



Forest

S A F E



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NEWSLETTER

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Web Applications

Within the ForestSAFE project some interactive web applications are to be set up to demonstrate new ideas, methods or technologies for environmental protection and management.

Introduction to the Forest Management Tool

There are over 300 000 private forest owners in Sweden, and their combined ownership accounts for over 50 % of the Swedish forestland. In the southern and most productive part of the country the percentage of private ownership is even higher, explaining why they make up well over 50 % of the total annual increment. In addition, private forestland tends to have higher ecological and socio-cultural value as a result of more varied forestry and forest management over time, in comparison to corporate or State owned forest.

Although forest professionals are often involved in implementing forest management activities, the legal responsibility rests on the landowner and they often have decisive influence on planning and choice of strategy. Furthermore, a significant number of forest owners are themselves active in practical forest management.

Swedish legislation regulates only an absolute minimum standard in regard to forestry. Instead the legislator expects forest owners to take significant responsibility based on freedom, knowledge and motivation. This expectation is the key to good forestry practice in Sweden: The knowledge and will of the private forest owner.

Providing forest owners with a solid basis for decision-making, in the form of correct information and good planning tools, becomes a vital link in the chain that makes up a responsible long term and environmentally sound forestry practice.

The next link in the chain is to keep up the interest for environmental and forest management issues. It is only when one understands and realizes the value of responsible forest management that one can draw correct conclusions from the information given and, only then, can one take appropriate action.

Therefore it is important not only to provide information and IT-tools but also to disseminate information, give advice and hold continuous dialogue in the choice between different forest management options.

In order to accommodate the wide variety of local variations it is imperative that the advice given is based on local knowledge. For that purpose close contact with personnel from the various Regional Boards of Forestry is extremely valuable.

In principal this is also the traditional method used by the Swedish forest authority. The challenge faced by us today is to incorporate this tradition into an IT based environment. The need for IT-based information and services is increasing, especially now since more private forest owners live further away from their holdings and derive less of their income from forestry.

It is from this need that the idea of "MyForest - Forest Management Tool" was generated. This is a web-based environment where information, IT-services and advice are accumulated into a personal "workplace" for the private forest owner. Within the framework for ForestSafe certain key elements of this platform will be developed.

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Forest Management Tool

The "Forest Management Tool" is a demonstration of a web-based interface to visualise areas of high environmental value and other conventional forest data. It is combined with tools for forestry management planning. Environmental data is always present when the management tool is active to ensure that all information is taken into consideration during the forestry planning. The information is also presented in an advisory context in order to provide both data and professional help to forest owners.

Three different levels of functionality have been defined:

Level 1. Public information and simple GIS-functionality (without possibilities to edit)

Level 2. Private (password protected) information and simple GIS-functionality

Level 3. Private (password protected) information and advanced GIS-functionality (with possibilities to edit)

In each level there are two main views: The GIS-application shown in a "MyForest" advisory context with limited GIS functionality or as a fully featured GIS Web-application.

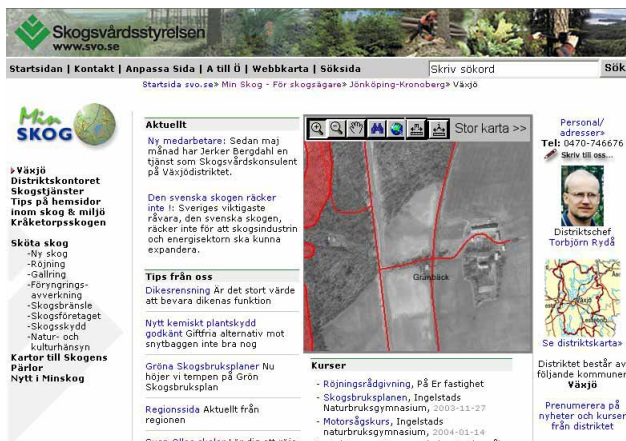


Figure 1. Example of map with public information shown in a "MyForest" advisory context

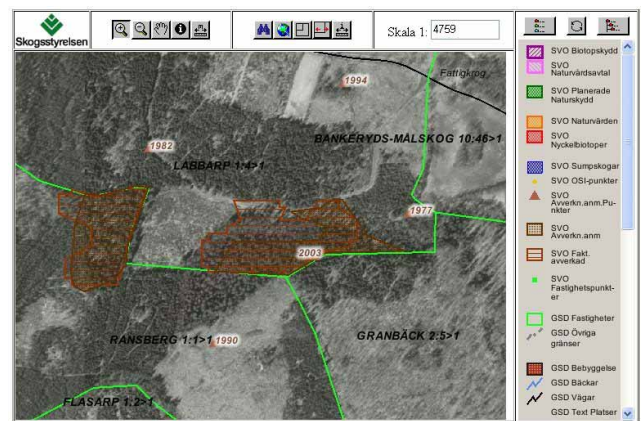


Figure 2. Example of password protected information shown in the standalone GIS application

To demonstrate these levels and different uses of them, the functionality of a content management system, CMS is needed as well as a web-based GIS. Development costs are minimized as a ready-made system, EpiServer4, is used as a platform for the CMS and the GIS-application is built on a .NET/ARCIms/SDE.

At the current time we are evaluating various authentication systems which can provide a general solutions for password protection.

Forest Management Plan v.s. kNN-estimations

KNN-estimated data, processed by the Swedish University of Agricultural Sciences, is frequently used within the ForestSAFE project. To get an idea of the accuracy of the kNN-estimates in Västra Götaland, especially the volume information, a stand-level comparison was made between kNN-data and green forest management plans on four different estates. The data processing was done in ArcView with the spatial analyst extension.

If the green management plan is considered as correct information, then the kNN volume estimates are very

good for spruce-dominated stands with medium stand density. There was however a tendency for volume in pine forest to be overestimated with KNN.

Comparison of volume data from a forest management plan and kNN-estimates:

Total volume from the management plan: 25 214 M³sk.

Total volume from the kNN-estimations: 23 555 M³sk.

The volume data from kNN is 7% lower compared with the forest management plan.

Comparison between the volume data from the forest management plan and kNN-estimations (Timber density 100-200 m³sk/hectare)

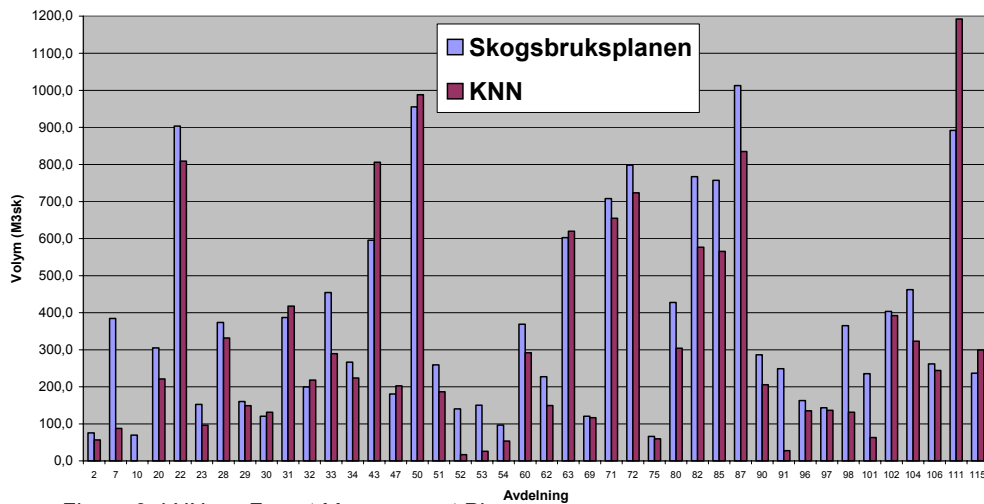


Figure 3. kNN vs. Forest Management Plan

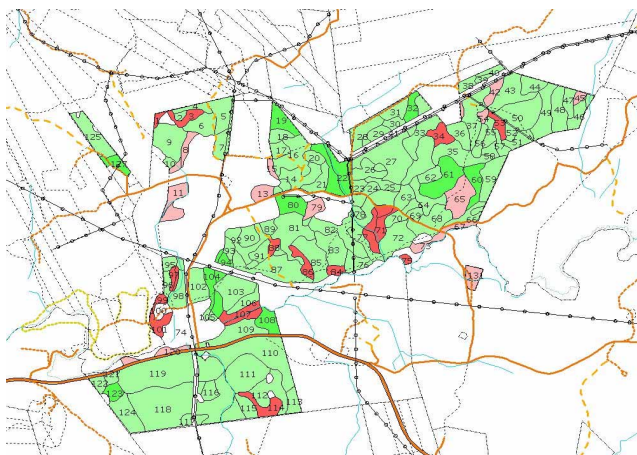


Figure 4. Green Forest Management Plan



Figure 5. kNN-estimated volume data

Interactive tools

Interactive Web Mapping

An interactive web map has been produced as a trial means of disseminating information about the project to foresters. This map is fully interactive with pan, zoom and layer control capabilities as well as the ability to query layer databases much like a Geographical Information System (GIS). Unlike a GIS however it is readily available over the web, with no need for the user to have any software beyond a web browser.



Figure 6. Interactive map

The ForestSAFE Metadata Database

ForestSAFE Metadata Database

A database has been developed to store all the data collected by the ForestSAFE project. This database is searchable so that all field data, imagery and publications for a given time period and location can be located and displayed with ease from a single source. This will ensure project partners will have access to the project data beyond the end of the project in 2005

Project website

For further information, visit our website at www.svo.se/forestsaf or e-mail Lars Björk (project leader) at lars.bjork@svsac.svo.se