Changes in diet of mink *Neovison vison* in the Snæfellsnes peninsula

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Aims

To assess dietary changes in mink in the Snæfellsnes peninsula during 2002-2008

Introduction

In the last decade in Iceland we have seen:

- Rising sea temperatures.
- Collapse of sand eel (unpublished data).
- Collapse of Iceland scallop *Chlamys islandica* in 2003 (Jónasson 2007).
- Decline in non-migratory waders in winter (Guðmundsson *et al*. 2008).
- Reduced recruitment and decline of many sea birds species (Garðarsson 2006).
- Decrease in mink population in the Snæfellsnes peninsula by 46% between 2002 and 2006 (Stefánsson *et al*. 2008).

Material and methods

- Stomach content analysis was made on 611 mink culled in the years 2002-8.
- Prey items were analysed by season and separated for the sexes.
- Statistics used were chi-square analysis and logistic regression where appropriate.
- The year was divided into two seasons, warm season (May-Sept) and cold season (Oct-Dec, Jan-Apr).
- The group "Other" is Wood mice, arthropods and molluscs.

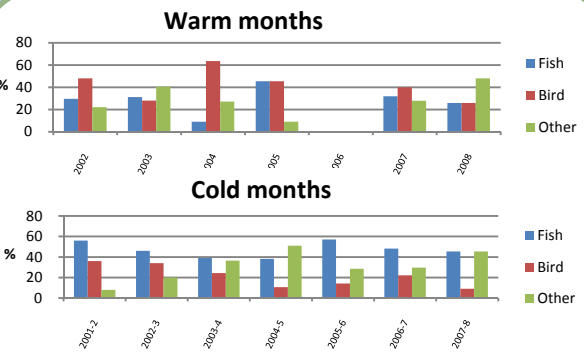

Fig. 1. Relative frequency of occurrence in males in the years 2001-8.

Results – Chi square tests

- **Females**: There was no difference in prey frequency.
- **Males – Cold months**
  - There was a significantly high frequency of other prey in the diet of males in 2003-4 (mostly mice), 2004-5 and 2007-8 (mostly arthropods) (Fig.1).
- **Males – Warm months**
  - The frequency of birds in the diet of males was significantly higher in 2004 than in other years.
  - There was a significantly high frequency of other prey in the years 2003 and 2008 (Fig.1).

Results – Logistic regression

- **Cold months**
  - There was a 28% and 39% decrease in birds per year in males and females, respectively.
  - Insects and arachnids increased 36%, molluscs 41% and multiple prey 22% per year in males.
  - Seabirds (Fulmar F*ulmarus glacialis* and birds from the suborder Lari) decreased 70% per year in males.
- **Warm months**
  - Ducks decreased 44% per year in males.

Cannibalism

- Cannibalism was noted in three females in 2007.

Discussion

- The diet of mink in the Snæfellsnes peninsula, especially male mink, seems to have been affected by direct and indirect changes in the environment in recent years.
- Males increasingly compensated for low intake of birds with non-optimal food such as arthropods and molluscs.
- A sharp decrease in seabirds in male mink diet correlates with the observed decrease in many seabird species in recent years.
- Males are almost twice the body mass of females and therefore need far more food in absolute terms. The fact that males showed much greater changes in diet than females during the period in question suggests that they were more affected by a change in food availability.

Conclusion

Changes in the food availability seem to be affecting diet of mink, especially that of males, in the Snæfellsnes Peninsula. This may be one of the reasons for the observed decline of the mink population in the area.

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