Ágrip kynningarerinda / Introductory lectures abstracts

Y1 Population regulation in the American mink

Róbert A. Stefánsson og Menja von Schmalensee
Náttúrustofa Vesturlands (West Iceland Centre of Nature Research)
robert@nsv.is

Understanding population dynamics and regulation is a fundamental issue in ecological research, especially in the context of invasive species. The American mink (Neovison vison) is among the most invasive species in Europe. It was introduced to many European countries in the 1920s and 1930s. Hunting statistics indicated a high population growth rate in many countries but in the last two decades, many mink populations seem to have decreased. Changes in population density of native predators, such as otter and red fox, with subsequent changes in competition and prey availability for mink, have been proposed as likely explanations in some areas.

The Icelandic terrestrial vertebrate ecosystem is rather simple compared to mink habitats in other countries. With only two carnivores (Arctic fox (Vulpes lagopus) and American mink), one abundant rodent (wood mouse (Apodemus sylvaticus)), no amphibians or reptiles, Iceland is an interesting country for mink studies. Relatively accurate mink harvest data since 1958 provide a good approximation on changes in mink population size. Combined with research on mink carcasses, an opportunity to understand the regulation of the mink population has appeared. Influencing factors will be discussed, such as intra-guild competition and the cascading effects of climate change through the food web, with negative effects on mink body condition, fertility and survival. The results are compared to mink population changes in other countries.

Y2 Global threats to Icelandic Eiders?

Jón Einar Jónsson
Rannsóknasetur HÍ á Snæfellsnesi
joneinar@hi.is

The status of the Icelandic eider Somateria mollissima population is evaluated based on nest counts, brood counts and sex ratios. Nest numbers of Icelandic eiders generally are not correlated with weather or climate change; whereas evidence is increasing that their food supply is vulnerable to warming temperatures or ocean acidification. The Icelandic eider population increased 1980-1990 but has declined from 1991 onwards. In the longest nest count series, Brokey Islands 1906-2007, there was no correlation with local weather but segmented regression indicated that warm regimes were periods of decline whereas the cold regimes coincided with peak nest numbers but also catastrophic events. Nest initation dates seem more sensitive to weather changes than nest numbers. Nest counts remain to be up-dated for the last six years but there is little evidence for major changes in 2008-2014, as indicated by the available nest counts, brood counts or sex ratios. Surprisingly, the overall populations index for Iceland 1980-2010 trends similarly to those for the Baltic Sea, Norway, Scotland and the White Sea. The synchrony across Northern Europe suggests the influence of a large global-scale driver, possibly the Atlantic multidecadal oscillation in SST (AMO) or ocean acidification. Two major knowledge gaps that require further studies are the food availability for Eiders in Iceland and the high incidence of low-pathogenic avian influenza relative to Eider populations in western North America.