

# The Swedish Forestry Model



# Introduction

Sweden is a country dominated by forests. Forestry is crucial for the national economy and most Swedes closely relate to forests and forestry pursuits. Sweden holds just below 1% of the world's commercial forest area, but provides 10% of the world's sawn timber, pulp and paper. The most popular Swedish outdoor activity is "forest walking", according to opinion polls.

During the 18th and 19th century, many forests were overexploited for housing construction, fuel wood, charcoal for the iron industry and latterly as a source of logs for timber and pulping. Cattle grazed the forests at that time, reducing tree regeneration. After decades of political debate, parliament passed the first Forestry Act into law in 1903. This required owners to replant after forest felling. The Forestry Act has been updated four times since then and today's comprehensive legislation balances relevant economic, ecological and social interests.

The Swedish forestry model is mainly shaped by the country's natural conditions and constraints, its history, the knowledge and experience of the forest owners and the tradition of consensus policies based on mutual respect, understanding and compromise.

This booklet provides an overview of the values and goals that are embodied in Swedish forest policy

and practice today. It describes the nature and scope of the involvement of politicians, government authorities, research institutions, forest owners, industry, nongovernmental organizations and other stakeholders in the forest sector. It is divided into four sections:

- Natural conditions and constraints (p. 3–5)
- The role of government (p. 6–7)
- The role of forest owners (p. 8–10)
- Shared responsibilities (p. 11–14)

This *Swedish Forestry Model* booklet is produced by the Royal Swedish Academy of Agriculture and Forestry. Björn Lundgren, chairman, and Fredrik Ingemarson, secretary of the Committee for International Forestry Issues, have contributed substantially. The Academy is a forum for people who, for the benefit of Swedish society, are seeking to develop and improve Sweden's land-based industries: agriculture, forestry, fishing, hunting, reindeer herding and aquaculture.

This booklet is based on one published in 2001 and is produced in close cooperation with the Swedish University of Agricultural Sciences, the Swedish Forest Industries Federation, the Swedish Federation of Forest Owners and the Swedish Forest Agency.

Royal Swedish Academy of Agriculture and Forestry

Stockholm, July 2009

Åke Barklund

*Secretary General and Managing Director*



Cover picture: Stefan Örtenblad. Above: Michael Ekstrand, Swedish Forest Agency

# Sweden's physical geography

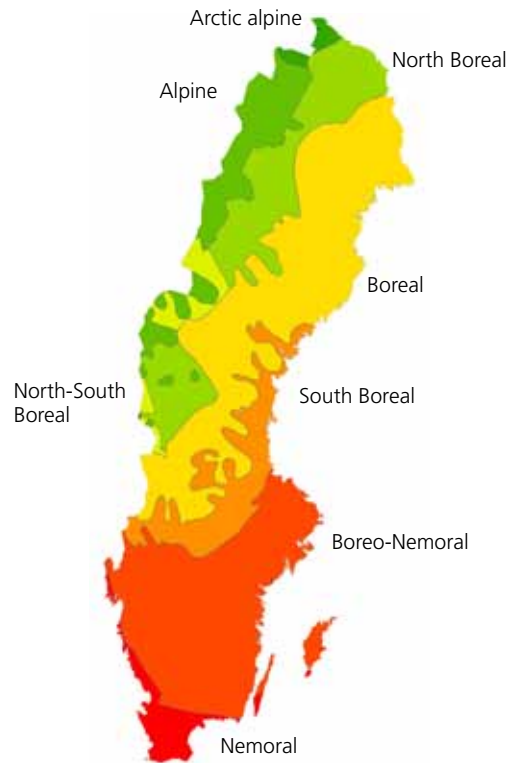
Eight vegetation zones can be distinguished in Sweden. The Boreal zone and its sub-zones cover the majority of the land area and consist of coniferous dominated forests. In the south, there is a small zone of mainly deciduous forests; the Nemoral zone.

The climate is strongly influenced by the northerly location of the country.

Sweden's landscape, which is characterized by lakes, wetland areas and shallow, nutrient-deficient soils, was shaped by the glaciers that receded only 10,000 years ago.

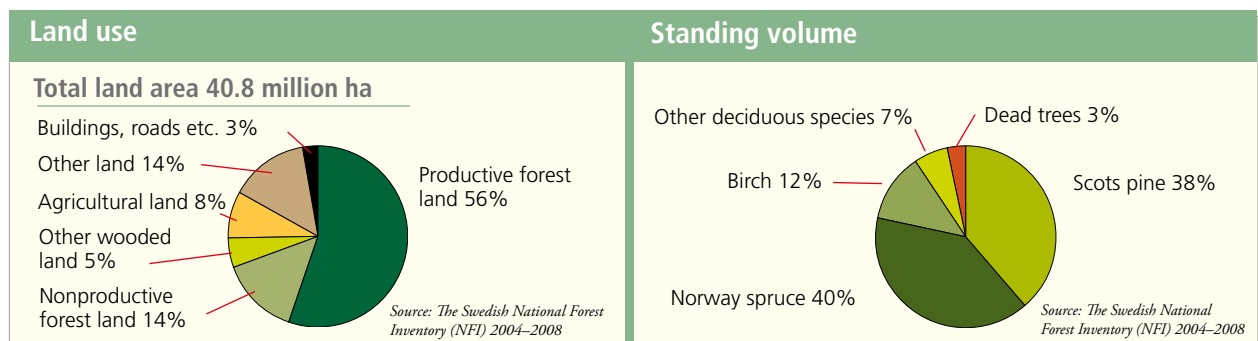
As a result of these natural conditions, the land has a low productive capacity, a predominance of coniferous forest and relatively slow vegetation growth.

Owing to the large north-south extent of the country (the latitude ranges from 55°N to 69°N), there is a considerable variation in the climate and soil conditions, both of which are more favourable for plant growth in the south.



*Sweden's forests are among the most northerly in the world. The warming effect of the Gulf Stream permits forest growth at latitudes that are characterized by treeless tundra in other parts of the world.*

*A wintry forest landscape in Sweden. Photo: Stefan Örtenblad*



# Historical background

Swedish forests have been exploited for centuries. In early times, the best forest land was cleared for arable farming; large areas were claimed for shifting cultivation and forest grazing was widespread. As well as being a source of fuelwood and timber for domestic use, and providing hunting grounds, the forests also supported various secondary uses, e.g. the production of charcoal, tar and potash.

### Wood-consuming industry

As early as the thirteenth century, the mining industry (largely concentrated in central Sweden) became an important consumer of timber. Fuel wood was needed for ore extraction, and charcoal was used for smelting and additional processing.

Meanwhile, in the more populated south of the country, forest raw materials were being used in the production of iron and steel, and for ship-building, glass-making, extraction of train-oil etc., as well as for meeting domestic needs.

In the mid-1800s, a growing forest products industry (mainly in the north) generated increasing demand for saw logs and, some 50 years later, raw materials for the manufacture of pulp and paper. The utilization of the forest resources in the north led to Sweden being transformed from an agrarian society into a rapidly developing industrialized nation.

As a consequence of this forest use and the absence of any reforestation measures, large areas of forest had been depleted by the end of the nineteenth century.

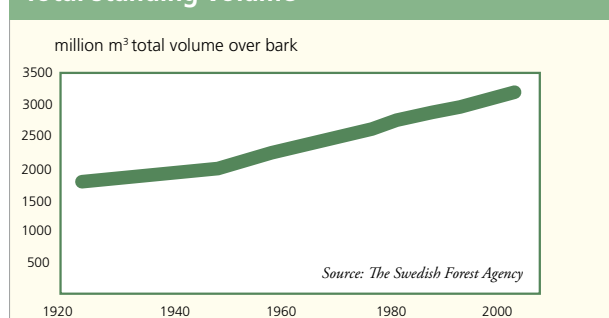
### Increasing growth

After World War II, an even-aged stand management system—consisting of final felling followed by planting or natural regeneration—became the most widespread forestry practice. As farming methods were rationalized, forest grazing became the first practice to disappear. Later on, pasture and poor-quality arable land were either left to regenerate or planted with forest trees. These developments therefore led to increased tree growth in our forests.

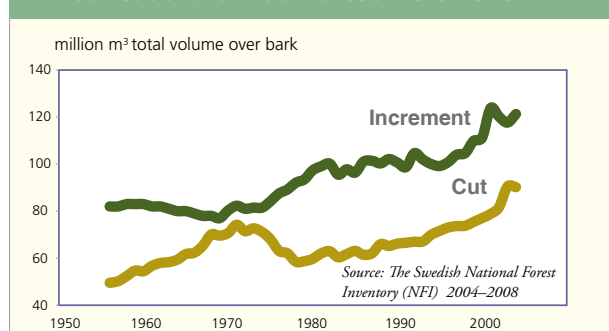
During the twentieth century, the forestry sector was able to meet the growing demand for timber from the expanding forest products industry through a large increase in the annual harvest. Yet, despite this, the country has still been able to increase its crop of standing timber by about 70% from the time of the first national forest survey in 1923.

The biodiversity found in the Swedish forests today has been largely determined by past forestry management and usage. Some habitats supporting rare species of flora and fauna were created by past land uses that have now disappeared. First growth or untouched forest is rare, but different histories and topography contribute to a diverse forest ecology.

### Total standing volume



### Annual cut and annual forest increment



*In the early 1900s, extensive forest areas were in poor condition because of overcutting and cattle grazing.*

*Photo: R Lundhaal*





# Outdoor activities

### The right of public access

The ancient right of public access in the countryside in Sweden entitles people to pick berries, gather mushrooms, to camp and to pursue outdoor recreational activities. There are some restrictions, however; one must not cause damage to a land-owner's property or to objects or sites of natural, historical or heritage value. Cutting down trees is, for example, prohibited.

This right, which has few parallels in other countries, has benefited generations of Swedes. People who can roam freely in the forests and countryside generally acquire not only a knowledge of, and affection for, wildlife and the natural environment, but also some familiarity with forestry practice.

### Hunting

Close to 300 000 people are registered as hunters at the Swedish National Environmental Protection Agency. Moose hunting is important from a cultural point of view and it creates excellent conditions for recreation. From an economical point of view the meat and the hunting rights have a great value, while the damage on the forest caused by moose (and other deers) is a big problem. Moose hunting is regulated by the County Administrative Boards.



*Picking mushrooms is a popular pursuit in Sweden.*

*Photo: Björn Svensson/SkogenBild*



*Photo: Areca*

# The right to herd reindeer

The forestland in Northern Sweden is today used for both forestry and reindeer husbandry. About one third of the national territory is legally defined as reindeer grazing land – the exact borders are still under discussion.

Reindeer husbandry is of particular importance for Sami culture, and some Sami have the exclusive right to herd reindeer. It is derived from immemorial rights, which also entitle the Sami to fish and hunt.

The forest owners are obliged to accept reindeers on their properties, even though the herds sometimes can cause damage to the forest regeneration.

The forest owners are obliged not to undertake forest management without considering the needs of reindeer husbandry. Consultations are mandatory before final felling, and the dialogue between forestry and reindeer herdsman is today an important instrument for resolving the conflicts between forestry and reindeer husbandry.



*There are about 250 000 reindeers and 4 500 reindeer herdsman in Sweden. Photo: Mats Bildström/SkogenBild*

# National forest policy: principles

### History

The poor state of Sweden's forests at the end of the nineteenth century became a burning political issue. In 1903, parliament made a historic decision: to formulate a special forest policy. Forestry legislation, focusing initially on reforestation, was introduced. This was followed two years later by the establishment of a forestry authority in each county. A law prohibiting industrial forest enterprises from purchasing privately owned forest holdings and long-term logging rights was also introduced at the beginning of the twentieth century.

Government regulation of the forestry sector was intensified after the Second World War, culminating during the 1980s in extensive legislation. A general levy on forestry, government subsidies, mandatory forest-management plans for forest holdings and a national survey of family enterprise forests to facilitate targeted advisory services were all introduced.

### National forest policy today

In 1990, forest policy was reviewed. In accordance with customary practice in Sweden, a parliamentary committee, comprising a broad range of expertise representing government departments, trade and industry, research, conservation groups, etc., was set up to conduct the review.

The new forest policy, which took effect in 1994, was influenced, above all, by the wish for greater

liberalization in the business sector and the need for greater attention to conservation issues in forestry. The policy structure was changed from one characterized by the imposition of regulations, to "freedom under responsibility" based on management by objectives. Two overriding goals of equal status were formulated: one for production and one for safeguarding biodiversity.

One principle underlying the new policy is that more room should be afforded in the market for different forest products and services. Both the levy on forestry and the associated subsidies have therefore been abolished. In addition, forest policy and legislation now apply equally to all forest owners.

The review also resulted in the Government creating more nature reserves, many of which are incorporated in the Natura 2000 European network.

In recent years forestry has been increasingly influenced by environmental policy. The overarching intention of the policy is, in line with international agreements, to ensure that development is sustainable. The basic principle of the environmental policy is sectorial integration, i.e. each sector of society is responsible for the environmental implications of activities in their sector.

In 2004, forest policy was subjected to further review. This resulted in a parliamentary decision that, in essence, was a continuation of the existing policy, but with a stronger emphasis on climate issues.

*A modern logging site. This is a good illustration of the new forestry policy in Sweden, under which the respective goals for forest production and the environment are given equal weight. Photo: SkogenBild*





# National forest policy: implementation

The Swedish Forest Agency (SFA) was established in 2006, replacing the previous County Forestry Boards and the National Board of Forestry. The agency is the overriding authority for forestry and associated environmental and conservation issues. In addition to its role in ensuring observance of the relevant laws and regulations, SFA also provides training, advice and information on forestry. Another duty is to conduct forest surveys, to identify valuable conservation and heritage sites and to maintain a register of such sites.

The Swedish Environmental Protection Agency is the national agency responsible for overall environmental policy, while other government agencies have specific responsibilities. The agency's role is to promote environmental policy and to act as a unifying agent on environmental issues. The agency also has national responsibility for the creation of nature reserves. This work is coordinated with SFA.

The two agencies largely employ legal measures, as well as education, training, advisory and information services, in ensuring adherence to the national forest policy.

The main stipulations of the current Forestry Act, which has a wider framework than previous legislation on silviculture and forest management, are:

- mandatory reforestation after final felling
- a ban on the felling of young stands
- an obligation on forest owners to carry out preventive control of insect pests
- special management regimes for valuable hardwood forests and upland forests
- a general duty of care for objects or sites of natural, historical or heritage value in the forests.

Net income from forestry is taxed—essentially in the same way as for other branches of industry.

Legislation on timber mensuration stipulates that sawlog, pulpwood and chips measurements must be carried out in accordance with the directions of the SFA. This ensures a correct basis for payment.

*Reforestation, normally planting or natural regeneration, is compulsory after final felling. Pre-commercial thinning is normally desirable, but voluntary. Photos: Stefan Örtenblad/SkogenBild and Björn Svensson/SkogenBild*



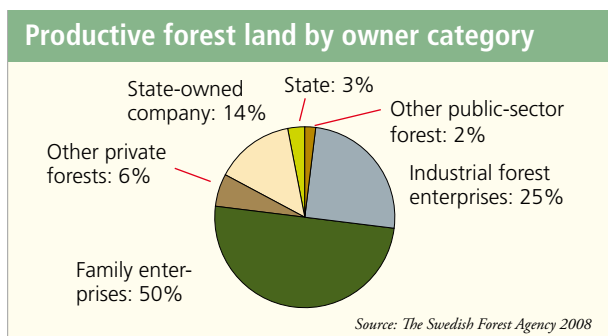
# Forest owners

### Family forestry

About half of all forest land in Sweden is owned by family enterprises. There are some 200,000 families with holdings of more than five hectares and most holdings are passed on from one generation to the next. The average holding is 50 ha, but the size varies greatly. The tradition of combining farming and forestry has been very common. Family enterprises have different objectives and also different priorities—this leads to a rich diversity of forestry practice. However, one traditional goal is common to all: sound long term management of the forest.

Forestry cooperatives were established by forest owners during the 1930s in order to give their members a stronger negotiating position and a better chance of securing higher prices for their timber. Some 90,000 family enterprises, which together account for roughly half of all family-enterprise forests, belong to a forestry cooperative. In addition to the marketing and sales services they provide for their members, the cooperatives also offer logging and advisory services, and represent the interests of family forestry in consultations at the political level. Through their membership of these cooperatives, family enterprises also own industrial facilities—principally pulpmills and sawmills but also installations for the rapidly growing energy sector (heat and electricity).

*An advisor offering support to a private landowner.  
Family enterprises own about half of all forest land in Sweden.  
Photo: Stefan Ortenblad*



### Industrial forest enterprises

A small number of large industrial forest enterprises own some 25% of all forest land in Sweden. Most of the state forest belongs to Sveaskog, a state-owned company, which accounts for 14% of all forest land. The rest of the public-sector owned forests account for 5% of the forest land, of which 3% is state-owned and 2% is owned by other public bodies, mainly the church. This ownership structure, with widespread corporate ownership and most of the state-owned forest managed commercially on the basis of financial objectives, contrasts sharply with the ownership structure of forests in continental Europe.

The Swedish industrial forest enterprises have undergone a restructuring period, and one effect of this reconstruction is that today there are only a few integrated companies in Sweden that have both forest holdings and industrial capacity. Forest owners or not, industrial enterprises buy wood on a stumpage basis from private forest owners and act as advisers to family enterprises.

The sawmills, which for the most part are owned by private enterprises or groups of companies, do not normally have forests of their own.





# Economic and efficient forestry

Logging today is largely carried out by private contractors and is efficient and highly mechanized. These contractors use their own machinery and constitute an important element in Swedish forestry. In family-enterprise forests, however, owners often still carry out regeneration and other silvicultural work themselves.

Because most forestry machines are equipped with on-board computers and mobile communication systems, logging can be directed to meet the current needs and requirements of the market. Even secondary haulage, which is done by road or railway, is now an integral part of this system. With an efficient flow of wood, the amount of timber stockpiled in the woods or at process locations has been substantially reduced.

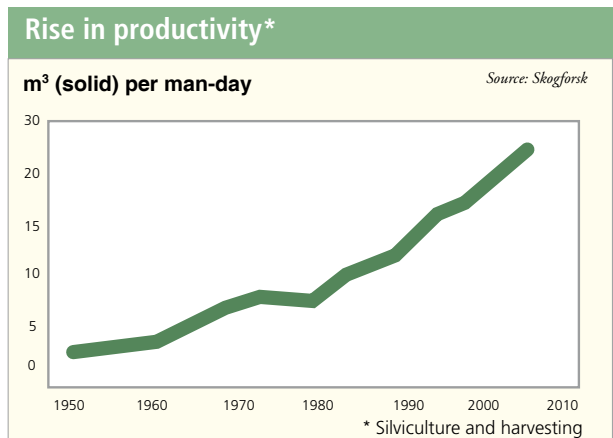
Saw logs and pulp wood comprise the great part of the net income, but energy assortments are economically increasing.

The interest in broadleaved trees is growing, for two main reasons. One is that the wood working industry asks for more hardwood, the other that many forest owners are looking for alternatives to pine and spruce as these are susceptible to wind throw, as evidenced in the recent severe storm events in southern Sweden.

Some non-wood forest incomes of growing importance are tourism and wind power.

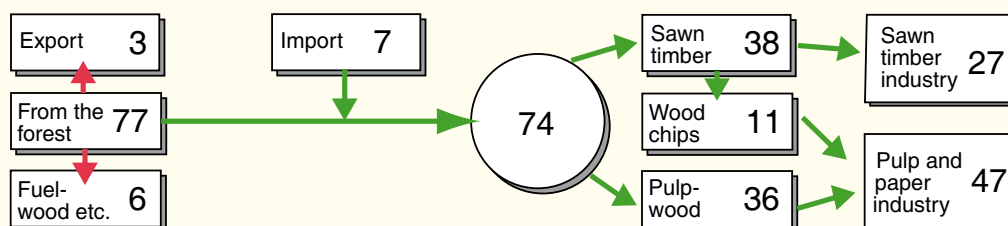
*A single-grip harvester. Cut-to-length (CTL) or shortwood logging, whereby the trees are cut into sawlogs and pulpwood bolts before being extracted, is the dominant method in Sweden. Thinning accounts for some 30% of the total annual cut, and final felling for the remainder. Photo:Ponse*

*A forwarder with forest fuel (tops and slash) on a final-felling site. Energy is an increasingly important product from Swedish forests. Photo:Thomas Adolfsén/SkogenBild*



## The timber market 2006

Figures in boxes = million m³ (solid)



Source: Timber Measurement Council

# The forest products industry

The timber market in Sweden is less regulated than in most other countries, which means that there is a greater incentive to keep costs down and to improve both technology and profitability in the entire market chain. The value of the timber is increased, throughout the chain from logging to industrial production, by matching the products to the needs of the consumer and end-users. Ultimately, it is the capacity to continually improve productivity and the product values that determines the level of activity in forest operations and associated industries. In the years preceding the present global financial downturn (2009), profitability was high with an all-time high in logging volumes, as well as importation of wood raw material from the Baltic States and Russia. However, due to rapidly falling demand, the annual cut decreased significantly in 2008 and 2009.

The need to establish independent timber mensuration bodies to ensure reliable and impartial measurement for the timber market was recognized at an early juncture by the forestry sector and the government. The work of the mensuration bodies has been modernized over the years, but the basic principle guiding their work remains the same.

Inside a modern sawmill. Photo: Säg i Syd



## Certification

There is an increasing need for players in the timber market to be able to provide their customers both with assurances of the quality of forest products and hard information on the direct or indirect environmental impact of their products. One way in which this is done is through forest certification, which provides assurance that certified companies' practices and products have met specific standards. Being major exporters of wood and wood-based products, Swedish enterprises have been at the forefront of national and international certification schemes for the forestry sector, as part of the drive to promote timber as a sustainable raw material.

*A kraft pulp mill is also a big energy producer. SCA's kraft pulp mill Östrand in Timrå has a soda recovery boiler which produces steam with higher pressure and temperature than any other soda boiler in the world. This allows Östrand to produce 0.5 TWh of green electricity in a turbine, far more than the consumption of the kraft mill.* Photo: SCA



## The forest products industry 2008

	Production	Quantity exported	No. of mills
Pulp, million tonnes	12.1	3.4	43
Paper & board, million tonnes	11.7	10.1	43
Sawn wood, million m <sup>3</sup>	17.5	12.0	170*
Plywood, million m <sup>3</sup>	0.2	0.05	8
Chipboard, million m <sup>3</sup>	0.6	0.03	
* >10,000 m <sup>3</sup> /year			

Source: Swedish Forest Industries Federation

## Sweden's principal exports 2008

	SEK x billion		
	Export	Import	Balance
Forest products	128	30	98
Motor vehicles & automotive components	142	105	37
Electronic goods & computers	150	155	-5
Other engineering-industry products	266	192	74
Steel & minerals	133	104	29

Source: Swedish Forest Industries Federation



# Protection of biodiversity in forests

The Swedish model for protecting forest biodiversity is a combination of *general conservation considerations* in all day-to-day forest management and the designation of more strictly *protected forests areas*.

**General conservation considerations** include the establishment of buffer zones along watercourses, the limitation of clear-felling areas and the retention of snags and clumps of trees. These practices protect valuable biotopes, aquatic ecosystems in the forest landscape and cultural remnants. In addition, they ensure that there are appropriate amounts of dead and decaying wood in the forest.

According to an SFA-inventory in 2007, on average 6% of the standing tree volume is left at the harvesting site, mainly for conservation reasons. Rules for general conservation considerations are embodied in the Forestry Act.

**Protected forests** General conservation considerations are insufficient, since there is also a need for fully protected forest areas to ensure the conservation of biodiversity. The political goal is a joint venture with the forestry sector, with the overall objective of protecting 1.9 million hectares of productive forest

land in two packages: 1.2 million as legally protected, including national parks, nature reserves and habitat protection areas and 0.7 million as voluntarily set-aside areas. All non-productive forest land is protected through the Forestry Act since the 1970's. Finally, particular strict rules apply to mountain forests.

**Woodland key habitats.** In the 1990s, the Swedish Forest Agency conducted a comprehensive nationwide survey of key woodland habitats – areas that support, or are capable of supporting, rare and endangered (red-listed) species. The key habitats have no legal protection unless they are formally set aside as protected areas with compensation to the forest owner. Forest owners are, however, strongly recommended to save them. Further they are given high priority in certification schemes.

**International commitments.** At the EU level, the Habitats Directive is integrated into national legislation, with biodiversity protection achieved through the Natura 2000 sites. Consideration of this network of prioritized areas with high conservation value is an increasing focus of the activities of government agencies and the forestry sector.

## The Swedish model for protection of biodiversity in short

### Formal protected

- A. Nature reserve
- B. Habitat protection area
- C. Nature conservation agreement

### Voluntary

- D. Voluntary set-aside

### General consideration

- E. General consideration for high nature values

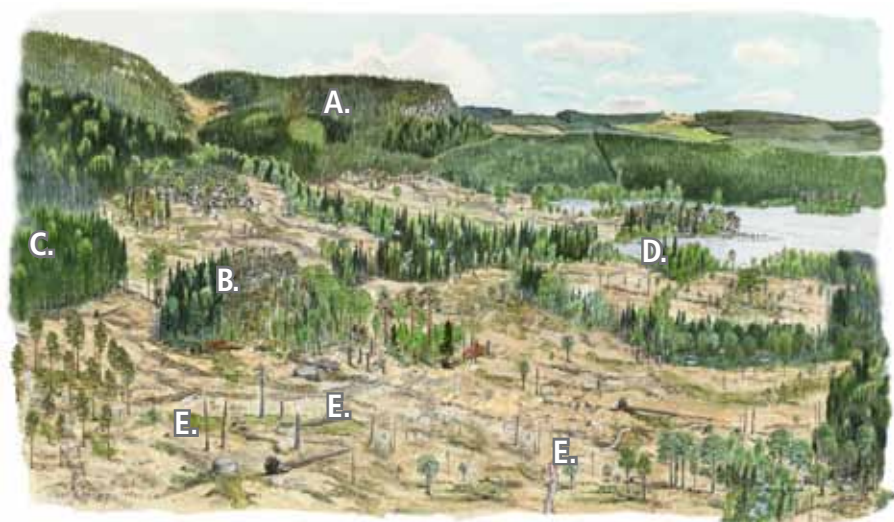


Illustration: Martin Holmer

## Protected forest areas 2009

Protection type	Million hectares	Per cent of total forest area
Legally protected	4.4	15.7
Voluntarily set-aside areas	1,0	3.6
<b>Sum</b>	<b>5.4</b>	<b>19.3</b>

Protected forest (FAO definition) areas 2009 according to European classification (MCPFE).

Total forest area 28 million hectares

Source: Swedish Forest Agency

# Investing in knowledge

### R & D collaboration

There is a long tradition of collaboration in R & D between the government and the forestry sector. The government has assigned to the Swedish University of Agricultural Sciences the tasks of providing suitably qualified professionals to the forestry sector and pursuing forestry research. The research is financed partly from research funds, the allocation committees of which include representatives from the forestry sector.

*Skogforsk* (the Forestry Research Institute of Sweden) conducts mainly applied research and is financed jointly by the government and the forestry sector. The Institute aims to publish its research findings promptly, so that they can be applied in practice as quickly as possible.

*The Royal Swedish Academy of Agriculture and Forestry* is an important academic forum for researchers, forestry and agricultural professionals and organizations, and government authorities.

### Extension work

The Swedish forestry model places great emphasis on the education and training of forest enterprise employees, forestry contractors and forest owners.

*The Swedish Forest Agency* and the *Forestry cooperatives*, both separately and in collaboration, have long provided an extensive range of courses and study groups covering special aspects of forest management for family forest owners.

Several web resources, for example newsletters, discussion forums and a web advisory service, are part of the outreach service. A recently released web application is *My pages*, where the forest owners, after a personal logging-in, can see maps and other information pertaining to his or her own forest property.

### “Kraftsamling skog”

The campaign *Kraftsamling Skog* (Focus on Forestry) aims at increased profitability by increasing forest yield from family forestry by 20% in the next 50–100 years. The campaign is being implemented during the years 2007–2010 and aims to have 50,000 participants.

In the campaign forest owners can participate in study groups, excursions, courses, seminars, web-based and distance education.

The campaign is a cooperative effort between LRF (the association of farmers) and the forest owners associations.

### Knowledge Direct

“Knowledge Direct” is an internet-based guide to forestry practice providing information and advice on silviculture and environmental issues, free of charge. The guide offers exercises, knowledge tests and calculation tools and instruments. For example: The user enters forestry data for his or her own woodland, and then calculates the profitability and growth responses of different measures such as thinning, fertilization, use of improved reforestation material and selection of stands for final harvesting.

The guide currently has some 400 visitors per day.

Knowledge Direct is produced by Skogforsk in close cooperation with researchers and experts at universities and in the practical forestry sector. Thus, it provides a direct link between the researcher’s findings and the end-user: the forest owner.

Photo: Stefan Örtenblad/SkogenBild





# Surveys and management plans

### Forest management plans

The industrial forest enterprises now use *Landscape ecology plans*, while family enterprises use *Green forest management plans*, in both types of plan stands are classified in terms of production and conservation values.

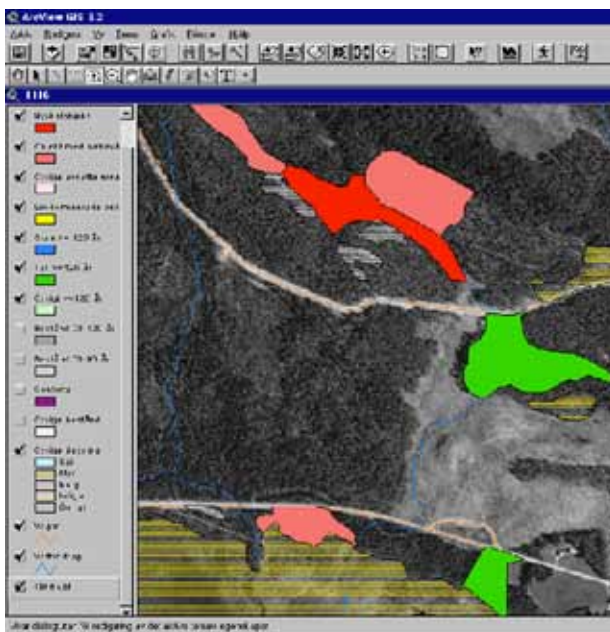
Traditional, voluntary forest management planning in Sweden has evolved into an effective tool for incorporating both general and specialized conservation measures into everyday forestry; this covers objects and sites of natural or heritage value. These plans are also important instruments for forest certification.

### The Swedish National Forest Inventory (NFI)

The NFI is an instrument used in monitoring developments in the nation's forests. It takes the form of an annual systematic cluster sample inventory that includes all land and lake areas in Sweden. Approximately 20 000 sample plots are included in the annual sample, 85% of these are visited.

The NFI covers all ownership categories, including nature reserves and national parks, and has been carried out since 1923, a real forest "history book".

Estimates based on NFI-data are part of the Official Statistics for Sweden. The NFI is carried out by the *Department of Forest Resource Management* at the *Swedish University of Agricultural Sciences*.



*All large industrial forest enterprises today use ecological landscape plans. These plans ensure that each forest landscape (usually comprising an area of 30,000–40,000 ha) will contain an acceptable proportion of old forest, broadleaved forest, etc., in the long term. The plans are drawn up with the aid of computerized geographical information systems and look several decades ahead.*

*The majority of forest owners in Sweden have a forest management plan that specifies the status of the forest of today and proposes measures to be carried out over a ten-year period both to secure a good financial return and to safeguard and promote biodiversity in the forest. Photo: Björn Svensson/SkogenBild*



# Damage and threats to the forests

## Weather

When selecting species and provenances for replanting felled areas, it is important to consider extreme weather events. The single most severe abiotic threat is storms, which down millions of m<sup>3</sup> of trees each year.

Forest fires are a minor problem in Sweden.

## Fungi

The single most severe biotic cause of damage to forest trees is root rot, mainly on spruce, caused by *Heterobasidion annosum*. Other fungi that seriously affect conifers are *Greminiella abietina*, *Cronartium flaccidum* and *Lophodermium seditiosum*. On broadleaves, apart from Dutch Elm disease, ash is increasingly attacked by the newcomer *Chalaria fraxinea*.

## Insects

The pine weevil *Hylobius abietis* is a serious pest, killing many newly planted seedlings. On mature spruce trees, the Bark beetle *Ips typographus* is the most serious insect pest, especially in the years following big storms when dead and weakened trees provide lots of feeding and nesting opportunities.

*After the hurricane Gudrun in January 2005. Roughly 90 million m<sup>3</sup> were windthrown in southern Sweden. Storms are the single most abiotic threat to the Swedish forest. Photo: Areca*



## Mammals

By far the most serious mammal damage of conifers is caused by moose (elk) (*Alces alces*), which kill young trees and greatly reduce the quality of future sawn timber from the survivors. This force many forest owners to plant spruce, which moose normally do not consume, on sites where pine is better adapted.

The moose has a high reproduction capacity for being such large deer, thus the population density increases rapidly to an increased amount of fodder. This was the case some 30 years ago, when the area of young forests increased substantially due to the development of modern forest management.

The moose is an appreciated part of the Swedish nature, but the population greatly influences the landscape, for example with respect to the mix of both tree and other plant species, thus affecting the biodiversity. There are still large numbers of moose and roe deers (*Capreolus capreolus*) in many places compared with available fodder – rowan, willow, aspen, oak, pine, grass and herbs – so the damage on commercially grown forests are considerable.

*The number of moose per 1 000 ha is high compared with other countries. The winter population is estimated to around 250 000. Photo: Stefan Örtenblad/SkogenBild*



### Estimated cull 2007–2008

Moose	81 000	Bear	181
Roe deer	119 000	Lynx	86
Red deer	3 400	Mountain hare	30 900
Fallow-deer	18 600	Field hare	38 100
Wild boar	32 700	Beaver	6 900
Fox	63 000	Marten	7 700

*Source: Swedish Association for Hunting and Wildlife Management*



# National networking

Forestry in Sweden operates in the market economy. However, Government is involved in the industry through participation in institutions that facilitate research, development and education. Non-Governmental voluntary organizations and the forestry business organizations and others are also heavily involved in today's Swedish forestry.

## Non-Governmental voluntary organizations

The popular voluntary organizations that blossomed at the end of the 19th century were effective advocates of new ideas and thinking. Trade unions, the Free church and the Temperance movements have been important in shaping modern Sweden, in parallel with the political parties and industry.

The involvement of people in voluntary movements – relevant to forestry – lives on today, not least in environmental organizations such as the *Swedish Society for Nature Conservation* and the *WWF*.

Twenty-one outdoor-recreation societies, among them the *Swedish Orienteering Federation*, the *Swedish Association for Hunting* and the *Swedish Kennel Club*, have formed an umbrella organization “*Swedish Outdoor Life*” (Svenskt Friluftsliv) to strengthen the recreational voice in the discourse on forestry.

## The Forestry Business organizations

The majority of privately owned forest estates are members of the *Swedish Federation of Forest Owners* and almost all Swedish sawmills and pulp & paper mills are members of the *Swedish Industries Federation*, which speaks on their behalf in public discussion.

## ... and others

The dioceses owning two percent of Swedish forest land, the *Royal Swedish Academy of Agriculture and Forestry*, the *Swedish Forestry Association* (which has 7 000 individuals as members), the *Samian Federation* and a variety of trade unions are also important stakeholders in the forestry development discussion.

## National networking

Gradually, networks have evolved that enable different parties to negotiate and cooperate. The safety regulations in forestry, for instance, grew out of such collaboration, as did the nature conservation measures in forestry. Discussions are today going on between forestry and hunting representatives about an appropriate regime for game management. Similarly, discussions take place about recreation-friendly forestry, especially close to towns.

A recent forestry networking success story is the development of the certification systems, FSC and PEFC, as marketing tools for forest products grown under sustainable forest management.

# International cooperation

Though ecological and socioeconomic conditions differ greatly across the world, there is a need to cooperate on forestry issues. It is vital that international agreements are reached of such quality that Governments will secure Sustainable Forest Management for their Nations. The Swedish forestry model, which has evolved over many years, has benefitted greatly from the willingness of different groups in society to work together.

We believe Sweden can serve as a model and case study for the international community, as it continues to develop an even better future for forestry.





Photo: Michael Ekstrand, Swedish Forestry Agency

The Swedish Forestry Model is produced by:



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