



## What can we learn from tooth wear about diet and food limitation of red foxes in the low Arctic?

Red foxes are generalist predators that increase in abundance in the North and expand their range northward into to the Arctic. The main drivers for this increase / expansion are food subsidies resulting from various human activities and warmer winter climate. As most medium sized predators in the low Arctic, red foxes feed on small rodents when small rodents are abundant and their population size fluctuates with small rodent abundance. When small rodent abundance is low, they depend on other resources such as birds. However, in winter these other resources may be scarce, and the foxes increasingly rely on carcasses or human subsidies.

Tooth wear, both broken teeth and tooth microwear (small scratches on the tooth surface left from the food that can be seen in a microscope) provide information about the diet of an animal. The more broken teeth, the more an animal had to eat hard food, and bones or meat will leave different microwear signatures. We have now collected red fox jaws from Varanger peninsula over the last lemming cycle and the topic of this master thesis would be to analyze macro- and microwear for foxes both at the coast and in the inland over these years to get information about the resources supporting them, and notably the importance of reindeer carcasses. The information from the teeth may be completed with stable isotope data.

This project is part of COAT, more specifically the Arctic fox module in Finnmark <https://www.coat.no/Fjellrev/Varanger>, and will be in collaboration with Prof. Peter Ungar from the University of Arkansas in the USA who is a world leading specialist in tooth wear studies <https://ungarlab.uark.edu/> . The student will probably travel to the US to learn how to determine micro- and microwear of the teeth.

If you are interested in a master thesis about red foxes on Varanger Peninsula contact me at [dorothee.ehrich@uit.no](mailto:dorothee.ehrich@uit.no) or come and see me at my office 2.017

Dorothee

