Remote sensing and mobile GIS system to reach a more efficient production of Green Forest Management Plans

A project has been run with the aim to use new technologies to develop today's production of Green Forest Management Plans into a more efficient production. In satellite images a GIS segmentation tool has been used for segmentation of stands and kNN-analysis has been used for requiring volume data. In addition to this the use of a field computer with GIS program together with a GPS has been tested.

Segmentation

The segmentation tool in the SVO system *Kotten* has been tested in satellite images with the aim to be able to use this as preparations for Green Forest Management Plans. First the segmentation was made in the satellite images, then field controls were made to test the reliability of this segmentation. For the field controls two methods were used, one objective and one subjective. The purpose of the field control was to see if the stand boundaries were found and which boundaries were hard to find.

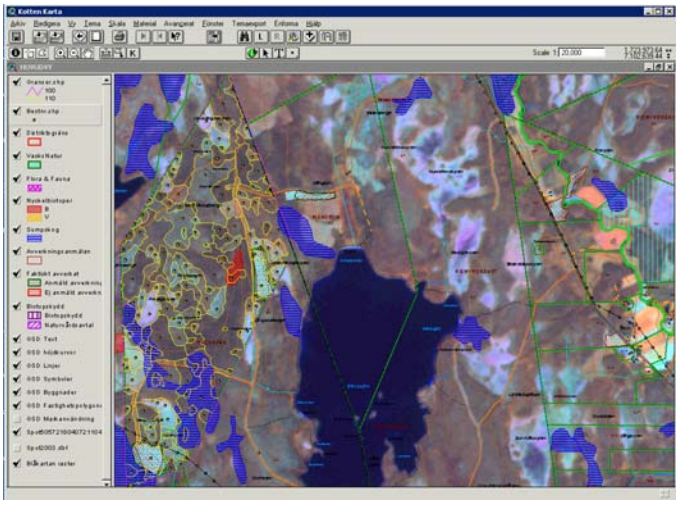

Image 1. Segementation made on a fastighet as preparations for a Green Forest Management Plan

Field computer

Image 2. iPAQ Pocket PC with satellite images and EMTAC GPS with blue tooth communication.

A pocket PC and a GPS has been used for the fieldwork together with the GIS program ArcPad for working with the satellite images. The communication between the pocket PC and the GPS is wireless. With this way of working the production of Green Forest Management Plans can be made more efficient when the map and field data is connected.

kNN-estimations

Comparisons of volumes have been made between data from Green Forest Management Plans and kNN-estimations. The purpose is to create good basis data to be able to decrease the time for fieldwork. The results show that the volume is fairly accurate for a larger area but that the method still needs to be developed for use in individual stands.

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