

Growth and weight changes of American mink (*Mustela vison*) in Iceland

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1. Introduction

The American mink (*Mustela vison*) was first introduced into Iceland in 1931 for fur farming. The feral population is thought to consist of the descendants of the subspecies first introduced, which is smaller than its feral conspecifics occupying most of N-Europe [1,2].

Species of the family Mustelidae show sexual size dimorphism. It is thought to be an adaptation to the promiscuous mating system, which puts different selection pressures on the sexes. Thus females are small to be more energetically efficient but males are big so that they can travel faster, cover longer distances and fight rivals during the mating season [3,4].

Here we present data on mink growth and weight to shed light on the life history of the population.

2. Materials and methods

We collected carcasses from mink hunters all over Iceland for a 10 year period (1997-2006). Several measurements were made on each mink and samples obtained to study mink population ecology.



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3. Results

Mink pups are born around 10 May. Growth is fast in both sexes, although males gain weight faster than females. The sex difference in weight is statistically significant already in July and increases from then on. Females reach adult length in August and adult weight in September. Males however reach adult length in September but do not reach adult weight until the end of the year. The growth rate of males is reduced in September and October, during dispersal, and they lose considerable weight in the beginning of September when they should be gaining weight. The

weight loss between weeks is not quite statistically significant, probably due to the poor power of the t-test ($t=1.827$; $p=0.08$, $\text{power}=0.294$) (Fig. 1).

Monthly average weight of adult mink ranges from 1.13 (April) to 1.45 (January) kg for males and from 0.61 (July) to 0.82 (December) kg for females. The maximum for both sexes is prior to the mating season but the minima are associated with the most difficult times of the year; in males it occurs at the end of the mating season and in females at the time they have to hunt both for themselves and their growing pups (Fig. 2).

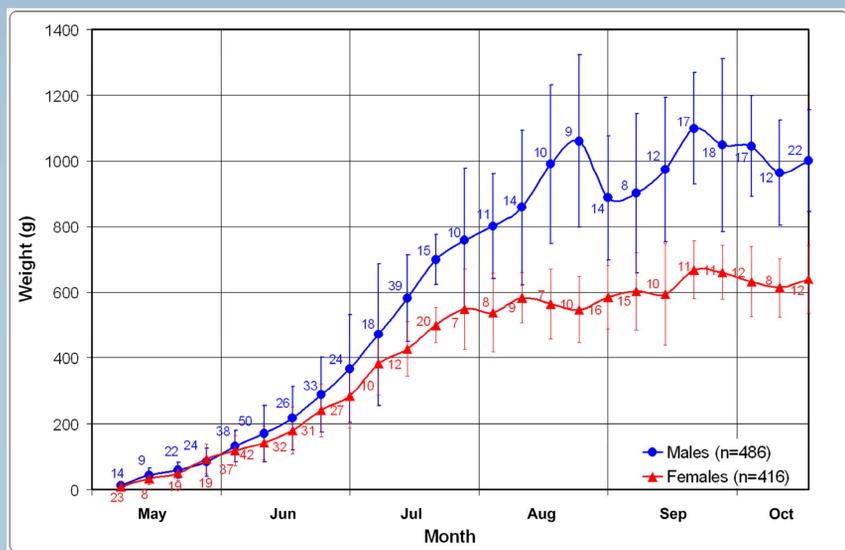


Figure 1. Weekly average weight of feral juvenile mink in Iceland. Females (red) grow slower but reach adult weight sooner than males (blue). Vertical bars indicate standard deviation and numbers show sample size.

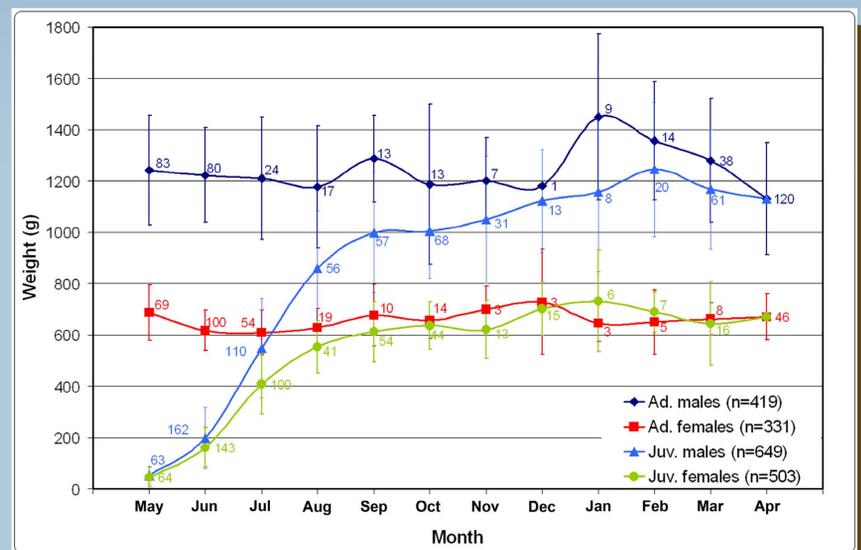


Figure 2. Monthly average weight of feral mink in Iceland. Light blue (males) and green (females) lines represent juveniles but red (females) and navy blue (males) adults. Average adult weight is 1212 (males) and 644 (females) grams. Vertical bars indicate standard deviation and numbers show sample size.

4. Discussion and conclusions

These results show that weight changes correspond well to mink life history and will help in identifying the factors influencing population regulation, since weight fluctuations seem to be linked to the mating system

and other events in the life history of the mink. They show how the sexual size dimorphism develops in the first few months and indicate that dispersal in autumn may be more demanding for males than females, supporting our data on dispersal distances which indicate that males are more likely than females to travel long distances during dispersal [5].

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