

STUDY AREA DESCRIPTION

NORD- GUDBRANDSDALEN

INNLANDET, NORWAY

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1 INTRODUCTION

The study area is centered on two of the key municipalities in Nord-Gudbrandsdalen: Skjåk and Lesja – which branch off from the main Gudbrandsdalen valley.

Settlements and farms cluster at the bottom of the valley, while spruce and pine forests cover the slopes, giving way to birch between boreal and alpine zones. Livestock farming remains vital for the rural economy, cultural heritage, and landscape management.

The area lies within the wolverine protection zone, and livestock losses from wolverines are a common challenge. It also borders the lynx protection zone to the north, south and east, while the wolf and bear protection zones are over 100 km away. Still, some losses to these carnivores have occurred in recent decades.



Figure 1: One of the valleys in Skjåk (Nordberg) showing the typical division of landscapes with settlements and agriculture at the bottom, followed by forests, and eventually mountains (Photo Credit: Morten Kielland).

2 OVERVIEW

- **Municipalities:** Skjåk and Lesja.
- **Geographical size:** ca. 3,500 km.
- **Human population:** 2,171 in Skjåk and 1,197 in Lesja (2025). Human population in this area has decreased by about a third in the last 60 years.

- ▶ **Number of livestock farmers (approx.):** The area contains 185 cattle farms, 105 sheep farms, and 5 goat farms, with some farms keeping multiple types of livestock.
- ▶ **Livestock farming systems:** Sheep, goat, beef and dairy cattle.
- ▶ **Wild large carnivore species:** Wolverine, lynx and golden eagle.
- ▶ **Wolverine population:** 6-7 litters born annually in 2023-2025, well above regional target of 4 litters per year.
- ▶ **Lynx population:** An average of 7 litters born in 2023-2025, also exceeding the regional target of 5 litters per year.

3 SOCIOECONOMIC CONTEXT

- ▶ The region borders several of Norway's most iconic national parks: Rondane, Jotunheimen, and Dovrefjell. These protected areas are important for biodiversity, and provide extensive grazing grounds for livestock, reflecting the area's long-standing tradition of outfield grazing. Livestock farming remains vital for the rural economy, cultural heritage, and landscape management. Reindeer herding also takes place in some of the national parks.
- ▶ Nord-Gudbrandsdalen is home to all four of Norway's native deer species: moose, roe deer, red deer and wild reindeer. The area is a popular destination for hunting, which plays an important role in local culture and wildlife management.
- ▶ Agriculture has traditionally been an important source of employment in these municipalities. Although a relatively large proportion of the population still resides on agricultural properties, most residents today work in healthcare, secondary industries and tourism.
- ▶ Nature-based tourism has become a major year-round sector, driven by access to national parks and a variety of outdoor activities, such as hiking, cycling, kayaking, and fishing.
- ▶ The region's central location and economic diversification contribute to expected population stability. However, education levels in the county are among the lowest in Norway, with only 29% of residents in Innlandet having completed higher education, compared to 56% in Oslo.

4 FARMING CONTEXT

Outfield grazing of free-ranging sheep, cattle and goats remains an important resource for agriculture in the area. Livestock graze on communal lands from early June to late August. Most farms are managed by families or one or two persons. The grazing areas are located in the wolverine protection zone, a management measure adopted by the Norwegian authorities. A large research project will be launched in 2026 with the aim of reducing losses from wolverine predation and ensuring adequate compensation to grazing farmers.

In Norway, crossbreds are most common in dairy cattle and sheep production — Norwegian Red Cattle and Norwegian White Sheep, respectively. There are also several national and international sheep breeds. Beef production is dominated by continental breeds, particularly Charolais and Hereford.

Main Challenges:

- ▶ Ageing farmer population and low generational renewal.
- ▶ Declining profitability and dependency on subsidies.
- ▶ Major losses caused by wolverine predation are causing emotional frustration and conflicts around compensation payments.



Figure 2: Extensive cattle production, one of the main livestock productions in the study area, is shown here with a herd of crossbred Norwegian Red Cattle grazing on natural pasture valley slopes (Photo Credit: Morten Kielland).

5 LOCAL CONFLICT ASSOCIATED WITH LARGE CARNIVORES

Number of attacks:

Livestock predation in the area is high. Over 17,000 sheep were lost and compensated for in the two municipalities between 2006 and 2024, averaging 913 annually. Losses have increased slightly in recent years, driven by an increase in Skjåk municipality (from an annual total of 259 to 459 between 2021 and 2024), while losses in Lesja have remained stable at 650 annually. No cattle depredation has been reported.

- Majority of sheep losses are attributed to wolverines, accounting for 92% of losses between 2006 and 2024. Minor losses were recorded by wolves (2.8% of losses), bears (2.6%), golden eagles (2.1%), and lynx (0.3%).
- In recent years (2021–2024), losses to wolverines have become even more dominant, accounting for over 98% of all losses. No losses have been recorded from bears and wolves, and only 3 cases have been recorded from lynx. Losses from golden eagles have remained stable at 1.8%. Golden eagles lack a designated carnivore zone.

Social conflict:

- The level of conflict between farmers and carnivore management is high, largely due to wolverine populations exceeding regional targets (e.g. 6 litters annually versus a target of 4 in recent years), and insufficient compensation for substantial sheep losses.
- Confirming carnivore attacks is particularly difficult, as livestock graze freely and largely unattended during summer, and wolverines and golden eagles often drag, dismember, or bury carcasses.
- Various lethal and non-lethal preventive measures have been attempted to reduce conflict, including licensed hunting, guard dogs, herders and financial compensation for losses. However, many people consider these measures to be inadequate or ineffective.



Figure 3: Infield pasture with a mixed herd of crossbred and short-tailed traditional sheep in Skjåk, after the sheep are taken down from outfield pastures in the fall (Photo Credit: Sverre Galgum).

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