Forest Inventories in Canada

Revised: November 13, 2019

Overview

The purpose of this live document is to record all information about forest inventories in Canada that might be relevant to the CASFRI process. This includes information on acquiring data and metadata, converting and translating the data to the CASFRI standard, and issues that occur during those processes.

Attribute issues

#178 - Review implementation of STRUCTURE\_PER in existing translation tables

* <https://github.com/edwardsmarc/CASFRI/issues/178>

#170 - Empty NFL, ECO and DST rows should be filtered out with a VIEW

* <https://github.com/edwardsmarc/CASFRI/issues/170>

References

Gillis, M.D., Leckie, D.G., 1996. Forest inventory update in Canada. For. Chron. 72 (2), 138–156.

Gillis, M.D., Omule, A.Y., Brierley, T., 2005. Monitoring Canada’s forests: the national forest inventory. For. Chron. 81 (2), 214–221.

Leckie, D.G., Gillis, M.D., 1995. Forest inventory in Canada with emphasis on map production. For. Chron. 71 (1), 74–88.

British Columbia

* Old notes: [https://docs.google.com/document/d/11-gNX4VLdmcZSg0t1zKvulwj3MWKImY8KXMC1SSwEP8/edit#](https://docs.google.com/document/d/11-gNX4VLdmcZSg0t1zKvulwj3MWKImY8KXMC1SSwEP8/edit)

Introduction

The latest BC inventory consists of one file geodatabase that covers the entire province (including TFL 48).

Data acquisition for VRI was carried out following a photobased, two-stage inventory protocol. First, forest stands were manually delineated as individual polygons and applicable forest attributes were interpreted based on visual characteristics of the aerial photographs. Second, ground sampling was undertaken for calibration and validation purposes. Following delineation and interpretation, a suite of standlevel forest attributes are available, including species composition (up to six species recorded for each stand), height, canopy closure, age, volume, basal area, stem density, and site index. Given the relatively large size of the VRI polygons (mean area =8.5 ha), some of these polygons might not represent homogeneous internal conditions. That is, the forest stand conditions may be consistent for attribution, but there may also be anthropogenic (e.g., road edges, landings) or other natural features (e.g., streams, rock outcrops).

Bookmarks

* [Data Management and Access](https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/forest-inventory/data-management-and-access)
* [VRI Data Standards](https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/forest-inventory/data-management-and-access/vri-data-standards)
* [VRI Polygons and Rank 1 Layer](https://catalogue.data.gov.bc.ca/dataset/vri-forest-vegetation-composite-polygons-and-rank-1-layer)

Data

The definitions and range of values for attributes used in the translation process are provided in Table 2.

Notes about the attributes:

* Land cover components are interpreted separately from standard inventory data and are intended to provide broad hierarchical descriptions of the land cover inside polygons.
* No horizontal structure i.e., no need for structure\_per?

Methods

Use cases

* poly1
* poly2
* poly3

Translation test

* Randomly select 1000 polygons and upload to colab for processing.
* Click here to see results in ipynb notebook

References

Bourgeois, W., Binkley, C., LeMay, V., Moss, I., Reynolds, N., 2018. British Columbia Forest Inventory Review Panel Summary Report. Prepared for the Office of the Chief Forester Division, British Columbia Ministry of Forests, Lands, Natural Resource Operations and Rural Development.

British Columbia Ministry of Forests, Lands, Natural Resource Operations and Rural Development, 2018. Vegetation Resources Inventory: Photo Interpretation Procedures, Version 3.4. British Columbia Ministry of Forests, Lands, Natural Resource Operations and Rural Development, Forest Analysis and Inventory Branch, British Columbia, Canada.

Alberta

AB06 Inventory Notes

What's new

Last updated (2019-05-30)

Bookmarks

Alberta Vegetation Inventory Standards and Data Model Documents

Forest and vegetation inventories data

General

AB16 Inventory Notes

What's new

Last updated (2019-05-30)

Bookmarks

Alberta Vegetation Inventory Standards and Data Model Documents

Forest and vegetation inventories data

General

New Brunswick

L1VS - Dominant layer number of canopy layers

L2VS - Secondary layer number of canopy layers

Value Description

0 Not applicable

1 One canopy layer

2 Two canopy layers

3 More than two canopy layers (dropped for 2003-2012 inventory cycle)

NB01 Inventory Notes

Bookmarks

* http://www.snb.ca/geonb1/e/DC/catalogue-E.asp
* Wetlands metadata (incomplete): https://geonb.snb.ca/ArcGIS/rest/services/GeoNB\_DNR\_NBHN/MapServer/11
* Waterbodies metadata (incomplete): https://geonb.snb.ca/ArcGIS/rest/services/GeoNB\_DNR\_NBHN/MapServer/13

Contacts

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www.snb.ca/geonb

Note: I contacted Bernie on 20-Aug-2019 to acquire metadata for their hydrology data.

General

* The inventory has 2 layers. In keeping with the CAS\_04, I have kept the layers as separate rows in the same table. An alternative would be to have a set of layer 1 and layer 2 tables.
* An important challenge here will be to code the 2 layers in SQL!
* The CAS\_04 NB\_0001.lyr file had several problems, so prior to using it I made the following modifications:
  + replaced all ",," with ","
  + deleted 4 records with no layer 2 information
  + NB\_0001-xxFOREST\_NONFOR-xxxxxxxxxx-0045270145-0387023
  + NB\_0001-xxFOREST\_NONFOR-xxxxxxxxxx-0052412905-0508761
  + NB\_0001-xxFOREST\_NONFOR-xxxxxxxxxx-0052422602-0512802
  + NB\_0001-xxFOREST\_NONFOR-xxxxxxxxxx-0050408144-0515168
  + partially fixed 3 records using rawfri        NB\_0001-xxFOREST\_NONFOR-xxxxxxxxxx-0047375524-0357987 (layer 2)        NB\_0001-xxFOREST\_NONFOR-xxxxxxxxxx-0052422602-0526925 (layer 2) NB\_0001-xxFOREST\_NONFOR-xxxxxxxxxx-0050405790-0530309 (layer 2)
  + this still leaves a discrepancy of 1 layer 2 polygon

Northwest Territories

Contact: Lisa Smith

To do:

* Decipher layer 1 / layer 2 Perl code
* Generate ECO attributes
* Flag remaining attributes that are not translated