Recruitment of practice students for 2022

In the CarniForeGraze project, we have several possibilities for practice students, mostly during the field season, which starts in May and last until October.

About CarniForeGraze: Grazing in carnivore forests for sustainable production of food, timber and biodiversity

Our vision is a carnivore-compatible method for livestock production in the outfields (here: boreal forest) that enhances tree growth in young forest stands, increases abundance and diversity in plants and pollinators and contributes to local and regional economy and food security. For this, we aim to gather interdisciplinary knowledge and user experience on livestock grazing in carnivore-exposed, forested areas and use this knowledge to propose innovative solutions for the sharing of the common goods that the boreal forest provides. This project contributes to the mitigation of one of Norway's most pronounced conflict lines related to the use and conservation of outfields. The recovery of large carnivores has triggered multiple, interconnected conflicts of interests along with a drastic decrease in outfield grazing in the forested region of south-eastern Norway. Our project aims at optimizing economic and ecological sustainability for agriculture (livestock production, pollinators), forestry (wood) and game harvest in sympatry with large carnivores. We are interested in an agroforestry system that can lead to win-win synergies for different groups of interest. As a practice student you will be part of a large research group, with master students, PhD students, field coordinator and several practice students. You will stay at Campus Evenstad, a remote campus about 2.5 hours north of Oslo. Located in the forests of the eastern valley with many possibility for weekend hiking/camping trips. The campus has an active student society with social activities and possibility to rent outdoor equipment for camping, canoeing, and biking. The project does not cover any living costs or housing.

https://www.innlarge.no/carniforegraze
https://www.youtube.com/watch?v=L5dVnKOX4CA

Project leader: Barbara Zimmermann (barbara.zimmermann@inn.no)

Contact: Mélanie Spedener (melanie.spedener@inn.no)

Next field season (May - October 2022):

Does livestock grazing increase plant and pollinator diversity on young spruce plantations?
To study cattle and sheep's grazing effects on plant and pollinator biodiversity, we will identify plant species, count flowers and catch flower visitors in young spruce plantations. This fieldwork will take place between June and August.
Housing: At campus Evenstad and/or in a cabin in the field.
Special requirements: Plant and insect identification skills are an advantage. For example, having passed a course that included the use of plant identification keys. Car/ driving license is an advantage.
Contact: Mélanie Spedener (melanie.spedener@inn.no)

Cattle in the forest: GPS technology and virtual fencing in remote boreal forests
Background
The use of GPS tags to study animal movement and behavior increased in last decades. Improvement of battery life, attachments systems, and lower production costs increased the possibilities for research. This makes it more accessible for everyone and new systems are developed for other usages, one of those usages are virtual fencing for free-ranging livestock. Within the CarniForeGraze project we use such a virtual fence system on cattle grazing in the boreal forest. Norway has a long tradition with free-ranging livestock, both sheep and cattle. Farmer release their animals in spring to the summer ranging areas. By using GPS collars on cattle for virtual fencing, farmers can monitor their cattle remotely and contain their cattle in a certain area. Whenever an individual roams towards the border of the grazing area, they will hear a sound warning, when not turning back they will receive an electric shock. Cattle are conditioned to the collars in a controlled pasture and learn quickly the meaning of the sound (similar to understanding a physical fence). With this technology farmer can not only see where there cattle is, but we can also study how cattle are selecting habitats in the forest, behaving throughout the season, and how presence of carnivores might affect their behavior.
Internship topic
To be able to use new GPS tags in research it is important to know how the GPS collars are performing, i.e. how precise and accurate are the GPS locations? Precision and accuracy of GPS devices have increased in the recent years. However, we would like to know how those GPS collars are preforming when deployed in remote areas. In order to study this we need to compare the positions of the collars with high accuracy GPS positions. During this internship you will work with the main question: How precise and accurate are the GPS collars when deployed in the remote boreal forests of Norway? In order to answer this question you will go into the field to follow and observe cattle, and measure their locations with differential-GPS for high accuracy GPS positions. Back from the field you will analyze the collected data using Qgis or R (previous experience will be advantageous, but not necessary). You will work on a report where you present your findings. By doing this you will learn how to use GPS devices and navigate through remote areas, work independent in remote areas, and to analyze spatial data in Qgis (and potentially in R – statistical computing).
Fieldwork should be conducted in the period from the end of May till August, potentially it is possible to join fieldwork on different parts of the CarniForeGraze project. Days in the field can be long, with sometimes a lot of mosquitoes and rain, but also adventurous in navigating through remote areas, observing cattle and potentially seeing other wildlife as moose. A

driving license is required and an own car would be advantageous, any driving costs for the project will be covered.
Contact Erik Versluijs (erik.versluijs@inn.no) for further information about this internship.

After the field season (autumn and winter 2022)

Vandalisme on clearcuts: Who has damaged the tree saplings?
We have recorded the damages on tree saplings and at the same time wildlife cameras have been recording the activity on the clearcut, so we (hopefully) can tell how has been damaging the trees (cattle, sheep, moose, deer). The practice student will help us analysing the pictures taken by the wildlife cameras. Housing: At campus Evenstad. Special requirements: None.
Contact: Mélanie Spedener (melanie.spedener@inn.no)

Bumble bee identification
To study cattle and sheep's grazing effects on plant and pollinator biodiversity, we will identify catch flower visitors in young spruce plantations during summer. We will identify these insects, prioritizing bumble bees, during the long and cold days of autumn and winter. This work will take place at campus Evenstad, not far away from the next coffee machine. Once the insects are identified, we are able to build plant-pollinator interaction networks, a method the student can learn mor about if he/she wishes.
Housing: At campus.
Special requirements: Experience with insect identification skills are a big advantage.
Contact: Mélanie Spedener (melanie.spedener@inn.no)