



Beaver reintroduction in Hungary



The Hungarian reintroduction programme started in 1996 and was organised by the WWF Hungary. Between 1996 and 2007, two hundred and thirty four individuals were released in the Gemenc, Hanság and Mátra Hills, and in the regions of the Tisza and Drava Rivers. 90% of the beavers were originated from Germany (Bavaria) and the rest came from Austria and Poland. The Bavarian population was the result of a programme, in which 120 individuals were reintroduced from Russia and Poland between 1966 and 1980. This project was so successful that the Bavarian population reached 5000 individuals in 2000. Because the very dense population caused some kind of economic damage, German experts wanted to reduce the number of beavers by capturing and releasing them into foreign areas, for example into Hungary. The captured beavers lived in channels and canals in Bavaria, therefore, after their release into high quality wetlands and nature reserves, many of them migrated into channels which were similar to their original habitats.

In Hungary the biggest population exists in the Szigetköz region. In a census in 2008, 104 territories were included and the estimated population was 360-370 individuals. Because of the increasing tendency, the actual population may exceed 600 individuals. In the Hanság and Mura regions there are continuously increasing populations, whereas in the Gemenc and Middle-Tisza regions the number of beavers stagnates. An increase in these populations is predicted for the next few years because there are a number of unoccupied habitats, especially on the small streams.

At the beginning of the reintroduction programme some experts had concerns about the possible conflicts between the beavers and local stakeholders. Because beavers went extinct more than a century ago, there was only speculation about the possible affects on the environment. The beavers may affect the forestry by gnawing and felling trees, and hollows within the dykes may endanger flood prevention. Fortunately no significant damage has been detected; the beavers have only caused small-scale problems on a local level. As a consequence of the cooperation between nature conservation authorities and other stakeholders, these problems seem manageable and most of the land-users are able to accept the presence of the beaver population.



Reintroduction

Nowadays, alarmed by the global decrease in biodiversity, conservation experts all over the world are launching reintroduction and propagation projects to assist the survival of certain species or restore damaged ecosystems.

The first beaver reintroduction project started in 1922 in Sweden. More than 20 European countries have joined that initiative and beaver reintroduction is the one of the most successful stories in this field of nature conservation. As a result of reintroduction and effective protection, the present beaver population numbers about 639,000 individuals.

In Hungary, the first observations were between 1985 and 1986, 120 years after extinction. Most probably the beavers, which had been reintroduced into Austria, had migrated into the Szigetköz area.



The extinction from Hungary



The beaver had been a common species in the rivers of Europe and northern and eastern Asia until the 18th century. Earlier it had been hunted for its fur, meat and musk, then later diminishing wetland habitats endangered the species. By the early 1900's the beaver had almost been exterminated; there were only eight isolated populations with 1200 individuals in total.

In Hungary, the last beaver was shot in February of 1854 next to the village of Ács in Komárom-Esztergom county. In 1865, beavers were observed on the islands of the Danube and the Drava close to Zimony (now in Serbia). This was the last observation in Hungary. As a point of interest, in a cookbook, published 23 years after the extinction of the beaver, there were two recipes to prepare beaver meat.



As a consequence of the difficulty in identification, some individuals of the North American beaver have been reintroduced into European countries. In Sweden, Finland and Russia there are now large populations of North American beaver; approximately 40,000 individuals have been counted. The Eurasian beaver rarely builds dams and populations expand more slowly than the North American variety, therefore the dense North American beaver population may squeeze out the native species from a mutual habitat.

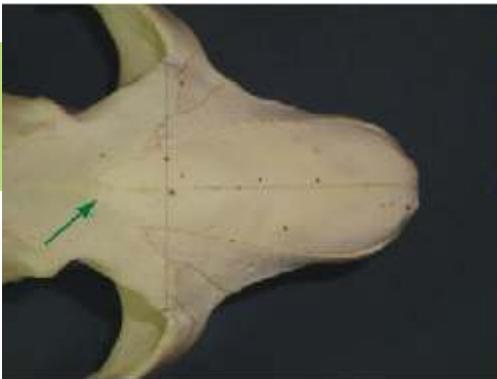
In Hungary, some North American beavers were reintroduced into the Hortobágy region, but they have extinct yet. It was suspected that North American beavers migrated from Austria to the Rába River, but the examination of a skull disproved this supposition.



The North American beaver

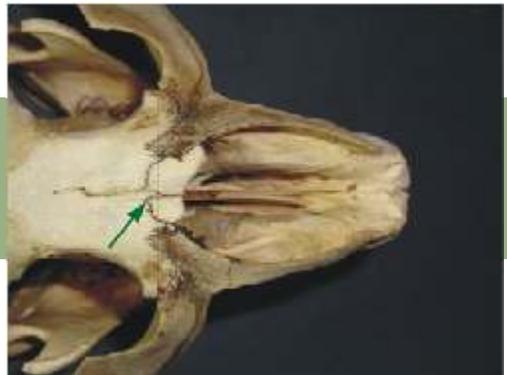


The North American beaver (*Castor canadensis*) is a closely related species of the Eurasian beaver (*Castor fiber*); the evolution of the two species separated 7.6 - 8 million years ago. Individuals of the two species are not able to hybridize because the number of chromosomes are different; the Eurasian beaver has 48 whereas the North American beaver has 40 pairs of chromosomes. Nevertheless, without chromosome sampling, it is not easy to distinguish the two species. The simplest differentiation is the size of the nose bone. In the case of the Eurasian beaver, the nose bone significantly longer than the zygomatic bone. By contrast, in the North American beaver the nose bone is only slightly longer than zygomatic bone.



Skull of the Eurasian beaver. Green arrow: end of the nose bone; fine line: end of zygomatic bone Photo: Dávid Czabán

Skull of the North American beaver. Green arrow: end of the nose bone; fine line: end of zygomatic bone Photo: Dávid Czabán



The beaver is frequently called an “ecosystem engineer” because this species can significantly transform its environment and modify the natural resources for other species. On the one hand the beavers fell trees wintertime, on the other they may build dams. Dam-building is a typical activity on narrow, shallow streams where the beavers can increase and stabilise the water level using the dams to submerge the entrance of the hollows and the winter feed reserve. As a consequence of dam construction, large areas can be inundated; the beavers can change the landscape fundamentally.



Beavers live in cavities carved into the riverbank. The diameter of the hollow is about 50-80 cm and the entrance is under the water surface to protect it against predators. The length of the hollow and passages can be more than 10 meters. When the riverbank is not steep enough, the beaver can build a "lodge" from branches and twigs. In some cases, the animals gather a food reserve for winter by collecting sprouts and branches.

Beavers are herbivores; trees, shrubs and herbaceous plants make up their diet. There is a long list of preferred plants; more than 150 herbaceous and 80 tree species are identified as a beaver's feed. During the summer they prefer herbaceous species and from October to May they fell trees to obtain the bark, which is the basic feed in wintertime. Beavers prefer riverbanks as a feeding area; 90-95 % of foraging has been observed within a 10-meter distance from the water.





The Eurasian Beaver

The Eurasian beaver (*Castor fiber*) is the largest rodent species in Europe; its length is between 75 and 100 cm, the tail is about 30-35 cm long and the animal weighs 20-48 kg. The beaver's fur is thick, silky and waterproof. The eyes and ears are small and the animal can close its ears and nose under the water. In the hind legs, the feet are webbed. This species can be easily identified by the large, orange-coloured incisors and the large, flat scaly tail which is used for steering in the water and for giving warning signals by flapping. The beaver can swim very well, but it rarely moves over land because the short legs and squat body are not advantageous for walking. Two glands next to the rectum produce a secretion to make the fur waterproof. The second claw on the hind legs has adapted into a special tool for cleaning the fur.

The beaver does not hibernate as the winter is the reproduction period. After 105-107 days of pregnancy the female gives birth to two young called 'kits'. The offspring live together with their parents for two years until they are sexually mature. In the wild, beavers live 15-22 years, however, in captivity they can reach 50 years of age.

The beavers live in a colony (parents with one- and two-year-old kits) and they take over a territory on the riverbank. The borders of the territory are marked with their scent and the colony defends it against other families. Colony members can communicate by whistling, smell and flapping their tail.

