

Sweden looking for a new sustainable cutting level

A few years ago, there was a wide gap between potential and actual cutting in the Swedish forests. The annual growth levels greatly exceeded the annual cut. This gap is now diminishing, since large areas of forest and substantial volumes of wood have been taken out of production for environmental reasons. This is partly an effect of the ongoing forest certification programme. In southern Sweden, it is probably not possible to increase the long-term cutting volume without jeopardising sustainability.

A commission is now to consider

the future development of Swedish forests over a 100-year perspective. One essential task is to determine the sustainable cutting level. The commission will work with two scenarios:

- Continued forestry at today's levels, and current goals.
- "Better forestry"; a scenario with more ambitious silviculture, more fertilization and a reduction in damage caused by game.

The commission will present a final report in the beginning of the year 2000.

Source: The National Forestry Board, Sweden.

100 million m³sk

Annual growth

70 million m³sk

Annual felling

The gap between annual growth and felling is not as great as it seems, since a substantial part of the growth is no longer available for felling due to environmental concern.

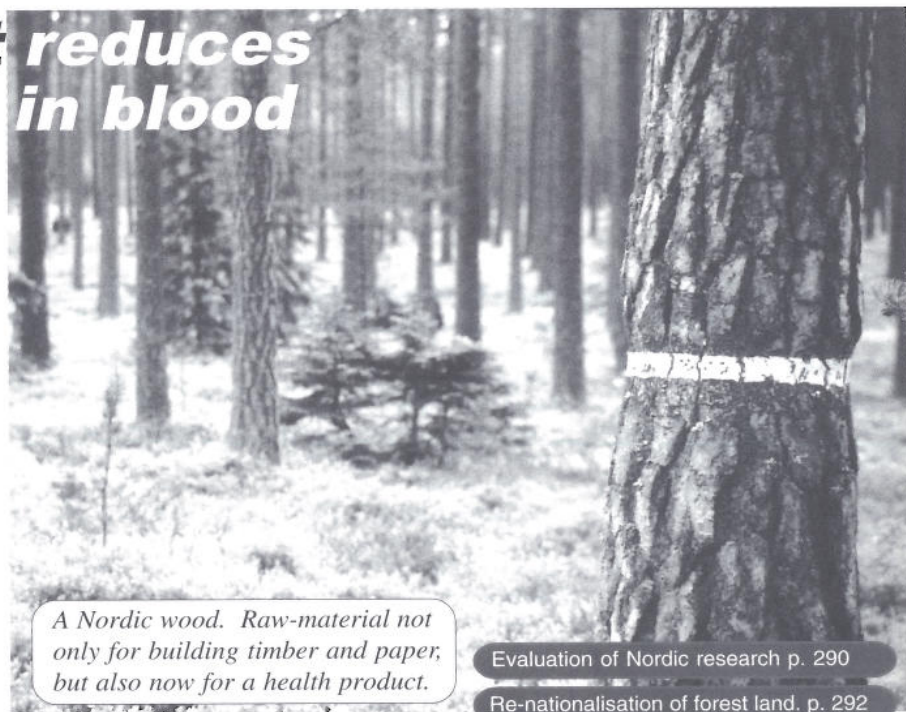
Tree product reduces cholesterol in blood

Benecol is the registered trademark for products with a fat soluble stanol ester that can restrict the absorption of cholesterol.

More than 30 scientific reports have been published on the effects of plant stanol ester on serum cholesterol levels, and it has been clearly demonstrated that, used as a part of the daily diet, it reduces total and LDL cholesterol.

Today, it is possible to buy a margarine with Benecol in Finland and the UK. Further new markets are targeted this year.

Sterols are found in every plant. Their concentrations are very low and, thus, the best raw material sources are industries where very large volumes of plant-based material are handled. Today, sterols are obtained from two main sources: the vegetable oil industry and the wood processing industry. Sterols are extracted from tall



A Nordic wood. Raw-material not only for building timber and paper, but also now for a health product.

oil and tall oil pitch, for instance. One of the main suppliers is the Finnish forestry concern, UPM Kymmene in Kaukaa, Finland.

Source: EFI News No. 1, June 1999.

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Evaluation of NKJ/SNS projects

A scientific evaluation of four environmental research projects involved in the Nordic Environmental Research Programme has recently been carried out. The projects, partly financed by three different Nordic bodies (NMR, NKJ and SNS, see next page), were evaluated in 1998 by a group of three senior researchers, chaired by Dr. Sveinn Aðalsteinsson of the Icelandic Horticultural College. The other two evaluators were Dr. Ivar Schjelderup, PlanteForsk, Tromsø and Prof. Germund Tyler, University of Lund.

Scepticism about application process

In the beginning of the 1990's, NMR, NKJ and SNS, each following their own procedures, identified a number of important topics for environmental research in agriculture and forestry. Expert committees and an advisory group were set up, and encouraged research groups in their respective countries to apply for funds.

Initially, the researchers were asked not to send a complete application, only a letter of intent or expression of interest. After discussion with the

expert referees, and communication between various interested research groups, concrete proposals were completed. Finally four integrated projects emerged (see below).

The evaluation panel is not convinced that the chosen application model, requiring an initial letter of interest and detailed proposals at a later stage, is optimal. "It is not certain that the best or the most efficient groups will be granted money", they say. "It may also be tempting for the research groups to promise more than they can deliver, simply to secure funds".

Another great disadvantage with the method used to handle proposals for the Nordic Environmental Programme, is that groups are virtually forced to work together—even if there are few advantages in doing so, or even considerable practical difficulties. This can obviously cause inefficiency.

But the group also sees virtues in the system. Better control and co-ordination is possible, compared to a free application procedure, they believe, and the total time spent writing proposals is minimised.

Further remarks

Overall, the evaluation panel is pleased with the results of the four projects. Some of them were highly active in education and training, which represents good use of Nordic funds, according to the panel. Another positive aspect is that some of the projects have developed into larger EU-financed projects.

But there are of course qualifying comments. One project has not been successful in its modelling, for instance, and another project should have published more in refereed journals.

The group also makes several general observations:

- Project groups that made extensive use of their external referees, had regular meetings, and good co-ordination, produced better results than projects which did not.
- Some project groups have not published any final report, and the publications of others have been restricted to little more than one such report. A clear output measure would have been advantageous to all, including a requirement that a short

The four evaluated projects

KLIMA

on the likely impact of rising CO₂ and temperature levels on Nordic forests given limiting and optimal nutrient supplies.

Co-ordinator:

Prof. Sune Linder, Swedish University of Agricultural Sciences

Referee: Prof. PG Jarvis, Edinburgh

Total funding: €1.3 mill
NMR/NKJ/SNS contribution: €0.5 mill

NORPHOS

evaluating losses of dissolved and particulate phosphorus from Nordic agricultural land to aquatic environments.

Co-ordinator:

Dr. Peter Botterweg, Jordforsk, ÅS, Norway

Referee: Dr. Sjoerd van der Zee, Wageningen Agricultural University, The Netherlands

Total funding: ca. €1.0 mill
NMR/NKJ/SNS contribution: €0.4 mill

VITALITET

assessing imbalances in forest nutrition – and their effects on vitality.

Co-ordinator:

Prof. Folke Andersson, Swedish University of Agricultural Sciences

Referee: Prof. R. F. Hüttel, Brandenb. Techn. Universität, Cottbus, Germany

Total funding: ca. €0.9 mill
NMR/NKJ/SNS contribution: €0.4 mill

NORN

a Nordic project on nitrogen in forested and arable land.

Co-ordinators:

Prof. Per-Erik Jansson (focusing on modelling) and Prof. Tryggve Persson (focusing on experiments); both from Swedish University of Agricultural Sciences

Referees: Prof. Hans J.M. van Grinsven, National Institute of Public Health and the Environment, Bilthoven, the Netherlands, and Prof. J.M. Andersson, Department of Biological Sciences, Exeter, UK

Total funding: ca. €1.3 mill
NMR/NKJ/SNS contribution: €0.7 mill

final report be compiled, together with a complete publication list. The value of international publication should also have been stressed from the outset.

Parallel EU-project

The partners in one of the projects were also collaborators in a related EU project. Their strong links to the EU research effort makes it difficult to differentiate papers derived from the Nordic project, the evaluation group says. Although one can argue that the specific funding source of a good paper does not greatly matter, where several may be involved, it undoubtedly makes comparison with other Nordic projects more difficult.

Nordic money for EU projects?

In their recommendations, the evaluation panel suggests an alternative way to promote inter-Nordic research exchange. This is to fund EU projects with two or more Nordic participants. By supporting already existing co-operative ventures, the Nordic profile in these projects could be strengthened, less money would need to be spent on handling proposals, and more would be available for Nordic research, workshops and student exchange etc. However, a disadvantage with this suggestion is the risk that only "mainstream" research, i.e. bland, non-controversial projects that all partners agreed to support, would be funded.

NMR

The Nordic Council of Ministers, formed in 1971, is the co-operative body serving the governments of the five Nordic countries. Co-operative goals and strategies are coordinated by the Nordic ministers for co-operation.

SNS

The Nordic Forest Research Co-operation Committee is an institution financed by the Nordic Council of Ministers. SNS initiates, co-ordinates and supports forest research collaboration between the five Nordic countries.

NKJ

The Nordic Joint Committee for Agricultural Research (NKJ) promotes and supports cooperation on agricultural research between the national research councils or similar research organisations in the five Nordic countries. In addition NKJ acts as an advisor to the Nordic Council of Ministers.

Evaluation panel recommendations:

- More open competition in selecting projects
- Selection to be based more strictly on scientific merits
- Stricter guidelines of output measures of projects
- More money for "post-project" activities, such as maintenance of databases and long-term field experiments
- Support inter-Nordic dialogue (workshops etc.) in existing EU-projects.

Swedish re-nationalisation of forest land

In Sweden, almost 900,000 hectares of forest land has recently been re-nationalised. The re-acquisition was carried out in two steps:

First, the forestry concern AssiDomän transferred some 30% of its forest properties to a new company, named Sveaskog.

Then, the Swedish government acquired all the shares in the new company, paying off the other shareholders with state-held AssiDomän shares.

AssiDomän was completely owned by the Swedish State until 1994, when 49.8% of the shares were sold on the market—primarily to financial institutions and individual investors.

Following the transfer, the Swedish

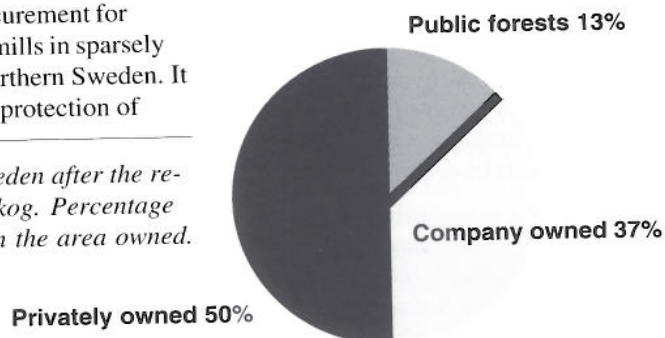
State owns approx. 35% of the slimmed down AssiDomän—a company that remains substantial forest owner with 2.4 million hectares of forest land.

Several arguments were advanced in favour of this exercise. The 900,000 hectares of state-owned forests in Sveaskog should enhance and safeguard timber procurement for privately owned sawmills in sparsely populated areas in northern Sweden. It should also facilitate protection of

Forest owners in Sweden after the re-acquisition of Sveaskog. Percentage distribution based on the area owned.

forest land for environmental reasons.

Furthermore, it should ease concern about the stock-exchange value of AssiDomän shares, since the high proportion of governmental ownership was believed to have a negative influence on the market.



Danish oak research

Aerial photographs

Methods for estimating the volume of an oak stand from aerial photographs using image analysis are being developed by the *Danish Forest & Landscape Research Institute*.

The idea is to use images taken in wintertime, when the trees are bare, and then program the computer to map the number of trees and their diameters.

New growth model

Researchers at the Institute are also working with a new dynamic model for oak growth. The models used today are from 1933. Since then, planning and forestry practices have changed, and there is a need for better tools for deciding the optimal times for thinning and clear-cutting under various conditions.

Valuable resources in this respect are the more than 70 oak field trials available, some dating back as far as the 1850's!

A leading role

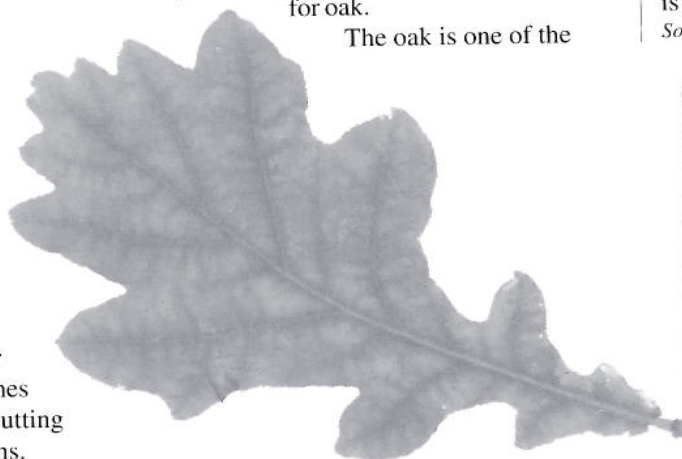
These two oak-projects are presented in a recent newsletter from the Danish Forest & Landscape Research Institute. In the newsletter, the Institute proclaims its ambition to be one of the leading international research centres for oak.

The oak is one of the

most robust trees in Denmark, capable of growing on many different sites, it is said. The oak can also with-stand competition from weeds better than many other broad-leaved species. This is an important consideration if one wants to reduce the use of chemical weed control in plantations.

Another oak-related activity at the Institute is also mentioned in the newsletter: studies of DNA-markers for different properties of the oak. This is a partly EU-financed project.

Source: Skov & Landskab Nyt No. 2 1999.



Lodgepole pine in Sweden—a limited threat to biodiversity

With appropriate precautions, the North American lodgepole pine (*Pinus contorta*) poses no threat to biodiversity in Swedish forests. This is the main message in a press release from the Swedish Forest Industries Federation, citing an environmental impact assessment published by SkogForsk, The Forestry Research Institute of Sweden. A condition, however, is that the lodgepole pine plantations should not be too extensive.

The lodgepole pine can, according to the impact assessment, self-regenerate in Sweden. The species should not, therefore, be planted too close to areas with high environmental value.

Planning on regional levels, with lodgepole pine concentrated in

defined zones, while other areas are kept free of the pine, is probably advantageous for biodiversity, says the assessment.

Lodgepole pine has been planted in large areas in Sweden since the 1960's. So far, approx. 550,000 hectares have been planted. That is some two per cent of the total forest area in the country. Most of the lodgepole pine is planted in northern Sweden. It is believed to be 30–40% more

productive than the domestic Scots pine (*Pinus sylvestris*).

Source: The Swedish Forest Industries Federation



Clippings

Wood helps the environment

Danish forestry and wood-processing industries have launched a joint campaign with the message "wood is good for the environment".

A corner-stone of the campaign is a web-site with information about forests, forestry and wood. The web-site is designed to be a source of information for professionals, do-it-yourself-builders and other interested groups. The project will also carry out special information activities targeting, amongst others, children.

Source: Ministry of Environment and Energy, Denmark.

Multistorey wooden buildings

New fire-protection regulations in Denmark have made it possible to build multistorey buildings in wood. A number of projects with high wooden buildings are, consequently, expected to start in 1999.

Source: Ministry of Environment and Energy, Denmark.

Polytunnel to China

The Foundation for Forest Tree Breeding in Finland has delivered a "polytunnel" to the Northeast Forestry University in Harbin, China.

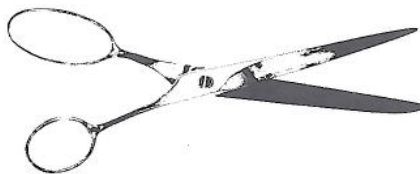
The tunnel, which has a length of 70 metres and a width of 20 metres, is to be used for greenhouse production of birch seed. It's equipped with automatic irrigation, shading facilities and automatic ventilation.

Source: Foundation for Forest Tree Breeding, Finland. Yearbook 1998.

Natural medicines and health foods from trees and bushes

A survey shows that a number of trees and bushes growing in Denmark can supply raw material for producing natural medicines and health foods. Danish farmers are interested in this "new" crop, but there is an extreme lack of knowledge in the field.

Source: Ministry of Environment and Energy, Denmark.



Forests to protect groundwater

The leaching of nitrate is reduced within a few years after planting a forest on agricultural land. This is due to the trees' high nitrogen requirements when establishing their crowns.

This is said in a review of existing knowledge on how forests affect the groundwater, prepared by *The Danish Forest & Landscape Research Institute*.

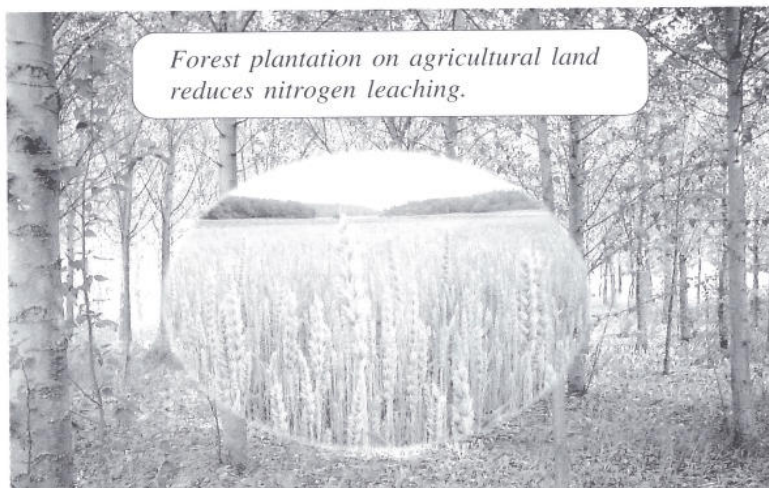
According to the report it is, however, difficult to reduce the nitrogen leaching down to the level we find under older forests. The soil content of nitrogen in agricultural land is simply too high, due to earlier fertilizations. Nevertheless, the nitrogen leaching is lower with forest coverage than with continued agriculture.

The review is a contribution to an

afforestation project in western Denmark, where the local authorities are planting forests on former arable land. The forest is designed to protect the groundwater, and to contribute

various other benefits, such as enhanced recreational value and habitats for plants and animals.

Source: Skov & Landskab Nyt No. 2 1999.



Forest plantation on agricultural land reduces nitrogen leaching.

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