

From the enclosure to the wild - The role of zoos in protecting biodiversity

The Earth's biodiversity is shrinking faster than ever. More than 40,000 species are now on the Red List of threatened animal and plant species. Around 16,000 of these species are threatened with extinction. According to the World Conservation Union (IUCN), every fourth mammal species, every eighth bird species and a third of all amphibians are threatened. Therefore, species conservation is more important today than ever before. Zoos have now also dedicated themselves to this task. For many, it has become the main goal, just like the preservation of healthy ecosystems.

By exhibiting the animals, they offer visitors access to animals from foreign continents and seas. For it is unfortunately usually true that you only maintain what you know and you only think you know what you have seen yourself. The exhibited animals thus are "representatives of their species in the wild". Since the Washington Convention on International Trade in Endangered Species of Wild Fauna and Flora in 1973, it is in any case only possible to take animals from the wild for zoos in a very limited way. Since then, a fundamental change has taken place in most European zoos. Zoos mostly have to show animals that were bred in the zoo itself. And since animals reproduce most successfully when they live in a species-appropriate environment, most zoos strive to model their enclosures on as close a replica of the natural habitat as possible. Modern zoos create entire landscapes such as savannahs, river landscapes or rainforest houses. The EU's new zoo directive, which demands species-appropriate habitat design, has also contributed to this. The focus here is particularly on the protection of wild animals and the preservation of biological diversity.

Preserving wild animal populations

To avoid inbreeding, the loss of the original gene pool and unnatural selection, zoos helped create the European Conservation Breeding Programmes (EEP) in 1985. In these, they commit to showing only animals born in zoos. EEPs also manage the existing gene pool of certain zoo animal species and enable viable wild animal populations to be maintained over a period of several hundred years. Many species would already be extinct without the populations in zoos, such as the **Przewalski's horses**. A small population survived in zoos, based on only 12 founder animals.

In addition to species conservation *ex-situ*, i.e. outside the animals' natural habitats, many zoos are now also involved in *in-situ* conservation, which is also a requirement of the EU Zoos Directive. They act directly on site and thus also support the primary goal of species conservation, namely to preserve animal and plant species in their actual habitats.

Przewalski's horses back home

The participation in the reintroduction of the Przewalski's horses in Mongolia and China is a major project of Cologne Zoo. Due to poaching and competition with domestic herds, the Przewalski's horse was wiped out from its last refuge, the Djungarian Gobi. In the meantime, thanks to breeding programmes in zoological gardens, there are about 1800 Przewalski's horses again. Some of them have been returning to Mongolian and Chinese nature reserves for several years. However, the reintroduction of an animal or group of animals is a very complex matter. The first step is to find a suitable area where the animals can live. If the causes of the species' extinction are still present, the project is doomed to failure from the start.

Once a suitable area has been found, the next step is to select the animals. Here, the genetic criteria first play a role. The animals must not be closely related, because usually the first group released into the wild represents the gene pool for all subsequent generations, i.e. of an entire developing population. The health condition of the animals is also important. The competition for food with domestic herds as well as the unaccustomed temperature fluctuations require great adaptability from the Przewalski's horses.

After a year in an acclimatisation enclosure, the animals gradually explore their surroundings. Initially, the herds return to the open enclosure again and again, until they have expanded their foraging areas to such an extent, that they can manage without the security of the enclosure.

