



Sveriges lantbruksuniversitet  
Swedish University of Agricultural Sciences

**Department of Wildlife, Fish  
and Environmental Studies**

## Timing of calving along latitudinal and altitudinal gradient.

In moose, the mating season (i.e., the rut) peaks in September and mid of October, depending on latitude. In many herbivores, timing of calving coincidence closely to the start of the vegetation period to ensure optimal foraging conditions during lactation when energy requirements are high. Yet, climate change may affect this relation in timing. Sex ratio may affect the timing of perception, and thus in turn affect the timing of calving.

To improve our knowledge about the timing of calving in Swedish moose along a latitudinal and altitudinal gradient and in relation to external and biological factors, we are looking for a student who is interested in analyzing moose calving dates in relation to their spatial distribution, start of vegetation period, and moose sex ratio. The student will use the existing dataset on moose calving dates given by GPS-marked female moose across twenty different areas in Sweden. The student will link these dates to SMHI data on vegetation period given by different weather stations and to data on moose sex ratio as given by the moose observation data in the area.

**Requirements:** A motivated student that has good knowledge in GIS, R and statistics. The project will be a desk-based study. The project is expected to generate a peer viewed publication in an international journal.

**Extent:** 60 or 30 credits

**Supervisor:** Wiebke Neumann, Fredrik Widemo/Jonas Malmsten

**To apply:** please send a letter of interest to Wiebke Neumann ([Wiebke.Neumann@slu.se](mailto:Wiebke.Neumann@slu.se)) explaining your suitability for the project.