Endangered Species

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Endangered Species

1. IUCN – International Union for Conservation of Nature

1.1 general

1.1.1 definition

The International Union for Conservation of Nature is a global organization which intends to make sustainable use of natural resources possible while conserving biodiversity and the environment.

1.1.2 foundation

The IUCN was founded in 1948 as the first global environmental organization. In those days the network was known as "Union for Protection of Nature" until the name was changed in 1956. Today the organization is the largest conservation network of the world.

1.1.3 organizational structure

The union consists of three major components: its member organizations, its secretariat and its six scientific commissions which do research on various topics such as education, environmental law and ecosystem management. Member organizations can be national or international NGOs as well as states and governmental agencies. The members can define the program of the union which means that a state can come up to the other institutions if there is a regional problem to be solved.

1.2 mission

The work of the IUCN is focused on safeguarding biodiversity, fighting climate change by promoting for example the use of renewable energy and develop "green economy" which means that the union does also consider economic interests. Based on research results, the network can take action by initiating projects and influencing laws.

1.3 red list of endangered species

If we take a closer look at biodiversity, it is obvious that there must be an up-to-date record of animals and plants from all over the world in order to protect endangered species successfully. Based on this data, the IUCN classifies every single species into different categories of endangerment. Altogether there are seven stages that tell us whether a species is threatened or not.

LC	Least Concern	stable population
NT	Near Threatened	on the verge of being threatened
VU	Vulnerable	threatened
EN	Endangered	highly threatened
CR	Critically Endangered	on the verge of becoming extinct
EW	Extinct in the Wild	still individuals in captivity
EX	Extinct	probably lost forever

Above that, there are two further categories, namely “data deficient” which means that the collected information is not enough for a reasonable classification and “not evaluated”.
According to the network, 34 per cent of all animal and plant species are threatened (2010).

Some examples of endangered species:

Species	**Category of Endangerment**	**Habitat**	**estimated Population**
Siberian Tiger	EN	Southeast Asia, Siberia, India	fewer than 500
Orang Utan	EN	Indonesia	around 50.000
Black Rhinoceros	CR	Eastern and Southern Africa	around 4.000
Ice Bear	VU	Arctic	20.000 – 25.000
Giant Panda	EN	small areas in central China	around 1.600

There are also regional red lists: In Austria for example the wildcat, the brown hare and the otter are endangered respectively on the verge of local extinction.

1.4 protected areas

The IUCN does not only classify animal and plant species but also protected areas. These different types of sanctuaries have different purposes and therefore it is exactly determined if and how the areas can be used by humans. (*see point 4)*.

2. CITES – Washington Convention

2.1 general

CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) is both a treaty and an organization that seeks to ensure the survival of endangered species by regulating the international trade in animals and plants. In the course of meetings the representatives of the states that have signed the contract discuss whether it's necessary to pass new regulations. These meetings are called “Conferences of the Parties”. CITES is not the same as the Convention on Biological Diversity which is a treaty of the United Nations.

2.2 convention in Doha 2010

The last conference took place in Doha (Qatar) in which 2000 delegates of 175 nations participated. However, the result was disappointing. The representatives did neither agree on a ban of blue fin tuna trade nor on new protection schemes for various shark species. Only the ivory embargo was extended.

3. CBD – Convention on Biological Diversity

3.1 general

The Convention on Biological Diversity was ratified by 191 nations. The United States can participate in the conference but need not necessarily stick to the regulations because they are one of the few countries that have never signed the contract. The goal of the convention is once again to preserve biodiversity and healthy ecosystems and to make sustainable use of resources possible. In short, the representatives of the nations try to find a compromise between ecological and economic interests.

3.2 conference in Nagoya 2010

The convention's last conference took place in Nagoya (Japan) in 2010. One of the most important decisions is the enlargement of sanctuaries all over the world. Within the next 10 years, 17 per cent of the continental and 10 per cent of the marine surface shall be protected. Moreover, the loss of biological diversity shall be stopped by 2020. This is definitely a very ambitious goal because as the world's population is increasing uninterruptedly, more and more resources will be needed.

Another important point is fighting biopiracy. This term can be defined as follows:

"The commercial development of naturally occurring biological materials [...], by a technologically advanced country [...] without fair compensation to the peoples [...] in whose territory the materials were originally discovered." (taken from: http://www.thefreedictionary.com/biopiracy)

3.2.1 ABS-protocol (access and benefit sharing)

Because biopiracy is not only a threat to nature but also to local communities and developing countries, there must be a solution which strengthens the rights of these people respectively nations. A promising concept that was worked out in the course of the meeting in Nagoya is the ABS-protocol (access and benefit sharing). To be precise, the member states have to pay a certain percentage of the profit made by selling products that contain genetic resources to the state of origin (for example a pharmaceutical group has to pay if they use biological resources from another country). The implementation in the different countries shall be controlled by agencies.

4. Protected Areas – Categories

The term "protected area" is defined as follows by the IUCN:
"*an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means.*"

Because every sanctuary has different requirements there are altogether six categories of protected areas:

4.1 Category I: Strict Nature Reserve and Wilderness Area

The first denomination is divided into two subcategories. That is to say there is a slight difference between Strict Nature Reserves (Ia) and Wilderness Areas (Ib). Both terms refer to the strictest protectorates: The ecosystem shall be preserved at all costs and without influence by humans. Therefore, entering the nature reserves is usually prohibited, at least for common visitors. Scientists may enter in order to do some research work because in these areas they can get unaltered results. By all means, it is decisive that these zones are spacious enough so that the ecosystem can develop and work also in the long term.
Wildlife areas are normally accessible for the public as long as landscape features with regard to ecology, geology, and physical geography (a subfield of geography which considers the Earth surface as a system in which various processes take place) are conserved sustainably. Thus, humans must not alter the scenery significantly. These zones may only be populated by native people.

4.2 Category II: National Park

National Parks seek to protect nature areas in the ling term. They may serve as local recreation areas or be available for research work. Humans may influence the development of National Parks for instance to favor endangered species, to regulate populations or to exterminate non-native animals and plants. These schemes can have a positive impact on biodiversity, however, it's important that humans don't use National Parks too extensively. In some parts, for example, fishing, hunting and forestry are permitted. National Parks are significant tourism regions as well.

Some examples for category II protected areas are Yellowstone (USA), Kruger National Park (South Africa), Tsavo East and West (Kenya), Teide (Spain) and Sarek (Sweden), which is roughly 200.000 hectares large.

4.3 Category III: Natural Monument

National Monuments can either cover small areas or just one special landscape feature. Therefore, it's all about conserving particular natural appearances such as water falls, canyons, caves and craters but also reefs. Tourists are encouraged to pay a visit to the monuments. The main emphasis is not on preserving endangered animals but nevertheless, in many cases the conservation of natural features contribute to biodiversity. Caves, for instance, can serve as shelter for various species.

4.4 Category IV: Habitat Management Area

The main objective of these zones is the protection of particular habitats or species. This often requires purposeful action by humans, thus, the nature is not left in its own devices. Visitors may enter as long as it's guaranteed that they don't harm the habitats. By making these zones accessible, tourists can be sensitized so that they begin to appreciate and respect wildlife. Habitat Management Areas might be relatively small but the extension varies. They can embrace for example spawning areas, breeding grounds or wetlands.

4.5 Category V: Protected Landscapes

Protected landscapes intend to preserve the scenery. Therefore, humans may use these zones for economical purposes such as forestry, fishing, hunting and even agriculture. These landscapes can also serve as local recreation areas. Protected landscapes are usually quite large and might connect two other sanctuaries with each other. Therefore, protected landscapes are actually momentous for biodiversity. Organic products might have their origin in these areas.

4.6 Category VI: Protected areas with sustainable use of natural resources

These protected areas shall ensure variety of species and make sustainable economical use by humans possible at the same time. This objective is criticized by ecologists because cultivation always has an impact on ecological balance. Therefore, it's important that at least some parts of the areas are not used too extensively. After all, these areas are protected against exhaustive cultivation, thus, the resources that have their origin in these zones shall be appreciated and not exploited. That includes the interdiction of large plantations because they would affect the landscape in such a way that biodiversity is threatened.

5. Threats for animal and plant species

5.1 poaching and trophy hunting

Illegal hunting - also known as "poaching" - is one of the major threats to biodiversity because poachers disrespect quotas, close seasons and protected species. Due to the high unemployment rate (above all in African countries), quite a lot of people risk severe punishment and kill animals without permission. The business can be extremely profitable since products such as ivory or the horn of rhinos are highly appreciated in Asian countries, especially because they are said to be potency cures.
Between 1950 and 1980 a huge numbers of elephants were put to death illegally. At that time, it was estimated that the species would become extinct in 2010. Thanks to conservation efforts like the foundation of new sanctuaries, we can still admire the behemoths in the wilderness. The rhinoceros, however, is critically endangered in many parts of the "dark continent" ans still the authorities are unable to put an end to poaching.
Animals are also killed illegally in Asia: Tigers are on the verge of extinction, but nevertheless, they are hunted mainly for their bones which are also regarded as medicine in China. In fact, there are only 3200 wild tigers left, the Javan, the Bali and the Caspian tiger have already disappeared.

Another point that has to be considered is that hunting big game is allowed in many (African) National Parks. For a huge amount of money, tourists may kill a certain number of animals and take the trophies back home. The impact of trophy hunting on the wildlife can only be estimated. Although there are quotas, nobody can guarantee that they ensure the survival of the species.
Marcie Beth, a research assistant for wildlife in the "Humane Society of the United States", explained in an e-mail how trophy hunting affects the wildlife and the local people:

"There are some countries that do not allow any trophy hunting, such as Kenya. But yes, the hunting areas of countries that do allow it are private and government-owned. These countries generally do establish quotas, however they are not based on science so they do nothing to ensure the survival of the species. You are certainly right to question the idea that trophy hunting decreases poaching – it does not. The proponents of this idea say that if people can make money from selling lion hunting permits to foreigners, then instead of poaching the lions they will keep them alive so that a foreign hunter can kill the lion instead. So essentially 'poaching' is replaced with 'legal killing' by a trophy hunter and the lion dies regardless. Ecotourism (as you alluded to) brings in far more jobs and money to local communities than does trophy hunting!"

5.2 loss of habitat

Sensitive ecosystems are destroyed because humans want to use fertile areas for economical purposes.

5.2.1 rainforests

Rainforests are not only indispensable for the native fauna and flora but also for the entire mankind: The trees can store up to 800 tons of CO_2 per hectare. Furthermore, about 15 per cent of the world's fresh water supply can be found in the tropics. However, the rainforests are getting smaller and smaller due to uncontrolled deforestation. Scientists estimate that 50 years ago, the rainforests covered 14 per cent of the Earth's continental surface. Today, less than a half of this area is left although the rainforests are home to 50 per cent of the known species including endangered ones such as the Orang Utan in Indonesia, the Gorilla in central Africa and the Jaguar in Central and South America. Products such as coffee, tea, rubber, exotic fruits, soy[1] and palm oil[2] are grown in the tropics and may accelerate the destruction of rainforests if there is no proof (f.i. a certificate) that guarantees sustainable agriculture.

[1] Soy has become a major feedingstuff within the past decades. That's why factory farming also harms these sensitive regions.
[2] Palm oil is an important primary product for sweets. In 2010, Greenpeace addressed Néstle in the course of a startling campaign because they use palm oil from huge companies that do neither care about the environment nor about the local people whose livelihood is threatened.

5.2.2 coral reefs

Coral reefs are the rainforests of the underwater world. In total, they cover 0,17 per cent of the ocean's surface. The major coral regions are situated in the Western Pacific, to be precise, around the Philippines, Indonesia and some states of Oceania. Although they can attract many tourists, coral reefs face serious danger. According to the CBS, coral reefs are disappearing four times as fast as rainforests.
The first point to mention is global warming which causes a sea level rise. Reefs are located in rather shallow waters and, as corals need a certain amount of sunlight to grow, many will probably not be able to resist the change and die. Furthermore, a special process called “bleaching” is a consequence of the increasing water temperatures. When the water is getting to warm, the corals will expel a symbiont algae called zooxanthellae which provides the life-sustaining oxygen and thus, the coral will die. Global warming also affects coral reefs insofar as the oceans are getting more and more acid due to the CO_2 emissions. Moreover, warm waters provide ideal conditions for bacteria cells to reproduce and spread diseases.
Another danger to coral reefs is the overexploitation of natural resources, rather overfishing and collection of marine life. Nowadays, we know new, effective fishing methods but since they are also less selective and trap even very small animals, they have a destructive effect on all marine habitats including coral reefs. The logical consequence is that a high number of juvenile fish that haven't been able to reproduce are caught preventing the renewal of stocks. If fish disappear, especially predators, the whole ecosystem is affected: As soon as there are too few carnivore fish, the animals that feed on plants will dominate and exert pressure on corals and subsequently on other species' habitat. This is just one example to demonstrate how altering the ecological balance can modify entire regions.
Additionally, the destruction of nature in coastal regions lead to a higher risk of sedimentation in the sea. Apart from some exceptions, most corals cannot tolerate the excessive deposit of mud, sand and other similar materials. Trees would be able to reduce the effect of soil erosion in the sea but since costal regions are often cultivated in order to support agriculture, provide tourism facilities or create new settlement areas, the materials are washed into the sea by the rain unhamperedly.

5.2.3 coastal regions

As mentioned before, there are very few unspoilt coastal regions left. Nonetheless, they are vital areas for many species as they provide shelter or serve as nursery grounds. Mangroves, for example, are highly productive plants because they are able to reduce pollution and conserve water quality. Furthermore, they provide homes for various kinds of mammals, birds, fish and mollusks since they can thrive in salty ground and prevent soil erosion which is a major threat to coral reefs (see point *5.2.2*) as they stabilize the sediment. Mangrove forests become less and less extended because the areas where they grow can be profitable for companies – for instance to promote tourism. That doesn't mean that these zones should be closed for visitors, quite the contrary, environmentally-sensitive tourism or – in the ideal case – ecotourism can help both the local people and the environment as the guests are getting more aware of social and environmental concerns.

5.2.4 savannas

Savannas and steppes are both arid grasslands. The main difference is that the tropical vegetation zones are called savannas, the grasslands in the temperate zones are known as steppes. Savannas usually get more rain than steppes and therefore there is scattered tree growth.
Africa's savannas are famous for their wildlife. Many of them are National Parks (for definition see point *4.2*) but nevertheless they are threatened by pollution, poaching and trophy hunting which is allowed in some protected areas. Humans also exert pressure by using the land for cattle grazing or for other purposes. The latest example is the planned Serengeti Highway which will divide the Tanzanian National Park. This will have a severe impact on ecological balance because every year, approximately 2 million gnus cross the Mara River in order to get to the Kenyan Masai Mara. If the Tanzanian President, Jakaya Kikwete, insists on his plans to construct the highway in 2012, the gnus and the predators that follow the herbivores would have to cross a highly frequented street to continue their migration.
That's a current example of how human influence affects ecosystems in Eastern Africa. As the population in African countries is increasing extremely quickly, protected areas will probably become smaller within the next decades.

5.3 global warming

Global warming is the increase in the average temperature of Earth's near-surface air and oceans due to the CO_2 emissions. This temperature rise threatens various habitats since the melting ice caps do not only make the arctic habitats on which many species such as ice bears depend smaller, they also cause sea-level rise. This might lead to coral bleaching (see point 5.2.2) and other phenomenons such as acidification. The CO_2 emissions might also contribute to desertification. Diseases can spread more easily in the water because the higher the temperature is the more agreeable the conditions are for bacteria cells to reproduce. The major problem is that global warming is happening faster now than anytime before, thus, species have difficulty in adapting to the changing situation. In fact there have always been climatical abnormalities but human activity does certainly accelerate the warming. The most reasonable measure that everyone can take is to use energy efficiently (see point 6.1.2).

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