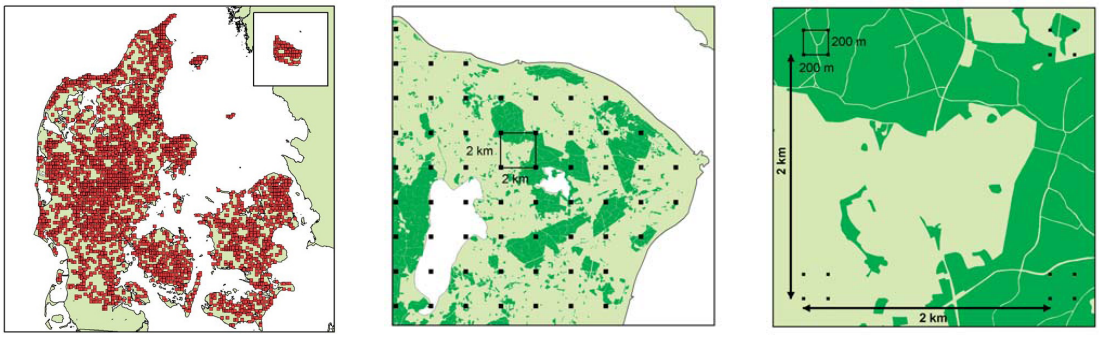
Recreational indicators in the Danish National Forest Inventory – experiences and results

Frank Søndergaard Jensen, University of Copenhagen, Denmark, fsj@ign.ku.dk
Thomas Nord-Larsen, University of Copenhagen, Denmark
Vivian Kvist Johannsen, University of Copenhagen, Denmark
Hans Skov-Petersen, University of Copenhagen, Denmark

Several international processes aim to monitor the forest status, and the political focus on the recreational/social function is increasing – as well as the demand for cost-effectiveness of the monitoring efforts (e.g. Sievänen et al 2008, 2013). This paper describes, to our best knowledge, a unique forest recreation monitoring approach, which is part of the compulsory national forest inventory.

The Danish National Forest Inventory (NFI) is based on a 2 x 2 km grid, with a cluster of four sample plots placed in each corner of a 200 x 200 m square in each grid cell. One fifth of the sample clusters are monitored each year. Before including recreational indicators on a permanent basis, a trial inventory was accomplished in 2006-2007. This trial identified 11 recreational indicators, including e.g. trails, hunting facilities and litter, which was meaningful seen from a recreational point of view and manageable in the existing inventory system. The paper presents results founded on a total of 4,138 forested clusters inventoried in 2008-2012 which makes up the first full sample circuit (Suadicani et al 2013).



Design of the Danish National Forest Inventory. Clusters of sample plots are placed in a 2x2 km grid. Each cluster contains four sample plots placed in the corners of a 200x200 m square.

It was e.g. found that hunting facilities were present on 27% of the clusters; forest roads/trails on 35%, while tracks were found on 17% – indicating access facilities are present in more than half of the Danish forest area. The presence of other outdoor recreation facilities, like campgrounds and fireplaces, were more limited (6%). An interesting observation is made in relation to conflict management: only in 1% of the clusters there are coincidences between hunting facilities and other recreational facilities. By further analysis, the results can be related to e.g. ownership status and geographical/administrative regions.

It is revealed that national forest inventories can be relatively simply and cost efficiently expanded to include a number of recreational/social indicators, which generally is not available otherwise. The continuity of the measurements will be a valuable addition to sustainable knowledge-based management and policy decisions.

References

Sievänen, T., Arnberger, A., Dehez, J., Grant, N., Jensen, F.S. and Skov-Petersen, H. (ed.) (2008) Forest recreation monitoring – a European perspective, Working Papers of the Finnish Forest Research Institute, no. 79.

Sievänen, T., Edwards, D., Fredman, P., Jensen, F.S. and Vistad, O.I. (ed.) (2013) Social indicators in the forest sector of Northern Europe. A review focusing on nature-based recreation and tourism, TemaNord 2013:584, Nordic Council of Ministers.

Suadicani, K., Nord-Larsen, T., Olsen, O., Jensen, F.S. and Skov-Petersen H. (2013) 'Samfundsøkonomiske funktioner', in Johannsen, V.K., Nord-Larsen, T., Riis-Nielsen, T., Suadicani, K. and Jørgensen, B.B. (ed.) Skove og plantager 2012, Frederiksberg, Denmark: Skov & Landskab.