Natural Resources Canada
Ressources naturelles Canada

CANADIAN FOREST SERVICE

Science HIGHLIGHTS

CANADA'S NATIONAL FOREST INVENTORY

How can a national forest inventory monitor forest sustainability?

A plot-based network will provide a statistically relevant picture of how forests are changing over time

A national network of forest plots are being measured to provide researchers a big-picture understanding of how Canada's forests are changing. Canada's National Forest Inventory, which samples one percent of Canada's landmass, released its first set of data in 2009. The goal is to release a new set of data every five years. The data is informing policies on issues like climate change, supporting science initiatives and contributing to Canada's international forestry reporting commitments.

"Using a network of permanent inventory plots means that change can be estimated from repeated measurements," says Mark Gillis, manager of the National Forest Inventory. "The inventory lets us assess and monitor the extent, state and sustainability of Canada's forests in a timely and accurate manner."

The inventory collects data including forest type and composition, age, biomass, disturbance activity and mortality, land use, ownership, and protection status. These indicators have almost unlimited applications for researchers.

The data is available to modelers to conduct analysis and to generate data that can be used for things like monitoring the impact of climate change. The inventory provides national data on status and trends over time on 25 attributes of sustainability. It also offers data to support national and international initiatives such as the Montréal Process, which develops and implements internationally agreed criteria and indicators for the conservation and sustainable management of temperate and boreal forests.

Collaborating to provide accessible, user-friendly data

The inventory is housed on an interactive website with a map of Canada that lets users zoom in and out of specific areas. It is available to researchers and the public. It offers standardized reports and people can also request specific information grouped under three themes. Forest themes illustrate the distribution of Canada's forest resources according to a number of identified themes, such as forest area. Plot statistics provides access to individual forest plot statistics and pictures. Reporting generates custom summaries in tables and graphs.

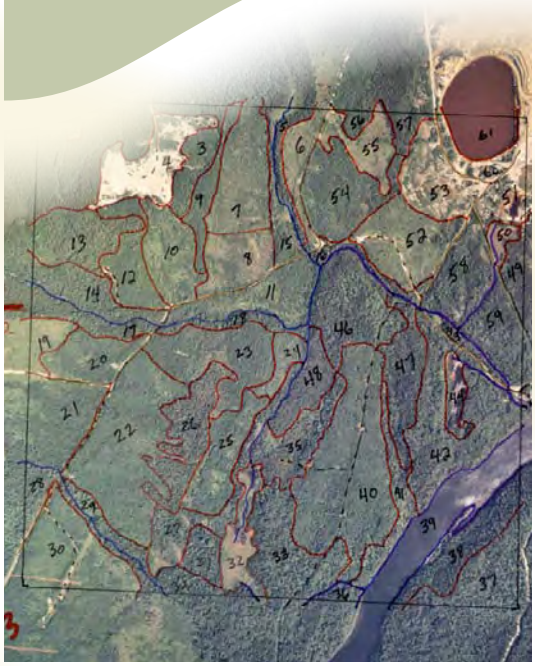
"The data is accessible in a variety of ways. If you were interested in the boreal plains, for example, you could generate a report that focused on that," Gillis says. The inventory website is easy to use—even members of the public are showing an interest.

Overview

Canada's National Forest Inventory is housed on an interactive website.

The inventory is available to researchers and the public. The website provides interactive, user-defined reports as well as a number of standard reports.

To provide statistically reliable data, the inventory samples one percent of Canada's land mass.



Aerial photo plot

Canada

The inventory is a collaboration of provincial and territorial jurisdictions and the Government of Canada. It's coordinated by the Canadian Forest Service of Natural Resources, under the guidance of the Canadian Council of Forest Ministers. Provincial and territorial collaborators collect and provide data using jointly developed standards and procedures. The Canadian Forest Service provides the infrastructure to manage the data, and leads in the analysis of data and generation of reports.

A statistically sound approach to covering all of Canada's forests

To provide statistically reliable data, the inventory samples one percent of Canada's land mass using a combination of photo and ground plots. Photo plots, each two kilometres by two kilometres are located on a national network divided into squares measuring 20 kilometres by 20 kilometres. Approximately 20 000 photo and ground plots are used to characterize Canada's forests.

Each plot is a permanent observation unit and contains information derived from aerial photography or high-resolution satellite imagery. A subset of the photo plots are visited on the ground. These ground plots are used to collect information that is not visible from aerial observations, such as individual tree information, detailed vegetation cover and soils information.

Consistent, reliable and transparent data

All Information is collected using a set of uniform standards, enabling consistent reporting across the country. "All our procedures and collection methods have been peer reviewed and are available on the website. People may question the results, but if they follow the documented procedures they will arrive at the same results. We are committed to keeping the inventory as accessible and as transparent as possible," Gillis says.

As the data in the inventory grows, with the passing of each five-year measurement cycle, our understanding of Canada's forests and their future will grow along with it.

Northwest Territories black spruce sample plot (ground view)