Programme

WEDNESDAY NOVEMBER 5TH.

Arrival in Segovia, check in, accommodation and dinner.

THURSDAY NOVEMBER 6TH.

■ STATUS AND EVOLUTION OF WOLF POPULATIONS IN EUROPE.

9:00 - 10:00 Registration.

10:00 - 10:30 OPENING SESSION.

WORK SESSION: WOLF STATUS AND DISTRIBUTION IN EUROPE.
Chairperson: Antonio Fernández de Tejada.

10:30 - 11:00 ALPINE REGION (France and Italy).
- The wolf status in France.
  Pierre Migot.
- The wolf status in Italy.
  Luigi Boitani.

11:00 - 11:30 FENNOSCANDIA REGION (Sweden Norway and Finland).
- Status and trends of wolves in Scandinavia.
  Olof Liberg.
- Status and management of wolf in Finland.
  Ilpo Kojola.

11:30 - 12:00 NE EUROPE (Baltic countries, Poland and Germany).
- Status and trends of wolves in NE Europe.
  Zanete Andersone.

12:00 - 12:30 Coffee break

12:30 - 13:00 CARPATHIAN REGION.
- Wolves management in Carpathians.
  Ovidiu Ionescu.

13:00 - 14:00 IBERIAN PENINSULA (Portugal and Spain).
- Wolf Status and Distribution in Portugal and principal working issues developed by Nature Conservation Institute.
  Ines Barroso.
- Status and evolution of wolf in Spain.
  Juan Carlos Blanco.

14:00 -16:00 Lunch.

WORK SESSION: EXPERIENCE OF WOLF MANAGEMENT AND GOOD PRACTICES.
Chairperson: José Ángel Arranz.

16:00 - 18:00 LIFE PROJECTS
- Wolf-livestock conflicts: past actions and next steps.
Annette Mertens.

OTHER EXPERIENCES:
- Control of compensation for damages caused by wolf in Alava Province.
José Ramón Aguirrezabal Sanz.
- Assessment and wolf damage valoration and wolf damage valoration system in Basque country
Mario Sáez de Buruaga.
- Wolf management in Picos de Europa National Park.
Borja Palacios Alberti.
- Aid Programmes to livestock farming for wolf damages in Galicia. (Spain).
María del Carmen Juliani Aguado.
- Measures to alleviate wolf damages in Castille and Leon (Spain).
José Ignacio Molina García.

18:00 - 18:30 Coffee break.

18:30 - 19:30 ROUND TABLE.

21:30 Dinner.

FRIDAY NOVEMBER 7TH.

■ TOWARDS NATIONAL AND REGIONAL STRATEGIES. MANAGEMENT PLAN.

WORK SESSION: GENERAL PRINCIPLES OF WOLF MANAGEMENT.
Chairperson: Miguel Aymerich.

9:00 -10:00 HABITATS DIRECTIVE.
Nicholas Hanley.

10:00 - 11:30 BASIS FOR WOLF MANAGEMENT IN EUROPE:
- Cutling, hunting and problem wolves: when and how to remove wolves.
Luigi Boitani.
- From protection by law to conservation through acceptance: lessons from the Croatian case for wolf management in Europe.
Djuro Huber.
- Spatial strategies for wolf management: to zone or not to zone?.
John Linnell.
- Food Ecology of wolves in Europe: and inevitable conflict with human interest?.
Henryk Okarma.

11:30 - 12:00 Coffee break.

WORK SESSION: NATIONAL STRATEGIES.
Chairperson: Luigi Boitani.

12:00 - 14:00 NATIONAL STRATEGIES PRESENTATION:
- Management of the wolf in France.
  Martine Bigan.
- The Italian Policy for Wolf Conservation.
  Piero Genovesi.
- Wolf status in Latvia: distribution, dynamics and management of population.
  Janis Ozolins.
- Wolf in Estonia. Present status and management activities.
  Peep Männil.
- Wolf (Canis lupus) in the Slovak republic.
  Martin Kassa.
- Basis for Wolf Conservation and Management Strategy in Spain.
  Borja Heredia.

14:00 - 16:00 Lunch.

WORK SESSION: REGIONAL STRATEGIES.
Chairperson: Esperanza García Corvo.

16:00 - 17:30 REGIONAL STRATEGIES PRESENTATION:
- Wolf management in Asturias.
  Juan Carlos del Campo González.
- Status of Iberian wolf populations in Castilla-La Mancha. Conservation strategies.
  Rafael Ruiz López de la Cova.
- Wolf conservation in Andalusia.
  Antonio Franco.
- Wolf management plan in Galicia.
  Mercedes Robles Gómez.
- Strategies of the wolf management and conservation plan in Castille and Leon.
  José Ángel Arranz Sanz.

17:30 - 18:00 Coffee break.

18:00 - 19:00 ROUND TABLE.

19:00 - 19:30 CONCLUSIONS OF THE MEETING.
Chairperson: Nicholas Hanley.

19:30 - 20:00 CLOSURE.

21:30 Dinner.

SATURDAY NOVEMBER 8TH.

Field trip to Hoces del Duraton Natural Park (Segovia).
Visit to "Age of the Man" Exhibition.

SUNDAY NOVEMBER 9TH.

Return to the airport.

THE WOLF STATUS IN FRANCE: METHODS AND AN UPDATE

by
Pierre Migot, E. Marboutin & C.Duchamp (ONCFS)

An expanding wolf population is recolonising the south-eastern part of France from the alpin Italian source population since the early nineteen's (first presence sign in 1992). From 1994 onwards, a 3-step monitoring system has been implemented by the National Game & Wildlife Agency (ONCFS), a governmental agency that depends on the Ministry of Environment (MEDD). First a coarse-grained survey of the whole distribution area of the species is conducted based on a wide network of ca. 450 trained people. Every kind of presence sign (prints, preys, scats, visual observation, attacks to sheep….etc.) is first attributed a confidence certification based on standardized criteria, then included in a single data-base. Second, the distribution and number of permanent wolf packs is surveyed, based on intensive snow-tracking and prints analysis. Third, a genetical survey based on the analysis of DNA within scats allows to estimate the number of different genotypes, their relationship to each other, and to compute estimates of population numbers using capture-mark - recapture analysis (CMR) of DNA fingerprinting. Since 1992, the area occupied by the species is increasing, as well as the number of wolf packs established during winter time (11), and the genetical data combined with CR modelling shows that actual numbers are increasing too. Although still under concern, the conservation status of the species in France is therefore better and better (only positive signs are recorder: trends in area occupied, packs number, and wolf numbers are all positive). The demographic connections with the Italian alpin population also contribute to improve the status of the French wolf population.

STATUS AND TRENDS OF WOLVES IN SCANDINAVIA

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The Scandinavian wolf population was reestablished during the 1980´s through natural immigration from the Finnish/Russian wolf population. The present population is based on only three founders. The population has grown from 8 animals in 1990 to approximately 100 animals in 2002. In 2003 for the first time a decline was recorded. The population is isolated with a gap of approximately 800 km to the nearest source population in eastern Finland. Wild potential wolf prey, primarily moose and roe deer, is abundant in Scandinavia.

The wolf population is censused each winter through a combination of snow tracking, radio telemetry and DNA-analyses of scats. Each tracking event is reported on standard forms, including a map, where e.g. snow conditions, age of track, number of wolves, territory markings, hunting efforts and found prey carcasses are recorded. All tracking records are evaluated by a national coordinator and a report is prepared after each season. A joint Norwegian-Swedish research program (SKANDULV) with the aim of providing the management with data necessary for an optimal conservation and management of the wolf population, is operating. Since the start in 1998 a total of 50 wolves have been radio-marked, and presently there are 15 wolves with working transmitters in the population. The genetic status of the population is continuosly monitored through DNA-analyses.

Wolf-human conflicts include: depredation on domestic reindeer, depredation on domestic stock other than reindeer (mainly sheep), killing of hunting dogs, competition with human hunters for hoofed game, and human fear. The most important conservation problems at present seem to be intolerance of wolves in local sectors of the population leading to a certain amount of poaching, and the genetic isolation which in the long time perspective might threaten the population with inbreeding depression and/or impoverishment of its genetic variation.

The wolf is a protected species in both Norway and Sweden, and both countries have ratified the Bern convention. Sweden is also obliged to obey the European Union´s Species and Habitat Directive. The long term national goal for the Swedish wolf policy is to preserve a viable wolf population that should be allowed throughout the entire country, although with some restrictions in the reindeer husbandry areas. A concrete short term goal is to reach a level of 20 breeding units in the country (today there are 8-10).

Norway has a more restrictive predator management. The main reason for this is the large number of free ranging domestic sheep, around 2,1 million. Norway has a zoned wolf policy. The wolf zone covers approximately 40.000 km2 (13 % of the country) in the southeast, along the border to Sweden. Inside the zone wolf control policy is very restrictive, while outside allowance to kill a damaging animal might be given promptly, albeit depending on the total wolf population status. The present wolf policy is based on the principle that Norway and Sweden together shall have a long-term viable wolf population where Norway takes responsibility for a lesser part of this population. Predators must not jeopardize the sheep and reindeer husbandry. However, Norway is at present reconsidering its large-predator policy, and a new Act is expected during 2004.

STATUS AND MANAGEMENT OF WOLF IN FINLAND

Ilpo Kojola, Finnish Game and Fisheries Research Institute, Oulu Game and Fisheries Research, Tutkijantie 2 A, FIN-90570 Oulu, Finland

Finnish wolves form a part of large, continuous Eurasian distribution range. Based on the number of reproductions, mean annual growth rate in population size was 18% during 1996-2002. Twelve reproductions took place in 2002. The geographic range where reproductions occur widened from the easternmost Finland at the same time. Reproductions in the middle and western parts of the country have been recently confirmed. Monitoring is based on observational data collected by local voluntary experts and extensive use of radio and GPS transmitters. In 1998-2003, totally 48 wolves from 11 packs or mated pairs have had a transmitter. Transmitters have been also used to have a detailed figure about space use and different aspects in population ecology, for example juvenile dispersal. Dispersal distances from the study area in east-central Finland have varied between 40 and 400 km. Directions form a sunray pattern, thus dispersal from Finland to Russia also exists. Wolf pack territories are located mostly in regions where human population density is low (1-2 people/km2). In 2002, depredations either on semi-domesticated reindeer or sheep occurred within 6 out of 16 territories occupied by a pack or mated pair. Depredations are compensated by the government. Electric fences have been used as a non-lethal preventive method where sheep or cattle depredations have occurred. Website (www.suurpedot.fi) has established for educational purposes. In addition, a large carnivore information centre is under establishing. Because wolf depredations on domestic dogs impair the public image of wolf "the wolf phone service" has initiated to aid hunters to decrease the risk of wolf attack on their hunting dogs when they are hunting in the areas where wolf movements are continuously tracked. National management plan is currently in preparation. In that management plan regional targets as the number of reproductive packs, criteria and actions might be set, as a compromise resulting from biological information and discussions with different interest groups and local stakeholders.

STATUS AND TRENDS OF WOLVES IN NE EUROPE (BALTIC COUNTRIES, POLAND AND GERMANY)

Zanete Andersone

ABSTRACT

Wolves are relatively widespread in NE Europe (Estonia, Latvia, Lithuania, Poland and Germany) but their legal status, abundance and trends vary between the countries. In the Baltic, wolf is a game species that is widely distributed and totals about 700-800 individuals in all three countries. In Poland and Germany, wolves are protected and their range is more fragmented. In Poland there are about 500 wolves occurring mainly in the eastern part of the country. In Germany, there are 2 packs in NE Saxony. After intensive eradication campaign in the mid-1990s, wolf population in the Baltic has declined and now is stabilising after the decrease. In lithuania, the decline in numbers has just started due to unknown reasons. In Poland, wolves are declining in the mountains while a slight increase has been observed in the lowland population. In Germany, the wolf has a potential to increase if the habitat and public acceptance will allow it. The main conservation problems are over-hunting/poaching, economic conflicts, law enforcement, public attitude, habitat fragmentation, hybridisation with dogs. The main reasons of conflicts are competition for the same prey with hunters (Baltic, Poland), depredation on livestock (Lithuania, Poland, Germany), attacks on humans (mainly by rabid wolves and mainly in the Baltic).

Perspectives for the species in the region are favourable provided that hunting in the Baltic is more regulated, habitat connectivity is maintained/improved and the public acceptance is ensured. Baltic wolf population is directly related to the core population in the east and trans-boundary ecological corridors and international co-operation should become a future in order to ensure continuity of wolf distribution in the region.

COMMUNICATION PAPER

Wolf is one of the most controversial species that was heavily reduced in Europe due to direct persecution by man. In the beginning of the 19th century it was still quite widespread throughout Europe but by the end of the 20th century only a few isolated populations were left in Western Europe. However, by the 21st century wolves started gradually re-colonising a part of the their former range.

In my talk, I'm going to focus on the situation with wolves in five countries - Estonia, Latvia, Lithuania, Poland and Germany. These countries form a continuous belt but whether or not the wolf distribution is so continuous is a different matter.

STATUS

Status of the wolf in these five countries is different.

In Poland and Germany, wolves are protected. In Poland in mid 1990s, wolves were still hunted in 3 provinces (Krosno, Suwalki and Przemysl) between November and February. And only from 1998, the species was totally protected all over the country.

In Germany, wolves were protected by the EC Species and Habitat Directive since 1992. In W Germany, the

species was protected by Bern Convention while in E Germany wolves were persecuted intensively until 1990.

In the Baltics, wolf is a game species. In Estonia, it is a licensed game with a hunting ban in summer and hunting quotas. In Lithuania, there is also a hunting ban in summer. In Latvia, the old hunting regulations are still valid which means all-year round wolf hunting without any restrictions. However, the new hunting regulations are under way and they will include hunting ban in summer time for a few months.

Due to the EU accession process amendments to the Baltic national legislation should have been made in order to be in accordance with the EC Species and Habitat Directive. All three countries have achieved geographic exemption for the wolf which means that this species will remain a game species but hunting will have to be more regulated - no all year round hunting will be allowed any more.

Abundance and distribution of wolves in this region also differs. In the Baltcis, wolf density is the highest. However, the consequences of the intensive hunting pressure in the 1990s are obvious now. E.g., in Estonia there is less than 100 wolves left. There is the usual discrepancy between the official numbers and monitoring result. E.g., in Estonia, the official number is 170, the monitoring data - 70-90 (two times lower). In Latvia, the official number is 566 wolves for 2003 but our estimations are somewhat lower - around 300 wolves. In Lithuania, the number of wolves is about 350 (official number). Wolves are more or less evenly distributed throughout the Baltics apart from some most agricultural and least forested or densely populated parts.

In Poland, there were 510 wolves in 2002, which is a lower number than 900 in the mid-1990s. Wolves occur mainly in eastern Poland and in the Carpathian Mountains, central Poland is agricultural and free of wolves.

In Germany, where wolves gradually spread from western Poland. In 1998, a pair of wolves settled in NE Saxony in a military training area. In 2000, the first reproduction was proved. The pair had pups for 4 years in a row (2000 - 2003) and now consists of 10 animals. In 2002, the second back was established. Both packs use an area of about 200-300 km2 each.

CENSUS METHODS USED

Estonia - trained observers, all year round census (since 2002): snow-tracking transects, all year round observations by hunters (obligatory)

Latvia - snow-tracking, all year round observations by hunters and officials of the State Forest Service

Lithuania - snow-tracking, all year round observations by hunters. There was a monitoring programme for a few years but that is stopped now due to the lack of funding.

Poland - census by personnel of the Forest Service and National park rangers (snow-tracking, all year round observations, tracks, breeding dens, prey remains)

Germany - snow- tracking, howling simulation, inquiries among hunters and foresters about wolf sightings

TRENDS

Estonia - stabilising after the decrease
Latvia - stabilising after the decrease
Lithuania - decreasing
Poland - decreasing in the mountains, slightly increasing in the lowland
Germany - increasing

CONSERVATION PROBLEMS

What are the reasons of these trends?
In various parts of the NE Europe, conservation problems are slightly different. In the Baltics, a too intensive hunting has been the main threat up to present. **Over-hunting** (and a purposeful eradication campaign) in the mid-1990s caused a drastic decline in wolf numbers and only now the wolf populations started stabilising. However, in Lithuania, wolf numbers have just started decreasing. All the previous reports from Lithuania stated wolf population as increasing. The reasons of this recent decline are unclear as the hunting pressure remained the same.

In Germany and Poland, where the wolf officially is a protected species, there is a considerable risk of **poaching** if the attitude towards the species is negative, especially from hunters who are actual gun hol-ders. It is a problem in Poland and might become a problem in the Baltic countries if wolf hunting is heavily restricted. This issue is tightly related with **law enforcement** and **public opinion**. Public opinion is an important issue in the Baltic states where wolf has been traditionally regarded as a pest and eradicated for centuries. Also, it is essential in countries like Germany where wolf is coming back after more than 100 years of absence.

Habitat fragmentation - if the forest fragmentation continues to increase it can even further split the wolf distribution in these countries, especially the already agricultural countries such as Lithuania and Poland. Forest fragmentation and the high proportion of agricultural land can be a major obstacle to further wolf dispersal in Germany as it is very likely to cause a very high level of damage that is unlikely to be tolerated.

In the Baltics, forestry has been very active for the last few years, as timber trade was one of the main sources of income both for the state and private forest owners. However, it did not influence the total area of forested land. It changed the forest structure, increasing the proportion of the young forest and decreasing the proportion of the old-growth forests. However, the age of the forest is not the principal factor for wolves as long as forested area remains the same and there are enough refuge areas. From the point of view of wolf ecology, young forests are even better as they are favourable for their prey - deer density is higher in the young forest plantations.

Population density and road density - this can be a problem in populated Poland or Germany where human density is much higher than in the Baltics and the road network is more dense. However, a dense network of motorways is also a potential problem for the Baltic countries. After the EU accession, structural funds will be available and road infrastructure will be built. If nature conservation issues are not taken into account when developing infrastructure, the Baltic can also encounter a fragmentation problem.

Hybridisation with dogs can happen locally where wolf density has been decreased below a certain threshold. A few cases of hybridisation were proved in Latvia in area of a low wolf density.

Economic conflicts can be a major obstacle to conservation. Humans as a rule do like tolerating economic loss if they can get rid of the problematic species.

What are the major sources of conflict with humans?

CONFLICTS WITH HUMANS

In the Baltics, the main conflict is between wolves and hunters due to the **competition for the same prey.** Hunters pay rent for their hunting grounds therefore, they regard themselves as exclusive holders of hunting rights in that area, and wolves are regarded as unwanted competitors, killing "their" game. Interesting that in Lithuania, the conflict between wolves and hunters seems to be less pronounced. Probably it can be explained by slight differences in hunting traditions or maybe the proportion of hunters in the society is lower. In Poland where the density of ungulates is higher, one would expect this conflict to be not so pronounced, however, it is not the case and hunters strongly oppose wolf "damage" to wild ungulates. In Germany, wolf numbers are so low yet that it is hardly an issue (apart from the impact on the introduced mouflon, which is decreasing partly because of the wolf predation).

Damage to livestock in the Baltics is seasonal and/or local where certain wolf packs can start causing damage to livestock. But since livestock husbandry isn't intensive (mainly a few private animals), the extent of damage is very low). E.g., in 1997-1999, in Latvia there were less than 200 depredation cases including dogs. In Lithuania, the damage is higher - up to 1000 cows per year. No prevention measures are taken, often livestock grazes far away from the actual farm and is left there for a few days without any supervision. Guarding dogs are not used either. There is no state compensation for the damage either - only if the livestock was insured (which is a private initiative by the owner), only then the owner can get money. But due to a hard economic situation, very few owners insure their animals.

In Poland, there are a few places in the Bieszczady Mountains (SE Poland), and in NE Poland (Bialowieza Forest, Mazurien). The reasons of conflicts are unsuitable compensation system and the lack of prevention systems. Only shepherds from the Tatra Mountains use guarding dogs (Tatra Mountains Shepherd). Most of the damages occur in areas with free-ranging sheep flocks breeding on forested hills (SE Poland) or on pastures where cows or cattle graze for a few days without supervision (NE Poland). There are about 500 kills per year.

The more fragmented the habitat is (as we see on the example of Poland and Lithuania), the more damage to livestock is done by wolves. There is a clear gradient from Estonia to Poland in terms of depredation on livestock. Estonia is the most forested country of all five (ca.50% of the area) and livestock husbandry is not intensive. Hence, the damage there is minimal. Latvia, with its 44% forested areas and non-intensive agriculture has almost the same, very low damage level. Lithuania, with 30% of forests, is much more fragmented and conflicts with livestock owners are more common. The same in Poland and Germany - in forested areas with non-intensive livestock husbandry, wolves prey on wild ungulates. But depredation starts where they enter a fragmented landscape, encountering livestock in pastures. Of course, the lack of preventive measures doesn't help. Especially in countries like Germany, where people forgot how to co-exist with large carnivores, all the preventive measures should be as re-introduced from the start.

Attacks on humans - are rare nowadays. In the Baltics, where rabies is common, some attacks happen. In the 1990s, even 3 attacks of non-rabid wolves were registered in Latvia. Rabies is not common in wolves and the risk is negligible. E.g., in Latvia, where rabies in wildlife is very common, there was on ave-rage only 1 case of rabies in wolves per year in the last decade. But of course such attacks, even though by rabid, wolves, do not help to raise the profile of the species in the region and always causes lots of hysteria.

PERSPECTIVES OF WOLVES IN THIS AREA

The Baltic population of wolves is directly related to that in Russia and Belarus, however its relatedness to the Polish part of the population already becomes somewhat dubious. In the Baltics, wolf distribution is more or less continuous while within Poland, fragmentation of the wolf distribution becomes more pronounced and they mainly occur in the east of the country with small islands in the west. The population in the Baltic is linked to the core population in the east, and, being an open system, is not in danger of isolation.

There is an ongoing international project funded by the Research Council of Norway that involves Norway, all three Baltic countries and Poland. One of the aspects of the project is the analysis of habitat connectivity from Estonia to south Poland and the analysis of animal movements in a fragmented landscape. It will show whether or not there is a continuous link between the population in the Baltic and SE Poland. But there is very unlikely to be a link between that and an establishing population in Germany.

The new hunting regulations in the Baltic should be enough to ensure wolf conservation in the long term (provided that poaching is not extensive). There is always a risk that poaching will take place as the wolf has traditionally been regarded as a pest and newly invented hunting restrictions (season, quotas) can cause a resistance in a certain proportion of hunters. It was the case in Poland that when the wolf status changed from game to a protected species, poaching on the species increased. Therefore, for the Baltics, the model of limited use seems to be much better from the conservation point of view.

Another concern is the season of the hunting ban. In the draft regulations for Latvia, it was planned to be from 1 April to 15 July, which seems too early. In the national wolf action plan it is recommended to have the hunting ban until the end of August. But due to a strong hunters' lobby it seems to be difficult to achieve this goal. The new regulations should be accepted by the end of this year, and it remains to be seen what will be the term for the hunting ban.

The future of the wolf population in NE Europe depends on the three main factors: hunting intensity, habitat fragmentation and public attitude. If environmental status quo is maintained, then no major threats to the present wolf status will occur provided that hunting in the Baltic states becomes more regulated and the present level of the connectivity between habitats is maintained.

From the environmental point of view, there are no major obstacles to the favourable wolf status in the NE Europe. The critical factor is the public attitude towards the species. Conservation measures alone will not give the desirable effect, if the attitude is negative. Therefore, public information and education is crucial for the long-term wolf conservation in the region. But it should be done in parallel to establishing an official (and effective) compensation system for livestock damage and some reasonable benefit system for hunters having wolves in their hunting grounds.

WOLVES MANAGEMENT IN CARPATHIANS

Ovidiu Ionescu, George Predoiu, Georgeta Ionescu
Forest and Wildlife Research Institute

The paper presents the wolves' situation in different countries in the Carpathian Mountains. Starting from the history and coming to our days the wolves' existence was more and more influence by human activity. Direct or, as a consequence of human actions, the wolves' population decrease or increase, reduce or increase its density and territory.

The impact of international conventions was different from country to country.

A model project was developed in the area having four components: research, management, public awareness and ecotourism. Results of the research on wolves in Carpathians are also presented. Territory and size of the packs, diet and factors of diet influence, mortality and conflicts with livestock.

Regional initiatives were developed with the help of Bern Convention and WWF. The main purpose is to coordinate the efforts and actions for a better management of large carnivores and conservation of one of the most valuable area for biodiversity conservation and functional ecosystems.

WOLF STATUS AND DISTRIBUTION IN PORTUGAL AND PRINCIPAL WORKING ISSUES DEVELOPED BY NATURE CONSERVATION INSTITUTE

Ines Barroso

Wolf is a strictly protected species in Portugal, since 1990, according to national specific legislation, being classified as an Endangered species in the Portuguese Red Data Book. Nature Conservation Institute (ICN) is the institution in charge of wolf management in Portugal. Distribution area, population estimate and global trends will be presented according to 94-97 LIFE project and a National Wolf Census that is being presently carried out.

Compensation system for livestock losses attributed will be described as well as will be presented some statistics on damage. In order to minimise damage, new minimum requirements of prevention, for each traditional grazing systems, were identified and included in a proposal of new regulation for wolf national protection law. Since the presence of livestock guarding dog is considered to be an essential prevention measure, distribution programmes of livestock guarding dogs from national breeds are being carried out.

In order to know wolf death causes and to facilitate the development of relevant studies for wolf conservation, is being implemented a dead wolf monitoring system.

STATUS AND EVOLUTION OF WOLF IN SPAIN

Juan Carlos Blanco

The Iberian wolf spreads all over the Northwest of the Iberian Peninsula. More than 80% of this population is found in Spain.

The main wolf Spanish population occupies around 120.000 km2 in the Northwestern quadrant of the country, with probably more than 2.000 individuals. It is in clear expansion, and since 1970 its range has increased at least its double size. In the boundaries of the main territory there are wide zones with favourable conditions for wolf recolonization in a short time. Besides the main population, there is another one with some tens of individuals in Sierra Morena (300 km away from the first one), with a serious danger of extinction.

The main problem is related to the damages to livestock which can cause losses of 1,5 million euro per year. Damages are bigger in mountain zones and dehesas (kind of pasture), where livestock is in extensive regime, and in recently recolonized areas by wolves. In Sierra Morena wolves are poached because of its supposed damage on big game.

Wildlife management in Spain is responsibility of the autonomous communities. Eight of them maintain reproductive wolf stacks, but most of the wolves are in Castille and Leon and Galicia, that host respectively 60% and 30% of the whole Spanish population. According to Habitats Directive (1992) wolf is protected (Annex II and IV) south of Duero river, while the population situated north of Duero river can be managed (Annex V). In fact, north of the Duero river wolf is managed like a game species in most of the autonomous communities.

The administrative fragmentation is one of the main problems for the right management of the Iberian wolf population. In this sense, it's necessary the promotion of actions in three levels: 1) To foment cooperation between Spain and Portugal; 2) To approve the National Strategy of Wolf in Spain, that involve the national Environment Ministry and all the Autonomous Communities of the Country; and 3) To design and approve Wolf Management Plans for every autonomous community in Spain.

CONTROL OF COMPENSATION FOR DAMAGES CAUSED BY WOLF IN ALAVA PROVINCE (SPAIN)

José Ramón Aguirrezabal Sanz - Veterinary
Forest Service
Alava Provincial Council

After thirty years of demographic silence, wolf recolonization in Alava Province, occured at the middle of 1980 decade, was such an anecdotal event than nobody cared enough. However, after hardly three years of this century, the continuous expansion of the wolf has revived the everlasting conflict wolf-livestock, in which the opposed positions about this predator take place among livestock farmers, conservationists and public.

Alava Province, as a natural receiver of the expansive wolf populations coming from Northern Burgos Province, can be considered as the enter gate to Basque Country for this canid, playing the role of a bastion defending the big sheep grazing areas of Vizcaya, Guipuzcoa and the neighbouring Navarra Community.

This paper explains the compensation system existing for damages caused by wolf in Alava -highlighting the measures involving prevention, that can be considered as pioneering- according to this summary:

- Wolf distribution in Alava.
- Legal status of the species.
- Subsidies of the Provincial Council.
- Direct damage compensations.
- Subsidies for prevention.
- Species control methods.
- Statistical Data.
- Pending claims.

ASSESSMENT AND WOLF DAMAGE VALORATION SYSTEM IN BASQUE COUNTRY (SPAIN)

Mario SÁENZ DE BURUAGA (1) ; Miguel A. CAMPOS (1); Enrique ARBERAS (1); José Ramón AGUIRREZÁBAL (2) and Alejandro ONRUBIA (1)

(1) CONSULTORA DE RECURSOS NATURALES, S.L. - VITORIA-GASTEIZ (Álava).
(2) Departamento de Urbanismo y Medio Ambiente. DIPUTACIÓN FORAL DE ÁLAVA. VITORIA-GASTEIZ (Álava).

Since 1999, after adopting the decision of compensating the economic losses caused by wolf predation on livestock in Alava province, a technical assessment that verificates every reported attack along the year was established in this province.

In Vizcaya province, though there is not a similar compensation system, the same technicians are also responsible of valuating the damages to livestock, thus this information can support different management guidelines of the species in Vizcaya.

The group of technicians developing the assessment system is composed by biologists with a wide experience, both in wolf ecology and in livestock management. Besides, as a very valuable factor, the group keeps excellent personal and professional relationships with livestock farmers in the area of influence. The tasks of valuation are mainly attended by two technicians that cover a total surface of 1.660 Km2 (1.170 Km2 in Alava and 490 Km2 in Vizcaya), though the potential work area is 5.255 Km2 in the two sectors.

The valuation system includes contact telephones (24 hours a day, every day of the year) through which the affected farmers can report the technicians about the existence of the damage. In a response time not longer than, as an average, 90 minutes after the notice, a technician (equipped with an all-terrain vehicle, a digital camera, a GPS receiver and a dissection and asepsia kit-bisturies and gloves-) goes to the place where the event occured. The technician gets information from the farmer, from the affected livestock (identification, race, sex, age, wounds, etc.), and from the area in order to record complementary data.

After the inspection a compensation application form is given to the farmer who shall fill it in and deliver to the Agrarian Regional Office. The technician then will elaborate a complete report on the collected information, which is delivered to the corresponding Autonomous Delegation.

WOLF MANAGEMENT IN PICOS DE EUROPA NATIONAL PARK

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Picos de Europa National Park

Picos de Europa National Park spreads over a 650 square kilometer territory, as a part of the Cantabrian Range, in the North of Iberian Peninsula. The wolf packs present in this Park (3 in 2003) belong to the Northern Spain core population.
The monitoring developed by the National Park Service is continuous since the species recolonised the area at the middle of 1980 decade. In 1992 the first reproduction data are collected; in 1995 the National Park hosted two reproductive wolf packs; since 1999-2000 there are 3 different packs, two of them at the northern side of the range - with more livestock farming activity- and the other one at the southern side. Nowadays wolf occupies more then 80% of Picos de Europa territory. The maximum number observed in a pack has been 7 individuals.

In some areas of the Park traditional livestock farming is important. Sheep and cow herds are frequent and thus wolf damages. The breeders have improved the livestock management in the last years, by using guardian dogs and keeping the cattle in sheds at night.
In 1997 a study on wolf diet along the year (Llaneza et al) showed a presence of a 67% of wild prey (roe, chamois, wild boar, deer) while the resting 33% was composed of domestic prey (sheep, goat, cow). Wild prey resulted to be more frequent in the Northern side.
The National Park personnel developed during 1995, 1999 and 2003 a selective hunting over the different wolf packs, especially in the Northern side (with more livestock presence). In the last of these actions (2003) 4 individuals were hunted, two in each pack of the Northern side.
Wolf control should be used as a management tool -respecting a favourable sustenibility status for this species- in those areas where livestock keeps on deeply rooted and damages can be important.

MEASURES TO ALLEVIATE WOLF DAMAGES IN CASTILLE AND LEON (SPAIN)

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Coexistence between large carnivores and livestock is necessary and seems practically impossible without predation. Thus it is necessary focusing the problem of damages towards the reduction of the conflict. The Department of Environment of Junta (Regional Government) of Castille and Leon has established a series of measures, whose main objectives are:

- Reducing the negative impact that the conservation of these species can generate in certain human groups.
- Reducing hostility and preventing revenges that can be taken against these animals and, though not consciously, against other species.

These measures can be divided into three large categories that, at the same time, are complementary:

- Preventive measures.
- Control measures.
- Compensatory measures.

Besides the European support schemes for Sustainable Rural Development observed in the Common Agrarian Policy (R.D. 708/2002), Junta of Castille and Leon, through its Department of Agriculture, also subsidizes the adoption of measures preventing wolf damages. Thus for instance, fencing in extensive livestock farming is contemplated as a subsidizable action up to 40% of the investment, with a limit of 4.600 euro per applicant (Orden AYG/158/2003).

Control measures focus on the elimination of the most problematic individuals by specialized patrols composed by personnel from the Department of Environment.

In Castille and Leon, Junta only compensates wolf damages in those areas under its direct hunting management and only if they are placed North of Duero river. In those cases it compensates the whole loss.

Besides, since 1999, Junta has developed a series of supports to cover the franchises established for these damages, both in the insurances established in the National Plan of Agrarian Insurances, or in any policy subscribed by the livestock farmer when the risk of damages caused by wolves or roaming dogs is covered.

Recently, the Department of Environment has decided to increase the compensations for losses caused specifically by wolf (Orden MAM/539/2003), in order to get a bigger socialization of the damages produced by this species in the productive activities of rural world. With this aim it compensates the lost future profit and indirect damages.

The Department of Environment has also disposed a technical assessment for livestock farmers affected by wolf or roaming dogs attacks south of Duero river. This service intends to help these farmers, both in the accreditation that the damage was caused by a canid, and with the administrative procedures of the insurance and the payment claim of the franchise.

CULLING, HUNTING AND PROBLEM WOLVES: WHEN AND HOW TO REMOVE WOLVES

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Wolf management is often very controversial because involves a complex interaction of ethical, economic and ecological issues. Removal of individual animals or portions of wolf populations are often debated as tools to reduce or prevent conflicts with livestock, even in areas where wolves are protected by national and international legislation. I review the basic steps of the management decision process and the conditions that would allow the biological feasibility of wolf removal. The LCIE suggests that objective and robust data are necessary before these management techniques are applied and that they should be considered only within the framework of comprehensive management plans of biological populations and not of portions of populations defined by national or other administrative boundaries.

FROM PROTECTION BY LAW TO CONSERVATION THROUGH ACCEPTANCE: LESSONS FROM THE CROATIAN CASE FOR WOLF MANAGEMENT IN EUROPE

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What is the difference if a sheep is killed by unprotected or by protected predator, wolf in this case? In Croatia we learned the both lessons. The change from unprotected to protected status happened in 1995. The author personally wrote the proposal to protect the wolf. Now he is lobbing to soften the protection. Why? Wolves always ate meat, wild prey or livestock, whatever was easier. When wolf is not legally protected the damage it does is counted as a part of harsh nature, like lightning or disease. Shepherds or hunters are allowed to try to kill as many wolves as they can. There are no damage inspections and no damage compensations. There is little to none media interest. Wolves can stand this persecution until their reproductive capacity is exceeded, e.g. by use of poisons or by too many guns and roads. Of course the lack of prey is very detrimental too.

When protected wolf kills anything, always the government body is blamed and hated. Compensations are always too slow and too low, but the total sum paid is growing dramatically. Media are full of bloody stories and rarely on the side protected wolves. There are always too many wolves. Locals continue to kill as many wolves as they can, including occasional use of poisons. Nobody pays fines.

The possible way out of black corner includes: Regulated hunting to satisfy the emotional gap of predatory man and to decrease the number of wolves in the most critical regions. Instead of damage compensations, introduce the subsidies for the risk of farming in the wolf range and support better flock protection measures. Increase the natural prey base. In Croatia we are now struggling to introduce this third model. The workshops with all interest groups are underway and the process is hard and slow but is definitely leading in this direction.

SPATIAL STRATEGIES FOR WOLF MANAGEMENT: TO ZONE OR NOT TO ZONE?

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Adopting different management / conservation strategies in different areas (zoning) is a common approach to achieving multiple, diverse, and often conflicting objectives within multi-use landscapes. For example, much of Europe's biodiversity conservation strategy depends on adopting special patterns of land-use or protection within the reserve network of Natura 2000. Wolves are such generalists that they do not generally require specific management measures (as long as they have prey and some form of semi-natural habitat). However, they often cause conflicts with humans. It is in principle possible to reduce wolf-human conflicts (for example livestock depredation) through zoning, for example by focusing mitigation measures into some areas where wolves are favoured and adopting less tolerance of wolves in areas where conflicts are not mitigated. However, some conflicts cannot be mitigated (semi-domestic reindeer herding, competition with hunters for game), and others may be made worth by zoning (many social conflicts). On the whole it is likely that some form of zoning will be required in many situations, although the size of zones, and the extent to which management practices differ between zones needs to be carefully considered. When considering a species like wolves that have large home ranges and long dispersal distances it is apparent that management zones will need to be measured in terms of thousands of square kilometers, presenting challenges for administration.

FOOD ECOLOGY OF WOLVES IN EUROPE: AND INEVITABLE CONFLICT WITH HUMAN INTEREST?

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Wolves are opportunistic predators and their diet vary considerably in different parts of their geographical range. Whenever available, wild ungulates are main prey of wolves. Livestock consists a considerable part of wolf diet in several European locations, especially where wild prey decreased and/or livestock is easily available.

Conflict between wolves and humans occurs all over Europe, however with different intensity in various geographical areas and countries. Major fields of conflict are currently livestock depredation and losses of wild ungulates caused by wolves. Thus, two major groups mostly affected and inte-rested in wolf management are livestock owners and hunters. Several ways to mitigate conflict are used by management/nature conservation authorities. It includes various compensation payment schemes, techniques to protect livestock, and attitude changing educational efforts. In some countries impact of wolves on livestock, or rather amount of compensation paid, is high. In other countries, this impact is practically negligible, however there much more important sociological and social consequences of wolf presence and predation. Presentation gives an general picture of wolf predation in Europe, shows the main areas of conflicts, and seeks possible solutions to management and conservation problems.

THE ITALIAN POLICY FOR WOLF CONSERVATION

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The wolf almost became extinct in Italy during the second half of the last century. Since the'70s, as a consequence of legal protection, the abandonment of many rural areas, and the increase in the number of wild preys, the wolf rapidly increased its range. In the early '90s this natural expansion led the wolf to reach the western Alps and, more recently, the central Alps. The wolf causes relevant management problems, primarily because of its impact on livestock; consequently, Italy is characterised by diffused poaching, considered to be the main cause of mortality for the species. However, the ongoing population increase and range expansion indicate that the poaching pressure is well below the population increase rate. Under the Italian legal framework the wolf is strictly protected, all damage are compensated by the regional administrations, and the Ministry of Environment is required to coordinate monitoring activities. No derogations to the strict protection regime, involving killing of individuals, have ever been authorised.

Although the competence on wolf conservation is at the Ministry of Environment, as a consequence of the decentralisation of power, the responsibility for the application of most conservation measures (i.e.: damage compensation, monitoring, etc.) are at the local level (regions, provinces, protected areas). This complex repartition of roles and competencies limits the efficacy and coherence of wolf conservation. A more coordinated policy is therefore critical, also because of the biology of this species, characterised by low densities and large spatial requirements. Furthermore, the expansion of the wolf in the Alps makes urgent the definition of common regional policies among neighbouring States. In order to develop and implement a coordinated national policy on wolf conservation, the Ministry of Environment decided to establish a National Action Plan for Wolf Conservation. The plan was produced in 2002 by the National Wildlife Institute, with the support of the leading wolf experts ad and the main NGOs, and was then approved and published by the Ministry of Environment.

Scope of wolf conservation, as defined by the plan, is to maintain and recover, in coexistence with people, viable populations of wolves. In order to achieve this aim it is important that the population of the Italian peninsula is maintained at its present level of size and range; the re-colonisation of the entire Alpine region is promoted; wolf-human conflicts are mitigated. Leading Italian wolf experts consider main limiting factors for the species to include: poaching; conflicts with farmers and hunters; competition and genetic pollution with free roaming dogs. Other factors (habitat loss and fragmentation, human disturbance, demographic factors, range fragmentation) are considered of secondary importance.

Critical steps for implementing the plan include a more participatory approach, involving local communities in the decision-making process (creation of a "National Wolf Committee" open to stakeholders), and increased coordination among Italy, France and Switzerland (establishment of a "Standing Committee for Wolf Conservation in the Alps"). The plan then identifies the key elements for wolf conservation, that include: the reduction of poaching; education and information campaigns; a revision of the policy on the control of free-roaming dogs; strict regulation of the existing non-Italian wolf and dog-wolf hybrids breeding farms; cautious control of the small stock of captive Italian wolves; the recovery of roe and red deer in central and southern Italy; an assessment of the role of corridors; the development of a coherent policy on damage prevention and compensation (priority given to prevention, compensation conditioned to prevention, priority use of the available resources in the key areas for wolf conservation and potential corridors). Compensation must be based on the following principles: the entire market price of the loss is covered; all the indirect costs are covered; compensation is paid very rapidly; no distinction between dogs and wolves is applied; on-

the-spot inspection is always carried out immediately after the claim. The alternative of provi-ding incentives to farmers in key areas for wolf conservation should be explored. If available resources are not sufficient to cover all losses, priority should be given to key areas for wolf conservation and to corridors, rather than to other areas of wolf presence. No compensation shall be paid in areas where the species is not present and that are non-critical for wolf conservation and expansion. Any translocation of wolves is strictly banned and prevented; captive breeding programs (aimed at futu-re reintroduction into the wild) are not considered a useful option. Wolf control is excluded for the term of validity of the plan (5 years), even if, in general terms, a science based removal of individual wolves is considered acceptable if this can reduce poaching and thus not increase overall mortality of the wolf population. In this regard, the development of a more efficient monitoring system is a critical requisite. Guidelines for wolf monitoring are attached to the plan: in order to improve know-ledge on wolf status and population dynamics, the National Wildlife Institute is carrying on large scale monitoring programs, by non-invasive genetic techniques, in the Western Alps and in the Northern Apennines. Data exchange among Italy, France and Switzerland has star-ted in 2001, through regular meetings among technical experts.

It must be noted that action plans do not have a legal power in Italy and most provisions of the wolf plan are thus non binding (a revision of the legal framework in this respect is under evaluation). The implementation of the proposed conservation measures is thus the real challenge, requiring the cooperation of all involved actors.

WOLF STATUS IN LATVIA: DISTRIBUTION, DYNAMICS AND MANAGEMENT OF POPULATION

Janis Ozolins

ABSTRACT

The wolf population has never been extinct in Latvia, however time to time the numbers were reduced by hunting considerably till few individuals left. Although the wolf is recently common in the major part of the country, the last period is noted for a tendency towards fragmentation of the range. A management plan is elaborated and signed by the Minister of Environment to ensure further sustainable use and conservation of wolf population. The national State Forest Service, local hunters, biology students, scientists and experts from abroad are involved. Prescribed actions include amendments to the relevant legal acts, development of monitoring system on basis of samples from hunting bag and field surveys, applied research, assessment of the risk of economic losses, utilisation of the network of protected areas for wolf conservation (Natura 2000), promotion of public awareness and attitudes towards wolves and large carnivores in general, implementation of a quota system etc. Considering the present level of threat to the po-pulation and little significance of economic losses, the management plan intentionally does not include specification of the so-called optimal wolf number for Latvia. Conservation success depends entirely on the hunters' attitude and sustainable harvesting.

COMMUNICATION PAPER

The earliest data on wolf in Latvia, useful for scientific research, date from the 19th c., when the number of wolves was high (Grevé 1909, Kalnins 1943). However, by the late 19th c. population was nearly destroyed by intensive hunting. Over the 20th c. the number of wolves has varied considerably, depending on the hunting intensity. During the period after WW I it increased up to several hundreds. However, over the subsequent period of 20 years wolf was nearly exterminated, with only 17 individuals left according to the data of 1940. After WW II, the population re-established itself and reached 1000 individuals according a rough estimate. The rigorous control of wolf started in the 60`s resulted in another decrease of wolf. During the 70`s the population recovered again to reach another peak in the 90`s - the second one in the post-war years. In the past few years control was strengthened and there is again a decline in the wolf population.

Although the wolf is common in the major part of the country, the last period is noted for a tendency towards fragmentation of the range. North Kurzeme (north-west of Latvia) and Latgale (south-east) are becoming the regions where the density of wolf is highest. The sparsely forested central part of the country, Zemgale Plain, lying between the above mentioned regions, and intensive urbanisation processes around Riga appear to make east - west migration of wolf difficult. Already now the morphometric data of skulls show the individuals of the eastern population to be bigger than western ones (Andersone, Ozolins 2000). This difference may probably be explained by the mixing of population in eastern Latvia with individuals from less harvested populations in Russia and Belarus whilst the wolves in western Latvia remain relatively isolated. At the same time, there are no significant differences in population status and habitat conditions between Latvia and neighbouring countries, thus a joint wolf population inhabits Eastern Baltic, Belarus and western regions of Russia. Forests and raised bogs are considered to be the main wolf habitats. The hunting is the main factor of wolf mortality everywhere, although there are still no legislative documents and management system that could effectively reduce or stop wolf hunting if the long-term existence of the population would appe-

ar under threat. Consequently, a management plan is elaborated for Latvia in accordance with the Law on Protection of Species and Habitats (in force since 05.04.2000). The plan includes a system of sustainable management of the wolf population and is suggested as a long-term strategy for conservation of the wolf in Latvia. The plan is signed by the Minister of Environment in 2003.

Conservation objectives are appointed as follows: to maintain the current population size, estimated to be 300-500 individuals before hunting season, for a long term; to avoid any fragmentation of population and ensure a free movement of animals between western and eastern sub-populations in Latvia; to maintain a high environmental carrying capacity and fairly natural ecological functions of the species in ecosystems.

Research was started by support of state forestry authorities and involving master and PhD students from Latvian University: Z. Andersone and A. Pupila. The basic principles of the plan and preliminary studies have been developed in 2000 within the framework of the project "Inventories of Species and Habitats, Development of Management Plans and Capacity Building in relation to Approximation of EU Birds and Habitats Directives" financed by DANCEE (the Danish Environmental Protection Agency). Due to the joint attempts, some basic information on wolf reproduction and population structure was gained and utilised for the management plan.

The State Forest Service helped to find hunters who volunteered to provide information on the animals killed and gave away the skulls for some time for research. To determine the age of the individual, each of the skulls collected for research purposes had one canine removed and its root of the length of 1-1.5cm sawn off. Afterwards the tooth was placed back in the jaw in order not to spoil the trophy. The individual's age was determined by counting the number of incremental lines in the tooth cement of the given piece of tooth root. A sub-sample from the harvested animals (n = 84) collected from the autumn 1998 until the spring of 2000 accounts for 19 % of the total number of wolves harvested in that period. By the counting the placental scars (Ozolins et al. 2001), the average number of embryos per female wolf was 6.0 (n=10 SD = 1.89). 83% of the adult females were capable of having cubs. Several differences in the population structure of the sample were found compared to expected natural structure, e.g., the predominance of females over males in several age groups, that could be a consequence of the effect of a high hunting pressure on the wolf population. Cubs of the first year only represented 20 % of the total hunting bag, however, there is no reason to believe that cubs had a better survival rate than older animals during hunting. Obviously, there is a high mortality of pups and embryos including the one caused by the killing of pregnant and lactating females.

The second sample of hunted wolves was collected from summer 2000 till spring 2002. It totals 101 wolves or 40% of the total hunting bag from that period. Continuation of the study showed that breeding signs (fresh placental scars in females hunted in late summer-autumn and signs of heat in females hunted in late winter-spring) were present in 84.2% of 19 checked females. The average number of embryos per female wolf was also insignificantly bigger - 6.14 (n=7 SD=1.21) in 2000-2002. The structure of the sample shows that in comparison to 1998-2000 significantly more male wolves were hunted (P=0.05). Now, it is necessary to compare the obtained results with at least one more sample in the next two years to be able to judge whether the changes in population structure indicate an effect of the hunting pressure.

Idea about wolf conservation in Latvia really requires a revolution in human perception but recently it starts to be accepted step by step. In the past, the wolf control is mostly motivated by "game conservation". The total sum paid by the State Forest Service, between 1995 and the first half of 1997, for killing 276 wolves is 18,238.96 LVL (=ca. 29,900 EUR). Since 1st January 2000 awarding a bonus is cancelled but wolf control continues to be financially supported by some municipalities and private persons. Since autumn 2000, the State Forest Service has started registering voluntary reports from people about wolf attacks on domestic animals. During the last three seasons, 60 wolf attacks were reported. In total, 42 calves, 107 sheep, 9 goats and 6 dogs were killed or injured. The time of attack almost always was night or dawn and the livestock has not been protected. The location of attack was on average at 123 m from the buildings (n=43, SD=104.2m) and 276 m from the nearest forest (n=32, SD=561.2m). Three locations within the country held the highest rate of attacks.

At the same time, various field data are lacking. Only few litters have been found (n = 3), where the number of natal cubs is known for sure (on the average 7.3). The average number of a pack is 5.7 (n = 14) excluding single animals. No investigations are done on the size of pack's territory. Considering the information mentioned above, the measures for management plan were elaborated. The management plan intentionally does not include specification of the so-called optimal wolf number. As the wolf in Latvia is not an endangered species and does not cause significant economic losses, conservation of at least the present level of the population depends entirely on the public attitude and sustainable harvesting. The planned measures are as follows.

The conservation needs should be completely adopted by relevant legislation. Appointing of closed season is of particular importance.

- To develop a monitoring of the species' status by assessment changes in hunting bag. Monitoring tasks should include more complete obtaining of data on hunted and dead wolf.
- Data by field methods of monitoring and applied research instead of existing rough number estimates should be taken for assessment of population viability.
- To assess the risk of economic losses if wolf hunting is reduced.
- Through research to understand what habitat conditions are most important for wolves and to take it into account when elaborating the joint network of protected areas (Natura 2000).
- To check and promote public awareness changing peoples' negative attitude towards wolves and large carnivores in general.
- To implement a quota system in order to be able to decrease or stop hunting in the localities where wolves are disappearing. The present breach in distribution between western and eastern Latvia should be taken into consideration and hunting quotas and temporal exploitation ban of wolves should be enforced in the area connecting western and eastern sub-populations.
- An action plan to implement the management measures should be updated in three years.

International co-operation takes also place to improve wolf research and management in Latvia. As a result of attending the network of Large Carnivore Initiative for Europe, an application on the subject "Large carnivores in northern landscapes: an interdisciplinary approach to their regional conservation" was prepared and submitted in 2002 to the Norwegian Research Council's program for EU candidate countries. Funding was received and Norway, the three Baltic States and Poland are collaborating now closely for the period from 2003 to 2005.

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PRESENT STATUS AND MANAGEMENT ACTIVITIES

Peep Männil

Abstract

Although wolf has been persecuted during last centuries in whole Europe, including Estonia, the population has never been exterminated in our territory. Abundance of suitable non-fragmented habitats, favourable geographical position, diverse and dense natural prey base and relatively low level of damages are the main reasons of wolf's continuing existence in Estonia. Due to differences in hunting intensity, status in neighbouring countries and impact of several natural factors the number of wolves has been varied in wide range during last 50 years: 1000 individuals were counted in 1954, only 4 in 1966, 700 in 1995 and 170 in this year (official hunting statistics).

Since the beginning of this century the official politics towards wolf has been rapidly changed. In 2001, an action plan "Management of large carnivores in Estonia" was compiled . In 2002, a new monitoring methodology to get more reliable and complete data was implemented while the existing census and hunting statistics - didn't cover by the whole investigation area. Present monitoring is based on describing and mapping the observations of the whole territory throughout the year. Additionally, scientific data (date, place, main body measurements, sex, canine roots for age determination, reproductive organs and genetic samples) are collected from all hunted individuals. Until 2002 wolf was hunted round the year without any limits. Since last year the hunting season has been open from 01.08. to 31.03.

Since 2002 wolf is managed on the state level. An advisory the working group under the Ministry of the Environment sets yearly hunting quotas for large carnivores.

The goal of the present policy is to keep the wolf population between 100 and 200 individuals by regular and flexible hunting control, favourable for both predator and man.

COMMUNICATION PAPER

Although wolf existence in Estonia has been reported through many centuries, the regular data on hunting statistics is available since year 1954. Regular census and size of hunting bag were yearly reported by hunters associations.

During last 50 years the number of wolves has been varied in wide range. 1000 wolves were counted in 1954 , which was the highest peak after II WW. Using the extreme hunting methods like poisoning the number reduced rapidly and during 10 years period there were about 10 individuals counted per year. In 70`s the population recovered and reached the next top in the middle of nineties, when 700 individuals were counted in 1995. Such a high number seems to be unbelievable for such a small territory (Estonia covers about 45 000 km2), but is supported by the size of hunting bag - 302 wolves were shot in 1995 and in three years 1994-1996 altogether 703 wolves were shot (fig.1) During this period the predation of wolves caused significant decrease of wild boar and roe deer - the preferred prey species for wolf in Estonia (Valdmann, 1998). Since those years the decrease of wolf number continued until present time because of the extensive legal hunting.

Fig. 1

Willing to have a viable wolf population in Estonia at present and in future, the politics towards wolf have been changed at the beginning of this century. To terminate the over harvest, which is the main potential threat to wolf survival in Estonia (Lõhmus, 2002), different measures have been implemented.

The estimation of wolf number (hunting statistics) did not rely on any special methodology and the statistical number was mainly based on hunters opinion, collected from hunting districts. Comparing the census data and the size of hunting bag, which is expected to be more reliable, a trend of overestimating during periods of population decrease and underestimating during the increase appears. Similar trend has been watched in Latvia (Ozolins, 2000).

Keeping the wolf population in favourable status, the sustainable regular harvest rate cannot be based on census data because it's not reliable enough. Since last year the independent monitoring methodology was implemented. It is based on describing and mapping the wolves and tracks throughout the year, using specially trained observers. The observation net is covering the whole country.

As the result 434 observations of single individuals, pairs or packs were registered in winter 2002/2003. During the data management 8 packs and couple of pairs and single ones were separated. The final results show the presence of up to 80 wolves in Estonia in spring 2003, after hunting and before the breeding season. The difference between monitoring (80) and census (170) data is remarkable.

The former hunting statistics showed only the number of hunted wolves by districts. Since 2001 a lot of scientific data (date, place, main body measurements, sex, canine roots for age determination, reproductive organs and genetic samples) are collected from all hunted individuals.

The action plan "Management of large carnivores in Estonia" was compiled in 2000-2001 and approved in 2001 by the Ministry of the Environment. It was developed by a working group led by the Ministry of the Environment in cooperation with scientists, including different interest groups such as Estonian Hunters Association, State Forest Management Centre and NGOs (Estonian Fund for Nature, Estonian Teriological Society). The plan includes three species - wolf, lynx and brown bear and foresees activities for 10-year period to achieve the main goal - to maintain a favourable conservation status of large carnivore populations, meaning maintaining the populations with sufficient numbers and natural functions, at the same time seeking to limit agricultural damage and other conflicts. Regarding the management plan the expected number of wolves should be kept between 100 and 200 to achieve the goal, mentioned above. This number as optimal is accepted by majority of public, questioned in Estonia during 1999-2000 (Randveer, 2001).

During last 50 years no wolf attacks to human has been recorded, but not far in history, in years 1804-1853 111 people were killed by wolves. 108 victims of 111 were children and were killed just for prey (Rootsi, 2001). Also the rabid wolf attacks to people were quite common. Therefore the fear and anger towards wolves in near history is understandable. Fortunately, the attitudes towards wolves are totally different in Estonia today

Relatively small amount of depredation and natural fear to man is a result of regular hunting pressure. Public attitude towards wolf is relatively positive in Estonia and it makes us possible to tolerate relatively high density of wolves. Keeping or achieving the wolf acceptance by rural people is a key question in large carnivore conservation everywhere.

Hunting time and number of hunted wolves was not restricted until near past. Hunting regulations were updated last year and wolf hunting season was fixed from 01.08. to 31.03.

In 2002 the Ministry of the Environment established advisory working group on large carnivore management, consisting officials, scientists and representatives of different NGO-s. One of the tasks of LCMG is to fix yearly hunting quotas for wolf. The quota for current hunting season is 16 wolves for the whole Estonia.

Such a low quota follows the objective to keep the wolf number over 100 before breeding season. Monitoring data shows the number being lower in this spring. In addition to direct effect of low quota the indirect effect may have even stronger impact. Age of the wolves, hunted in last two seasons, shows significant difference in time scale. Among the wolves, shoot in period before rut (01.08 -15.01) only 30% and after beginning of rut (15.01-31.03) about 75 % were adults (n=30).

We guess that such a small hunting quota will be used up before 15.01 and the hunting bag will consist mostly of young animals. So the survival of reproductive units will increase the reproductive potential of the population.

Estonian wolf population has high reproductive potential and positive migration from Russia and Latvia. Regular and flexible sustainable hunting, based on scientifically founded monitoring results is the only way for efficient conservation of wolves in Estonia and in countries having similar situation.
During the accession negotiations with EU Estonia got geographical derogations to exclude our wolf population from Annex II and IV of Habitats Directive. We suppose the conditions of Annex V of the Directive are most suitable for long term conservation of wolves in countries with high wolf density, like Estonia.

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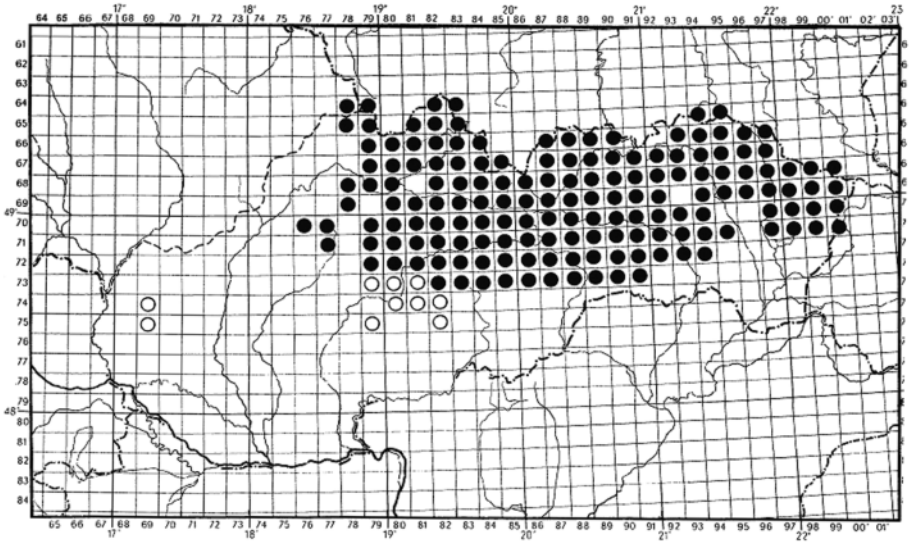
WOLF (CANIS LUPUS) IN THE SLOVAK REPUBLIC

Martin Kassa

Distribution in Slovakia

Wolf (Canis lupus) is the autochthonous species of the Slovak fauna. At present it lives in the woody, core Carpathian mountains in the north and the north-east of Slovakia (Fig. no 1). Its abundance is approximately 400 – 500 individuals.

(Fig. no. 1)
Map of wolf (Canis lupus) distribution in Slovakia



● permanent occurring O occasional occurring

Compiled by RNDr. Jana Budayová in 1996. Occasional observation added. (Collective, 1999)

Considering quite suitable conditions in cross-border areas with the Czech republic and Hungary it gradually spread into these countries too.

Status of wolf (Canis lupus) in Slovakia through last decades

According to official hunters' statistics in last decade number of wolf (Canis lupus) in Slovakia has increased approximately in 50 %.

Year	Number	H/P	H/R	Died
1990	750	-	-	-
1991	-	-	130	-
1992	501	-	100	-
1993	797	-	177	-
1994	807	-	44	-
1995	768	-	67	-
1996	969	-	-	-
1997	950 - 1330	-	74	-
1998	865 - 1233	48	54	3
1999	1004 - 1238	-	69	13
2000	1287	-	118	6
2001	1113	-	93	3
2002	925	-	113	-

Legend: number - number of individuals in each year, counted on spring (1.3.) by hunters' statistic methods
H/P - number of hunting permissions that were issued
H/R - number of individuals that were shot
Died - number of individuals that were found dead

Ecologist and specialists from hunting field estimate present numerous state of wolf of 400 – 500 individuals.

Before the year 1945 the wolf occurrence in Slovakia was only exceptional in the Eastern Slovakia, in the form of invasion pack from Poland in the Northern Slovakia, but only in extraordinary tough winters. After the year 1945 the wolf was widespread but it was intensively hunt without any limitation not only with gun but also with catching by legholds traps, poisoning and taking cubs from the dens.

As a result of that the number of wolves decreased again to minimum. The poisoning and catching in the legholds traps was prohibited and since 1975 there was a protective period from 1 March to 15 September as an initiative of hunters for the first time in the Slovak history. Thanks to that its number enormously increased and its area was essentially extended to the west.

Increase of the ungulates populations (roe-deer (Capreolus capreolus), red deer (Cervus elaphus), boar (Sus scrofa) enabled also increase of wolves population thanks food base. In that time from 100 to 160 wolves was hunted yearly but the wolf population was still increasing. It means that we regulated wolf population and at the same time number of wolves and ungulates slightly increased.

Methods of defining the population

The managers of then hunting areas make every year game counting. It is coordinated by Forest Research Institute, where they are also evaluated.

The Forestry research institute in Zvolen proposed optimum number of animals in individual geographic zones including optimal number of large carnivores in a research project about main game species. The optimal number of large carnivores was described to consider to habitats and present of suitable food.

Expert advisory commission for large carnivores works at Ministry of Agriculture and Ministry of Environment of the Slovak republic. The main objective of this commission body is to prepare the action plans for protection and management for large carnivores in the territory of the Slovak republic. Proposal of biological and legislative principles for protection and management of large carnivores is processed and the actions plans for protection and management of large carnivores are in processing.

Scientific reliability of the data on wolf population numbers

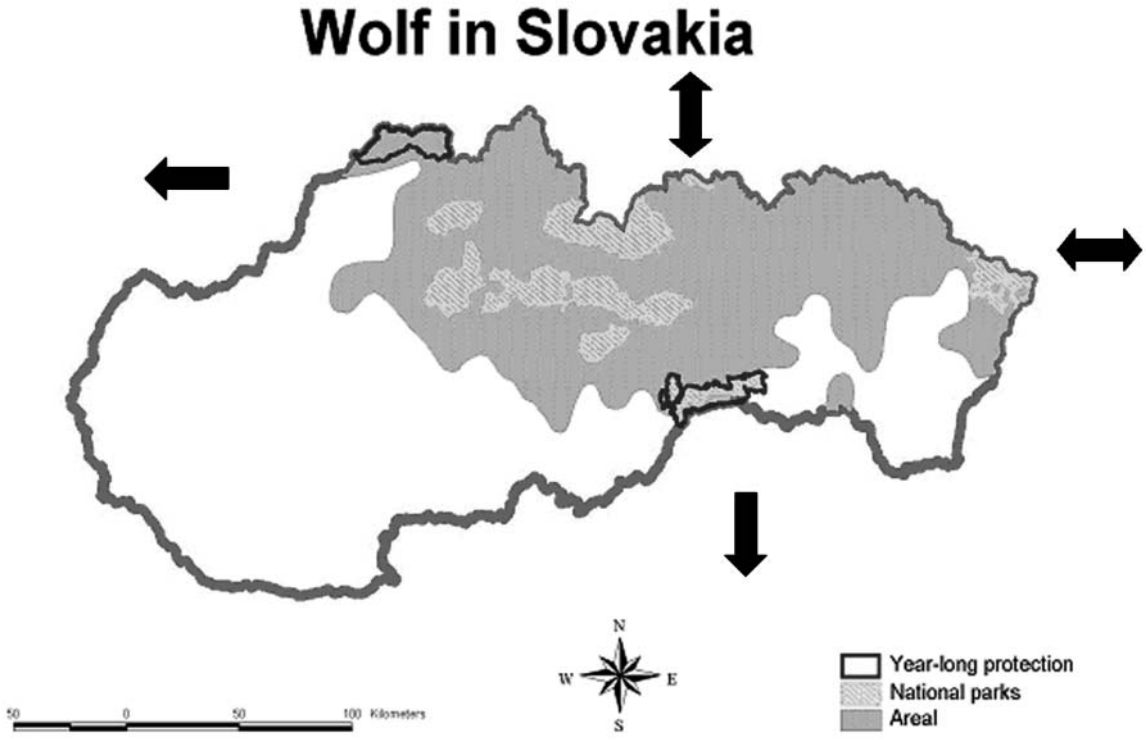
The Forestry research Institute in Zvolen have tried to found out real population numbers, not those over estimated by hunters. State Nature Conservancy, Administration of PLA Polana in cooperation with Forest Research Institute, Zvolen, first time in history organize large carnivores counting. Counting was realized in whole Polana mountains, where also exists deer area (number J-XVIII Polana) in 1. - 2.12.2001. Preparation and realization of this project was coordinated by County administration, together with Administration of PLA Polana and Forest Research Institute. About 200 people participated on this project and covered 73 278 ha. Results were getting together on Administration of PLA Polana and evaluated on FRI. After comparison of these results with results of official hunters' statistics we found out that hunters' statistics are 4-6 times over estimated.

Year	Wolf counting in Polana region		Annual officialhunters' statistics in Polana
	Stabil population	Temporary population	
2001	7	3 - 5	28

Relationship of national populations to those in neighboring countries

Neighboring populations in Czech republic and Hungary dependent on animals from Slovakia that naturally dispersing from Slovakia. Populations of these species in Poland are independent from Slovak populations. We don't have any information about Ukraine.
Corridors to Czech republic are in the north-western part of Slovakia in the area of PLA Kysuce.
Corridors to Hungary are in the southern part of Slovakia in the area of NP Slovensky kras (Fig. no. 2).

(Fig. no. 2)
Corridors and migration areas of the species Canis lupus between Slovakia and neighboring countries.



There are a few Acts concerning about large carnivores and their protection. By the Act 543/2002 on Nature and Landscape protection wolf is partly protected in Slovakia. Within two important sites on borders with Hungary and Czech Republic is protected all year round. The rest of national territory comes under seasonal protection beginning from 16th January and finished on 31th October.

In process of implementation of EU legislation Slovak republic asked for derogation of his protection. The reason is his quite stable population in Slovakia and rather frequent conflicts with livestock-breeders. And therefore is wolf protected only in the period 16th January – 31th October of the calendar year. The rest of the year is wolf possible to hunt. But there are two areas in Slovakia where wolf has year-round protection – PLA Kysuce (cross-border area with Czech republic) and Slovensky kras NP (cross border area with Hungary) (Fig. no. 2).

By the hunting legislation wolf belongs to game which is possible to hunt in the period 1th November – 15th January of the year. It means that it is possible to hunt wolf in this period, but except two above mentioned areas where it has year-round protection. In the period of its protection and in the area with year-round protection it is necessary exception given by the Ministry of Environment of the Slovak republic and the Ministry of Agriculture of the Slovak republic too. By the Act on CITES is wolf include into the group A. It means that its possession or possession of any part or any product of it and registration of its possession are the strictest.

Slovakia has no license for hunting. Holder of valid hunting permission and armament permission with complete exam for hunting can shoot wolf in the hunting period only with valid permission for hunting of wolf. For hunting of wolf in closed season or in the areas where it is all year protected, hunter has to have special permission from the Ministry of Agriculture and from the Ministry of Environment.

Compensation of damages

Compensation of damages caused by wolf is solved by Act 543/2002, which says that state is covering damages caused by protected large carnivores (bear, lynx and wolf) as protected species. There are strictly written conditions that must be fulfilled to cover the damage made by animals in this Act. It also says who can ask for covering expenses, what can be covered and other information.

The state is responsible under conditions, to extent and in the way defined by this Act for damage caused in the territory of the Slovak republic by wolf to:

a) lives and health of natural person,
b) selected domesticated animals,
c) dogs used for guarding of selected domesticated animals against attacks of beasts which may be dogs trained by different methods than methods used for training service dogs, ship-dogs, hunting dogs and big ship-dogs,
d) hoofed game in areas with a year-round species protection of defined animals.

Damage to domestic animals (horse, donkey and their hybrids, cattle, ship, goat, pig) may be compensated, if were in time of the event which directly resulted in a damage placed in closed premises or in electrical enclosures or outside closed premises or electrical enclosures, however, directly supervised by a natural person or watched by shepherd dog.

Documented evidence of scale and frequency of problems

State Nature Conservation prepares methodic and datasheet that must be fulfilled by special commission on the place where is the problem with large carnivores occurred. State is covers expenses for damage caused on domestic animals and game (in areas where the animal is the year- round protected).

Threats

There are few threats of wolf in Slovakia. We can mention for example illegal hunting, poaching, illegal keeping of animals and traffic.

International co-operation

State Nature Conservation cooperates with the Ministry of the Environment of Hungary on the project LIFE that is aimed on monitoring of wolf and lynx in Hungary.

Under preparation is cooperation on the monitoring of large carnivores with Poland.

We are also working on the bilateral cooperation on monitoring and management of large carnivores in large protected areas in Slovak-Czech border.

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Zákon Národnej Rady Slovenskej republiky c. 543/2002 Z.z. o ochrane prírody a krajiny. (Act of the National Council of the Slovak republic No. 543/2002 on Nature and Landscape Protection).

BASIS FOR WOLF CONSERVATION AND MANAGEMENT STRATEGY IN SPAIN

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General Direction of Wildlife Conservation
Ministry of Environment

The Spanish Ministry of Environment is promoting the elaboration of a Wolf Management and Conservation Strategy in contribution with Autonomous Communities and main experts. The national strategies for species conservation approved in Spain have been in charge of threatened species for which legal framework assigned to the National Commission of Wildlife Protection the coordination and unification of the policies developed by the Autonomous Communities.

Although this it is not the case of the wolf, as in a good part of its distribution range it is not a catalogued species and, in many cases, it is considered like a game species, there are some factors that recommend the elaboration of a national Strategy. Among them, its wide distribution area and range, its social incidence, the socioeconomic implications and finally its symbolic, cultural, scientific, and ecological values.

In the context of European Union and the International Agreements subscribed by Spain, it is appropiate having a reference document with the guidelines for the wolf management and conservation, respecting the competence framework and permitting the eventual regulation development by the Autonomous Communities.

The Strategy includes recommendations on the following aspects: legal initiatives; livestock damages; habitat conservation; zoning; hunting and population control; recreational and tourist uses; roaming dogs; media conflict; wolves in captivity; monitoring and investigation; information and awareness.

WOLF MANAGEMENT IN ASTURIAS

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Departament of Environment. Principado de Asturias

The area of distribution of wolf in Asturias spreads over most of the territory, except the coastal stripe and the medium valleys of Caudal and Nalón rivers and the pre-coastal ranges in the east. Population numbers seem to keep stable, at least during the 15 last years, when the reproductive groups have oscillated between the 14 and 21. A recolonization on the Western zone of Picos de Europa range it is verified.

Although wolf diet presents a big spatial variation, the most frequent food resources in Asturias are livestock and wild ungulates.

Since the present Hunting Law of Asturias was approved in 1989, the Regional Administration compensates all the damages caused to livestock. In 2002 there were a bit more than 2.000 attacks with an economic value of 580.000 euro.

The hunting regulations, in force since 1991, does not consider wolf as game species.

The Wolf Management Plan in Asturias was approved in December 2002, elaborated with the participation of all the involved sectors (livestock famers, hunters, local administrations, foresters and conservationist groups) and after several meetings of experts and a public information process. The Plan seeks as an main goal the conservation of the species maintaining a population level that guarantees its future and viability, being compatible with agrarian development and social acceptance.

Criteria for establishing control measures on population as methods, personnel, timing and zones, trying to achieve a consensus by creating a consultive committee.

To give a special attention at conflict of stray dogs and hybrids; to support all the information measures about population; keep the compulsory compensations for damages to livestock and to promote technical solutions to reduce them. It proposes developing tourist or recreational experiences to give the species a new value so that it can be accepted by rural inhabitants as another element of natural patrimony.

STATUS OF IBERIAN WOLF POPULATIONS IN CASTILLA-LA MANCHA. CONSERVATION STRATEGIES

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Department of Environment. Junta de Comunidades de Castilla-La Mancha

The Iberian wolf is a protected species in Castille-La Mancha and it's included in the Regional Catalogue of Endangered Species as "In Danger of Extinction", thus the elaboration of a Recovery Plan for the species is compulsory. The Department of Environment is developing the population monitoring and collecting the necessary information for the elaboration of this Plan, while some conservation measures have been already taken.

There are two populations of iberian wolf in Castille-La Mancha with very different characteristics: on the one hand, the one in Sierra Morena, in Ciudad Real province, where the existence of stable packs is not probable; on the other hand, the population arrived at the north of Guadalajara province in 2000 through Soria and Segovia provinces, which has their origin in the recent expansion experienced by the wolf population at the North of Duero river. The latter is in phase of reco-lonization and intending to settle stable packs.

For its final settlement in the north of Guadalajara province it needs the end of the persecution that may be suffering, what requires a strict protection and the adoption of measures to reduce conflicts with livestock. In this framework the Department of Environment approved, in November 2001, a group of economic aids to livestock farming in oder to reduce the risk of damage to livestock by wild canids, subsidizing the repairing or the installation of small fences and the acquisition of guardian dogs as well as contributing to the insurances suscription that cover damages produced by attacks of wildlife or roaming dogs.

On the other hand, the evolution of the wolf population is being monitored, not only by experts, but also by foresters who have been qualified through different courses in detection and identification of wolves signs. The places where livestock is attacked are visited systematically.

WOLF CONSERVATION IN ANDALUSIA

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Junta of Andalusia

Due to their huge uninhabited areas, the Iberian Wolf (Canis lupus signatus) kept a relatively widespread distribution in Andalusia until the beginning of XXth century, when their populations suffered a strong decline, due above all to the use of poisoned baits and traps. This made the wolf to survive only in Sierra Morena, a range in the North of this Autonomous Region. By the end of the 1980 decade wolves just kept two small packs, fragmented from each other and from the rest of the Spanish wolf populations. This situation seemed to announce the brief species extinction and thus the wolf was legally protected in 1986, starting the compensations for livestock damages. In 1997, the Department of Environment of Andalusian Goverment initiates in contribution with the University of Jaén a study to determine the state of conservation of the population of Sierra Morena, that included the identification of the main problems of conservation and the pertinent corrective measures.

To carry out this work, the University of Jaen used different survey techniques, among them lineal transects on foot, listening points, howl simulations, revision of attacks to livestock and interviews to public. During the period of investigation (1997-2001) a continued reproduction of wolf in Sierra Morena was verified. Its stable presence has been observed in two zones: one situated among Eastern Sierra Morena in Seville and Western Sierra Morena in Cordoba; and the other one among Eastern Sierra Morena in Cordoba and Central Sierra Morena in Jaen. The study estimates that in Andalusian Sierra Morena there is a population of 9-11 family groups, what supposes some 63-77 wolves. To conclude, the wolf keeps today in Andalusia a small but viable remaining population, and that there are signs of expansion eastwards and westwards from its nuclear areas in Sierra Morena. This expansion seems favoured by the existence of Natural Protected Areas and Sites of Community Importance in procedure of statement (Natura 2000 Network), as well as by the local economy based on hunting activity (big game). Nevertheless this natural expansion conflicts with the resistance of many cattle breeders and private game preserves holders.

As a continuation of the study, and following its recommendations, the Department of Environment has optimised the damage compensation procedure and started a project of study and management that includes the monitoring of the population of wolves, its genetic characteristics, the identification of mortality causes and sinks, and the promotion of preventive measures of livestock attacks by means of agreements with cattle breeders, such as the use of electric fences, enclosures, guardian dogs and a livestock management compatible with the presence of wolf. It is expected these mea-sures can assure the survival of the remaining population, especially in the Natural Protected Areas Network and the Sites of Community Importance.

STRATEGIES OF THE WOLF MANAGEMENT AND CONSERVATION PLAN IN CASTILLE AND LEON

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Junta of Castille and Leon

Iberian wolf in Castille and Leon has experienced an expansion in the last years that has supposed, besides the increment of Its density in the areas it already occupied, the apparition of the species in zones where it had disappeared some decades ago. Thus nowadays wolf inhabits all the nine provinces of Castille and Leon, and its breeding has been confirmed in eight of them. The numbers oscillate from 1.000 individuals at the beginning of the spring to 1.500 individuals at the middle autumn. The evolution experienced by the species in Castille and Leon has supposed that its range has increased in 35% since 1990 decade.

This situation, along with the need of wide areas for the species, its big ecological resistance, its high reproduction rate and its ability for generating conflicts advise for the elaboration of Management Plans for the species. The aims of the Wolf Management and Conservaction Plan in Castille and Leon are, among others: to assure the viability of the species; to permit their expansion towards other zones; to minimize damages to livestock; to guarantee the sustainable explotation and to have updated information of its situation.

Castille and Leon presents a strong ecotonal character because of its extension, its geographical situation and its orography, being a very diversified space. This characteristic makes difficult the application of common management measures to all the territory and complicates the adoption of successful management models designed for a concrete area. The only way to manage such complicated situation is to adopt a flexible and agile system, so that the actions disposed can adapt to the situation of the species each place and each moment and, at the same time, contemplate the particularities of each zone. Thus zoning the territory is indispensable

Zoning is recommended as a management tool by the Manifesto and Guidelines on Wolf Conservation prepared by the Wolf Specialist Group of the International Union for the Conservation of Nature and Natural Resources (IUCN); by the Recommendation n° 17 (1989) of the standing committee on the protection of the wolf in Europe an it's provided in the Action Plan for the conservation of the wolves in Europe of the Council of Europe, in the European Group of Experts on Conservation of Large Carnivores and in the Action Plans developed in USA.

Zoning must be designed taking into account the following factors: landscape; availability of wild prey and other food resources; the kind of livestock and its management. With this measure there can be established the following zones: high density, low density, exclusion, transition zones and corridors. On the other hand, according to the article 16 of Habitats Directive, hunting of the species is intended south of Duero river, in the framework of an exploitation plan designed by the Department of Environment. This plan will fix the quotas and regulate hunting according to demographic parameters, the damages caused and the management objective in each region. This management system makes the appreciation of the species by local inhabitants easier, due to the important source of incomes that its game exploitation can generate. Hunting can be also used as a tool to reduce damages caused on livestock, permitting in this way a better appreciation on part of the livestock farmers and to harmonize its presence with livestock. At the same time, lines supporting livestock farming will be established, for the compatibilization with the presence of wolf.