Project descriptions AB-207 spring 2022 (application deadline 15 Oct 2021)

Title: Spatial ecology of the Svalbard reindeer (1-2 students)

Subject keywords: Spatial ecology, reindeer, Bjørndalen, landscape diversity, snow cover, vegetation, BIG, Svalbard.

Project background: The Svalbard reindeer is a key species in the Svalbard terrestrial ecosystem linking vegetation growth and predator dynamics. There exists amble information on the annual population dynamics of the reindeer across Svalbard. However, so far, we know very little of their seasonal use across the Svalbard landscape. Hence, through the ecosystem monitoring programme "Bjørndalen Integrated Gradients" (BIG) carried out and maintained by the Department of Arctic Biology at UNIS, reindeer has been counted and marked spatially on a weekly basis since and throughout 2019 and 2020. We expect, that the spatial habitat use of reindeer in Bjørndalen is related to changes in snow cover and vegetation spring emergence. However, so far very little is known of the seasonal spatial habitat use of reindeer on Svalbard. Your project will contribute significantly to our increased knowledge.
Aim: To collect and analyse spatial data on Svalbard reindeer to investigate the spatial distribution of reindeer throughout the year.

Methods: Weekly fieldwork in the reindeer population in Bjørndalen; these data will be combined and analysed together with the data from previous year.

Preferred educational background / competence: Spatial and temporal understanding of population dynamics. Basic knowledge of the statistical software R user interface.

Contact information: Mads Forchhammer (mads.forchhammer@unis.no).

Title: Arrival and breeding phenology of common eider in Svalbard (1-2 students)

Subject keywords: Phenology, common eider, Adventfjorden, ice and snow cover, vegetation, BIG, Svalbard.

Project background: Timing of arrival and breeding are essential for Arctic breeding birds. The common eider arrives in Svalbard waters ahead of breeding in colonies on land. This timing is expected to be dependent on ice and weather conditions further south as well as food present in Adventfjorden. As a project student you will become part of the monitoring programme "Bjørndalen Integrated Gradients" (BIG) and will be given access to previous years data as well.

Aim: To collect and analyse phenology data on Svalbard for common eider breeding in Adventdalen from April-July.

Methods: Daily fieldwork along Adventfjorden and at the colony east of Longyearbyen. The data will be combined and analysed together with the data from previous year.

Preferred educational background / competence: Spatial and temporal understanding of phenology. Basic knowledge of the statistical software R user interface.

Contact information: Mads Forchhammer (MadsF@unis.no).