

A technical guideline for protective measures for river banks, dikes and dams against beavers (*Castor fiber*) and other burrowing animals

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Digging burrows – the big problem

Beavers, coypu and muskrats (but also rabbits, foxes, badgers and other species) are actively digging their homes in river banks, dikes and dams. These burrows can collapse and will weaken the structure of dams and dikes, causing them to break and subsequently creating huge damages e.g. due to flooding.

The water management authority of Ingolstadt in Bavaria, Germany was the first organization which developed and implemented preventive measures against digging animals in the late 1980s by embedding steel wire mesh as vertical barrier for the protection of the dikes. The measures were published 1997 in a guideline for water management organizations.



The beginning 1990: Meshwire installed into dikes against beaver burrows (Photo: G.v. Lossow)

Since then, beavers and coypu have spread all over Europe, and the problems showed up in a much wider area in different countries, and a number of solutions have been developed for problems.

During the last years, the authors have collected all information available and finally published an updated version of the technical guideline titled “DWA-M 608: Beaver, Muskrat, Coypu”.



Two layers of different sized meshes against digging activities of beavers and smaller rodents (Photo: M. Arndt).



A vertical mesh along the river bank, installed without digging. (Photo: M. Arndt).



Protecting a bank with a double layer of large stones (Photo R. Rombach)



Flatten the river bank keeps beavers from digging burrows (Photo B. Sättele).

The manual covers not only measures against digging burrows, but also numerous measures for protecting trees and crops and for preventing or mitigating the flooding due to beaver dams.

The new manual has 3 volumes:

- vol. 1, biology of beaver, coypu, muskrats (already available in english)
- vol. 2, preventive measures (english in preparation, due end of 2025)
- vol. 3, habitat improvements (in progress).

It is available from DWA (Deutsche Vereinigung für Wasserwirtschaft, Abwasser und Abfall e.V.), www.dwa.de/shop

