



Iceland becomes forested again

Iceland – the land of fire and ice – is striving to claim a place among the forest-harvesting countries of the north. The forest is no longer merely vegetation that binds the soil and improves the environment; it can also provide a source of income for rural Icelandic communities. These were some of the messages delivered during the SNS summer meeting in western Iceland.

When Iceland was first settled, in the 9th century, 25–40% of the country's land area was covered by forest and woodland. However, the forest was

soon almost completely wiped out as a result of sheep grazing and climatic cooling, transforming Iceland into a notoriously treeless land. Deforestation continued up to the mid-20th century; harvests for energy purposes being the main reason for the late decline.

However, the forest is returning as a result of ambitious planting

programs, and is now even becoming a valuable source of saw-timber and other wood for manufacturing various products and energy-generation. The first plantations have reached thinning dimensions, and their harvesting has begun to create a market for local contractors in areas which have suffered from unemployment.



Picture above: Contractors happy to see a growing market for harvests from first-generation spruce and larch plantations in Iceland. Photo: Mats Hannerz

Right: Plantations of introduced species, such as Sitka spruce, now cover some of the hillsides in Iceland. Photo: Mats Hannerz

Break-through

The financial crisis struck Iceland hard in 2008, but it has had an unexpected positive effect on local forestry. Imported wood has become more expensive, providing opportunities to raise prices of domestic wood. In the current situation, it is profitable to harvest in the young forests in Iceland. The Icelanders talk about a break-through for Icelandic forestry.

The wood has mainly been harvested for energy purposes, to be burnt in fireplaces and pizza ovens, but several new niche markets are emerging for the wood. For instance, wood chips are being used for footpaths, spruce poles for fish-drying racks, spruce and pine shavings for livestock bedding. Another user of domestic spruce wood, following recent price changes, is the ferrosilicon processing industry.

Afforestation

The afforestation plan for Iceland is ambitious. Trees have been planted on a small scale for afforestation since about 1950, but the planting rate increased in the 1990s. Today about 6 million seedlings are planted annually, corresponding to an increase in forested land of about 1 000–1 500 hectares per year, and about 1.2% of the land is now covered

“A century ago, most Icelanders had never seen a tree. Fifty years later, few Icelanders believed that trees of any size to speak of could grow in Iceland. Planting trees was the harmless hobby of a few eccentrics, but forests for timber production were out of the question. Today, forestry for timber production, land reclamation and amenity is being carried out by thousands of people all over Iceland”.

Thröstur Eysteinnsson, Division Chief of National Forests at the Iceland Forest Service.

by forest and forest plantations.

The long-term goal, according to the Regional Afforestation Projects Act of 2006, is to raise the forest cover to 5% of the land area, corresponding to 500 000 hectares. The goal should be met in 40 years from now, but budget cuts following the financial crisis will probably retard the program.

Introduced species

The new forests in Iceland differ substantially from the ancient birch and willow tree and shrub land. The forest established by planting is to a large extent based on introduced conifers and hardwoods such as Siberian larch, Sitka spruce, lodgepole pine and poplars. Introduced species are mainly planted on treeless land, while areas with natural woodlands are afforested with native species. The planting of native birch (*Betula pubescens*) has been increasing and for some years has comprised 30% of the total planting. The domestic birch forest is also growing as a result of natural regeneration around the existing forest patches. The success of birch regeneration is strongly negatively linked to the degree of grazing, and if free sheep grazing declined birchwoods would likely expand rapidly.

Fast-growing

Iceland's lack of trees led to a widely held belief that trees don't grow well on the island. However, once established, trees can grow very rapidly in many

parts of the country. In the sheltered valleys, Sitka spruce can produce some 10 m³ per hectare and year. With poplar (*Populus trichocarpa*), the yield can reach 20 m³.

Forestry research in Iceland

Most of the applied forestry research in Iceland is performed by Iceland Forest Research, part of the Iceland Forest Service. Its headquarters are located in Mogilsa near Reykjavik, but there are also offices in Akureyri. The institute currently has a staff of 15 persons.

The institute has traditionally concentrated on species and provenance trials, but in recent years research has expanded to cover topics such as carbon and nutrient cycles, establishment problems, pests and pathogens and ecological implications of afforestation.

Related research is also performed at the Agricultural University of Iceland, which has a main campus near Borgarnes, western Iceland. In 2004, the university started a forestry degree programme for the first time. It is now possible to obtain bachelor's and master's degrees in forestry in Iceland, in contrast to bygone times, when foresters had to be trained abroad.

Read more about Icelandic forestry:

“Forests returning to Iceland”, News and Views No. 2, 2003.

“Forestry in a treeless land 2009”, www.skogur.is, English version

Adalsteinn Sigurgeirsson, head of Iceland Forest Research, in front of the headquarters in Mogilsa near Reykjavik. Photo: Mats Hannerz



Successful start for the Nordic CARs

The Centres of Advanced Research (CAR) are successful and should be continued for a further period, according to an evaluation commissioned by SNS. Further, in addition to existing CARs, a new centre for wood material science and engineering should be established.

Five Centres of Advanced Research were initiated by SNS in 2005–2006. The CARs were intended to have 4- to 5-year durations, and financial support was awarded for the whole period. The end of the funding period is approaching, and the centres have now been evaluated. The evaluation was carried out by Olav Gislerud, former secretary of SNS.

In his report, Olav Gislerud, concluded that the CARs have successfully met their goals, although some of them had a “slow start” before establishing networks. Some minor adjustments of scope are also recommended if the networks are to be continued. Some findings are listed below:



*Nordic-Baltic
Centre of Advanced
Research on
Forestry Serving
Urbanised Societies*

The existing network linking the urban forestry community in Nordic and Baltic states was considerably strengthened with the CAR, sparking an influx of new members, including PhD-students, Icelandic representatives and practitioners. An overview of state-of-the-art research on urban forestry was undertaken at the start of the project, helping to identify research topics to focus on. Several publications have been produced through the network, mainly on urban forest management concepts and methods.

Read more: www.sl.life.ku.dk/care-for-us



*Centre of advanced
research on
environmental
services*

CAR-ES has focused on the impact of forest management on carbon sequestration, water quality, biodiversity and (especially) the interactions between these “environmental services”. Before this CAR was established, there was no Nordic network that focused on the environmental effects of management strategies. The assessment found the scope of the CAR to be too broad, and recommended that it should focus more specifically on environmental services in forests where biomass is being intensively exploited.

Read more: www.nordicforestry-cares.org



*Centre for advanced
research in forest
genetics and tree
breeding*

GENECAR has helped to identify common research and competence needs for strengthening forest genetics and tree breeding programs in the Nordic countries, and have strengthened Nordic coalitions in existing EU projects. The network discusses possibilities to join forces in tree breeding, e.g. by using common breeding materials in the Nordic countries. The research strongly supports the needs to use tree breeding as a means to maintain sustainable forestry in a changing climate. The evaluation recommends greater inclusion of the genetic research at Umeå University.

Read more: www.nordicgenecar.org



*Operation systems –
centre of advanced
research*

The OSCAR network has continued a long tradition of Nordic collaboration to develop technological systems with practical applications in forestry. Forest technology has fewer actors today, and OSCAR helps individual researchers to broaden their networks. This is especially important for researchers in small countries such as Denmark, Norway and the Baltic countries. Several projects and collaborations would never have started without OSCAR. Biannual conferences have attracted many participants, and the network played an important role in the establishment of a research school in forestry technology with 11 PhD students.

Read more: www.skogforsk.se –search OSCAR



*Virtual centre of
advanced research
in forest pathology)*

This network has established strong Nordic collaboration with the Baltic countries, helping to monitor new diseases such as those caused by *Chalara fraxinea* (responsible for ash decline), and *Dothistroma septosporum* on pine in Finland. PATHCAR has organized workshops and meetings on subjects such as the genomics of pathogens. Important aspects of the network’s concerns, which clearly require cross-country collaboration to address, are related to pathogen migrations.

Read more: www.metla.fi/org/pathcar

Facts:

A CAR differs from the ordinary networking activities sponsored by SNS in that it has a long, fixed duration (4–5 years) and receives a higher grant, €40 000–50 000 per year. The five CARS presented above were established for the first period, 2005–2010. They have previously been presented in News and Views No. 1, 2005. SNS will invite new submissions for CARs in 2010.



Sweden: Strong support for tree breeding, but some reservations about genetic diversity

According to a survey of forestry professionals in Sweden, 97% believed that genetically improved trees from seed orchards grow better than unimproved trees. Almost 75% believed that trees from seed orchards produce better quality timber than unimproved trees, and 53% considered the improved trees to be healthier than unimproved trees. However, over 50% of the respondents were worried that the use of improved material could reduce the genetic diversity of forests.

The survey was undertaken by Skogforsk, who asked 165 professionals from forest companies, forest owners associations and the Swedish Forest Agency about their attitudes towards tree breeding.

The results will be useful for identifying the information and competence needed by practitioners using various types of forest regeneration materials.

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The beauty of nature and social interactions motivate Danish hunters

Bagging game in itself may explain just a quarter of the price a hunter is willing to pay for the activity. Other important factors include the beauty of the natural world and social interactions with other hunters.

The motives for hunting and the willingness to pay a given price were investigated by researchers at Forest & Landscape, Denmark (Thomas Lundhede, Jette Bredahl Jacobsen, Bo Jellesmark Thorsen).

A hunting area with forest land, particularly older forest, is considered

to be more valuable than one with no forest. The availability of a hunting hut will also increase its value, by 30%. An important function of the hut is to provide a place for socialising with other hunters on the ground.

Eighty percent of hunters claimed that experiencing nature was an important motive for the activity, but only 10% stated that the meat obtained from game animals was important. Almost 60% considered being together with friends to be an important aspect of hunting.

Read more: www.sl.kvl.dk

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