

The effects of variation in fertility on mink (*Neovison vison*) population size

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Mink was introduced to Iceland in 1931. It soon escaped from captivity and had spread throughout all lowland areas by 1975. Hunting statistics (Fig. 1) indicate that mink population size kept on increasing with minor downtrends every 5-10 years. Since 2003 the population size seems to have been decreasing rapidly.

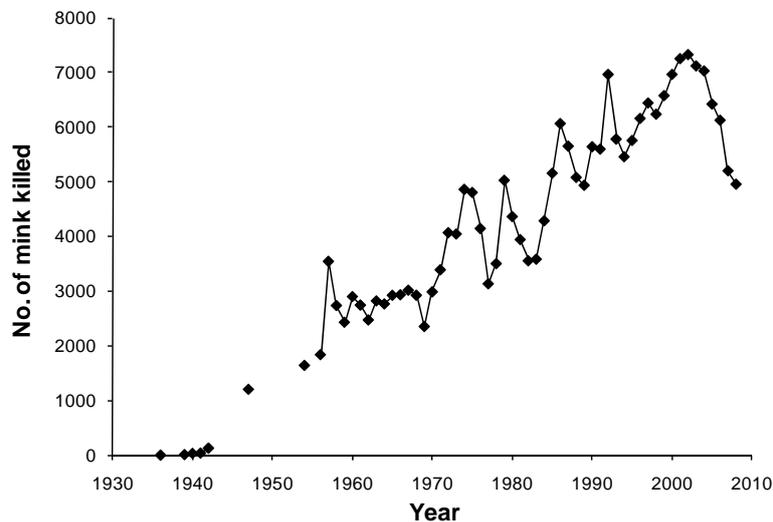


Fig 1. The number of mink killed in Iceland annually from 1937-2009.

Until now, the reasons for fluctuations in the mink population size have been unknown. In the period 1996-2009, a sample of 3,554 mink received from mink hunters was investigated in an effort to elucidate the demographic basis for population changes. The data include information on fertility (foetal and placental scar counts). The number of mink killed annually was used as an index of population size, assuming constant hunting effort between years. Mink litter size peaked in 1999, four years prior to peak population size, but has decreased since then. Average fertility explained 33% of the variation in population growth rate (pgr) between years. If the two years (2005 and 2007) with the far lowest pgr were excluded from the analysis, fertility explained 71% of the pgr. Thus it seems that changes in population size from 1996-2009 can largely be explained by variation in fertility, although additional factors, most importantly winter mortality, seem to be more important in some years (e.g. 2005 and 2007). Our data indicate that for mink the equilibrium mean litter size *in utero* is 6.7 cubs in Iceland.

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