

## Aliens attack – population dynamics and density control of American mink *Neovison vison* in four National Parks in Poland

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### Abstract

American mink (*Neovison vison*) is a semi-aquatic species, endemic to North America, which was introduced to the wild in Europe in the 1930s. In many introduced areas, the American mink is a significant predator of waterfowl and riparian mammals, leading to a marked decrease in their density. The aim of this study is to analyze adaptation of mink in their introduced range and to determine factors affecting population dynamics and colonization rate after eradication in the 4 National Parks of Poland (Biebrza, Narew, Warta Mouth and Drawa National Park). Studies have shown that it is possible to reduce the number of mink in protected areas and gain greater knowledge of the biology and ecology of invasive species. Fieldwork and trapping were conducted in each park over 5 days twice a year (March and November 2009, 2010 and 2011). In each park, trapping took place at two sites: an experimental area [EA] (from which the mink were removed) and a control area [CA] where mink were marked and released. Live-traps were set on the banks of rivers. During the spring and summer 20 rafts were deployed (10 in the EA and 10 in the CA in each park) for population monitoring and to determine the effectiveness of mink trapping. In total 248 mink were caught (125 in the CA and 123 in the EA). The ratio of males to females was 1.6:1. Preliminary results show large differences in morphological traits and population parameters between the various national parks. The average body weight of males and females from the West of Poland was 1.35kg and 0.6kg, respectively, and from the East of Poland 2.0kg and 0.8kg, respectively. The lowest density of mink was in the Drawa (2.5 inds./10 km watercourse), and the highest was in the Narew NP (9 inds./10 km watercourse). The rate of recolonisation was related to the time since trapping and density of the mink in the NP. The frequency of mink sign found in the EA after 6 months of mink trapping was similar to that in the CA, suggesting a fast recolonisation of the eradication area in all parks. Our results underscore the need for continuing research and further analysis to underpin eradication programs, as well as monitoring and controlling populations of invasive predators in protected areas.

Keywords: American mink, biometrics, invasion, monitoring, *Neovison vison*, Poland, recolonisation