

International Forest Management:  
A Case Study of Germany, Wales, Sweden and  
Finland

By Kristie Derkson

## **INTRODUCTION**

Forests are an important resource for many countries economically, environmentally and socially and are integral parts of life. People rely on forests for shelter, paper, erosion protection, water filtration, wildlife habitat, carbon sequestration and fuel. Forests are vital to life, their sustainability and future is very important and their management needs to be carefully considered. It is necessary to realize that almost every country has some type of forest but every country has different policies and management systems for forests. Forests, however, do not recognize boundaries or politics and this can have a dramatic effect on sustainability and continuation of forests. It is not only interesting but vital for forest health, to study different management practices between different countries to be able to ascertain and predict issues in forestry and be able to solve them effectively across borders.

Forests do not recognize borders and Europe is an excellent study of different management systems and their effects on similar forest ecosystems. Countries in Europe are relatively small and forest ecosystems overlap political boundaries so it is important for these countries to understand each other and be able to work together towards sustainability. It is important for foresters and everyone in the industry to have knowledge of international forestry and management practices. An education of international forestry management can open up many alternatives for foresters and open communication and increase common understandings of forest management worldwide. According to the Government of Canada Foreign Affairs and International Trade the Canadian foreign policy

on environmental issues communication will promote common forest agendas with clear obligations and reporting means, consideration that all forests are valuable and deal with them balanced and holistically, increased sustainable trade, aid professionals in differing countries with decision making, help support developing countries and get commitments from governments to comply to worldwide standards (2008). Canada is a very large area and like Europe has many different ecosystems and subsequently many different forests so it is important that each type is managed accordingly. Studies of Europe's forests and their different management styles and the positive and negative consequences will be extremely beneficial for professionals in Canada.

## **GERMANY**

31% of Germany is covered in forest and of that coniferous trees dominate at 57.5% and forestry is the second most important land use in the country (Roering 2004). Norway Spruce (*Picea abies*) is the most important coniferous tree and European Beech (*Fagus sylvatica*) is the most important deciduous tree (Roering 2004). The dominant trees are currently coniferous because of previous management interventions and if left natural the dominant vegetation would have been broadleaf trees. Efforts are currently being made to convert the stands closer to natural vegetation, rather than coniferous monocultures (Langshausen 2007).

In the Black Forest and the Rhine Valley many trees were felled for World War II for fuel and planted rapidly, which contributed to the monoculture and was the largest consumer of timber (Langshausen 2007). But currently, of all the timber consumers in Germany, sawmills are the largest, closely followed by veneer mills, plywood mills and fiber, chip and pulp mills (Roering 2004). Forests are also used for employment, recreation and habitat so although primary industry is clearly an important consumer of forests in Germany there are other important users.

German forest management systems allow for different levels of protection for its different uses. Roering states that according to the 2002 Ministerial conference on the Protection of Forests in Europe there are three main classes and three subdivisions with many overlaps. The first class of protection is Conserving Forest Biodiversity. This includes three subdivisions i) No active intervention ii) Minimum intervention and iii) Conservation through active management (2004). All three in total includes 19.9% of forest area in Germany and their purpose is for the protection solely of biodiversity. The second class is Protection of Landscapes and Special Natural Elements covering about 43.6% of Germany, this is specifically for protecting special areas and important regions of forests in Germany that have significant ecological significance. The third is Forests with Protective Functions which covers 27.8% of German forests (Roering 2004).

In Germany there are state, communal and private ownerships of forest areas. According to the Federal Forest

Inventory and the Federal Ministry of Consumer Protection, Food and Agriculture, 47.3% of forest is private, 29.6% is state forest (Bundeslaender in German) and 19.5% is communal (2007). Accessibility to society for forests is regulated federally and recreation is allowed, however cycling, driving, riding and wheelchairs are only allowed on current roads and tracks. Even though much of the German forest is privately owned, the Forest Act of 1975 still has legislative power. The Forest Act states that Forest Law is to enhance forestry, conserve forests based on their economic, environmental and recreation benefits, and to ensure balance between the public and the private forest owners (Roering 2004). Therefore, although there is such a large private ownership, regulation is still intact and the general public's concerns are met. Sustainable and proper management are obligations all forest owners must meet, including the continued conservational and recreational functioning of the ecosystem. All needs of the private owners are balanced against the general public's needs and decisions are made by authorities in this manner, with the overall function and structure of the forest in mind (Roering 2004).

## **WALES**

There are 285 000 hectares of woodland in Wales and of these 158 000 ha are conifers and 127 000 ha are broadleaves. According to the Forestry Commission Sitka spruce (*Picea sitchensis*) is the dominating coniferous tree (53.2%) and Oak (*Quercus robur*) is the dominating broadleaf tree (33.9%) (2002). The forests in Wales are vital to the country environmentally, socially and economically.

There is a large history of forest management in Wales. Pressure in the Middle Ages on the forests increased timber production and Lords and land owners put fences up around their properties, protecting forests as hunting grounds for their recreation. But it was in the 20<sup>th</sup> century that real changes started happening in Welsh forestry. To support the wars, the forests were, for the very first time; clear-cut (Forestry Commission 2006). This had a huge impact on the forests and reduced the woodlands down to 5% of the total coverage of Wales, approximately a third of its coverage in the Middle Ages. This encouraged the formation of the Forestry Commission in 1919. The purpose of the Forestry Commission was to build up a reserve of timber for the future. Private landowners started building forests and in the 70's and 80's huge tax incentives encouraged growth in this time. This was done incredibly fast, and it can be seen by observing single species planted in straight rows, with little to no undergrowth. The hasty planting has slowed down but the total coverage of forest is now 14% (Forestry Commission 2002).

There are currently twice as many people employed full time through private ownership of forests than the Forestry commission in Wales. There is approximately 120 000 ha of forest owned by the Forestry commission and the 96 000 ha owned by private individuals and 9000 ha are protected and twice as many people are employed through private ownership than the Forestry Commission itself (Forestry Commission 2007). There are approximately 1500

secondary processing businesses and this is important economically, and the Welsh government is hoping this industry can encourage growth in the primary industry (Forestry Commission 2006).

However, the Welsh understand the importance of multi-purpose woodlands. Forests, in Wales, are not only for timber production, but recreation, carbon absorption, tourism, habitat and environmental health (Forestry Commission 2007). Wales has little room, so forests are integrated into ingenious dual land management practices, with crops and graze land growing under trees. The Forestry Commission practices flagship forestry and it is expected that private forest management follows the same (2007). The Forestry Commission, the National Assembly, the Welsh Office Agriculture and Environment Department, and the Environment Agency Wales all manage and work towards sustainable Welsh forestry.

## **SWEDEN**

Sweden is covered 85% with conifers. Norway Spruce (*Picea abies*) covers approximately 45% of the entire forests and Scots Pine (*Pinus sylvestris*) encompasses 39%. According to the Swedish Forest Agency amongst deciduous trees, birch has the largest standing volume of 10% and the others are species of oak and beech (2007). According to the latest Swedish National Forest Inventory, of the forests, 51% are owned privately, 24% by forest companies, 18% by the state and 7% other. This is a considerable amount of private owned forest and great care in Sweden must be

taken in stewardship. 3.1% of forests in Sweden are protected (Swedish Forest Agency 2007) and responsibility for the protection is shared between the Swedish Forest Agency and the Swedish Environmental Protection Agency. The forestry industry has played a large part of the Swedish economy in the past and will continue to do so in the future (Keskitalo 2008).

Sweden's forested area has a great history of disturbance from human use. In the Middle Ages, the trees were depleted for fuel, predominantly for mining, which continued on for hundreds of years (Ostlund 1997). As well, the south displays a lot of damage because of clear-cutting for farmland and cultivating. Sweden had a large population surge in the 19<sup>th</sup> century and this led to an increase in small home leases, which increased clear-cutting as well. When Sweden started increasing sawmill production, shortly thereafter, forests in the north were put under tremendous pressure for the first time as well (Ostlund 1997). The Swedish Forest Agency claims that the number of old growth (over 150 years) has decreased and the number of large diameter trees has decreased 80% from the 1950's from 43.5% to 7%. (2007). Older growth forests were replaced with monoculture, even-aged, uniformed forests because of the intensive forest cultivation and management plans that followed. World War II increased the forest production and like with most other parts of Europe, woodlands were reduced to a drastic state. Forest legislation had been in place in Sweden since 1886; however, enforcement and management were not always installed. Not long after World War II, a Forestry Act stated that forests could no longer be freely cut and 6 weeks notice must be given before falling trees. Sustainability and good management

practices for the future were the basis of the Act and an increase in timber in Sweden began to occur (Swedish Forest Agency 1948).

Legislations have been changing and in 1994 a new Forest Law came into effect, focusing on sustainability and preservation of biodiversity. Forest management must emphasize multiple uses and timber production is recognized as no more important as common access attributes, such as walking, berry picking and reindeer grazing, wildlife habitat and biodiversity conservation (Swedish Forest Agency 2007).

## **FINLAND**

86% of Finland is covered in forests (Peltomaa 2007). The most dominant tree species in Finland, the Scots Pine (*Pinus sylvestris*) accounts for 65% of all tree species in Finland and the Norway Spruce (*Picea abies*), accounts for 24%. This makes for a predominantly coniferous woodland cover. Downy Birch (*Betula pubescens*) and Silver Birch (*Betula pendula*) compose the rest of the most common species (Peltomaa 2007).

Forestry is and has been the most important industry in Finland economically for many years. From 1885 to the twentieth century it has played a huge role in shaping the country economically, socially, environmentally and politically (Peltomaa 2007). The forest industry in Finland has an important history in contributing to the world's steam power in the nineteenth century and timber harvested in Finland was exported to drive steam power all over Europe. The first paper mills were established in Finland in

1885, and these became the most important industry to the country and continue to be very important (Peltomaa 2007). Timber and paper exports play a large role in the economy dating back to 1917 when Finland gained independence.

After independence, the Finnish decided to focus on their forest industry to fuel their economy. However, only 24% of the forests in Finland are government owned, 9% by the forest industry, 4% by the municipalities and parishes and 62% (440 000 people) are privately owned, which amounts to almost 10% of the entire population of Finland (Peltomaa 2007), which made state control of the industry impossible. In 1928 the government began state subsidies for forest owners and many national programs were introduced and funded to establish new and improve current forest productions (Peltomaa 2007). Private forest legislations including the Forest Decree in 1917, and the Private Forest Act in 1928 was created to help regulate forest owners, but it created a rift in the industry between private owners and the government (Siiskonen 2007). They were created to ensure the forests would not be devastated, but a lot of private owners felt that they were interfering with traditional Finnish forest practices and regulating their livelihoods. The farmers did not trust the forestry professionals and the felt they were too oppressive (Siiskonen 2007). However, legislation and subsidies in 1966 were introduced which revised many outdated compliance laws. Private owners were much more willing to let go of traditional devastating methods and criticism by the forest scientists settled down (Siiskonen 2007). Now the focus is on multiple uses of forests and forest owners and

legislative bodies are much more eager and willing to work together.

The Finnish have a tradition of public right of access and the National Forest Programme encourages this. In Finland it is every person's right to have access to forests for recreational rights without permission from the landowner. This includes walking, camping, and picking berries and mushrooms from the forest (Peltomaa 2007). 10% (2.4 million ha) of the forests in Finland are conservation areas or areas where access to forests is restricted (Peltomaa 2007).

## **CONCLUSION**

Europe has a diverse forest ecosystem and an equally diverse forest management system. There is relatively little forest in some countries and large areas of forest in others. However, all of the countries are pressed financially, spatially and through consumer and producer demands. Innovations and research such as dual land management and selective loggings are all being done to help ensure a sustainable future for the forestry industry. Issues such as climate change, increasing demands on agriculture, urbanization, pollution and increased needs for recreation are global issues and communication and understanding are key, so countries can learn from each other. Each country has its own ideals, goals and standards and it is essential that they work together, not only the countries mentioned, but all across the globe, to promote, sustain and ensure a viable, healthy future for forestry around the globe.

## References

- Federal Ministry of Food, Agriculture and Consumer Protection. 2007. "National Forest Inventory" [http://www.bmelv.de/cln\\_044/nn\\_757120/EN/07-Forestry/forestry\\_node.html\\_nnn=true](http://www.bmelv.de/cln_044/nn_757120/EN/07-Forestry/forestry_node.html_nnn=true) (April 1, 2008).
- Foreign Affairs and International Trade Canada, 1992. "International Forest Issues." [http://www.international.gc.ca/foreign\\_policy/ees/EnvironIssu/forest/forest-en.asp](http://www.international.gc.ca/foreign_policy/ees/EnvironIssu/forest/forest-en.asp) (March 31, 2008).
- Forestry Commission. 2002. "National Inventory of Woodland and Trees Wales". [http://www.forestry.gov.uk/website/pdf.nsf/pdf/niwales.pdf/\\$FILE/niwales.pdf](http://www.forestry.gov.uk/website/pdf.nsf/pdf/niwales.pdf/$FILE/niwales.pdf) (March 25, 2008).
- Forestry Commission. 2006. "Woodlands for Wales". [http://www.forestry.gov.uk/pdf/woodwaleseng.pdf/\\$FILE/woodwaleseng.pdf](http://www.forestry.gov.uk/pdf/woodwaleseng.pdf/$FILE/woodwaleseng.pdf) (March 20, 2008).
- Forestry Commission. 2007. "Forest Research". <http://www.forestresearch.gov.uk/fr/HCOU-5QJMBB> (April 2, 2008).
- Keskitalo, E. C. H. 2007. Vulnerability and adaptive capacity in forestry in northern Europe: a Swedish case study. *Climatic Change*. 87: 219-234.
- Langshausen, J. (2007, August 12) Lecture presented in European Field Course. University of Freiburg, Freiburg, Germany.
- Ostlund, L., Zackrisson, O. & Axelsson, A. 1997. The history and transformation of a Scandinavian boreal forest landscape since the 19<sup>th</sup> century. *Canadian Journal of Forest Research*. 27: 1198-1206.

- Peltomaa, R. 2007. The conflict between traditional and scientific forest management in 20<sup>th</sup> century Finland. *Irrigation and Drainage*. 56: 151-59.
- Roering, H. 2004. Institute for economics study on forestry in Germany. Federal Research Centre for Forestry and Forest Products and Department of Wood Science for the University of Hamburg, Hamburg Germany.
- Siiskonen, H. 2007. The conflict between traditional and scientific forest management in 20<sup>th</sup> century Finland. *Forest Ecology and Management*. 249: 125-33.
- Swedish Forest Agency. 1948. "The Swedish forestry Act". <http://www.svo.se/episerver4/templates/SNormalPage.aspx?id=12677> (March 10, 2008).
- Swedish Forest Agency- Skogsstyrelsen, 2007. "Forests in Sweden". [http://www.svo.se/episerver4 templatesSNormalPage.aspx?id=11310](http://www.svo.se/episerver4/templates/SNormalPage.aspx?id=11310) (March 31, 2008).