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PARTNERSHIP
WITHOUT BORDERS

OPEN BORDERS FOR WILDLIFE IN THE CARPATHIANS

The wolf

A guide for...



www.openbordersforbears.com



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FOREWORD



The wolf is a characteristic predator of the European continent, with few animal species more divisive on Earth. Throughout history, it has been revered as a saint in many social cultures around the world, but there were places where it was the embodiment of the devil himself. The Bible played a significant role in judging the negative, for in Scripture, evil is a symbol of greed. It was only St. Francis of Assisi who reconciled and defended the terrible wolf that terrified the Gubbians.

" Veni huc, frater lupe, et ex parte Jesu Christi tibi praecipio, quod nec mihi nec alteri noceas." "Come here, wolf brother, and I ask Jesus Christ not to hurt me or anyone else."

Due to its high degree of adaptability, it lives in an extremely diverse range of habitats across Eurasia and North America. Over the last few centuries, due to ruthless extermination and habitat degradation, its population has declined significantly and its distribution has become intermittent. Over the past twenty years, it has been conquering new territories in both Central and Western Europe due to population growth in the centers of its distribution area.

Adam Szabó,

wildlife expert at Aggtelek National Park

ABOUT THE PROJECT

The Carpathian region is home to more than a third of the approximately 12,000 wolves, 17,000 bears and 9,500 lynxes that live in Europe, excluding Russia. It is estimated that around 8,000 brown bears live in Central and South-Eastern Europe. These ecologically critical, strictly protected and culturally significant mammals are threatened, not only by poaching, but also by habitat fragmentation and shrinkage caused by chaotic infrastructure planning and development. As large carnivores frequently move across national borders in search of food and mates, it is essential to conserve these large and complex ecosystems in the region across administrative boundaries.

Protecting nature is essential, not only for wildlife but also for local communities, who much depend on the many resources it provides: from clean air and water to fertile soil and stable climate. These environmental services depend on a well-connected ecological web of high biodiversity. Maintaining and improving ecological connectivity protects not only wildlife but also the entire ecosystem humans depend upon.



Project partners from four countries (WWF România – Maramureș Branch, România, Slovak Ornithological Society/BirdLife Slovakia, NGO RachivEcoTur Ukraine, Aggtelek National Park Directorate Hungary) embarked in a dynamic journey called “Open borders for wildlife in the Carpathians” www.openbordersforbears.com to design and secure transboundary ecological connectivity between habitats. The project, funded under Hungary-Slovakia-Romania-Ukraine, ENI Cross border Cooperation Programme 2014-2020 (<https://huskroua-cbc.eu/>) aims to improve connectivity in four countries and support integrated habitat management for wolves, brown bears and the Eurasian lynx.

This project is a continuation of the previous project implemented by WWF-România in 2012-2014, “Open borders for bears in the Carpathians of Romania and Ukraine”, which has mapped the first network of ecological corridors in Maramureș, in the Romania-Ukraine border area. Unlike the first project, where the umbrella species was the brown bear, now systematic monitoring (using photo-video cameras, drone and genetic tests) will be carried out for three large carnivore species - bear, wolf, lynx, and work will continue on identifying ecological corridors in Slovakia and Hungary. Large carnivores are at the top of the trophic pyramid, and if their populations are maintained at optimal numbers, it means that other animal species are also in good conservation status in their habitats.



THE IMPORTANCE OF ECOLOGICAL CORRIDORS IN A HEALTHY ECOSYSTEM

The network of ecological corridors in the Carpathian Mountains is meant to be a coherent system of natural or semi-natural elements of the landscape, designated for administration in order to maintain or restore ecological functions as a means of conservation of wildlife species, offering in the same time adequate opportunities for the sustainable use of natural resources.

The design process of the network of ecological corridors in the Carpathian Mountains area was based on the ecological requirements of large carnivores and the favorable habitats in the area. Large carnivores, as an umbrella species, due to its position at the top of the trophic pyramid and the vast habitats they need, are a target species in the design of regional ecological networks, because protecting viable large carnivore populations will ensure the conservation of other species as well.



Categories of ecological corridors:



Core area of distribution: large areas of natural or semi-natural habitat that fulfill requirements for permanent residence of umbrella species. For large carnivores it consists mainly of forests. The size of a core area should not be less than 300 km².



Stepping stone: an array of small patches of favorable habitat that individuals use during movement for shelter, feeding and resting.



Wildlife corridor: landscape structures of various sizes, shapes and vegetation that mutually interconnect core areas and allow movement and migration of species between them. The width of the corridor should not be less than 500 m.



Critical zones (bottle-necks): fragments of corridors with significant limitations of the land permeability for the target species due to the concentration of different types of barriers (e.g. fences, arable land, motorway etc.).

Types of barriers that disrupt ecological corridors:



terrestrial (e.g. road and railway infrastructure, tourist complex, ski resort, etc.)

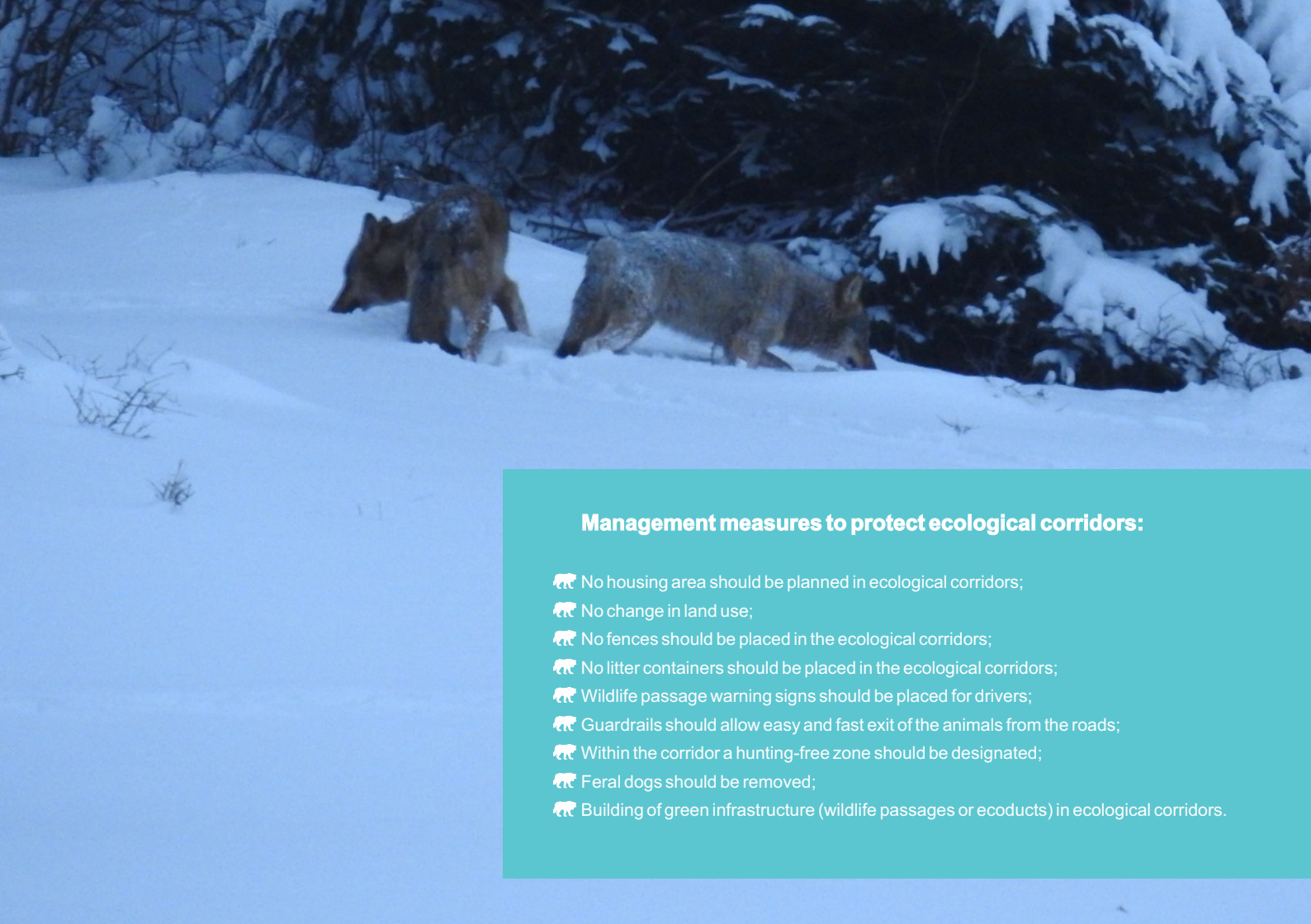


aquatic (e.g. micro hydropower plants, sills, dams, catchments, etc.)



aerial: some of the most common barriers for bird species are wind farms, overhead power lines and tall buildings.





Management measures to protect ecological corridors:

- 🐾 No housing area should be planned in ecological corridors;
- 🐾 No change in land use;
- 🐾 No fences should be placed in the ecological corridors;
- 🐾 No litter containers should be placed in the ecological corridors;
- 🐾 Wildlife passage warning signs should be placed for drivers;
- 🐾 Guardrails should allow easy and fast exit of the animals from the roads;
- 🐾 Within the corridor a hunting-free zone should be designated;
- 🐾 Feral dogs should be removed;
- 🐾 Building of green infrastructure (wildlife passages or ecoducts) in ecological corridors.

A photograph of a wolf standing in a snowy forest. The wolf is looking towards the camera, with its body angled slightly to the left. The background is a blurred forest of snow-covered trees.

ABOUT LARGE CARNIVORES

A carnivore is an organism, in most cases an animal, that eats meat. A carnivorous animal that hunts other animals is called a predator; an animal that is hunted is called prey.

An animal's diet determines where it falls on the food chain. Each food chain consists of several trophic levels, which describe an organism's role in an ecosystem. Carnivores and omnivores occupy the third trophic level. An omnivore, such as a human, is an organism that eats plants and animals.

Many carnivores get their energy and nutrients by eating herbivores, omnivores, and other carnivores. Carnivores that have no natural predators are known as apex predators; they occupy the top of the food chain. Here are large carnivores, the bear, the wolf and the lynx. But not all carnivores are predators. Some carnivores, known as scavengers, feed on the carcasses of already-dead animals.

Carnivores vary in shape and size, but they often share similar traits. For example, most carnivores have sharp teeth adapted for capturing prey and tearing flesh. Additionally, many carnivores have relatively large brains. Carnivores also have a single stomach chamber and a simple digestive system, unlike herbivores, who often have a stomach with multiple chambers and a specialized digestive system.



Carnivores play an important role in keeping ecosystems balanced. They keep populations of prey species from becoming too large. Scavengers like vultures help prevent diseases from spreading by eating the remains of dead animals.

Large carnivores play an important role in the environment.

We are just beginning to learn how they positively impact the environment. For example, bears play a role in fertilizing forests by dragging carcasses throughout forests and depositing scat on the forest floor. In eating fruit and nuts, they disperse seeds. Each seed is deposited on the forest floor with a little 'fertilizer' to get it started. Bears also help to clean up carcasses and, as predators, they help keep populations such as deer in balance.

Large carnivores are also a good indicator species. Bears, wolves and lynxes need a variety of habitats to survive and thus managing habitat for these species benefits many others including humans. If the land is healthy enough to support a population of fit, large carnivores then it is also healthy enough to support people.

People have been fascinated with bears and wolves throughout time and around the world. They have captivated the human imagination and have become woven into the fabric of myths, legends and anecdotes. Large carnivores are a part of human culture in countless ways — from ancient ceremonies to myths to teddy bears and plush toys. In the next chapters you can read more about the wolf.



THE WOLF

[CANIS LUPUS]

IMPORTANCE

Losing one single ring from the food chain can generate changes at all levels within an ecosystem. It is more dangerous that these changes are not visible in short period of time. Wolves are on the top of the food chain, regulating, thus, the structure and dynamics of herbivorous species, but, in the same time, being dependent on them. Furthermore, optimal and viable populations of red deer, roe deer or wild boar are closely dependent by other environmental factors including anthropogenic ones. Zooming out, the biological systems appear to be very connected and every component is dependent in many ways to the other ones. Well known situations in which wolves disappeared from some areas became detrimental to plant communities. Herbivorous populations boosted in numbers and in the same time degenerated in genetic variability. Active management measures were thus required, with high monetary costs for those countries. After all, reintroduction of wolves was the natural solution to balance the unbalanced nature.

DESCRIPTION

The wolf (*Canis lupus*) is included in the family Canidae, along with dog, fox, jackal and raccoon dog.

The wolf is widespread in: Eastern Europe, the Scandinavian Peninsula, Russia, the Middle East, Central Asia and Siberia, but their density is generally low in these areas.

It is a robust animal, approx. 1.5 m long, excluding the tail which adds up to about 0.8 m. The weight is variable, usually between 30 and 50 kg, but in some cases exceeding 70 kg.

The fur is a brown-gray color with multiple variations. It consists, in fact, of two rows of hairs: one very thick, woolly, next to the skin, yellowish-gray and a second, longer, called an ear, with a black tip. Wading in autumn in temperate areas, the wolf has a summer "coat", darker in color, other than the winter one, lighter, so that it can be camouflaged, thus being more difficult to be spotted by prey and being able to hunt more easily.

The wolf is a digitigrade animal, treading on the toes of the fingers and having non-retractable nails - unlike the lynx - so that they can be clearly seen in the marks left on soft ground or snow.





Food and dentition are typical of a carnivore. Although it is omnivorous when needed, it can also survive on fruit or other vegetables - even eating tree bark - the wolf still prefers meat. He behaves both as a hunter and as a necrophagous, being an important factor in maintaining the natural balance.

Mature wolves usually howl in various tones, but also bark short, just as dogs bark, when they are caught or give a short alarm signal. They also bark when they fight or when they are injured. The little pups are whining. Usually, males, especially the old ones, howl in a thick and deep tone, females and pups howl in thinner and more weeping tones.

The wolf has a mainly nocturnal activity. He proves to be extremely cautious towards man, whom he attacks only if he has no other alternative to avoid (when it is trapped, caught in closed spaces, so that it can no longer retreat, etc.).

HOME RANGE

Wolves use various types of habitats from forests to pastures. Food availability determines the territory used by this species. The spatial behavior of wolves depends on the season and the life cycle. In spring and summer, wolves are more bound to their dens (in case the reproduction was successful and wolf female has pups). Later in the year, the pack moves to the rendezvous sites. The wolf needs a large territory to fulfill its biological demands of approx. 10,000 to 500,000 hectares, even more than a bear. In Europe, the average densities of wolves are around 2 individuals/100 km². Also, they have great mobility, and it is possible to travel easily 20 to 30 km per day in searching for prey. Imagine that in Budapest for example (the capital of Hungary), are living almost 1.8 million people over a land area of about 525 square kilometers. Such space will be enough only for 10 crowded wolves.



TRACES

The wolf's paw pattern is very similar to that of a large dog, but it is longer. The general shape is elliptical, and the cushions of the middle fingers are printed from the lateral ones forward. In addition, the middle fingers are printed more closely, with the claws visible, the middle ones being closer than the dog's. Even when there are several wolves, they synchronize their pace and step back. For this reason, the number of wolves in a pack can be identified by traces only when passing over obstacles, when they usually scatter. Normally based on a group of tracks we can determine the species with a higher certainty as dog movements are different from that of the wolf. Track of wolf consists of 4 toe prints (slightly oval), a pad (with differences in front & hind pad) and the claws. There are four claws visible in the wolf's paw print. Compared to dog's paw print, wolf's paw print is usually longer, as two front finger balls are more in front and thus the paw print seems to be elongated in comparison to that of dog, which seem to be more rounded. The size of wolf's paw print ranges from 8 to 10 cm. When walking, wolf places its back leg paw into the print of the front leg paw, which results in a regular line pattern. When walking in a group, wolves usually walk in one track (especially in the snow), which may create uncertainty in the number of individuals which are present.





MATING AND REPRODUCTION

At the end of spring, the behavior of wolves in the pack changes. Migration throughout the territory is replaced by short hunting, having the starting point of the camp. The choice of this place is the privilege of the pregnant female. This is usually the female with the highest rank, the pair of the leading male in the pack (in wolves the pair usually remains until death). Mating takes place in February-March, after which the wolf stays together, to raise the pups. After a gestation period of seven weeks, 62-65 days, 3 to 10-13 helpless, blind pups are born and begin to open their eyes in 12-13 days. They are nurtured by mother as well as other wolves. After two or three months, the pups are already out with the pack. They don't need the den anymore, but they stay with their parents for many more years. Wolves live up to 15 years.

THREATS

All species that need large areas to survive are negatively impacted by habitat constrictions and fragmentation. In that circumstance, additional pressures arise on the side of farmers which interact with large carnivores for land and life stock damages may occur also. Feral dogs are also a big issue identified in Carpathians since such dog uses the same trophic resources as wolves by one hand, and on the other hand, feral dogs may spread various diseases in wolves' population. Upon all threats, lack of public awareness concerning the wolf could be the greatest threat. It generates low acceptance for general public even when no imminent conflicts are perceived and no damages are produced.





A ranger, Mykola Svystun, met a wolf at dawn, at 5:20, in the Skole Beskydy Park, Lviv Region. The animal crossed the bridge across the stream towards him. However, the animal was not frightened and confidently went forward to the man to get off the bridge. The man did not move and, according to him, was "hypnotized" by what he saw. The wolf confidently crossed the bridge and fled into the woods. From her (wolf's) nipples, it was clear that it was a female feeding puppy. Another meeting took place in mid-September at dawn near Mount Parashka, when the ranger was resting near the spring. Suddenly, a wolf came out of the forest onto the road, but when he heard a man, he immediately began to run across the meadow to the forest. Mykola Svystun also told about another case when he fell asleep on a traverse path in the woods while resting. When he woke up, he noticed a wolf on the same road, standing at a medium distance from him and looking in his direction. The wolf escaped due to the sound of a shot fired by a ranger.

MEETING THE WOLF



How to behave when you meet a wolf:

The wolf treats humans with caution. The reason for this is the annual regulation of its number. This carries out a kind of selection of animals, which are afraid of man and associate his smell with mortal danger. Therefore, usually in casual encounters, the wolf tries to leave this place as soon as possible. Human behavior when meeting with a wolf should be calm, do not make sudden movements, do not turn your back to it. It is recommended to move slowly to a safe distance. If a wolf tries to chase (attack), you can try to scare it with loud shouts. Don't try to run away. Wolves that contacted rabies and injured animals in general can be dangerous because their behavior is unpredictable.



HUNTING AND POACHING

As in the case of the bear and lynx, the wolf is protected by international conventions, it is a priority conservation species in the European Union. Unfortunately, in the economy of the game management made by the hunters, the wolf is considered somehow as a “pest” because it interferes with humans in terms of resources. Anyway, wolf poaching is more often in the case of life stock damages, when farmers decide to act by themselves by killing the “annoying” wolf.

Human injuries made from wolves are seldom because close encounters are rare as this species is very human sensitive.



CONCLUSIONS

It is clear now that ensuring the connectivity for wildlife is a must. It seems that only establishing natural protected areas is not enough for wild animals in order to thrive since human-made infrastructures like roads, highways or settlements break the habitats in smaller isolated pieces hampering animal movements between their places for feeding, mating or dispersion. Large carnivores are using huge area of habitat ranging for hundreds to thousands square kilometers. Thus, a methodology to identify the ecological corridors with some clear functional parameters that describe such corridors have to be put in place at regional scale. That was the main objective of the project "Open borders for wildlife in the Carpathians".

Connectivity has at least two directions: restoring and preserving it. It is obvious that the second is more desirable in terms of costs and effectiveness. So, for healthy and resilient animal populations we have to think every time one step ahead - to prevent instead of repair.



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