

Europe's carnivores

A CONSERVATION CHALLENGE FOR THE 21ST CENTURY



A WWF-UK REPORT • FEBRUARY 1999



Copyright 1999 WWF-UK
All rights reserved

All material appearing in this publication is copyrighted and may be reproduced with permission. Any reproduction in full or in part of this publication must credit WWF-UK as the copyright owner.

The authors have used all reasonable endeavours to ensure that the content of this report, the data compiled, and the methods of calculation and research are consistent with normally accepted standards and practices but no warranty is given to that effect nor any liability accepted by the authors for any loss or damage arising from the use of this report by WWF-UK or by any other party.

ISBN No 1 85850 159 8

ACKNOWLEDGMENTS

This report was compiled by Lucy Farmer, Nicola Brewerton and Callum Rankine.

We would like to thank the following people for their support and assistance: William Pratesi, Miguel Delibes, Dr Urs Breitenmoser, Dr John Linnell, Professor Jon Swenson, Professor Luigi Boitano, Christoph Promberger, Peter Jackson, Dr Johnny Birks, Dr Chris Mason, Dr Paul Toyne, Gail Murray, Rebecca Hesson and Justin Swarbrick.

Contents

INTRODUCTION	2
IBERIAN LYNX	4
EURASIAN LYNX	7
GREY WOLF	8
BROWN BEAR	11
WOLVERINE	12
THE CARPATHIAN LARGE CARNIVORE PROJECT – A LESSON IN COHABITATION	14
CARNIVORES IN THE UK	16
OTTER	17
POLECAT	18
RECOMMENDATIONS	20
CONCLUSIONS	21
WWF'S WORK	22
PARTNER ORGANISATIONS	24
REFERENCES	25



The plight of Europe's large carnivores has become an issue of increasing conservation concern. They continue to be persecuted by humans, and in many cases their habitats are under threat. While the precarious status of Asia's tigers is widely known, some of Europe's own top predators are in danger of quietly disappearing. Others face an upsurge in conflict with people as they attempt to reclaim parts of their former ranges.

The status of the Iberian lynx, found only in pockets of Spain and Portugal, is a matter of grave conservation concern. It is now recognised as the world's most endangered cat species with its tiny population facing a real threat of extinction. Other species, such as wolves, are beginning to expand their ranges, but unless public acceptance of their presence is quickly secured, conflict with people will inevitably result in carnivores being the certain losers.

The political developments in Europe, particularly within the European Union, with the partial disintegration of national borders and more unified legal and planning requirements, create new and promising opportunities for managing large carnivore populations. In view of these possibilities and in recognition of the threats facing carnivores, WWF-UK has launched a campaign for Europe's Carnivores. The campaign builds on WWF's strong European network and existing partnerships, and aims to raise awareness and funds for the carnivores struggling to coexist with Europe's dense human populations. This report highlights the status of a number of key carnivores, identifies the threats facing them and proposes conservation action to secure their survival in our crowded continent.

Introduction

Europe once provided a wide range of natural habitats for its large carnivore species. Today suitable habitat is greatly reduced and large carnivores have been driven from many areas altogether by human encroachment and persecution. Where they survive, they occupy highly fragmented and human-dominated landscapes.

The Iberian lynx has recently been labelled by IUCN (the World Conservation Union) as the most critically endangered cat species in the world, with a total

Redefining the big bad wolf and presenting positive images of carnivores is vital if carnivores and people are to co-exist in Europe

population as low as 650 clinging to isolated pockets of Spain and Portugal. The Eurasian lynx has also disappeared from much of its historical range. Relict brown bear populations are dangerously small and highly fragmented in southern, central and western Europe.

Wolf populations face intense human pressure throughout most of their range and wolverines – large members of the weasel family – number around just 500 outside Russia.

Britain is no longer home to any large terrestrial carnivores – and the smaller, less common species which survive continue to be threatened by human activities. Otters are making a slow comeback after decades of hunting, and pollution of their riverine habitat. The wild cat of Scotland is endangered, and while pine martens and polecats are expanding from their heartlands of Scotland and Wales respectively, their expansion will inevitably lead to conflict with people.

Carnivores in Europe face a catalogue of threats; particularly the larger species regarded as direct competitors with humans. These threats include habitat loss (often the result of deforestation and agricultural expansion), reduction of natural prey species, unsustainable and illegal hunting, road traffic, and in some cases, pollution and dwindling genetic variation. Livestock predation, the major trigger for exterminating animals such as wolves, is linked to livestock management techniques and broader agricultural policy, including Common Agricultural Policy (CAP) livestock subsidies.

Retaining large carnivores in Europe poses a daunting but important conservation challenge for the 21st century. Large carnivores require large areas of suitable habitat with plentiful prey species and therefore serve as useful barometers of the health of their natural environment. In conservation terms, they are Europe's equivalent of tigers and jaguars, and their presence in viable numbers is a measure of regional biodiversity and Europe's contribution to the conservation of global biodiversity.

The predatory behaviour of carnivores can interfere with local economic activity, particularly livestock farming, resulting in conflict with people. Hostility to large carnivores is understandably prevalent among some hunters and farmers who regard predators as pests and competitors. Although attitudes appear to be changing, negative images still persist in the wider community, due in part to fear and misunderstanding fuelled by centuries of popular mythology. Redefining the big bad wolf and presenting positive images of carnivores is vital if carnivores and people are to co-exist in Europe. Demonstrating how people and carnivores can live in harmony, and how people can actually benefit from their predatory neighbours, is central to WWF's approach.

The future of Europe's large carnivores is dependent upon cross-border cooperation between nations and on managing predator interactions with human activities on a local level. They are complex tasks that must involve a wide range of parties including land managers, local

communities, NGOs, governments, international organisations and conventions. Political developments, especially within the European Union with the partial redefining of political borders, has created important new opportunities to manage large carnivore populations – but the support of local people remains pivotal.

In 1995, in recognition of the many complex challenges surrounding the conservation of carnivores, WWF and partner organisations in 17 European countries established a Large Carnivore Initiative for Europe (LCIE).

Focusing on five species – the European brown bear, Iberian lynx, Eurasian lynx, wolverine and the wolf – the LCIE’s mission is to “maintain and restore, in coexistence with people, viable populations of large carnivores as an integral part of ecosystems and landscapes across Europe”. A Large Carnivore Group has also been established and includes representatives from governments, national and international conservation organisations and leading scientists and other experts.

The Initiative is working on four main levels:

- protecting large carnivores and their habitats
- integrating large carnivores with local development
- supporting large carnivores through legislation, policies and economic instruments
- gaining public acceptance for the existence of large carnivores.

In the UK, WWF is engaged in a number of activities to enhance the conservation of carnivores. These include lobbying for better legal protection for wildlife, pushing for reform of the Common Agricultural Policy in favour of agri-environment schemes, and ensuring that the European Habitats and Species Directive is translated into practice. WWF is also helping to implement biodiversity action plans for carnivores and their habitats.

WWF’s Campaign for Europe’s Carnivores builds on these important activities. It aims to raise awareness of the problems facing carnivores and challenge people’s negative perceptions of wild predators. It will also raise funds for a range of priority conservation activities in the UK and Europe.

It is clear that the challenge of conserving carnivores involves ecological, economic, institutional, political and cultural factors. WWF, together with its many partners, is addressing all these issues in its vision to secure healthy populations of carnivores in Europe through the 21st century and beyond.

The LCIE’s mission is to “maintain and restore, in coexistence with people, viable populations of large carnivores as an integral part of ecosystems and landscapes across Europe”

Iberian Lynx

LYNX PARDINUS • FAMILY: FELIDAE

STATUS: ENDANGERED, CITES LISTED APPENDIX I

DISTRIBUTION

The Iberian lynx is the most threatened cat species in the world. Today it is found only in isolated pockets in Spain and Portugal. Lack of research has made it difficult to assess just how rapid the decline in lynx numbers has been. However, it is thought that the Iberian lynx experienced an 80 per cent range loss between 1960 and 1990.

As a result of habitat loss, hunting, accidental killing and loss of prey species, there are fewer than 800 left in the wild, many existing in tiny, fragmented populations.

BIOLOGY

There was little known about the Iberian lynx until very recently. Its status as a separate species from the Eurasian lynx has long been questioned, but fossil records, morphological and genetic evidence has clarified its position as *Lynx pardinus*. Iberian lynxes are heavily spotted and half the size of their Eurasian cousins, with long legs and very short tails. They prey almost exclusively on rabbits, but will also feed on birds, rodents and young deer. Adult lynxes have comparatively small home ranges between four and 20km² in size, preferring scrubland interspersed with open areas. They are solitary animals, most active at twilight when rabbits are also present. Usually three kittens are born in April. Many other aspects of their biology are still being researched.

THREATS

Iberian lynxes have long been viewed as hunting trophies or as vermin and subject to human persecution. They received protection against hunting in the

early 1970s and since then hunting has dropped off. However, a significant number of lynx are still killed by hunters or in traps and snares set for smaller animals. Changes in natural habitat such as loss of hedges and an increase in roads threaten lynx, and in the 1980s road deaths caused 7 per cent of lynx mortalities. Over-hunting and changes in habitat have led to

a drop in rabbit numbers.

This, coupled with the myxomatosis epidemic and more recently Rabbit Haemorrhagic Disease (RHD), have reduced rabbit levels today to just 5 per cent of those in the 1950s. Furthermore, many of the lynx populations have been fragmented into tiny communities, raising concerns about genetic viability and susceptibility to disease.

CONSERVATION SOLUTIONS

Because the range of the Iberian lynx is so limited, conservation measures should be relatively easy to implement. One of the first needs is to designate core 'lynx areas' where conservation measures will take priority.

Habitat: In order to establish areas suitable for the lynx, it is important to promote land uses which make scrubland preservation possible, as well as providing incentives for landowners to encourage lynxes onto their land. Building infrastructure such as roads should be banned in 'lynx areas'.

Hunting and Trapping: Laying snares, traps and poison should be prohibited in 'lynx areas' and

bans enforced vigorously. Shooting should be stopped through awareness campaigns.

Research: Reliable methods to detect lynx presence and monitoring lynx populations are needed. In order to aid rabbit recovery, research into rabbit diseases is needed. Further research into lynx genetics is essential. In the short term, it may be necessary to move individuals or groups of lynx in order to aid recovery of isolated populations, while in the long term, habitat corridors could be established. More research is also required to establish action plans that will work toward a sustainable future for the Iberian lynx.

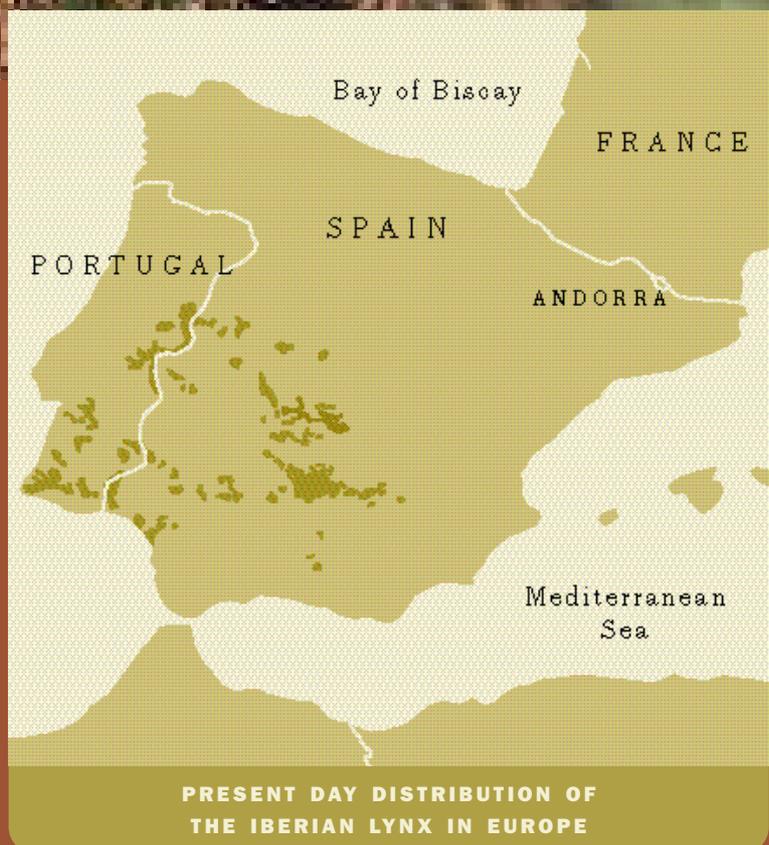
SURVIVAL PROSPECTS IN EUROPE FOR THE 21ST CENTURY

If current trends continue, the Iberian lynx will probably disappear in the first half of the 21st century. This would be a huge embarrassment for Europe, as it would represent the first well-documented extinction of a wild felid in our continent. However, an increasing number of people are working to change current trends and we can only hope they are successful.

Miguel Delibes, Biologist, Spanish Council for Research



*If current trends
continue, the
Iberian lynx will
probably disappear
in the first half of
the 21st century*



*Humans are still
a major threat to
the lynx,
particularly small
populations or
populations of
reintroduced
animals*



PRESENT DAY DISTRIBUTION OF THE EURASIAN LYNX IN EUROPE



Eurasian Lynx

LYNX LYNX • FAMILY: FELIDAE

STATUS: LOWER RISK, CITES APPENDIX II LISTED

DISTRIBUTION

The Eurasian lynx is one of the widest ranging of all cat species. It was once distributed through Russia, central Asia and Europe, and may have occurred in Britain around 1,800 years ago. The lynx reached its minimum numbers in the 1950s as a consequence of human activities. In Europe today the lynx has a continuous population in Nordic countries and small scattered populations in central and western Europe. There are about 7,000 Eurasian lynxes left in Europe.

BIOLOGY

The third largest predator in Europe, the lynx has a short body, long legs and distinctive tufted ears. Measuring 1m in length and 60-65cm in height, it is the largest of four lynx species. Forest is typical lynx habitat, but lynx also occur in semi-deserts, and in northern latitudes they can even survive in the tundra. They are solitary animals with marked individual territories of between 100-500km² for males. Their preferred diet includes roe deer, reindeer and chamois, but lynx will also take birds and hares in some areas. The lynx has no natural enemies and can live up to about 17 years.

THREATS

The lynx's disappearance in lowland Europe was due to human persecution, deforestation, expansion of agriculture, an increase in human populations and a decrease in wild prey. Although the lynx is not endangered, these threats still affect it today all over Europe. Habitat loss, and the loss of a prey base due to logging and human population pressures, could devastate this elusive animal. Humans are still a major threat to the lynx, particularly small populations, or populations of reintroduced animals. These groups can be devastated by losses due to traffic accidents, or by unsustainable hunting and poaching. In Norway last year, licensed hunters killed 117 lynxes out of a total population of just 500-600. This type of hunting may be unsustainable, particularly when compounded by illegal hunting.

CONSERVATION SOLUTIONS

Research: More knowledge of population densities and dynamics is needed, especially in areas where governments allow controlled lynx hunting to take place. Farmers need to be made aware of the facts surrounding lynx biology and predation in order to make informed decisions about hunting.

Habitat: Suitable habitat and prey are essential for the continued survival of lynx in Europe. This land and the animals within it need to be properly managed, and deforestation should be stopped.

Human conflict: In order to reduce conflict with man which leads to lynx deaths, efforts are needed to reduce livestock predation and economic losses to farmers through measures such as compensation schemes and awareness programmes. Local people should be encouraged to participate in the planning stage for lynx conservation in their area.

SURVIVAL PROSPECTS IN EUROPE FOR THE 21ST CENTURY

The lynx was mercilessly persecuted for many centuries and has disappeared from most of its original living space in Europe. However, lynx populations in northern and eastern Europe have slowly started to recover. We are far from having the lynx back to where it once belonged, but the signs are encouraging. Nevertheless, the problem of conflict with human interests remains, and too many lynx die at man's hand. We must forget about our old prejudices against large carnivores and accept them as part of our ecosystem and culture.

Urs Breitenmoser, Dr. phil. nat., University of Bern

Grey wolf

CANIS LUPUS • FAMILY: CANIDAE

STATUS: VULNERABLE, CITES LISTED APPENDIX II

CONSERVATION SOLUTIONS

Wolf conservation has taken on a cross-border identity, involving WWF and other organisations and experts from all over Europe sharing knowledge, expertise and funding to increase the chances for its long-term survival.

Research: a nine-year wolf research programme has started in the Carpathians to establish better knowledge of wolf ecology, wolf/human relationships and threats to wolves.

Land management: Habitat restoration is required in key areas to increase a healthy prey base and encourage wolves to move back into their former territory. Corridors of land between small populations need to be established to allow movement of animals and avoid local extinctions.

Local People: In order to establish successful projects, local people need to be involved with wolf management plans. Education programmes will increase people's understanding of the wolf, replacing myth with fact. Problems caused by wolf predation on domestic animals will be addressed by livestock protection schemes involving dogs and compensation systems.

Policy: WWF's lobbying campaign for modification of the Common Agricultural Policy is integral to encouraging the return of European carnivores.

DISTRIBUTION

The wolf once had one of the largest global distributions of any land living mammal, occupying much of the Northern Hemisphere. During the 19th century, wolves were exterminated from all central and northern European countries. Today the species is starting to recover naturally in several parts of Europe, with the largest populations found in eastern countries, particularly Romania, the Balkan area, Poland and bordering countries. There are between 15,500 and 18,000 wolves in Europe today.

BIOLOGY

The wolf is the second largest predator in Europe after the brown bear. The adult male weighs an average 40kg and measures up to 150cm in length. Wolves feed

opportunistically, but main prey species are ungulates, such as moose and deer. Wolves can live in very diverse habitats, adapting to the most extreme conditions, from the plains of central Spain to the tundra of Finland. They are social animals, living within a marked territory in packs with strong bonds. The alpha female and male are dominant and are usually the only two wolves in a pack to breed.

THREATS

The wolf has for centuries suffered from a negative image, based largely upon fear, misunderstanding and the fact that it kills livestock. This image poses difficulties with human/wolf interaction and often leads to conflict. In some countries there is unrestricted hunting of wolves. In others, licences are issued without any biological understanding. Poaching is widespread and probably the single most important mortality factor for the wolf in Europe. Wolves preying on domestic animals have been a problem since man progressed from hunter/gatherer to farmer, and although the numbers of sheep or cattle taken are, as a percentage very low, livestock predation remains the primary reason for exterminating wolves. Human encroachment is the most significant threat to wolf habitat. Wolves can live close to humans but they need safe retreat areas. This is not considered in land planning in wolf areas and the small, fragmented populations in western Europe can result in animals moving into unsuitable habitat.

SURVIVAL PROSPECTS IN EUROPE FOR THE 21ST CENTURY

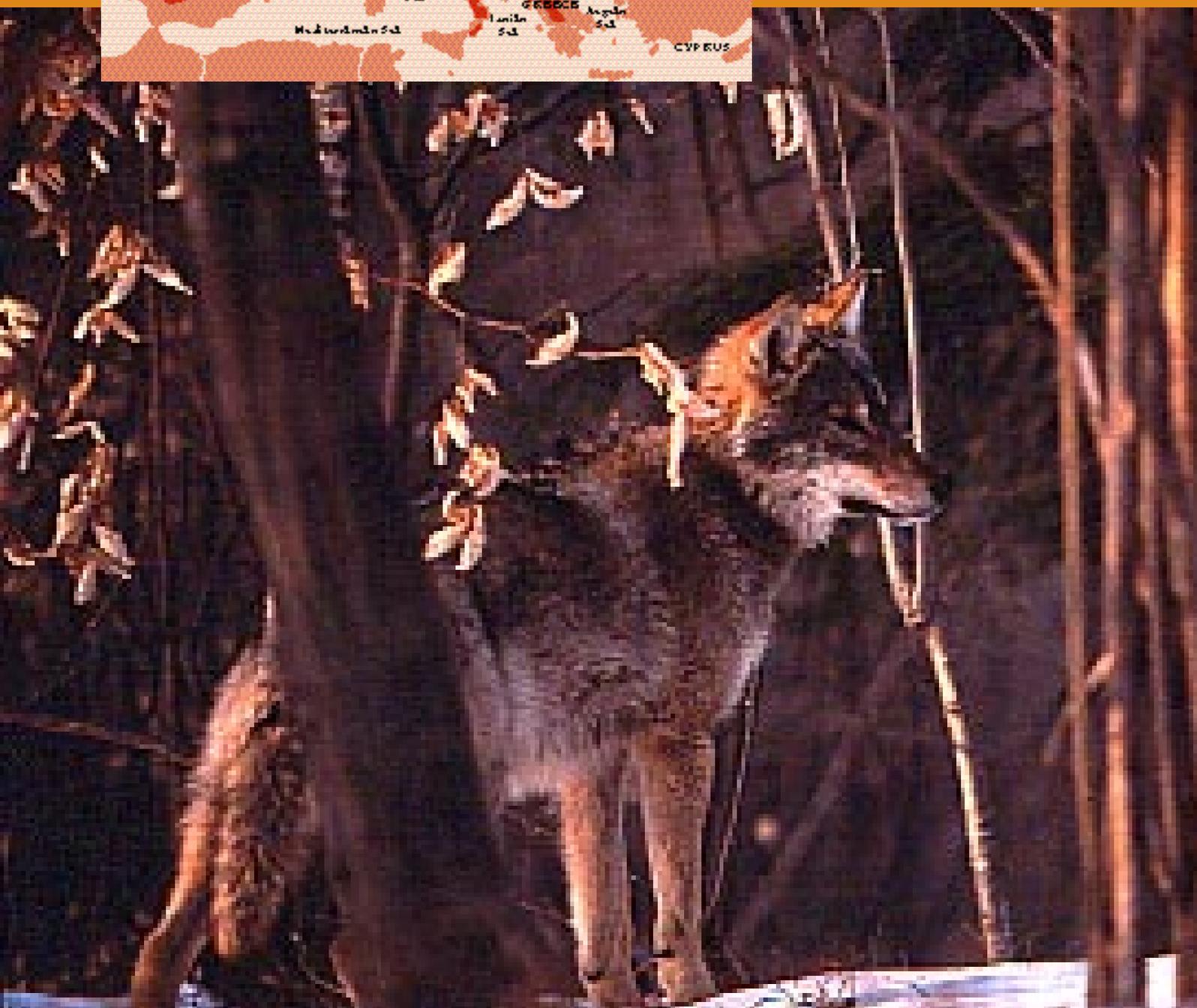
The current trends are generally positive throughout Europe, but too many small populations are still vulnerable or threatened by irrational management or poaching. The wolf is a very adaptable species and has shown its ability to cope with high human densities. Wolves can survive wherever there is something to eat and where humans do not kill them. They know how to live among humans. It is up to us to show the same kind of adaptability and tolerance.

Luigi Boitani, Professor of Vertebrate Zoology, University of Rome

PRESENT DAY DISTRIBUTION OF THE WOLF IN EUROPE



Poaching is still widespread and probably the single most important mortality factor for the wolf in Europe





PRESENT DAY DISTRIBUTION OF THE BROWN BEAR IN EUROPE



Several of the smaller, isolated populations may go extinct during the next century

Brown bear

URSUS ARCTOS • FAMILY: URSIDAE

STATUS: APPENDIX II UNDER THE BERN CONVENTION
CITES APPENDIX II LISTED

DISTRIBUTION

The brown bear is the most widespread bear in the world occurring in Europe, Asia and north America. Increasing human populations have squeezed brown bears out of many parts of their former range in southern Europe. Today Europe has 14,000 brown bears and there are another 36,000 in Russia. The two main bear populations in Europe are in the Carpathian Mountains and in north-eastern Europe where there is a continuous population from the Urals to the west coast of Finland. Some relict brown bear populations are precariously small and highly fragmented in southern, central and western Europe.

BIOLOGY

Brown bears have massive heads and heavily built bodies, with males weighing 140kg-320kg. They are actually omnivores and their diet ranges from nuts and fruit to insects and meat (prey or carcasses). Bears are not efficient hunters, but they will take young moose and unprotected livestock given the opportunity. Bears generally hibernate in late autumn for between three and seven months in dens dug in the ground or under rocks. They are active during both day and night, although human persecution has led to nocturnal behaviour in some areas. They have huge home ranges, living in deciduous and coniferous forests as well as steppes and tundra.

THREATS

The continued survival of the brown bear in Europe is threatened by many different factors. Public attitudes are generally negative towards bears, due in part to fear of attack. As human populations expand, bears lose their habitats and food sources, resulting in predation on livestock, especially sheep and goats. Bears also take unguarded livestock even where there is abundant food.

The best bear habitat has already disappeared in Europe through logging and forest clearance. The planting of exotic conifers has seriously altered local ecosystems in some places. Habitat fragmentation due to roads not only leads to traffic casualties but also isolates populations, which can lead to local extinctions. In some areas, poachers kill cubs to the detriment of local bear populations. The increased demand for bear parts in Asia for use in traditional Chinese medicine has led to a massive increase in poaching in Russia, and presents a very substantial threat.

CONSERVATION SOLUTIONS

Legislation: International legislation protecting bears from poaching and illegal trade needs to be continually enforced.

Habitat: Key bear areas and corridors need to be identified and given suitable protection. Good forest management and controlled logging can benefit bears, and should be encouraged.

Human conflict: Farmers need to be encouraged to use traditional livestock guarding techniques, and compensation schemes for livestock lost to bears need to be introduced. Public awareness and education is needed to inform people in bear areas about bear ecology and human safety.

Research: More research into population dynamics, genetics and bear habitat is required in order to carry out the work in bear action plans.

SURVIVAL PROSPECTS IN EUROPE IN THE 21ST CENTURY

Several of the smaller, isolated populations may go extinct during the next century. The European brown bear is more productive and more adapted to people than the brown bears of Asia and north America. Thus, although the increasing human pressure is certainly a negative factor, bears can withstand it if it is not too overwhelming.

Jon Swenson, Professor of Ecology and Natural Resources Management, Agricultural University of Norway

Wolverine

GULO GULO • FAMILY: MUSTELIDAE

STATUS: CITES APPENDIX II LISTED, VULNERABLE

DISTRIBUTION

In addition to their distribution in eastern Siberia and north America, wolverines once occurred throughout the European part of Russia, Norway, Lithuania and north-east Poland. During the last century wolverines disappeared from these southern areas in Europe due to persecution, deforestation and human development. Today surviving populations are found in central and northern Norway,

Sweden, Finland and Russia.

There are estimated to be just 2,000 wolverines left in the wild, of which 1,500 are in Russia.

BIOLOGY

Wolverines are the largest terrestrial member of the weasel family. Looking a little like bears with rich brown coats and head markings, they are powerfully built for the harsh conditions in which they live. They scavenge from kills abandoned by wolves and lynxes,

but prey on hares, rodents and occasionally animals as large as moose, in addition to domestic sheep and reindeer. Recent studies have shown that these solitary animals have very large home ranges, between 200 and 1500km², in habitats ranging from alpine to birch and deciduous forest.

THREATS

Wolverines are very scarce in Europe today. Their continued survival is threatened due to small and fragmented populations and the likelihood of poor genetic diversity. Habitat loss is a substantial threat with wolverines pushed to the last available habitat not developed by humans. Human encroachment into traditional wolverine habitat can cause the loss of essential prey species, and increase the risk of human/wolverine conflicts as wolverines prey on domestic animals. The loss of other carnivores, such as wolves, could also affect wolverines by depriving them of an important source of carrion meat.

In Norway, farmers no longer use traditional farming techniques which deterred predation, so wolverines are often killed in an effort to protect livestock. Legal hunting and poaching continue, taking a large percentage of wolverine populations. The annual quotas in Norway, which are currently set by government-approved committees, are very high in relation to the scientifically obtained population estimates.

CONSERVATION SOLUTIONS

Livestock conflict: WWF aims to help decrease this conflict, thereby helping to reduce the legal and illegal killing of wolverines. Farmers should be encouraged to adopt guarding techniques compatible with wolverine conservation, and given economic incentives to have wolverines on their land. A new compensation and education scheme for reindeer herders in Sweden has recently been established where farmers identifying wolverine dens on their range will profit financially. Local communities are also being encouraged to participate

in conservation management, and education campaigns will be set up.

Illegal hunting: Intensified law enforcement and high penalties need to be established to prevent illegal killing. Hunting allowed by governments needs to be properly managed, so that it avoids small endangered populations.

Monitoring and Research: Still very little is known about the wolverine, and further research into population dynamics, wolverine-prey relationships, habitat use etc. should be given high priority.

SURVIVAL PROSPECTS IN EUROPE FOR THE 21ST CENTURY

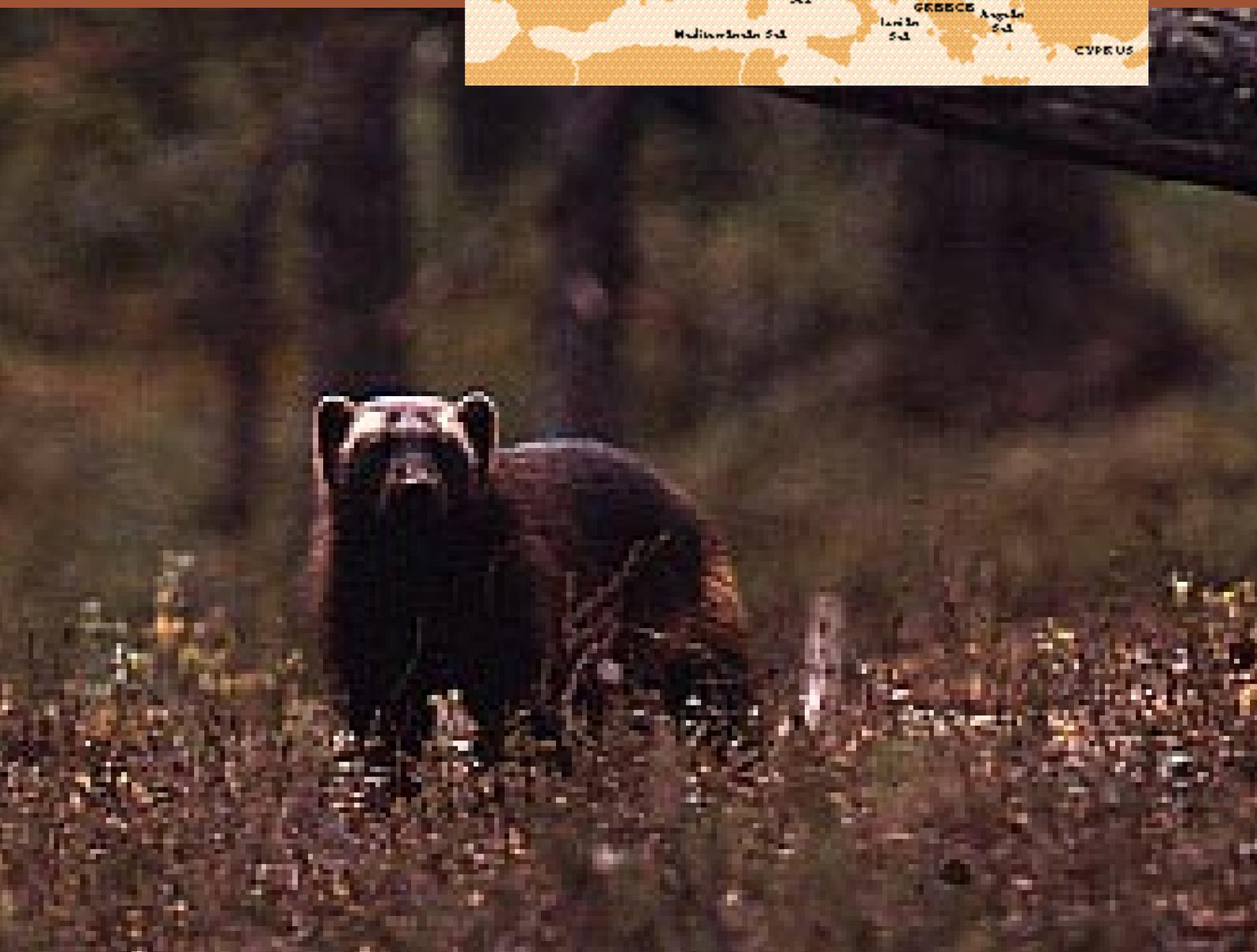
There is still a lot of good quality habitat left throughout the mountains and forests of Scandinavia, Finland and Russia. The only limitation is human acceptance of wolverines. If the conflicts between wolverines and livestock can be decreased, then wolverines should have a good future in all Scandinavia and Finland. However, there is a very long road to walk before we can achieve this goal.

Dr John D C Linnell, Norwegian Institute for Nature Research

PRESENT DAY DISTRIBUTION OF THE WOLVERINE IN EUROPE



Habitat loss is a substantial threat with wolverines pushed to the last available habitat not developed by humans



The Carpathian Large Carnivore Project

A LESSON IN COHABITATION

The Carpathian Mountains in Romania boast an unusual feature. They represent probably the last place in Europe where high concentrations of people and large predators coexist. Bears are nightly visitors to the rubbish bins of Brasov where wolves also mingle with the 350,000 city folk. One wolf pack actually lives within the limits of the city, relying heavily on it for food sources.

The Romanian Carpathians cover only 1.4 per cent of the land surface of Europe but they contain 43 per cent of all Europe's bears, 30 per cent of its wolves west of Russia, and a significant proportion of its lynxes. The mountains are home to traditional prey species including red deer, roe deer, wild boar and chamois (an agile goat antelope). They also support hundreds of thousands of sheep and a human population of almost five million. And there lies the challenge.

Since 1994, an international research and conservation project supported by WWF has been operating in the area around Piatra Craiului Mountain in the south-eastern corner of Transylvania. Its aim is to build a model region for the peaceful cohabitation of large carnivores and humans. It seeks



PHOTOS: CHRISTOPH PROMBERGER

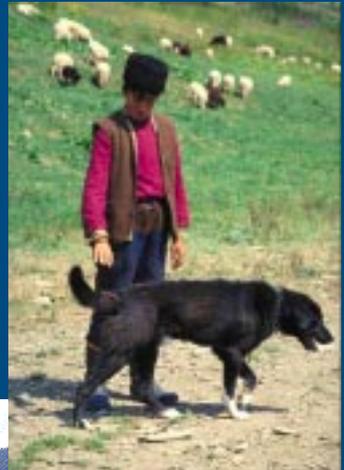
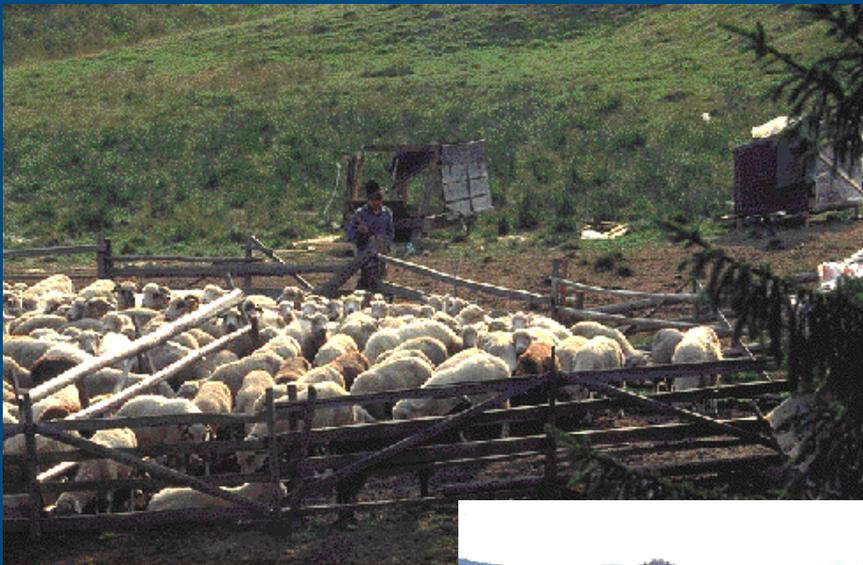


to bring together several areas of interest – biological research, rural development, human-animal conflict management and public awareness.

Each of the three species (wolf, bear and lynx) has its own research programme. Some of the work overlaps all three species, such as predation on livestock, and some is very specific, such as pack structure and family behaviour in wolves. In order to know what works for conservation, it is important to understand how these predators survive. Animals are trapped, fitted with radio collars and released. Researchers then track the animals

to find out where they go, what they eat and how they interact with each other. Wolves, for example, can travel long distances each night and they do not necessarily move around hills and ridges, but sometimes go straight over the top.

The Project also seeks to show local people how they can actually benefit from living with carnivores. At the foot of Piatra Craiului Mountain, just five kilometres from the field research cabin, is a small town called Zarnesti, right in the entrance of the Birs Valley. Tourism activities are limited and very little infrastructure exists. By promoting eco-tourism, to look



Left: A wolf is anaesthetised while a radio collar is fitted. Above: Sheep are penned at night to deter predators. Far right: Dogs, not guns, are the main deterrents to carnivores. Right: Tourists visit the Romanian Carpathians in Summer, hoping for a glimpse of the region's large carnivores.

for bears and wolves, the town's tourist industry can be extended. The people of Zarnesti can see the benefit that wolves and bears bring and are eager to be involved in their conservation. The local mayor is especially keen – perhaps it is no coincidence that his surname in Romanian means wolf.

Naturally concern remains about livestock casualties. During the summer months millions of sheep graze the alpine meadows. Throughout history, shepherds have learned to live with carnivores and the Carpathians are one of the few places where traditional livestock guarding methods are still used. Everywhere else in Europe, large carnivores have been exterminated or reduced to low densities and the rural human population has lost the knowledge of how to cope with them. In Romania, shepherds protect their herds of up to 1,000 sheep with extremely ferocious guard dogs. Sheep are usually

penned at night, further reducing wolf and bear kills.

These traditional sheep-guarding methods are now being shared with other parts of Europe. In Italy, WWF has been promoting the breeding of Abruzzo mastiffs, the traditional guard dogs of Italian shepherds. The breed had suffered a decline in popularity but is now enjoying something of a revival thanks to its tenacity in deterring wolves.

A large part of the Project in Romania is centred on public awareness. Wolves in particular have centuries of bad publicity to overcome. Their negative image stems from the efforts of early livestock owners to portray them as merciless killers. In the days when man was a hunter-gatherer, the wolf was revered as a hunter to emulate. But when man switched to keeping livestock, and sheep and goats fell prey to wolves, feelings of admiration turned to fear and

loathing. This unpopularity persists today and the project strives to educate people about the real facts and dispel the myths and misconceptions. In North America, for example, where wolves are more numerous than in Europe, not a single person has died from a wolf attack in the last 100 years. People, however, have killed countless wolves.

A variety of methods is used to portray carnivores as a natural part of the mountains' ecology. These include educational visits by schools and tour groups, publicity in the national and international media, and the distribution of leaflets and other literature. Slowly but surely, the message that predators are a necessary and even beneficial part of the landscape is beginning to sink in.

WWF-UK's Campaign for Europe's Carnivores has pledged £115,000 towards the project.

Carnivores in the UK

In the UK, large carnivore species were persecuted to extinction several hundred years ago in order to protect livestock from predation. As a result the number of deer increased – and today Britain's hills are overstocked and overgrazed.

During the era of large sporting estates in the 19th and early 20th centuries, all carnivores were treated as vermin and controlled. For some, such as the fox and the stoat, this meant only a short-term decline in numbers – but for others, such as the polecat and the pine marten, it led to their near-total disappearance.

Nowadays, a greater appreciation of the ecology of carnivores has shown how humans and carnivores can co-exist. There are now several medium-sized carnivores such as the pine marten, polecat and otter, whose populations are slowly increasing and their ranges expanding. Because they can only survive if favourable conditions exist, their spread through the countryside will enable us to judge the state of our landscape. They need, for example, foraging areas that support adequate prey, and secure breeding territories with resting areas free from disturbance.

In effect, these carnivores are barometers for the health of the British countryside. This report looks at the current status of two of them in the UK: the otter and the polecat.

It has now been clearly demonstrated that PCBs affect the reproductive and immune systems of otters

PRESENT DAY DISTRIBUTION OF THE OTTER IN THE UK



HUGH CLARKE, WWF-UK



Otter

LUTRA LUTRA • FAMILY: MUSTELIDAE

STATUS: GLOBALLY THREATENED. CITES APPENDIX I LISTED,
BERN CONVENTION ANNEXES II AND IV OF THE HABITATS DIRECTIVE

DISTRIBUTION

Formerly widespread in the UK, otter populations went through a rapid decline from the late 1950s. By the 1980s the species was absent from most of England, surviving only in the south-west and on the borders of Wales and Scotland. They remained in Northern Ireland, Scotland and Wales but with much depleted numbers in the latter. However, in recent years the otter has been recorded in many former localities, spreading out from strongholds in Scotland, Wales and the south-west.

BIOLOGY

Otters live on the banks of rivers, lakes and sea coasts where there is

access to fresh water. They are adapted for a semi-aquatic lifestyle; the thick sleek coat protects otters from the cold, and their broad tails can propel them through the water at speeds of up to 10kph. Otters eat mainly fish, together with occasional small mammals, water birds and frogs. They inhabit home ranges which may include up to 40km of waterside, which they mark with spraints to keep in contact with their neighbours. They are generally solitary animals with a lifespan of only about five years in the wild.

THREATS

A number of factors have adversely impacted otter populations, including hunting, persecution and

the destruction of riverside habitat. Rapid industrialisation in the 1950s saw increased pollution and declining fish-stocks, with organo-chlorine pesticides and PCBs reaching critical levels in the aquatic environment in the 1950s and 1960s. These compounds accumulate in food-chains, affecting top carnivores in particular. It has now been clearly demonstrated that PCBs affect the reproductive and immune systems of otters, resulting in lowered breeding success and increased risk of disease. Fortunately, PCB levels in fresh-water food-chains have declined steadily over the last 15 years. Where otters are re-colonising lowland rivers, roads present a particular hazard and indeed may now be the single most important threat to population expansion.

CONSERVATION SOLUTIONS

Legislation: The otter is protected by national and international legislation and cannot be killed, kept or sold except under special licence. The British government included the otter in its Biodiversity Challenge document. The challenge is to maintain and expand existing otter populations, and by 2010 to restore breeding otters to all catchments and coastal areas where they have been recorded since 1960. WWF and partner organisations have included this target in their own otter action plans.

Habitat: In some areas 'otter havens' have been established, and artificial holts built to encourage breeding of otters. WWF and the Worcestershire

Wildlife Trust are currently working on an area of the River Avon to recreate a historic wetland in order to provide a suitable habitat for otters moving through the region. Two Special Areas of Conservation (SACs) have been proposed for the otter, and WWF is lobbying to establish many more protected habitat sites suitable for otters and other aquatic animals.

Research: National surveys are being conducted every five to seven years and local surveys are looking at present distribution and the potential for future spread.

Land management in favour of otters will be promoted, encouraging more wetland and grass-land habitats suitable for otters.

SURVIVAL PROSPECTS IN THE UK FOR THE 21ST CENTURY

Otters have a bright future if current attitudes towards them continue. However, because pollution was the cause of the rapid decline in numbers we must be mindful that it could strike again in some form or other. Currently, the most significant threat to expanding populations in the lowland is mortality on roads. Bridges must be made otter friendly to reduce the need for otters to cross roads and this is easy to do. Otters can thrive in the presence of man provided they are not persecuted and have sufficient cover along waterways to conceal themselves.

Dr Chris Mason, Department of Biological Sciences, University of Essex

Polecat

MUSTELA PUTORIUS • FAMILY: MUSTELIDAE

STATUS: APPEARS ON THE LONG UK BIODIVERSITY LIST

DISTRIBUTION

In 1800 polecats were common and widespread in most of the UK. By the end of the 19th century numbers had dramatically dropped as the value of their pelts increased along with trapping by gamekeepers. In the 1910s they could only be found in a tiny area of Wales. Polecat distribution mapping began in the late 1950s, and their numbers have been increasing since this time, with a 'front' expanding the polecat's range east from Wales. Today the polecat is well

established in Wales and has re-established in the West Midlands. Populations derived from reintroduced animals can be found in Cumbria, the East Midlands, the west Highlands and central southern England.

BIOLOGY

Polecats are medium-sized, long-bodied carnivores, with distinctive black and white facial markings. They are predominantly nocturnal, and they tend to hunt on the ground, avoiding swimming or climbing.

Polecats will prey on a wide range of species from hedgehogs to reptiles; rabbits, however, dominate their diet. Their preferred habitats are woodland edges, farm buildings and field boundaries, and their territories have a close correlation to local rabbit warrens.

THREATS

Polecat populations were historically threatened by gamekeeping and fur trapping. The increase in game estates in the 19th century led to more persecution of small mustelids, as they were perceived to be competitors for game. These pressures have declined in recent years.

However as populations of polecats spread east from Wales, they will again experience problems with agricultural areas and game estates: they are often caught in traps designed for other animals, or killed by poisons intended for rodents. There is little legislation protecting them from indiscriminate killing, and even low mortality can have devastating effects in areas with low population densities. The movement into more populated areas will also lead to increased road deaths. At the moment carcasses of polecats killed on the road are the only contact many researchers and conservationists have with this species. As with most species dependant on the countryside, habitat degradation will also have a negative impact on polecat populations.

CONSERVATION SOLUTIONS

Recommendations will soon be published which identify key conservation issues and actions to ensure a sustainable future for the polecat. These include polecat exclusion devices fitted to tunnel traps as polecats move into areas with heavier predator control. Unnecessary persecution of polecats could also be minimised by increased legal protection such as licensing procedures, which are currently lacking. Recommendations will also include an improved pesticides policy, a change in agricultural policy and

guidelines for management of polecat habitats and prey species.

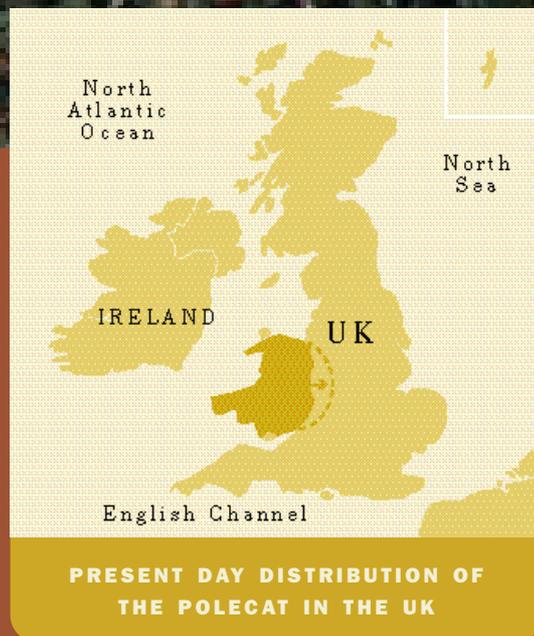
Research: More research is needed into population and distribution throughout the polecat's known range and the areas it may be moving into. The Vincent Wildlife Trust initiated a new polecat distribution survey based mainly on road deaths. The survey led to increased research into the relationship between polecats and feral ferrets as well as rabbit/polecat distribution.

SURVIVAL PROSPECTS IN EUROPE FOR THE 21ST CENTURY

Polecats have a sustainable future in the UK in the 21st century as long as we maintain an adequate level of prey population and as long as nothing gets worse as regards pesticide use, persecution and road deaths. Polecats should be able to reclaim 90-95 per cent of their former range if recommendations for their conservation are implemented. However, they will never be able to repopulate areas with high road density and intensive agriculture.

Dr Johnny Birks, The Vincent Wildlife Trust

*They will never be able
to repopulate areas with
high road density and
intensive agriculture*



Recommendations

FOR LARGE CARNIVORE CONSERVATION IN EUROPE

In addition to the conservation action proposed for the grey wolf, Eurasian lynx, Iberian lynx, brown bear and wolverine, a number of general recommendations for large carnivore conservation in Europe should be implemented:

- conservation efforts should be concentrated at the population level, which often requires cross-border co-operation;
- The Pan-European Species Conservation Action Plans produced by the Large Carnivore Initiative for Europe should be adopted by the Bern Convention and European Commission;
- it would be highly desirable for each country to set up a specific body responsible for large carnivore management issues, and which would be charged with the preparation of national management plans;
- wherever compensation systems are in place for livestock casualties, these should be tied to prevention incentives to deter predation;
- in-depth and scientific human attitude studies (including work on human-carnivore conflict resolution) should be initiated;
- where re-colonisation of areas by large carnivores is desirable, the following principles should be applied:
 - first priority should go to support natural re-colonisation,
 - second to work on the augmentation on non-viable populations,
 - third to release animals into areas in order to join up non-viable populations;
- the principle of management of large carnivores through a system of zoning including core areas, buffer zones and corridors should be investigated;
- there is a need for standardised and accurate monitoring of large carnivore populations throughout Europe;
- poaching must always be combatted vigorously;
- where ‘problem’ animals, such as persistent livestock killers or animals threatening people, are identified, emphasis should be given to maintaining populations and not on concentrating on individuals (apart from rare exceptions);
- agricultural policies should be reformed, replacing direct production subsidies with greater support for environment and sustainable rural development measures. The conservation of carnivores should be encompassed by such measures.

GENERAL RECOMMENDATIONS FOR CARNIVORE CONSERVATION IN THE UK

- The government should set up a monitoring scheme for carnivores.
- The needs of carnivores should be addressed through the UK Habitat Action Plans under the UK Biodiversity Action Plan.
- UK carnivores listed under the EU Habitats and Species Directive should be maintained at favourable conservation status.

Conclusions

Historically, large carnivores have been viewed almost exclusively as our competitors for food and for recreational hunting. Much effort was spent eradicating them throughout the northern hemisphere. As a result, many large carnivores have vanished from much of their former ranges or have been reduced to remnant populations.

The fate of large carnivores in Europe will ultimately depend on our ability to co-exist with them. Public attitudes towards carnivores are beginning to change and today many people respect them as an important part of Europe's natural heritage. This softening of attitude has allowed the recovery of large carnivores in parts of their former ranges. However, carnivores continue to be persecuted by people and their habitats remain under threat in many places.

There is a clear need for conservation activities to operate at a population level which necessarily means international action through cross-border cooperation, in addition to local action. More progress is needed to secure the survival of carnivores in Europe in the 21st century and beyond. In the case of the Iberian lynx, the need for effective conservation action is urgent and critical.

WWF's work

HIGHLIGHTS OF WWF ACTIVITIES TO CONSERVE EUROPE'S CARNIVORES

THE LARGE CARNIVORE INITIATIVE FOR EUROPE (LCIE)

The LCIE, which focuses on the conservation of brown bears, wolves, wolverines, Iberian lynxes and Eurasian lynxes in Europe, is an integral part of WWF's European Programme and the WWF network has funded much of the LCIE's work to date. A number of WWF National Organisations are involved including WWF-Netherlands, Norway, Sweden, Switzerland and UK.

WWF'S EUROPEAN POLICY PROGRAMME

This Brussels-based office was established in 1989, to act as the eyes and ears of the WWF network. It actively promotes conservation of species and habitats in Europe. It presses governments to comply with conservation laws and to consider the environment in all relevant policies and laws.

NATIONAL PROGRAMMES

WWF-Austria: A successful brown bear reintroduction programme has been running in the Eastern Alps of Austria for 10 years. Three bears were reintroduced into the area in 1989, and today the population is estimated to have swelled to 25-30 through reproduction and immigration. WWF-Austria is now looking at future work with wolves in the Alps and is raising awareness of wolf conservation with a view to reintroducing this species in the future.

WWF-France: The species work of WWF-France has a strong carnivore component, and it has been an active participant in a lynx reintroduction project in Les Vosges.

WWF-Italy: The work of WWF-Italy is closely tied with the work of the LCIE. WWF Italy is working on three carnivore-related projects: to introduce three bears into the Adolfo Brenta area in northern Italy, to breed large dogs suitable for guarding livestock against carnivore predation, and to undertake a carnivore awareness poll in the Italian Alps.

WWF-Finland: A film called *Tommy and the Wildcat*, about a boy and his friendship with a lynx in Lapland, was produced in cooperation with WWF-Finland. The film highlights issues of lynx conservation such as reintroduction, poaching and livestock predation.

WWF-UK: Surveys in several parts of Britain which will help measure the spread of otter re-colonisation are being supported by WWF-UK, which is also involved in the creation of the first reserve in Britain for otters. In addition, WWF-UK is a major contributor to the Carpathian Large Carnivore project in Romania (see page 14).

WWF'S EUROPE/MIDDLE EAST PROGRAM

This programme stretches from Portugal to the Bering Strait and from the Arctic Ocean to the Persian Gulf. WWF has National Organisations in 14 countries and supports conservation projects in another 18 countries. Around 120 projects are divided into five sub-regions including:

CENTRAL AND EASTERN EUROPE

Hungary: Human domination and fragmentation of the Hungarian landscape led to the extinction of all large carnivores including the lynx. Recently lynx have again reached the borders of Hungary, and there are now estimated to be 10-20 lynx in northern Hungary. This project is working to establish a sustainable range for lynx, to increase research of lynx status and ecology and to improve the attitude of local people towards lynx.

Poland: The Biebrza Valley is one of the most valuable wetland areas in Europe, supporting 157 breeding birds as well as otters and wolves. WWF is supporting work within the National Park, promoting better management and training, and rehabilitating the wetlands to ensure the long-term viability of this area.

Latvia: The forests and waterways of Latvia still provide a home to wolves, lynxes and otters. WWF set up an office in Latvia in 1991 which prepared an action plan identifying 300 areas in need of protection and advised the government about sustainable forestry and ecologically sound agriculture.

Czech Republic: WWF is supporting a National Park in the Sumava region which is home to threatened species including eagle owls, lynxes and otters.

Bulgaria: The Rhodope Mountains straddling the Greek border are covered in ancient forests and shelter wolves, bears and lynxes. WWF is working with local organisations and the government to create protected areas while helping to generate income through ecotourism, sustainable forestry and local crafts.

BALTIC

Sweden: A new compensation scheme has been set up to prevent human persecution of wolverines. Within areas of reindeer husbandry, farmers identifying wolverine dens will profit financially. Education schemes are in place to encourage carnivore-friendly attitudes.

THE MEDITERRANEAN

Portugal: Guadiana Valley Natural Park has some of the best riverine ecosystems in the Iberian peninsula and hosts several threatened species including the black stork and the otter.

WWF is developing a management plan for the park and guidelines for the restoration of the natural oak woodlands, maquis and riparian forests. In partnership with ADPM, a local NGO, WWF has designed a new project to promote the active participation of the local population in the management of the park and educate local communities about conservation.

Spain: Doñana National Park is a wetland park rich in species diversity and is a key area for the highly endangered Iberian lynx. This area is under threat from development, pollution and water abstraction. A project began in 1997 to undertake a rapid evaluation of the situation in Doñana. The project will also carry out a pilot project for raising awareness and improving implementation of the EU Habitats and Species Directive in Doñana.

Partner Organisations

WWF ORGANISATIONS AND PROGRAMMES INVOLVED IN CARNIVORE CONSERVATION IN EUROPE

WWF-Austria
WWF-Belgium
WWF-Denmark
WWF-Finland
WWF-France
WWF-Germany
WWF-Greece
WWF-Italy
WWF-Netherlands
WWF-Norway
WWF-Sweden
WWF-Switzerland
WWF-UK
WWF-International
WWF European Policy Office
WWF Central & Eastern Europe Programme Office
WWF Mediterranean Programme Office
WWF Eastern Europe/Central Asia Programme
WWF Baltic Coordinator
WWF Green Danube Coordinator
WWF Arctic Coordinator
WWF Latvia Project Office

The Wildlife Trusts

ORGANISATIONS INVOLVED WITH THE LARGE CARNIVORE INITIATIVE FOR EUROPE

ARCTUROS, Greece
ATECMA, Spain
Bern Convention Secretariat
Carpathian Large Carnivore Project, Romania
CNN, USA
Council of Europe
Ecosphere, France
Environmental Protection Agency, Sweden
EURONATUR, Germany
Footloose Media, Sweden
Forestry Faculty, Estonian Agricultural University, Estonia
Forestry Service, Ministry of Agricultural Policy, Italy
Green Balkans, Bulgaria
Grimso Wildlife Research Station, Sweden
KORA, Switzerland
Large Herbivore Initiative, Netherlands
Memorial University, Newfoundland, Canada
Mercantour National Park, France
Munich Wildlife Society, Germany
NINA, Norway
Office National de la Chasse, France
State Forest Inventory, Latvia
The Instituto di Ecologia Applicata, Italy
University of Bern, Switzerland
University of Rome, Italy
University of Ljubljana, Slovenia
Wageningen University, Netherlands
Wilderness Fund, Bulgaria
Wolf Life Programme, France
Wolf Project, Spain
Ministry of the Environment, France
WWF-Austria
WWF-France
WWF-Hungary
WWF-International
WWF-Italy
WWF-Switzerland
WWF-UK

REFERENCES

The Action Plan for the conservation of the Eurasian Lynx (lynx lynx) in Europe

Urs Breitenmoser,
Christine Breitenmoser-Wursten,
Henryk Okarma, Thomas Kaphegyi,
Ursula Kaphegyi-Wallmann,
Ulrich M. Muller (1998)

Draft Action Plan for the conservation of the Iberian lynx (Lynx pardinus) in Europe

Miguel Delibes, Alejandro Rodriguez, Pablo Ferreras (1998)

An Action Plan for the conservation of the grey wolf in Europe

Luigi Boitani (1998)

Draft Action Plan for the conservation of the wolverine in Europe

Arild Landa, Mats Linden,
Ilpo Kojola (1998)

Draft Action Plan for the conservation of the brown bear in Europe

Jon Swenson, Norbert Gerstl,
Bjorn Dahle, Andreas Zedrosser
(1998)



WWF conserves wildlife and the natural environment for present and future generations.

WWF-UK, Panda House
Weyside Park, Catteshall Lane
Godalming, Surrey GU7 1XR
United Kingdom
Telephone: +44 (0)1483 426444
Website: www.wwf-uk.org

Registered Charity No 201707
Printed on recycled paper made from
100 per cent post consumer waste
994 February 1999