STUDY AREA DESCRIPTION

NORD-TRØNDELAG

TRØNDELAG, NORWAY

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CoCo
Co-creating Coexistence

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TABLE OF CONTENT

LIST OF FIGURES

1 INTRODUCTION

The study area features a variety of extensive and diverse landscapes and habitats, ranging from low-elevation grasslands to forested and montane environments, with grazing resources varying in spatial distribution and forage quality due to differences in soil fertility, vegetation, and microclimates.

The highest quality outfield pastures are concentrated in the nutrient-rich eastern part of the region. However, these areas are also within the bear and wolverine protection zones, as well as partly within protection zones for lynx (in the west and south), resulting in livestock losses and making grazing challenging. For instance, in Lierne, where outfields make up 99.1% of the area, the number of free ranging sheep has dropped from 60 herds prior to the establishment of the bear protection zone to fewer than 10 herds, all now using fenced pastures.

Figure 1: Spruce forest with a fenced pasture for sheep in Lierne, located in the northeast of Trøndelag county. Fencing is a prerequisite since the area is a protected area for bears (Photo Credit: Morten Tofastrud).

2 OVERVIEW

► **Municipalities:** Høylandet, Grong, Namsos, Lierne, Snåsa, Namskogan, Verdal, Steinkjer, and Levanger.

► **Geographical size:** ca. 8,000 km^2.

► **Human population:** 83,176.

► **Number of livestock farmers (approx.):** Approximately 110.

► **Livestock farming systems:** Sheep, dairy and beef cattle, and reindeer

► **Wild large carnivore species:** Wolverine, bear, lynx and golden eagle.

► **Wolverine population:** 15 litters born on average each year in 2023-2025, exceeding the annual regional target of 10 litters for Trøndelag and Møre og Romsdal counties.

► **Bear population:** 2-3 litters born each year, matching the annual regional targets.

► **Lynx population:** 16 litters born on average each year, exceeding the annual regional target of 12 litters.

Figure 2:   Carnivore-proof fenced pasture located in a forested area of Høylandet municipality, previously dominated by deciduous woodland. Intensive sheep grazing has led to significant vegetation change, converting the former forest habitat into managed grassland (Photo Credit: Morten Tofastrud).

3   SOCIOECONOMIC CONTEXT

► Agriculture continues to play a pivotal role in the local economy, representing the region's most significant industry and contributing to a larger share of value creation than in any other Norwegian county. The importance of agriculture varies across municipalities, but its influence on rural livelihoods and regional development remains profound.

► Many farms combine livestock production with off-farm employment or secondary enterprises, such as forestry or agri-tourism, in order to stabilise income, reflecting a multifunctional rural economy.

► The region faces significant demographic challenges, including population decline and outmigration to cities, as well as an ageing population in many rural communities. Population decline is expected to continue in rural areas, and population growth projections rank Høylandet municipality as the worst in the country, with an anticipated population decline of 20% by 2050.

Figure 3:   Extensive livestock systems in Lierne: beef cattle grazing on semi-natural grasslands near Sandsjøen, alongside traditional sheep farming, reflecting low-input land-use practices that sustain rural livelihoods (Photo Credit: Ingrid Johanne Stange Nilsen).

4   FARMING CONTEXT

The agricultural sector is deeply rooted in the utilisation of local land resources. Dairy farming is the dominant production system, supported by extensive grassland management, with beef cattle production ranking second. These systems are complemented by crop cultivation, with considerable areas dedicated to growing cereals.

Main Challenges:

► This study area is particularly suffering from high levels of farmers quitting livestock keeping, or farming altogether. Carnivores are highlighted as a key factor. Large distances between farmers make cooperation amongst them difficult.

► The reduced number of farms has led to an increase in farm size, which in turn has led to structural changes and the transformation of the agricultural landscape.

► Grazing farmers are usually organised into grazing associations that cooperate on supervision, collection and investments. This is more common in the western part of the area and less so in the east, where animals are kept fenced in.

Figure 4:   Extensive grazing of Norwegian White sheep, the most common breed in Norway, in the transition between a semi-natural pasture area (front) and a natural forest pasture area in Lierne (Photo Credit: Ingrid Johanne Stange Nilsen).

5   LOCAL CONFLICT ASSOCIATED WITH LARGE CARNIVORES

Number of attacks:

Livestock depredation varies across the study area. Verdal municipality (south) reports the highest losses, averaging 776 sheep annually (2006-2024), compared to 174–179 annually in Namsskogan (north), Lierne (centre), and Levanger (south). Of the 55,000 sheep that were compensated during this period, only 14% occurred in recent years (2021-2024). There were minor losses in Høylandet and Lierne (21-22 per year), and major losses in Verdal (835 per year). Only three cattle losses have been recorded. Reindeer face higher levels of predation.

► Between 2006 and 2024, sheep losses were attributed to bears (27%), wolverines (22%), lynx (22%), and "unknown" carnivores (22%). In recent years (2021-2024), wolverine-related losses have increased (30%) while bear-related losses have declined (20%).

► Bear losses are highest in municipalities within the bear zone (Namskogan, Grong, Lierne and Snåsa), accounting for around 50% of losses. Wolverine losses dominate in Verdal and Levanger (39% of losses in each municipality), while losses to lynx are prominent in Høylandet, Namsos, and Steinkjer (35-45%).

► Between 2021 and 2024, losses to bears have remained steady at 50% in Snåsa, but dropped to 22–28% in Grong, Lierne, and Namskogan, where there are very few farmers left.

Social conflict:

Many farmers within the bear protection zone have stopped with sheep farming or farming all together – the main reason being increased carnivore depredation - leading to a significant decrease in the number of sheep farms in Lierne, Grong, and Høylandet municipalities. Those that continue have had to adapt by using carnivore-proof fences. In the past decades, conflicts have arisen over the killing of bears. Several farmers and reindeer herders were investigated for illegal shooting. They claimed that it was necessary to protect themselves and/or their livestock.

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