

MSc student project / Examensarbete

Linking plant diversity to ungulate (klövdjur) diets or ecosystem productivity

Background

The introduction of non-native species, shifts in land-use practices and range expansions of native species have strongly changed Sweden's ungulate communities resulting in species assemblages and abundances that have not been witnessed before. These include novel trophic interactions which are one of the strongest drivers through which ungulate species influence each other's performance, e.g. via competition or facilitation. Such interactions might cause shifts in the species-realized niches and thereby alter the functioning, structure and performance of ungulate populations and communities.

The MSc project is connected to the 'trophic interactions' part of the BEYOND MOOSE research framework where we aim to understand food choices of different ungulates, primarily moose, red deer, roe deer, fallow deer, and wild boar. One crucial aspect for understanding diets is knowledge about food availability. This is not simply the proportions of palatable vegetation in an area at a specific time but rather what can be accessed by the different ungulate species for consumption. Relating food availability to diet composition provides the contextual framework for understanding trophic aspects like preference and consequently dietary niche shifts. Food availability, i.e. plant relative abundance and richness, will be measured in the field on already established tracts in northern (Umeå-Nordmaling) and central (Öster Malma) Sweden. These data can then be linked to ungulate diets inferred via DNA metabarcoding from dung pellets collected in the same area as part of an ongoing PhD project.

Alternatively, and depending on the interest of the student, it would also be possible to investigate the linkage between plant species richness and primary ecosystem productivity. Classic theory describes the productivity-richness relationship (PRR) as hump-shaped, with richness being highest at intermediate levels of productivity. However, the validity of this assumption is still under debate and the subject of ongoing research.

Requirements

We are looking for a candidate with **good knowledge of the Swedish forest vegetation**, including shrubs, forbs and graminoids in the understory. Since the project will include at least two months of fieldwork (probably in May and June 2017), previous experience with forest or vegetation inventories in a boreal environment would be an asset. A driver's license is required to access the field sites.

Extent

Ideally 60 credits, but 30 credits could also work.

Contact

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