

## Forest Condition Monitoring in Finland – National report

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Photo: Jouni Hyvärinen

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### Extensive monitoring of forest condition – Level I in Finland

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Finland has been participating since 1985 in the Level I monitoring of forest condition. Metla annually inventories forest condition, using internationally standardised methods ([Eichhorn et al. 2010](#)), on a representative sample of tree stands.

The systematic network used in the annual crown condition survey has been designed to provide information at the national level about crown condition and its variation in background areas. A number of parameters are measured on the trees. The most important variables used to describe crown condition in Finland are relative leaf- and needle-loss (i.e. defoliation), discoloration and abiotic and biotic damage of the crown.

#### Extensive monitoring network (2009–2012)

The integration between ICP Forests Level I and NFI was accomplished in 2009 in Finland. The sampling design of the current NFI is a systematic cluster sampling, and thus differs from the standard plot design in Europe (Fig. 1a, below). Annually, a new set of ca. 900 permanent plots, established during the ninth NFI in 1996–2003, was assessed in the forest condition survey. The same permanent plots were to be assessed in five-year intervals. Level I survey was ceased in Finland in 2012.

#### Earlier extensive monitoring networks (1985–2008)

In 1985–2008, the inventory was carried out on about 500 mineral soil and 100 peatland plots selected from the permanent sample plot network of the eighth National Forest Inventory, established in 1985 (Fig. 1b, below).

In addition, soil surveys have been carried out on 338 plots in 1986/87, on an additional 104 plots in 1995, and on 508 plots in 2006–2007. Needle samples were collected for elemental analysis on 160 plots (98 pine plots, 62 spruce plots) during 1987–1989 ([Raitio 1994](#)), and on ca. 30 plots (16–18 pine, 12–14 spruce) annually during 1992–2007 ([Luyssaert et al. 2005](#)).

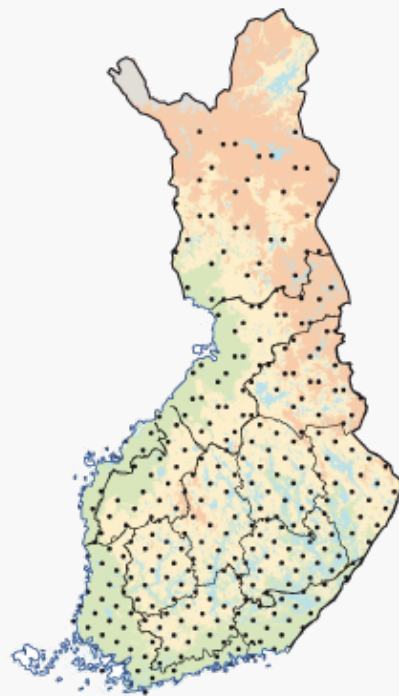


Figure 1a. The extensive forest condition (ICP Forests Level I) monitoring is being carried out on ca. 900 permanent National Forest Inventory (NFI) plots.

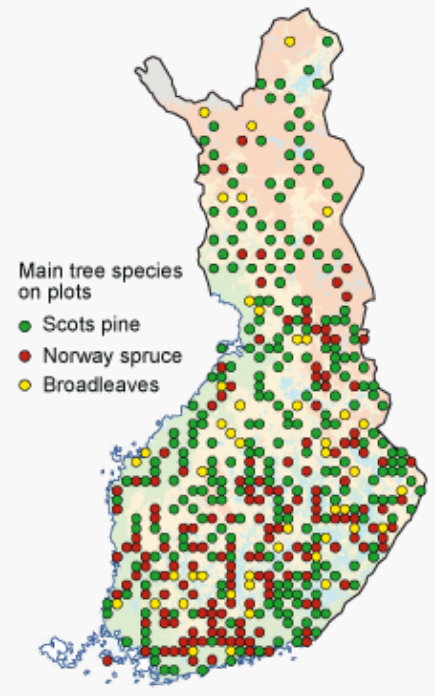


Figure 1b. The network of the annual, large-scale crown condition survey (ICP Forests Level I) in Finland applied in 1985–2008).

## References

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