

The role of predation in mass mortality of wood lemmings (*Myopus schisticolor*)

Background

The wood lemmings (*Myopus schisticolor*) is a small rodent that during years of low population size is restricted to moss-rich old-growth spruce forest where it exclusively feeds on mosses. The species is known for population outbreaks followed by mass mortality. During outbreaks, wood lemmings are commonly found dead along roads, railroads, in villages, on lawns, in basements etc. The reason for the outbreaks are unknown, but might be related to the – especially in outbreak years – skewed sex ratio of the species. Likewise, we know very little about the causes of the mass mortality that has been speculated to be caused by either predation, diseases, stress and/or food shortage.

During a total of three outbreak years from three different population cycles, we have sampled wood lemmings that are biobanked at -20°C. This material along with wood lemmings sampled within the national monitoring program of small rodents provides a unique opportunity to examine different factors potentially driving mass mortality. This project will focus on the predation-hypothesis.

Primary questions

1. To which extent are wood lemmings during outbreak years attacked by predators?
2. Are predators the cause of death or do predators take wood lemmings after the lemmings' death?
3. If yes, is predation that common that it might be the main cause of death?

Work plan and methods

1. Thorough literature study on driving factors of small rodent mass mortality
2. Development of study design
3. Lab analyses using pathological methods to disentangle predation prior death from predation/scavenging after death of wood lemmings
4. If interesting, participation in small rodent trapping to get a better “feeling” for the data
5. Data analyses
6. Thesis compilation

Extent

Preferably 60 credits, but 30 credits might also work.

Contact

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