details on this matter later on today, so I will not go into further details. But I still want to emphasize that while we killed off carnivores and lowered the population levels to close to zero, we opened for a change in agricultural practices. For the past decades we have developed a practice of free-ranging sheep and extensively herded reindeer spread over most parts of Norway. This change of practice has altered the prey base of carnivores in Norway, and our ability to cope with the problems. When we implement a carnivore policy which aims to increase carnivore numbers and re-establish them in new areas, we of course run into major conflicts with other interests in the society!

But, and this is important in the context of this conference:

Those conflicts are anticipated. We know they are coming, and we have to be able to deal with them. Anyhow, there is no simple solution available to us. We can not kill all carnivores, we can not remove all the sheep or reindeer, and we can not teach the carnivores not to eat sheep or reindeer. So where does that leave us? It leaves us with the only possible answer: We have to learn to live with the carnivores and with the conflicts, and step by step find old and new ways to cope with the conflicts.

We believe that this is not a question where it is possible to be fundamentalistic either way. Conservationists acting and arguing against the taking of any carnivore individual are keeping the fire burning as much as a farmer advocating the extermination of wolves. Mind you, such views are the extremes. But those views are often what catches the interest of media, and thereby are presented to the public. That is why the Bern-convention and conferences like this are important. It gives the participants a possibility to exchange views on common problems, to hear all parties at the same time, and to confront and learn from each other. Hopefully this conference will also result in specific recommendations to the parties. Thus, the conference will provide both the experts, other participants, and press with a common background and information. Finally, let me remind you all that managing carnivores is not really a biological issue. It is about people and their preferences and attitudes.

On behalf of the Ministry of Environment, I wish you all a very good conference. Thank you very much for your attention.

2. Large Carnivore Management in Norway

by Mr Terje Bø, Head of Section, Directorate for Nature Management

Chairman, experts and other participants, ladies and gentlemen

The theme of my presentation here today is about how we manage large carnivores in Norway. This is indeed a complex and difficult matter, primarily because it contains a very large variety of problems and different angles. Anyhow, I will try to give you some headlines, and pursue some of those in more detail, either in this presentation, or if questions arise, later today during the panel debate. To give you some background, lets keep in mind the management goals given in today's regulation on management of large carnivores in Norway.

Management regulations of July 93 (Will be revised in July 2000)

§ 1 Aim

The aim of this regulation is to ensure that populations of bear, wolverine, wolf and lynx are viable in the long term. Within this frame predation caused by these carnivores on sheep/cattle and reindeer shall be kept as low as possible.

Let's then look at some history:

You have heard from The Ministry of Environment today how the current management policy of rebuilding populations, and at the same time prevent damage to livestock and reindeer, have been debated by parliament twice during the 90's. This policy, and the need to rebuild populations is historically caused by a population decline. If we go back to around 1840, state bounties were introduced to encourage the killing of large carnivores and a lot of other species. Large bounties and good prices on pelts led to general population decline. In fact, bears and wolves were functionally extinct by the 1970's. To illustrate this, lets look at the development of the different populations as we can interpret from the hunting statistics.

1. Slide of bear hunting statistics
2. Slide of wolf hunting statistics
3. Slide of lynx hunting statistics
4. Slide of wolverine hunting statistics

So, as you have seen from the slides, the populations have been very low in numbers, this of cause affects the distribution throughout the country. As an example we can look at the distribution of lynx and bears through this period.

5. a. Slide of bear distribution
5. b. Slide of bear distribution

6. Slide of lynx distribution

Historically low numbers and limited distribution are factors that may well be important in deciding future management practice, and shed some light on different management options. We are therefore currently funding research on genetic variation in all four species. Not surprisingly, results indicate a previous bottleneck situation for all the carnivore species. This should be kept in mind, especially when we consider population viability, and when we evaluate current management

Because of the low numbers, conservation measures were introduced in the 1960' and 1970's. As a consequence populations have grown in numbers and spread back into habitats from which they were exterminated. This is clearly a result of reduction in kill rates of carnivores, caused by the conservation measures implemented in the 60's and 70's. It does not mean that we have eliminated killing carnivores, neither legally nor illegally. Overall mortality may have slowed down the population growth, but still the mortality has been lower than production, and consequently there has been room for population growth. The present situation is given in the next slide.

Status of carnivore populations 2000 (Norway)

Species	*Numbers*	*Trend*	*Distribution*
Wolf	**36-39**	**Inc.**	**Inc**
Lynx	**500+**	**Stable**	**Inc**
Wolverine	**200+**	**Inc**	**Inc**
Bears	**26-55**	**Inc**	**Stable**

But, establishing viable populations is only one part of management goals set by parliament. To reduce the conflict with other society interests, and especially reduce the number of livestock and reindeer killed is the other part. Those two goals are clearly in conflict with each other, and it may seem impossible to achieve both at the same time. Common sense tells us that increasing carnivore populations kill and eat more prey. So what do we do then? There are a lot of options, but the management today is based on two main strategies: Those strategies are:

1. **Management of carnivores must be based on a principle of area zonation**
2. **Carnivores causing excessive damage run the risk of being killed.**

Area zonation:
Core areas for bear and wolverines, management zones for wolves and lynx.

Killing carnivores:
Ordinary hunting for lynx, (quota-regulated)
Licensed hunting and taking of individuals for wolves, bear and wolverines

One important effect of those principles is that they create a better way for people to anticipate management decisions in any given situation.

To be able to show you a little more how those principles work, lets concentrate on the two species lynx and wolf. This is not a random choice, because they represent the two species where complaints against the management have been brought to the attention of the Bern Convention. It is also the most numerous (lynx) and the most endangered (wolf) of the populations.

There is also available comprehensive documentation in English in the material you have received when arriving at this conference.

By describing the management of these two populations in more detail, I hope you will get a better understanding of how those principles work. Lets start with the lynx.

The lynx has been a widespread and relatively numerous species in Norway in the last few decades. In 1997 the parliament found that lynx should be managed in a way that kept a relatively large number distributed over most of Norway. But in the areas to the west, where lynx were found only as stray animals, and the depredation risk is high due to a high density of free-ranging sheep, lynx were to be kept out of this area.

7. Slide of lynx-free areas

This has since been implemented in the management practice. We can of course give no guaranties that lynx will not occur occasionally in the west coast, but current regulations give farmers and other interested parties access to a non-regulated hunt for two months (February-March) each year. So far this has been sufficient to avoid large-scale depredation by lynx in the western coast of Norway.

In the rest of the country local populations are kept fairly stable. We kill about a 100 lynx each year, of an estimated winter-population before hunting of 500 + individuals. The hunting is regulated by fixed quotas, where total number and number of adult females are regulated. All carcasses from the hunt is collected and analysed for different aspect like sex, age, radioactivity, reproduction, stomach contents, genetics etc, etc.

The county governors have the authority to issue a licence to kill lynx out of the hunting season, if they cause damage to either sheep or reindeer.

Then lets have a look at the wolf. The wolf population has just recently recovered from a very low population level. If we look at only the last decades, the wolf was bordering on total extinction in both Norway and Sweden.

8. Slide of population development for wolves

We will shortly receive the annual report from the population monitoring project of wolves. Preliminary results are that the population in winter 1999/2000 consisted of 67-81 (62-78 in 1999) wolves in the winter population in Scandinavia. The composition was 6 functioning family groups, or reproducing wolf packs. In addition to those packs we had 6-10 pairs, and we expect new packs will be established this summer. Thus, we expect around 10 breeding pairs this summer, and a further increase in population size.

The management goal we are working at just now, given by parliament in 1997, is that we want 8-10 family-groups of wolves before we reconsider our management tools. We know that managing wolves will be difficult in the future. A high depredation risk and predation rate, high reproduction potential and high dispersal rates and dispersal distances make the wolf situation complicated towards the sheep farming in Norway. Some of you will ask why it is not complicated towards the reindeer herders? This is because of the management zoning policy for wolves. The parliament decided in 1997 that all of the sami reindeer herding areas should be kept free of reproducing wolf packs and pairs.

9. Slide of sami reindeer herding area

This year the government has proposed to further limit the area where wolves shall be allowed to establish reproducing units. This proposal will shortly be distributed in a general public hearing, and revised before it is finalised in winter 2000/2001. Generally, I believe that you do not have to a prophet to guess the reactions among sheep farmers and some of the other people living in those areas. Those living outside the "wolf Zone" will want to stay there, and those inside will want the zone changed so that they will be on the outside.

10. Slide in proposal for wolf zone

The government proposal advocates lifting management restrictions on wolves outside of the wolf zone, allowing the taking of individual wolves on a relatively low level of depredation on livestock. Lifting the restrictions will also include the removal of pair and family-groups established outside of the wolf zone. As you can see of this slide the area where wolves will be allowed to expand is not very large. You may also note that two og the existing wolf packs are established outside of the wolf Zone.

So what are the conclusions on all those area based zoning practices, whether it is wolf zone, core areas or whatever. The conclusion is that those are just tools to make the carnivore management predictable to all involved. The same management practice is implemented on different levels inside or outside the management zone/core area. For instance, a licence to kill a bear will be issued on a low level of depredation on sheep if it is outside the core area, compared to inside, where the bear population is given priority.

Management zones/core areas:

Inside	**Outside**
Carnivore priority	**Sheep/reindeer priority**
Preventive measures	
Change of agr. practice	**Licensed hunt**
Quota-regulations on lynx hunting	**No quota for lynx hunting**
Carnivores killed on high levels of depredation	**Carnivores killed on low levels of depredation**
Priority for money	**Low priority for money**

Now, this all sounds reasonable and predictable for all parties involved. But, the carnivores do not care much about bureaucratic decisions on borders and numbers. Therefore, conflicts arise continuously both inside and outside the management zones, and they need to solved quickly. Thus, carnivore management in Norway is a profession of fast compromises between two conflicting management goals. Whatever the outcome of a given situation is, we can be

assured that one or both sides in the conflicts disagree. This is probably also why the press finds carnivore management a good thing. There is always a conflict going on!

There are many possible ways to solve or reduce this conflict, but one essential factor has to be available, and that is money. Money for compensation, money for hunting, money for change of agricultural practices, preventive measures, research and development, etc.

So far, with the political interest in this issue, money has been available. Our budget for the year 2000 is now approximately 132 million NKr, or 15,3 mill USD/16 mill EURO.

This budget goes mainly to compensation and preventative measures.

Carnivore management budget 2000

*Total 132 million NKr (15,3 million USD)**

Theme	Mill. NKr	Mill USD
Comp. Sheep	**55 mill**	**6,4 mill**
Comp. Reindeer	**25 mill**	**2,9 mill**
Preventive measures	**42 mill**	**4,9 mill**
Research	**4 mill**	**0,5 mill**
Monitoring	**4 mill**	**0,5 mill**
Hunting	**2 mill**	**0,2 mill**

*** (excluding salaries etc for management authorities)**

Finally let me conclude this presentation with some opinions. Be aware that what you have heard in this presentation is a very short version of a complex management situation. My colleagues and myself will of course be available to elaborate on those and other topics you want to hear more about during this conference.

You must also be aware that we do not claim to have the solution to the conflict situation with carnivores regaining lost territory. We do not believe that there is such thing as a simple solution, only a lot of compromises and hard work from all involved. Only that way we will be able to balance the different interests involved in this conflict.

Conclusions:

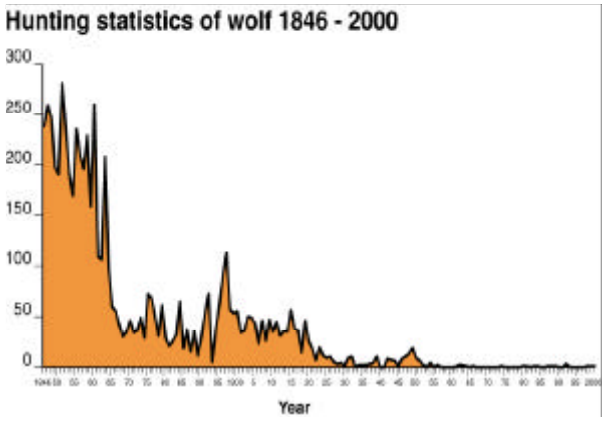
- **The policy of viable populations stands.**
- **No time schedule to achieve this is given.**
- **Management options must be a dynamic tool, adjusted as populations develop.**

Research and monitoring are essential to create a common base of understanding processes, both biological/ecological and human attitudes.

We have a firm policy of establishing and keeping viable populations of the species involved. This policy is not likely to change. Not only because of our own wildlife management regulations, but also because we have taken on an obligation through signing different international agreements, including the Bern Convention. I believe that we can discuss the ways and means to fulfil those obligations for hours and days, and other countries may have a different approach to this than Norway. We consider our national and international obligations as an obligation of results, and methods to be adjusted and implemented at our own timing and priority. We know that killing carnivores is controversial both nationally and internationally. Still, we believe that the taking of individuals is necessary, both to avoid extreme depredation on livestock and reindeer and to give both people, management and prey the necessary room for adjustment.

We know that we have to live with the conflicts for many years to come. Therefore we hope that this conference is a start of a process that gives us opportunity to report more in detail on developments, and have discussions on current management options.

Thank you very much for your attention


Hunting statistics of wolf 1846 - 2000
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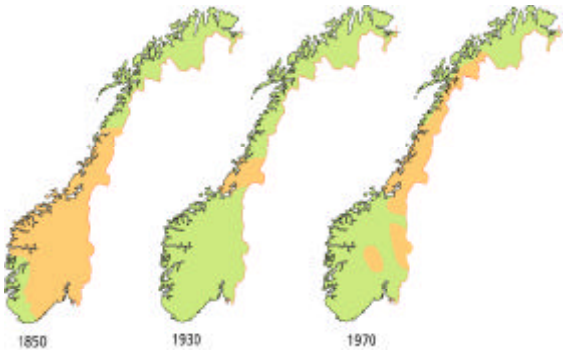

Lynx distribution 1850-1970

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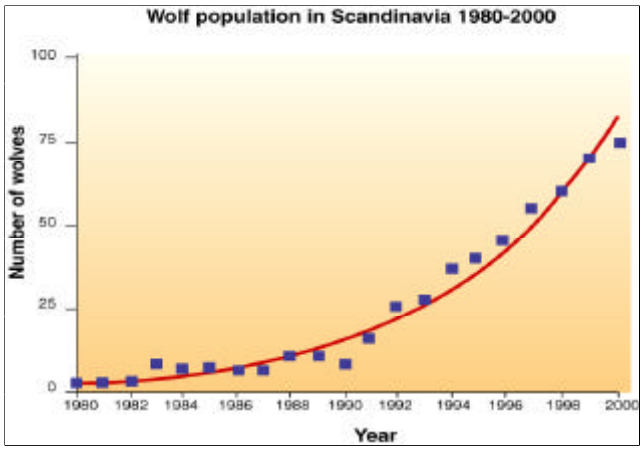

9.

Political goals and promises (Norway)
(St. meld. 35 (96-97)/ Inst. St. 301)

Viable populations of wolf, bear, lynx and wolverine.
Maintain harvesting of the pasture fodder -resources by free grazing livestock and reindeer at 1997 level.
Keep the farmer's economic consequences from re-introduction of large carnivores at a reasonably low level. (example: full governmental compensation for loss of animals due to large carnivores is authorized by law.
Reduce conflicts

The way to solve problems and reach the goals

A list, proposed by the government containing 20 loss -preventive actions.

The problems between sheep farming and large carnivores

1. Preventive actions

Preventive actions affecting livestock have low effect and/or are extremely expensive.

An example is a herding project in the Speke Valley, 1999 where herders looked after 2400 grazing sheep protecting them from 10-12 wolves. Losses were reduced, but the costs was 9 mill NOK (= 74 mill EUR).

This year many loss-preventive projects were, as a result of cooperation between farmers and the government, planned in detail. When the extent and costs for these projects increased further, however, the Norwegian government could not come up with the funding required as promised.

Preventive actions affecting carnivores, including the possibility of taking out special killer -individuals, are not sufficiently used to reduce losses. The government has maintained strict protection of wolf and bear on an individual level, while license - and quota hunting for lynx and wolverine has not been successful.

2. Population size - large carnivores

There is always a debate going on regarding the size of populations of carnivores we have and need. Some organizations demand keeping self-sustainable populations of large carnivores in each and every Scandinavian country, no matter how small the countries are, and irrespective of costs and conflicts. Finland and Sweden have already proposed keeping quite large populations, which will of course also affect sheep farming in Norway.

3. Loss of livestock

Estimated average loss of free grazing sheep over time and regions in Norway without large carnivores would have been 3.5 %, which is low compared to other animal husbandries. Since large carnivores were reintroduced (end of the 1980s), the losses of livestock have increased heavily each year. Wolves, which for several reasons often cause the worst conflicts, have lately developed less fear of humans and have started to kill livestock even on farm fields.

In 1999, farmers applied for compensation for more then 50 000 sheep. This corresponded to 6 % of the free grazing sheep in average for the country, even if loss due to predation is still marginal in the south and southwest part..

The history of pasture use in Norway

The availability of rich pastures has been the main reason why human settlements in inland Norway have been possible. Every part of the so called "wilderness" of Norway has, since old times, been divided into pastures representing a farm's or a group of farms' traditional grazing -rights. Today 33 400 farms base their production on animals let out to graze free (1998).

Figure 2

The government has over the last decades strongly encouraged people to continue to live in rural areas and harvest from their natural resources.

The value of grazing our uncultivated pasture

In addition to 2.1 mill sheep, 65 000 goats, 240 000 cattle and 6 000 horses are let out to the pastures each summer. The amount of fodder these animals harvest in uncultivated pastures each year corresponds to 320 mill feed units (1 feed unit = 2800 kcal). To be able to produce the same amount of energy on cultivated fields, we would require 5800 average Norwegian grain producing farms as well as huge amounts of chemical fertilizers, herbicides, tractors, harvesters and other equipment.

Norwegian landscape and nature

The number of farms and animals in Norway was previously much higher than it is today, and our landscape and nature are therefore strongly influenced by the activity of humans and grazing livestock. Nevertheless, some people, in and outside Norway, still seem to believe that our rural areas can be compared to the wilderness of for example North America.

Reduced grazing and human activity has recently resulted in, like many places in Europe, a high degree of overgrown areas. A lot of species which are now in IUCN`s Red Data Book, live in biotopes which exist only in such semi-natural landscapes (30 % of the vascular plants, 33 % of the butterflies, 76 species of the field -fungus, and 27 species of birds). It should be unnecessary to underline the ecological advantage of livestock grazing in this context.

In Hedmark county, which has the longest history of large carnivores in Norway, losses were steady at 3.3 % until 1988. Now losses are close to 9 % despite the intensive use of loss-preventive actions and reduction of farms in the worst areas.

Since large carnivores ar e quickly spreading to new pastures and because finding the carcasses and assessing the cause of death often might be difficult, we are sure that the hidden numbers of loss to predators are high.

The government is not capable of keeping losses and conflic ts down according to the aims it expressed when Norwegian carnivore management was planned and approved.

5. Compensation for loss

Despite the fact that the difference between number of lost animals before and after re -introduction of large carnivores are higher than the number of animals farmers claim to lose due to predation, only 60 % of sheep the farmers applyed compensation for are being compensated. In 1997, the loss higher than normal without large carnivores, was 49 500 sheep, while only 44 300 s heep were applied compensation for.

Figure 3

Bern, 25 September 2000 practices, which operate on participants herding and guarding, and on sheep races with no

l'identification par analyse génétique des indices de loup (poils, fèces) à travers l'évolution de la répartition et de la composition des meutes et l'exploitation des ressources alimentaires dont le cheptel domestique.

- à mettre en place des actions de prévention et de compensation des dommages, comprenant la mise en place de mesures de prévention des dégâts sur les troupeaux dans les zones exposées au loup: 150 chiens de protection, 100 parcs de regroupement nocturnes, le recrutement de 20 aides bergers pendant la saison d'estive et de quatre techniciens assurant le conseils aux éleveurs ainsi que la compensation des dommages causés par le loup.
- à l'amélioration de l'acceptation du loup par les populations concernées grâce à des actions de communication (diffusion des connaissances et sensibilisation)

Le plan d'action national

Un plan d'action pour la préservation du pastoralisme et le loup dans l'Arc alpin a été rédigé conjointement par les ministères chargés de l'agriculture et de l'environnement afin d'assurer une cohabitation durable entre le loup et le pastoralisme. Ce plan (diffusé en séance) était basé sur le principe d'un zonage des alpes entre des territoires d'expérimentation et des territoires de gestion du loup, a fait l'objet d'une large concertation auprès des partenaires locaux et des instances associatives et socio-professionnelles.

Des modifications importantes ont été apportées au plan initial avec un abandon d'un zonage des Alpes en ce qui concerne le statut de protection du loup. En revanche, des territoires d'action prioritaires seront désignés en fonction de leur importance pour la conservation du loup et du pastoralisme, où les actions en en matière de prévention des dommages seront réalisées. Sur l'ensemble du territoire alpin, le loup est protégé, mais dans le respect des engagements de la France vis à vis de la directive Habitats et de la convention de Berne, des interventions ponctuelles (capture ou destruction) peuvent être autorisées selon un protocole strict, sans que cela n'empêche l'accroissement de la population.

Une coordination transfrontalière franco-italo-suisse, a démarré avec la constitution d'un comité de coordination transalpin sur le loup, qui s'est réunis à Paris en juin dernier. Ce comité a pour but l'échange d'informations sur l'état des populations et une harmonisation des politiques de gestion du loup dans les trois pays.

II. L'ours

Situation

Dans les années 1950, la population d'ours des Pyrénées est estimée à 70 individus. Actuellement il ne subsiste que 4 à 5 ours adultes, un subadulte et un ourson dans le Haut-Béarn, ainsi que deux adultes réintroduits en Pyrénées centrales à partir de Slovénie en 1996 et 1997 et quatre subadultes.

Mise en œuvre du plan d'action au niveau national

La survie de cette espèce protégée passe par la conservation des habitats naturels qui lui sont favorables et l'acceptation de sa présence par les bergers qui subissent les attaques et par les hommes dont les activités occasionnent des dérangements préjudiciables à l'animal : réalisation de pistes et routes sylvo-pastorales, coupes forestières, développement de certaines formes de tourisme, chasse mal contrôlée.

A la suite d'un plan de conservation de l'ours établi en 1984 qui s'est heurté à des oppositions locales, deux chartes ont été signées par les collectivités locales et l'Etat :

- L'une en 1993 a permis la réintroduction expérimentale de trois ours slovènes (génétiquement proches des ours pyrénéens) dans les Pyrénées centrales. Malgré les efforts entrepris pour favoriser l'acceptation locale des ours réintroduits et de leur descendance, les dégâts causé par les ours subadultes en 1999 et en 2000 en Ariège dans un secteur qu'ils ne fréquentaient pas jusqu'à présent ont entraîné un fort rejet local qui s'est traduit par le vote d'un amendement demandant le retrait des ours introduits dans les Pyrénées, lors de l'examen de la loi chasse au parlement. Si cet amendement a finalement été supprimé, le Ministère de l'Aménagement du Territoire et de l'Environnement s'est engagé à réaliser un débat public concernant le programme de réintroduction des ours, tout en renforçant les actions de prévention des dégâts causés par les ours. Un audit du programme sera réalisé au cours des prochains mois afin de rédiger un plan d'action pour les ours des Pyrénées, qui sera soumis à débat public.

- L'autre charte, signée en 1994 a permis la mobilisation de responsables du Haut-Béarn pour la conduite de diverses mesures favorables à la fois au développement économique des vallées et à la nécessaire préservation de l'ours : meilleur suivi des animaux, nourrissage, aménagements et plantations forestiers adaptés, prévention des attaques de troupeaux. Un projet de renforcement de la population d'ours béarnaise n'a pas pu se concrétiser en 2000. Le bilan des cinq premières années de l'action de l'Institution patrimoniale du Haut-Béarn dans la mise en œuvre de la charte de développement durable des vallées béarnaises et de protection de l'ours devrait permettre d'établir les bases d'une

restauration de la population d'ours et de son habitat dans le cadre du contrat de plan Etat -régions qui débute en 2000.

III. Le lynx :

Situation :

Le lynx est présent en France sur trois massifs :

1. Dans le massif jurassien :

Les lynx issus des réintroductions effectuées en Suisse se sont installés dans ce massif dans les années 70. Leur aire de présence couvre actuellement la quasi -totalité des massifs forestiers sur une aire continue de 5 500 Km².

Dans le massif alpin :

L'aire totale de présence couvre une superficie de 2 200 Km², répartie en plusieurs îlots de superficie minimum localisés dans les cinq départements des Alpes du nord. Aucune aire de présence continue n'a pu être mise en évidence.

Dans le massif vosgien

Le lynx a fait l'objet d'un programme de réintroduction d'animaux en provenance de T chécoslovaquie dans les années 80. Il couvre actuellement une superficie totale de 1 700 Km², formant une aire continue sur le versant alsacien des Vosges moyennes et du sud. La colonisation des Vosges du nord ne s'est en revanche pas encore produite. La poursuite de la réintroduction dans cette région pourrait être envisagée.

La prédation sur le cheptel domestique :

Les dégâts sur les moutons sont essentiellement centrés dans le massif du Jura. En 1998, 51 troupeaux ont été attaqués dans ce massif causan t la mort de 147 ovins, soit moins de 0.5% des effectifs ovins. Si la plupart des élevages ne sont pas touchés ou de manières épisodiques, chaque année deux à six foyers d'attaque sont identifiés, liés à l'apparition d'individus ayant un comportement préda teur sur les ovins. Une à deux autorisations de capture de ces individus à problèmes ont été délivrées chaque année, entraînant une diminution des pertes.

La possibilité, parallèlement à l'indemnisation des dégâts, d'intervenir ponctuellement sur les lynx à problèmes, a permis de diminuer les tensions sociales qui existaient au moment de son retour, et a contribué à son acceptation par la population locale.

5.7. Hungary

Short report on the conservation status and government's projects on the Hungarian pop ulation of Wolf and Lynx as large carnivores
by the Ministry of Environment and Regional Policy

Distribution

Wolf

At the end of the 19 century the Hungarian wolf population declined significantly and it has been extirpated fr om most of the country. During the 20 century only occasional occurrences have been recorded. These occasional occurrences were most "frequent" in the periods of World War I and II. For current occurrence only few, sporadic and sometimes contradictory data are available. It is certain, however, that the wolf is present again in the country since ca. 1990. Two major ranges developed by the end of the 20 century, which are not connected with each other neither in the origin of the animals, nor in the habi tat's local conditions.

Out of the two areas, the population is more stable with more frequent occurrences in the north -eastern part of Hungary. The resettlement (spontaneous range expansion) originated from the Carpathian population. In the region of Aggtelek and Zemplén hills the continuous presence of a small population can be concluded from various observations, with signs of reproducing individuals. The source of the animals is thought to be from the migrating Slovak population. Sporadically, wolves ap pear in some other regions of the Northern Uplands, such as in the Bükk. According to the observations the wolves occupy the inner regions of the mountain's deep forests. In this region most of the forests are actively managed and beside timber production game management is also significant. In the last 15 years, wolf occurrences were registered also in the eastern part of the country, at the Romanian border and in the north -eastern Szatmár-Bereg region, even in open lowland areas.

At the southern part of the Danube-Tisza Plane region and in the Bácska region, migratory individuals settled down from Yugoslavia and /or Romania. The occurrences are more casual here, but there are confirmed records of specimens with youngs.

Lynx

Although the lynx occured in th e present Hungarian territory for centuries, in the 20 Century it was considered to be extinct in Hungary. As a consequence of the growing Carpathian lynx population, the number of records started to increase in the country since the 1980's. Its Hungaria n occurrence is now limited to the region of the Northern Uplands. The occurrence of the lynx is tightly linked to forested hilly areas. The pattern of occurrences is varying from year to year. According to the surveys permanent or occasional occurrences were registered in the Börzsöny, Mátra, Zemplén and Aggtelek hills, with sporadic records in the Bükk and in the Tarna hilly region in the last 15 years.

Brown bear

Occasional, rare immigrant in the most northern, hilly region. The individuals are vagrants from the Slovak population.

Population size

Wolf

Similarly to a number of other countries, lack of information and, in some cases, unreliable data characterise the state of the Hungarian knowledge. According to the available shooting data, questionnaire surveys, and the occasional field surveys the population size has been rather fluctuating in the last three decades, but it shows an increasing trend. Observations refer to 1-3 specimen in one pack. According to our present knowledge the number of wolves i s likely to be around 15-25, but out of this, breeding families are not more then 2 -5. No information is available on the offspring's number.

Lynx

Similarly to the wolf, there is a lack of sufficient information on the numbers of lynx in Hungary. Accordin g to the available shooting data, questionnaire surveys, and the occasional field surveys the population size in the last two decades has been fluctuating, but with an increasing and more balanced trend then in case of the wolf. Signs of reproduction (i.e. young individuals) are also recorded. However, most recently the population is probably declining (disappearance of well-known occurrences).

Compiled by Zsombor Baltay, Gábor Magyar and Gábor Nechay, considering also the action plan on and drafted by László Szemethy, Gábor Firmánsky and Miklós Heltai.

Brown bear

Occurrence of single individuals or individuals with cubs are occasionally recorded along the borderi ng area to Slovakia (occasional sightings of bears and observations of tracks and droppings).

Conservation status

Wolf

Until 1985 the wolf was considered to be extinct in Hungary. Following the reappearance of the wolf in the Hungarian fauna in the secon d half of 1980s, hunting was permitted by the regional hunting authorities which, following heavy media criticism after the first cases, asked the approval of nature conservation inspectorates as well.

Since 1993 it is listed as protected species. Its "na ture conservation value" or "penalty value" is 50,000 HUF (ca. 200 Euro). Deliberate killing, on an individual basis, is allowed only with authorisation of the competent National Park Directorate (these directorates operate outside the areas of national parks as regional nature conservation authorities as well, in the administrative regions).

Lynx

Similarly to the wolf, lynx was also considered to be extinct (last individuals observed in 1915) in Hungary up to the 1980s. On an individual basis hunting of s tragglers was permitted occasionally in a similar way as in the case of wolves. Since 1988 the lynx is protected and since 1993 listed as a strictly protected species. Its "nature conservation value" or "penalty value" is currently 250.000 HUF (ca. 1000 Eu ro). No hunting permit was issued to lynx since the beginning of its protection.

Brown bear

Since 1993, the brown bear is legally protected, its "nature conservation value" or "penalty value" is 50,000 HUF (ca. 200 Euro).

Nutrition

Wolf

The nutrition hab its of Hungarian wolves require further surveys. The sporadic Hungarian observations concur with international data. The wolf's wintertime prey consists mainly of mouflon and young deer (calf, hind) in the Zemplén, while in the summer period mainly of smal l rodents. According to the observations in Bácska, wolves obtain food mainly from carcass disposal sites and from sheep flocks.

Lynx

Domestic observations merely show the lynx to prey predominantly on roe -deer and mouflon, occasionally on red deer calves. Its feeding behaviour/pray spectrum needs certainly further studies.

Brown bear

No data from Hungary exist. Feeding habits are probably mostly vegetarian.

Habitat requirements

Wolf

Analysis of exact habitat requirements in Hungary is not available, a comprehensive survey needs to be conducted in the matter. According to current data it turned out that wolves stay close to the centre of their range.

Lynx

There is no detailed information about the habitat requirements of lynx. Observations exist only fr om large continuous forests.

Brown bear

The individuals coming over to Hungarian territory stay in hilly and forested areas.

Land use, migration

Wolf

Land use and migration is the least known behaviour element. Due to the local habitat conditions, rich pr ey abundance and wolf density, no migration of significant level is expected. It is a question however, whether the detected/observed wolves in Hungary are migratory ones from neighbouring countries or have a permanent territory here; what is the distribut ion of their (moving) range between neighbouring countries; which neighbouring country's

population are Hungarian wolves connected with?
Lynx
The above said is valid to the lynx.

Government's projects

There is no ongoing government's project. However, elaboration of an action plan on lynx and wolf is in preparation. According to the draft plan as main factors of threat are:
– habitat fragmentation
– forest management
– tourism
– extensive livestock breeding
– illegal killings
– other human factors

The main tasks of studies are:
– studies of the feeding behaviour
– range and population monitoring.

5.8. Italy
by the Instituto Nazionale per la Fauna Selvatica

In 1999 the National Wildlife Institute - the Italian government agency for the study and conserv ation of wildlife – has been delegated by the Ministry of Environment to produce an Action Plan for the Conservation of the Wolf. The production of a national action plan represents an important step for the wolf conservation, because Italy is characterised by a highly fragmented political and administrative system, often limiting the coherence of the instruments implemented for addressing wolf management problems.

In respect to the task, between 1999 and 2000 we produced a draft of the plan, that has been recently sent to a list of experts, indicated by the Ministry of Environment, for comments. The planned time schedule is to convene all the experts within this summer, to discuss all the comments, and to than arrive to an agreed version of the action plan for next autumn, and to a final version within this year.

The present version of the draft has been produced n the basis of the guide lines of the European Action Plan, and of the Italian experiences in wolf conservation and management. In respect to the importance of promoting a transboundary co-ordination in wolf conservation, we carefully considered the recent French Action Plan on the Wolf, and the positions of the Swiss experts and authorities on wolf conservation.

The main principles proposed by the present preliminary version of the draft, that will be discussed with the Italian experts, are the following:

1. scope of the Action Plan is to maintain the wolf population in the Apennines, and to promote, in coexistence with people, a further expansion of the species across the Alps, in order to arrive to re-connect the Alpine population with the Slovenian wolves.
2. The conservation of the wolf requires the resolution of the conflicts with human activities. In this respect, it is critical to involve farmers and hunters in the conservation efforts.
3. The presence of an established population of wolves in the Alps, makes essential a transboundary communication and co-ordination among Italy, France and Switzerland in order to promote - carefully considering the different social, political, and economic contexts among the three countries - common guide lines for the management and conservation of the species. In this respect, the creation of a permanent table of consultation among the Alpine countries appe ars an essential step.
4. The control of problem individuals, if based on explicit numerical objectives ensuring the maintenance of a viable population of wolves in the long term, can result to be sustainable for the wolf population, coherent with the international guide lines on wolf conservation, and, under certain circumstances, can represent an effective tool for resolving local conflicts. Nevertheless, wolf control appears socially and culturally unacceptable for a large part of the Italian society, and it is not considered in the management tools included in the Action plan.

Updated information on the re -introduction of the Brown bear to the Italian Central Alps

The range of the Brown bear in Italy is limited to the population of central Apennines, a nd to a residual population of 3 old individuals in the Adamello Brenta Natural Park (Central Alps). More over, some individuals are occasionally recorded on the eastern Alps, arriving from Slovenja and Austria. A translocation project aimed to re -establish a viable population of at least 50 bears in the Central Alps was proposed by the Adamello -Brenta Natural Park administration, in co -operation with the Province of Trento. Therefore, a feasibility study was realised in 1998 by the Italian National Wildlif e Institute: causes of population decrease, habitat suitability, costs of the project, potential impact of bears to human activities, and attitude of residents toward bears were analysed. A survey on the attitude of the local population towards the Brown bear, carried out through 1,500 telephone interviews, indicated a positive opinion of 75% of the residents, raising to over 80% when stating that bears will be constantly monitored, and that problem individuals will be removed or destroyed. In this respect, an emergency team has been created, training rangers to aversion and trapping techniques.

The feasibility study indicated that the translocation has good probabilities to be successful in the medium -long term. In the Central Alps there are still about 1, 700 kmq of suitable habitat for the bear, that can sustain a population of about 50 animals. The predicted cost of the project is high, but it has been considered sustainable by the administrations funding the translocation, and funds for damage prevention and compensation have thus been approved.

On the basis of the positive results of the feasibility study, the project was approved by the Italian Ministry of Environment and by all competent authorities. The re -introduction is partly funded by CEE through a “LIFE” program, and is carried out in co -operation with the National Wildlife Institute and with the authorities of Slovenja, where bears are captured.

The re-introduction, co-ordinated by Dr. Andrea Mustoni, started in 1999; captures in Slovenja were organised by the Forest service co-ordinated by Dr. Marko Jonozovic. A male (Masun, 3-5 years old, 99 kg) was trapped in May 26th and a female was trapped 4 days after (Kirka, 3 years, 55 kg). Each bear was transported to the Central Alps immediately after capture, by using a van with air conditioning and a video system to constantly check the animal. In the first year after release, the 2 bears were located twice a day by radio-telemetry; they moved less than expected and did not cause any damage to livestock or bee-hives. The female moved in an area of about 19,000 ha, while the male, after several months of limited activity, last December started increasing his activity, firstly moving in a valley abut 35 km far from his previous home range, and than going further westward.

On the basis of the encouraging results of the first year, we decided to release 3 more bears (1 male, 2 females) in 2000. Last May Daniza (female, about 100 kg, 3-5 years old), Joze (male, 140 kg, 5-6 years old), and Irma (female, 113 kg, 5 years old) were captured in Slovenja, equipped with a radio-collar and 2 ear transmitters, and transported to Italy under the supervision of a veterinarian. In the next years we plan to release at least 4 more bears, for arriving to a minimum of 9 animals. The final aim is to arrive in the next 20-50 years, through natural reproduction of the released bears, to a population of 50 animals in the Central Alps.

5.9. Moldova
by the Ministry of Environment and Territorial Development

In conformity with Action Plans for Large Carnivore in Europe in the frame of Bern Convention, the Institute of Zoology of Academy of Science of Moldova would like to inform that: from species of large carnivores the territory of Republic of Moldova is populated by the wolf (Canis lupus). The numbers of wolfs in years 50 have been enumerated around 300 animals. During years 70th there number have been reduced till around 20 animals (Uspenschi, 1979 in the monografy "Mamiferes").

In the further time the wolves have been in terrupted to reproduce, arising sporadically speaking the food in wintertime. In the last ten years the wolf was observed in some sites. For example, in autumn of 1995in the wod alongside commonness Batîr and mihailovca, Cimislia sector Lapusna District we re observed two adults wolfs, and in autumn and winter period of 1996 it was discovered the tracks of 4 wolfs in the Zloti forest after tearing many colts, sheeps, goats in the wood. It is possible that a couple of wolfs have reproduced in that wood.

Other case of wolf apparition in seeking of food it was mentioned nearly communa communa Advarma from the South part of republican 1994.

Causes of wolf disparition are following:

– direct crushing and chasing,
– absence for reproduction sites,
– poaching, etc.

It is possible in the future wolf to appear sporadically in transit from Carpati mountains, from Romania, or from Ukraine forest.

5.10. Poland

Conservation status of Large Carnivores (Brown bear, Wolf, European Lynx) in Poland

Large carnivores in Poland are considered, both by governmental institutions and the public, to be valuable element of native fauna. Growing ecological awareness of the society resulted in using large carnivores as a flagship species of NGOs conservation activities. One should, however, be aware that large carnivores are potentially conflict species with human activities. Thus, the major role of government nature conservation agencies is to mitigate possible conflicts.

Distribution and population size of large carnivores in Poland is very different for the species concerned. Brown bear inhabit only south-eastern part of the country (the Carpathian Mountains) and its number is estimated at about 100 individuals. Number of bears has been relatively stable during last 10 years. European lynx occur in two separate locations: lowland population inhabits the north-eastern part of the country, while the mountain population can be found in the Carpathian Mountains. Number of lynx is estimated to be below 300 individuals, and their number has steadily decreased during recent years. Wolf has the most extensive distribution in Poland: its core area are in the Carpathian Mountains and the north-eastern Poland, but it can be found also in eastern Poland and in few locations in western part of the country. Number of wolves is estimated to be more than 900 individuals and the population has slightly increased during last 5 years.

There is an agreement between wildlife management authorities and scientists involved in carnivore research that the officially reported numbers of brown bear and European lynx is probably close to the actual ones. In the case of the wolf, there is however considerable controversy. Some experts argue that the number is considerably overestimated and the actual number is below 600 individuals, while others claim that the number of wolves is even more than 1 000 individuals.

Currently, all large carnivores are strictly protected in Poland and included in the Polish Red Data Book of Animals. They are also considered very important species in currently prepared Natura 2000 for Poland. Brown bear is protected since 1950s, while Eurasian lynx and wolf are under protection since 1996 (actually, the wolf is protected over all Poland since 1999). Strict protection means not only that a species cannot be killed, but also that all activities and manipulations which are changing unfavourably its environment are prohibited. Law is enforced relatively well, however a few cases of poaching are reported annually.

In case of necessary management intervention (habituated bears, excessive damages to livestock by wolves) a special permission can be issued by the Ministry of Environment to take adequate steps against species concerned. Such steps can include negative conditioning of problem animals, immobilisation and translocation live trapping for captivity, are killing.

Damage caused by large carnivores (e.g. livestock, crops, beehives) is compensated by the states through provincial nature conservation authorities. Damage compensation scheme involves a participation of local forester, veterinarian, and a livestock owner to describe damage scale and propose a compensation quota. Current compensation system work relatively well, however it still should be improved, especially to pay for losses without too time consuming procedures.

Future activities of the Ministry of Environment concerning large carnivores will follow actions suggested in Action Plan for Brown bear, Wolf and European lynx) worked out by the Large Carnivore Initiative for Europe. A National Strategy of Wolf Conservation was already prepared in 1999 and is in a process of consultation with other governmental institutions, livestock owner organisations, wildlife managers, and NGOs. It is planned to prepare National Strategies for Brown bear and European lynx in the near future.

Important activity is going to be preparing and introducing a reliable system of monitoring numbers and population trends of large carnivores. Input from several ongoing research projects on these species will be crucial for producing a successful monitoring scheme. Populations of large carnivores often occur in transboundary wilderness areas. That is why, the Ministry of Environment is going to work to co-ordinate with neighbouring countries conservation/management activities focused on shared populations of large carnivores.

5.11. Portugal
by the Instituto da Conservaçao da Natureza

I. Iberian Lynx in Portugal: status survey and conservation problems

1.Distribution and status of the Iberian lynx in Portugal

The Iberian lynx was an almost unknown species in Portugal until the 1970's, then a first survey determined a preliminary national distribution (Palma, 1980) with occurrences in Serra da Malcata, Contenda -Barrancos and the Algarve mountains.

The first study (Palma 1977 and 1980) on this species ecology and conservation was carried out in Serra da Malcata, a central-east area of Portugal. At that time, massive habitat destruction in this area, caused by industrial forestations, was the trigger for a national campaign for lynx conservation that culminated with the creation of the Serra da Malcata Nature Reserve in 1981.

National data were collected in a non-systematic way by Vasconcelos (1989). From 1995-97 a conservation lynx project was developed by Institute for Nature Conservation, co-financed by LIFE/CE, during which new data was gathered, providing a better assessment of the national situation.

National distribution was based on direct inquiries, using a systematic methodology covering selecte d areas of the country. Several authors refer the adequacy of these methods when great extension of territory has to be covered and for monitoring presence and abundance of species with cryptical behaviour and occurring at very low densities such as lynx (Easterbee et al. 1991; Rodrigues & Delibes, 1990 and 1992; Gros 1998; Stahl 1998). Sightings or deaths reported by gamekeepers, hunters and other people whose activities are related with the field were accepted as positive after careful confirmation.

The results obtained revealed a restricted and highly fragmented present distribution. Five areas of occurrence were identified, three of them transborders (Malcata, S. Mamede, Guadiana valley) and the two others (Sado valley and Algarve-Odemira) possibly composing an isolated metapopulation. Other dispersal occurrences through the country – such as Gerês, Montesinho, Mira and Serra de Ossa - can indicate residual areas or large dispersal movements.

To make a comparative analysis with Spanish data, population s ize was estimated adapting methodology from Rodriguez & Delibes (1992). Considering the data obtained by sightings from 1986 to 1996, a Portuguese population size of 40-53 adult animals was estimated. Considering the size of national territory, these value s already indicated a startling situation. However, intensive field search of signs done over the last two years in two different areas - Malcata and Algarve-Odemira –did not show evidence of resident lynxes.

Serra da Malcata Nature Reserve studies over last years (Castro 1992; Sarmento et al. 1997; Sarmento & Cruz 1998a) allowed us to observe a decrease in densities pointing to a serious local pre-extinction status:

Period	Number of lynxes (N)	Area (Km ^{2})	Mean Density (N/100 Km ^{2})
1992	5-8	125	5.2
94-95	4	210	1.6
96-97	2-3	190	1.3
98-99	1	160	0.3

We don't have this type of information for the other nuclei in the country. However sightings data from 1990 - 1997 and 1994-1997 showed a general decrease in observations and presence area.

In conclusion, consi dering a pessimistic scenario, we may be in the presence of a collapse of social organisation, with dispersed individuals with very large territories and probably no breeding.

2.National Action Plan of Iberian Lynx

One of the main goals national LIFE pro ject was to collect information to support the elaboration of a National Plan for lynx conservation.

Now a technical proposal for the National Action Plan of Iberian lynx is going to be discussed with other key - actors responsible for its implementation, su ch as governmental institutions, management authorities, researchers and NGO's. We identified as main issues for lynx conservation:

- adequate habitat and prey management;
- more effective species protection;
- creation of specific legislation;

- creation of socio-economic incentives;
- monitoring and research;
- increasing public information and awareness;
- co-operation/co-ordination between entities and countries involved in lynx conservation
- population reinforcement/reintroduction

The National Action Plan of Iberian lynx is in articulation with the Action Plan for the conservation of the Iberian lynx in Europe, incorporating its main themes.

3. On going activities

The implementation of National Action Plan is foreseen to all lynx areas. Some of those actions are already taking place at a local level and are as follows:

Protection of important areas for lynx conservation

The most important lynx occurrence areas were proposed to be integrated in Natura 2000. Some of them have already been included in the National Sites List - 1 phase (August 1997) and others will be integrated in the National List - 2 phase, soon to be approved. We hope it will allow a more effective control of any change in land use and more co-ordinated management.

Identifying corridors between occurrence areas to reduce the risks of inbreeding is a critical issue and the National Action Plan propose a detail study on different landscape scales in order to provide a rational habitat evaluation that will help decision making in lynx conservation.

Habitat protection and restoration

In Serra da Malcata Nature Reserve habitat management is being carried out more intensively since 1988 in public areas. Actual LIFE project "Recovery of habitat and prey of the Iberian lynx in Serra da Malcata" (2000-2003) will allow to restore significant areas of Mediterranean forest and scrubland, through elimination of exotic species, forestation with native species and promotion of natural regeneration.

Many lynx areas are currently affected by human activities (intensive forestation, tourist pressure, large infrastructures building) causing severe changes in the habitat. Under the Habitat Directive and Environmental Impact Assessment legislation such projects are now submitted to evaluation before hand. This assessment process is still in an experimental phase. Dialogue between entities needs to begin at conception planning level.

Economic incentives need to be more efficiently applied to preserve Mediterranean vegetation and increasing rabbit populations but it also necessary a change on European agriculture and forestation policies.

Rabbit population recovery

In Serra da Malcata Nature Reserve the Institute for Nature Conservation owns 1 936 ha of natural land, where rabbit increase measures and habitat improvement are being preferentially implemented.

However most lynx areas are private lands. In some of those areas in Serra da Malcata Nature Reserve agreements with the owners also allowed to carry out conservation actions. In Algarve management agreements with hunting associations have been established over five years. These agreements provide technical and economic support for improvement of lynx prey density. We also intend to implement this type of contracts with local landowners and establish agreements with hunting managers to buy rights for small game species.

Main measures taken to increase rabbit density are:

creation of small scattered pastures/harvests in the middle of shrub areas;

construction of artificial shelters near pastures;

experimental restocking with radio-tagged rabbits;

creation of rotating non-hunting reserves at local scale;

reducing or when possible halting rabbit hunting during some years to help recovery;

veterinary monitoring of rabbit diseases;

creation of breeding enclosures for rabbits.

All these actions have been monitored to evaluate rabbit responses to habitat management. Serra da Malcata Nature Reserve obtained an increase in mean rabbit densities from 1.3 rabbits/ha to 2.4-4.8 individuals/ha with continued actions over three years. We do not yet have results from Algarve.

Reduction of non-natural mortality causes

Poaching seems to be the main lynx man-caused mortality in Portugal and Spain (Rodriguez & Delibes 1990, Ferreras et al. 1991, Ceia et al. 1998). Only in Malcata a routine search for illegal capture methods (leg-traps and

snares) is being carried out. In the National Action Plan reinforcement of vigilance and awareness campaigns are foreseen to overcome this threat.

Research and monitoring

Ecological studies and monitoring Iberian lynx

Different methodologies are being used for lynx detection. Local distribution has been done based on lynx sign search (Palomares et al. 1991, Gíl-Sanchéz et al. 1999) along tracks in two areas – Malcata Nature Reserve (since 1990) and mountain areas of Algarve (since 1996). A very low number of scats and footprints was found. A similar study, made by an University (Faculty of Sciences, University of Lisbon), is going on (since 1999) in the area that will be flooded by Alqueva dam, a big infrastructure in Guadiana river, near the lynx occurrence area called Guadiana valley, still without conclusive results.

Although trapping is being carried out in Malcata since 1994 (total trapping effort of 3562 trap/nights) and in Algarve in small scale, no lynx captures have been performed. Tracking lynxes with trained dogs is an alternative method under consideration.

Since 1998 camera trapping with associated scent stations has also been used as a complementary way to detect lynxes but has been without results. Almost all the other occurring carnivores were registered. A wider use of this technique will start this year.

Diet studies were done in Malcata (Palma 1980; Castro 1992; Sarmento et al. 1997) confirming lynx preference for rabbit, even when this prey exists in low densities and revelling the inexistence of alternative preys. In this area the carnivore community is currently being monitored, in terms of spatial distribution, abundance and predation impact.

Many questions on space use of populations remain unanswered due to absence of telemetric studies.

Sighting lynx data have been used to evaluate habitat in presence/absence lynx areas in Algarve -Odemira (Rodrigues 1997) and Sado valley (Monteiro 1998) and to construct a local spatial model of lynx habitat and distribution in the absence of further information (Palma et al. 1999).

Wild Rabbit ecology and monitoring

Local studies have been done in Malcata (Sarmento & Cruz 1998a, Sarmento et al. 1998b) Algarve-Odemira (Rodrigues 1997) and Sado valley (Monteiro 1998) to evaluate distribution patterns and density and also to determine habitat parameters that influence presence and abundance of the wild rabbit. Since 1999 a study to evaluate rabbit distribution and abundance, made by the Faculty of Sciences, University of Lisbon, is also going on in the area of Alqueva dam.

Rabbit distribution in Algarve -Odemira and Sado valley shows a heterogeneous pattern, with discontinuous range and small pockets of abundance. There is also a strong correlation between rabbit abundance and lynx sightings. Rabbit density is presently being determined in Algarve to evaluate its potential to maintain resident lynxes.

Genetic study

Genetic analyses using specific regions of mitochondrial DNA (Palomares et al. 1999) are being done to identify scats from different lynx areas collected during field work. No samples have yet been definitely identified as lynx. Depending on the sample size of confirmed lynxes the study can continue using microsatellites, a technique already used with other Portuguese samples in 1996 in collaboration with the Institute of Zoology (London). Population parameters such as genetic variability, migration and distance between populations can be obtained.

Viability analysis

A model to analyse the Iberian lynx's probability of extinction has been developed. Several simulations permitted the identification of parameters particularly important for lynx population such as adult mortality and short time extinction in the absence of migration. These results show the importance of combining habitat restoration and population reinforcement.

Public education and awareness

After identifying the different target groups and main conflicts with human population in lynx areas specific initiatives are taken to influence the public attitude about lynx conservation: a presentation for urban citizens and an itinerant exhibition through lynx areas and special sessions for hunters, landowners, local politicians, university students and children; a school project called "The Lynx in our area", a game and a book for children; distribution of pamphlets, posters and pins; and publication of articles about lynx projects.

Captive and "semi -captive" breeding

Portugal is involved in the Experimental Captive Breeding Program for Iberian lynx, a current technical proposal, submitted to approval to Spanish Administration. It will allow the creation of one breeding centre in Portugal, with the objective of producing lynx for restocking. For the implementation of this process it is necessary to identify and improve the areas where restocking or reintroduction would be conducted, being a long -term process.

4. Lynx conservation: co -ordination and planning

Only national and cross -border co-ordinated efforts will allow the implemen tation of the National Action Plan of Iberian Lynx and an effective lynx conservation.

Portugal has representation in the Lynx Work Group in Spain and in the Captive Breeding Group.

The discussion of the National Action Plan will integrate representatives of different sectors: other government institutions, management authorities, researchers, NGO's, hunters, and landowners, all responsible for its implementation and success. Spanish representatives will also be invited for this discussion.

Co-ordinated elaboration with Spain of management plans for shared sites Natura 2000 and its implementation should be considered to optimise the efficiency of transborder lynx populations.

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II. Wolf conservation in Portugal

Wolf conservation in Portugal is under the responsibility of Instituto da Conservação da Natureza (ICN), the governmental agency for nature conservation. Grupo Lobo (Wolf Group), a non-governmental organisation dedicated exclusively to wolf protection, and the Zoology Department of the Lisbon Faculty of Sciences are the other major interpreters on the conservation of the species.

Background information

Conservation Status – classified as Endangered species (Portuguese Red Data Book, 1990)
Legal Status – fully protected under the Wolf Protection Act (Lei 90/88) and regulation (Dec-Lei 139/90)
Distribution area: approx. 18 000 Km (North - 13 000 Km , South - 5 000 Km)
Two subpopulations: North and South of Douro river
Population size (summer): 250 -300 individuals (20/30 south of Douro)
54-57 wolf packs (7 south of Douro)
Global trends:
North of Douro - slow decrease (stability or slight increase at local level)
South of Douro - fast decrease (stability at very small areas)

Ongoing activities in view to implement a Wolf Action Plan in Portugal

Since the enforcement of the Wolf Protection Act several studies were made on wolf and wild prey conservation and improvement and on livestock damage management. Based on all the gathered data and according to Recommendation nr 74 of the Council of Europe Standing Committee, a document with the basic guidelines for the Wolf National Action Plan was prepared by ICN and is going to be discussed with other key-actors responsible for its implementation: governmental institutions, management authorities, researchers, Grupo Lobo and other NGO's.

The Wolf National Action Plan will be set in articulation with the Action Plan for the conservation of wolf in Europe, incorporating its main themes.

Working issues:

Research and monitoring

- Wolf population monitoring system – based on the analysis of damage occurrence area, direct observations and presence signs, it has been possible to follow up the number, size and approximate location of most of the wolf social units. Specific criteria were established and a special form was prepared to register all data.
- Wolf studies - studies are being held by Grupo Lobo and the Zoology Department of the Lisbon Faculty of Sciences, on wolf ecology, parasitology, feeding habits, genetics, predation and population fragmentation, using several techniques, including microsatellites, radio-tracking, scat analysis and others.
- Dead wolves collecting and death causes monitoring systems –since 1999 a system is working to get all the possible data about dead wolves collected. Contacts have been established with the Portuguese scientific community to know the data and samples the different institutions wanted to be collected. Since the beginning of 2000 a centralised treatment of dead wolves has been set at a veterinary laboratory, under responsibility of ICN, to obtain data about death causes, genetics, pathologies and other relevant information.
- Wolf damage monitoring system - legally, when a wolf attack does occur, the owner has to inform ICN within 48 hours since he noticed it. Then, a verifying team goes on site to check the situation and to see if damage was really caused by wolves. In this case and if the minimum livestock protection measures were taken, an indemnity value is calculated upon the tables made by the Ministry of Agriculture for livestock prices and that value is paid to the livestock owner. To improve the efficiency of the wolf damage working team an exhaustive form to register wolf damage data was created and a handbook was edited to help this team to have a more professional and uniform procedure. To allow a faster data processing a new wolf damage database is now being finished.

Wolf damage management

Livestock protection measures stated on actual regulation (Dec.-Lei 139/90) are not fit to the reality of the different grazing systems used on the wolf distribution area, leading to the increase on the problem of wolf damage to livestock. Since 1997, ICN focused a great attention on the ways to minimise it. All the livestock grazing systems used in the wolf distribution area were analysed and grouped in six major systems taking into account the following aspects:

characteristics of grazing (herd dimension, range, species)
relationship with man (shepherd)
relationship with guarding dog

defence against wolf attack

The minimum requirements for prevention of wolf attacks were identified for each system and are considered in the proposal for the new regulation of the wolf protection law (ready to discussion with partners before submission to final Government approval).

In order to reduce wolf damage on livestock, actions have been taken to promote the use of guarding dogs. Grupo Lobo, with the support of other entities, has a project with the simultaneous aim of conservation of autochthonous breeds of guarding dogs, providing shepherds with young dogs and veterinary support. At a smaller scale, Montesinho Natural Park is also providing shepherds with young dogs from a local breed.

Agri-environmental measures

To promote the improvement of the new regulation and to help livestock owners to increase the use of protective measures against wolf attacks, ICN prepared a proposal of economic incentives to include in the Agri-Environmental measures funded by the European Union (supported by the Common Agricultural Policy). Different EU countries dealing with similar problems could use these measures.

Wolf protection law and regulations

Ten years past the application of the law some problems were detected almost related with penalties on illegal killing of wolves and the minimum protection measures requested by the State to indemnify the livestock owners. Therefore a new regulation of the law was prepared and will be soon discussed.

Wild prey population studies (wild boar, red and roe deer)

As wild prey populations have a great importance on wolf conservation, studies have been set on distribution area, bio-ecology and follow up of some populations. Low densities or absence of deer are common scenery to almost all the wolf distribution area. Therefore, improvement or re-introduction of wild prey populations is of major concern on wolf conservation policies. ICN and Coimbra University on the 1995-1997 LIFE Project for wolf conservation have done experimental re-introduction of roe deer. A pilot project is being prepared in collaboration with the Ministry of Agriculture and Porto University with the aim to clarify the roe deer genetics and to improve densities or re-introduce roe deer in areas identified as important for wolf conservation.

Environmental education and public awareness

Grupo Lobo has a major role on this issue, with several initiatives s like a newsletter, a webpage, and visits to schools. They also run the Wolf Recovery Centre, located near Lisbon, where visitors can learn about wolves and their place in the ecosystem. Contact between man and wolf can be settled and people can sponsor individual wolves, establishing affective links with these animals.

An itinerant exhibition and actions directed to particular target groups are also present on Grupo Lobo initiatives. A study on public attitudes is now running at a national level and a few others are under preparation.

ICN is preparing a brochure for the livestock owners explaining the new regulation, what protective measures must be taken and how to deal with wolf damages to have access to indemnization.

Implementation of the Plan

Only national and cross-border co-ordinated efforts will allow the implementation of the Wolf National Action Plan. Co-operation with Spain will be needed particularly in what concerns conservation and monitoring of cross-border packs, with a special attention to the area south of Douro river, where a particular attention must be given to habitat fragmentation and corridors.

Food supply must be a constantly present subject in order to reduce wolf dependence on livestock, reason for most of the human-wolf conflicts.

Management plans of Natura 2000 sites will necessarily contribute to the implementation of the plan.

5.12. Romania
by the Ministry of Waters, Forests and Environmenta l Protection

Brown bears

Throughout recent history, bears have occupied the extensive forests in the mountains and hills of Romania. Due to human persecution, the number of bears decreased to less than 1,000 individuals by the 1940s. In the early '50s the y reached their lowest population size with an estimated number of 860 animals. Since then, the management of the species dramatically changed. The strict protection, combined with low harvests and supplementary food, allowed the bear population to steadily increase. Due to these measures, the population reached a peak of almost 8,000 individuals in 1988, definitely overpopulation for the inhabited area. After the revolution in 1989, the number of bears decreased substantially due to poaching, illegal use of poison, a high legal harvest by local and foreign trophy hunters, and the killing of problem bears. Nowadays, the population is officially reported to be about 5,500 bears. Because that level of the population involved a high level of conflicts as well, the official policy was to reduce the population to an "optimum number" for the suitable areas. This number is about 4, 500.ex. The distribution of brown bears corresponds, with few exceptions, to areas situated above 800 miters altitude and covers coniferous forests, mixed forests, and beech and oak forests. The population is located mainly in the mountains (93%), with only 7% living in the hills of northern Transylvania. Bears have their highest densities in the north -central part of the Romanian Carpathians, especially in the counties of Mures, Neamt, Harghita, Covasna, Brasov, and Buzau. Towards the west and northeast, the density is lower but still high compared to other parts of the European bear range.

The Apuseni Mountains, the northern part of the West Carpathians, are home to a smaller population of approximately 250 to 300 bears. Although there seems to be a gap between the population in the Apuseni Mountains and the main Carpathian population, there is little doubt that the two populations are c onnected. Bears are known to migrate over long distances and there is contiguous forest throughout this area, free of barriers for such migrations. The Romanian bear population is one of the few strong and healthy populations in Europe and, although the Romanian Carpathians represent only 1.4% of the European surface west of Russia, they are home to about 43% of all European bears. The Carpathians of Romania have international importance in the conservation of brown bears

Wolves

After World War II, wolves were present in all forested parts of Romania and numbered over 4,000 animals. However, excessive livestock depredation occurred and as a result in 1955, the government launched a campaign to control wolf numbers. Intensive hunting, trapping, searching for wolf dens to kill the pups, and particularly the use of poison, reduced wolves to a low level up until the late sixties. Until 1967, the wolf population had declined to about 1,500 and only the remoteness of the mountains and the increasing number of deer and wild boar saved the wolf from even further decline. The species, however, had completely disappeared from the forests in the plains. After this, the wolf population started to slowly increase again because the number of hunters decreased, and thus the hunting pressure on the species. Then, the aim of wildlife management was to keep a rather small wolf population.

Due to the fact that other species, such as brown bears, wild boar, and birds of prey also suffered from poisoning, the use of poison was forbidden in 1991. Until then, the wolf population had continued to increase slowly and, according to official numbers, reached about 3,100 individuals in 1996. This represents about 30% of all European wolves west of Russia. Wolves have the farthest-reachin g range of all three large carnivores in Romania and even settle parts of the foothills northwest of the mountain chain, where the forest cover is not as contiguous as in the higher elevations. In contradiction to bears, the wolf population has a continuou s distribution in the West Carpathians and no gaps are reported between the Apuseni Mountains and the main Carpathians. According to the official numbers, the highest densities of wolves occur in the central and north -central part of their range, where lar ge continuous forests still exist.

Although approximately five million people live in and around the Romanian Carpathians, wolves, along with bears, have one of their European strongholds in this mountain range. It is, in fact, one of the only places wher e the European wolf still lives in densities, which are probably close to natural conditions and still coexist over much of their range with human economic activities. They are distributed almost continuously over the Carpathian Mountains and their populat ion densities are very high compared to other parts in Europe.

Lynx

Very little data about the specific biology of lynx population in Romania is available. The species has little economic value as trophy for foreign hunters doesn't cause damage on livest ock, and their only interaction with human interests is predation on ungulates. Due to these facts, not much scientific attention was given to the species. During the anti-wolf campaign in the sixties and seventies, lynx were legally excluded from persecut ion. According to reports from hunters during this time, they were, however, affected by the use of poison. Lynx seemed to have suffered more from predator control than wolves, for two reasons: they have a low natural population density and reproduction ra te,

and they are more vulnerable to trap and shoot.

For 1999 the lynx population size is officially estimated to be about 1,800 animals. Lynx occurrence is reported almost exclusively from areas with large, contiguous forests. Their geographical distribut ion is the smallest of the three carnivores and the highest population densities are in the county of Harghita and in the Apuseni Mountains. Compared to other countries in Europe, lynx density in the Romanian Carpathians seems to be extremely high. I believe, however, that the number of lynx is a little overestimated. Even if the actual number of lynx were only one - half of what is reported, the Romanian lynx population is still having European significance. With the exception of Fenno-Scandinavia, lynx occu r in Europe in small and highly fragmented populations. Although reintroduction programs have brought the species back to Switzerland, Slovenia, and the Bohemian Forest, all reintroduced populations are based only upon a few individuals and they are still considered threatened. Besides the Nordic countries, the Carpathians are the only lynx population in Europe, where the species is continuously distributed over more than 100,000 sqkm. Romania, again, is the backbone of the lynx distribution in Central and Eastern Europe.

Golden Jackals

In small numbers in Romania as long as the wolf population was well represented in the whole area, the golden jackal start to increase his number after the disappearing of the wolves in the south plain and in Dobrogea. As a result of a free ecological niche and a strong source population in Bulgaria, the golden jackal start to be more and more present and realize stabile populations near Danube. The official estimation is now about 300 ex.

Romania joined and ratified the B ern Convention in 1993, which conflicted with the existing hunting law and large carnivore situation in Romania: only the lynx was listed as protected species and could be hunted only with a special license. Bears had a special status and could be hunted w ith an individual license, wolves weren't protected at all and could be killed by any means year -round, golden jackal has a period of protection from spring to autumn. A new hunting law resolved this conflict in 1996. According to this law in accordance wi th the Bern Convention, wolves and bears are completely protected. The lynx and the golden jackal have a hunting season limited to October 15th until March 1st, with harvest quotas and only individual licenses being issued for lynxes. The new hunting law, however, gives allowances for hunting wolves and bears if they cause damage to livestock. In this case, licenses to hunt wolves and bears can be issued by the Department of Wildlife Management in the Ministry of Waters, Forests and Environmental Protection .

5.13. Russia

by Mr Vladimir Fedotov, State Informational – Analytic Center of game animals and the Environment

The method of defining the number of animals and the state of resources of Large Carnivores in Russia

The work on the registration of number of game animals in Russian Federation is carried out annually by means of unified methods. The state service of the registration of the hunting resources of Russia supported by the Department on protection and rational usage of the hunting resources of the Ministry of Agriculture of Russia (further - Department), estimates the number of main species of game animals in various parts of the country separately and in Russia as a whole.

The number of game animals, the tendencies of its change and the analysis of the state of resources of game animals in Russia are annually published in state reports «About the state of the natural environment of Russian Federation».

The basis of obtaining the information on the number of the majority of species of game animals is the Winter path registration. The registration operations by this method cover now the larger part of the territory of Russia. In 1999 50,6 thousand registration paths were treated. Their total length was 515,9 thousand km.

This method, worked out by our specialists, is used not only in Russia, but also in Finland. This method is being introduced in northern Sweden and Canada.

The investigation of daily activity tracks of animals is necessary for defining the Recounting coefficients of the Winter path registration. The Recounting coefficients are used to define the number of game.

The defining of Recounting coefficients is carried out by the Informational - analytical center of game animals and the environment, where I work. On the basis of the analysis of the number of animals in oblasts, krais and independent republics, the singling out the quotas of prey, in particular of large carnivores (except for the wolf!) is planned for the following game period.

The number and the length of the paths of the Winter path registration of game animals in Russian Federation, and also the number of investigated tracks of daily activity of animals, are represented in table 1.

Table 1. Amounts of works on Winter path registration in Russia

1992	26599	22096	250496	3531
1993	29018	24104	267045	3627
1994	32261	26793	299299	5073
1995	34633	29640	329292	5556
1996	39656	35364	390361	6381
1997	44386	40540	435638	7570
1998	50022	46664	506165	8364
1999	50647	47446	515916	9537

In 1998 the method was modified. We took into account our experience in Finland, where the system of constant registration paths is organized. We've introduced the method in our country. The reliability of the registration results has increased. Another important factor is the precise location of the path on the landscape. Consequently the registration work is being controlled and it increases the quality of the work.

The climatic conditions, which influence, in particular, the providing of forage for the animals, cause the long - term fluctuations of number of the animals.

The estimation of the state of the environment of game animals is carried out on the basis of the materials of Center of meteorology of Russia, plus the information from the reports of territorial subdividings of the Department is taken into account.

An the beginning of the 90s the climatic period was unfavorable, which influenced the number of game animals.

The efficiency of natural vegetative forages lowered, and the wetlands, important for game, dried out.

Bad economic situation caused the growth of illegal hunt, which also caused the lowering of the number of game in 1992-1995

In 1997-1999 the situation changed. The number of majority of species game animals in Russia as a whole has increased (table 2).

Nowadays in Russian Federation there are considerable resources of game animals. In Russia in 1999 lived more than 1,2 millions of Caribou, 632 thousand of Elks, 669 thousand of Roe deer, 174 thousand of Wild boars, 1,1 million of Sables. The resources of Water birds are estimated as 80-95 millions specimens.

The influence of the man, can change the fluctuation amplitude of the number. However, the main reason of fluctuations are determined by natural climatic factors. The animals are extremely vulnerable during the unfavorable climatic periods. During these periods it is necessary to limit the legal prey of game and to strengthen the struggle against the illega l one.

Table 2 . The Number of Game in Russia

Red deer *	163,6	174,0	+6,4
Caribou	1220,6	1231,6	+0,9
Wild boar *	172,9	173,6	+0,4
Musk deer*	152,3	156,4	+2,6
Caucasian aurochs *	48,2	48,5	+0,6
Roe deer*	663,8	669,3	+0,8
Elk *	631,2	631,7	+0,1
Sika deer*	11,5	13,3	+15,7
Bighorn sheep *	49,7	49,7	0
Squirrel*	9765,3	8952,9	-8,3
Beaver **	252,7	258,4	+2,3
Otter **	56,9	60,9	+7,0
Ermine *	994,8	1034,2	+4,0
Alpine hare *	4283,3	4778,4	+11,6
European hare *	812,4	778,0	-4,2
Kolinsky*	293,3	271,6	-7,4
Corsac fox*	32,1	29,3	-8,7
Martens*	156,6	169,1	+8,0
Fox*	513,8	517,6	+0,7
Sable**	1057,2	1077,4	+1,9
Polecats*	91,8	94,8	+3,3
Beard partridge*	902	1147	+27,2
Wood grouse*	3364	4209	+25,1
Hazel grouse *	8185	15929	-12,4
Partridge*	3279	3684	+12,3
Black grouse*	8739	8582	-1,8

* - the number on March 1 is given
** - the number on October 1 is given
***- the number on May 1 is given

Table 3. The prey of main species of game in Russia

Red deer	4313	3682	3918	+6,4
Caribou	26566	60131	63440	+5,5
Wild boar	9343	10259	11888	+15,9
Caucasian aurochs	115	121	136	+12,4
Roe deer	21406	19556	17451	-10,8
Elk	21684	17202	16090	-6,5

Sika deer	482	419	498	+18,9
Bighorn sheep	134	81	123	+51,9
Beaver	5034	4828	4019	-16,7
Otter	389	291	310	+6,5
Sable	97960	125658	132478	+4,7

Brow bear

The number of the brown bear from the end of the 80s has varied insignificantly as a whole, though at the beginning of the 90s it was a little bit higher than in modern times, - about 130 thousand specimens.

The number of bears in the European part of Russia varies slowly, nowadays it is at a high level (table 4), the southern boundary of the area, having shifted a little bit to the north during the previous decade, now is stable. In the Asian part of Russia the number of bears depends on the harvest of cedar nut, spawning of salmon, etc. And therefore the number of these animals varies more abruptly in comparison with the northern part. In the years of poor harvests of main forages the mortality of the bear increases during the winter hibernation, and the number of not sleeping bears increases also. The situation like that was observed in Evenkiya in1998.

The prey of the brown bear in the last game period has noticeably increased – nearly to 9 %. On the whole the level of the prey of the bear is quite moderate.

In full the game resources of this animal is used in Udmurtiya, where the registration of the bear is organized well. It is necessary to remark, that the profit from bear hunting for the state and for the game farms is especially high. For example, in the game farms 132 licenses are sold, at a quota of 60 specimens. It allows to provide a lot of the hunter with the licenses, that promotes the reduction of illegal hunt. Thus, it is known beforehand, that th e total prey of the bear will not exceed the quota, given to the region . Thus, the total high productivity of hunt (8,8 % is preyed from the number, the quota is realized almost to 90 %!) causes its attractiveness. The coefficient of success of hunt (ratio of number of the preyed bears to the number of the bought licenses, expressed in %) in 1998 is not very high - 40 %. In Komi-Permyatsky independent district, for example, where the coefficient of success of hunt is more than 60 %, the low quota and the low demand for the license (about a half from the quota) caused the fact that less than 2 % from the stock of brown bears were preyed upon. It is lower than in Russia as a whole. As a rule, the high percent of resource usage in the regions is connected with the excess of the number of the sold licenses in comparison with the quota: in Yaroslavskaya oblast, where the quota is also mastered almost to 90 %, the number of the sold licenses exceeds the quota twice. As in both regions (and in some other) the stock of the bear does not reduce, it is possible to make a conclusion that there is no illegal hunt there.

As a whole it is possible to suppose, that the state of resources of brown bear in Russia is satisfactory. Special protection in the places of popular hu nt is not required. This species is taken under protection in the nature reserves.

Table 4. The number and the prey of Brown bear in Russia.

	1997	1998	1999	
Russia				
Northern Region				
Arhangelskaya oblast	6	6	6,5	141
Vologodskaya oblast	4,5	5	5,5	247
Kareliya republica	2,5	3	3,3	127
Komi republica	4,5	4	4	35
	0,5	0,45	0,45	32
Northwest Region				
Leningradskaya oblast	1,4	1,5	1,5	34
Novgorodskaya oblast	1,2	1,3	1,3	35
Pskovskaya oblast	0,8	0,9	0,9	32
Central Region				
Brjanskaya oblast	rare	rare	rare	-*

	1997	1998	1999	
Vladimirskaya oblast	rare	rare	rare	-
Ivanovskaya oblast	0,06	0,06	0,06	3
Kaluzhskaya oblast	rare	rare	rare	-
Kostromskaya oblast	1,9	2	2	71
Moskovskaya oblast	rare	rare	rare	-
Smolenskaya oblast	0,2	0,22	0,22	2
Tverskaya oblast	1,2	1,2	1,2	51
Yaroslavskaya oblast	0,6	0,5	0,45	31
Volgo-Vjatsky Region				
Kirovskaya oblast	4,6	4,6	4,6	196
Mariy Ael republica	0,35	0,35	0,35	12
Nizhegorodskaya oblast	0,55	0,56	0,56	17
Chuvashskaya republika	rare	rare	rare	-
Povolzhsky Region				
Tatarstan republika	rare	rare	rare	-
Northern-Caucasian Region				
Dagestan republika	0,25	0,27	0,28	1
Kabardino-Balkarskaya republika	0,5	0,4	0,33	1
Krasnodarsky krai	0,54	0,6	0,7	24
Adigeya republica	0,07	0,04	0,04	-
Severnaya Osetiya republica	0,12	0,12	0,12	-
Karachaevo-Cherkesskaya republica	0,4	0,4	0,45	14
Ingushetiya republica	0,04	0,04	0,05	-
Ural Region				
Bashkortostan republica	2	2	2	49
Orenburgskaya oblast	0,06	0,05	0,05	3
Permskaya oblast	5,5	5	5	144
Komi-Permyatsky independent district	1	1	1,1	16
Sverdlovskaya oblast	2	2	1,9	77
Udmurtskaya republika	0,7	0,6	0,7	53
Chelyabinskaya oblast	0,45	0,46	0,5	7
Western-Siberian Region				
Altaisky krai	0,4	0,5	0,5	23
Altai republicai	3	3	3	16
Kemerovskaya oblast	1,9	1,8	1,9	75
Novosibirskaya oblast	0,3	0,3	0,3	8
Omskaya oblast	0,4	0,4	0,3	25
Tomskaya oblast	2,5	2,8	2,9	34
Tyumenskaya oblast	0,6	0,6	0,6	-
Hanti-Mansiysky independent district	2,4	2,5	2,7	47
Yamalo-Nenetsky independent district	0,8	0,8	0,78	14
Eastern-Siberian Region				
Buryatiya republica	2	2	2	19
Irkutskaya oblast	4	4,5	4	25
Ust-Ordinsky Buryatsky independent disnrict	rare	rare	rare	-
Krasnoyarsky krai	4,5	5,3	4,8	99
Taimirsky independent district	0,2	0,2	0,2	2
Hakasiya republica	1,3	1,5	1,3	16
Ievenkiysky independent district	3	3	2,7	-
Tuva republica	2,2	2,2	2	12
Chitinskaya oblast	3,5	4	3,9	3
Far East Region				
Amurskaya oblast	2,9	3	3,3	133
Kamchatskaya oblast	7	7	6,5	335
Korjaksky independent district	3	4	4	34
Magadanskaya oblast	2,5	2,5	2,5	43
Chukotsky independent district	1,8	2	2	16
Primorsky krai	2,3	2,2	2,1	31
Saha (Yakutiya) independent district	12	12	12	70
Sahalinskaya oblast	3	3	3	64

	1997	1998	1999	
Habarovsky krai	6	6,4	6	120
Evreyskaya independent oblast	0,5	0,5	0,5	11

* - prey of the brown bear in the given region during a season of game 1998 -1999 was not produced

Wolf

This species in Russia has never been protected, and on the co ntrary, always was exposed to a rigid regulation of number. During the economic stability in the country the insurance companies paid premiums for its prey within the year round.

The minimum number of the wolf in the last two decades was in 1990, then the number began to increase and reached its maximum (in Russia as a whole) in 1995 -1996.

In the subsequent years in Russia the number of the wolf remained at a high level. At the same time in a number of economic regions of the European part of Russia at the end of the 90s the decrease of number of the wolf has been observed.

In Northern economic region the number of the wolf in the last decade noticeably has begun to reduce since 1986, having reduced up to 2-2,5 thousand at the end of the 80s. Then the contr ol over the stock of the wolf was nearly lost and the number exceeded 4 thousand in 1995 -1996. After that, on the background of worsening of the fodder base it again turned out to be at its minimum.

In the 80s there was a similar situation. Then the number of the wolf increased sharply and reached its peak in1994-1995. In the last years, the number of the wolf has reduced twice because the level of prey was higher than in the 80s.

In Central economic region the minimum number was in 1990 (the level of prey, accordingly, has decreased from 2 to 0,8 thousand). The maximum number was observed in 1993 -1996, after which at a level of the registered prey over 1,3 thousand specimens, the number of the wolf began to reduce (tab. 5).

In Volgo-Vjatsky economic region the peaks of number were observed in 1986 and 1996. Most wolves concentrate in Kirovskaya oblast. The modern number insignificantly differs from the depression of 1990 (0,8 thousand).

The number of the wolf is more flattened in Central -Chernozemny economic region, where except for the Voronezhskaya oblast, the low density of the population of the wolf is the characteristic. In the Voronezhskaya oblast there are more reserves with better protective and fodder conditions, than in other areas of this economic region. The prey of the wolf in the economic region as a whole is equal or even exceeds the number of its gain.

The situation in Povolzhsky economic region is sharply contrasting: in northern areas and in Tatarstan the density of the population of the wolf is not very great, but in steppes there are many wolves. In the 80s in Kalmykia there were few wolves, however, now for this Republic as well as for other southern areas the high number of this species is a characteristic.

The level of prey here still is insufficient, so that not only to compensate for the gain of the wolves and the inflow of them from Kazakhstan, but also to reduce the stock of these carnivores up to the tolerable mark.

The high number of the wolf is saved also in Northern -Caucasian economic region, where there are many steppes, mountain h abitats and reserved territories.

The number of the wolf in Ural economic region is constantly high.1/3 of these wolves live in Bashkortostan Republic, where the prey on the wolf can't compensate for the annual gain. The noticeable increase of the number of the wolf in Orenburgskaya oblast can be explained by its inflow from Kazakhstan. In Sverdlovskaya and, especially, in Permskaya oblasts the intensive control over the number of the wolf is carried out. In Kurganskaya oblast this carnivore does not go beyond control during the whole of the described period. In the Udmurt Republic the control has been restored for the last 3 years: in 1999 the number of the wolf is the lowest for the last 20 years.

In the Western-Siberian economic region the number of the wolf is still high, it sticks at a level, which was marked in the first half of the 80s and from the middle of the 90s, but the peak of the number probably ended in 1998.

In the Eastern-Siberian and in th e Far East economic regions the decrease of the number was observed at the end of the 80s, the growth of the number – at the beginning of the 90s, and by now the growth has stopped at a high level. The tendency of the decrease of the number is more often m arked in the regions, where the control over the number of the wolf - in Buryatiya Republic, Amurskaya oblast and Khabarovsky krai is better.

Table 5. The Number and Prey of the wolf in Russia

Arhangelskaya oblast	1,0	0,68	0.58	-15	198
Nenetsky independent district	0,2	0,15	0,13	-13	-
Vologodskaya oblast	0,8	0,58	0,5	-14	373
Kareliya republica	0,46	0,4	0,38	-5	160
Komi republica	0,95	0,69	0,7	1	118
Murmanskaya oblast	0,09	0.1	0,05	-50	15
Northwest Region					
Leningradsk aya oblast	0,5	0,5	0.4	-20	351
Novgorodskaya oblast	0,3	0,27	0,25	-7	179
Pskovskaya oblast	0,6	0,55	0,4	-27	278
Central Region					
Brjanskaja oblast	0,15	0,14	0,11	-21	107
Vladimirskaja oblast	0,05	0,04	0,03	-25	19
Ivanovskaja oblast	0,08	0,08	0,06	-25	29
Kaluzhskaja oblast	0,17	0,14	0,1	-29	126
Kostromskaja oblast	0,25	0,23	0,2	-13	86
Moskovskaja oblast	0,05	0,05	0,05	0	29
Orlovskaya oblast	0,02	0,02	0,02	0	14
Ryazanskaya oblast	0,13	0,1	0,1	0	75
Smolenskaja oblast	0,5	0,46	0,4	-13	414
Tverskaja oblast	0,7	0,6	0,45	-25	338
Tulskaya oblast	0,02	0,02	0,02	0	17
Yaroslavskaja oblast	0,1	0,12	0,1	-17	135
Kirovskaya oblast	0,5	0,45	0,4	-11	285
Mariy Ael republika	0,09	0,06	0,05	-17	39
Mordoviya republika	0,12	0,13	0,16	23	57
Nizhegorodskaya oblast	0,36	0,29	0,21	-28	184
Chuvashskaya republika	0,04	0,03	0,02	-33	17
Belgorodskaya oblast	0,07	0,07	0,06	-14	66
Voronezhskaya oblast	0,3	0,3	0,25	-17	240
Kursksya oblast	0,08	0,08	0,05	-37	63
Lipetskaya oblast	0,02	0,02	0,02	0	7
Tambovskaya oblast	0,05	0,06	0,06	0	23
Povolzhsky Region					
Astrahanskaya oblast	0,55	0,68	0,69	1	492
Volgogradskaya oblast	0,5	0,55	0,51	-7	528
Kalmykiya republika	0,45	0,6	0,75	25	404
Penzenskaya oblast	0,06	0,09	0,07	-22	30
Samarskaya oblast	0,03	0,02	0,02	0	6
Saratovskaya oblast	0,25	0,3	0,24	-20	310
Tatarstan republika	0,1	0,13	0,12	-8	50
Ulyanovskaya oblast	0,1	0,08	0,05	-37	89
Dagestan republika	0,7	0,8	0,9	13	346
Kabardino-Balkarskaya republika	0,1	0,1	0,1	0	22
Krasnodarsky krai	0,55	0,6	0,57	-5	230
Adigeya republica	0,05	0,07	0,07	0	41
Rostovskaya oblast	0,6	0,7	0,5	-29	643
Severnaya Osetiya republica	0,08	0,08	0,06	-25	52
Stavropolsky krai	0,2	0,26	0,35	35	127
Karachaevo-Cherkesskaya republica	0,2	0,15	0,15	0	78
Ingushetiya republica	0,05	0,05	0,04	-20	21
Chechenskaya rep ublica	0,1	0,12	0,12	0	
Ural Region					
Bashkortostan republica	0,9	1,0	0,99	-1	224

Kurganskaya? oblast	0,06	0,09	0,07	-22	30
Orenburgskaya oblast	0,19	0,17	0,25	47	37
Permskaya oblast	0,61	0,41	0,39	-5	235
Komi-Permyatsky independent district	0,13	0,15	0,14	-7	23
Sverdlovskaya oblast	0,8	0,8	0,7	-12	296
Udmurtskaya republika	0,11	0,1	0,09	-10	89
Chelyabinskaya oblast	0,26	0,26	0,21	-19	135
Altaisky krai	0,39	0,47	0,5	6	306
Altai republica	0,5	0,6	0,5	-17	494
Kemerovskaya oblast	0,26	0,31	0,24	-23	89
Novosibirskaya oblast	0,19	0,14	0,14	0	72
Omskaya oblast	0,32	0,3	0,2	-33	56
? omskaya oblast	0,5	0,55	0,5	-9	250
Tyumenskaya oblast	0,3	0,31	0,29	-6	173
Hanti-Mansiysky independent district	0,5	0,6	0,5	-17	83
Yamalo-Nenetskiy independent district	0,4	0,45	0,45	0	47
Eastern-Siberian Region					
Buryatiya republica	1,6	1,8	1,5	-17	475
Irkutskaya	3,0	3,0	3,0	0	370
Ust-Ordinsky Buryatsky independent disnrict	0,12	0,12	0,22	83	12
Krasnoyarsky krai	1,7	1,85	2,0	8	418
Taimirsky independent district	1,0	1,0	1,0	0	47
Hakasiya republica	0,48	0,54	0,55	2	158
Ievenkiysky independent district	3,0	3,0	2,8	7	294
Tuva republica	1,2	1,2	1,2	0	365
Chitinskaya oblast	2,0	2,3	2,2	-4	468
Aginskiy Buryatsky independent disnrict	0,1	0,16	0,09	-44	-
Far East Region					
Amurskaya oblast	1,7	1,6	1,4	-12	504
Kamchatskaya oblast	0,15	0,14	0,12	-14	19
Korjaksky independent district	0,7	0,9	1,0	11	47
Magadanskaya oblast	0,8	0,9	0,8	-11	56
Chukotskaya oblast	1,0	1,2	1,2	0	418
Primorsky krai	0,25	0,31	0,35	13	53
Saha (Yakutiya) independent district	5,0	5,0	5,0	0	881
Sahalinskaya oblast	0	0	0		0
Habarovsky krai	2,5	2,5	1,8	-28	72
Evreyskaya independent oblast	0,15	0,2	0,18	-10	13

Lynx

In the 90s the dynamics of the number of the lynx shows the decrease of its resources on the territory of Russia. Before 1995 the number of the lynx did not exceed 35 thousand; then it reduced further, and from the beginning of 1996 it hasn't risen higher than 30 thousand. In 1999 in the majority of economic regions of Russia there has set up a tendency for the number of the lynx to grow.

The further reduction of its resources went on only in the districts of the Western -Siberian economic region. In the Far East economic region in 1999 the reduction of the number was also registered, but in a number of regions – Amurskaya and Kamchatkaya oblasts, Korjaksky independent district – the number began to grow slowly. The simultaneousness of peaks and depressions in separate economic regions is revealed weakly, the same with the phases of the number dynamics. In the regions of t he European part and the Urals as a whole the increase of the number up to the point of 13 thousand specimens was marked in 1992 -1993, and it reduced to the minimum point of 9,7 thousand specimens on this territory in 1997. In 1999 the number of the lynx w as close to average in the 90s in Northwest, Volgo-Vjatsky, Povolzsky, Ural economic regions, and it was marked below the average level in Northern, Western -Siberian, the Far East regions. A little bit higher it was in Central and Eastern -Siberian economic regions.

The registered prey of the lynx still does not reflect precisely enough the real legal prey of this species. In the

period of 1998-1999 according to these data 626 lynxes were preyed upon, and the most full information came from the Northwest, Central and Ural economic regions. In the regions, where the information is got from, the quantity of non-returned licenses on the prey upon lynx is quite big - more than 70 %. Taking this into account, the total legal prey, in the period of 1998-1999 could be 18 % higher than that officially registered. In the regions of East Siberia which has presented the data, 43 % from the total amount of the prey, registered in Russia, was preyed, and in the regions of the Urals and the Far East – each 15% respectively.

The specimens of this species have a vast hunting area. Therefore to protect these territories effectively it is necessary to allocate vast areas for the natural reserves. In existing reserves of Russia the lynx, together with other species of animals, is under protection. The creation of new reserves requires major financial expenditures. In the conditions of modern Russia it is widely spread to prohibit the prey of this animal in those districts where its existence is under threat. However, these measures have proved to be ineffective in the struggle against the illegal hunt.

Wolverine

The considerable part of the area of the Wolverine in Russia is situated in northern regions, where it is hardly possible or impossible to use the main method of registeri ng the resources of game animals - the Winter path registration. These are Nenetsky independent district, the tundra territories of Yamalo -Nenetsky independent district, Taimir, the north of Yakutia, Chukotka. The number dynamics in these regions can also differ from what is observed on the territories controlled by the registration, and its parameters are especially difficult to reproduce at the correction of the objective registration data. However, the available data allow to assume, that in the 90s the number of the Wolverine, be it reduced, would be reduced insignificantly. The total resources of the Wolverine in Russia in 1999 were estimated as 25,7 thousand specimens.

For the last two seasons in Russia the prey upon 574 wolverines is registered, that, probably, insufficiently fully reflects the amount of prey of this species, as, for instance, out of 20 regions of the Eastern -Siberian and the Far East economic regions the information about the prey on the Wolverine has come only from 6 of them. But in 2000 nominal single licenses on the prey upon the Wolverine and the Lynx were introduced. It makes possible to expect considerable improvements in the gathering the statistical data on the prey of these species.

As well as the Lynx, the Wolverine has a vas t hunting area, and that makes it difficult to protect this species and to create new reserved territories.

5.14. Slovakia
by the Ministry of Environment

Large Carnivores Conservation Status in Slovakia

Competencies for protection and regulation of wildlife are divided between the Ministry of Environment and the Ministry of Agriculture.

In respect to EU accession process, Bern Convention Action Plans and WWF Initiative for Large Carnivores a national group of experts is being created to involve conservation, hunting and forest management experts. Also a new legislation for nature and landscape protection is being prepared. It is anticipated that zone system will be established for regulation of large carnivores populations.

Wolf (

During the past period - from 1975 -1994 the wolf was protected within the protected period set up by the Order on manner, time and conditions of hunting No. 172/1975. Hunting period lasted from September 16 -February 28 . In 1994, the Act on Nature and Landscape Protection introduced wolf as an all-year round protected animal, as one listed in CITES annexes. However, this status of protection was neglected by hunters and Slovak Environmental Inspection undertook several lawsuits with hunters associations which hunted wolf in compliance with hunting rules but in discrepancy with the nature protection legislation. Unfortunately, the Highest Court always decided in favour of hunting associations, which lead to continuing 5 1/2 months hunting period for wolf.

To solve this unfavourable situation of disregarding of nature legislation, the new legislation was prepared and negotiated with the Ministry of Agriculture and Slovak Hunting Union representatives. A new period of conservation was accepted by all parties lasting from January 16 - October 31. On June 21 , 1999 the amendment of the Order on manner, time and conditions of hunting of the Ministry of Agriculture, and as of July 1, 1999 the Ministry of Environment Order No. 93/1999 on protected plants and animals and societal valuation of protected plants, animals and trees were put into a force.

Through this process the following goals were met:

legislative discrepancies in protection of wolf and large carnivores between the two ministries were solved

hunting period of wolf was cut down into one half of the previous period

hunting within reproduction period is now prohibited

via legal hunting the illegal shootings are minimised and availability of data on population and bionom of wolf increased

In response to a number of critical complains with respect to the change of hunting period received from hunters public as well as from nature conservation NGOs, as of December 1999 there was organised a seminar on management of bear, wolf and cormorant under auspices of the State Secretaries of the ministries of agriculture and environment. As an outcome of the seminar there was adopted a set of recommendations (8) to assist in implementation of Action Plans for bear, wolf and cormorant. One of the demands is also an assessment of positive or negative impact of implementation of new protection period for wolf to be undertaken within the years 2000 -2001. The wolf population is estimated to reach up to 400 individuals. However, illegal huntings are still being recorded.

In 1999 following projects were implemented:

1. Brochure "Who was it?" for identification of damage caused by large carnivores resp. by dogs, This publication was disseminated to all levels of relevant local and state administration.
2. Active cooperation with Poland started, focused on information exchange, international protection, (Association for Nature Wolf)
3. Opportunities for reintroduction of wolf to Belgium was discussed with RC WOLF / Belgie

Although there is a telemetrical equipment available, the project on wolf monitoring and management in Slovak Carpatians, has not started yet.

Brown bear ( )

1. Distribution and population number

Brown bear population in Slovakia represents the western border of the Central -European distribution area of this species.

The centre of bear occurrence is the Tatra Mountainss (West, High, Belianske and Low), the Ve¾ka and Mala Fatra Mountains, the Kremnicke Mountains, the Polana Mountain and the eastern part of the Slovak Ore Mountains. The area is spontaneously spreading to west- and southwards. From the point of conservation of the genetic variability, a stable connection between the Western-Carpathian isolated population and the substantially larger Eastern - Carpathian population is desired.

2. Habitat requi rements

The optimal biotope of bear is situated in the areas of coniferous and mixed forrests from the 5th to the 7th wood vegetation belt. Particularly the Fraxineto-Aceretum, Abieto-Fagetum, Abieto-Piceetum and Fagetum-Abietinopiceosum wood types from 700 to 1250 m above the sea level.

3. Population size

The population number is estimated by hunters' statistics to be at about 1200 individuals. However, this is highly overestimated number and real estimation is max. of 600 -800 individuals. (Remark to the stated numbers: there is no universal counting methodology of bears and the statistics are created by counting from the reports of individual hunting subjects. With regard to an individual area of one bear, which in average represents 18,8 square km of hunting ground, the same bear is counted several times by the individual subjects.)

4. Conservation status

According to the Act of the No. 287/1994 on Nature and Landscape Protection the Brown bear is a preserved species. Also, under the amended Act on hunti ng the bear belongs to the all-year-round preserved species. Therefore, a bear is regulated only via permit issued by the Ministry of Environment of the Slovak Republic.

5. Brown bears and humans

The damages to livestock caused by bear are refunded by the state via Ministry of Agriculture, with the exception when the hunting grounds are not owned by the state, these are reimbursed by the user of the hunting ground.

The recorded damage is caused mainly to livestock, sheep and bee-colonies. In 1999 the state administration quoted the damages to be more than 660 000 Sk (approx. 100 000 FF).

The level of damages can be substantially reduced by the usage of more-row electric fences, but also by reasonable placement of the apiaries and by keeping the cattle away from the forest areas.

6. Hunting

The increase of damages resulted in the effort to regulate the number of the bear population, through „regulative hunting" according to the „Conception of development of hunting in Slovakia" (H et al 1973), where a target number was defined to be 300-350 individuals. In the actualised version (1983) it was increased to 350 -400 individuals.

The planning of the regulative hunting started from the number equal with 5 % of the population, later this amount raised to 10%. Before 1989 a regulative hunting was focused on heavy, trophy male-bears. This resulted in disturbed sexual and age structure of the bear population with the superiority of females, and in speeding up the growth of the population and its strong rejuvenatio n. The effort to change this situation ended in planning of the regulative hunting in accordance with the weight categories, where the killing of as much as 90 % of individuals weighing 100 kg was planned. Thus the probability of killing young males or fem ales without young ones increases. This could contribute to improve the sexual and age structure of the population, affected by one-sided hunting.

The permit is issued by the Ministry of Environment of the Slovak Republic after submission of application b ased on exceptions in the recent period, level of damages, detailed description of proposed manner of hunting, number and age category, estimation of population within the relevant area and on the principle of excluding the areas within the Third to the Fifth Level of Protection (National Parks, Nature Reserves). Deadline for applications is January 31st. Last year there were issued exceptions for shooting of 67 bears for 45 subjects. From this amount 28 bears were hunted up.

7. Rules for regulation of br own bear population

For judging the requests for the regulative hunting of bear the State Protection of Nature asserts the following principles:

- permanent development of bear populations in Slovakia
- sustainable natural sexual and age structure of the popul ation
- excluding of hunting of the bear in protected areas with the Third to the Fifth Level of Protection
- concentration of hunting activities to areas of high and repeated damages on livestock and bee-colonies
- preferential shooting of synantropic bears
- creation of continuous connection between the western and the eastern population

European Lynx ( )

During the past period from 1975-1994 the lynx was protected within the protected period set up by the amendment of the Hunting Act No. 172/1975. Hunting period lasted from September 16-February 28. In 1994, the Act on Nature and Landscape Protection introduced wolf as an all-year round protected animal, as one listed in CITES and Bern Conventions annexes. However, this status of protection was neglected by hunters, therefore the Ministry of Environment prepared new legislation which was negotiated with the Ministry of Agriculture and Slovak Hunting Union representatives. This resulted in putting into a force the Order of the Ministry of Agriculture from June 1999, and as of July 1, 1999 the Ministry of Environment Order No. 93/1999 on protected plants and animals and societal valuation of protected plants, animals and trees, which provide an all-year round protection for lynx.

Currently, there are implemented several partial monitoring programs, mainly in large protected areas - national parks and protected landscape areas. Systematic monitoring of lynx is planned for the model area Velka Fatra, where telemetrical equipment is planned to be used. In 1999 the expert group of nature conservation professionals was enlarged with experts from the hunting associations. Also, within the Ministry of Agriculture the Forestry Research Institute is being involved in research programs and in statistical evaluations of populations of game animals (Hunters statistics).

5.15. Slovenia

by Mrs Jana Vidic, Ministry of Environment and Physical Planning

Protection status of large predators in Slovenia

Three species of large predator live in Slovenia - brown bear, wolf and lynx. Their central habitat consists of large connected forests (Slovenia is 54% forest covered) in the south of Slovenia, especially in the area of Snežnik, Kocevje and central Notranjska. Individuals of all three species migrate from there in various directions, including the Alps.

The link between the central region with the area of Gorski Kotor and Velebit in neighbouring Croatia is extremely important for their survival, where are similarly present all three species of predator, which form a unified population unit with Slovene individuals.

It is considered that around 400 bears, around 100 lynx and some 10 wolves live in Slovenia .

Since 1993, all three species have been protected (Ordinance on the protection of threatened animal species, Official Gazette RS, no. 57/93), although hunting them may exceptionally be permitted by the minister responsible for agriculture or hunting.

The largest number of exceptional permits are issued for shooting bear, for the purpose of preventing conflict with people and enabling the coexistence of people with bears. In the last five years, an average of 46 bears annually have been taken from nature (shot, captured for resettlement, run over on roads and railways, other causes).

In 2000, we are preparing in Slovenia a strategy of managing large predators. For the moment, a professional proposal of management of brown bear has been prepared. The main aims are preserving the species and ensuring co-existence with people. We therefore envisage measures for protection of the bear and measures for protection of people from bear, in relation to the local population, farming, forestry, tourism, recreation and gathering the fruits of the forest, and building infrastructural facilities. The measures are specific and variously strict in the central area of the habitat, on the edge of the area, in the corridor region, which leads from the central region towards the Alps and to areas in which bears are only exceptionally present.

We envisage that the strategy will be adopted by the Government RS since it is necessary to achieve a harmonisation of interests with all competent ministries, especially those with responsibility for agriculture, hunting and tourism. We intend to prepare strategies for wolf and lynx in the same way.

In the political co-ordination of the strategies, we anticipate the most problems in relation to maintaining the corridor regions towards the Alps. In one past year, a few bears caused 80% of all damage to domestic livestock in a corridor region in that year, but some 100 bears in the central region, where people permanently coexist with the bears, only 20%. We are aware of the importance of the corridor region for the passage of large predators to the neighbouring countries of Italy and Austria, but we expect national or local authorities in the mentioned neighbouring countries similarly to adopt a strategy of protection or management of large predators which will be co-ordinated with activities in the space. It has already been shown too often that the return of large predators to the Alps is only a wish of nature conservation organisations, which is unrealisable without achieving a popular consensus. Slovenia will not be able to maintain the corridors, especially if their justification and sense is not ensured with co-ordinated and politically confirmed strategies in neighbouring states. In addition to the financial burden of the damage caused, because of cases of conflict in the corridor areas, general public opinion is also turning against the bears and harming the established tolerant attitude in the central area where people traditionally live with large predators.

The main factors threatening large predators in Slovenia are:

– changes in the habitat because of new and intensive human activities in the area, among which, because of the spread of settlement into open nature, increased tourist and recreational activities and the construction of traffic infrastructure, especially motorways which sever the historic connections between forest ecosystems and prevent or hinder linkage among population units, and other roads which enable greater access for people into the area,
– the fear of the local population of the return of large predators to historical habitats in the sub-Alpine and Alpine region,
– interventions in the population of brown bear which has changed the age and sex structure.

The most important measures for the protection of large predators in Slovenia are, in particular:

– the adoption of a national strategy of managing large predators, on the basis of which, among other things, conservation, agricultural and hunting interests will be co-ordinated and on the basis of which action plans will be produced,
– the founding of protection regions (three large regional parks are in process of being founded, which cover a significant part of the central living space of large predators),
– agreement with Croatia on joint efforts at protection of large predators.

5.16. Spain
by the Directorate-General for Nature Conservation, Environment Ministry

Cantabrian Brown Bear

Legal status

"Endangered" in the Red Book of Spanish Vertebrates, in Royal Decree 439/90 governing the National Endangered Species List and in Decree 32/90, which gave rise to the Regional List of Endangered Vertebrate Species of the Principality of Asturias.

Considered a "Priority Community species" due to its inclusion on Annexe II of Habitats Directive 92/43/CEE and in Royal Decree 1997/1995, which transposes it to Spanish legislation.

Included on Annexe II of the Bern Convention as a "Strictly Protected Species".

Recovery plans

Spain has five brown bear recovery plans:

- Decree 34/89 of May 18 authorising Cantabria's Brown Bear Recovery Plan (Cantabria Region Official Gazette 02.06.89)
- Decree 108/90 of June 21 setting out a protection statute for the brown bear in the Autonomous Region of Castilla y León and authorising the Recovery Plan. (Castilla y León Official Gazette Nº 122 of 26.06.90)
- Decree 13/91 of January 24 authorising the Asturias Region Brown Bear Recovery Plan. (Principality of Asturias Official Gazette Nº 49 of 28.02.91)
- Decree 149/92 of July 5 officially sanctioning Galicia's Brown Bear Recovery Plan. (Galicia Official Gazette Nº 114 of 16/07/92)
- Regional Decree 268/1996 of July 1 giving official recognition to Navarra's Brown Bear Recovery Plan. (Navarra Official Gazette Nº 93 of 02.08.96)

Conservation status

Spain hosts some of the most threatened bear populations in the world. These populations face growing threats involving habitat loss and fragmentation, demographic limitations and loss of genetic diversity.

Since the first quarter of the last century the brown bears of the Cantabrian Mountains have been distributed in two populations (western and eastern) thought to be totally unconnected. Recent genetic studies on these two populations appear to confirm this hypothesis. The distribution area covers 5,000 km2 although data on errant individuals extends this figure to nearly 7,000 km2. The western population census figure of 50-65 bears producing an annual average of five litters was greatly exceeded in 1999, with at least eight new families being recorded. The census of the eastern population by means of molecular techniques yields 20 individuals, but no litters were recorded in 1994, only one per year between 1995 and 1997 and none in 1998. 1999 saw an improvement, with two new families being recorded.

Analyses of the evolution and dynamics of the above populations appear to indicate that the risks of extinction are high. The most important threat factors are human-caused bear mortality and habitat loss and fragmentation. Furthermore, the small size of these populations is in itself a danger, and extinction may occur as a result of stochasticity. In international terms, bear population viability depends on there being several hundred bears and areas of several thousand square kilometres.

National strategy

The National Strategy for Brown Bear Conservation, passed by the National Nature Protection Commission on October 19, 1999, aims to ensure the long-term viability of the brown bear populations in the Cantabrian Mountains by increasing numbers and distribution, assuming the limitations inherent in coexistence with rural communities and the socio-economic development of the latter.

This aim will only be achieved if the main objectives outlined below are met.

- Reduction in the number of bears killed by people.
- Conservation and improvement of bear habitat.
- Guaranteeing connections between the two subpopulations and clusters within them.
- Ensuring public support for bear conservation.

The strategy indicates guidelines and measures to orient revisions of the recovery plans, which will have to be more specific as regards conservation actions and include a system of priorities to tackle initially the main threats.

The strategy will be applied in the current and potential bear distribution ranges described in the recovery plans and in the corridor between the two bear populations on the Asturian and Leon sides of the Cantabrian range, which the regions concerned will include in the geographical scope of their respective recovery plans.

Effective compliance with this strategy necessarily depends on co-ordination between all the sectors involved and on the will of those responsible for applying it to work towards a common aim, assuming and fulfilling each and every one of their commitments. Only in that way will this document make a real contribution to ensuring conservation of the Cantabrian brown bear.

Workshops and seminars

In recent years, the following events have been held:

"Brown Bear Conservation in Europe. A Challenge for the Twenty First Century". This seminar was organised by the Directorate-General for Nature Conservation (Environment Ministry) at the State-run hotel ("parador nacional") in Fuentes Carrionas, Cervera de Pisuerga, Palencia from 26-28 March 1998. A report on this seminar will be published in the near future.

Co-ordination

A Brown Bear Working Group has been set up under the aegis of the Wild Flora and Fauna Committee. The group comprises experts, representatives from the regions concerned and qualified personnel from the Directorate-General for Nature Conservation. One of its tasks has been to draw up the National Strategy for Brown Bear Conservation.

The Directorate-General for Nature Conservation has hired a Brown Bear Co-ordinator whose duties are as follows:

– to advise the Directorate-General for Nature Conservation and the regions that so require on all matters concerning Cantabrian brown bears,
– to co-ordinate monitoring and survey activities. Take part in national and international meetings,
– to co-ordinate and promote implementation of the recovery plans.

Studies

The following are being carried out:

"Genetic Study of the Spanish Brown Bear Population"
Budget: 33.900.000 ptas – Duration: 1997, 1998m and 1999
Aims:
– Individual genetic identification.
– Estimate of the size of the Cantabrian population.
– Determine the number of breeding females, birth intervals, individual differences between females, movements, den use.
– Specialisation in bears as regards damages; identification of bears for possible future release and relationship with native bears, etc.

"Programme Concerning Survival of Females with Cubs in the Cantabrian Mountains"
Budget: 20,000,000 ptas – Duration: 1998, 1999 and 2000
Aims:
– Locate, monitor and keep under surveillance family groups consisting of females with cubs, thereby helping to ensure their survival.
– Annual census of family groups and estimate of annual productivity, estimate of annual survival rates of young and causes of mortality.
– Identify threat factors affecting family groups.
– Analysis of intra- and interspecific relationships and their effect on the survival of family groups.
– Evaluation of the impact of human activities on the movements, activity and survival of family groups.

The following are planned:

A study on brown bear habitat for a total of 14,000,000 ptas.
An agreement with Asturias to restore the Pajares corridor and to organise a campaign against the use of snares.
An agreement with Castilla y León to restore the Leitariegos corridor.
An agreement with the Fundación Oso Pardo (Brown Bear Foundation) and FAPAS (Asturian Wildlife Conservation Fund) to staff surveillance patrols on private hunting reserves.

Life projects

The following are being carried out:

"Action Programme for Brown Bear Conservation in the Cantabrian Mountains"
Community grant : 6,469,2000 euros (75%) – Duration: 1992-1999

Beneficiaries: Autonomous Regions of Asturias, Cantabria, Castilla y León, and Galicia as well as the Fundación Oso Pardo.

"Conservation of Threatened Vertebrates in the Pyrenees"
Community grant (Spanish bear subproject): 1,526,447 euros (75%) – Duration: 1994-1999
Beneficiaries (Spanish bear subproject): Autonomous Regions of Aragón, Navarra and Cataluña.
"Brown Bear Conservation in Asturias"
Community grant: 529,248 euros (70%) – Duration: 1998-2002
Beneficiary: FAPAS (Asturian Wildlife Conservation Fund)
"Conservation of Breeding Subpopulations of Brown Bear"
Community grant: 436,928 euros (70%) – Duration: 1998-2002
Beneficiary: Fundación Oso Pardo
"Ancares de León: Coordinated Management of Two Adjacent SCIs"
Community grant: 430,682 euros (50%) – Duration: 1999-2002
Beneficiary: Regional Government of Castilla y León
"Ancares de Galicia: Coordinated Management of Two Adjacent SCIs"
Community grant: 504,299 euros (50%) – Duration: 1999-2002
Beneficiary: Regional Government of Galicia

Iberian Lynx

Legal status

"Endangered" in the Red Data Book of Spanish Vertebrates and in Royal Decree 439/90, which governs the National List of Threatened Species.

It is considered a "Priority Community Species" as it is included on Annexe II of Habitats Directive 92/43/CEE and in Royal Decree 1997/1995, which transposes it to Spanish legislation.

It is included on Annexe II of the Bern Convention as a "Strictly Protected Species".

Conservation status

The Spanish lynx is declining throughout its historical distribution area and is considered by the IUCN to be the most threatened cat species in the world.

On the national list drawn up in 1988, there were estimated to be around 1000 –1200 lynx spread mostly in small subpopulations that are isolated one from another (Sierra Morena, Montes de Toledo and Doñana). More recent estimates provided by the Wild Flora and Fauna Committee's Lynx Working Group (although not at national level) indicate that some regions (Extremadura and Castilla–La Mancha) have experienced a population decline of around 50% in less than ten years.

In recent years, there has been a 50-60% decline in Castilla –La Mancha and a 44-66% fall in Extremadura compared with the 1988 census estimates. Numbers for Doñana are stable (40–60 individuals), while in Castilla y León no comparative information is available. Lynx experts are currently in general agreement that there cannot be more than 600–800 lynx left in Spain and Portugal.

The lynx's decline, which began in the sixties, was aggravated between 1989 and 1996 by the appearance of viral hemorrhagic disease in rabbits. Lynx live in extremely low densities in increasingly divided and isolated subpopulations, and the outlook for the near future is that the aforementioned decline will continue.

National strategy

The "Strategy for Spanish Lynx Conservation" includes the technical bases to develop lines of action that will serve as guidelines for the drafting of the recovery plans of regions where are lynx are currently found i.e. Andalucía, Castilla-La Mancha, Castilla y León, Extremadura and Madrid. This strategy encompasses the knowledge and experience available on Spanish lynx to date, opening up a line of proposals that have been agreed upon and prioritised. As yet no recovery plans have been passed.

The strategy received the go-ahead from the Wild Flora and Fauna Committee and was approved by the National Nature Protection Commission on February 25 1999.

Its aim is to ensure conservation of the Spanish lynx in the long term. It will be in force indefinitely and will be reviewed at Working Group meetings and updated every 4 years.

The strategy will be applied in the lynx's potential distribution range i.e. areas where it is currently found, well-conserved surrounding areas and the corridors linking the different populations.

Direct responsibility for applying the strategy lies with the Central Government and the regional governments, but the inclusion of other sectors involved in its conservation (private landowners, NGOs, local communities, hunting sector, etc.) is envisaged.

As a result of Portugal having been invited to take part, there is liaison with the Instituto da Conservaçao da Natureza (ICN) via a Portuguese representative in the Spanish Lynx Working Group.

The priority conservation actions in the strategy are divided into 13 basic strands; namely:

– Co-ordination and co-operation
– Habitat protection and restoration
– Reduction of isolation between subpopulations
– Hunting management
– Increase in food availabi lity (rabbit)
– Avoidance of non-natural mortality
– Research
– Monitoring of lynx populations and prey populations
– Captive breeding programmes
– Awareness-raising
– Development of specific regulations. Pilot actions
– Information flow
– Material and fin ancial resources

Workshops and seminars

– The Directorate-General for Nature Conservation jointly organised with the IUCN Conservation Breeding Specialist Group a workshop on "Viability of Populations and Habitat of the Spanish Lynx" on February 21-24 1998 in Cabañeros National Park.

– The Spanish Lynx Conservation Strategy proposes the use of captive breeding as a back-up tool for lynx conservation. In response to this need, on October 25, 26 and 27 1999, a technical meeting was held in the Natural History Museum in Madrid to implement an Action Plan for Captive Breeding Spanish Lynx.

Co-ordination

Within the Wild Flora and Fauna Committee, a Spanish Lynx Working Group was set up consisting of experts, representatives from the regions concerned and adviso rs and qualified personnel from the Directorate-General for Nature Conservation. One of the group's tasks was to draw up the National Conservation Strategy.

The Directorate-General for Nature Conservation of the Environment Ministry has hired a Spanish Lyn x Co-ordinator whose functions are to:

– advise the Directorate-General for Nature Conservation and the regional governments on all matters pertaining to lynx
– co-ordinate lynx monitoring and control activities
– attend national and international meetings about the species
– co-ordinate and promote implementation of the conservation strategy

Studies

The following are being carried out:

"Development of a Captive Breeding Programme for Iberian Lynx "
Budget: 2,000,000 Ptas – Duration: 2 months
"Population diagnosis"
Budget: 44,000,000 pts – Duration:2000, 2001 and 2002
Aims: determine the size of Spanish lynx subpopulations in priority areas
" Management Agreements with Owners of Private Estates / Fundación CBD"
Budget: 90,000,000 ptas – Duration: 3 years
"Management Agreements with Owners of Private Estates / ADENA -WWF"
Budget: 90,000,000 ptas – Duration: 3 years
Implementation of the project "DNA Analysis of Lynx Scat" is planned
Budget: 16,000,000 ptas – Duration: 2000, 2001 and 2002
Implementation of th e project: " Actions for Rabbit Restocking for Lynx and Imperial Eagle" is planned.
Budget: 18,800,000 ptas
Implementation of the project "Lynx Conservation Actions on the State-owned Estates of Lugar Nuevo and Quintos de Mora" is planned.

Life projects

"Programme of Actions for Iberian Lynx Conservation "
Community grant: 2,000,000 euros (75%) – Duration: 1994-1998

Beneficiaries: Regional governments of Andalucía, Castilla -La Mancha, Castilla y León, Madrid, CSIC (Higher Council for Scientific Research), t he Environment Ministry.

"Conservation of ~~Lynx pardinus~~ in Extremadura"
Community grant: 827,512 euros (60%) – Duration: 1998-2002
Beneficiary: Regional Government of Extremadura
"Conservation of the Imperial Eagle, Black Stork, Black Vulture and Iberian Lynx in Private Natural Areas in Castilla –La Mancha and Extremadura"
Community grant: 1,196,495 euros (70%) – Duration: 1999-2002
Beneficiary: Fundación CBD

Wolf

Legal status

Bern Convention. The wolf was originally on Annexe II of the Ber n Convention (strictly protected), but the Spanish Government made a reservation and included it on Annexe III (protected species, exploitation of which shall be regulated in such a way that the populations do not become endangered).

Habitats Directive (92/43/CEE). North of the Duero, the populations are included on Annexe V (may be subject to management measures). South of the Duero the wolf is on Annexes IV (strictly protected) and II (must be subject to habitat conservation measures) as a priority measu re.

State and Regional Regulations. In accordance with Conservation Act 4/89 and the decrees implementing it, the wolf is not on the Endangered Species List, which empowers the regional governments to take decisions regarding its management.

In the northern Spanish regions of Galicia, Cantabria, the Basque Country, La Rioja and Castilla y León (north of the Duero) the wolf is a game species. In Asturias, it is not listed as a game species nor is it protected; however, in practice it is considered a protected species, but subject to management measures.

In Extremadura, Castilla la Mancha and Andalucía, it is a protected species.

Conservation status

Almost all the wolves in Spain occur in a continuous population in the north western quadrant of the country, where there are estimated to be about 2,000. The population has increased in terms of numbers and has spread over the last 30 years. There are also small isolated threatened subpopulations in Sierra Morena and along the border with Portugal (Extremadura and Salamanca).

Over the last ten years, the recovery of the northern population in Spain has been consolidated. It appears to be stable in most of the country, with a slight increase on the northern and eastern edges of its distribution area i.e. Asturias, Cantabria, the Basque Country and La Rioja. However, on the cereal table land of Castilla y León, there density has increased considerably and wolves have crossed the River Duero. The small population currently living south of the river has great potential for growth, which will foreseeably allow it to reach the Sistema Central range in a few years' time.

In Sierra Morena, there may be just a few dozen wolves, particularly in Andalucía. Wolves may have become extinct in Extremadura in the last ten years. An increase in the population south of the Duero can be expected in the future.

Co-ordination

A specific wolf working group exists under the aegis of the Wild Flora and Fauna Committee. There are plans to draft a conservation strategy, which would serve as a frame of reference for the regions to draft their respective action plans.

In 1999, the Environment Commission of the Spanish Parliament passed a non -legally binding proposal for several wolf conservation measures.

Workshops and seminars

International Seminar on Wolf Conservation and Management in Spain
(San Lorenzo de El Escorial, Madrid, June 8 -10, 1999).

This seminar brought together qualified personnel from the regional governments, Spanish wolf specialists, researchers from universities and the C SIC, representatives of the main NGOs and international experts such as David Mech (President of Wolf Specialist Group of the IUCN) and Luigi Boitani (responsible for drafting the Wolf Action Plan for Europe for WWF's European Large Carnivore Initiative).

Studies

"Applied Studies to Mitigate the Effects of Motorways on Spain's Wolf Populations"
Budget: 12.272.800 ptas – Duration: 1998 and 1999
Aims:

- To study the ecology and impact of infrastructures on a wolf population living in agricultural environment s.
- Design more effective corrective and compensation measures to limit the barrier effect on wolves and on other large mammals.
- Publicise the problem of fragmentation caused by the road network.
- Develop a technical co-operation project with the regional ad ministrations.

On recent actions undertaken for the conservation of the Iberian lynx in Spain

by Alejandro Rodríguez, Miguel Delibes and Pablo Ferreras
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Update: June 2000

After the thorough process of discussion on the successive drafts of the Action Plan for the Conservation of the Iberian lynx in Europe, whose final stage was the meeting held in Slovakia in October 1998, a definitive Action Pla n has been produced under the auspices of the Large Carnivore Initiative for Europe. Further, this Plan is being considered for endorsement by European institutions. Since 1998 the course of conservation action has proceed in some fields. In the present do cument we outline the main advances during this period in the implementation of conservation measures which agree with those considered in the Action Plan. We also discuss some shortcomings that, in our opinion, hinder the development of important actions.

1. Coordination of lynx conservation

The Spanish Lynx Working Group of the Wild Fauna and Flora National Committe is today the forum where administrative decisions concerning the conservation of the Iberian lynx are debated and coordinated. The Lynx Grou p is chaired by a member of the Spanish Ministry of the Environment and gathers representatives of the Regional Governments (abbreviated RG henceforth). We think that such a group should be complemented by a consultive board in which researchers, conservat ion experts, NGOs and external consultants will discuss and produce recommendations from a purely technical standpoint. The Lynx Group has taken three important steps in accordance with the Action Plan:

a. the preparation of a Spanish Strategy for the Cons ervation of the Iberian lynx, which was approved in 1999 by the National Commission for the Conservation of Biodiversity (i.e. the immediately upper level of political decision with regard to the Wild Fauna and Flora National Committe). This strategy offer s a set of recommendations aligned with goals and actions considered in the Action Plan. This document, as the product of consensus within the National Commission, has influence but not legal value, because conservation action is restricted to RG.

b. the designation in 1999 of a person responsible to promote the contents of the Strategy and facilitate the collaboration between RG; this person has been hired by the Ministry of Environment.

c. the incorporation of representatives of the Portuguese administra tion as permanent members of the Lynx Group since February 2000. This will hopefully lead to an improved coordination of policy proposals affecting lynx in both countries as well as coordinated transborder management of international populations.

One problem with the National Strategy for the Conservation of the Iberian lynx deals with its ambiguity. The Strategy itself is merely a framework: whereas it contains a list of actions, these are not ranked according to their relative priority. It does not consider a time schedule neither allocates specific financial resources to particular programs or tasks. Whereas the Strategy was the result of an agreement between all administrations involved, the competence for lynx conservation is in the only hands of the r egions. RG should claim for the important role laws attribute to them and take the initiative for conservation action, complementing the otherwise estimulating leadership that the Ministry of Environment has played while launching both the Strategy and the Lynx Group.

Since the Spanish laws appoint conservation duties to RG, the really important advances in administrative commitment with in situ conservation measures should be made through Regional Recovery Plans. Some of these are under preparation or have already been written, but no one has been approved by the correspondent government. For instance, the Andalusian Recovery Plan was written in 1999 and is now being reviewed by the administration for legal consistency.

To some extent the roles of the Ministry of Environment and RG, as established by law, have been reversed in practice. The Ministry should encourage and coordinate while RG should execute conservation actions for the Iberian lynx, and not the other way round (see examples below). This change of roles may greatly limit the efficiency of conservation measures.

2. Habitat protection and restoration

Little new has been done in this respect. Some RG spend a part of available resources allocated to lynx conservation in the maintenance of local patc hes of open land, often planted with cereal or pastures, which makes homogeneous scrubland tracts closer to the more patchy habitat requirements of lynx. The main advance in habitat protection will be in the declaration of new reserves, or the increase of restrictions in existing ones, within the Nature 2000 Network. However, there is a serious delay in the definition of “lynx area”, the area where the long -term conservation plans should be applied. Currently, this undefinition creates problems to regional administrations when deciding which areas should be proposed as candidates for the Nature 2000 Network of reserves. In some cases, it is argued that the species is not present anymore or that the habitat has been altered in some way to exclude areas

recently inhabited by lynx. Nevertheless, by thinking in this way one forgets that these areas (even if altered) are privileged as the most easily restored for lynx natural recolonization or future reintroductions. In this regard, it is remarkable that at the moment the European Commission considers "insufficient" the list of 'Sites of Community Importance' (SCIs) presented by Spain, apparently because not enough area is included to guarantee the survival of the Iberian lynx, among other species.

One change that draws our attention is that, in accordance with the action 2.5 of the Action Plan, from this year on, in Extremadura the EIA studies require an additional favourable report from the Regional Conservation Agency, which hopefully will benefit the preservation of lynx habitats.

3. Recovery of rabbit populations

The most important advance under this heading has been a new experience, again promoted by the Ministry of Environment through two NGOs (CBD-Habitat Foundation and ADENA-WWF): the agreement concerning land management between NGOs and several private owners in small areas of Eastern Toledo Mountains and Sierra Morena (some 3000 ha and 1000 ha, respectively). The area in Toledo Mountains harboured the second most important lynx population both in density and numbers, just before a drastic decline which started 15 years ago. The particular conditions of the agreement may vary from one owner to another, but in all cases there is an economical incentive attractive to owners (e.g. buying hunting rights during one or more seasons without hunting) and an assumed benefit for lynx habitat, especifically the enhancement of rabbit populations. Protocols for this action have been based on a document with guidelines for game management in lynx areas. This document has been brought forward by ADENA-WWF and produced at the beginning of 2000.

4. Reduction of mortality causes

The agreement between private owners and NGOs mentioned under action 3 is also aimed at promoting the owner's strict observance of regulations concerning traps and the complete avoidance of disturbing human activities. In areas containing lynx populations standard methods for predator control such as snares are now completely forbidden.

5. Public education and information

During the last year, the Iberian lynx has remained highly ranked in the treatment that media devote to nature conservation issues. Several events around the Iberian lynx and its problems have drawn the attention of many journalists both in Spain and abroad. The press campaign explaining the Large Carnivore Initiative for Europe and the publication of an excellent book of lynx pictures can be cited among these events.

6. Habitat connection between isolated lynx populations

The current discussion about the limits of the future SCIs, i.e. the elements of the Nature 2000 Network, will be crucial to satisfy the connectivity requirements between lynx populations. This is another point which underlines the importance of being generous in selecting the SCIs' boundaries having the recovery of Iberian lynx in mind (see also comments to action 2).

7. Reduction of the risk of inbreeding

No measure has been taken.

8. Captive, semi-captive breeding, and reintroduction

In the light of the results of the recent Portuguese survey (1994) and the last regional surveys in Spain (1995-1996), the possibility that the lynx has disappeared from many of the areas shown in the 1988 distribution map (see Action Plan, p. 40) has gained strength. Indeed, nowadays only there is proof that lynx still exists in some localities of Eastern Sierra Morena and the coastal plain of Doñana. Therefore, as a cautionary measure, the urgency to design and develop an experimental program of captive breeding has been stressed. In October 1999 researchers, technicians and representatives of the administrations met in a workshop held in Madrid, once again called by the Ministry of Environment. As a result, a detailed proposal of a Captive Breeding Plan for the Iberian lynx has been prepared. It contains objectives and actions regarding the establishment of priorities within the Plan, the management of captive animals, reproductive physiology, genetics and demography, health, reintroduction, and organizative aspects. The third draft of this document is now being discussed. So far, the main problems with this Captive Breeding Plan is that both the role of different institutions and the origin of financial resources for specific tasks and materials have not been adequately clarified.

Regarding action 8.4. of the Action Plan, a preliminary assessment of the Alcornocales Natural Park (Cádiz, S Spain) as a potential site for lynx reintroduction has been made in the framework of compensatory measures following the construction of a highway disecting such potential lynx area.

9. Monitori ng and research

Actions undertaken for lynx conservation, both before and after the elaboration of the National Strategy and the LCIE Action Plan, have never been monitored at a technical level. These actions have been primarily funded by EU LIFE programs. Established administrative controls have been efficient in assuring that the amounts invested corresponded to program goals (e.g. a given number of rabbit restocking attempts). However, assessing the real efficiency of these actions, in terms of measurabl e benefits for lynx populations has generally been neglected. Further, since these actions apparently have not changed the declining population trend of the Iberian lynx, a crucial question is "why not?". Obviously we need detailed information on the techn iques and protocols used as well as on their effects on some ecological parameters expressing the lynx response. As this information has not been collected we have learned little despite the work done, and we are not in a better position to correct mistake s or to improve the benefits of future actions for the lynx. It is therefore extremely important that every conservation action will
a. include enough funds in its budget for monitoring its biological efficiency, and
b. define its objectives so that the success of the action could be determined by objective data (a vague definition would be e.g. "improve food abundance in the area", while a more testable one would be "increase rabbit density from 0.5 ind/km to 0.9 ind/km ").

Under the auspices of the Anda lusian Regional Government, important advances have been made in the development of an objective method to identify Iberian lynx remains (tissue contained in scats, hair, skin and so on). Mithocondrial -DNA markers specific for the Iberian lynx have been is olated. After several tests evaluating the probability of obtaining false positives due to factors such as scat age it has been concluded that this molecular technique has an almost complete diagnostic value. Besides, this method is affordable and quick to perform, thereby applicable to large scale surveys. Therefore, soon it will be possible to draw a new lynx distribution map based on objective data. Individual identity could also be recognized both through DNA analysis and camera -traps baited with lynx u rine. These can be used to estimate population size at smaller spatial scales.

New knowledge on lynx habitat requirements has been recently published: especifically a comparison of habitat characteristics of lynx just before dispersal, during dispersal, an d just after settlement, and a description of the features of breeding dens. Two more studies have addressed the interspecific relationships (mostly exploitative and interference competition) between Iberian lynx and Egyptian mongoose, red fox, and Eurasia n badger. Other contributions include a list of intestinal parasites in a lynx population living in Sierra Morena, and a description of one death attributed to tuberculosis in the Doñana area.

10. Estimated current population trend

In spite of the efforts summarized above the status of the Iberian lynx is more and more worrying. There is indication that most populations are still declining, and could locally be close to extinction. For instance, intensive trapping (with both cameras and real traps) has bee n performed in several areas of Toledo Mountains and Sierra Morena without positive results. Preliminary results of DNA analyses indicate that scats collected by volunteers in many localities can not be attributed to the Iberian lynx. Sightings or other in direct evidence are becoming rare in areas where they were not some ten years ago. All this information suggests that increased efficiency in conservation action is now more needed than ever.

5.17. Sweden

The Situation of Large Carnivores in Sweden

by Ms Lena Berg & Mr Anders Bjärvall, Swedish Environmental Protection Agency

The four species of large carnivores in Sweden – brown bear, lynx, wolverine and wolf – are all legally protected. However under certain conditions the Environmental Protection Agenc y (EPA) can allow limited controlled hunting. Details on the extent of recent such decisions will be given below for each species.

In 1998 the Government appointed a Commission to draft a proposal for a future national policy for the large predators. According to the directives the Commission should consider a wide spectrum of biological, hunting and economic issues. The policy should also safeguard biodiversity and genetic variation to allow the species to survive in their natural habitats and in viable po pulations. This Carnivore Commission submitted a final report in January 2000. The report was distributed to various authorities, organisations etc for hearing with end of June as deadline. After consideration of comments received during this hearing -process the plan is that the proposal will result in a proposition to the Parliament.

As far as livestock is concerned the most abundant prey for large carnivores in Sweden by far is the semidomestic reindeer. There are no wild reindeer in Sweden. Based on exte nsive field studies it has been estimated that at least 20 000 semidomestic reindeer are killed annually by large carnivores. From 1996 there has been a completely new system for compensation of these losses. Through 1995 the reindeer owners were compensat ed only for reindeer which were found dead and where it could be verified that a large carnivore (or a golden eagle) was responsible. From 1996 the reindeer owners are compensated in relation to verified reproduction or confirmed presence of the carnivores based on a field inventory. The total cost for 2000 for this system is 35 million SEK. The principle was decided in 1995 but is still not regulated by any legislation. The Commission now has proposed a special ordinance concerning the right to compensation.

There have been recent changes also as far as other livestock than semidomestic reindeer is concerned. Under current regulations the county administrative boards have funds to contribute with measures to prevent damage by wildlife including carnivores a nd also to compensate for damage that has occurred.

Poaching is an old problem where new information recently has become available. The Carnivore Commission assigned to the different research projects on large carnivores to try to estimate the extent of p oaching on each respective species. Separate reports, mainly based on information from radiocollared animals, are included in the Appendix to the main report. The conclusions are alarming. Poaching of large carnivores takes place on a large scale in Sweden, often with cruel methods. Particularly for the wolf and the wolverine, the illegal hunting may have severe consequences.

In late June national Action plans for all four species were adopted by the EPA. Information from the Agency on large carnivores is available under www.internat.environ.se/index.php3

Brown bear

Since 1943 when brown bear hunting again was allowed after a period of total protection, different surveys show that the population has been growing steadily. The most recent calculation – in 1996 by the Scandinavian Bear Project – estimated the population at around 1 000 bears. It means that the number of bears has tripled in about 60 years. This development has taken place in spite of a legal harvest of almost 1 500 bears during the same period.

A system for controlled hunting has been in force since 1981. The EPA sets annual quotas for all areas where hunting is allowed and when the quota is filled in an area or the season is over hunti ng is stopped. For a number of years the total annual quota has been just above 50 bears. Most of them have been shot. In 1997 a complaint about the Swedish bear hunting was made by a Swedish NGO to the European Commission. The organisation claimed that th e hunting was not in accordance with the rules in the Habitats Directive. After some correspondence and a meeting in Stockholm however, the Commission in 1999 concluded that the Swedish bear hunting does not mean any transgression of existing rules.

The Scandinavian Bear Project, initiated in 1984 and still running, has significantly increased our knowledge about the species. The project has generated some 100 published articles, covering e.g. home range size, activity, movements, age of first reproduction, number of cubs per litter, interval between litters, mortality, food, infanticide, genetics and danger to man.

The report from the project on the extent of poaching of bears, published in the appendix of the final report from the Carnivore Commission, co ncludes that the illegal kill probably is equal to or even higher than the legal.

Lynx

The official shooting statistics reflect the considerable variation in the Swedish lynx population during the last decades. From the mid 1960ies to the mid 1980ies the re was a steady decrease indicating a drastic decline in the population. Towards the end of this 20 year-period the EPA estimated that the total population might have been as low as only a few hundred individuals. However, under cover of protection, from 1 986 in Sweden outside the reindeer management areas and from 1991 in the whole country, the number started to increase again. Estimations based on winter-surveys of snow-tracks indicate that the total population in 1999/2000 might have been approaching 1 5 00 individuals.

There was a need to keep the total protection for four years but from 1995 the EPA has allowed some controlled hunting primarily to try to reduce the damage caused by lynxes in areas with semidomestic reindeer. The first year only six lynxe s were allowed to be killed but the number has grown and in 2000 the total permit was 183 lynxes out of which 165 were killed. The inventories on which the new system for compensation for carnivores in reindeer management areas are based, clearly indicate that this harvest has reduced the number of lynxes and thus reasonably also the extent of damage.

Also the lynx hunting was reported to the European Commission in 1997 with the same outcome as with the bear hunting. The Commission found that there had been no transgression of the rules in the Habitats Directive.

Research-projects based on radio-collared lynxes were initiated in 1994. In a report to the Carnivore Commission – published in the Appendix to the final report from the Commission – the projects try to quantify the extent of poaching on lynxes. The material is limited but indicates that the illegal hunting might be of the same magnitude as the legal.

Wolverine

The wolverine is unevenly distributed within the reindeer management area where the popul ation – based on the inventory which is part of the compensation system – last winter was estimated at 270 individuals. From the mid 1970ies to the early 1990ies the population decreased but in the late 1990ies the species to some extent returned at least within part of its range. In addition reproduction of wolverine has been confirmed in 1999 and 2000 in a forested area outside the reindeer management area.

The wolverine has been fully protected since 1969 but with possibilities for the EPA to allow – under certain conditions – restricted controlled hunting. On single occasions in recent years this possibility has been utilised to reduce damage in situations with local concentrations of wolverine reproductions in the reindeer management area. Wolverine kit s in a den or the female and her kits have been killed or alternatively the kits have been transferred to a zoo.

A research-project, initiated in 1992, has tried to utilise the fate of the radio -collared animals to evaluate the extent of poaching. The report, similar to the ones mentioned above, is included in the Appendix to the final report from the Carnivore Commission. Radio -collared wolverines have been illegally killed even though these animals are regularly monitored and the project stresses that poa ching might have a significant effect on the population dynamics of the wolverine. The project particularly points out that illegal killing can be an obstacle for wolverines to get re - established outside the study-area.

Wolf

During the 1980ies and 90i es the number of wolves increased strongly from around or even less than 10 mainly in Sweden, to 59-75 individuals of which several had spread into Norway. The number in April 2000 included six packs of which probably five were the result of reproduction in 1999. One pack was exclusively in Norway, two of the territories covered areas on both sides of the border and the remaining three were in Sweden. The number also included from six to nine resident scent -marking pairs. In February 1999 an adult male had to be killed because of a severe injury. Apart from this, no wolf has been legally killed in Sweden since February 1993.

A Swedish-Norwegian research project on wolves was initiated in late 1998 when seven individuals were radio - collared. In January-February 2000 another 11 wolves were equipped with radio. Some of these wolves have demonstrated very extensive dispersal movements over central and southern parts of the Scandinavian Peninsula.

The research-project has already lost radio-collared wolves due to poaching but has not been running long enough to allow a scientific evaluation of the extent. However, of 40 wolves known to have died in Scandinavia from December 1977 to March 2000, 13 were illegally killed. For comparison, only six were killed after a previous permit from an authority. Moreover, of the 40 wolf deaths all but one were caused by man. Traffic – trains or cars – was the most common cause of death.

5.18. Switzerland

The Situation of Large Carnivores in Switzerland

by Urs Breitenmoser and Hans-Jörg Blankenhorn

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According to the Swiss Federal Law on Hunting and on the Protection of Mammals and Birds Living in the Wild (Swiss Hunting Law) and its corresponding ordinance (Swiss Hun ting Ordinance), the three large carnivores bear, wolf and lynx belong to a list of animals with special responsibilities of the fed eral authorities. The "Big Three" are year-round protected from hunting, and wildlife services of the cantons can remove specimens cau sing damage to livestock only with permission of the Federal Office for the Environment, Forest and Lan dscape (FOEFL). On the other hand, the FOEFL has far-reaching duties in regard to the pr evention and compensation of damages. Furthermore, the Swiss Hunting Ordinance obliges the FOEFL to draw up management plans for these specially listed species. After problems with wolf and lynx management in recent years, the implementation of such manag ement plans have been given high priority.

The lynx, reintroduced in the 1970s in the Jura Mountains and the central and western Swiss Alps, has unde rgone fluctuations in both, distribut ion and abundance. At presence, two small populations exist in Switzerland (Fig. 1), numbering some 100-150 individuals. The Jura population extends also over the French part of the mountain range and seems to be of moderate density. The population in the Alps, however, has increased in the north-western Swiss Alps in recent years and reached a density of about 2 adult individuals per 100 km . Parallel with the lynx abundance, damage to livestock has increased and the roe-deer population decreased. In 1999, a total of 193 domestic animals, mainly sheep, were compensated as lynx kills. The impact of lynx on livestock and wildlife has caused a violent controversy in the north-western Swiss Alps. In spite of the high lynx abu ndance in this region, the lynx popu lation did not further expand. On the contrary, monitoring data indicated that the lynx presence was declining in the central Swiss Alps, and large parts of the eastern and southern Swiss Alps are still not occupied (Fig. 1). Obviously, lynx, which show a relatively low capacity to disperse, have pro blems to overcome barriers of high mountain ridges or human altered va lleys between geographical compartments (Fig. 2).

The wolf intrudes into south-western Switzerland from the expanding population in the Fre nch and Italian Alps. Damages to sheep herds first occurred in 1995/96, then again in 1998 and in 1999 (Fig. 1). In winter 1998/99, two wolfs were killed in the upper Rhone valley, one illegally shot, the other killed by a car on the Simplon pass road. In 1999, some 250 free roaming sheep were killed or disa ppeared in the central part of the canton of Valais, all attri buted to probably only one wolf. When the attacks continued in spring 2000, the FOEFL authorised the wildlife department of the canton of Valais to shoot this wolf.

The brown bear is not (yet) present in Switzerland. However, when the population in the eas tern Alps further expands or the restocking of the remnant occurrence in the Trentino region succeeds, the south-eastern Swiss Alps may see the immigration of bears in the coming years. The FOEFL has instructed the KORA (coordinated research projects for the conservation and management of carnivores in Swi tzerland) to produce information material for the brown bear and for the other large carnivores, which can be downloaded from the internet at :// . . . .

Research activities in the past three years concentrate at (1) the study of the impact of lynx on wildlife and livestock in the north-western Alps by means of radio-telemetry, (2) the testing of preventive measures against wolf (mainly livestock-guardian dogs) and lynx (protective co llars and deterrents) attacks on sheep, and (3) the evaluation and implementation of monitoring systems.

The political focus was on the drawing up of the management plans. The FOEFL installed a national task force including the relevant interest groups, the cantons, and experts to draft such plans, which are then given into consultation to the cantons and the public. The objective of the lynx mana gement plan is the conservation and maintenance of a viable lynx population in Switzerland and in the Alps. In o rder to achieve this goal, methods for the prevention of carnivore damages in livestock have to be d eveloped and implemented, and large carnivor e management has to be sustainable considering their impact on other wildlife species, agricu lture and forestry. The most important aspects of the management plan are:

The future management of lynx will be based on geographical compartments as shown in Fi g. 2. In every compartment, a regional management board for large carnivores including the local a uthorities and the i nterest groups shall be installed. The concept defines three chronological stages: stage 1 (present status): Lynx distribution is clustere d; stage 2 (near future): Lynx is spreading into all suited habitat areas of Swi tzerland; stage 3: lynx occupies all suitable habitat and is co nsidered viable.

A monitoring system for the lynx population is established and continued in all stages.

Livestock damage: The confederation and the cantons organise and reimburse local pr ogrammes for carn ivore damage prevention. They compensate for animals killed by a lynx if reasonable preventive measures were applied and the sheep was not killed inside a fo rest. If 15 sheep are killed within a radius of 5 km in a year (12 sheep if damages occurred in the previous year), pe rmission can be given to capture or shoot the lynx on this pasture. The removal of lynx speciali sing in livestock is possible in all stages.

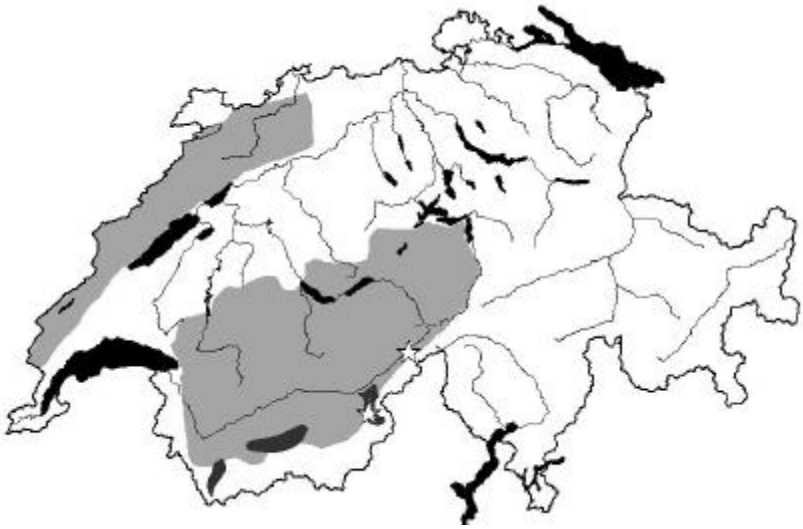
Interventions into the lynx population shall be allowed if within a compartment the i mpact of lynx on wil dlife (mainly ungulates) is considered too high or if due to lynx pred ation, another wildlife species (e.g. c apercaillie) is threatened.

In stage 2, interventions into local lynx populations shall be done mainly in the form of transloc ations of individuals into other compartments. In stage 3, sustainable shooting of lynx on a r egional scale will be possible.

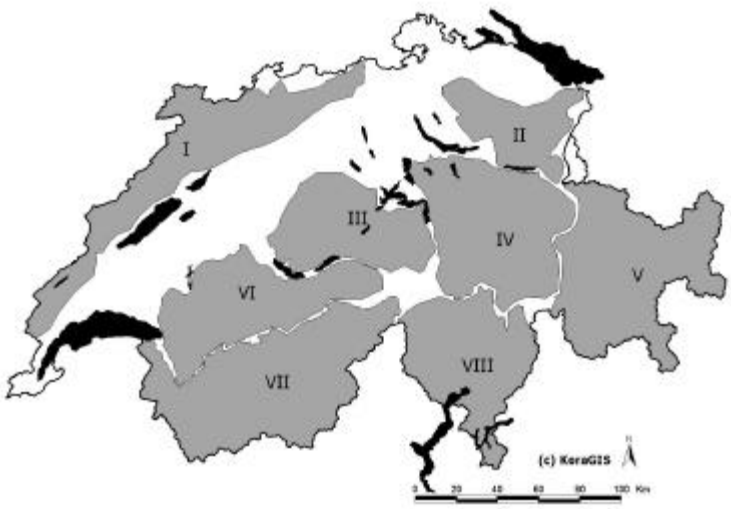
The concept defines the present and future com petences for the cantons in regard to interve ntions into the local lynx populations. The cantons are given more competences in regard to lynx management, in order to allow them to take part in the programme of active lynx transl ocations from compartments of high density to areas not yet occupied. As Switzerland is only a part of the potential Alpine lynx pop ulation, the federal authorities hope to cooperate with all other Alpine countries and international inst itutions in order to secure the long-term survival of the lynx throughout the Alpine arc.

The “Concept Lynx Switzerland” was agreed upon by the federal and cantonal authorities in spring 2000 and will be published in August 2000. A first draft of the wolf management plan is presently b eing discussed in the national task force and should be ready for a public consu ltation by the end of the year 2000.

. Area of continuous lynx occupancy (light grey) in Switzerland and areas of wolf pre sence since 1995 (dark grey = regions of wolf attacks on sheep herds; stars = wolves illegally shot and killed on the road).



. Geographical compartments for the management of lynx and wolf in Switzerland. Transloc ations of lynx are pre sently planned from the compartment VI (north-western Alps) to the compartment II (north-eastern Switzerland).



5.19. Tunisia

by the Ministry of Agriculture, Directorate General of Forestry

The protection and conservation of wildlife in Tunisia are matte rs of priority for the Tunisian Government which has ratified several international conventions, more particularly the Washington and Bern Conventions.

Several projects for the reintroduction of wildlife species formally present in Tunisia have been carrie d out in recent years. Mention may be made, by way of example, of the Oryx, the Mhorr gazelle, the ostrich, the mountain gazelle, the Serval, etc.

While the main efforts have been aimed at the Sahel -Sahara antelopes, wild carnivores have also received attention.

I. The principal wild carnivores of Tunisia

1. Hyena (Hyaene hyaena)
   A rare protected species found mainly in the hilly brushlands in the north, centre and south.

2. Weasel (Mustela nivalis)
   Rare species which frequents the brushlands and forest s north of the Dorsale mountain range.

3. Zoril (Poecilictis libyca)
   Rare species to be found mainly in the brushland and rocky areas in north and south, in ancient olive groves and in oases. The northern variety is darker than the southern.

4. Otter (Lutra lutra)
   Rare species of which frequents the wades, lakes and dams north of the Dorsale range.

5. Jackal (Canis aureus)
   Common species found throughout Tunisia, particularly in steppeland, brushland and forests.

6. Fox (Vulpes vulpes atlantica) incl uding Rüppell's fox (Vulpes rueppelli)
   Common species found in the south and extreme south of Tunisia.

7. Fennec (Fennecus zerda)
   Rare protected species to be found in the sand dunes and the Nebkhas south of Chott El Djerid. A very popular species in Tunisia, it was chosen as the logo of the Environment Ministry and symbolises for children the "nature warden" combating attempts to harm the environment.

8. Monk seal (Monachus monachus)
   Very rare protected species concentrated on the northern coast of Tunisia (islands of La Galite, Galliton and Zembra).

9. Cheetah (Acinonyx jubatus)
   Very rare protected species occasionally observed passing through the region of the Grand Erg Oriental.

10. Caracal (Caracal caracal)
    Very rare protected species found in the forests and brushlands of north -western and central Tunisia.

11. Serval (Leptailurus serval)
    Protected species not recorded in Tunisia since the 1940s. It used to frequent the dense forests of cork oak and the El Feidja region.

12. Sand cat (Felis m argarita)
    Rare protected species found in the extreme south in rocky brushland regions.

13. Caffre cat (Felis libyca)
    Relatively rare protected species to be found throughout Tunisia in forests and brushland.

14. Genet (Genetta genetta)
    Common species present in brushland, forest and oasis habitats throughout Tunisia.

15. Egyptian mongoose (Herpestes ichneumon)
Common species frequenting wetlands north of the Dorsal range.

II. Reintroduction of the Serval in Tunisie

This species was no doubt exterminated in Tunisia in the mid 20th century.

In 1991, one male and two females, bred in Munich zoo, were acquired and raised in a breeding centre at Dar Chichou (Cap Bon, Tunisia).

The reintroduction of these Serval was planned in two sta ges:

– raising and breeding of Servals in a wire netting enclosure at Dar Chichou;

– transfer of the captive-bred Servals to an acclimatisation enclosure in El Feidja national park and subsequent release in the wilderness area of the national park.

At the age of five months, the young Servals are separated from the mother and placed in the acclimatisation enclosure of El Feidja national park.

The transfer of the young Servals from the Dar Chichou breeding station and their reintroduction in the El Feidja national park is carried out in two phases.

The young Servals are first kept in an acclimation enclosure (10 x 10m) near a spring. Some months later they will be released into the adjacent forest. The enclosure is surrounded on all sides with large -mesh wire netting which allows birds and small rodents to enter, but is open to the sky. The enclosure is also fitted with a service gate and a small aperture half way up the fencing which will enable the Servals to leave the enclosure while preventing hens or rabbits from doing so.

The grass and scrub within the enclosure are left intact. Two crates are also provided where the Servals can shelter or mate.

For two months, the Servals are fed with live chickens or rabbits. Chicken feed is also spread to attract birds and small rodents from the surrounding woodlands.

After the two-month period, the small aperture in the wire netting is opened to allow the Servals to leave, but the same food is still provided inside the enclosure to enable them to return from time to time to seek food and shelter.

III. Results of Serval reintroduction in Tunisia

Date of release in El Feidja national park	Numbers	
	Males	Females
12.12.1994	1	1
01.08.1995	1	-
19.06.1996	2	-
07.05.1997	2	3
18.12.1997	-	2
17.02.1999	1	1
05.02.2000	1	1
Total	8	8

A few Servals have been observed in El Feidja forest and in the adjacent part of Algeria since the start of the reintroduction scheme.

5.20. Ukraine
by the Ministry of the Environment and Natural Resources

State of wolf , lynx and bear in Ukraine

Wolf

Wolf is considered to be common species in Ukraine. As other species their number changed from year to year depending on nature conditions and anthropogenic pressure. As well adapt able species, the wolf increased in number during the time of economic and social instability. For example during Civil War in 1917 –1919 the wolf distributed all over Ukraine but before the Second World War their number had sharply decreased up to 100 time s because of intensive human prosecution. During the II World War their number had been increased and in 1947 –1949 was estimated up to 7000 individuals. In 1946 –1967 there were caught (hunted) about 35000 wolf and in 1969 wolf's number did not exceed 300 individuals. Then the wolf's number is steadily increased (see table).

In general, the wolf considered to be harmful species especially for cattle, ship and other animal stock used by humans. Although, the human -wolf relation are always a subject of strong discussion among scientists, wide public, farmers, and nature conservationists.

Wolf is a hunting species in Ukraine and its taking from the wild is regulated by hunting legislation. The wolves are hunted under control of the regional bodies of State Committee for Forestry. There are no hunting quota for wolves in Ukraine.

There is a monitoring of wolf number in Ukraine. Usually, rangers and hunters collect data on the wolf number and distribution and then give this information to the regional forestry departments. They generalize the information for their region (oblast') and send it to the State Committee for Forestry, the body which is responsible for management of hunting species including wolf.

If wolves occur within the protected area, they also should be protected as any other species of wildlife, according to the status of this territory.

There is no scientific programme on national level but some scientists study wolf on a regional level.

Wolf is included to the appendix II of the Bern Conventi on. As Ukraine is a member state of the Bern Convention, there is an intention to give more attention to the wolf as well as other large carnivores. There is a great interest in participation of Ukraine in Large Carnivore Initiative in Europe. On the 19th Meeting of the Standing Committee of the Bern Convention in 29 November – 3 December 1999, Recommendation No. 74 on the conservation of large carnivores was adopted. There were outlined, inter alia , "to consider drafting and implementing (or, if appropriate, reinforcing) national Actiona Plans for the species listed in the Appendix to the recommendation". The wolf is covered by this Recommendation as well. A number of measures towards the wolf conservation and study is proposed for Ukraine in the Action Pla n for wolf.

There is a discussion now to start joint conservation project on large carnivores in Carpathian region together with Carpathian countries (Poland, etc.)

Table 1. Number of wolves in Ukraine, as a whole and per oblast' (administrative unit in Ukraine), number estimated/hunted (killed). The data are given according to the annual Statistical Bulletin of the State Committee of Statistics.

Ukraine as a whole	1760/679	2043/619	2064/756	2146/940	2172/798	2227/967
Crimea		2				
Volynska oblast'	46/22	62/31	60/11	68/33	73/22	66/27
Dnepropetrovska oblast'	63/44	81/29	67/41	80/28	97/26	116/66
Donetska oblast'	20/15	30/13	37/15	44/37	56/27	39/34
Zhitomyrska oblast'	162/82	195/72	243/83	281/102	192/37	199/93
Zakarpatska oblast'	167/22	179/10	125/26	117/29	147/47	124/37
Zaporizka oblast'	49/14	57/12	60/32	54/31	40/32	33/18
Ivano-Frankivska oblast'	89/19	86/17	106/12	99/25	115/32	121/32
Kyivska oblast'	62/26	100/28	140/22	96/34	132/37	145/56
Kirovogradska oblast'	19/2	38/2	26/4	23/-	44/7	79/36
Luganska oblast'	144/62	238/105	232/115	319/146	239/122	305/143
L'vivska oblast'	133/49	110/45	145/33	106/20	123/46	80/43
Mykovaivska oblast'	48/6	58/12	61/15	57/23	91/21	88/17
Odeska oblast'	42/33	58/28	43/26	80/31	46/23	86/33
Poltavska oblast'	40/30	54/41	60/39	41/50	39/26	38/23

Rivnenska oblast'	159/24	164/35	145/63	144/70	141/61	201/49
Sumska oblast'	103/63	87/5	132/48	142/79	133/62	133/41
Ternopilska oblast'	37/9	30/7	9/3	8/4	12/4	10/2
Kharkivska oblast'	64/37	43/31	43/26	65/25	88/32	96/68
Khersonska oblast'	56/31	47/21	79/23	77/36	98/21	65/28
Khmelnitska oblast'	33/3	27/6	19/6	26/3	25/1	36/1
Cherkaska oblast'	19/17	56/14	28/12	23/12	18/6	18/9
Chernivetska oblast'	40/6	36/5	43/7	29/5	27/8	19/7
Chernihivska oblast'	165/63	204/45	157/94	164/116	196/98	176/104
Kiev	-/-	3/-	4-	3/1	-/-	4/-

Lynx

Lynx is represented in Ukraine by two subspecies dwelling in Polissya and Carpathians. The species mostly distributed in Ukrainian Carpathian. S mall populations are available in the forested area in Manevitsky district of Bovyn' oblast'. Some individuals occur also in Polissky Natural Reserve (Zhytomyrska oblast'). Single animals have been recorded in the northern part of Chernihivska oblast' and Sumska oblast' (came from Byelorussia). Before the 19 century lynx was distributed in Polissya and Forest -Steppe province.

Lynx habitats in Ukraine include mostly hardly accessible sites in coniferous and mixed forests. In mountain area animals go up to 1200 m above sea level.

Lynx number in Ukraine reaches 400 –500 individuals and tends to decline.

Main factors which cause lynx population decline are poaching, habitat degradation due to forestry activity and recreation load, transport infrastructure devel opment, and disturbance.

Lynx is included in Red Data Book of Ukraine under category II (vulnerable). It is protected in Polissya Natural Reserve, Carpathian Biosphere Reserve, Carpathian National Natural Park, zakaznik (a kind of protected area) "Rys'" (Lynx) in Manevitsky destrict of Volynska oblast'). Proposals of creation of new protected areas are under consideration.

Bear

Bear is the largest carnivore in Ukraine, typically inhabiting vast forested area. In Ukrainian Carpathian bear occurs up to upper forest border. Main habitats includes bush in forest cutting areas rich in berries. In autumn animals go down to beach and oak forests. Winter bear habitats include mostly coniferous and mixed forests were they build bear's lair and hiber nate.

Bear population number in Ukraine tends to decline. In accordance to hunting statistics total number of bears in Ukrainian Carpathian is estimated to be 300 –400 individuals. The highest level of bear population number in Ukrainian Carpathian had been recorded in 1968 – 1236 individuals, in 1974 their number was 1135, and in 1978 – 973. Main declining factor is poaching. Other factors include habitat degradation, disturbance, and environmental pollution.

Bear is not included in the Red Data Book of Ukraine. Nevertheless, it is protected by law and its hunting is allowed only in exclusive cases under strict control.

For all three species, a scientific program aimed at study of present status of population of animals and elaboration of conservation measures is expected to commence in the year 2000. During its implementation, recommendations of the Standing Committee of the Bern Convention relevant to the large carnivore conservation will be taken into account.

A N N E X E 6

Mandat révisé du groupe d'experts sur les grands carnivores

– faire le point sur le statut et les problèmes de conservation des grands carnivores sur le territoire des Parties contractantes à la Convention et des Etats observateurs;

– proposer des mesures de conservation appropriées dans le but de maintenir des populations viables de grands carnivores là où leur application est réaliste et conforme à l'article 2 de la Convention;

– proposer des moyens et des méthodes visant à limiter autant que possible les conflits entre les grands carnivores et les économies rurales, afin que la coexistence de l'homme et de ces espèces puisse s'inscire dans la globalité du développement durable des zones rurales concernées;

– suivre la rédaction et la mise en œuvre des plans nationaux ou ré gionaux d'action pour les espèces, et collaborer le cas échéant avec les Etats pour résoudre les problèmes techniques qui se poseraient;

– promouvoir l'identification de zones d'intérêt pour les grands carnivores en vue de les utiliser dans la constitutio n du Réseau Emeraude de zones d'intérêt spécial pour la conservation et de contribuer à la recherche de zones pour le Réseau écologique paneuropéen (Domaine d'action 1 de la Stratégie paneuropéenne de la diversité biologique et paysagère);

– soutenir la m ise à jour des plans d'action de la LCIE et leur élargissement à de nouveaux territoires qui ne seraient pas encore couverts, et encourager la rédaction de plans d'action pour d'autres espèces pertinentes telles que Caracal caracal et Panthera pardus ;

– soumettre au Comité permanent des projets de recommandations relatives à la sauvegarde des grands carnivores;

– assister le Comité permanent dans toutes les questions portant sur les grands carnivores et faire toutes les propositions susceptibles d'amélior er l'efficacité du groupe.