Collaboration between the North American Soil Geochemical Landscapes Project and the National Forest Inventory Soil Program

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Presentation Outline

- Background/Rationale
- Comparison of Soil Related Programs
- Opportunities for Collaboration
- Working Together

Background/Rationale

Canada’s National Forest Inventory Program

Background/Rationale

Canada's National Forest Inventory is an interagency collaboration between the federal government and the provinces and territories

The objective of the program is to assess, monitor and report on the extent, state and sustainable development of Canada's forests in a timely and accurate manner

The federal government's role is to develop the standards and procedures for data collection, create the infrastructure to manage the data, undertake the analysis of the data, and generate reports.

The role of the provincial and territorial partners is to develop their sampling programs and collect and provide data to a national standard.

Background/Rationale

National Forest Inventory plots are established on a national monitoring framework

Approximately 25,000 photo plots and 1000 ground plots have been established across Canada

As part of the ground sampling program, soils are described and sampled using a consistent series of field and analytical protocols in order to:

- Describe soil characteristics
- Determine soil carbon content (kg/ha)
- And collect data that can contribute to the assessment of:
    * Nutrient and water availability to plants (soil structure and texture)
    * Carbon sequestration

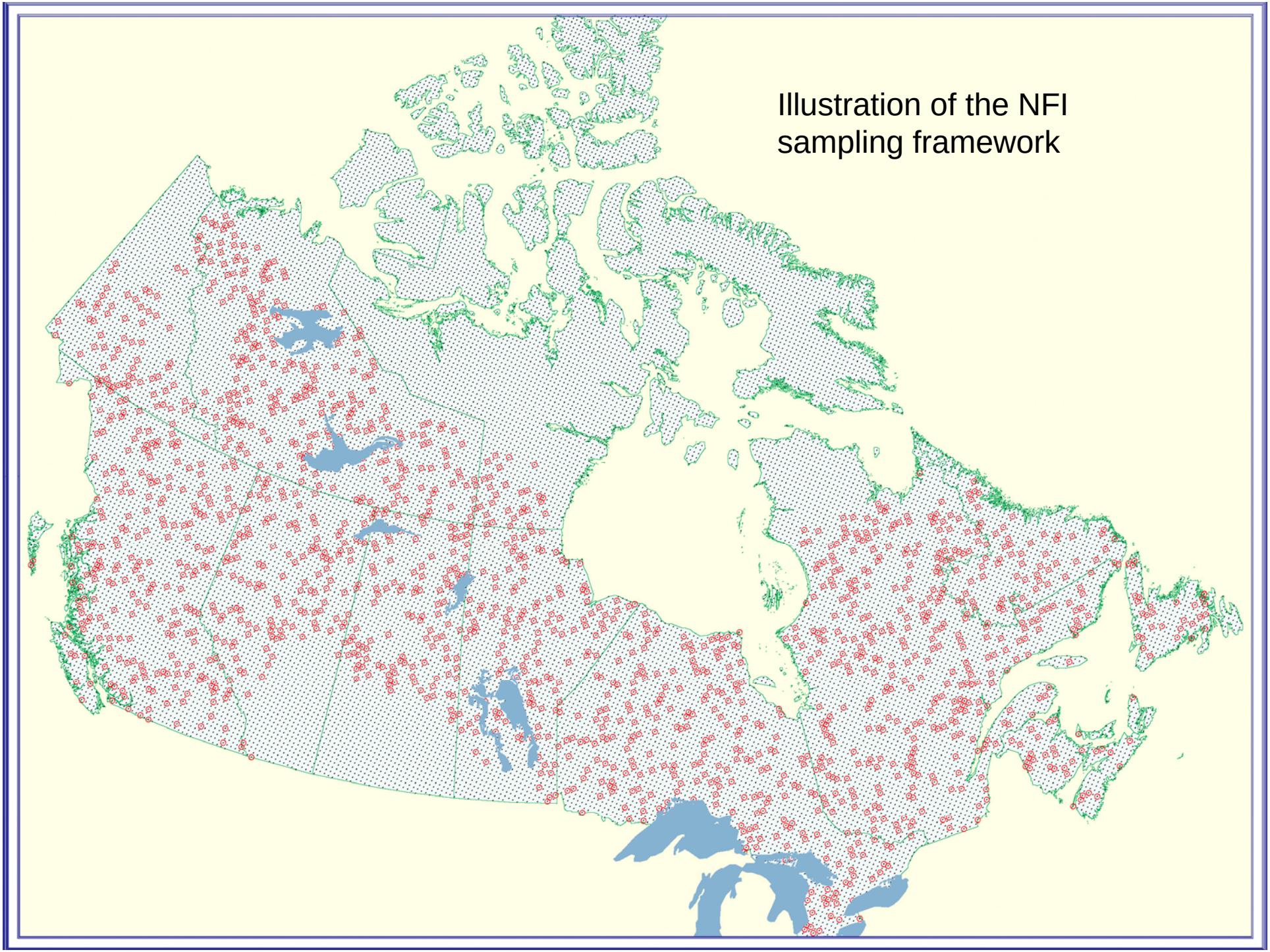


Illustration of the NFI
sampling framework

National Forest Inventory Sampling Framework

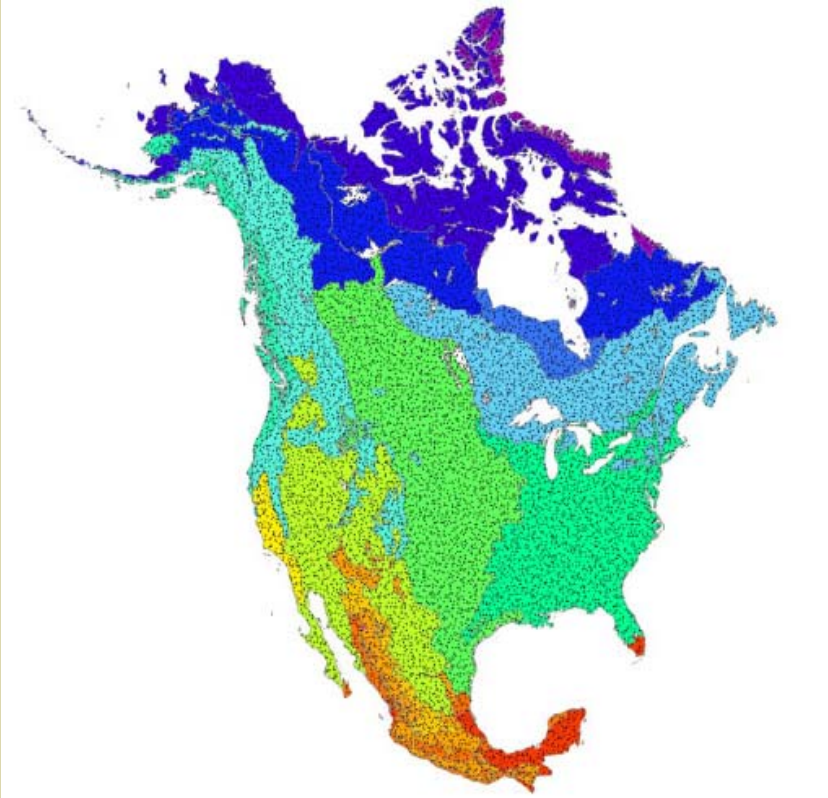
A network of sampling points is systematically located across the population to ensure complete coverage – photo plots are located at each sampling point.

Ground plots are established at a sub-sample of randomly selected photo plots.

National Forest Inventory Data is reported by terrestrial ecozone.

Change is estimated from repeated measurements of plots at regular intervals.

Background/Rationale



North American Soil Geochemical Landscapes Project

Background/Rationale

The North American Soil Geochemical Landscapes Project is a tri-national initiative, including Canada, the United States and Mexico,

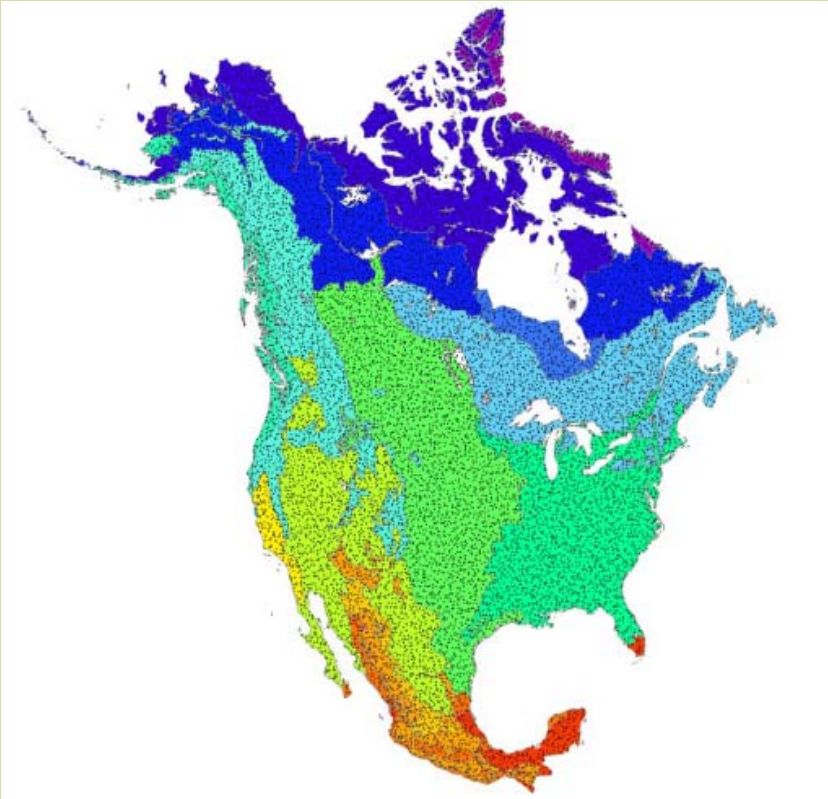
Soils are described and sampled using a consistent series of field and analytical protocols in order to understand and map soil geochemical variability across North America

Project provides consistent soil geochemical data

Soil geochemical data is to be used to assess and manage the risks of environmental hazards and support a variety of geoscience initiatives.

Background/Rationale

With two programs sampling soils across Canada it just makes sense to explore opportunities to work together….



Background/Rationale

When the North American Soil Geochemical Landscape Project was announced, representatives from both programs met to discuss the potential for collaboration between the two programs in an effort to:

- achieve increased efficiency in federal monitoring programs; and
- enrich the data of each program.

Program Comparison

	NFI Soil Program	NASGLP
Sample design	Random sampling design	Generalized random tesselation stratified survey design.
Soil description	Methodology is similar. Some additional attributes are described.	Methodology is similar. Some additional attributes are described.
Main objective for collecting samples	To determine carbon/unit area	To determine soil geochemistry
Collection method	By depth	By horizon
Samples collected	- Forest floor organic samples (4) - 0-15 cm samples (4) - 15-35 cm samples (2) - 35-55 cm sample (1)	- Anthrax sample (1) - Public health sample (1) - A horizon (1) - B horizon (1) - C horizon (1)
Bulk density	Measured for every sample collected.	Determined from a sub-sample of each master horizon.
Surface substrate	Tallied at 30 different points along two line transects. Used to correct plot level estimates of soil carbon.	Overall stoniness of the site is assessed as part of the soil description.

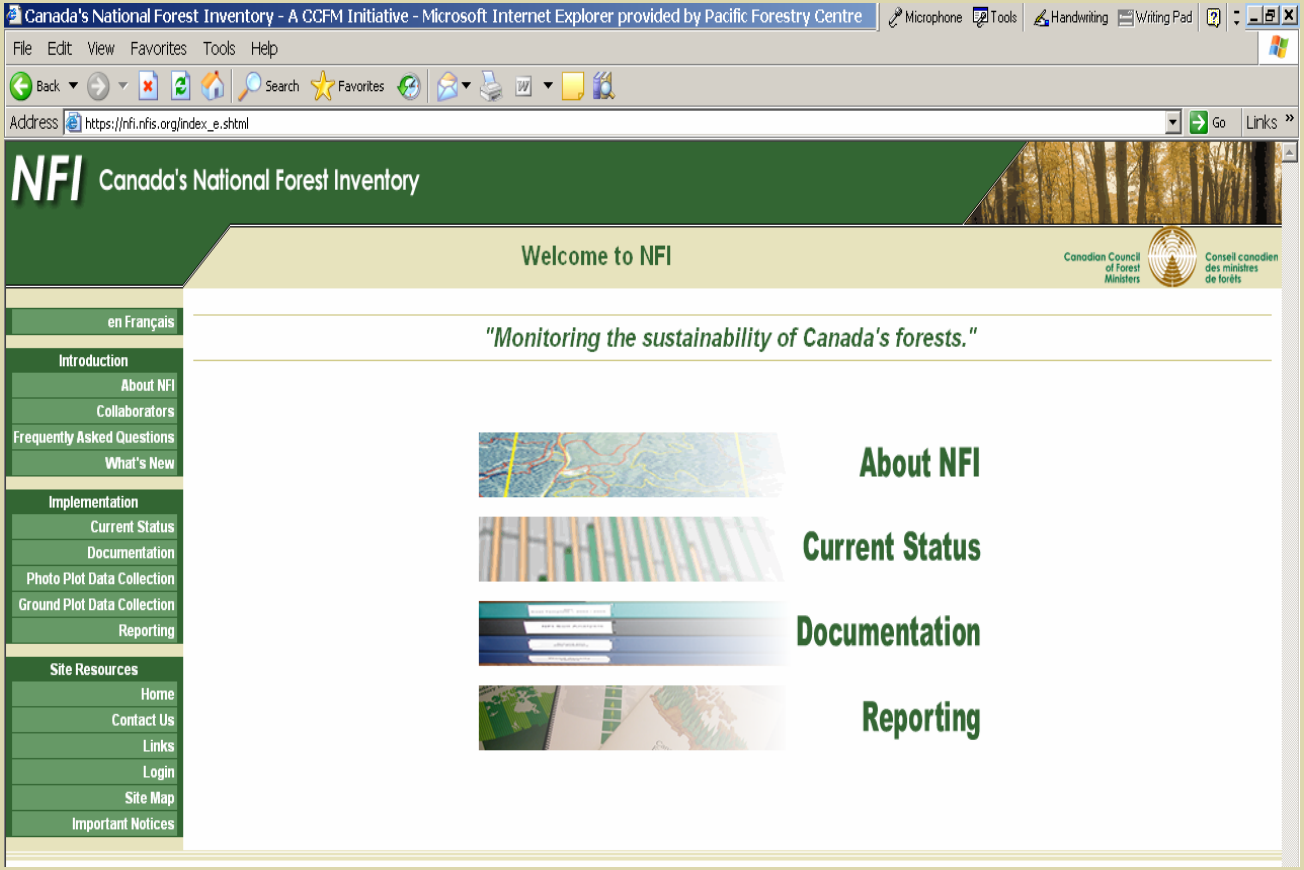
Opportunities for Collaboration

Although the programs use different sampling frameworks and collect different samples to meet their program objectives, efficiencies can still be achieved by working together to provide each other with supplementary-qualitative information of value.

Working Together

- NFI to collect additional samples for geochemical analysis
- Add to the data available for mapping soil geochemistry
- Potential to utilize archived NFI soil samples

Questions?



http://nfi.nfis.org