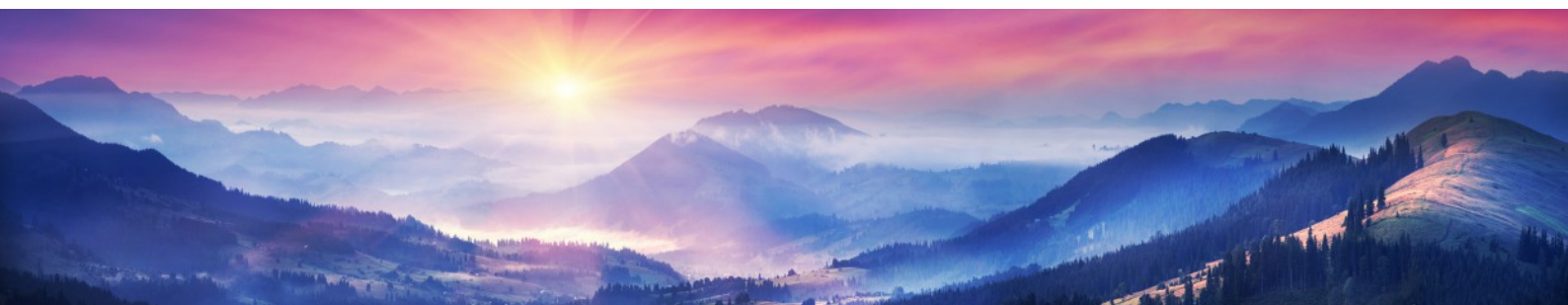




Hungary-Slovakia-Romania-Ukraine

ENI Cross-border Cooperation Programme
2014-2020



OPEN BORDERS FOR WILDLIFE IN THE CARPATHIANS

Guide to Exploring Connectivity in Our Region **Maramures**

2021



www.openbordersforbears.com



Co-financed by the European Union

Guide for teachers and students from VIIth to Xth grade Guide to Exploring Connectivity in Our Region - Maramures

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More details at: www.wwf.ro.

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The Guide to Exploring Connectivity in Our Region. Maramures invites you on the path to explore the fascinating nature in your home area of Maramures, to get to know its key animal species - the bear, the wolf and the lynx - and to grasp the importance of ecological connectivity. Whether you are a student or a teacher, this Guide will be your companion along this path of exploration. We hope that during this journey you will pick up not only literal cones and berries, but also ideas and tools to help you act in order to protect this nature.

The Guide is built of two main parts - one dedicated to Knowledge and one offering guidance for Experience (by which we mean the Learning Experience that takes place during the interactive workshops intended for exploration and discovery of the Knowledge on Wildlife and Ecological Connectivity).

Part 1: Knowledge

Part 2: Experience



INTRODUCTION

“Change will not come if we wait for some other person or some other time. We are the ones we’ve been waiting for. We are the change that we seek.”

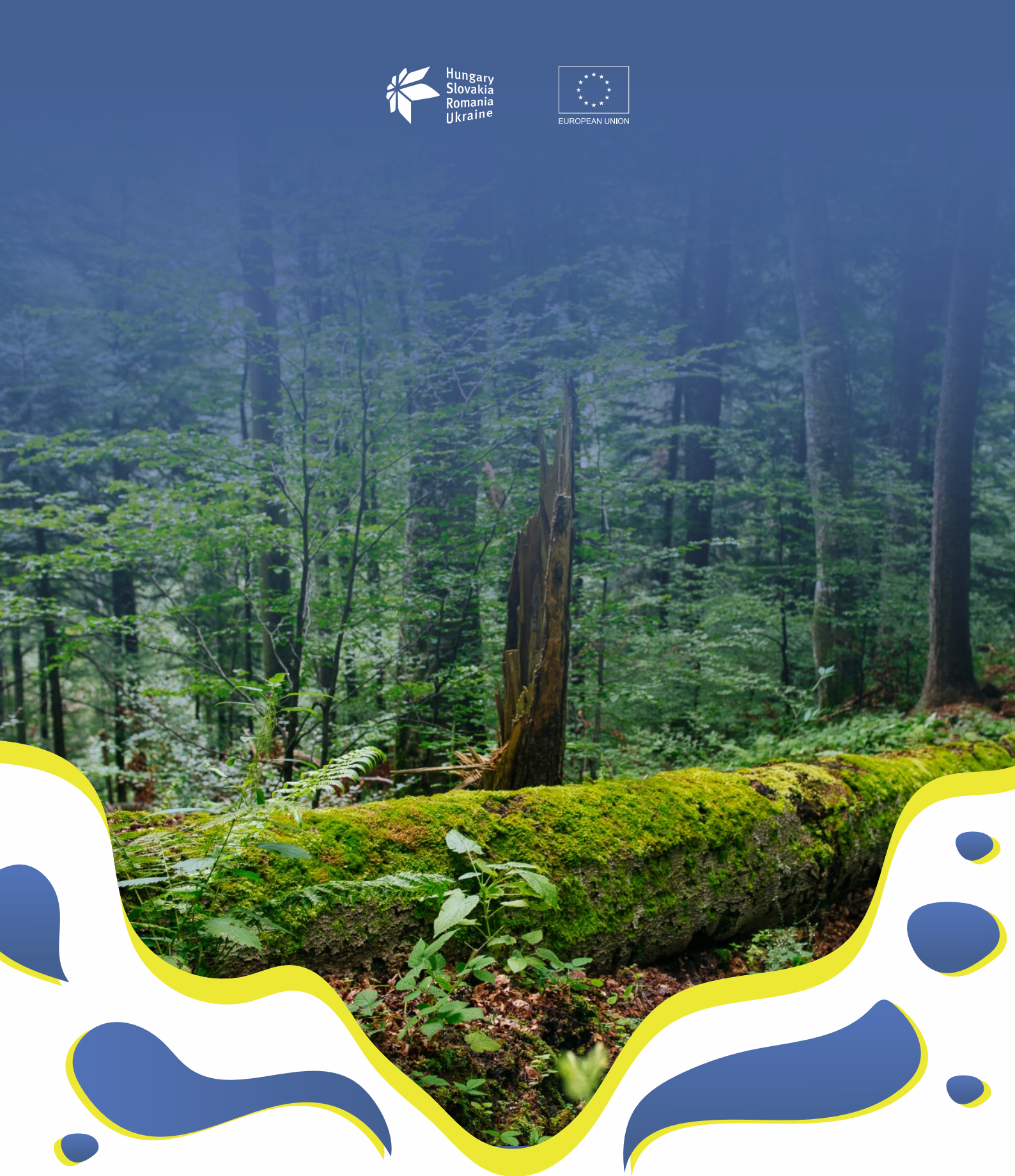
Barack Obama

NATURE is PART of OUR FAMILY, it protects us and it gives us the essential elements of life: air, water, food, but also peace and inspiration. Unfortunately, our behavior has a negative impact on nature, creating fragility and imbalances in ecosystems and consequently species suffer, including us humans.

The pandemic that affected the planet in 2020 is an example of the relationship between the general degradation of the environment and its concrete impact on our health and well-being; in addition, it has shown us, more clearly than ever, that a resilient nature is essential to ensure a healthy and sustainable future. And this future is now in our hands, because **WE ARE THE CHANGE**, and therefore we must have a responsible attitude towards nature and we must act responsibly, together, here and now, for ourselves and for the future generations.



*Alexandra Pușcaș,
project manager,
WWF-România Maramureș Branch*



PART 1

KNOWLEDGE

1. ZOOM IN: A natural area that we treasure

In the heart of the Carpathian Mountains, shared by two countries (Romania and Ukraine) with contrasting economies and societies, **Maramures region is a representative sample of untamed nature and unspoiled traditions, one of the last reservoirs for biodiversity and refuge for large carnivores in Europe.**

Have you ever tried to write down on a piece of paper how many species of plants and animals you thought there were in your school yard? If you were to spend an hour outdoors, looking carefully around you, you would discover that even the school yard has a wealth of life forms. Try then and imagine how many life forms there are in gardens, in meadows, in forests, on flood plains, in lakes, mountains, oceans, in the jungle and in the entire world. Life is a true spectacle and comes in a huge variety of shapes and sizes.

Nature weaves a web of life out of very different systems, unique in their own way, based on landscape, climate and many other local factors. If we were to use one word for all of these factors of the living world, we would suggest: **Biodiversity** (with “bio” meaning “life”).

People and wildlife, we are all part of biodiversity. We are all interconnected in the fabric of life even if, on a day-to-day basis, we are not always aware of the invisible threads that tie us together.



Although certain landscapes have been shaped by the centuries-long inhabitants of these mountains, the area still preserves its “**semi-natural**” character, as **people in the Carpathians have always lived in harmony with nature.** Local communities have many **opportunities** for development due to this rich nature and culture, as they can develop economic activities which both respect and make use of its natural and cultural heritage - such as ecotourism.

Unfortunately, oftentimes people do not take this natural wealth into consideration, and ***nature is under pressure by numerous threats*** :

-  more and more forests and meadows are replaced by buildings and other different human activities (a phenomenon called “***land use change***”);
-  more and more trees are cut illegally (also known as “***illegal logging***”);
-  animals are hunted without permission (by “***poaching***”);
-  ***human activities*** enter deeper and ***deeper into nature***. One example is that of hydropower plants “swallowing” the free flowing mountain streams.

These threats combined with ***climate change impacts*** raise the risks of losing important natural resources and biodiversity of the area.



In 2019, a group of people and organizations passionate about nature joined together to work on better protecting 4 million hectares of nature (a surface comparable to that of Switzerland) in the Carpathian Mountains, located at the borders of 4 countries: Hungary, Slovakia, Romania, Ukraine. They know that when nature is healthy all animals thrive, and so do human communities. Therefore, they have decided to discover and to protect the essential natural “islands” and “bridges” that animals - especially the bear, the wolf and the lynx - need in order to survive. This joint cross border cooperation and work takes place under the umbrella of a project called **Open Borders for Wildlife in the Carpathians** (OBWIC) www.openbordersforbears.com



FACTS ABOUT THE CARPATHIANS

Length: over 1500 km

Width: between 12 km and 500 km

Surface: 209.000 km² (similar to Great Britain, the largest island in the United Kingdom: 209,331km²)

Highest peak: 2.655 m. Gerlachovský štít, Slovakia

8 countries: Austria, Serbia, Slovakia, Czech Republic, Hungary, Poland, Romania and Ukraine.

Home of Europe's wildlife: Bears: 41% | Wolves: 30% | Lynxes: 28%

Natural protected areas, preserving the most precious landscapes:

18% of the Carpathian ecoregion

36 national parks * **51** nature parks and protected landscape areas * **19** biosphere reserves * **200** other natural protected areas

35% of the Maramureş region (350.000 ha)

Examples of Natural protected areas in Maramureş:

Romania: Rodnei National Park, Maramureş Mountains Nature Park, Codrii Seculari of Strâmbu Băiut, Natura 2000 site

Ukraine: Carpathian National Nature Park, Carpathian Biosphere Reserve, Synevyr National Park



Map © CCIBIS, 2019 / @Cornelia Doerr, WWF

Large carnivores in the Carpathians

Animals naturally need to move due to different reasons: search for food, shelter, new home territories, partners or breeding places for their offspring. The fragmentation of the landscape mostly affects those species that require large natural habitats, especially large carnivores: **grey wolf, Eurasian lynx and brown bear**. Some of these habitats are protected by the EU Habitats Directive as part of the Natura 2000 network of protected areas.



The presence of large carnivores in nature sometimes stirs debates about possible conflicts with humans, but those conflicts are often just a consequence of landscape fragmentation. As the living space of bears, wolves and lynx is shrinking, the number of contacts with people may be increasing. These species depend on large undisturbed forest areas with no or very little human presence. Furthermore, long distance movement is a part of their biology.

Large carnivores are called “umbrella species”. If they have proper space to migrate, it indicates the fact that other species can also live besides them.

Facts about Maramures region in both Romania and Ukraine

Total area: 10.000 km² in Romania and Ukraine

Inhabitants: 700.000

Protected areas: 350.000 hectares (Nature/National Parks, Biosphere Reserve, Nature Reserves, Regional Landscape Park, Ramsar sites, UNESCO World Heritage sites)

Natural resources: forests (211.000 hectares of forest included in natural protected areas), rivers (Tisza and Prut watersheds), and mosaic landscapes with high nature value farmland.

Biodiversity: A unique and highly diverse mixture of habitats ranging from beech and coniferous dominated virgin forests, meadows, floodplain forests along free-flowing rivers, wetlands (including peat bogs) hosting a rich fauna and flora specific to the Carpathian Mountains, with keystone species and complex trophic chains with large carnivores at the top (bears, wolves, lynx).

History and culture: The area has been continuously populated since Neolithic times. Located at the crossroads between different cultural and religious influences, Maramures Region today is a mixture of ethnic groups, including Romanians, Hungarians, Ukrainians, Hutsuls, Boykos, Ruthens, Polish, Czechoslovaks and Germans, with well-preserved traditions that make the area special. The strong connection and dependence of the population on the woods dominated landscapes is still reflected in the occupations and lifestyle of the community. Well-preserved wooden villages and churches (many of them listed as UNESCO World Heritage), traditional dress and local gastronomy make Maramures Region as near to a living museum as can be found in Europe.

IN FOCUS: MARAMURES REGION

In Romania, Maramures County is situated in the North Western part of Romania and it includes a very diverse landscape: mountains, hilly areas, plateaus and plains, all modelled by traditional agricultural practices over centuries. It is mostly dominated by the Eastern Carpathian Mountains, including Tibles, Rodnei and Maramures ranges (highest peaks are Pietrosu Rodnei 2303 m, Pop Ivan 1937 m, Tiblesului Peak 1839 m). Most relevant rivers are: Tisa, Somes and Viseu. There are 2 municipalities (Baia Mare and Sighetu Marmatiei), 11 towns and 63 communes with a total of 460 689 inhabitants (2019 Census). 64 natural protected areas of different categories cover approximately 39% of the county's surface.

Attractions

-  walks in the wilderness in Maramures Mountains Nature Park or Rodnei National Park
-  wildlife observation
-  train rides to discover untamed nature on Viseu River Valley
-  wooden churches, massive wooden gates, traditional houses and installations
-  UNESCO virgin forests (Grosii Tiblesului, Strambu Baiut)
-  UNESCO wooden churches (Barsana, Budesti, Desesti, Ieud, Plopiș, Poienile Izei, Rogoz and Surdesti)



In Ukraine

Zakarpattia Oblast (Transcarpathian region) is located in the Southwest of Ukraine. In the north it borders on Lviv, in the east on Ivano-Frankivsk oblasts of Ukraine, in the south it borders on Romania, in the southwest on Hungary, in the west on Slovakia and in the northwest on Poland. The administrative centre is the city of Uzhgorod.

About 80% of the territory of this land is occupied by mountains, creating from the southwest to the southeast the Vododilnyi mountain range, the Gorgany, the Svydovets, the Chornohora, the Polonynskyi range, the Rakhiv Massif and the Volcanic Carpathians. In the Chornohora mountain range, there is Mount Hoverla (2061 m) that is the highest peak of the oblast and Ukraine.

This is one of the most picturesque regions in the country, with a diverse landscape, unspoiled countryside, a temperate climate, mineral and thermal waters, offering pleasant conditions for tourism, recreation and skiing in winter.

Attractions

-  the pride of the region is "The Centre of Europe",
-  Lake Synevyr
-  Narcissus Valley
-  The Biosphere reserves, national and regional parks, which cover an area of more than 130 hectares

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FORESTS. WETLANDS. MEADOWS

In focus: High nature value forests. Wood.
Wanted: both dead and alive

In focus: High nature value farmlands

In focus: Maramures Mountains Nature Park and Chornohora Mountains, part of Carpathian Biosphere Reserve and Carpathian National Nature Park. Specific habitats

FORESTS

3.95% of Romania's forests are located in Maramures county.

Source: National Institute of Statistics, 2018

The Romania-Ukraine cross-border area of Maramures maintains a living, ancestral connection between man and forest. An important part of these forests are "High Nature Value Forests" (HNVF), valuable for their biodiversity, ecology and importance for local people.

High Nature Value Forests mean ...

- 🐾 "hotspots" of biodiversity (including endemic, rare, threatened or endangered species)
- 🐾 wide forest landscapes, where native plants and animals thrive
- 🐾 rare, threatened or endangered ecosystems
- 🐾 vital environmental services in critical situations (including protection of water sources, erosion control, pollution control, etc.)
- 🐾 fulfilling the basic needs of local communities, including the preservation of the cultural / religious identity
- 🐾 a reserve of groundwater, which feeds the flow of springs and rivers
- 🐾 regulating air temperature, which, nearby forests, is lower by 1.9 degrees Celsius in summer and higher by 1.7 degrees Celsius in winter.

2. What is special about our nature?



Significant forest tree species are:

- 🐾 spruce (*Picea abies*)
- 🐾 silver fir (*Abies alba*)
- 🐾 beech (*Fagus sylvatica*)
- 🐾 common oak (*Quercus robur*)
- 🐾 sessile oak (*Quercus petraea*).

In addition to these, there are also subalpine junipers (*Juniperus communis*) much preferred by the buzzard (*Buteo buteo*), willows (*Salix alba*), poplars (*Populus alba*) and alders (Grey alder) mainly along the watercourses, etc.

One important trait of High Nature Value Forests is the presence of dead wood.

Dead wood: a story of life and death in the forest

What is dead wood?

Veteran trees, standing dead or dying trees, fallen logs and branches, decaying biomass.

Why do trees die in the forest?

by accident: wind and snow, fire, prolonged drought, very aggressive pest attacks;
by “normal” causes: such as competition between trees.

What are the benefits of dead wood?

-  Dead wood is essential for the forest and its functioning, as it maintains forest productivity, natural regeneration, biodiversity conservation, increases resilience to climate change and enhances provision of ecosystem services to local communities and the public in general.
-  Biologists believe that a quantity of dead wood (15 to 20 cubic meters per hectare) is absolutely necessary to maintain the entomological (entomological = related to insects) balance between predators and their parasites. The more dead wood, the lower the chances of an explosion of pest populations of insects.
-  Dead trees constitute the habitat for almost 30% of the insects present in the forest; these insects are a source of food for many birds; dead wood may be the nest for some species.
-  Over 40% of forest inhabitants are dependent on the number and volume of dead trees.
-  Dead wood in the forest enters a process of rapid and complete decomposition and it is a source of minerals, nutrients and nitrogen that contribute to soil fertility that is the basis of productivity and tree growth.
-  Dead wood from forest trees can be used both as a source of renewable energy and as a caregiver of biodiversity and as a source of increasing soil fertility. Dead wood supports the balance and complexity of trophic networks specific to the forest and the health of these ecosystems.



Meadows

Along with the forests, meadows are the essential component of village life in historical Maramures and the basis of animal breeding. Higher altitude meadows are used for grazing, whereas those closer to the village are used as hayfields providing animal feed in winter.

The measurement of time, the well-being of families, the quality of dairy products, meat and honey reflected in the health and vigor of the locals is related to hay.

From the perspective of tourism, the hayfields adorned with haystacks, fused with natural “islands” of trees, hedges, patches of cultivated land and orchards - form the unmistakable cultural landscape around the villages so appreciated by visitors. To all this is added the delight offered by the dozens of fragrant flower species found in the hayfields, the smell of freshly mowed hay, the idyllic image of the locals mowing, turning the hay, building the haystack - all handmade and mobilizing the whole family.

In the language of the European Union, these areas are identified as High Nature Value Farmlands where traditional agriculture is the main economic activity and a key factor in nature conservation. Traditional agricultural practices are the main factor contributing to the maintenance of these areas, and their continuation is supported by the European Union through subsidies to landowners.

High Nature Value Farmlands

are located in rural areas where traditional agriculture is the main economic activity and a key factor in nature conservation. These lands are characterized by the presence of natural and semi-natural vegetation (pastures), generally very rich in species, and are integrated, in some cases, in an extensive and uninterrupted “mosaic landscape” that includes natural elements (such as field edges, fences), vines or stone, wooded or shrubby areas, streams) and patches of cultivated land and orchards.

Wetlands

Wetlands or peat bogs are **vulnerable ecosystems** all over the world and they create **refuges for some rare plant species**. In the wetlands of Maramures one can find:

-  Bog Blueberry (*Vaccinium uliginosum* ssp)
-  Small Cranberry (*Vaccinium oxycoccus*)
-  Roundleaf Sundew (*Drosera rotundifolia*) - carnivorous plant
-  Black Crowberry (*Empetrum nigrum*)

Iezerul Mare Peat Bog - nature monument, IUCN category IV - is one of the best conserved oligotrophic* wetlands of Maramures County, Romania, located on the Plateau of Ignis Mountains at an altitude of 1014 m.

*oligotrophic is a term commonly used to describe terrestrial and aquatic environments with very low concentrations of nitrates, iron, phosphates, and carbon sources.

They also have a very essential role of storing water as a sponge, absorbing the water and slowing the flow of water: the living plants and even the dead plant can absorb the extra water, protecting against flooding for example. Furthermore, sediment or pollutants in the water are filtered by the wetland, while the soil, plants, and animals in wetlands act as filters and purifiers.

Nature dwellers: plants and animals

Plants: blueberries (*Vaccinium myrtillus* L), fen orchid (*Liparis loeselii*), Roundleaf Sundew (*Drosera rotundifolia*) - a carnivorous plant, trees etc.

Invertebrates: Eurasian Grasshopper (*Stenobothrus eurasius*), black coloured ground beetle (*Carabus variolosus*), Alpine longhorn beetle (*Rosalia alpina*) etc.

The **Alpine longhorn beetle** (*Rosalia alpina*) is a symbol of the naturalistic value of the landscapes in which it lives: old forests (especially beech) in cool and humid mountain areas, with sunny areas and decaying dead wood. It is a priority species under EU legislation and enjoys protection Europe-wide.

Amphibians and reptiles: yellow-bellied toad (*Bombina variegata*), Carpathian newt (*Triturus montandoni*), European pond turtle (*Emys orbicularis*), etc.

Fish: huchen or “Danube salmon” (*Hucho hucho*), lipan (*Thymallus thymallus*), Danubian long barbel gudgeon (*Gobio uranoscopus*), etc.

Birds: white-backed woodpecker (*Dendrocopos leucotos*), wood grouse (*Tetrao urogallus*), golden eagle (*Aquila chrysaetos*), etc.

Mammals: Large carnivores - bear (*Ursus arctos*), lynx (*Lynx lynx*), wolf (*Canis lupus*) - as well as other species - Tatra pine vole (*Microtus tatricus*), European pine marten (*Martes martes*), otter (*Lutra lutra*), Red deer (*Cervus elaphus*), Roe deer (*Capreolus capreolus*), etc.

Maramures Mountains Nature Park, Romania

The Maramures Mountains, named in the old Maramures diplomas “Silva Nigra” and then the “Forest Carpathians”, are the highest mountain massif (1037 m, Farcau Peak) on the Romanian border with Ukraine.

Maramures Mountains Nature Park, largest protected area in Romania, 133,621 ha - a protected area of national interest in the category of natural parks was established in 2005 for the **conservation of the local landscape and traditions, for the protection of the natural, spiritual and cultural heritage of the area, for the sustainable management of forests and for the encouragement of sustainable tourism based on these values**. Moreover, due to the presence of priority habitats and species, Maramures Mountains Nature Park was designated as a **NATURA 2000 site**.

Biodiversity: The region is **one of the most biologically diverse regions in the Northern Hemisphere, ensuring connectivity with Ukraine**.

Large carnivores: 80 wolves; 84 bears; 18-22 lynx.

Specific habitats: **65% of the Park is covered by forests**, typical for hilly and mountainous landscapes, formed by beech trees, conifers and even rare spruce trees.

The rivers in the park belong to the **Tisza hydrographic basin**: Viseu with its main tributaries, Ruscova and Vaser Valleys. Notable lakes are Taul Rosu or Vinderel. The park also hosts many mineral springs, with varied compositions: bicarbonate, ferrous, sulfurous or salty.

Representative **wetlands** are: Taul Baitei, Taul Preluca Mesghii.



The Carpathian Biosphere Reserve (CBR), Ukraine

CBR is part of the Chornohora Mountain Range which is **the highest and most massive mountain ridge in the Ukrainian Carpathians**. The Chornohora massif is characterized by **intact natural ecosystems of high-altitude mountain belts**. Of particular interest are the highland forests, which form the upper forest line, dominated by **spruce**.

The Chornohora massif consists of two separate parts. The main part, from Hoverla Mt. (2061 m) to Pop Ivan Mt. (2020 m), lies on the watershed of the Tisza and Prut rivers, and also serves as a natural border between Ivano-Frankivsk and Zakarpattia regions

CBR was established in 1968, and it has been a part of the UNESCO network of biosphere reserves since 1992. The total area is **53,630 hectares** (about 5 times bigger than the Disney World or 10 times smaller than the Grand Canyon National Park in the United States).

The Carpathian Biosphere Reserve since 2016 is a part of the Emerald Network of Europe.

In 1997, 2002 and 2007 the CBR was awarded with the European Diploma by the Council of Europe.

The reserve represents the entire natural and landscape diversity of the Ukrainian Carpathians - from the Transcarpathian foothills to the subalpine and alpine zones. It protects the highest point of Ukraine - Mount Hoverla - and other highest peaks of the Ukrainian Carpathians, the Geographical Center of Europe, the European largest areas of beech and beech-fir-spruce primeval forests, the famous Narcissi Valley, the largest karst caves in the Ukrainian Carpathians, along with a number of other unique natural and cultural sites. Almost 21,000 hectares of primeval beech forests are protected in the territory of CBR as part of the pan-European UNESCO World Heritage Property "Ancient and Primeval Beech Forests of the Carpathians and Other Regions of Europe" (since 2007), which is the largest primeval beech forest site in Europe.

Chornohora is **on the bucket list of many travelers**, so it is described in numerous books, and is often mentioned in folk art. Hiking along this massif we can enjoy incredible landscapes and unique biodiversity - here you can find dozens of plants and animals listed in the Red Book.

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<http://cbr.nature.org.ua>



Ecosystem services can be better understood if we look at them in separate categories:

-  Support services which ensure the conditions that make possible the existence of all living organisms, including humans: the water cycle, photosynthesis, soil formation, the provision of nutrients, the provision of living spaces or 'habitats' for wildlife, the provision of species and genetic diversity.
-  Regulating services which ensure that the ideal natural conditions are there for our life to continue without major issues: purification of water, purification of air, pest control, pollination, erosion control.
-  Provisioning services which provide better living conditions or without which we would not be able to survive: food, drinking water, raw materials, fuel and power, medicine.
-  Cultural services that are not material but touch our minds and our spirits, giving us joy, relaxation and inspiration: source of inspiration for artists, architects, engineers and other similar professions, spaces to enjoy a moment of relaxation and outdoor sports, areas for tourism and hiking, its beauty and spiritual value.

Ecosystem services are flows of materials, energy and information from natural capital stocks that combine with the services of manufactured and human capital to produce human well-being. Ecosystem services must always be analyzed in connection with the socio-economic context.

A gift from nature never comes alone

Although scientists have broken down ecosystem services into separate categories, in nature these gifts actually come bundled as a package. One ecosystem or one single species often offers several kinds of services at the same time.

Each element of an ecosystem can provide several services at the same time. An oak, for instance, may provide acorns for squirrels, shelter for birds, shade and cool for a hiker, oxygen for all animals, and so on.

The forest: a silent green factory

-  Contributes to soil formation by: crushing rocks (mechanical action of roots), altering rocks (chemical action), humus formation and ensuring fertility (by the contribution of organic matter).
-  Retains 40-50% of the amount of precipitation and reduces the risk of flooding;
-  Moderates the temperature regime (in summer, the forest is about 2 degrees cooler than outside, and in winter the temperature is 1.7 degrees higher inside the forest than outside of it); reduces wind speed;
-  Source of biodiversity. Forests provide shelter and a source of food. They allow the preservation of natural environments, here forming the most numerous and complex trophic chains (Example: fruits and seeds - mice - fox and falcon; leaf - tree lice - ladybugs - tit/parus)
-  During the photosynthesis process, 1 ha of forest absorbs annually, about 16 tons of carbon dioxide and produces 30 tons of oxygen. Trees also retain dust, other polluting gases from industry or transportation. In temperate regions, depending on the season, forests offer an ever-changing landscape. The colors they wear, the tranquility, the unpolluted air, and the landscape are sufficient reasons to attract tourists.
-  Offers diverse renewable resources if they are used in a sustainable manner: mushrooms, berries, medicinal plants.

3 .What are the gifts that nature offers us?

Provisioning, Regulation, Cultural services

In focus: The gifts that we receive from the Forest

Nature works in an extremely intricate way, and has done so for millions of years, with or without humans. We, humans, are part of nature and we use whatever nature produces, whether we realise it or not. One way to describe how we let nature's gifts into our lives is to think of ourselves as users of nature's services. Think of everything we use from nature every moment of our lives. Even right now. Palpable, tangible things which we can perceive with our senses: we see the furniture, the plants outside the school, the light, we hear the birds or the movement of leaves, we smell apples or fragrance from plants, we can touch clothes, the notebook – they ALL come from nature.

By providing us with these things, nature is doing us a favour. Actually, a lot of favours. What do we do when someone does us a favour? We thank them and, if possible, try to do something for them in return. When it comes to nature, we will explore together the ways we can thank it and offer something back. This can, in fact, mean that we simply need to be careful, aware and responsible not to cause any damage. Because a natural imbalance will eventually harm us, the humans.

Have you ever considered that we get services from nature we couldn't live without? Fresh air, cleaned by trees, fertile soil in which we grow our crops, relaxation by taking a stroll in the park, and so on. Nature is a system that sets in motion millions of mechanisms that allow life to work.



Ecosystem services

For us humans, nature is similar to a giant “factory” offering us vital services, called “ecosystem services”.

What do we give back to nature?

For these “services” permanently given to us by nature free of charge, Nature only ever asks us in return to let it mind its own business. Sadly, people often disrupt Nature’s proper functions and these services, so essential to our life, cannot be provided anymore.

The better we understand nature and its ecosystem services, the more we can help them work and thrive.

Sources. Bibliography. Webography:

Eco education for Green Schools. Students’ Textbook, WWF Romania, Greeninitiative and British Council, 2017



4. Our superheroes with fur and paws



(C) Lukas Holasek – for OBWIC

General information about large carnivores, role in the ecosystem and benefits.

In-depth profile of the three Large Carnivores in focus – appearance, behavior, threats:

 The bear

 The wolf

 The lynx

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 (also known as trophic chain), a sequence of organisms that provide energy and nutrients for other organisms. 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. The animals that eat secondary consumers, like owls that eat rodents, are known as tertiary consumers. Carnivores that have no natural predators are known as apex predators; they occupy the top of the food chain.

Not all carnivores are predators. Some carnivores, known as scavengers, feed on the carcasses of already-dead animals. Vultures, for example, are scavengers.

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. Predators keep populations of prey species from becoming too large. Scavengers like vultures help prevent diseases from spreading by eating the remains of dead animals.

A food chain outlines who eats whom. A food web is all of the food chains in an ecosystem. Each organism in an ecosystem occupies a specific trophic level or position in the food chain or web. Producers, who make their own food using photosynthesis or chemosynthesis, make up the bottom of the trophic pyramid. Primary consumers, mostly herbivores, exist at the next level, and secondary and tertiary consumers, omnivores and carnivores, follow. At the top of the system are the apex predators: animals who have no predators other than humans. Here are our best friends, the bear, the wolf and the lynx.

Since a food web is representative of an entire community, it will consist of multiple food chains that are intertwined. There are usually multiple predator species that feed on a particular prey species, and one predator species usually feeds on multiple prey species. The same goes for the relationship between plants and herbivores.

A food web describes the many species and interactions within an ecosystem. Mapping these interactions can show us how an entire ecosystem could fall apart if it loses even one species.

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. By 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.

These emblematic species have much to teach us. For example, how can a denning female bear shut down her digestive and excretory systems and still deliver and nurse cubs? Usually the bones in mammals who are inactive for long periods of time lose calcium and become weak – so, how can bears sleep for a couple of months and yet come out of the den with strong bones? People are studying the bear to further human knowledge about everything from osteoporosis to kidney disorders to organ preservation to long-distance space travel.

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. Bears are a part of human culture in countless ways — from ancient ceremonies to myths to teddy bears and furry cats.



Sources.
Bibliography.
Webography:

<https://bit.ly/3qwy4FX>



The bear:

Importance. Bear presence = healthy nature

Brownish like the forest floor and as big as a “moving rock” – the bear is a natural element of the forest as much as any tree or mushroom or bird. Not only is this our perception – that a forest is “complete” when it has bears roaming through it – but science shows the same: the presence of the bear in the forest proves that the forest is in good health. Bears are predators, at the top of the food chain (trophic pyramid), they need a variety of sources of food from nature. Bears also need wide spaces to move. When there are many bears in the forest, this means that there is plenty of food – so the forest is rich and thriving.

The brown bear has been a widespread species in Europe, a situation that has changed dramatically over the past centuries, and **the species disappeared completely** from many countries on the continent.

According to an IUCN report, there are currently almost **14,000 brown bears living in Europe** (excluding Russia) (Brown Bear Conservation Action Plan for Europe, 1999). Of these, about **6,000 live in forests in Romania (2012)**, the average density being about 8 bears / 100 km².

Description: The brown bear lives along the entire Carpathian chain, in large and dense forests, preferring quiet areas, less frequented by humans. The basic requirements for the survival of brown bears are related to the possibilities of feeding, resting, mating and dispersal conditions, and finally, to the existence of favorable habitats and corridors that ensure the connectivity of habitats.

The bear has excellent hearing, it can detect a conversation between people from about 300 m and can hear the camera shutter from about 50 m.



(C) Lukas Holasek – for OBWIC



But smell is the bear's most valuable "tool". Smell is fundamental for defense and attack, being the window of communication with the world around him, more than sight or hearing. It seems that the bear has the most developed smell among carnivores, serving to detect the pair, the presence of man, other bears, chicks, and other food sources. The bear is able to detect traces of human presence more than 40 hours after crossing.

Herbs and buds are eaten mainly in spring or early summer. In summer and early autumn, bears eat mushrooms and fruits (raspberries, blackberries, blueberries, apples, plums and pears). In late autumn, but also in winter, bears consume acorns and beechnuts. Insects, especially Hymenoptera (ants, bees, wasps) can be an important food source seasonally, especially due to the proteins they contain.

Bears, like all mammals, need to maintain a constant body temperature. Fur is a very good insulator in winter, fulfilling this function. The low solar reflection capacity of the fur facilitates the accumulation of heat from the sun.

At the end of autumn, after accumulating enough adipose tissue for winter sleep, bears usually enter the den. Winter sleep can last between 3-6 months. The lair is dug into the ground or is arranged in natural cavities, under rocks.

Some bears can stay active all year round if they find enough food. This behavior is also encouraged by luring them to artificial feeders. Sleep duration is directly proportional to the amount of fat accumulated in the fall and inversely proportional to the amount of food available in the winter.

Winter sleep is actually an adaptation to the lack of food this season, through which the animal uses its accumulated energy in the form of fat. However, this phenomenon can be made possible by staying as still as possible, because excessive movement means additional energy consumption.

It is important to know that if we disturb a bear during the winter, we force it to lose energy, which it can only recover by feeding.

Cubs:

The female bear gives birth to their first cubs at 4-6 years. Mating takes place once every 2 years, between May and June. The effective gestation period is 6-8 weeks, and the female gives birth to 1-4 cubs.

The cubs are born in the den during the winter sleep, in January-February. This is another strategy to adapt the species to the harsh living conditions.

But given that breastfeeding takes place at a time when the female cannot feed, nature has compensated for this with another adaptation strategy: the very small size of the newborns. Newborns weigh about 0.5 kg but grow very fast, accumulating up to 70 g / day due to the nutritious milk of the mother bear.

The cubs are left alone in the second year of life. The female resumes the reproductive cycle after her cubs become independent, so after about 2 years.

After being abandoned by their mother, at the age of 1.5-2 years, the cubs are forced to fend for themselves. **This period is the most delicate, because being very young, their life experience is very little. This makes them venture into dangerous areas, such as man-made areas, sheepfolds, landfills, where they often fall victim to dog attacks or road or rail accidents.**

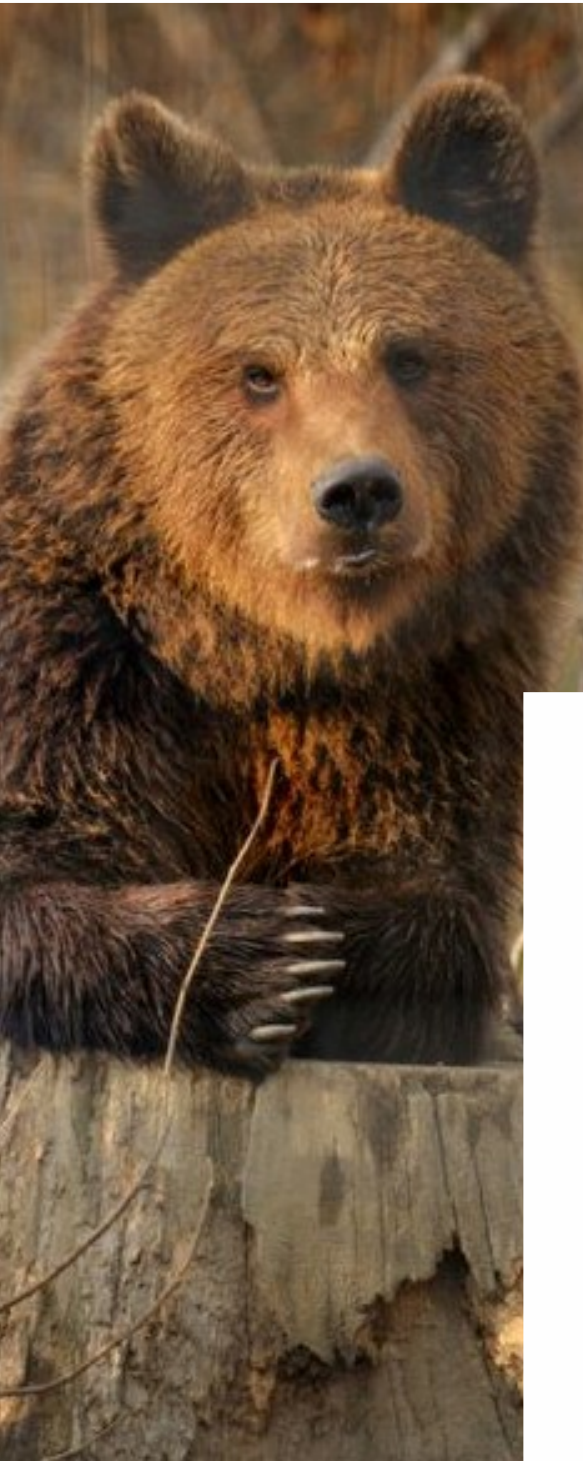
Solutions. The bear orphanage

Every year, dozens of bear cubs remain orphans in the forests of Romania. The Bear Orphanage located in Hasmas Mountains, raises cubs in a natural way, with a minimum of human intervention, and after 2 years the bears get to roam free in the forest. The cubs are fed seasonal food using drones, and they have to find their food in the enclosure as well as build their own den for the winter sleep. Working already for 16 years, the orphanage has successfully rescued over 150 bear cubs.

Cubs get out of their den: <https://bit.ly/3x6icwa>

For more information please visit: <https://bear-again.com/en/homepage-2/>





Threats:

Increasing pressures on forests - the main habitat of the brown bear - are a threat to the species and to our country. Habitat loss or fragmentation due to the development of transport infrastructure, but also urban or rural infrastructure (such as ski slopes, urban sprawl and construction implicitly, without taking into account the costs of biodiversity loss) are the main threat to the address of the species.

As a result of human activities and socio-economic development in the region, these habitats are increasingly affected, being either destroyed or fragmented.

Tracks:

The bear walks almost like a human being and steps on the whole paw; the feet account for walking, running, climbing, swimming, hunting, feeding, digging, and protection.

The paws are almost flat, with 5 fingers – the ones at the back are wider than the ones at the front. The claws are curved, non-retractable, shorter on the back paws and longer on the front ones.

If you meet the bear...

The bear would only attack a human when it appears to be the only way out of an unfamiliar situation that causes the bear to be scared for its life: getting too close to the cubs. A very sudden encounter that neither the human, nor the bear, have been able to predict or, quite rarely, situations when the bear is protecting prey hidden underground.

If we see a bear that, in turn, has spotted us as well, we just need to get away at once, calmly, in order to show the bear we do not intend to attack it or its cubs, or take away their prey. Usually, the bear would try to do the same. If, by any reason, the bear appears to be coming our way, it is recommended that, while we steer away, we drop something behind (a jacket, a backpack). The animal would get involved in sniffing the object and that will gain us time to get away.

Sources. Bibliography. Webography:

Manual for ecotourism interpretation, Maramures, The Green Heart of the Carpathians Project, WWF Belgium

The wolf:



Meet the wolf

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

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

Physical aspect, food, behavior: 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, and a winter one, lighter, so that it can be camouflaged, thus being more difficult to be spotted by its prey, which helps it 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 fruits or other vegetables - even eating tree bark -, the wolf still prefers meat. It behaves both as a hunter and as a necrophagous, being an important factor in maintaining the natural balance.

Mating takes place in February-March, after which the wolf pair remain together to raise the pups. After that, wolves, including pups, gather in packs, which, especially in severe winters, can associate with each other. After a gestation of 62-63 days, the wolf female gives birth to 4-6 pups who are blind approx. 2 weeks and are breastfeed for 6 weeks.

The wolf needs a large territory of approx. 2400-2500 hectares, ten times more than a bear.

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). After a gestation period of seven weeks, 62-63 days, 3 to 10-13 helpless, blind pups are born and begin to open their eyes in 12-14 days. They are nurtured by their 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.**

Sounds: 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, and females and pups howl in thinner and more weeping tones.

Tracks: 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 pad 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. For this reason, the number of wolves in a pack can be identified by traces only when passing over obstacles, when they usually scatter.

Other habits: It has exclusively nocturnal activity. It proves to be extremely cautious towards man, whom he attacks only if he has no other alternative to avoid him (when it is trapped, caught in closed spaces, snuggles so that it can no longer retreat, etc.).

Hunting: As in the case of the bear, the wolf is protected by international conventions, it is a priority conservation species in the EU and in Romania, as well it is a protected species; nevertheless it may be hunted under the conditions imposed by the central public authority responsible for environmental protection (case of damages, human injuries).

Sources. Bibliography. Webography:
<https://en.wikipedia.org/wiki/Wolf>



The lynx:



Lynx are a group of four species of medium-sized wild cats. All are considered to be part of the genus *Lynx*, but some authorities classify them as part of the genus *Felis*, to which the wild cat and the domestic cat belong. Of all four lynx species, only the Iberian lynx (*L. pardinus*) was assessed on the IUCN red list as a critically endangered species. The others, despite being hunted uncontrollably in the 19th and 20th centuries, remain beyond any danger of extinction worldwide, but are still threatened in some countries.

Areal and conservation status: Carpathian/Eurasian lynx (Europe, Asia), red lynx (USA, Canada, Mexico) and Canadian lynx (USA, Canada, Alaska) are presented by populations large enough to ensure the continuity of the species across the globe. Iberian lynx is on the verge of extinction, with only 84-143 lynxes of this species still living in Spain. The presence of lynx in Portugal is uncertain.

The lynx lives alone, the areas of the males and females overlapping. The area in which they live ranges from about 50 to 400 km, the males obviously occupying a large territory. The area where they live is marked with fresh traces of urine, the effect on other specimens of the same species being rejected and only during the mating period.

The lynx is currently living in 23 European Countries. The total estimated number of Eurasian lynxes is about 9000 individuals. In Europe there are regions where the lynx has never disappeared and where there are constant herds (eg. Scandinavian peninsula, the Carpathians and the Balkans). Some countries where the lynx has disappeared, e.g. Germany, Austria, France, Italy and Switzerland have gone through projects to reintroduce this species. Meanwhile, as a result of conservation measures, the lynx has returned from neighboring countries and other countries, such as Latvia, Bulgaria and Hungary.

Physical traits/appearance: Solitary animal a lynx is about the size of a dog. They are between 70 and 150 cm long, with a relatively short tail of 5–25 cm. The tip of the tail in all species is usually black, and at the tip of the ears are tufts of black hair, which distinguishes lynx from other felines. The color of the bristles is diverse and depending on the species and climatic conditions, varies between brown and beige or even white. Also, all lynx have white brushes on the chest, abdomen and inside of the legs. The maximum reported weights are between 50 kg and 58 kg, but normally the representatives of any species do not exceed 30 kg. Like all other cats, lynx have sharp, retractable claws that reach a length of 4–6 cm. Lynx live about 20 years.

The largest are the Carpathian/euroasian lynx, 80–150 cm long and weighing 18–30 kg. Next are the Iberian ones, with 85–120 cm and 13–25 kg and both American species that have the same values of length (70–120 cm) and weight (9–15 kg).

Lynx have a body length of 80-100 cm (rarely reaching 130 cm). The tail is only 11-26 cm long. The height is 60 cm and the weight is about 25 kg. Its fur is thick and soft, and the color varies according to the age, season and individual. Usually, it is reddish-brown with many dots. However, the fur can be dark gray in the area of the head, and black, while the belly can be whitish. The lynx is an active animal at night, his vision is very good even in the dark. When running, the lynx retracts their claws so that the footprints do not have claw marks. Their normal gait is the step. Like wolves, they place their hind paws in the trace of their previous paws. Females raise offspring alone. The offspring leave the area at the age of 10-12 months.

Behavior and prey: The lynx is an animal that hunts while waiting. It specializes in chasing and using short sprints to catch prey. The movements of the lynx are fast and quiet, which helps it to attack the prey unexpectedly. From a fixed spot, the lynx can jump up to 4-6 m in any direction. In Europe, the lynx is especially nourished by medium-sized wild animals such as deer, black goat and buffalo. However, small mammals and birds can fall prey to it. Lynx are capable of hearing a mouse from 60 meters away.

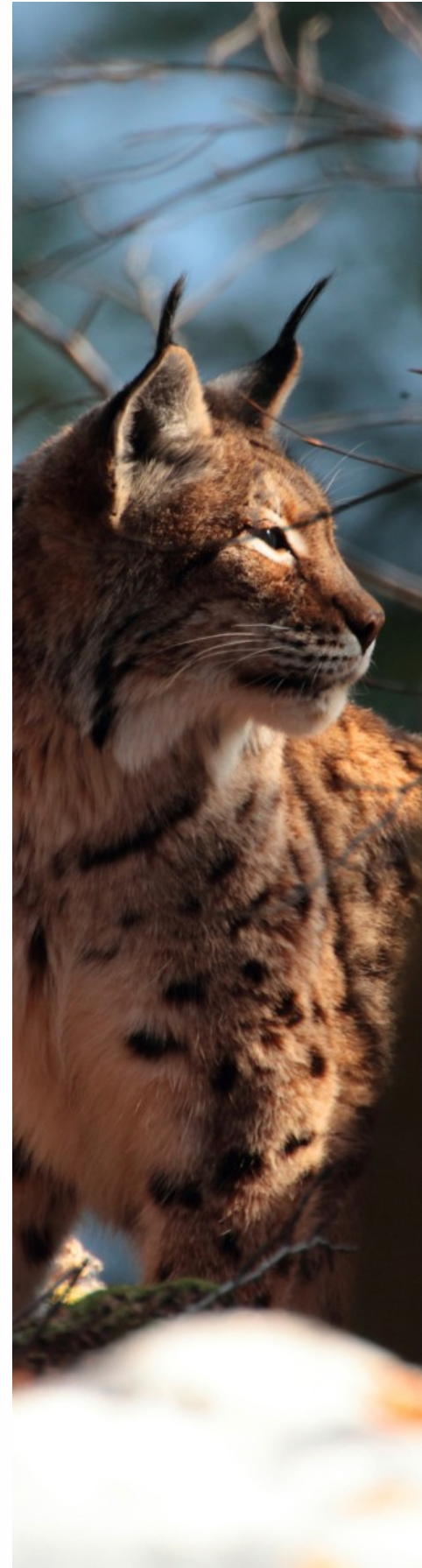
Mating: All species of lynx mate during early spring, in March and April. Because they are solitary animals, mating does not take place every year. The estrous cycle in females lasts 10-15 days, and the pregnancy 65-90 days, depending on the species, after which 2-4 kittens are born, blind for two weeks. Breastfeeding lasts relatively long, up to six months. The kittens separate from their mother when they are two years old, in order to prepare for the first mating. It is very difficult to observe the mating habits of lynx for various reasons, especially the rarity of animals, the effect of intensive hunting, or the size of the areas in which they live.

Tracks: The track of a lynx resembles the shape of a cat, but it is much larger. The track pattern cannot be confused with any other track when it is clearly printed, because the pads characteristic of cats are elliptical, without the printing of claws. On fresh snow it could be confused with a wolf or dog track, but the lynx obliquely imprints the "heel", in fact the underside of the foot and even the elbow of the back foot. In addition, the track is arranged in a slight zigzag.

Habitat: Prefers large and quiet forests located at high altitudes. But it also descends in areas of high hills. It is generally attached to its place of residence, but in the absence of food it makes relatively long journeys of up to 40-50 km.

Hunting: As in the case of the bear, the lynx is protected by international conventions, it is priority conservation species in the EU and in Romania as well it is a protected species; nevertheless it may be hunted under the conditions imposed by the central public authority responsible for environmental protection (case of damages, human injuries).

Sources. Bibliography. Webography:
[https://ro.wikipedia.org/wiki/R%C3%A2s_\(animal\)](https://ro.wikipedia.org/wiki/R%C3%A2s_(animal))



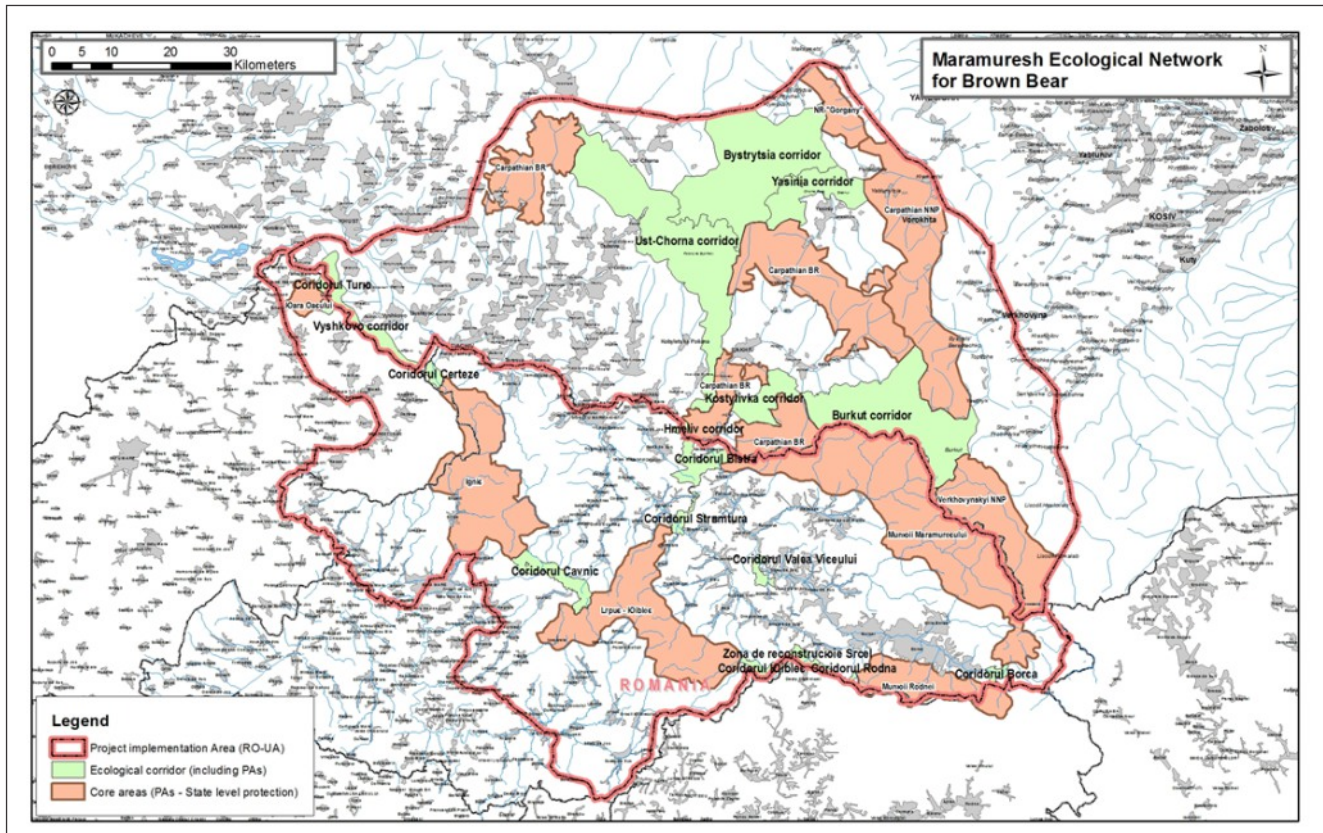
5. Ecological connectivity

The Romanian-Ukrainian transboundary network of ecological corridors

The network of ecological corridors in Maramureș, 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 Romania-Ukraine Maramureș area was based on the ecological requirements of the bear species and the favorable habitats in the area. The bear, as an umbrella species, due to its position at the top of the trophic pyramid and the vast habitats it needs, is a target species in the design of regional ecological networks, because protecting viable bear populations will ensure the conservation of other species as well.



Map network of RO-UA corridors

Source: Project Open Borders for Bears between the Romanian and Ukrainian Carpathians, ENPI HUSKROUA2007-2013

Categories of ecological corridors: (Maanen et al)

- 🐾 **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 square km.
- 🐾 **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 size, shape 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.)

Ecological corridors in Maramures county, Romania

In Maramures county in Romania, 11 critical ecological corridors were identified. The most vulnerable area where these corridors risk to be blocked is the Căvnic area where tourism infrastructure keeps expanding.

Nr. / Critical ecological corridors / Area (hectar)

- 1 Barsana - 114,7
- 2 Bistra 1 - 261,1
- 3 Bistra 2 - 241,1
- 4 Borsa - 316,0
- 5 Căvnic 1 - 432,7
- 6 Căvnic 2 - 455,2
- 7 Certeze - 394,3
- 8 Sacel - 103,1
- 9 Stramtura - 405,8
- 10 Valea Vișeuului 1 - 211,7
- 11 Valea Vișeuului 2 - 150,6

Total - 3.086,1

It is essential for these critical corridors to be secured and included in the regional development plans, in order to avoid the fragmentation of corridors because of potential economic investments with a major negative impact on biodiversity.

Pressure or Threat?

Pressure is an action or phenomenon that has had a negative effect in recent years, usually 5 years.

Threat is an action or phenomenon that will continue or may occur in the future and with potential negative effects in the coming years.

Source: IUCN

Threats for wildlife, namely large carnivores

The habitat loss and fragmentation given by development, (roads, ski resorts)

- 🐾 **No ecological connections** (migration corridors) in place; corridors need to be integrated in the existing land use planning

- 🐾 **Disturbance:** e.g. pressure from forestry activities in critical areas (affecting the dens), off-road leisure activities, pressure from people collecting mushrooms, berries, non-timber forest products, poor waste management.

Illegal hunting

- 🐾 **Lack of management capacity and support from authorities**
- 🐾 **Lack of coordinated approach and conservation measures**
- 🐾 **Local population and administrations are not aware** about the importance of biodiversity conservation and the role of the large carnivores in the natural ecosystems.

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. Thousands of birds and bats die each year due to the collision with these infrastructure elements.

What can we do?

- 🐾 perform studies, research, gather sufficient and relevant data on aspects related to habitats, dispersion and corridors in order to ensure the long term survival and conservation of large carnivore species;
- 🐾 official designation of ecological corridors;
- 🐾 develop investment plans and funding for management of LC species, thus also preventing human- wildlife conflicts;
- 🐾 develop and implement unified and commonly agreed upon tools in the cross-border area for the management of natural resources to contribute to the conservation of the corridors and sustainable development of the communities;
- 🐾 raising awareness of the need for maintenance of healthy ecosystems and related services, on which the local communities depend on
- 🐾 development and integration of management measures in the strategic spatial and management planning documents

Management measures to protect ecological corridors:

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

Sources. Bibliography. Webography:

Stanciu E., Florescu F. 2009. "Protected areas in Romania. Introductory notions." Green Steps Publishing House, Brasov
Project related materials "Open Border for bears in the Carpathians", 2012-2014

6. Looking after our nature: nature protection & nature conservation

Measures for nature protection & nature conservation in Romania and Ukraine

In focus: Protection measures for large carnivores

Nature protection or nature conservation?

Nature protection involves first of all actions to keep species and ecosystems in a state as natural as possible, to protect them from the effects of human actions, which often leads to restrictions on human activities.

Nature conservation refers to a more complex and dynamic approach: it can mean keeping rare species and habitats as natural as possible without intervening in natural processes, but it also allows active interventions to maintain natural values or even requires active resource management, especially in the case of “secondary” ecosystems that have resulted from human activities over the centuries. (Stanciu and Florescu 2009).

A natural protected area is "a clearly defined geographical area, recognized, designated and managed on the basis of legal acts or other effective means, in order to achieve long-term conservation of nature as well as of environmental services and associated cultural values " according to the International Union for Conservation of Nature (IUCN) definition of 2008. (Stanciu E., Florescu F. 2009. "Protected areas in Romania. Introductory notions." Green Steps Publishing House, Brasov).



Natural protected areas are essential in the conservation of natural and cultural capital because they include the most representative and significant areas in terms of biodiversity, associated natural and cultural values. Protected areas can mainly host plant and animal species that need to be protected because they are important both environmentally and scientifically. To protect them, the IUCN has classified the species according to the degree of danger (threatened with extinction). Examples of species from Romania and Ukraine classified according to IUCN as well as classification criteria can be seen below:

IUCN classification of species according to the degree of endangerment

EXTINCT (EX) A taxon is Extinct when there is no reasonable doubt that the last individual has died.
Example: Aurochs, (*Bos primigenius*)

EXTINCT IN THE WILD (EW) A taxon is Extinct in the Wild when it is known only to survive in cultivation, in captivity or as a naturalized population (or populations) well outside the past range.
Example: European Bison, (*Bison bonasus*)

CRITICALLY ENDANGERED (CR) A taxon is Critically Endangered when the best available evidence indicates that according to certain IUCN criteria it is to be facing an extremely high risk of extinction in the wild. Example: European Mink, (*Mustela lutreola*)

ENDANGERED (EN) A taxon is Endangered when the best available evidence indicates that according to certain IUCN criteria it is to be facing an extremely high risk of extinction in the wild. Example: Danube salmon, (*Hucho hucho*)

VULNERABLE (VU) A taxon is Vulnerable when facing a high risk of extinction in the wild (according to IUCN criteria). Example: The Rosalia longicorn or Alpine longhorn beetle (*Rosalia alpina*)

NEAR THREATENED (NT) A taxon is Near Threatened when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future. Example: European Pond Turtle, (*Emys orbicularis*)

LEAST CONCERN (LC) A taxon is Least Concern when it has been evaluated against the criteria and does not qualify for Critically Endangered, Endangered, Vulnerable or Near Threatened. Widespread and abundant taxa are included in this category. Example: white-backed woodpecker (*Dendrocopos leucotus*)

DATA DEFICIENT (DD) A taxon is Data Deficient when there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status. A taxon in this category may be well studied, and its biology well known, but appropriate data on abundance and/or distribution are lacking. Example: Stone Crayfish, (*Austropotamobius torrentium*)

NOT EVALUATED (NE) A taxon is Not Evaluated when it has not yet been evaluated against the criteria. These species have not been categorized or evaluated by IUCN.

The European network "Natura 2000", created for the protection of habitats and species covered by EU Biodiversity Directives, is a **network of protected natural or semi-natural areas** with the role of halting the decline of biodiversity by long-term conservation of endangered species (plants and animals) and habitats of European interest.

The purpose of the "Natura 2000" network is:

- (1) to protect the biodiversity of the European continent and
- (2) to promote economic activities beneficial to the conservation of biodiversity.

The major objective of the "Natura 2000" network is to identify, maintain and restore areas for the protection of wild flora and fauna species, as well as the corridors connecting them.

The "Natura 2000" network was created by the European Union Directives: "Habitats Directive 92/43 / EEC" and "Birds Directive", transposed into RO national legislation by Government Emergency Ordinance no. 236/2000, approved and amended by Law no. 345/2006.

Good to know: The network of Natura 2000 sites does not prohibit the development of economic activities. The concept behind the establishment of the Natura 2000 network encourages and supports any economic activity carried out on the basis of the principles of sustainable development and which does not affect species and habitats of Community interest. There are no restrictions related to activities unless the species and habitats for which the site has been declared are affected; furthermore, at Member States' level there are recommendations and support in place for: the use of best agricultural practices; use of environmentally friendly practices in general; practicing ecological tourism, etc.

Conservation of priority species and habitats can be compatible with sustainable management of natural resources, such as: forestry, tourism, hunting and fishing, etc., providing additional opportunities for local sustainable development (recreation, promotion/marketing for natural products from the area, etc.).

The Emerald Network (similar to the Natura 2000 network in the EU) is an ecological network made up of Areas of Special Conservation Interest. Its implementation was launched by the Council of Europe as part of its work under the Bern Convention, with the adoption of Recommendation No. 16 (1989) of the Standing Committee to the Bern Convention. The Bern Convention or Convention on Conservation of European Wildlife and Natural Habitats is the first international treaty to protect both species and habitats and to bring countries together to decide how to act on nature conservation (1979).

This objective is the long term survival of the species and habitats of the Bern Convention requiring specific protection measures. These habitats and species are listed respectively in Resolution No. 4 (1996) and Resolution No. 6 (1998) of the Standing Committee to the Bern Convention. Once the areas proposed are officially adopted as Emerald Network sites, they have to be designated and managed at national level. The national designation and management measures are decided and put in place to contribute to the main objective of the Network and their efficiency will be regularly monitored. Since 6 December 2019, Ukraine has officially adopted Emerald sites on its territories

In Romania, protected areas cover more than 20% of the country's surface. In order to ensure special measures for the protection and conservation of natural heritage, the protected natural areas in our country have been differentiated into the following four types:

A. of national interest: scientific reserves, national parks, natural monuments, nature reserves, nature parks.

B. of international interest: natural sites of the universal natural heritage, geoparks, wetlands of international importance, biosphere reserves.

C. of Community interest or "Natura 2000" sites: sites of Community importance, special conservation areas, special avifauna protection areas.

D. of county or local interest: established only on the public / private domain of the administrative-territorial units, as the case may be.

In some cases, there is a geographical overlap between protected areas of national interest (category A) and Natura 2000 (category C).

In Romania, Natura 2000 sites are well represented, with a surface of 22,68% from the country's total terrestrial surface. Main legal act ensuring protection and conservation of protected areas in Romania is the Government Emergency Ordinance no. 57 from 2007.

National and nature parks in Romania

The significant difference between the two forms of protected areas is apparent from the purposes for which they were established. The purpose of **national parks is to protect and conserve ecosystems, representative samples of the national biogeographic area.** In the case of **nature parks, protection and conservation refer to landscape ensembles in which the interaction of human activities with nature over time has created a distinct area, with significant landscape and / or cultural value.** In both cases, only traditional activities are allowed, practiced only by the communities in the respective areas, these being regulated by the management plans.

In Romania, so far, 13 national parks have been designated covering an area of 316,000 ha and 16 nature parks covering an area of 562,183 ha.

In Maramures County:

-  1 national park: Rodnei National Park
-  1 nature park: Maramures Mountains Nature Park;
-  13 Natura 2000 SCI sites: ROSCI0264 Valea Izei si Dealul Solovan bordering Ukraine;
-  5 Natura 2000 SPA sites: ROSPA0143 Tisa Superioara, bordering Ukraine.

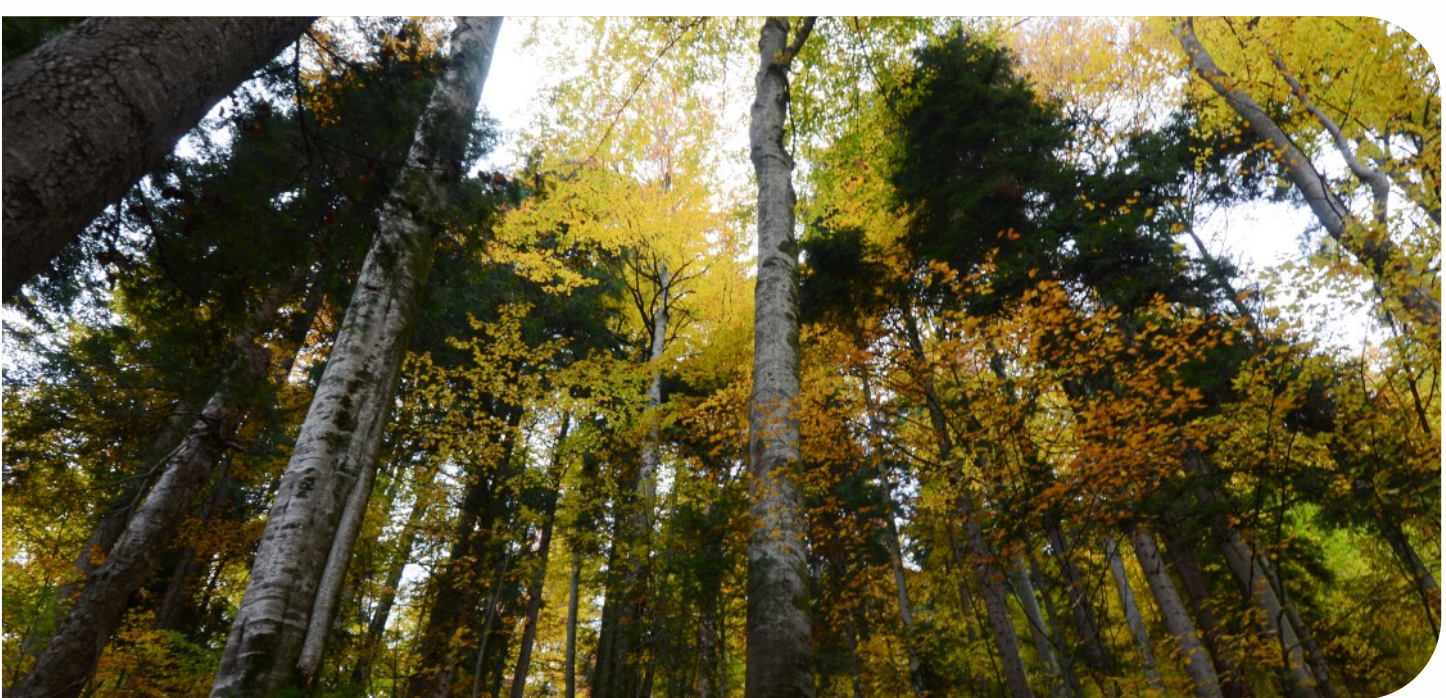
In focus:

Protection measures for large carnivores

- 🐾 data collection on large carnivores, including monitoring;
- 🐾 maintain ecological connectivity between habitats;
- 🐾 adequate land management within habitats important for large carnivore species;
- 🐾 preventive measures against human-wildlife conflicts (eg Livestock Guard Dogs, anti predator fences to prevent conflicts with communities)
- 🐾 preventing poaching;
- 🐾 building feeding points to steer carnivores away from livestock areas;
- 🐾 compensation schemes for livestock damages as well as payment schemes for landowners to protect large carnivores' key habitats;
- 🐾 good coordination of interministerial cross-border carnivore conservation policies;
- 🐾 control development and tourism activities;
- 🐾 information campaigns and stakeholder participation;
- 🐾 promotion of ecotourism based on wildlife observation

Preservation of common natural values needs integrated cross border cooperation on a landscape level, beyond borders.

Sources. Bibliography. Webography: Stanciu E., Florescu F. 2009. "Protected areas in Romania. Introductory notions." Green Steps Publishing House, Brasov
IUCN RED LIST CATEGORIES AND CRITERIA Version 3.1 Second edition



7. “I have a dream” ... it’s called Sustainable Development

Introduction to the Sustainable Development approach. Definition.

"Sustainable development is what pursues the needs of the present, without compromising the ability of future generations to meet their needs." (Brundtland Report, WCED, 1987)

The Brundtland report defines the basic "pillars" of sustainable development:

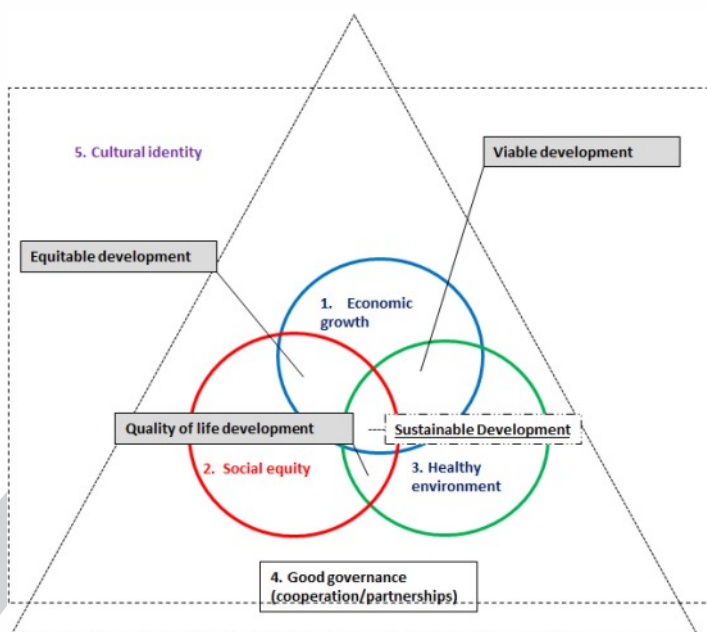
1. Economy - defined by efficiency, continuous growth, stability;

2. Social dimension - defined by standard of living, equity, social dialogue and delegation of responsibilities, which also includes the domains

2.1. Cultural identity - the totality of material and spiritual values created by humanity (the educational dimension for sustainable development) and

2.2. Good Governance - the institutional framework for supporting, promoting and applying the principles of sustainable development (institutional dimension); and

3. Environment - defined by the conservation and protection of natural resources, biodiversity, pollution avoidance.



Sustainable development is not a development primarily oriented towards environmental protection and conservation, as is often promoted, but a holistic, eco-socially responsible development through the integrated approach of all local elements.

The Sustainable Development Goals (SDGs) or Global Goals are a collection of 17 interlinked global goals designed to be a "blueprint to achieve a better and more sustainable future for all". The SDGs were set in 2015 by the United Nations General Assembly and are intended to be achieved by the year 2030. They are included in a UN Resolution called the 2030 Agenda or what is colloquially known as **Agenda 2030**.

The 17 SDGs are: (1) No Poverty, (2) Zero Hunger, (3) Good Health and Well-being, (4) Quality Education, (5) Gender Equality, (6) Clean Water and Sanitation, (7) Affordable and Clean Energy, (8) Decent Work and Economic Growth, (9) Industry, Innovation and Infrastructure, (10) Reducing Inequality, (11) Sustainable Cities and Communities, (12) Responsible Consumption and Production, (13) Climate Action, (14) Life Below Water, (15) Life On Land, (16) Peace, Justice, and Strong Institutions, (17) Partnerships for the Goals.



Sources.

Bibliography. Webography:

"Natura 2000 Maramures" Network Development Strategy (for the period 2016 - 2020), WWF RO
https://wwf.panda.org/wwf_news/?349332/Nature-and-the-SDGs
https://en.wikipedia.org/wiki/Sustainable_Development_Goals

Many people depend directly on local resources - land, water, forests, wildlife. The natural and cultural heritage of the cross-border area has an economic potential because:

-  is a producer of products and services with high added value;
-  creates jobs both for the direct exploitation of local natural resources and in the adjacent socio-economic space;
-  creates markets for local artisans. Crafts and craftsmen, part of the cultural heritage, are a valuable resource that can be used intelligently and pragmatically in capitalizing on local and regional specifics. ;
-  determines the use of local natural resources;
-  determines the development of industries and services such as: creative industry, tourism, civil construction industry, transports, etc. ;
-  contributes to the development of export capacity.

Nevertheless, it is important to find the best ways to improve livelihoods and reduce poverty but without endangering nature.

8. What are the “BIG” ideas for our nature?

Solutions for nature. A broad vision for nature conservation and sustainable development in Maramures (Romania and Ukraine).

-  Protecting ecological corridors
-  Green businesses
-  Sustainable tourism

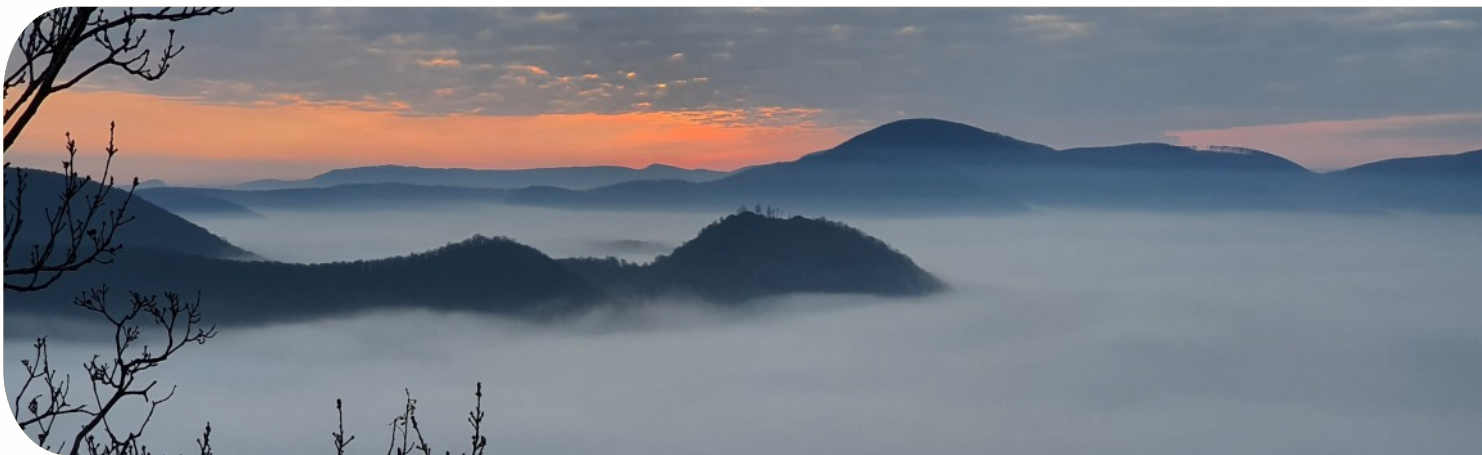
Protecting ecological corridors

Ecological corridors are essential for the needs of wildlife species to move from one natural habitat (or protected area) to another for different purposes (feeding, shelter, rest, mating). Among the most suitable / optimal habitats for large carnivores we mention: forests and natural meadows. Forests are essential habitats for large carnivores and securing forests means protection of wildlife species.

Large carnivores, especially the brown bear, play a role as an indicator of the quality of the habitat and the surrounding nature, as it is an animal that requires the existence of vast, undisturbed and clean forests. Where there are bears, nature has still been preserved to a superior quality. It is important to know that viable bear populations contribute to maintaining healthy ecosystems, their balance and services, which benefit local communities.

How can we contribute to the protection of ecological corridors?

-  protecting the forest
-  monitoring the corridors with trap cameras, or via field trips to discover the presence of large carnivore species (exp on snow)
-  information and awareness campaigns on the role of these ecological corridors and wildlife species in the proper functioning of the ecosystem.



The locals of the Carpathians - Hutsuls - have always lived close to nature and wild animals, which have always been considered the "owners" of the forest, totem creatures and symbols of their land. The locals, especially, respected the bear and even called it "uncle". Many legends and fairy tales in the Carpathians are connected with him. For example, locals believed that a bear would not attack a person for no reason. But he can take a sheep, a horse or a cow that grazes on the mountain meadows.

Many traditional methods of protection against bear attacks on livestock, which have been used by locals for generations, are known. Some of them still exist, such as the "puga" in Ukraine (a leather whip, the blow of which sounds like a shot from a rifle) or a shepherd dog. But there is another that can not be found often - grazhda (Ukraine). This is the name of the local traditional wooden houses with high fences, which looked more like fortresses than people's homes. They were built to protect not only the family but all the livestock of the owners. In such houses Hutsuls felt safe and were not afraid not only of bears, but also of wolves, wild boars and lynxes. On the principle of grazhda, the locals built their highland apiaries because bears often went there to eat honey. Behind a high solid and strong fence that even bears could not break, they kept their hives long before the invention of electric fences, and it helped. The only disadvantage of an apiary with such a massive fence - it is immobile.



Green Businesses

Ecological balance is a basic principle of green business when all products and services are created in such a way so they help reduce the negative impact on the environment. And sometimes, even to improve its condition. To do this, local entrepreneurs use the experience of sustainable management and knowledge of their ancestors, who have always lived in harmony with nature and received everything necessary for life from it. The demand for organic products and services is constantly growing. It also brings profit to residents and helps preserve the environment. A lot of people want to get environmentally friendly goods and unique services. The goods produced in the Carpathians are becoming incredibly popular far beyond their borders. Many tourists buy them as a souvenir, they can be found at farmers' fairs, in stores with organic products in many large cities, or even ordered by phone or online with home delivery. We can safely say that traditional crafts and farming have received a second life these days.

Traditional cheese

Bryndza (Brindza in Ukrainian language/Branza in Romanian language) is the most famous and popular traditional cheese in the Carpathians. Shepherds graze their sheep in the highlands (not lower than 700 m above sea level) from May to September. It is there in the plains that they make brindza according to the technology used in this area since the 15th century. On November 11, 2019, Hutsul Bryndza from Ukraine received a certificate of registration of a geographical indication. It became the first Ukrainian geographically protected brand that meets European registration requirements and has the right to be recognized in the EU.

Traditional crafts

Embroidered and traditional clothing is incredibly popular with both locals and tourists. Local craftsmen decorate shirts, blouses, towels, tablecloths, bed linen, and home decor with embroidery. Embroidered traditional clothing is still considered festive and is often worn not only by older people but also by young people. Another craft that has survived to this day is making lizhnyky. These are traditional bedspreads and blankets made of sheep's wool. The masters make their yarn, threads, and weave them on the loom. Sheep's wool is also used to knit various clothes - shawls, mittens, hats, and socks.

Gifts of the forest

Jams, fir tree syrups, dried fruits, fresh berries, forest mushrooms - all this can be found in small shops or at fairs in the Carpathians. Many of these products are used to prepare traditional dishes, such as banosh or mushroom soup. It can be served in local estates or restaurants.

Herbal teas

Traditional herbal teas are highly valued and popular with both locals and tourists. Natural and environmentally friendly - they are considered to be healthy. From May to September, locals collect a variety of herbs and flowers in the mountain meadows, dry, and make their teas for every taste. The traditions of this craft are passed down from generation to generation. It is very popular to add tilia blossom, mint, lemon balm, thyme, fireweed tea, berries, chamomile, and rose hips.

Honey

Especially valued is the honey that is collected in apiaries high in the mountains. In the Ukrainian Carpathians, beekeepers preserve traditions and keep a local species of bees - carpatka in Ukrainian language, albina carpatina in Romanian language (*Apis mellifera carpatica*). One single apiary can harvest several crops of honey in one year. Both adults and children like to eat honey. It is consumed in its natural form, as well as added to desserts and pastries. A traditional dish kutia - is prepared with honey and served for Christmas in Ukraine.



Ecotourism

The best of all worlds: how to have your cake and eat it?

A mechanism that secures the conservation of nature and sustainable development of local communities. Ecotourism is a form of tourism in which the main motivation of the tourist is the observation and appreciation of nature and local traditions related to nature and which must meet the following conditions:

-  nature conservation and protection;
-  use of local human resources;
-  educational character, respect for nature - awareness of tourists and local communities;
-  minimal negative impact on the natural and socio-cultural environment.

(Definition adopted by the Ecotourism Association of Romania according to the established definition given by the World Tourism Organization)

Did you know?

ECO- MARAMURES, Romania is an ecotourism destination hidden in the Gutai Mountains between Mara and Cosau rivers. It is a representative area of the historical part of Maramureș, where nature and culture are the main assets that contribute to the area's sustainable development via ecotourism.

<https://www.ecomaramures.com>

How should we behave in nature when we visit it as tourists?

While enjoying your time in a natural protected area, make sure to respect these principles:

-  only marked touristic routes are to be used;
-  car parking is allowed only in places specially designed for this purpose;
-  camping is prohibited, except for specially designed places;
-  do not damage road markings and signs,
-  disposal of own waste is required;
-  decent behavior and respect for other tourists is recommended;
-  it is requested to keep quiet (and keep dogs on a leash) not to disturb the wild animals
-  do not wash cars in rivers, streams or on lake shores and do not spill harmful substances or detergents;
-  noise, pollution of any kind is forbidden: shouting, screaming, loud music etc
-  wild animals (mammals, birds, reptiles, insects, etc.) are not to be fed, plants are not to be collected;
-  the lighting of the fire is allowed only in the places specially arranged for this purpose;
-  writing on trees, rocks or cave walls is prohibited;
-  the indications of rangers or foresters must be followed;
-  motor sports in protected areas are prohibited.

Practical tips for nature protection:

When you talk about nature, talk about what it means to you!

Promote local values and traditions, be proud of your area!

Promote Ecotourism - is a form of tourism in which the main motivation of the tourist is the observation and appreciation of nature and local traditions related to nature!

Organize events that will attract people to visit the natural beauties of your area!

As many people as possible are needed to sustain the wilderness. Bring your friends on the side of nature as well!

Understand that your efforts today will not be seen immediately tomorrow and accept that you are working for a long-term change!

Build education programs and involve young people, they are the next generation!

Develop a touristic package of a few days in which you include natural and cultural sights in your area!

Walking in the tracks of a lynx

I am hurt though, whenever an off road vehicle crosses my alpine meadows or my steep valleys, leaving behind deep scars in the ground and black dust clouds. The balance sustained over millennia can be disturbed in just a moment and this is done solely for the fun and adrenaline of people that do not understand that this is not the way to approach the mountains. Certainly not by motorcyclists who delight in hearing roaring engines, instead of listening to the sounds of nature or to the sound of cowbells.

The air often smells of gas emissions, and the environment is modified with every motorcycle going up the trails at high speed. It would be better if people came up here for the beauty of nature, its fauna and flora, its untouched landscapes, its century-old forests and crystal clear waters, still populated with many fish species. This would be possible as long as all the small hydropower plants would remain projects on paper and never built. The benefits of hydropower plants are infinitely smaller than the damage on nature.

Talking about wounds, one that literally bleeds is the one caused by poaching and uncontrolled hunting, which generate irreversible damage to the environment.

Sources. Bibliography. Webography:

www.visitcheilenerei.ro

<https://bit.ly/3lypFj8>



9. Can WE make a difference? Youth leadership for nature

Youth leadership.

In focus: *Stories of young people active for nature*

TANS Active clubs for nature protection, WWF-Romania initiative (nature, corridors).

The project "Active young people for the protection of wild Carpathians" facilitated access to relevant information and the creation of learning contexts (indoor, in high schools and outdoor, in nature) through which young people can observe the benefits that wildlife can offer and develop as leaders and active citizens. The partnership is encouraged (five high schools in the area of five national and natural parks: Semenic -Cheile Carasului National Park, Cheile Nerei-Beusnita National Park, Portile de Fier Natural Park, Domogled-Valea Cernei National Park and Retezat National Park) and long-term thinking (how can young people benefit from the value of wild areas in future activities after graduation).

Ecotourism example: In the heart of the eco-destination Eco Maramures, two GreenIMPACT youth clubs operate, in Breb and Budesti villages. But outside the Eco Maramures promotion is active as well, due to four other GreenIMPACT clubs opened in nearby localities: one in Sighetu Marmatiei, one in Baia Sprie and two in Baia Mare. Thus, while the clubs in Breb and Budesti organize events - the main hook for ecotourism - the clubs in the city carry the news further, educating and informing future generations of ecotourists.

The club from Baia Sprie focused on the promotion of the Blue Lake protected area, campaigning for its inclusion in the perimeter of the eco destination, while the club from Sighetul Marmatiei was in charge of promoting Craiasca Forest, near Ocna sugatag commune.

Junior Forest Rangers of Rakhiv (Ukraine)

For the third year in a row, the Junior Forest Rangers Club has been operating on the basis of Rakhiv School #1. The project was implemented by the Center for Public Initiatives in 2016 with the financial support of the US Forest Service.

The purpose of the club is to make schoolchildren of Rakhiv:

-  interested in environmental and conservation activities,
-  promotion of nature-friendly lifestyle,
-  efficient nature management,
-  active cooperation with local forestry enterprises, ecological NGOs and protected areas,
-  personal development of its members: participation in the Club taught them to be sociable and be able to work in groups and teams. They meet and learn from people of different professions.

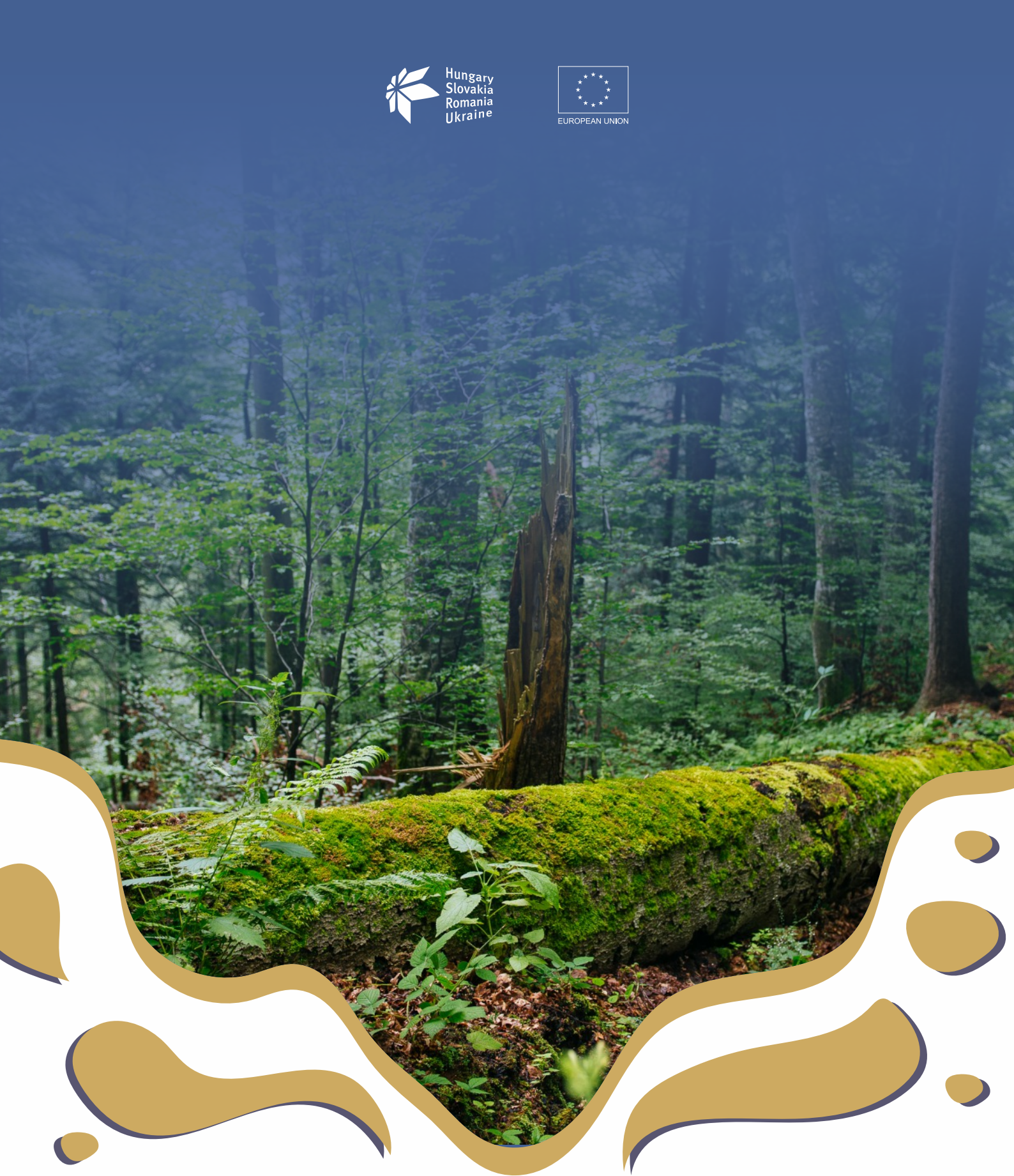


Participants of the first year of activity, mostly teenagers (circa 12 years old), during their stay in the club gained experience in communication, learned how to present themselves, gained leadership skills, and became more organized. They learned how to prepare projects on different topics, conduct research work for the Minor Academy of Sciences of Ukraine, participate in conferences and seminars etc.

The junior forest rangers are active on daily basis and share their experience with other schools and even kindergartens in the region. They have established strong cooperation with the Carpathian Biosphere Reserve, ecological NGOs, the region's state forestry enterprises, the Rakhiv Town Council etc. Head of the Club – Ms. Oksana TUROK, teacher of biology at school #1 of Rakhiv.

Sources. Bibliography. Webography:
<https://bit.ly/3ExapvC> / <https://bit.ly/39hbk4L> / <https://bit.ly/3ko9VQm>





PART 2

EXPERIENCE

10. Getting active together: activities for young active explorers

The aim of this section is to support teachers to empower students in taking action for the protection and conservation of large carnivores. It consists of 18 workshops designed to inform, learn and motivate students to take action for the protection and conservation of large carnivores.

The activities proposed in this section are developed on topics like: introduction into nature, conservation and protection of nature, ecosystem services, conservation of important species of large carnivores in the Carpathian region (wolves, brown bears, Eurasian lynx), mechanisms for sustainable development and landscape conservation of the area, solutions for connectivity, ecological corridors, green business and ecotourism, success stories, how to plan and implement an action project for conservation and protection of wildlife and taking action for wildlife.

The workshops are designed to be done consecutively, one after another, each workshop being interconnected with the previous and the following ones. The workshops can be done on a duration of five consecutive days (four workshops/day) or, widespread in time and location, depending on the teachers and pupil's availability and motivation.

The workshops are directly linked with the content presented in the first part of the manual.

Each workshop

-  Aim of the workshop: describes the general objective
-  Learning objectives: describe the knowledge (K), skills (S) and values (V) that the students will develop by the end of the workshop
-  Key concepts: the main concepts that are introduced during the workshop
-  Activities plan: a table with the list of the activities, duration, methods used and the materials needed for each activity
-  Description of activities: includes aim, set-up and facilitation and debriefing questions
-  Bibliography
-  Annexes and handouts

Workshops structure

Day 1:

- 🐾 Workshop 1: Let's connect - includes getting to know each other's activities, introduction to the topic of the project, motivation story, pre-evaluation and a group game.
- 🐾 Workshop 2: Our region - Information and methods to discover our region.
- 🐾 Workshop 3: What is special about our nature? - Increased awareness about habitats, fauna and flora, as well as the most important natural protected areas (a nature park and a biosphere reserve).
- 🐾 Workshop 4: Ecosystem services - Explains through interactive activities what ecosystem services are.

Day 2:

- 🐾 Workshop 5: Large carnivores: introduction, role and benefits - Includes activities that explain the characteristics of large carnivores and their importance for life.
- 🐾 Workshop 6: The bear: characteristics, threats and solutions - Includes group work activity about the bear (characteristics, threats and solutions).
- 🐾 Workshop 7: The wolf: characteristics, threats and solutions - Includes group work activity about the wolf (characteristics, threats and solutions).
- 🐾 Workshop 8: The lynx: characteristics, threats and solutions - Includes group work activity about the lynx (characteristics, threats and solutions).

Day 3:

- 🐾 Workshop 9: Natural protected areas - The aim of the workshop is to explain, by means of an interactive game, the concept of "natural protected area" and how to organize a natural protected area.
- 🐾 Workshop 10: Connectivity - Explains in a fun way the concept of connectivity.
- 🐾 Workshop 11: Nature: protection, conservation and sustainable development - Includes activities that clarify the concept of nature, protection, conservation of nature and sustainable development.

Day 4:

- 🐾 Workshop 12: Solutions ecological corridors, green businesses and ecotourism - Includes a game about clarifying what corridors are and a debate on the benefits of green businesses and ecotourism.
- 🐾 Workshop 13: Youth success stories - Includes a game about being brave, facilitated discussion about motivation and self-determination and inspiring success stories (group work).
- 🐾 Workshop 14: Our solutions - brainstorming - Includes a brainstorming activity through which the students make a list of all potential ideas that they can use in an action project for the protection and conservation of large carnivores.

Day 5:

- 🐾 Workshop 15: Project steps - Includes a team game about large carnivores and facilitated discussion about steps of a project.
- 🐾 Workshop 16: Project planning - Includes an activity about choosing a project idea and group work on project planning.
- 🐾 Workshop 17: Taking roles - Includes a story about how the roles are taken and group work about splitting roles and responsibilities in the project done for the protection and conservation of wildlife.
- 🐾 Workshop 18: Evaluation - Includes reflection activities related to all the workshops that have been done during the duration of the project.

WORKSHOPS OVERVIEW



Workshop name / Learning objectives / Methods used / Time

Day 1

1. Let's connect

- (S) Connect to one another and the topic of environment in a fun and motivational way;
 - (K) List what they appreciate about the environment / nature;
 - (V) Be open toward being involved in this project / workshops on the topic of large carnivores;
 - (V) Be curious about what is going to follow after this workshop;
 - (S) Self-assess their knowledge and motivation on the topic of nature and large carnivores.
- Presentation, get to know each other games, story, individual work, group game / 55 min

2. Our region

- (K) Describe more information about the region they are living in;
 - (V) Feel a sense of connection with the Carpathian region they are living in.
- Large group game, group work
65 min

3. What is special about our nature?

- (K) Name plants and animals that are special to Maramures region;
 - (K) Recognize the specific habitats of the region - forests, meadows, wetlands - and what makes them special;
 - (K) Describe the traits of two main natural protected areas: Maramures Mountains Nature Park, Romania, The Carpathian Biosphere Reserve (CBR), Ukraine;
 - (V) Appreciate the richness of 3 habitats: forests, meadows, wetlands;
 - (V) Take pride in the natural values of the region - species, habitats, protected areas.
- Energizing game, movement game, group discussion, creative group work / 60 min

4. Ecosystem services

- (K) Explain what ecosystem services are;
 - (K) Name examples of services from the four categories of services: Support services, Regulating services, Provisioning services, Cultural services;
 - (V) Appreciate nature as a “provider” of “gifts” or services that maintain all life on Earth;
 - (S) Identify ecosystem services that the forest and particular species provide.
- Individual work, Brainstorming, Card game, Group discussion, Video / 60 min

Day 2

5. Large carnivores: introduction, role and benefits

(K) Know the role of large carnivores in the trophic web.

(V) Appreciate the importance of carnivores in nature.

(V) Be motivated to protect large carnivores.

(S) Name benefits that we receive from large carnivores.

Warm up game, group discussion, group game, group work

55 min

6. The bear: characteristics and threats

(K) Identify the bear characteristics, needs and threats.

(V) Be empathic with the bear.

(V) Be motivated to protect the bear.

(S) Identify ways to help in the protection of the bear.

Creative group work, video, brainstorming

55 min

7. The wolf: characteristics and threats

(K) Identify the wolf characteristics and needs.

(V) Be empathic with the wolf.

(V) Be motivated to protect the wolf.

(S) Identify ways to help in the protection of the wolf

Mime, group work, storytelling, group discussion, brainstorming

60 min

8. The lynx: characteristics, value and threats

(K) Identify the lynx traits, values and threats.

(V) Be curious about the lynx characteristics.

(V) Be open toward the protection of the lynx.

(S) Identify ways to help in the protection of the lynx.

Presentation, group work

55 min

Day 3

9. Natural protected areas

(K) Explain key concepts: natural protected area, functional zoning, strictly protected zones (core zones), buffer zones, sustainable development zones

(S) Make decisions, define and defend with arguments the way that zones are established in a natural protected area

(A) Appreciate the value and importance of a natural protected area.

Presentation, group work, creative work

65 min

10. Connectivity

(K) Understand the bear migration

(K) Name barriers faced by animals during their migration

(S) Identify ideas to maintain ecological connectivity

(V) Feel empathy for bears and other animals who need to move to survive

Facilitated discussion, running game, brainstorming

90 min

11. Nature: protection, conservation and sustainable development

(K) define Sustainable Development

(K) name SDGs

(K) define Nature Protection, Nature Conservation, Natura 2000, Emerald network, IUCN criteria

(S) identify SDGs

(S) use information about protected areas to better understand the natural values of their country

(S) navigate IUCN red list website whenever they need information about a species

(S) identify and formulate protection measures for large carnivores

(A) be aware and optimistic about contributing to Sustainable Development

Group discussions, team research, brainstorming

Day 4

12. Solutions ecological corridors, green businesses and ecotourism

(K) Explain what ecological corridors are

(K) Describe the benefits, threats and barriers of wildlife corridors

(S) Identify what green businesses and ecotourism are as potential solutions in their area

Game, debate, facilitated discussion
70 min.

13. Youth success stories

(K) Describe what courage, motivation and self-determination are

(V) Be inspired by other groups who got involved in protection and conservation of nature

(V) Become more motivated to take action for protection and conservation of large carnivores

Large group game, facilitated discussion
65 min

14. Our solutions- brainstorming

(K) List the solution that were explored in the previous workshop

(A) Use creativity to find solutions

(A) Identify solutions and ideas that can be applied by students in the local community for the protection and conservation of wildlife

(V) Become more motivated to take action for protection and conservation of large carnivores

Group game, brainstorming
55 min

Day 5

15. Project steps

(S) Plan and organize a symbolic project for the protection of large carnivores

(K) List the stages or any initiative project they could have to the protection or conservation of large carnivores

(V) Getting motivated to initiate a local project for the protection or conservation of large carnivores

Team game, facilitated discussion
60 min

16. Project planning

(K) Re-list the elements of a project

(S) Choose the idea/ solution they would like to implement

(S) Brainstorm the list of actions that needs to be done

Group voting

Group work

70 min

17. Taking roles

(S) Analyze which roles and responsibilities they can take in the initiative/project

(V) Take real responsibilities in the project/ initiative

(V) Get motivated in making a difference in the protection and conservation of large carnivores

Story, group work
50 min

18. Evaluation

(A) Reflect on the feelings they experienced during the project

(V) Be curious about how this learning experience was for them

(S) Self-assess their learning and motivation they gained during the project on the topic of nature and large carnivores.

Game, group work, individual work
50 min

WORKSHOP NO. 1. LET'S CONNECT

Workshop goal: Participants should walk away from this workshop being able to connect to each other and the topic of the project.

Learning Objectives: After this activity, students will be able to...

- (S) Connect to one another and the topic of environment in a fun and motivational way;
- (K) List what they appreciate about the environment / nature;
- (V) Be open toward being involved in this project / workshops on the topic of large carnivores;
- (V) Be curious about what is going to follow after this workshop;
- (S) Self-assess their knowledge and motivation on the topic of nature and large carnivores.

Key Concepts: Connection, environment, nature, large carnivores (e.g. bear, wolf, lynx)

1. Welcome and introduction / Presentation/ 5 min. / Flipchart paper, markers
2. The environment, my friend / Get to know each other game / 15 min. / Colored Balls (2)
3. The kid and the starfish / Story / 10 min.
4. The cats, mice and grass / Group game/ 20 min.

Total time estimated: 55 minutes



Description of Activities

1. Welcome and introduction (5 minutes)

This time helps participants feel comfortable and settled down for the workshop, and helps them know what to expect from the time together.

Set up and facilitation: Arrange chairs in a circle. Invite participants to take a seat in a circle on chairs. Once all of the participants have arrived and sit on a chair, take a few minutes to introduce the workshop: "Let's Connect, Our region, Nature and Ecosystem Services". Explain that the goal for today is to explore this new project in which we are all involved; to explore how our environment is inter-connected and to define our role in it. Make this introduction for every workshop.

2. The Environment, My Friend (15 minutes)

This is a fun little game that allows each of the participants to connect to each other and to voice what they cherish about the environment.

Set up and facilitation: Invite the participants to sit in a circle and toss a ball gently to each other. The person who catches the ball must say his name and one element of the environment which he/she cherishes a lot. As a facilitator, you can start and give the first example. Continue passing the ball until each person has had a turn.

Summarize the activity and after that introduce the next workshops with the following message: we will play a lot and we will explore together interesting facts about nature and fascinating things about large carnivores like the wolf, the lynx and the bear. We can also explore ways in which these carnivores can be protected and their role in our lives.

3. The Kid and the Starfish (10 minutes)

This well-known story is a nice way to encourage the participants that every step towards environmental protection, even if small, does make a difference.

Set up and facilitation: Read the short story below aloud, and follow-up with a debrief session.

A kid was walking on the beach at low tide when he saw many starfish lying exposed on the beach, in danger of death. A man was watching him, and grew confused as the kid took starfish, one by one, and threw them back into the sea. 'I see you are very kind,' said the man, 'but there are probably hundreds of starfish on the beach. What you are doing certainly cannot make any difference.' The kid listened politely, and then bent down to pick up another starfish and throw it gently back into the sea. Turning to the man, he smiled and said, 'It made a difference to that one.'

Debriefing questions (examples):

What was the story about?

What do you think about what the kid did?

What values does the kid demonstrate?

Did his actions make a difference?

What would happen if more people on the beach threw a starfish back into the sea?

How do you think that the kid felt after throwing the starfish back in the sea?

Can you give an example of something you did until now to protect the environment in any way possible?

Do you think there are other living creatures that would appreciate the same support as the starfish received from the boy?

Make the connection with the topic of large carnivores that we will explore in the next workshops! Mention that we will understand more about the large carnivores and also find ways in which we can act like the little kid in the story!

Would you like to become the little boy/ girl in the story? If yes, we will explore how we can do this together.

4. The cats, mice and grass (20 minutes)

Note: This game explores the idea of balance in nature but is mainly used as an energizer for now and as a link with the next workshops. It involves running and tagging other members, so be sure there is enough space for the participants to run around safely.

Set up and facilitation: This game shows the main condition for balance in nature: only when all populations and species of animals and plants have enough resources, without threatening the welfare of other species.

Participants are divided into three groups: grass, mice and feral cats. During the game, each group will have the following challenges: members of the “grass” group can not make any sounds, “mice” will squeak, and “cats” will meow. The members of the “mice” group must catch the participants of the “grass” group (because mice eat grass), the “cats” must catch the “mice” (because cats eat mice), and the “grass” will catch the “cats” (because when cats die their bodies decompose, and they are transformed into minerals, and in the end they become food for the grass). When a participant is touched on the wrist by a participant that is chasing her / him, she / he becomes the “species” of the participant who caught her.

After several minutes the game is stopped by the facilitator, who counts how many participants are in each group. The game begins again with the participants in their new group. After several minutes, the game stops again and the participants in each group are counted. You may see that the species that were “dying” are back in terms of number (e.g. fewer mice, more grass; mice will have more “food” in the second round of the game and their number will increase again). Thus, we can see that every species is important and that they influence each other and usually stay somewhat in balance. After a few rounds, introduce a new player with the role of “hunter” who has the possibility to catch participants from any of the species. When participants are tagged by the hunter, they are simply “out” and should sit down on the edge of the playing area. After a few minutes it will be obvious that this new player produces an “artificial” imbalance in the number of all species.

Debriefing questions:

What happened during the game? What roles were played?

What are the elements of nature identified in the game?

How did the groups influence each other? Did they stay balanced or not?

What caused an imbalance? Why?

What can we learn from this game?

Obviously, most of us don't run around hunting grass, cats, and mice, but we do influence the natural world around us. In the next activities we will explore more about nature and the balance and imbalance in the nature and our role as humans in it

Bibliography:

ORGAN Kelly, 2017 *Active Citizenship Curriculum/ Environment Module*, New Horizon Foundation

Annex 1.1:

Pre-evaluation questionnaire

1. What do you feel about nature? Please describe.

2. How much do you consider you know about the mountains near you? Give a note from 1 to 5 where 1 means "I know nothing" and 5 means "I am an expert"

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

3. What are 3 most important gifts that nature offers to people in your region? Write them down.

1.
2.
3.

4. Do you consider a bear does more harm or more good to people? Give a note from 1 to 5 where 1 means "a bear does only harm" and 5 means "a bear does only good". Please give examples.

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

5. How about a wolf? Same as above 1 means "only harm" and 5 means "only good". Please give examples.

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

6. Have you ever heard of "ecological corridors"? YES ☐ NO ☐

7. What could "ecological corridors" mean? Please explain.

8. What are the 3 main threats to nature in your region?

1.
2.
3.

9. To what extent do you think a young person of your age can do something about these threats - to actually change the situation? Give a note from 1 to 5 where 1 means "I have no power at all" and 5 means "I can really do something meaningful".

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

10. How motivated are you to do something for the environment? Give a note from 1 to 5 where 1 means "I don't care" and 5 means "when do we start?".

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

WORKSHOP NO. 2. OUR REGION

Workshop goal: The aim of the workshop is to raise awareness among participants about the region they are living in and to create a sense of emotional connection with the wider Carpathian Region.

Learning Objectives: After this activity, students will be able to...

(K) Describe more information about the region they are living in.

(V) Feel a sense of connection with the Carpathian region they are living in.

Key Concepts: Carpathians, mountains, large carnivores.

1. Web of Carpathian Mountains/ Large group game/ 20 minutes/ String

2. Know more about our Mountains/ Group work/ 45 minutes/ Paper, pens, flipchart, etc.

Total time estimated: 65 minutes

1. Web of Carpathian Mountains (20 minutes)

The aim of this game is to energize the group but also to create an emotional connection with the region they are living in - Carpathian Mountains (either Romania or Ukraine).

Set up and facilitation: Invite the participants to sit in a circle with the facilitator in the middle, holding a ball of string. Ask the participants what personal connection they had when they were younger or have now with the Carpathian Mountains (memories, feelings, emotional attachment etc.) and / or to share with the group their first thoughts about nature in the context of the Carpathian Mountains. Give the end of the string to the person who answers first.

While the rest of the participants are thinking about what information they want to share about their emotional connection in relation to the Carpathian Mountains, ask them when they share information to look for connections between these elements. Tell them to pass the string ball among themselves so that it shows the link between the elements they feel or know about the Carpathian Mountains. For example, perhaps the first participant says, "Carpathians cross 8 European Countries". He then passes the ball of string to the second participant who can say maybe the name of some of the 8 countries or some other information connected to the Carpathian Mountains region or their emotional connection with it like: I have been hiking on a mountain peak in Ukraine 5 years ago. This will continue until every member of the group has shared either known information or some emotional experience or memory they have in connection with living in the area of the Carpathian Mountains.

As the web is built, maintain a constant discussion. At the end of the activity try to draw some general conclusion or some common facts about our connection with the Carpathian Mountains and our connection with them. Explain that the following workshops are going to be about better understanding our connection with the Carpathian Mountains and how we can have a positive influence in this.

2. Knowing more about our mountains (45 minutes)

The aim of this activity is to get deeper knowledge on the Carpathian Mountains with a focus on the region the workshop is taking place in.

Set up and facilitation: split participants in four groups. Give two groups a cut-off part of the text from the Manual about the Carpathian Region (general info about the territory, richness, biodiversity, challenges, etc.). For two other groups give more specific information about their region (Maramures or the Zakarpatska Oblast region in Ukraine). Ask them to read that part and select the most interesting and relevant information they consider about it. Ask them to present the information in an interactive way to help the other participants to remember as much information. It can be a little sketch, or a drawing, pantomime, etc. Allocate 15 minutes for preparation, 5 minutes for presentation and 5 minutes to draw some conclusions and make connections between the elements presented. Mention that in the next workshop we will explore more about nature, sustainable development, eco-systemic services and more on the large carnivores.

After the activity gets to the following questions:

Debriefing questions:

How much of this information were you familiar with?

What are some new things that you found out about and impressed you?

How deep is your connection with the region you live in? (on a scale from 1 to 5). You can draw a scale on the floor and participants arrange themselves on it according to their answers.

Do you feel that you have a connection with nature close to you? On a scale from 1 to 5 how deep is this connection?

Handouts/annexes:

Relevant pages from Part A



WORKSHOP NO. 3. WHAT IS SPECIAL ABOUT OUR NATURE?

Workshop goal: Participants should walk away from this workshop with an increased awareness of habitats, fauna and flora, as well as the most important natural protected areas (a nature park and a biosphere reserve)

Learning Objectives: After this activity, students will be able to...

- (K) Name plants and animals that are special to Maramures region.
- (K) Recognize the specific habitats of the region - forests, meadows, wetlands - and what makes them special.
- (K) Describe the traits of two main natural protected areas: Maramures Mountains Nature Park, Romania, The Carpathian Biosphere Reserve (CBR), Ukraine.
- (V) Appreciate the richness of various habitats: forests, meadows, wetlands.
- (V) Take pride in the natural values of the region.

Key Concepts: Habitats, forests, meadows, wetlands, dead wood, High Nature Value Forests, High Nature Value Farmlands, Maramures Mountains Nature Park, The Carpathian Biosphere Reserve

1. Nature dwellers of Maramures region/ Energizing game/ 10 minutes/ Notes with the species living in Maramures (see Annex 3.1)
2. Bring your habitat to life/ Movement game/ Group discussion (photo opportunity)/ 25 minutes/ Photocopy of the description of Habitats from Chapter 2 in the Knowledge section, scissors
3. Choose my natural protected area! / Creative group work/ 25 minutes/ Photocopy of the description of the 2 natural protected areas from Chapter 2 in the Knowledge section, flipchart paper, markers, (if possible) handicraft accessories (ex. colored paper, scissors, glue, leaves etc.)

Total time estimated: 60 minutes



1. Nature dwellers of Maramures region (10 minutes)

The aim of this activity is to introduce plants and animals that are special to the Maramures region and, at the same time, to energize the group. This activity is inspired by the classical energizer “the fruit salad”.

Set up and facilitation: The students are seated with enough place to move between the chairs. Ideally, they sit in a circle. From a hat they draw notes with the most important species in the Maramures region (see Annex 3.1). They read their note aloud and, together with the group, they establish to which category they belong e.g. woodpecker belongs to the Birds category, a European pond turtle belongs to Amphibians and reptiles, blueberry and oak are Plants, while bear and lynx are Mammals etc.

This is a good time to talk more about the species presented, especially when new terms are introduced. Please see Chapter 2 in the Knowledge section.

Then the movement starts. When the facilitator says “Birds!”, all Birds have to change places between themselves. When (s)he says “Plants!”, all Plants change places. Similarly with the other categories of species. The funniest part is when the facilitator shouts “Nature dwellers of the Maramures region!” and everybody has to change places.

Repeat the movement several times, with different mixes of instructions.

2. Bring your habitat to life (25 minutes)

The aim of this activity is to visualize the three main habitats that can be found in Maramures region and to understand and appreciate the complex elements that they are made up of, by embodying them with the help of “the living statues”.

Set up and facilitation: In a wide space where teams can move freely, split the group in 3 teams. Each team receives a handout with one habitat - forest, wetland or meadow - photocopied from Chapter 2 and cut out. Their mission is to create a living statue representing that habitat (geographical elements, species) using their bodies. Every team member must take part in the statue. For extra fun, the statue can also move (for 30 seconds). The other teams have to guess which habitat the other team represents.

10 minutes will be granted for preparing the statues, 5 minutes for the presentations (and photos) and 10 minutes for discussions:

-  how was it?
-  what have you found out about your team's habitat?
-  how do you see nature in Maramures after this exercise?

3. Choose my natural protected area! (25 minutes)

The aim of this activity is to explore and represent in a creative manner the traits of two main natural protected areas: Maramures Mountains Nature Park, Romania, The Carpathian Biosphere Reserve (CBR), Ukraine.

Set up and facilitation: Divide the group into 2 (or 4) smaller teams that will create a poster to be used for advertising one protected area for future visitors. Give them all necessary materials and the description of the two protected areas photocopied from Chapter 2 and cut out. Teams may also research about their protected area on the internet.

15 minutes will be granted for the creation of the posters, 10 minutes for their presentation and discussions:

-  what have you learned?
-  what are your favorite places that you would like to visit? What would you most like to see or experience?
-  how do you perceive this natural protected area?
-  would you like to visit it?
-  how do you perceive your region now?
-  do you think it's worth visiting?
-  what could be done to make our region and its natural values better known?

Annex 3.1.

Plants	beech, oak, silver fir, blueberry, fen orchid, Roundleaf Sundew - a carnivorous plant
Invertebrates	grasshopper, black coloured ground beetle, Alpine longhorn beetle
Amphibians and reptiles	yellow-bellied toad, Carpathian newt, European pond turtle
Birds	white-backed woodpecker, wood grouse, golden eagle
Mammals (large carnivores)	bear, lynx, wolf
Mammals (other)	Tatra pine vole, European pine marten, otter, Red deer, Roe deer



Foto © Thomas Hulik

WORKSHOP NO. 4. ECOSYSTEM SERVICES

Workshop goal: Participants should walk away from this workshop being able to explain what ecosystem services are and appreciate what nature offers us.

Learning Objectives: After this activity, students will be able to...

- (K) Explain what ecosystem services are
- (K) Name examples of services from the four categories of services: Support services, Regulating services, Provisioning services, Cultural services.
- (V) Appreciate nature as a “provider” of “gifts” or services that maintain all life on Earth
- (S) Identify ecosystem services that the forest and particular species provide.

Key Concepts: Ecosystem services. Support services, Regulating services, Provisioning services, Cultural services.



1. The gifts of nature/ Individual work , Brainstorming, Card game, Group discussion / 35 minutes / Flipchart, marker, Post Its, pens
Ecosystem service cards (Annexed Cards) printed in color (very important aspect!), ideally on a thick paper, and cut, scissors (optional) A4 paper or colored paper
2. A gift never comes alone/ Video, Group work/ 15 minutes/ Beamer, speakers, computer
3. Gifts of the forest/ Brainstorming/ 10 minutes/ Flipchart, markers

1. The gifts of nature (35 minutes)

The aim of this activity is to introduce the notions of ecosystem services and their categories, by helping students discover and group them.

Set up and facilitation:

Total time estimated: 60 minutes

Step 1:

On a flipchart, write the question: What do we have from nature in this classroom? Students will write their answers on post-it notes and stick them on the flipchart. Invite them to write one word or one answer per post-it, and use more post-its if necessary. After all answers have been placed on the flipchart, read them aloud and start grouping them in the 4 categories of ecosystem services, as described in Chapter 3 of the Knowledge section.

Usually students tend to give examples of “provisioning services” such as the plant in the window, water in my bottle, an insect in the corner etc. In this group discussion, through questions, try to make them aware that there are more elements from nature in the classroom: from the air we breathe to the textile fiber in our clothes.

Conclude this discussion by pointing out that these are the Gifts of nature that our life depends on. You may read together the first part of Chapter 3 of the Knowledge section (but do NOT yet introduce the categories of services).

Step 2:

Each student may draw a card (so that all cards are distributed in the classroom). Tell students that these cards represent the various gifts of nature, which belong to 4 categories. Invite students to stand up, talk to each other and group themselves into these 4 categories. Students may find a logical argument for getting together or they may notice the color code on the cards and group according to color - both are fine. Check and validate their grouping.

Step 3:

Once the groups are formed, ask them to think of which could be the name of their category. The names tend to be subjective, personal, creative - eg. the gift of healing, the treasure box etc.

Each team will present their name and give arguments for it, by reading the examples on the cards.

At the end of the discussion, teams will have written the name of the gift on the A4 paper and will place it in front of the team or on the flipchart. The facilitator appreciates their work.

Now is the time for the facilitator to reveal and to introduce the “official” terms: Ecosystem services, Support services, Regulating services, Provisioning services, Cultural services, with the support of the information in Chapter 3 of the Knowledge section.

2. A gift never comes alone (15 minutes)

The aim of this activity is to apply and exercise the knowledge on ecosystem services on concrete species.

Set up and facilitation: Divide the participants into 4 groups, representing the 4 categories of services (you might keep the groups from the previous activity). They will watch a 6 minute video and each team will write down the ecosystem services in their respective category.

The video is "I'm Batman", by Amy Wray, on the website [ed.ted.com](https://ed.ted.com/lessons/i-m-batman-amy-wray):
<https://ed.ted.com/lessons/i-m-batman-amy-wray>



After watching the video, the teams will share their results. Discuss about their general impressions:
How did you feel about a bat before this video?
What is your current impression? What changed?
Could we use this to "improve" the image of other species as well?
What species in our region might have a less positive reputation? ex. the wolf, a carnivorous plant etc
What services do these species provide?

In order to exercise and apply the recent knowledge, and according to the time available, invite students to remember their species from the previous workshop, and name what ecosystem services that species provides.

3. Gifts of the forest (10 minutes)

The aim of this activity is to highlight the ecosystem services that a forest provides, especially in a forested region like Maramures.

Set up and facilitation: As a continuation of the previous discussion, the facilitator invites students to name ecosystem services that a forest provides and write them down on a flipchart.

They read together the information in Chapter 3: The forest: a silent green factory . This will help complete the brainstorming and the list of results .

At the end, **discuss** the wealth of gifts that nature offers us, or services that it provides.

What do we give in return?

Did anything change in the way you see nature, after this workshop?

What would you do differently from now on?

Resources:

The Ecosystem service cards have been developed by WWF Sweden. The resource material is: Nature's services. A guide for primary school on ecosystem services. 2013. WWF-Sweden



Foto © Thomas Hulik

WORKSHOP NO. 5. LARGE CARNIVORES: INTRODUCTION, ROLE AND BENEFITS

Workshop goal: Participants should walk away from this workshop being able to name the three species of large carnivores in our region, to recognize their role in the ecosystem and to list the benefits we get from large carnivores.

Learning Objectives: After this activity, students will be able to...

- (K) Know the role of large carnivores in the trophic web.
- (V) Appreciate the importance of carnivores in nature.
- (V) Be motivated to protect large carnivores.
- (S) Name benefits that we receive from large carnivores.

Key Concepts: Large carnivores. Food web.

1. Meet and greet Large Carnivores/ Warm Up game, Group discussion/ 15 minutes/ (optional) photos of large carnivores to display in the room

2. Web of life* *photo opportunity: very visual pictures can be taken from above or below, during this activity/ Group game/ 25 minutes/ Post-its (sticky notes) with species forming the web of life as enumerated in Annex 5.1, ball of string

3. What gifts do carnivores offer?/ Group discussion/ 15 minutes/ Introductory part of Chapter 4 from the Knowledge section, (optional) Beamer, speakers, computer, (optional) Flipchart, marker

Total time estimated: 55 minutes



(C) Lukas Holasek – for OBWIC

1. Meet and greet Large Carnivores (15 minutes)

The aim of this activity is to introduce the theme of the day - large carnivores, knowing them better and finding ways to protect them.

Set up and facilitation: In a wide space where people can move, all students stand together in a circle. They have to start walking in any direction inside this common space (as if walking through a city square or a park or...a forest) and, each time they meet another person on their way they have to greet. But they only use the Hello that the facilitator indicates. The facilitator changes the way people greet each other after a few repetitions, therefore there will be several rounds of greetings with different ways to say Hello! and the game will become more and more fun.

The succession of greetings can look like this (the facilitator will demonstrate, when a completely new form of greeting is introduced) - when you meet another person

-  ... look them in their eye (make eye contact)
-  ... say Good morning
-  ... shake hands
-  ... give them the Bear paw (a very “sticky” high five)
-  ... give them the Lynx paw (they stand on one leg, lift one leg and touch the soles of their feet)
-  ... give them the Wolf howl (when they meet, they howl like a wolf)

The facilitator can ask

-  What does it feel like to greet like wildlife (like a wolf or other wildlife)?
-  Are mornings more fun than in school?
-  What do you think could be the theme of this day?

The facilitator introduces the theme of the day - “Large carnivores” - and they discuss:

-  Which species of large carnivores are in our region?
-  Why are they called large carnivores?
-  Are they “good” or “bad”? why?
-  Why are they called “umbrella” species? (see information in Chapter 1 of the Knowledge section)
-  Are they “strong” or “weak”?
-  Do you think we can do something to protect them?

2. Web of life (25 minutes)

The aim of this activity is to bring awareness of the interconnectedness of nature and the key role each species plays in the ecosystem, focusing on large carnivores.

Resource: This activity is adapted from the classical “Webbing” a game described by Joseph Cornell in the book “Sharing Nature with Children”, 1998, Dawn Publications, Canada

Set up and facilitation: Students stay in a circle and pick post-it notes with species from a hat. They open the sticky note, read what is written on it and stick it to their chest. Ask every student to say out loud what they are and make sure everyone in the group knows that species. Clarify what the letters in brackets mean (P, C1, C2, ...D).

The game can now start. A Producer (P) holds the ball of string. And throws it to a Primary Consumer (C1), who catches the ball, holds the thread with one hand and throws the ball to the next player, a Secondary Consumer (C2). This one, in turn, throws it to a C3 who...then may die of natural causes. This allows Decomposers to do their part and turn the animal into soil, allowing the lifecycle to continue and a new Producer (P) to grow.

The game continues until every player is connected (at least once, or even several times) in the web of life. Ask the players how this web looks like. It's beautiful! Is it strong?

Ask the players to gently lean back. Wow! The web holds all the players. It is a very strong system!

After this, the facilitator starts introducing various threats that make certain species disappear. The web starts getting loose and looking ugly.

What would happen if we cut down all the trees? The oak releases the string.

What would happen if all carnivores were killed? The carnivores release the string.

What would happen if due to air pollution all bees disappeared? The bee releases the string.

Questions:

-  How does the web look like now?
-  What happened?
-  Who caused this?
-  What could be done to prevent this from happening?
-  Who can do this?

3. What gifts do carnivores offer?

The aim of this activity is to build an awareness of the role of large carnivores, including from the perspective of ecosystem services that they provide.

Set up and facilitation: You may transition from the previous activity to this one, by watching together a beautiful 5 minutes video about the impact of wolves in a natural environment.

Video: How wolves change rivers: https://www.youtube.com/watch?v=kvKCTZf_-e4
You may look up this video on YouTube, by its title "How wolves change rivers"



Questions:

-  How was this story?
-  What happened?
-  What gifts did nature receive from wolves, directly and indirectly?
-  In what category of “ecosystem services” (support, regulation, provisioning, cultural) could you place these impacts?
-  What other services do wolves provide?
-  What about the other large carnivores?

The facilitator may write down the answers on a flipchart with the title “Gifts from large carnivores”. After having written down the spontaneous answers from the group, read together the Introduction of Chapter 4 from the Knowledge section, focusing on Large Carnivores.

After this, continue completing the list together with the group.

Annex 5.1

P = producers

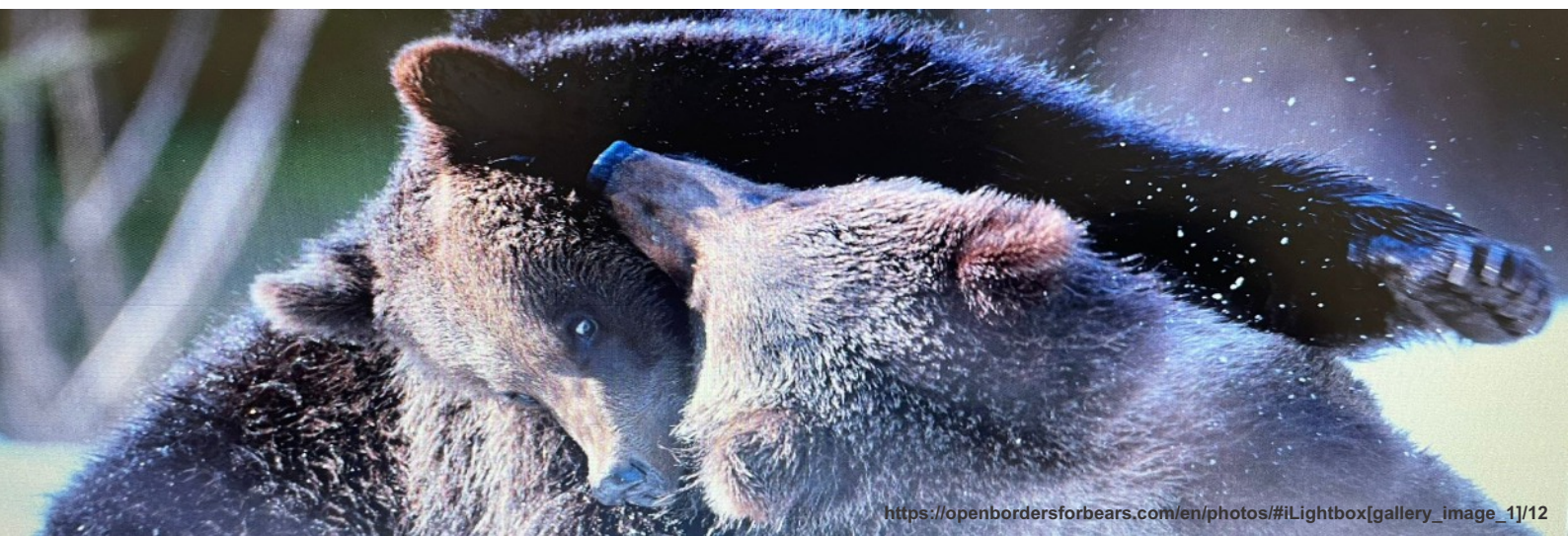
C1 = primary consumers ex. herbivores

C2 = secondary consumers ex. carnivores

C3 = tertiary consumers ex. large carnivores

D = decomposers

P	Oak tree (acorn)	Raspberry	Beech (beechnuts)
C1	Squirrel	Bee (honey)	Deer
C2	Hawk	Cuckoo	Wild boar
C3	Lynx	Wolf	Bear
D	Fungus	Bug/Earthworm	Bacteria



https://openbordersforbears.com/en/photos/#iLightbox/gallery_image_1/12

WORKSHOP NO. 6. THE BEAR: CHARACTERISTICS, THREATS AND SOLUTIONS

Workshop goal: Participants should walk away from this workshop being able to identify the bear's characteristics, needs and threats and discover ways the bear can be protected.

Learning Objectives: After this activity, students will be able to...

- (K) Identify the bear characteristics, needs and threats.
- (V) Be empathic with the bear.
- (V) Be motivated to protect the bear.
- (S) Identify ways to help in the protection of the bear.

Key Concepts: Large carnivores: bear

1. The superhero bear/ Creative group work/ 35 minutes/ Photocopies of description of the bear from Chapter 4 of the Knowledge section, flipchart paper, markers, post-its and other stationery for poster making

Sticky paste to display the posters

2. Bear cubs/ Video, Group reading and discussion/ 10 minutes/ Projector, speakers, computer

3. Bear patrol/ Brainstorming/ 10 minutes/ Flipchart, marker

Total time estimated: 55 minutes



1. The superhero bear (35 minutes)

The aim of this activity is to explore and interpret the bear characteristics, needs and threats.

Set up and facilitation: Divide the students into groups of 4-5 students. Each group receives a flipchart paper, markers and other stationery that might help them create a poster. Their task is to draw a superhero bear and to write or draw the answers to the following questions:

If the bear were a superhero ...

what would be his superpowers? (at least 4)

what would be his ideal home or hideout?

what would be his weakness?

Teams will answer with the help of the description of the bear from Chapter 4 of the Knowledge section. They may also look for information online.

15 minutes will be granted for the creation of the poster. 10 minutes for presenting the posters. Don't forget to put the posters on display! 10 minutes for comparing the posters, finding common elements and different contents or approaches, and drawing conclusions.

2. Bear cubs (10 minutes)

The aim of this activity is to focus on the characteristics of and the threats to bear cubs.

Set up and facilitation: Watch together a video with bear cubs. We recommend the footage from the Bear Orphanage in Balan, Romania.

This video can be an example: A winter's day at the bear orphanage
<https://www.youtube.com/watch?v=gVs8XA3UqwM>



Browse the YouTube channel of WWF-Romania, the playlist called "Bear Brother - povesti de la orfelinatul de ursi" (Bear Brother - stories from the bear orphanage)

Discuss the video:

-  How was it?
-  What did you notice?
-  How do you feel about the bear cubs?
-  Do you think they are "strong" or "weak"?
-  What could happen to them?



Then read together the description of Cubs from Chapter 4 of the Knowledge section. And comment with the group.

-  What other threats have you discovered?

Invite the group to complete their posters with threats (what makes the superhero weak?)

3. Bear patrol (10 minutes)

The aim of this activity is to identify possible actions for protecting the bears.

Set up and facilitation: The facilitator introduces the activity - "Imagine we are a bear patrol who can save bears. Now that we know what are some threats to bears, what could we do to reverse or to address these threats?"

The facilitator writes down the answers from the group, guiding them through all the threats identified previously, so that they can come up with as concrete as possible solutions.



WORKSHOP NO. 7. THE WOLF: CHARACTERISTICS, THREATS AND SOLUTIONS

Workshop goal: Participants should walk away from this workshop being able to identify the wolf's characteristics, to increase the empathy for the wolf and identify ways to protect the wolf.

Learning Objectives: After this activity, students will be able to...

- (K) Identify the wolf characteristics and needs.
- (V) Be empathic with the wolf.
- (V) Be motivated to protect the wolf.
- (S) Identify ways to help in the protection of the wolf.

Key Concepts: Large carnivores: wolf

1. Wolf mime/ Mime/ 20 minutes / Notes with key words- Annex 7.1

2. What do we have in common?/ Group work/ 25 minutes/ Photocopies of Chapter 4 from the Knowledge section.

(optional) other materials on wolves, such as magazines, books etc

Projector, speakers, computer (if video)

3. Who is the bad guy and the good guy in the wolf story?/ Storytelling. Group discussion. Brainstorming/ 15 minutes/ (optional) flipchart, marker

Total time estimated: 60 minutes

1. Wolf mime (20 minutes)

The aim of this activity is to describe physical and behavioral features of the wolf, and encourage empathy.

Set up and facilitation: Split the group in 2 teams. In turn, one team member draws a note with one feature of the wolf (see Annex 7.1) and has to mime this feature until his team-mates guess. The team has 1 minute to guess.

After each round, take time to discuss with the group the specific feature that was in focus.

There are 10 features, so each team can accumulate 5 points if they get all the right answers. In case of tie, the winner will be those who can invent the best poem using the keywords that had to be mimed.

2. What do we have in common? (25 minutes)

The aim of this activity is to discover features and behaviors that we have in common with the wolf, and deepen the sense of empathy.

Set up and facilitation: Divide the group in teams of 4-5 students. Let the teams know what their next mission is: after going through several sources of information (video, manual, even online research may be allowed) each team will have to write down and present what elements we humans do have in common with the wolves. ex. Wolves like to stick together as a pack, and so do we humans prefer company. They are nocturnal, as well as Victor in our team who prefers to read at night. etc

Every team reads the information on wolves from Chapter 4 in the Knowledge section. And also has the opportunity to research online and browse other materials on wolves, if available.

After the research, teams present their findings. The facilitator may write down on the whiteboard or on a flipchart the commonalities that come out of every team's presentation. Close the activity by comparing the presentations and reflecting on the experience.

Possible follow up questions:

-  How was it to search for commonalities between humans and wolves? (hard, easy, strange etc)
-  What were the first elements that popped up?
-  What surprising commonalities have you found?
-  How do you see wolves now, after having gone through this experience?

3. Who plays the bad guy and the good guy in the wolf story? (15 minutes)

The aim of this activity is to rethink the classical perception of wolves as evil and to think of ways that people could protect wolves.

Set up and facilitation: Start with a group discussion about wolf stories and perceptions:

-  Do you know any stories about wolves?
-  Do you remember what stories you heard about wolves when you were a child?
-  How is the wolf generally portrayed in these stories?
-  Are these old or new stories? Why do you think people, in the old days, used to see wolves as negative characters?
-  What do you think about wolves? Are they good or bad?
-  What good things do we receive from wolves?

Then read this old story, of Native American origins, showing wolves in a different light. These are symbolic wolves but they show clearly that people choose how they see things.

Topics for further discussion:

-  How was the story?
-  What does it say about wolves? What about how we see them?
-  Who is the real bad guy in the wolf story, especially today?
-  What bad things do people do to wolves? directly or indirectly?
-  How could we rewrite this story? To help improve the coexistence between man and wolf?
-  You may write down on a flipchart the solutions provided by the group.

The story of two wolves

Grandfather: "There are two wolves fighting in each man's heart. One is love, the other is hate."

Grandson: "Grandfather, which wolf wins this fight?"

Grandfather: "The one you feed the most."

Annex 7.1

The length of the body of a wolf is 1.5 meters.

A wolf usually weighs 50 kilograms.

The wolf has a summer coat. (as his fur becomes lighter in weight and darker in color)

The wolf has 4 claws on each foot.

A wolf is an omnivore.

The wolf is also known as the “forest doctor”. (he maintains the natural balance by hunting or eating dead animals)

A wolf needs a large territory to move.

Wolves live up to 15 years.

Wolves are active at night (nocturnal).

The wolf has blind pups (in the first 2 weeks of life).

WORKSHOP NO. 8. THE LYNX: CHARACTERISTICS, THREATS AND SOLUTIONS

Workshop goal: Participants should walk away from this workshop being able to identify the lynx’s traits, values and threats and discover ways the lynx can be protected.

Learning Objectives: After this activity, students will be able to...

- (K) Identify the lynx traits, values and threats.
- (V) Be curious about the lynx characteristics.
- (V) Be open toward the protection of the lynx.
- (S) Identify ways to help in the protection of the lynx.

Key Concepts: Large carnivores: lynx

1. Introduction/ Presentation/ 15 minutes/ Picture of the lynx, video projector, speakers, computer

2. The Lynx lynx/ Group presentation/ 50 minutes/ Printed copies of the annexes

Total time estimated: 65 minutes



(C) Lukas Holasek – for OBWIC

1. Introduction (15 minutes)

Set up and facilitation: Invite participants to take a seat in a circle on chairs. Take a few minutes to introduce the name of the workshop: “The lynx”. Explain that the goal for this hour is to discover the lynx traits and his role in the ecosystem. Print and show a picture of the lynx or if you have access to technology present a very short movie about the types of lynx in the world:

Video here: <https://bit.ly/3AqoEzM>



2. The Lynx lynx (50 minutes)

The aim of this activity is to discover through experience and performance some of the characteristics of the Lynx.

Set up and facilitation: Arrange 4 spaces (squares) in the room or in an outdoor location. It is important to have squares that can accommodate at least 8-9 students inside and that the participants are able to communicate between themselves. The 4 spaces are called:

- Lynx - basic information
- Lynx - food
- Lynx - behavior and areal
- Lynx - protection measures.

Give each group the descriptions about the lynx (available in the content part) and ask them to read, understand, plan and perform a short performance / sketch about these traits of the lynx. They have 20 minutes to prepare and 5 minutes to present it to the other groups. The other groups have to guess all the traits that were presented. Write all the characteristics they discovered on a flipchart paper. The 4th group will have to think about what threats and measures of protection can be available for the protection of the lynx (see the threats and measures for protection in the content part).

Bibliography:

<https://www.edu-wildlife.eu/index.php/ro/bne-r>
<https://www.youtube.com/watch?v=7blIz3fuo-4>

WORKSHOP NO. 9. PROTECTED AREAS

Workshop goal: The aim of the workshop is to explain, by means of an interactive game, the concept of “natural protected area” and how to organize a natural protected area.

Learning Objectives: After this activity, students will be able to...

- (K) Explain key concepts: natural protected area, functional zoning, strictly protected zones (core zones), buffer zones, sustainable development zones
- (S) Make decisions, define and defend with arguments the way that zones are established in a natural protected area
- (A) Appreciate the value and importance of a natural protected area.

Key Concepts: natural protected area, functional zoning, strictly protected zones (core zones), buffer zones, sustainable development zones

1 Introduction/ Presentation/ 15 minutes

2. Let's build our own natural protected area/ Creative workshop. Work in small groups/ 30 minutes/ Outdoor activity! . 4m rope for each team and 4 long nails (20 cm or tent nails), tape. Paper with the various criteria: biodiversity, zonation, rules for people, benefit for local, education and recreation

3. Come visit our natural protected area/ Presentation/ 20 minutes

Total time estimated: 65 minutes

1. Introducing the key concepts. Group reading and discussion (15 minutes)

Set up and facilitation: The facilitator asks students to volunteer for reading together from Chapter 6. Looking after our nature: nature protection & nature conservation (relevant information from Part A)

Natural protected areas are terrestrial or marine areas specifically intended for the protection and conservation of biological diversity, natural resources and associated cultural resources.

In order to complete the information on protected natural areas in your region, read the Facts about the Carpathians text box in Chapter 1. Zoom in: a natural area that we treasure and in Chapter 2. What is special about our nature? focusing on the text boxes: Maramures Mountains Nature Park, Romania and The Carpathian Biosphere Reserve (CBR), Ukraine (relevant information from Part A).

Functional zoning of a natural protected areas

In order to meet the needs of nature but also the realities on the ground, natural protected areas are divided into certain categories of areas, depending on how much they can be accessed and used by humans.

 **Strictly protected zones (core zones)** are protected in a compulsory manner and represent samples of very little disturbed natural, terrestrial and aquatic ecosystems that are representative of the natural protected area;

 **Buffer zones** have been established around the strictly protected zones (core zones). Their role is to protect the core zones and to diminish the impact of human activities on the natural protected areas.

**Sustainable development zones are closer to the border of the protected areas and some human activities are allowed, so as the local communities may benefit from the natural values of the area in a sustainable manner ex. low impact tourism.*

2. Let's build our own natural protected area (20-30 minutes)

It is the time to put the new knowledge and the group creativity at work.

Set up and facilitation: Divide the group into teams of 5 members (approximately). Each team receives 4 meters of string and 4 nails, plus a photocopy of the information from the text box about the Functional zoning of a natural protected area. The rope helps the teams to put a "fence" around 1 square meter of land in a place that inspires them to build their future natural protected area.

The teams' mission will be to create and manage their own protected natural area, specifying how it is divided into zones. They will use natural materials nearby to create the specific landscape of their area. They have 20 minutes for this task (with the possibility to add 10 more minutes, if necessary). In the end they will have to be able to present:

-  the name of the protected natural area,
-  its main attractions and natural values,
-  the zones in which it is divided, by bringing arguments to support their decision.

3. Come visit our natural protected area (15-20 minutes)

Set up and facilitation: The big group takes a trip around all natural protected areas created by the teams. When the group arrives at one destination, the host-team presents the name of the protected natural area, its natural values and the zoning. The facilitator can play the role of an expert / inspector who asks clarification questions about how the functional zones were established.

At the end of the activity, the group sits in a circle and reflects on the experience.

-  What was it like to create a natural protected area?
-  How was it to define zones?
-  Did you have any difficulties or internal negotiations in this process?
-  What did you like most while setting up your natural protected area?
-  How do you see protected natural areas now?

WORKSHOP NO. 10. Connectivity

Workshop goal: The aim of the workshop is to understand, through direct experimentation, the bear migration, as well as the barriers they encounter. Stimulating empathy for bears and other animals who need to move to survive, raising awareness regarding the importance of ecological connectivity and identifying ideas to maintain ecological connectivity.

Learning Objectives: After this activity, students will be able to...

- (K) Understand the bear migration.
- (K) Name barriers faced by animals during their migration.
- (S) Identify ideas to maintain ecological connectivity.
- (V) Feel empathy for bears and other animals who need to move to survive.

Key Concepts: Migration. Ecological connectivity. Barriers to ecological connectivity

1. Ecological connectivity. An introduction/ Facilitated discussion/ 15 minutes/ Flipchart papers, markers

2. Playing catch with the bears/ Running game/ 60 minutes/ Tape, rope

3. Solutions for ecological connectivity/ Brainstorming/ 15 minutes/ Flipchart papers, markers

Total time estimated: 90 minutes

1. Ecological connectivity (15 minutes)

Read together Chapter 5. Ecological connectivity. You may divide the group in 5 teams and assign them one fragment of the text: Categories of ecological corridors, **Corridors in Maramures, Threats for wildlife, Barriers, Solutions for connectivity**. Each team reads and then presents their findings to the group. Discuss about what drew the students' attention, why this topic is important and how it connects with the students' reality.

2. Playing catch with the bears (40 minutes)

The aim of the activity is to understand, through direct experimentation, the bear migration, as well as the difficulties raised by various obstacles and threats caused by natural causes but also by human interventions on the environment. Stimulating empathy for bears and other animals who need to move to survive, raising awareness regarding the importance of ecological connectivity and identifying ideas to facilitate their migration and maintain uninterrupted landscapes and ecological connectivity.

Set up:

Preparing the physical playground:

The game requires a fairly large space, suitable for running and for playing a catch game. Ideally, it should be outdoors. And there should be more than 10 players. In order to prepare the space, the facilitator marks with paper scotch or with chalk a starting line and a finishing line, which represent the two final destinations of the bear migration in Maramures: the forests of Strâmbu Băiut (kilometer 0) and the Carpathian Biosphere Reserve in Ukraine (kilometer 200). Between them will be marked a few circles, as stepping stones, that represent natural protected areas (or even core areas of natural protected areas) where bears are safe for feeding and shelter.

Introducing the game:

The facilitator creates the setting in which the game takes place and presents this information about bear migration, reminding the group about the ecological corridor that will be used as a virtual setting for the game and the reasons why bears need to move.

Note: Re-read (you may do this together, as a group activity) the Bear sub-chapter from **Chapter 4. Our superheroes with fur and paws** and pay attention to mentions regarding the bear migration, what motivates a bear to move, what is important for the bear's well being and survival, and what are some threats for a bear.

Facilitation:

Playing the game:

It is played in three rounds, each with an increasing degree of difficulty, as a new "catcher" is added. At each new round the facilitator announces the stage of migration of the bears, what are the dangers and physical obstacles along the way and comments on the condition of the bear population after each round of running and the consequences of the dangers on the animals.

Round 1: Only one player catches

The game takes place at a fast pace. All players are behind the starting line, the forest of Strâmbu Baiut, and represent the bears. When the facilitator starts, the players have to migrate, running from one end – the forest of Strâmbu Baiut - to the other end of the migration route – the Carpathian Biosphere Reserve. However, a specially designated player must catch them. This player is called a "poacher". Each time this player catches one of the bears, the bear dies and stays in place, squatting (or retreating to the side). Bears can retreat from poachers in circles that represent protected natural areas. While in a circle, they cannot be caught and cannot die.

Round 2: Two players catch, plus one obstacle is added

After all the remaining players are behind the finish line, they start running back in order to complete the migration and return towards the forest of Strambu Baiut. In addition to the first player to catch them - the "poacher" -, a second player enters the game as a catcher and his name is - "traffic accidents". Likewise, each trapped bear dies and remains in place. In addition to this new danger, a physical obstacle is introduced: "a new road". In some areas, the forest narrows and the facilitator moves the paper tape to show the bear's new path and more protected natural areas (circles on the floor) disappear. The effect is that the bears (the players) have less space to move, their route is constrained to specific areas and there are more pressures on their lives and migration.

Round 3: Three players catch, a second obstacle is added

After all the remaining players are behind the starting line, the forest of Strambu Baiut, they start again towards the Carpathian Biosphere Reserve. This time there are three catchers: besides "the poacher" and "traffic accidents", the third catcher will be called "death by starvation" (or "conflicts with the locals"). There is also a new supermarket (or ski resort) on their route. For the supermarket, you can draw a barrier out of paper scotch or even place a physical obstacle on the path of the players, such as chairs. The faster you install it, the better. It is important for the route towards the Carpathian Biosphere Reserve to be completely blocked. It would be ideal for participants to know about the supermarket only AFTER starting to migrate. When they are already on their way, the supermarket appears. They can no longer advance to their destination and some are confused, others run quickly to sheltered areas or back to the forest of Strambu Baiut.

In order to increase the drama (but also the realism) of the game at this stage, a second obstacle should appear, a tourist complex / a real estate development. Thus, some bears will be trapped between the two obstacles, and others will be crammed into the forest from which they left. When placing the obstacles, do try to keep distances similar to the real distances.

In the end, we will see how many bears are left alive after moving in unfavorable conditions.

Note: If you only have a few players, after two rounds of the game you can restore the group of runners (because the bears also mate and have cubs) in order to have enough participants in the race. The dangers, however, must be proportional to the number of players.

Debriefing questions:

-  How was it?
-  When was it easier? When was it harder?
-  Do you think that such situations can happen in reality?
-  What are the threats to bears? Do you know others?
-  How do you feel now about bears / animals who migrate?
-  What did you understand from this game?
-  What do you think you could do now that you understand these things?
-  What could be some concrete solutions to keep the migration in optimal conditions for bears and other animals, and to maintain the ecological connectivity?

3. Solutions for ecological connectivity (15 minutes)

With this last question the facilitator opens a flipchart sheet entitled Solutions for ecological connectivity and starts writing down the solutions that appear in the discussion, on the topic of bear migration and ecological connectivity. All the information and the experience from this workshop will feed into defining Solutions that the students may later refer to when they choose what actions they want to take in their communities.

1. The three rivers (40 minutes)

The aim of the activity is to give participants a deep understanding of the concept of Sustainable Development, through an experiential learning activity. In case you don't have time or the right space for the activity, you may organize it in a simple way or even go straight into a group discussion about the definition of "Sustainable Development".

Set up and facilitation:

Preparing the three rivers. In the three separate spaces, prepare the three rivers that the participants will cross.

What does the river look like? It is a space that is too long and uncomfortable to cross with two big jumps. Around 2.2 - 2.5 meters. Mark the river sides with chalk or paper scotch. The participants will have to cross the river from one side to the other, without touching the water but only by using the stepping stones.

The trick is that every river has a different number of stepping stones - represented by A4 papers (which you may also stick to the ground).

🐻 One river has many many A4 papers, almost one near the other. ONLY at the end of the game participants will find out that this river is called The past.

🐻 Another river has 3-4 A4 papers, which makes the crossing comfortable. ONLY at the end of the game participants will find out that this river is called The present.

🐻 The third river has only 1 A4 paper. ONLY at the end of the game participants will find out that this river is called The future.

Participants will work in 3 separate teams and they will switch rooms. It is important that they can go from one room to another without seeing how the other rivers look like. They need to be surprised each time they reach the next river.

Playing the game

In a "neutral" space, where participants cannot see the rivers, split them into 3 teams and tell them that they will have to cross three rivers in under 1 minute. It is important to give them a time limit, so that they are more focused on the task than the river. Each team will go to a different room and then they will switch rooms. In turn, each team will cross each river.

At the end of the experience, the group gathers together in the common space and they share their impressions about the experience.

- 🐻 What did you do?
- 🐻 How was it?
- 🐻 Was there a difference between the rivers?
- 🐻 Which one was the easiest to cross? Which one is the most difficult?
- 🐻 How could it be easier to cross the third river?

Stop the dialogue to tell them this: There is one thing you did not know when you crossed the rivers. The fact that they each had a name - the first river, the one with many stones, was called The past. The second river, the one with 3 stones, was called The present. And the last river, the one with one stone, was called The future.

WORKSHOP NO. 11. NATURE: PROTECTION, CONSERVATION AND SUSTAINABLE DEVELOPMENT

Workshop goal: The aim of the workshop is to introduce the concept of Sustainable Development and the SDGs and help students acknowledge that their very efforts contribute to this big vision. Students also understand different concrete information, roles and tools necessary to bring

Sustainable Development to life: nature protection and conservation, types of protected areas, IUCN categories, protection measures for bears.

Learning Objectives: After this activity, students will be able to...

- (K) define Sustainable Development.
- (K) name SDGs.
- (K) define Nature Protection, Nature Conservation, Natura 2000, Emerald network, IUCN criteria.
- (S) identify SDGs.
- (S) use information about protected areas to better understand the natural values of their country.
- (S) navigate IUCN red list website whenever they need information about a species.
- (S) identify and formulate protection measures for large carnivores.
- (S) be aware and optimistic about contributing to Sustainable Development.

Key Concepts: Sustainable Development, Sustainable Development Goals (SDGs), nature protection, nature conservation, Natura 2000 and Emerald networks of protected areas, IUCN categories

1 The three rivers / Movement game / 40 minutes / !!! for this activity you need three separate spaces, where three groups can work in parallel without seeing each other, Paper scotch, 20 A4 sheets of paper, marker

2. Where are we in the “Sustainable Development” picture? / Group discussion / 10 minutes

3. Let us wear the scientist hat for a bit / Group discussion, team research, brainstorming 20 minutes / Photocopy of Chapter 6, scissors

Total time estimated: 70 minutes



Wait for reactions. And continue the group discussion.

-  What does this new piece of information bring to you?
-  What do the stones represent?
-  How could it be easier to cross the third river?
-  How do you feel about this new setup that you came up with?
-  Do you think it would work in real life?
-  How would it work in real life? What are some concrete actions that could make this vision real?

You may now introduce the definition of “Sustainable development” and use the information from Chapter 7 (relevant information from Part A). Tell them that they are not alone in their vision and that more and more people across the world are taking action to build a sustainable future. Let them know that this entire manual and their learning experience is also a concrete step towards Sustainable development.

2. Where are we in the “Sustainable Development” picture? (10 minutes)

Continue the group discussion by introducing the SDGs from Chapter 7 (relevant information from Part A). Briefly discuss each SDG and ask students which SDGs they think we are contributing to through this very activity. They may consider that SDG 15 Life on land is the most representative for their work, but they identify connections with other SDGs as well.

3. Let us wear the scientist hat for a bit (20 minutes)

The purpose of this activity is to explore Chapter 7 and to give students a brief experience of a few professions and roles that are working for sustainable development.

Divide the group into 3 teams. Cut the photocopy of Chapter 7 and give each team one segment, as follows:
IUCN classification of species

The first part of the chapter with the definitions of Nature Protection and Conservation. The entire segment about Natura 2000 and Emerald network + all relevant information about protected areas in your country
Protection measures for large carnivores

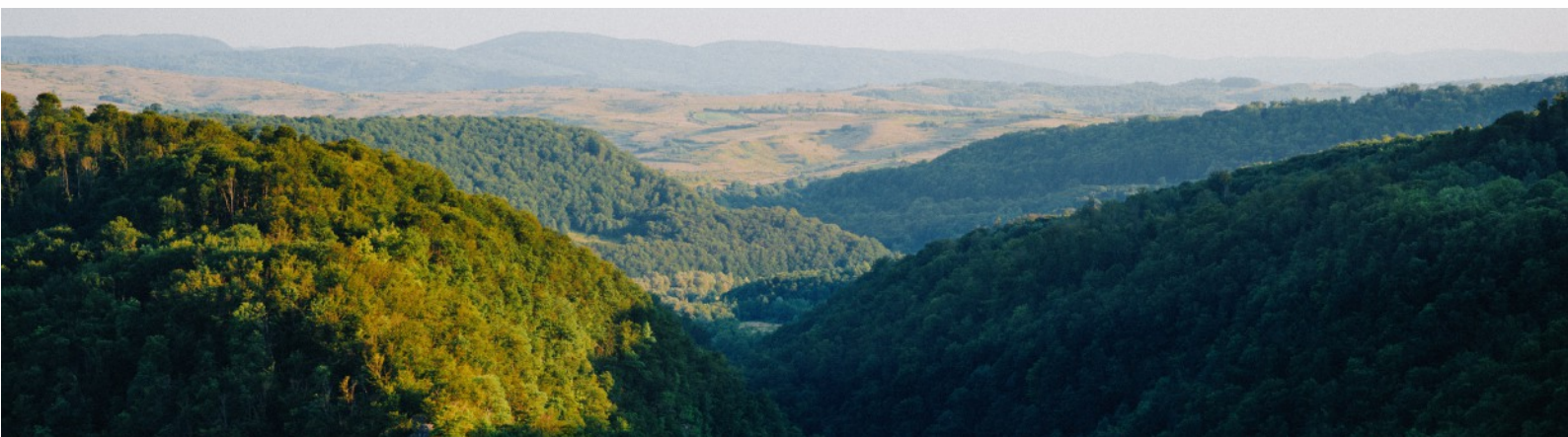
Each team has a mission for 10 minutes:

Team 1 will read the classification and then look for local species on the IUCN red list website:
<https://www.iucnredlist.org/>

Team 2 will read about the protected areas and prepare a report for their colleagues. They may choose to ask questions in a Quizz format, such as “Did you know that ... ?

Team 3 will read the protection measures and think of ways or places where they can actually be introduced in their reality.

After the time is up, the teams come together in a circle and share their findings.



WORKSHOP NO. 12. SOLUTIONS: ECOLOGICAL CORRIDORS, GREEN BUSINESSES AND ECOTOURISM

Workshop goal: The aim of the workshop is to raise awareness about the potential solution for the protection and conservation of large carnivores through ecological corridors, green businesses and sustainable tourism.

Learning Objectives: After this activity, students will be able to...

- (K) Explain what ecological corridors are.
- (K) Describe the benefits, threats and barriers of wildlife corridors.
- (S) Identify what green businesses and ecotourism are as potential solution in their area.

Key Concepts: Ecological corridors, Green business, Ecotourism (see content in part 1)

1. Ecological corridors / Game, presentation / 40 minutes / Flipchart papers, markers

2. Green business and ecotourism / Group debate, Facilitated discussion / 30 minutes / Affirmation cards

Total time estimated: 70 minutes

1. Ecological corridors (40 minutes)

The aim of the activity is to understand what ecological corridors are and how they are beneficial for wildlife.

Set up and facilitation: Ask three-four volunteers for this activity. The rest of the group arrange themselves into two parallel lines (like in a corridor), lines facing one another- with a 1,30 m distance between the lines and 30 -50 cm distance between people who are staying one next to the other. One by one, each volunteer has to pass with eyes closed (use a scarf) and to run between the two lines of people, from one end to another of the virtual "corridor". The role of the people in the lines is to help the volunteers to feel safe while passing through this corridor. Invite two-three people to act in an opposite way: to create ways in which the volunteer doesn't feel safe to pass. After each volunteer passes the corridor, invite the participants to talk about the experience:

-  How was it for the volunteers to pass through the corridor?
-  What were the elements that made them feel safe?
-  What were the elements that made them feel unsafe?
-  In which way do you think this game and the elements inside, are similar to the reality of a wild animal that is using a corridor?
-  What is an ecological corridor? Who knows? Can you explain?
-  What are the benefits of a corridor for wildlife?
-  What are some of the threats and barriers that wildlife and wildlife corridors face?

After the participants explain with their own words, offer them a few technical explanations about the corridors (see the content in part A).

Do you know about the existence of ecological corridors in your area? Can you tell us if there are? If they don't know, tell them more info about the corridors in their area in Romania or Ukraine (see more information in the content part 1).

What can you do to contribute to the protection of the ecological corridors? Gather all the ideas on a flipchart paper and then add extra information if relevant (see content Part A)

2. Green business and ecotourism

The aim of this activity is to clarify why green businesses and ecotourism are two other very good solutions for the protection and conservation of nature and wildlife in the area.

Set up and facilitation: Arrange 3 corners in the workspace. In one corner we will have the answer FALSE, in the second corner we will have the answer TRUE and in the third: I DON'T KNOW, I AM NOT SURE YET. Put different affirmations about green business and ecotourism in a bowl and ask one participant to pick one affirmation from the bowl. Invite participants to reflect on the affirmation and decide if it is true, false or the third option by arranging themselves into the space according to it. Discuss with the participants each affirmation and clarify what green business and ecotourism are, and why they are very good solutions for the protection and conservation of nature and wildlife.

TRUE *** FALSE *** I DON'T KNOW YET

1. Nature can offer everything necessary for life in a community.
2. It's very hard to become a green entrepreneur in my community (Clarify with the participants what a green entrepreneur is).
3. Local entrepreneurs can develop green businesses using the knowledge of their ancestors who have lived in harmony with nature (clarify with participants what green business might be).
4. Green business means developing organic products and services (explain what organic products and services might mean: traditional cheese, jams, syrups, dried fruits, herbal tea, honey, etc).
5. Less and less people want to buy and use environmentally friendly goods and unique services. (explain what environmentally friendly goods means).
6. Many souvenirs can be a source of a green business. (Ask them to give examples of potential souvenirs and traditional crafts in their region).
7. Traditional crafts and farming are not a good source of conservation of nature and sustainable development.
8. Ecotourism is a form of tourism in which the main motivation of the tourist is the observation and appreciation of nature and local traditions related to nature.
9. Ecotourism needs to follow these conditions: nature conservation, use of local human resources, educational character, respect for nature, minimum negative impact on nature and socio-cultural environment.
10. There are no ecotourism activities in my region. (Invite them to share examples of ecotourism activities in their region).

At the end of the activity discuss with the participants about what green businesses or ecotourism activities they know in their area.

Specify that in the next workshop they will get to know more about other groups or projects in their area and later they will brainstorm creative ideas related to ecological corridors, green businesses and ecotourism activities.

Note: for more information about green business and ecotourism see more information in the content Part A.

WORKSHOP NO. 13. YOUTH SUCCESS STORIES

Workshop goal: The aim of the workshop is to raise motivation for being involved in the protection and conservation of large carnivores.

Learning Objectives: After this activity, students will be able to...

- (K) Describe what courage, motivation and self-determination are.
- (V) Be inspired by other groups who got involved in protection and conservation of nature.
- (V) Become more motivated to take action for protection and conservation of large carnivores.

Key Concepts: Motivation, self-determination

1. Acts of courage, motivation and self-determination / Facilitated discussion / 15 minutes / Paper, pens, flipchart, post-its etc.

2. Success stories - getting inspired / Group work / 35 minutes

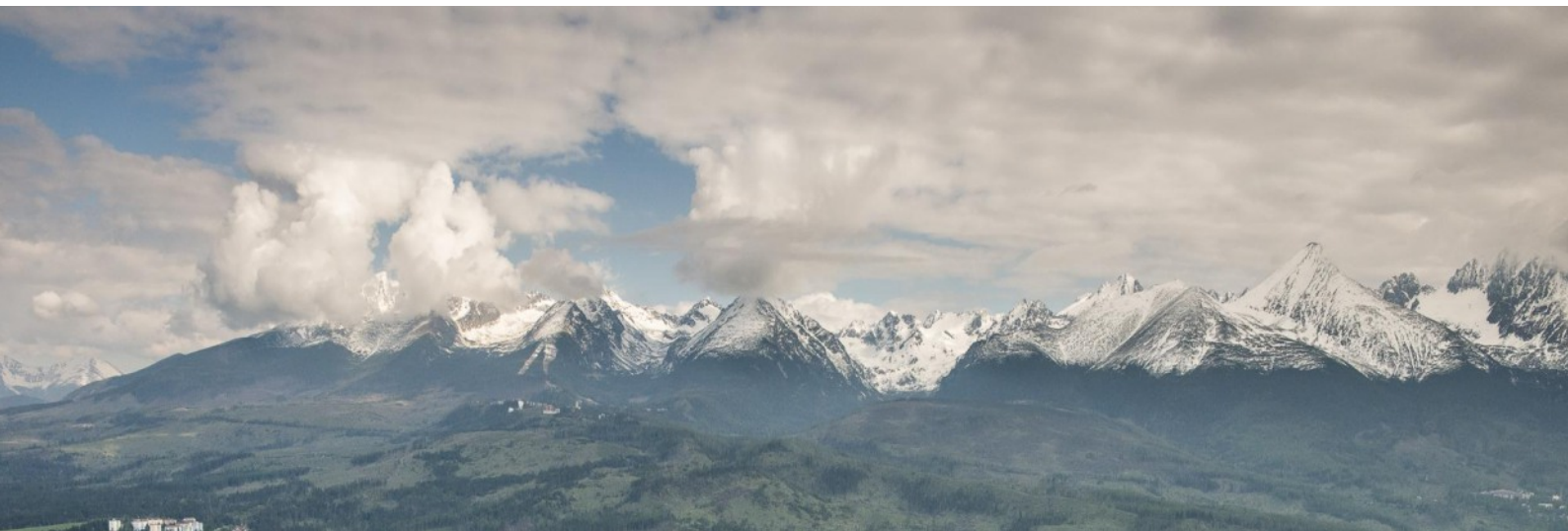
Total time estimated: 50 minutes

1. Acts of courage, motivation and self-determination (15 minutes)

The aim of this game is to get participants to feel braver about taking action on the protection and conservation of the large carnivores.

Set up and facilitation: Ask participants what they consider an act of courage? Give each participant a post-it and pen and ask them to think of an example of an act of courage done by somebody else and then to write it in a few words on the post. It can be an act of courage related to anything in a person's life - personal, professional. Give 2-3 minutes for reflection individually and then invite at least 4-5 participants to share it in the big group. You can gather all the other examples from the post-it on a flipchart paper under the word-courage and underline the common elements behind courage: risk taking, motivation, self-determination, etc.

Then ask them what Motivation and Self-determination mean to them. Write on a flipchart paper their answers. After that, present to them some very simple theoretical information to make the link between motivation and self-determination.



Self-determination is the capacity of each person to decide for and manage their own life. People who are self-determined are usually motivated by the wish to grow, learn and make an impact in their life and other people's life.

A person who is highly motivated is a person who is able to reach 3 psychological needs:

The need for Connection and belonging: to feel they belong to a group where they are doing something important together, where they feel loved and appreciated for what they are doing.

The need for Competence: is the need to do something from which they can learn something new, achieve new skills in a project, action, intervention and make a change in someone's life.

The need for Control: is the need to feel in control by your own decisions, to express your opinions about something, to share our ideas and skills, to contribute to something, to have a word to say about something (like my community or the life of large carnivores)

To sum up, to be able to become brave and with high level of self-determination we need to feel the sense of connection with others, to feel that we develop new skills while doing something and to have control - or the capacity to take initiative by ourselves about what we want to do or achieve in our life.

These requirements can be easily reached by a group of young people while doing a project or an initiative for their local community or for the environment in the field of nature protection and conservation.

There are a few examples of self-determined and motivated groups of young people that we would like to share with you for inspiration, and to show that it is possible to make a change for nature and large carnivores in the Carpathian Mountains. They can be a source of motivation for us and can help us to see that we can decide to be brave, motivated and self-determined when we want to make a difference for the nature we are living in.

2. Success stories-getting inspired (35 minutes)

The aim of this activity is to get inspired and motivated by the stories of motivation and self-determination of other groups of young people who took action for nature.

Set up and facilitation: Split the group in smaller groups. Give each group a description of other initiatives from Romania (see the content part 1):

-  Group 1: reads about the TANS clubs
-  Group 2: reads about the Eco-destination Mara-Cosau
-  Group 3: reads about Green Impact clubs
-  Group 4: reads about Youth Leadership
-  Group 5: reads about Association Ecologic

After they read the information received, they need to extract and present to the other group's information about:

-  Why do they think they are/were brave? How do they manifest their bravery and motivation for nature protection?
-  What do they do exactly and what might they learn while implementing their initiatives for the environment?
-  What type of decisions do you think this group/organization made while being involved?
-  How do they get to stay connected while implementing their initiatives?
-  What can you learn from these examples about how they work and act together?

Give 3-4 minutes time for each presentation and then summarize on a flipchart paper the common answers to the questions above. Mention that they can do less, as much, or much more than these groups and this can be done while they are acting brave and building motivation together. These elements will help us to really take good action, no matter how big or small our intervention is: stay together connected, plan to learn something new while doing it and make sure that your voice is heard and listened to.

Mention that in the next workshop we will brainstorm more practical examples about what can be done together with a high motivation, will power and bravery.

WORKSHOP NO. 14. OUR SOLUTIONS - BRAINSTORMING

Workshop goal: The aim of the workshop is to sum up all the general solutions for the protection and conservation of large carnivores and to find ideas that the pupil can apply in their community.

Learning Objectives: After this activity, students will be able to...

- (K) List the solutions that were explored in the previous workshop.
- (S) Use creativity to find solutions.
- (S) Identify solutions and ideas that can be applied by students in the local community for the protection and conservation of wildlife.
- (V) Become more motivated to take action for protection and conservation of large carnivores.

Key Concepts: Creativity: the action or process in forming new ideas or concepts. *** Brainstorming: group discussion to produce ideas or solve problems.

1. Creativity / Group game / 10 minutes / Pen, paper

2. Brainstorming / Group work / 45 minutes / Flipchart paper, markers, pen

Total time estimated: 55 minutes

1. Creativity (10 minutes)

The aim of this activity is to stimulate participant's creativity. Creativity is a must for the next activity.

Set up and facilitation: Invite participants to sit in two circles. Give a pen for one group and an A4 paper for the other group. Ask participants to find and demonstrate by miming other ways to use the object given.

One person shows the way the pen/ paper can be used and then passes it to the next person in the circle. Make sure that each person has at least one idea and each idea is different from that one already said.

Debriefing questions:

-  How was it to find different purposes for the same object?
-  Did you expect to find so many ideas?
-  What do you think we need (as skill) for this activity (creativity and imagination)?
-  In which way do you think we need creativity as agents of change for the protection of wildlife?

Let's use some creativity in the next exercise too!

2. Brainstorming (30 minutes)

The aim of this activity is to brainstorm solutions that can be applied by the students in their community for the protection and conservation of large carnivores.

Set up and facilitation:

Remind participants that in the last two workshops we explored solutions for the large carnivores protection and conservation. Invite participants to list what solutions we discuss and analyze. Write the solutions on a flipchart paper to be visible for the participants. Ask them to find concrete ideas about protection and conservation of large carnivores: any idea is good and is going to be written on the flip chart papers. Make sure there is enough time for brainstorming. You can give 5 minutes individually first, for the students to think and write the ideas on a piece of paper, and then invite them to share it in the big group. Don't reject any ideas – write all on the flipchart.

After you gather all the potential solutions, you add other ideas on their list, for instance:

-  Organize awareness campaigns for existing corridors.
-  Support local initiatives that already exist.
-  Make an education campaign in the local community explaining the benefits of protecting wildlife in the region.
-  Promote local values and traditions: organize local events for locals or tourists.
-  Develop a small-scale green business: collect fruits, berries, mushrooms, make jams, syrups, etc.
-  Make your own traditional crafts about wildlife and sell them in the community.
-  Organize biking routes for tourists to discover wildlife.
-  Promote ecotourism activities.
-  Organize events that will attract people to visit the natural beauties of your area.
-  As many people as possible are needed to sustain the wilderness. Bring your friends on the side of nature as well.
-  Build education programs and involve young people, they are the next generation.
-  Develop a touristic package of a few days in which you include natural and cultural sights in your area.

Ask: How do you feel about these ideas? Does it give you any inspiration or motivation?

We will decide together later what solutions we will choose to act upon.



WORKSHOP NO. 15. PROJECT STEPS

Workshop goal: Participants should walk away from this workshop being able to identify which will be the steps of any initiative project they could have in relation with the protection or conservation of the large carnivores.

Learning Objectives: After this activity, students will be able to...

(S) Plan and organize a symbolic project for the protection of large carnivores.

(K) List the stages or any initiative project they could have to the protection or conservation of large carnivores.

(V) Getting motivated to initiate a local project for the protection or conservation of large carnivores.

Key Concepts: Project, project steps, planning, activity scheduling, implementation, monitoring, evaluation

1. The large carnivore's Shelter / Team game / 45 min / Each team needs 20 matchboxes, 10 playing cards, 3 pieces of A4 paper, and 5 markers.

2. Steps of any initiative project / Facilitated discussion and presentation / 15 min
Flipchart papers, markers

Total time estimated: 60 minutes

1. The Large Carnivores' Shelter (45 minutes)

This game is intended to help participants understand the practical steps in any initiative project they would like to develop after the workshops. The group will work together to reach a goal using limited resources and then, based on that experience, identify the phases of a project: conception, planning, implementation, evaluation, and celebration.

Set up: Split participants in three small groups. One group is the Bears group, one is the Lynx group and one is the Wolves group (there should be an equal number of members in each team). If there are more than 4-5 people per group, you can make 1 extra bear group for example. Give each group a description of the exercise (found in the Building a large carnivore shelter - Instructions handout), but do not give them too many details. The task for the participants is to build a shelter / cave/ den for each type of carnivore their team represents in 20-30 minutes or less.

For construction materials, each team can use 20 matchboxes, 10 playing cards, 3 pieces of A4 paper, and 5 markers (as symbols). The teams must build their shelter on a foundation – either a piece of flipchart paper or a table (not just on the floor) – so that it can be evaluated for strength after it is completed.

Rules: Each carnivore in each team must have a separate space / room. (Points will be awarded for the number of carnivores the shelter can hold.) Each room must have four walls. The shelter should have a floor and a ceiling, which also need to be constructed out of the available materials (not including the flipchart paper foundation). The shelter must stand a gentle shake of the paper or table it is built on – if it falls apart, the carnivores aren't safe! Mention that the shelter is a metaphor and remind them that in reality these carnivores don't live like this. Is just for the sake of the game.

Evaluation criteria:

-  Strength of the shelter – 10 points (A resistance test will be made by gently shaking the table or flipchart sheet. The points are awarded if the shelter holds up under the test.)
-  Number of rooms – 2 points per room
-  Number of levels/floors – 10 points for each floor
-  Creativity – 20 points (Based on both appearance/aesthetics and creative use of materials.)

Facilitation:

Introduce the game by telling a story about a group of carnivores (bear, wolf and lynx) who lost their shelters because of an evil enchantress (or make up your own story based on well-known folk tales). Be sure to explain the problem clearly. Then, ask the group to name a possible solution. When one of them says something about “building them a new home / shelter,” agree with the idea and explain that this is exactly what they will be doing next!

Then, be sure to explain the rules and evaluation criteria clearly, and emphasize very firmly to the participants that there will be no extensions of time. When questions have been answered, start the timer and say: “Start!” Announce how much time has passed every five minutes to allow them to judge their progress. When the 30 minutes is over, take a tour to evaluate and grade each team, checking the strength of the shelter and assigning points based on the evaluation criteria. After grading the shelter, announce the winners and all the points they got and applaud them all together.

Then, gather the group together for a debriefing conversation, using the questions below to help you get started. The goal of the debriefing conversation is to help the teams recognize that all of their shelters went through the same phases during the activity: conception (identifying a problem and setting a goal), planning, implementation, evaluation, and celebration. These are the phases of any smaller or bigger project they could do for the protection or conservation of wild carnivores. Based on the participants' responses to your questions, help them to recognize each of the stages.

Debriefing questions:

-  What was the problem that you addressed? Why were shelters built for the carnivores?
-  Did you plan what you would do and what you would need before you started building? Why or why not? How did that go for you? Why was it important to plan ahead of time?
-  Did you change your plan at all as you went? Why was it important to adjust your plan as you went?
-  What did you do to ensure that what you built would stay standing?
-  Now that you have seen the results of the test, would you do anything different if you had to do this activity over again?
-  How did the teams feel during the working and after you succeeded?

2. Steps of any initiative Project (15 minutes)

Move right into this activity from the discussion above to help the participants connect their experience in the game to the stages of any initiative project they could do for the protection and conservation of wild carnivores.

Set up and facilitation: Write the following list on a flipchart/chalkboard in big letters:

1. Identifying the Problem
2. Clarifying the Goal
3. Planning

4. Implementation
5. Monitoring
6. Evaluation
7. Celebration

Explain to the participants that these are the stages of any project they could do and point out that they just went through these same stages in the building of their carnivores' shelter! To make sure that they understood, go through the list step-by-step and make sure everyone understands what each stage refers to.

Identifying the Problem:

This is the first step of any project. In the example with the carnivore's shelter, this happened when the groups announced that the carnivores have no shelter. Identifying the problem means deciding exactly what your project will be working to fix. Now that we understand a lot about the challenges that carnivores have, we can choose one problem to address.

Clarifying the Goal:

This is the second step of any project. In the example with the carnivore's shelter, this happened when the groups decided to build a shelter as a way to solve the problem of them having no shelter. (Clarify that there could have been other solutions too). Clarifying the goal means deciding which path to a solution your group will take through your project, and writing a clear statement explaining that goal.

Planning:

After the goal is decided, the next stage of a project is deciding how to actually get there. This means planning out the activities and steps the group will take to reach their goal. In the example with the carnivore's shelter, this happened when the groups took time to make a plan, decide which materials they'd use to build with, etc. This stage of a project can take longer, since there are always a lot of details to work out!

Implementation:

This is probably the most fun stage of any project or initiative: the time when the plan is put into action! In the example of the carnivore's shelter, this happened when the groups actually worked on constructing the shelter.

Monitoring:

This stage should happen alongside the Implementation stage in any project. Monitoring is simply a fancy way of saying that you should always be double-checking to make sure your plan is working as you expected. In the example with the carnivore's shelter, this happened when the groups took time to notice if their plan wasn't working and changed it mid-construction.

Evaluation:

This stage happens once the project is completed, and is the time when the group sits down to reflect on what happened during their project and whether or not they reached their goal. In the example with the carnivore's shelter, this happened when the groups shook their houses to see if their construction job was really successful or not!

Celebration:

This is the final stage of any project. In the game, this happened when the winning group was applauded for their construction project and received prizes.

Make sure the participants understand this progression and the analogy to the game they played earlier. Then, hang the flipchart on the wall and leave it up throughout the next workshops.

Ask at the end of the 60 minutes: How motivated they are to choose and plan a project for the protection or conservation of large carnivores? Ask them to shout a number from 1 to 5 where 1 (not at all motivated) and 5 (very motivated).

Bibliography:

Butyka. Marioara, 2017 Active Citizenship Curriculum/ Environment Module, New Horizon Foundation
Handouts/annexes: Carnivores Shelter Game Rules

Annex 15.1 Building a large carnivore shelter - Instructions

Your task is to build a shelter for each carnivores' group in 30 minutes or less. For construction materials, you can use 20 matchboxes, 10 playing cards, 3 pieces of A4 paper, and 5 markers. You must build your shelter on a foundation – either a piece of flipchart paper or a table (not just on the floor) – so that it can be evaluated for strength after it is completed.

Rules: Each carnivore in each team must have a separate space/room. (Points will be awarded for the number of carnivores the shelter can hold.) Each space/room must have four walls. The house should have a floor and a ceiling, which also need to be constructed out of the available materials (not including the flipchart paper foundation). The shelter must stand up to a gentle shake of the paper or table it is built on – if it falls apart, the carnivores aren't safe!

Strength	10 points	A resistance test is done by shaking the surface the shelter is built on. Points are awarded only if the shelter holds up.
Number of rooms	2 points per room	
Number of levels	10 points per floor	
Creativity	20 points	This score is based both on appearance and beauty, as well as creative use of materials.

WORKSHOP NO. 16. PROJECT PLANNING

Workshop goal: Participants should walk away from this workshop being able to decide a plan for a local initiative that would support the protection and conservation of large carnivores.

Learning Objectives: After this activity, students will be able to...

- (K) Re-list the elements of a project.
- (S) Choose the idea / solution they would like to implement to solve the identified problem.
- (S) Brainstorm the list of actions that need to be done.

Key Concepts: Project elements: identifying the problem, clarifying the goal, planning, implementation, monitoring, evaluation and celebration

1. Choosing the project idea / Group voting / 30 min / Markers, voting dots

2. Project planning / Group work / 40 min. / Flipchart paper, cardboard paper, marker, paper scotch

Total time estimated: 70 minutes

1. Choosing the project idea (30 minutes)

Set up and facilitation: On a flipchart, write the question, "What are the elements of a project?" and invite students to share their ideas with the group. Remind them that these elements were listed in the previous workshop. Write their responses on the flipchart. After all the contributions have been shared, synthesize them to share an organized definition such as:

A project = a piece of planned work or an activity that is completed in a defined and limited period of time and intended to achieve a particular purpose - in our case the protection and conservation of large carnivores.

Make sure to emphasize the following points about projects:

-  Projects are designed to do something or make a change
-  Projects have a starting and ending point
-  Projects can last hours or months or years
-  Projects are not routine; they are special and unique

Go back to the brainstorming list that you developed with the group in Workshop no. 14- Our solutions-brainstorming and presenting the list to the students again- so they can be connected with the solutions they discovered.

Now give each participant a marker or sticky dots. Tell them that they have 3 votes available for choosing a maximum of 3 ideas from the list that could be implemented by them as a group in the next period of time. Tell them that the criteria they should take into consideration when voting are:

-  To be motivated by the idea itself – to feel that they can learn something useful from it
-  To contribute to the conservation and protection of large carnivores
-  To be doable by the group in the limit of time established by the group

Each participant can put 3 dots / votes to 3 different ideas or all votes to just one idea. In the end, count the votes and make a range of the first 3 ideas that the group voted on. Give 10 more minutes for who to bring arguments for each of the 3 ideas.

In the end, tell them that from the 3 ideas voted they have to choose just one. Give them one more vote and 5 minutes for everybody to vote again for just one idea/solution. Count which ideas have the most votes. The idea with the most votes gets the chance to be implemented.

2. Project planning (40 minutes)

Set up and facilitation: remind students that the ideas they choose need to be taken through all these steps: identifying the problem, clarifying the goal, planning, implementation, monitoring, evaluation and celebration.

Emphasize that probably the idea that they have selected includes also the problem and the goal / solution and now they need to focus mainly on the implementation stage.

Write the idea/solution selected in the middle of the flipchart paper and leave space under for students' ideas. Split the group into 3-4 smaller groups and give each group the task to write as many activities or steps that need to be done in order for this idea to be reached. Craft some cardboard footprints and ask each group to write each activity on a footprint. Give them 10-15 minutes to discuss in detail all the activities. After they finish, invite each group one by one to stick the cardboard footprint on the flipchart. In case activities are repeated, arrange the footprint in an organized way or on types of activities that need to be done like: developing materials, promotion activities, direct meetings with people, making a movie, etc. (depending on the activities proposed). After the activities are listed, invite the participants to imagine that the project is started and they will have to convince someone who is not involved in the implementation that the specific activities were done according to the plan. How can they do that? What will be the "proof" that the activity was successfully implemented? During this discussion they will have to understand the importance of "proofs" (project indicators) and, based on them, the importance of the monitoring and evaluation.

Announce to them that in the next workshop you will go into more detail with roles and responsibilities to be decided. Congratulate the group for reaching this point.

WORKSHOP NO. 17. TAKING ROLES

Workshop goal: Participants should walk away from this workshop being able to decide roles and responsibilities in the action plan they choose.

Learning Objectives: After this activity, students will be able to...

- (S) Analyze which roles and responsibilities they can take in the initiative/project.
- (V) Take real responsibilities in the project / initiative.
- (V) Get motivated in making a difference in the protection and conservation of large carnivores.

Key Concepts: Roles and responsibilities

1. The story of everybody / Story / 10 min

2. Taking roles in the project / Group work / 40 min. / Flipchart paper, cardboard paper, marker, paper scotch tape

Total time estimated: 50 minutes

1. The story of everybody (10 minutes)

The aim of the story is to motivate students to take responsibility in the initiative they want to have for the protection of large carnivores.

Set up and facilitation: Read the story below and then ask the debriefing questions.

This is a story about four people named: Everybody, Somebody, Anybody and Nobody. There was an important job to be done and Everybody was sure that Somebody would do it. Anybody could have done it, but Nobody did it. Somebody got angry about that, because it was Everybody's job. Everybody thought Anybody could do it, but Nobody realized that Everybody wouldn't do it. It ended up that Everybody blamed Somebody when Nobody did what Anybody could have done.

Debriefing questions:

-  What is this story about?
-  What can we learn from this story?
-  How can this story be helpful in the project/initiative we are about to start?
-  What do you understand about responsibility? How is responsibility helpful in any project we have in our life?
-  How can we get motivated to take roles in our project? What motivates you in general when involved in a project?

2. Taking roles (40 minutes)

The role of this activity is to motivate students to take active roles in the initiative they started.

Set up and facilitation: Go to the meeting with the activity list and footprints of activities from the previous workshops and along with the students arrange the activities in a timeline. To be able to do that, ask participants the following questions:

-  What activities would you like to keep in the project?
-  What activities do you think are not relevant, doable and manageable by our group? (take out the activities they don't want to keep)

-  What extra activities do you think we should add to make sure we reach the goal?
-  Which are the first activities to be done at the beginning? Which are the ones to follow? (arrange the footprint with activities in the logical/ timeline order)
-  Which are the last activities you should do closer to the ending of your project?
-  How can you check if you managed to reach your goal?
-  After you arrange the activities in the right order, go to the next step. Ask participants to reflect individually on the following questions:
 -  What skills do I already have and can I use for reaching a certain activity or more?
 -  What skills do I still miss and I want to challenge myself to get out of my comfort zone and learn by experience while doing a certain activity or more? (give some examples here)

Give each participant 3-4 post-it papers and ask them to write their name on the post-it and the name of the activity they want to take responsibility for. They can choose to be involved either for the purpose of learning something new, or for the purpose of using the skills they already have in a certain activity. After reflection time, ask them to come forward and stick the post-its next to the activity footprint.

In the end, go through the entire list of activities and make sure you arrange the names of the students next to each activity according to their preferences. In the end, you might have for each activity a team ready for implementation.

Go to the morals of the previous story and ask what can be done now so we can avoid ending up like in the story? What can we do about it?

-  Make sure they get to the point that for each team there is a coordinator or a responsible person who works with the others in the team. Take some extra time to negotiate in each group.
-  Who is the coordinator?
-  Revise the action plan and what needs to be done for the next period of time until the project gets to be implemented.
-  Congratulate the team for the action plan they have and the responsibilities they took.
-  Celebrate this with a handshake or a group hug.

WORKSHOP NO. 18. EVALUATION

Workshop goal: Participants should walk away from this workshop being able to reflect on the learning experience that they had during the project.

Learning Objectives: After this activity, students will be able to...

- (S) Reflect on the feelings they experienced during the project
- (V) Be curious about how this learning experience was for them
- (S) Self-assess their learning and motivation they gained during the project on the topic of nature and large carnivores.

Key Concepts:

Evaluation: Assessing activities and achievements against a set of standards

Reflection: Taking time to think about changes and experiences that have occurred

1. Choose a color / Game / 10 min. / Colored papers

2. The story of our learning experience / Group work / 40 min. / Fake microphones, costumes, hats, etc.

Total time estimated: 50 minutes

1. Choose a Color! (10 minutes)

This game is intended to help the group warm up and gently introduce the topic of evaluation and reflection.

Set-up and facilitation: Scatter many different colored papers on the floor around the room. Then invite the participants to stand and, when you say “Start,” to move to the color that they believe best represents the way they felt during the project (workshops). Once everyone has arrived at a color, invite them to discuss in small groups why they chose that color. If there are participants standing alone next to a color, invite them to join a nearby group but stick with their chosen color. After a few minutes, ask each group to select a representative to share their reasons for the choice with the rest of the group.

2. The story of our learning experience (40 minutes)

This activity is intended to help participants review the stages of their involvement and learning into this project. This activity can be done in a lot of fun, creative ways – verbally as a fake quiz show, television interview, or role play; visually through posters, paintings, or timelines; or simply by discussion. Choose the method that works best for your group’s level of energy and creativity. Below is one option.

Set-up:

Gather props that can be used for skits: fake microphones, costumes, hats, etc., and make sure the room is big enough that the group can split into three different areas for planning.

Facilitation:

Invite the participants to split into 3 small groups. Tell each group that they will be presenting a short (2-3 minute) skit about how and what they learned/discovered until now in the project. Assign each group a different day in the workshops cycle (Day 1, 2,3,4,5) and then give them 5-7 minutes to plan a short skit about how they experience the workshops and the project they did (if that is the case). Encourage them to include funny moments, mistakes, difficulties, or surprises that happened during the workshops/project!

After the groups have had time to plan, re-gather them and have each group present their skit, in order, so that you have “watched” the whole project. Then lead a discussion using the questions below.

Debriefing questions:

-  What do you think were our project goals?
-  Do you think we met our project goals?
-  What was the most interesting thing you felt you’ve learned or discovered?
-  What was the most interesting thing you’ve learned?
-  What were some difficulties or challenges we encountered during the project?
-  What was the best, funniest, or most satisfying moment?
-  What impact do you think we have had on our region for wildlife and large carnivores or we might have in the future? How do you know that?
-  Do you think our project made or could make a lasting, sustainable change? Why or why not?
-  How can we help to be sustainable?
-  How can we best use what we learned for the future?
-  How do you envision the future of large carnivores in our region in 10 years? What will be its impact on our life?

Bibliography:

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Photosynthesis

Where does the oxygen to my lungs come from? Why are the apple and carrot sweet?

The green plants are solar panels. They capture the energy in the sunlight's rays. All green plants collect solar energy thanks to the green pigment chlorophyll found in plant cells. With the help of carbon dioxide from the air and water, the plants convert solar energy into carbohydrates (sugars). This causes the plant to live and grow. Photosynthesis also provides oxygen to all life on earth. Photosynthesis is the foundation of most ecosystems.



Soil formation

How is soil formed that plants grow in?

Soil forms when living animals (insects, worms, bacteria) break down and mix dead plant and animal parts and animal manure with sand, clay and minerals that erode from the ground. Nutrients are then set free and the soil becomes loose and can retain water and provide oxygen to plant's roots.



Nutrient supply

I need different substances for my body like fats, vitamins and proteins, but what does a plant need?

Plants, animals, fungi and microorganisms break down the waste in the environment, releasing nutrients to plants. This occurs in a cycle. Nutrients such as nitrogen and phosphorus move in a large cycle. Everything goes around.



The water cycle

How are clouds, rain, lakes and drinking water formed?

The water circulates through the countryside in a large loop between the rivers, lakes, the sea, plants and animals. The water in the lake evaporates, it becomes cloudy, it rains, the rainwater becomes lakes ... Water is essential for all life. The water cycle also serves as means of transport for different substances.



Habitats

A "slug" crawling on the grass, why is it so content there?

A garden is perfect for the slug. There is food and moderate humidity.

A functioning habitat contains everything a plant or an animal needs to survive – such as food, water and shelter.

Examples of similar habitats: sandy beach, rocky shore, seabed, spruce forest, swamp forest, farmland, ditch.



Genetic and biological diversity

Why are there so many different kinds of birds and fish?

Nature likes diversity. Different colours and shapes, sizes and looks. Many different kinds of genes and species mean that there are many solutions for ecosystems to work, evolve and resist change. In the rainforest, for example, there are millions of plants and animals. It is hardly noticed if a lizard becomes extinct.

Different habitats, plants and animals also mean that we appreciate nature for its beauty. TV's nature programs are so popular. Is it because you get to see so many strange plants and animals?



Drinking water

Every day we drink water, but where does the drinking water come from?

Drinking water is essential for life. If we do not drink we die within a few days.

In nature, there is plenty of water in lakes, rivers, clouds and more. Nature receives rainwater. It is purified and stored as groundwater in the ground. We can pump up this clean water.

There is also water in lakes, rivers, streams and in ice. The entire cycle of water through different ecosystems is a major and essential free service from nature. The water that is not fit to drink we can still use to irrigate potato fields and more.



Food

Food is essential, but how does nature help us with food?

For us to grow potatoes, wheat and apples it requires functioning ecosystems. We get all our food from plants and animals. We grow strawberries, and we have dairy cows, we hunt moose and we fish cod and so on. We must ensure that the ecosystems that give us our food are not destroyed or impaired.



Control of erosion

Can nature help us to protect ourselves against landslides?

When it is raining or very windy, soil and sand can be transported away. It is called erosion.

It is quite natural, but it may be too much. Soil erosion is a major problem in many areas where nature is being used too much. Plants and their roots stop soil erosion. Allowing forests to remain or planting new trees are important measures to help reduce erosion. Especially where the ground slopes it is important with grass and trees that bind the soil.



Raw materials

Where do the materials in rubber boots and the fabric in pants come from?

We humans get a lot of raw materials from nature. The list is endless on what we use from plants and animals in nature. Fibers for clothing, paper, upholstery, furniture, rubber, wax, oils and glues are just a few examples. Nature is like a giant shopping mall where we get material almost for free.

Today we are about 7 billion people on the globe who all need a lot of clothes and things. Nature's ecosystem services are working hard!



Medicine and health resources

Can dandelions and lady's mantle cure diseases?

Humans have always used plants from nature as medicine. Some plants can be used to cure or mitigate disease or to protect us from insects.

Many of today's medicines, health resources and cosmetics have evolved from substances in plants or animals in the wild. Perhaps 40% of all the medicine comes from the rainforest. A large biodiversity is like a pharmacy for the future.



Fuel

Every day we need to heat our homes and need energy to cook, but where does all the fuel for this come from?

Today we use a lot of oil to heat our homes and to supply electricity to our cookers. In poor countries a lot of wood is used, which means forests disappear. Wood that is gathered is the most common energy source in the world.

We need to use fuel from renewable resources instead of oil and coal. Wind and solar power are good.

Biogas is a good fuel source that can be obtained by letting waste decompose without oxygen.



Protection against natural disasters

Can nature protect us from hurricanes and floods?

If nature works well then it can protect people from natural disasters. Natural disasters are becoming more common, affecting more and more people.

Plants hold soil and moisture and prevent soil from being blown or washed away.

Wetlands can capture and delay water masses.

Forests and other vegetation along slopes hold in soil and nutrients and slow up downpour rains.

Forests near the coast and coral reefs in the ocean can hold water, stop the wind and waves and prevent flooding during hurricanes.

In cities, it is important with plants as protection against the wind. Green land can take care of overflowing water.



Protection against pests

How can we protect ourselves from mice and other pests?

In nature, it is a constant struggle between different species for food and habitat. If there is plenty of food and good protection for a species, it increases in numbers.

Almost all animals have natural enemies e.g. ladybirds. Both the larvae and adults eat aphids. Spiders, hoverflies, ground beetles, birds, bats, hedgehogs, frogs and toads are our friends. They ensure that pests do not increase too much.

These friends mean that the need for chemical agents reduces!

Snow and cold are great fighters of many pests.



Protection against disease

Can nature protect us against diseases?

Diseases affect humans, animals and plants. Some serious diseases for humans that are spread by animals are malaria, sleeping sickness, bilharzia and dengue fever. We use both medications and toxins to fight diseases.

Almost all animals and plants have a natural enemy. Both insects, fish, birds and other animals can prevent a serious disease from spreading by eating the animals that spread the disease.

Snow and cold are great fighters of many diseases.

Moreover, if the water purification works in nature, this reduces the risk of diseases spreading even more.



Water purification

How does nature purify dirty water?

When water flows through nature, it can be slowed down. It's good because then it gets purified. It flows through the earth, or lakes, and then gets filtered. Sludge and waste is captured by plants and animals. Bacteria and microorganisms help to "eat dirt", take care of the organisms that can cause disease and "filter away" toxins. Nutrients such as nitrogen and phosphorus are cleaned and absorbed by plants.



Better climate

Can forests make the climate better?

Trees and other plants take care of the greenhouse gas carbon dioxide. Even the ocean stores carbon dioxide. When you cut down a forest and maybe burn it up without planting new trees, this increases the greenhouse effect. This is because the stored carbon dioxide is released and because the forest's ability to absorb and store carbon dioxide decreases.



Purification of air

What benefits do trees provide in a city?

Trees and parks provide a more even and pleasant temperature in cities. They see to it that the temperature does not change too much.

Trees and other plants are also important for air quality because they remove pollutants from the atmosphere. They act as filters for pollutants. Dust and the like get trapped in the leaves. Some plants and ecosystems can even take care of toxic or harmful gases.



Pollination

What if bees and bumblebees were to disappear?

For blueberries to reproduce, pollen must be transferred from one flower to another. Otherwise there will be no good blueberries. Poor pollination equals poor harvest. Bees help pollinate blueberry flowers.

Over 90% of all flowering plants and more than two-thirds of the most important crops that we grow for food need the help of bees, bumblebees and other pollinators to reproduce. The rest pollinate themselves or with the help of the wind. Pollination allows harvests to become larger, there will be more flowers and more animals that can live on the seeds and fruits that plants provide.



Beauty and spiritual value

Is nature God?

Nature provides us with aesthetic experiences and inspires artists and performers. Think of all the beautiful paintings and fine summer songs.

For many people, everywhere in the world, nature is something that we are a part of. Nature is something bigger than us. It provides security, comfort and a feeling of belonging.

For example, for native Indians, nature is very important. One respects and worships it. This is the same for many other cultures. Many places in nature are special and have a special meaning for people. People who live a good life by appreciating nature's services often want to protect it.



Outdoors & tourism

Can I make money from nature?

Tourism can provide much revenue for tourist operators. Think of rafting, camping and mountain hiking. We want to visit exciting places and experience nature. Through outdoor recreation and nature tourism, we get our own experiences and understand that it is important with biodiversity and protecting ecosystems. Beautiful scenery and well-functioning ecosystems with animals and plants are important for tourism to work.



Nature inspires and provides knowledge

Can I learn something from nature?

Nature, biodiversity and natural landscapes are a source of inspiration for musicians, poets, painters, dancers, sculptors and other artists.

To understand how things work and to find new solutions to problems we can study nature.

Industry is sometimes inspired by nature's solutions and uses ecosystem services to develop products and services.



Health and relaxation

Can I feel better if I'm out in nature?

Being out in nature, hiking or playing sports is both good for physical exercise and to help people to relax.

Research shows that green nature causes people to handle stress, get well faster after illnesses and can maintain their health and happiness.

There are even doctors who write prescriptions to be outdoors.



Hungary-Slovakia-Romania-Ukraine

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