The beaver (*Castor fiber*) in Flevoland, The Netherlands

Jeroen Reinhold

Landschapsbeheer Flevoland, Botter 14-03, NL-8232 JP Lelystad, The Netherlands, email: reinhold@landschapsbeheer.net

Abstract: Thirteen years after an unintended introduction, there is a growing beaver (*Castor fiber*) population in the province of Flevoland, The Netherlands. The population was estimated to be at least 15 animals in 2003. It is assumed that the number of potential settlements is the limiting factor for the beaver population in Flevoland. At three locations in the canal Hoge Vaart, an opening in the sheet-pile walls was made to allow beavers to build a lodge behind these concrete canal bank stabilization measures. These actions illustrate the positive attention the beaver currently receives from the administration of the province.

Keywords: beaver, *Castor fiber*, Flevoland, bank construction.

History

After more than 150 years of absence, the successful reintroduction of the beaver (*Castor fiber*) in the Netherlands has been a fact for over a decade now. Forty-two beavers of Elbe origin (Germany) were reintroduced in the Biesbosch in the period 1988-1991 (Nolet 1993). To guarantee additional animals to strengthen the reintroduced population and to give people the opportunity to meet this new Dutch species, a breeding group of beavers was started in Nature Park Lelystad.

Nature Park Lelystad is located in the province of Flevoland. It is a wildlife park where threatened European mammals and birds are bred for reintroduction purposes. There are, for example, breeding groups of red deer (*Cervus elaphus*), otter (*Lutra lutra*), European bison (*Bison bonasus*) and white stork (*Ciconia ciconia*). The park is open to visitors. In 1988 two beavers arrived at Nature Park Lelystad from the Elbe-region (Germany). The animals were kept in a fenced-in semi-natural area. Soon after their arrival, two other beavers from the Elbe-region were brought into another fenced area.

In December 1990 the first successful escape

was a fact: one of the first beavers was found swimming in a nearby pond. Armed with brooms, the park guards could force the beaver back into the park. A few days later, however, a gnawed tree again marked the escape of one or more beavers from the park. These animals started a successful but unintended introduction of beavers in Flevoland.

Population development

Thirteen years after the first beavers escaped from Nature Park Lelystad, the population is still free-living and growing. Since 1999, a census is carried out yearly by volunteers of the Landscape Management Foundation Flevoland (LBF) and members of the Dutch Society for the Study and Conservation of Mammals (VZZ). Every February new as well as known lodges are visited to determine if lodges are still used by beavers and to assess the best locations for a population count in the summer. At one night in June and one night in July beavers are counted near the lodges from 8-11 pm. Both young, subadult and adult beavers at each lodge are registered. The maximum of both counts is seen as a minimum estimate of the number of beavers per lodge for each age category.

The minimum number of beavers in Flevoland increased from 11 in 2000 to 15 in 2003 (Van der

Photo 1. Typical canal in Flevoland with a bank construction of sheet-pile walls. *Photograph: Jeroen Reinhold.*

Bend & Reinhold 2003; figure 1). Supplementary counts showed that the volunteers miss animals during their counts. The actual population in Flevoland in 2003 is therefore assumed to be larger, i.e. about 30 animals.

Adapted canal banks

The province of Flevoland was formerly part of Lake IJssel. The land was reclaimed in the period 1942-1966. Villages, waterways, nature
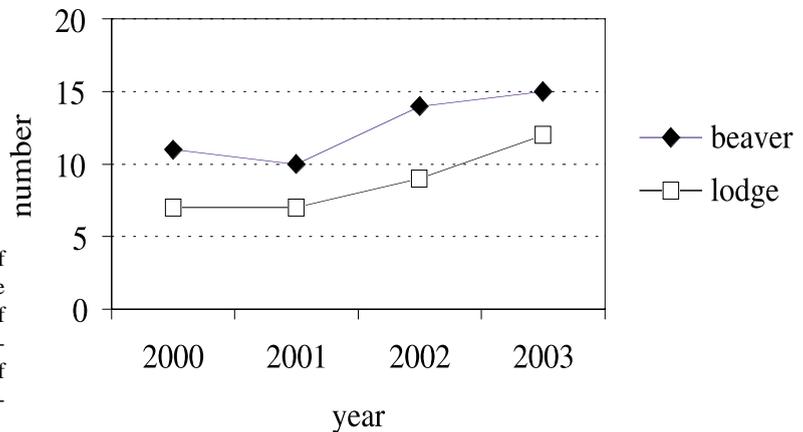
Figure 1. The number of beaver lodges and the minimum number of beavers counted in 2000-2003 in the province of Flevoland, The Netherlands.

areas, and agriculture in this province are all strictly planned. Large natural areas were planned at the borders of the province. The central part is mainly agricultural land. Large canals were made to transport water out or into the province. Canal banks had no ecological function and were mainly constructed of concrete sheet-pile walls (photo 1).

These canals potentially interconnect important nature areas; a function considered of no importance 50 years ago. Nowadays, ecologists and the government see the canals as ecological 'highways' for migrating animals. The beaver is one of the species that profit from these ecological corridors. The beaver dispersed in Flevoland from Nature Park Lelystad to other parts of the province, mainly in the western and southern parts of the island, using large canals as corridors. Five out of seven lodges outside Nature Park Lelystad are situated close to one of the main canals (figure 2). Because of the bank

construction used, beavers seldom use the canals themselves to build lodges. It is assumed that the number of potential areas for settlements is the limiting factor for the beaver population in Flevoland.

Fortunately, the Flevoland administration, who owns the canals, has planned to replace the mono-functional sheet-piles into a multi-functional bank construction with passage possibilities for animals like beaver. In 2002, the Flevoland administration seeked advice by LBF to alter the canal banks of concrete sheet-piles into a beaver-friendly bank enabling beavers to build lodges (Reinhold 2002). In 2003 the advised construction was made at three locations in the canal Hoge Vaart (photo 2). Sheet-pile walls with a total width of 1 m were pushed 0.5 m under the water surface, and behind these walls a beaver pool of 5x5 m with a depth of 0.75 m was made. One of the banks in the pool has a steep slope, next to which a willow was planted.

Photo 2. An adapted bank construction with possibilities for beavers to build a lodge. *Photograph: Jeroen Reinhold.*
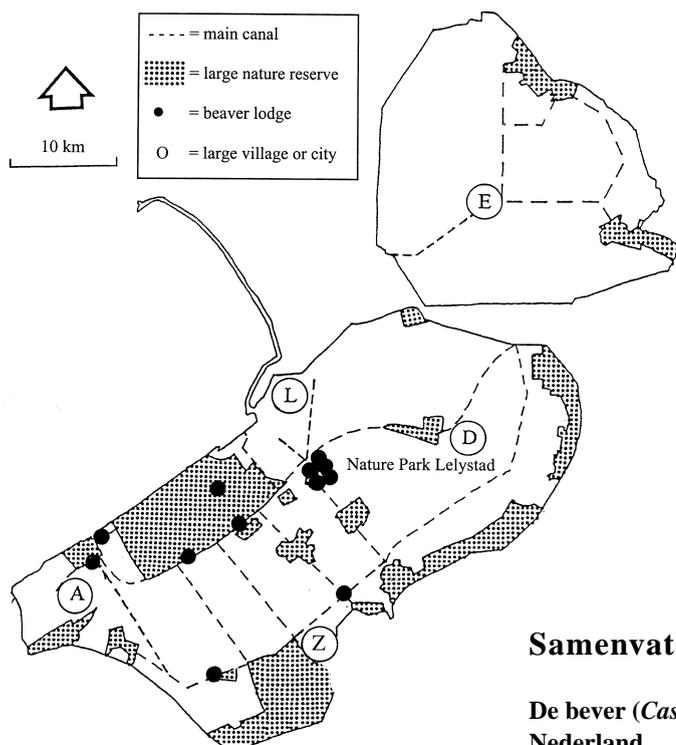
Figure 2. The locations of beaver lodges in relation to the locations of nature areas and main waterways in Flevoland (2003). The letters indicate large villages or cities: A = Almere; D = Dronten; E = Emmeloord; L = Lelystad; Z = Zeewolde.

The willow stabilizes the bank and is expected to provide shelter to beaver. Future surveys will show if and when the beavers start using these bank constructions.

References

Nolet, B.A. 1993. Terugkeer van de bever: herintroductie van de bever in de Biesbosch. Report 051. Instituut voor Bos- en Natuuronderzoek, Wageningen, The Netherlands.

Reinhold, J. 2002. Een oever voor de bever. Landschapsbeheer Flevoland, Lelystad, The Netherlands.

Van der Bend, R. & J. Reinhold 2003. Bevertelling Flevoland 2003. Report 2003-004. Landschapsbeheer Flevoland, Lelystad, The Netherlands.

Samenvatting

De bever (*Castor fiber*) in Flevoland, Nederland

Dertien jaar na een succesvolle ontsnapping uit Natuurpark Lelystad is de populatie bevers (*Castor fiber*) in Flevoland gestaag gegroeid. Vrijwilligers van Landschapsbeheer Flevoland en de Beverwerkgroep Nederland van de Vereniging voor Zoogdierkunde en Zoogdierbescherming tellen jaarlijks het minimum aantal dieren per burcht. In 2003 werden 15 dieren geteld. Het werkelijke aantal ligt hoger en wordt geschat op circa 30 dieren. Uitbreiding van de populatie wordt waarschijnlijk beperkt door het aantal plekken waar burchten gegraven kunnen worden. De Provincie Flevoland heeft daarom in 2003 op een drietal plaatsen langs de Hoge Vaart bevervriendelijke oevers aangelegd, die bevers de mogelijkheid bieden om achter de oeverbeschoeiing van het kanaal een burcht te graven. Daarmee nemen de vestigingsmogelijkheden voor de bever in Flevoland toe.