

Agriculture & Forestry
in Hedmark County, Norway

A green forestry harvester is the central focus, viewed through a circular opening in a large pile of logs. The harvester has snow chains on its tracks and the number '1410' on its side. The scene is set in a snowy forest with tall pine trees in the background. The lighting is bright, suggesting a sunny day.

forestry



© Svein Grønvold / NN / Samfoto

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Front page photo: Solor vgs Sønsterud

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Foto: Torfinn Kvingeboom



With a total area of 27 400 km² and covering three degrees of latitude, Hedmark is Norway's third-largest county. Altitudes range from 123 m along the shores of Lake Mjøsa to 2178 m on the highest peaks of the Rondane mountain range.

hedmark

– A Sizeable Piece of Norway



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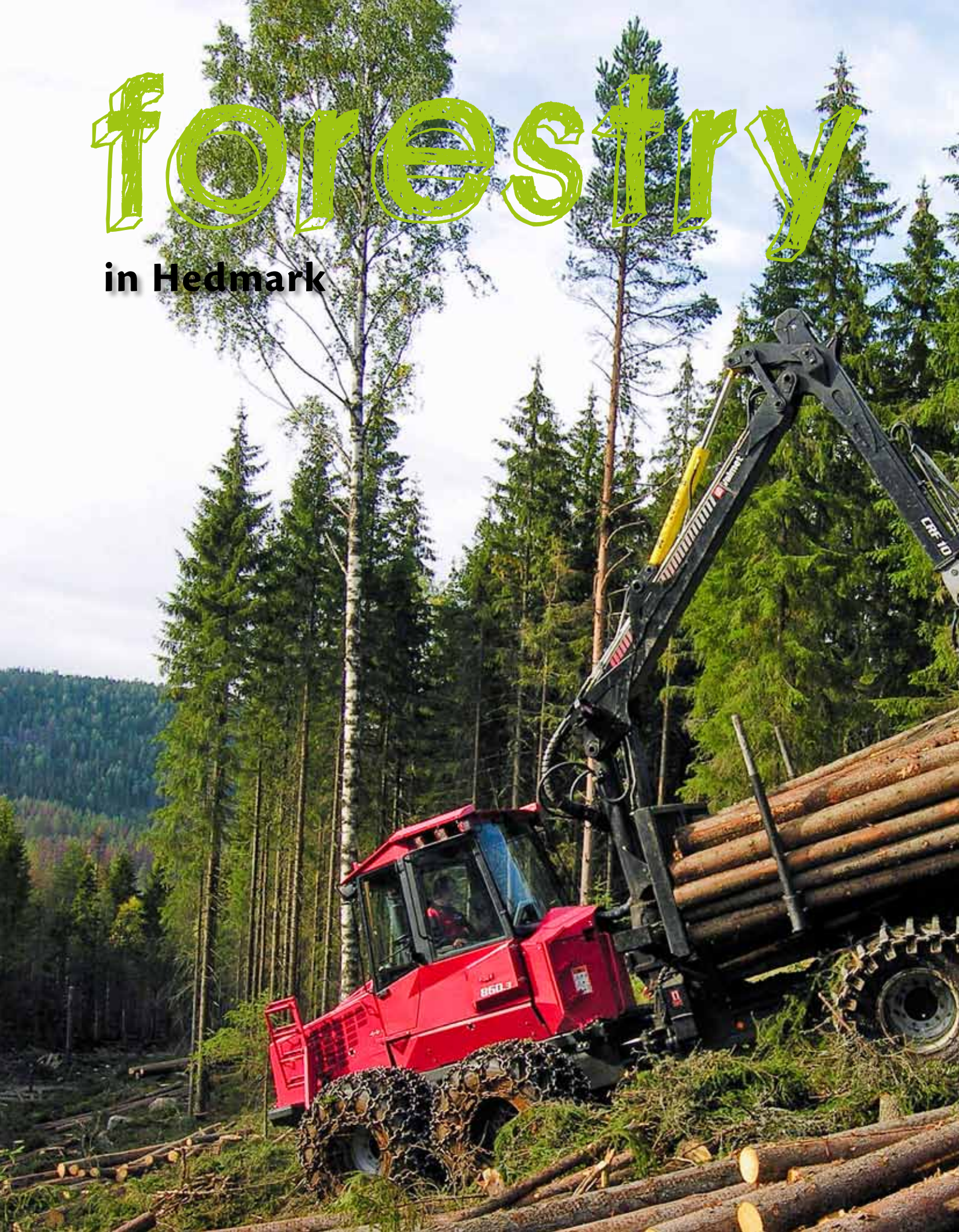
Even when it's summer along Lake Mjøsa, the peaks of the Rondane mountains could be experiencing a snow-storm. Hedmark's climate varies due to the considerable differences in altitude. Also, the county's geology and soils vary considerably. As a result of this wide range of natural conditions, farming and forestry in Hedmark show a considerable degree of diversity.

Based on fertile soils and a favourable climate, prosperous farming communities have developed along the eastern shores of Lake Mjøsa. This area has an especially thick layer of glacial till. The underlying Cambro-Silurian bedrock gives rise to calcareous, fertile soils. In the northern part of the Østerdal region, slates, sandstones and phyllites make up the parent rock. Even though the layer of glacial till is rather thin, vegetation thrives due to the nutrient-rich parent material. This can be seen in the mountain valleys, where lush pastures are an important resource and many summer dairy farms still are in operation. The vast forests are typical for the southern part of the Østerdal region. Pine barrens typically develop on the large stretches of sandy, nutrient-poor soils in the valleys, whereas spruce dominates in higher elevations. Accordingly, main crops in this region are cereals and potatoes at lower elevations, and grass and other forage crops higher up. Further south, in the Glåma valley, the landscape levels out. Here, sandy and silty soils dominate and provide the basis for extensive cereal and potato growing. Due to the natural conditions in southern Hedmark, timber quality in the region is the best in all of Norway.

Hedmark has 1.35 million hectares of productive forest and 0.1 million hectares of arable land. This cropland acreage is equivalent to about 125 000 soccer fields, or 10 percent of Norway's total agricultural area. In addition, Hedmark's forests account for 20 percent of Norway's forest resources. This makes Hedmark Norway's leading farming and forestry county.

forestry

in Hedmark





Forestry and forest resource processing have a long history and are of vital importance for local communities throughout all of Hedmark. Today's forestry is the result of a century of research and other efforts aimed at increasing the value of forest resources.

One of the main investments in forestry is to ensure rapid post-harvest regeneration. Pine-dominated forests cover 45 percent of the forest area in Hedmark. Natural regeneration is usually used in these areas. This method involves the use of selected seed trees, which are left standing after harvest as parent trees for the following generation.

Planting is often needed to regenerate spruce forests. Cones are collected in good seed years, and the seeds then used to grow forest seedlings in special forest tree nurseries.

The volume of standing timber in Hedmark's forests has more than doubled in the past 80 years. Today, the annual timber harvest amounts to 2.3 million m³, while the annual increment is 4.8 million m³. Forestry has experienced a technological revolution, and nowadays, nearly all harvesting is done with highly advanced logging machines.

Timber is a raw material for numerous products: construction wood, fibreboards, paper, poles, wood chips, furniture, etc. Forestry and the forest industry account for more than three percent of employment in Hedmark. The county is home to several large timber-processing plants, and is also a pioneering county in the field of bio-energy.

Some 260 enterprises in Hedmark process wood in one way or another. More timber is actually processed than is harvested in the county. Sound forest management is essential to ensure the sufficient supply of timber to the county's forest-based industry. In Hedmark, there are about 3200 jobs in the sawmill, woodworking and other wood-processing industries, with a total turnover of nearly NOK 4 billion.

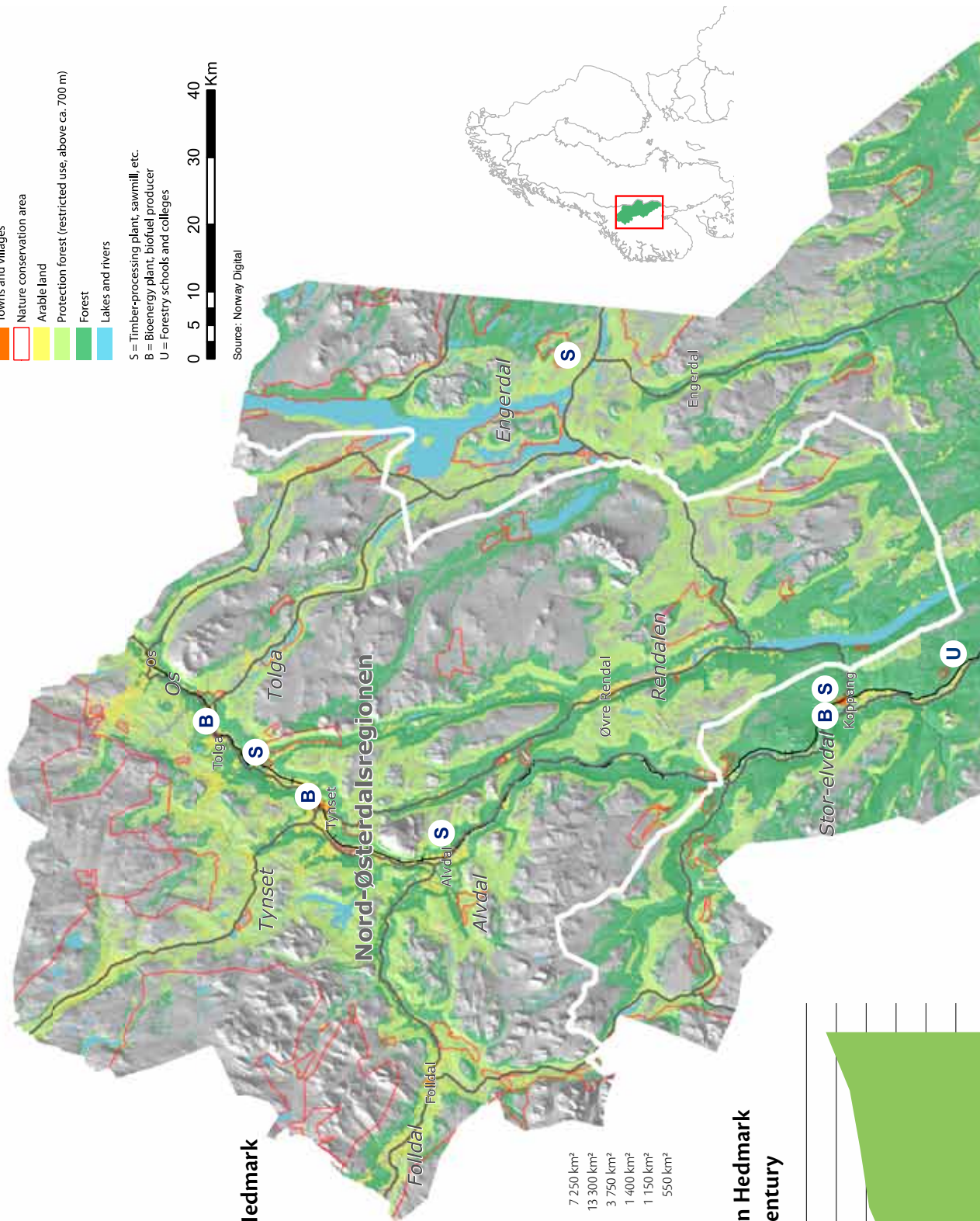
hedmark - forestry facts

- Legend**
- Towns and villages
 - Nature conservation area
 - Arable land
 - Protection forest (restricted use, above ca. 700 m)
 - Forest
 - Lakes and rivers

S = Timber-processing plant, sawmill, etc.
 B = Bioenergy plant, biofuel producer
 U = Forestry schools and colleges



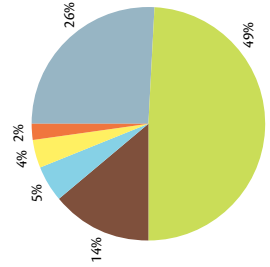
Source: Norway Digital



Land use distribution in Hedmark

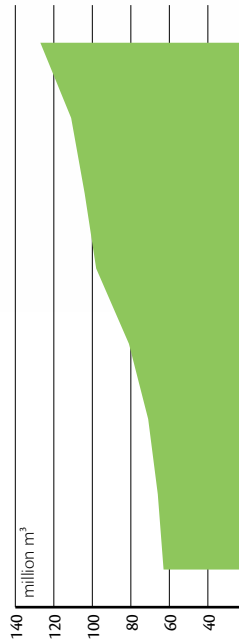
Total area 27 400 km²

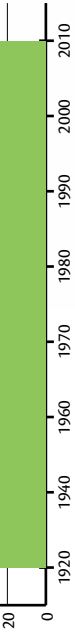
Source: National Forest Inventory



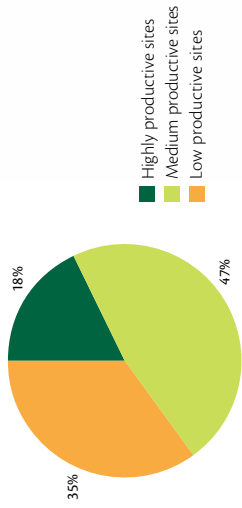
- Above coniferous treeline (> 900 m a.s.l.) 7 250 km²
- Productive forest 13 300 km²
- Bogs and other non-productive forestland 3 750 km²
- Lakes and rivers 1 400 km²
- Arable land 1 150 km²
- Other uses (built-up areas, roads, etc.) 550 km²

Standing timber volume in Hedmark – doubled over the past century

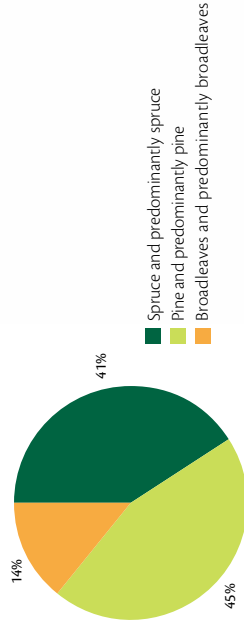




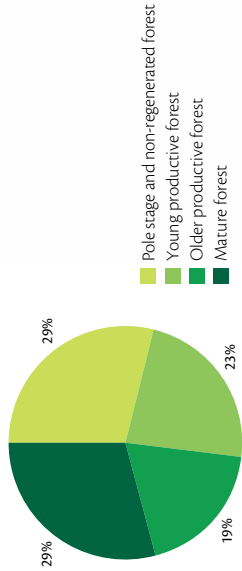
Forest site quality



Tree species on productive forestland

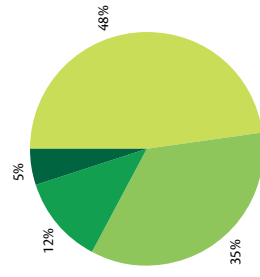


Forest age composition



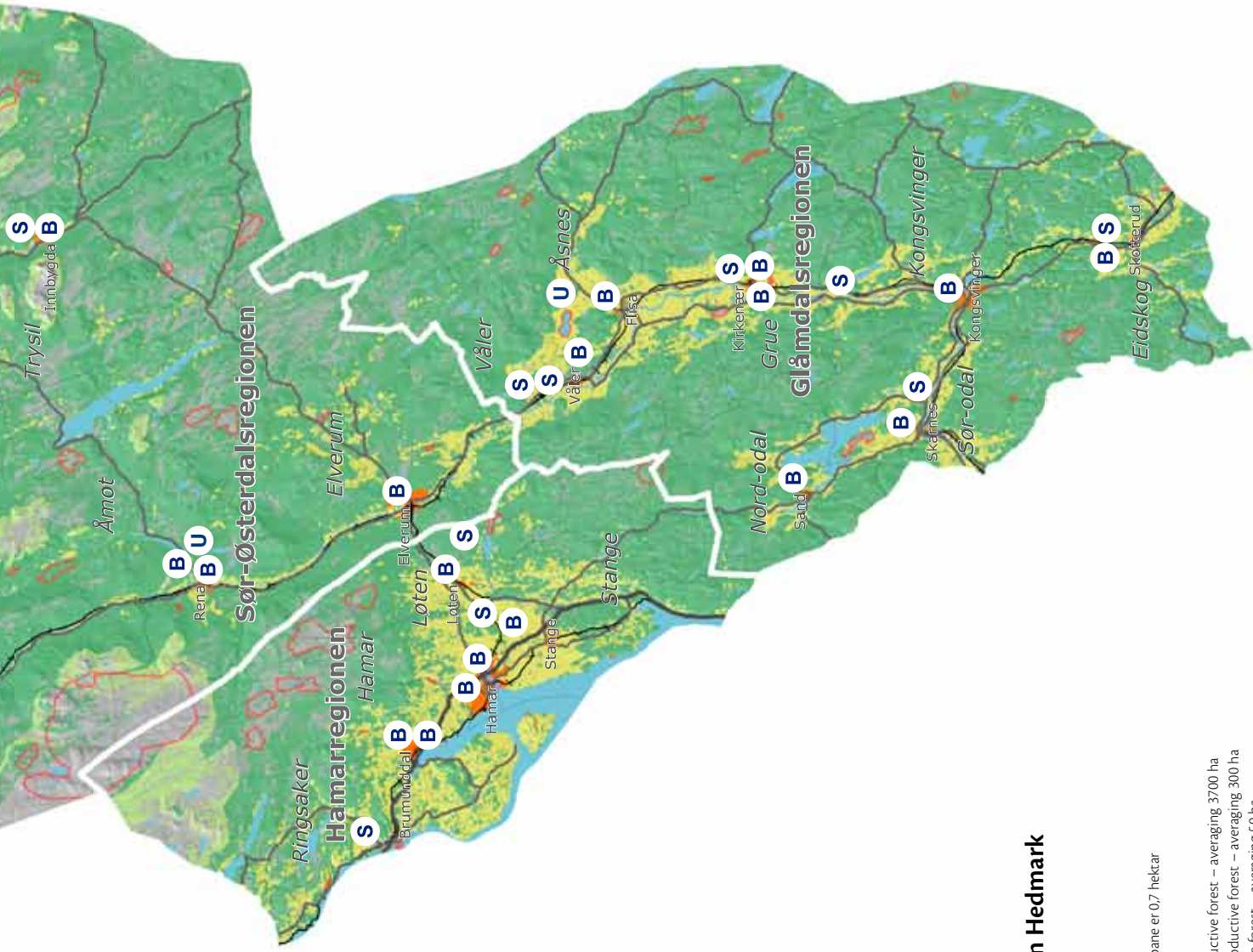
Land ownership structure – nearly 11 500 forest owners in Hedmark

Source: Forest Fund accounts



1 hektar = 10 dekar = 10 000 m². En internasjonal 11-er fotballbane er 0,7 hektar

- The 175 largest forest estates amount to 640 000 ha of productive forest – averaging 3700 ha
- The 1600 medium-sized estates amount to 460 000 ha of productive forest – averaging 300 ha
- The 3050 smaller estates amount to 160 000 ha of productive forest – averaging 50 ha
- The 6600 smallest estates merely amount to 70 000 ha of productive forest – averaging 10 ha



Hedmark has been focusing on increasing the use of wood in large construction projects. Environmental assessments have shown that wood is a «greener» construction material than steel and concrete.



Foto: Eiliv Sandberg

Wood for houses and heat



Foto: Torfinn Kvingeborn

Modern know-how and technology enable the construction of large wooden buildings, such as the Vikingskipet Olympic Arena in Hamar, the indoor speed skating facility of the 1994 Winter Olympics. Hedmark's wood-working industry sets the standards for the construction of large wooden bridges.

The use of bioenergy has longstanding traditions in Hedmark county. Twelve towns throughout the county are currently operating biofuel-based district or local heating facilities, and another four plans are being planned. About 160 farms have installed central heating systems that use firewood, wood chips or pellets to heat their own buildings or to produce marketable heat. Of Hedmark's total stationary energy consumption (i.e., energy not used for transportation), about 25 percent is based on biofuels, compared to the national figure of 8 percent.



forest and climate change

A warmer, wetter and more unpredictable climate presents a challenge to forest ecosystems.

Temperatures and rainfall are increasing and atmospheric CO₂ levels are rising.

Nitrogen in rain enhances forest growth, and increasing temperatures can lead to an advancing mountain treeline. At the same time, the occurrence of summer droughts, frost and storm damage, pest attacks and fungal diseases will increase in the years ahead.

Growing forests bind considerable amounts of CO₂. For example, forests in Norway bind one half of the country's annual anthropogenic greenhouse gas emissions. This is the result of active forest management and the fact that annual increment exceeds the volume harvested. Furthermore, wood is an important renewable energy source and a carbon-neutral building material.

The forest is an important habitat for many species. The way in which we manage our forests thus has a significant effect on biodiversity.



© Magnus ReneFlot / NN / Samfoto

Sustainable Forestry for the future



© Jens Sahlberg / Samfoto

One third of Hedmark's forest area is subject to specific restrictions, such as areas protected according to the Nature Conservation Act or regulated by the Forestry Act. Via the *Levende Skog* ("Living Forest") standards, forest owners have committed themselves to conserving biodiversity in connection with all felling operations and silvicultural measures.

In the old days, people used forests to hunt and fish, pick berries and mushrooms, and gather firewood. In the past few centuries, forests have increasingly become an arena for timber production, and in recent years there has been increasing focus on the role of forests for outdoor recreation. Regarding many of these issues, Hedmark has a responsibility to sustainably manage its forest resources. We should always remember that forests are a renewable resource!



© Bård Løken / NN / Samfoto

the great outdoors



Foto: Tore Holaker



© Kjell Erik Mørstøl / NN / Samfoto



© Espen Berntsen / Samfoto

Hedmark not only has vast forests and magnificent mountains, but also 2000 lakes and rivers. The county is thus an attractive place for outdoor activities and recreation, rehabilitation and nature-based tourism.

The rivers Glåma, Trysil and Rena, as well as Lake Mjøsa are popular trout fishing waters and are extensively used for a variety of water sports. About 70 tonnes of salmonids are caught each year in the Trysil River alone. Other popular game fish in the county's many lakes include grayling, char, pike, common whitefish and perch.

Wild reindeer were probably among the region's first inhabitants when they arrived after the last Ice Age approximately 10 000 years ago. About 900 wild reindeer are shot each year in Hedmark. The elk is a forest animal, and thus a typical Hedmark inhabitant. About 7300 elks are shot annually, making Hedmark Norway's number-one elk county. The first-hand value of elk meat is more than NOK 60 million annually.

The tourist sector markets Hedmark as the "World of Wilderness" (www.villmarksriket.com). Nature and wilderness-based activities enable tourists from all over the world to get a unique "taste" of Hedmark: its variety of landscapes, rich culture and good, local food. The natural environment is also actively used in rehabilitation and work training to reduce absence due to illness and unemployment. From a public health perspective, the use of forests and wilderness areas is important for Hedmark's population. The forest – our best medicine!



Hedmark has a number of major players in forestry education, research and development.

Knowledge

– Helps the Forest Grow

The Norwegian Forest Seed Station in Hamar supplies seeds to forest tree nurseries all across Norway. The Forest Seed Station operates several seed plantations in Hedmark. Such plantations are seed-producing "gardens" and forest tree gene banks, which in turn provide a basis for seed breeding and research.

Hedmark University College's department at Evenstad offers study programmes in forestry and wildlife management, ecotourism, bioenergy and applied ecology. The department conducts considerable research on applied ecology and takes part in extensive national and international cooperation in research and education.

Solør upper secondary school at Sønsterud offers educational programmes in forestry, wilderness tourism and landscape gardening, in addition to general academic courses.

The Norwegian University of Life Sciences (UMB) and affiliated institutions at Ås are a national centre for forestry education and research.

There is a considerable need for generating new knowledge to strengthen innovation, value creation and profitability throughout the entire forest value chain. To meet the challenges of the future, knowledge requirements will increase, and thus, cooperation between the various players in forestry and the wood-based industries is becoming increasingly important.



COUNTY GOVERNOR OF HEDMARK

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