

*ISO 19131 National Ecological
Framework for Canada
– Data Product Specification*

Revision: A

Data specification - National Ecological Framework for Canada

- Table of Contents -

1.	OVERVIEW	5
1.1.	Informal description	5
1.2.	Data product specification metadata.....	6
1.3.	Terms and definitions.....	6
1.4.	Abbreviations.....	6
2.	SPECIFICATION SCOPE	7
3.	DATA PRODUCT IDENTIFICATION.....	7
3.1.	Data Series Identification.....	7
3.1.1.	National Ecological Framework for Canada - Elevation	7
3.1.2.	National Ecological Framework for Canada - Total Land and Water Area.....	8
3.1.3.	National Ecological Framework for Canada - Land and Water Area by Province/Territory .	9
3.1.4.	National Ecological Framework for Canada – Land Cover	10
3.1.5.	National Ecological Framework for Canada - Landform	11
3.1.6.	National Ecological Framework for Canada - Permafrost.....	12
3.1.7.	National Ecological Framework for Canada - Surficial Geology	13
3.1.8.	National Ecological Framework for Canada - Soil Development.....	14
3.1.9.	National Ecological Framework for Canada - Soil Texture	15
3.1.10.	National Ecological Framework for Canada - Surface Material	16
3.1.11.	National Ecological Framework for Canada - Surface Form.....	17
3.2.	Data product identification	18
3.2.1.	National Ecological Framework for Canada – Terrestrial Ecodistricts	18
3.2.2.	National Ecological Framework for Canada – Terrestrial Ecoprovinces	19
3.2.3.	National Ecological Framework for Canada – Terrestrial Ecoregions	20
3.2.4.	National Ecological Framework for Canada – Terrestrial Ecozones.....	21
4.	DATA CONTENT AND STRUCTURE.....	22
4.1.	Feature-based application schema.....	22
4.2.	Feature catalogue – National Ecological Framework for Canada	23
4.2.1.	Feature attributes	23
4.2.1.1.	Ecodistrict ID.....	23
4.2.1.2.	Ecoregion ID	23

4.2.1.3.	Ecoprovince ID	23
4.2.1.4.	Ecozone ID.....	24
4.2.1.5.	Minimum Elevation.....	24
4.2.1.6.	Maximum Elevation.....	24
4.2.1.7.	Mean Elevation.....	24
4.2.1.8.	Range of Elevation.....	25
4.2.1.9.	Total Area	25
4.2.1.10.	Land Area	25
4.2.1.11.	Water Area	25
4.2.1.12.	Province	26
4.2.1.13.	Component Number	26
4.2.1.14.	Land Cover Percentage	26
4.2.1.15.	Land Cover Code	27
4.2.1.16.	English Description	27
4.2.1.17.	French Description.....	28
4.2.1.18.	Landform Percentage.....	28
4.2.1.19.	Landform Code.....	28
4.2.1.20.	Permafrost Percentage	29
4.2.1.21.	Permafrost Code	30
4.2.1.22.	Surficial Geology Area.....	31
4.2.1.23.	Surficial Geology Code.....	32
4.2.1.24.	Surficial Geology	33
4.2.1.25.	Soil Development Percentage.....	33
4.2.1.26.	Soil Development Code.....	34
4.2.1.27.	Soil Texture Percentage.....	35
4.2.1.28.	Soil Texture Code	35
4.2.1.29.	Surface Material Percentage.....	36
4.2.1.30.	Surface Material Code.....	36
4.2.1.31.	Surface Form Percentage.....	37
4.2.1.32.	Surface Form Code.....	37
5.	REFERENCE SYSTEM.....	37
5.1.	Spatial reference system	37
5.2.	Temporal reference system	37
6.	DATA QUALITY	38
6.1.	Completeness.....	38

6.2.	Logical consistency	38
6.3.	Positional accuracy.....	38
6.4.	Temporal accuracy	38
6.5.	Thematic accuracy.....	38
6.6.	Lineage statement	38
6.6.1.	National Ecological Framework for Canada	Error! Bookmark not defined.
6.6.2.	National Ecological Framework for Canada - Elevation	39
6.6.3.	National Ecological Framework for Canada - Land Cover	39
6.6.4.	National Ecological Framework for Canada – Surficial Geology	39
7.	DATA CAPTURE	40
8.	DATA MAINTENANCE	42
9.	PORTRAYAL.....	42
10.	DATA PRODUCT DELIVERY.....	42
11.	METADATA	42

Data specification: National Ecological Framework for Canada

1. OVERVIEW

1.1. Informal description

The National Ecological Framework for Canada provides a consistent, national spatial framework that allows various ecosystems to be described, monitored and reported on. It provides standard ecological units that allow different jurisdictions and disciplines to use common communication and reporting, and a common ground to report on the state of the environment and the sustainability of ecosystems in Canada.

The framework was developed between 1991 and 1999 by the Ecosystems Science Directorate, Environment Canada and the Center for Land and Biological Resources Research, Agriculture and Agri-Food Canada. Over 100 federal and provincial agencies, non-governmental organizations and private sector companies contributed to its development.

Key Points in Ecological Land Classification:

- Ecological Land Classification incorporates all major components of ecosystems: air, water, land, and biota, including humans.
- It is holistic; "the sum is greater than the whole".
- The number and relative importance of factors helpful in delineating ecological units varies from one area to another, regardless of the level of generalization.
- It is based on a hierarchy with ecosystems nested within ecosystems. The Ecological Framework for Canada defines four levels of ecosystems as a nested hierarchy of areas:
 - Ecozones
 - Ecoprovinces
 - Ecoregions
 - Ecodistricts
- It involves integration of knowledge and is not simply an overlay process.
- It recognizes that ecosystems are interactive and that characteristics of one ecosystem blend with those of another.
- It recognizes that map lines generally depict the location of zones of transition.

The National Ecological Framework for consists of the following datasets:

- Elevation
- Total Land and Water Area
- Land and Water Area by Province/Territory
- Land Cover
- Landform
- Permafrost
- Surficial Geology
- Soil Development
- Soil Texture
- Surface Material
- Surface Form

1.2. Data product specification metadata

This section provides metadata about the creation of this data product specification.

Data product specification title: National Ecological Framework for Canada

Data product specification reference date: Feb 25, 2013

Data product specification responsible party: Agriculture and Agri-Food Canada

Data product specification language: English, French

Data product specification topic category: Biota

1.3. Terms and definitions

"National Ecological Framework for Canada", sis.agr.gc.ca/cansis, Canadian Soil Information Service, Agriculture and Agri-Food Canada, online, March 2013

- Feature attribute
characteristic of a feature
- Class
Description of a set of objects that share the same attributes, operations, methods, relationships, and semantics [UML Semantics]
NOTE: A class does not always have an associated geometry (e.g. the metadata class).
- Feature
Abstraction of real world phenomena
- Object
Entity with a well-defined boundary and identity that encapsulates state and behaviour [UML Semantics]
NOTE: An object is an instance of a class.
- Package
Grouping of a set of classes, relationships, and even other packages with a view to organizing the model into more abstract structures

1.4. Abbreviations

AAFC	Agriculture and Agri-Food Canada
AVHRR	Advanced Very High Resolution Radiometer
MRSC	Manitoba Remote Sensing Centre
NOAA	National Oceanic and Atmospheric Administration
NRC	National Research Council of Canada

2. SPECIFICATION SCOPE

This data specification has only one scope, the general scope.

NOTE: The term 'specification scope' originates from the International Standard ISO19131. 'Specification scope' does not express the purpose for the creation of a data specification or the potential use of data, but identifies partitions of the data specification where specific requirements apply.

3. DATA PRODUCT IDENTIFICATION

3.1. Data Series Identification

3.1.1. National Ecological Framework for Canada - Elevation

Title	National Ecological Framework for Canada – Elevation
Abstract	<p>The “National Ecological Framework for Canada - Elevation” dataset series provides elevation information for ecological framework polygons, in meters. It includes codes and descriptions for minimum elevation, maximum elevation, mean elevation and the difference in elevation.</p> <p>This series provides an individual dataset for each level of generalization used in the ecological framework of Canada: ecodistrict, ecoregion, ecoprovince and ecozone.</p>
Purpose	This dataset series supplies the elevation values (minimum elevation, maximum elevation, mean elevation and the range of elevation) for each polygon for the corresponding level of generalization.
Topic category	Biota
Spatial Reference Type	textTable
Geographic Description	Canada
Constraints	Open Government Licence - Canada (http://data.gc.ca/eng/open-government-licence-canada)
Keywords	Thesaurus: Government of Canada Core Subject Thesaurus (http://www.thesaurus.gc.ca/recherche-search/thes-eng.html) Date: February 1, 2000 Keywords: Terrestrial ecosystems, Ecology, Ecosystems
Scope Identification	series
Feature Attribute Names	Ecodistrict Identifier, Ecoregion_ID, Ecoprovince Identifier or Ecozone Identifier, Minimum Elevation, Maximum Elevation, Mean Elevation, Range of Elevation

3.1.2. National Ecological Framework for Canada - Total Land and Water Area

Title	National Ecological Framework for Canada - Total Land and Water Area
Abstract	<p>The “National Ecological Framework for Canada - Total Land and Water Area” dataset series provides land and water area values for ecological framework polygons, in hectares. It includes attributes for a polygon’s total area, land-only area and large water body area.</p> <p>This series provides an individual dataset for each level of generalization used in the ecological framework of Canada: ecodistrict, ecoregion, ecoprovince and ecozone.</p>
Purpose	This dataset supplies the land and water area values in hectares (total area of land and water; land-only area; area of large water bodies) for each polygon for the corresponding level of generalization.
Topic category	Biota
Spatial Reference Type	textTable
Geographic Description	Canada
Constraints	Open Government Licence - Canada (http://data.gc.ca/eng/open-government-licence-canada)
Keywords	<p>Thesaurus: Government of Canada Core Subject Thesaurus (http://www.thesaurus.gc.ca/recherche-search/thes-eng.html) Date: February 1, 2000 Keywords: Terrestrial ecosystems, Ecology, Ecosystems</p>
Scope Identification	series
Feature Attribute Names	Ecodistrict Identifier, Ecoregion Identifier, Ecoprovince Identifier or Ecozone Identifier, Total Area, Land Area, Water Area

3.1.3. National Ecological Framework for Canada - Land and Water Area by Province/Territory

Title	National Ecological Framework for Canada - Land and Water Area by Province/Territory
Abstract	<p>The “National Ecological Framework for Canada - Land and Water Area by Province/Territory” dataset series provides land and water area values by province or territory for each ecological framework polygon, in hectares. It includes codes and their English and French descriptions for a polygon’s province or territory, total area, land-only area and large water body area.</p> <p>This series provides an individual dataset for each level of generalization used in the ecological framework of Canada: ecodistrict, ecoregion, ecoprovince and ecozone.</p>
Purpose	This dataset supplies the land and water area values in hectares (total area of land and water; land-only area; area of large water bodies) and province or territory information for each polygon for the corresponding level of generalization.
Topic category	Biota
Spatial Reference Type	textTable
Geographic Description	Canada
Constraints	Open Government Licence - Canada (http://data.gc.ca/eng/open-government-licence-canada)
Keywords	Thesaurus: Government of Canada Core Subject Thesaurus (http://www.thesaurus.gc.ca/recherche-search/thes-eng.html) Date: February 1, 2000 Keywords: Terrestrial ecosystems, Ecology, Ecosystems
Scope Identification	series
Feature Attribute Names	Ecodistrict Identifier, Ecoregion Identifier, Ecoprovince Identifier or Ecozone Identifier, Province, Total Area, Land Area, Water Area

3.1.4. National Ecological Framework for Canada – Land Cover

Title	National Ecological Framework for Canada – Land Cover
Abstract	<p>The “National Ecological Framework for Canada – Land Cover” dataset series provides land cover information for a component within an ecological framework polygon. It provides landcover codes and their English and French-language description as well as information about the percentage of the polygon that the component occupies.</p> <p>This series provides an individual dataset for each level of generalization used in the ecological framework of Canada: ecodistrict, ecoregion, ecoprovince and ecozone.</p>
Purpose	This dataset supplies the land cover class definitions for components for each polygon for the corresponding level of generalization.
Topic category	Biota
Spatial Reference Type	textTable
Geographic Description	Canada
Constraints	Open Government Licence - Canada (http://data.gc.ca/eng/open-government-licence-canada)
Keywords	Thesaurus: Government of Canada Core Subject Thesaurus (http://www.thesaurus.gc.ca/recherche-search/thes-eng.html) Date: February 1, 2000 Keywords: Terrestrial ecosystems, Ecology, Ecosystems
Scope Identification	series
Feature Attribute Names	Ecodistrict Identifier, Ecoregion Identifier, Ecoprovince Identifier or Ecozone Identifier, Component Number, Land Cover Percentage, Land Cover Code, English Description, French Description

3.1.5. National Ecological Framework for Canada - Landform

Title	National Ecological Framework for Canada - Landform
Abstract	<p>The “National Ecological Framework for Canada - Landform” dataset series contains tables that provide regional landform information for components within an ecological framework polygon. It provides landform codes and their English and French-language descriptions as well as information about the percentage of the polygon that the component occupies.</p> <p>This series provides an individual dataset for each level of generalization used in the ecological framework of Canada: ecodistrict, ecoregion, ecoprovince and ecozone.</p> <p>Regional landforms generally describe a region and include the various shapes of the land surface resulting from a variety of actions such as deposition or sedimentation (eskera, lacustrine basins), erosion (gullies, canyons), and earth crust movements (mountains).</p> <p>The regional landform classes are: plateau or tableland, hill and mountain, organic wetland, plain, scarp or valley.</p>
Purpose	This dataset supplies the regional landform class definitions for components for each polygon for the corresponding level of generalization.
Topic category	Biota
Spatial Reference Type	textTable
Geographic Description	Canada
Constraints	Open Government Licence - Canada (http://data.gc.ca/eng/open-government-licence-canada)
Keywords	Thesaurus: Government of Canada Core Subject Thesaurus (http://www.thesaurus.gc.ca/recherche-search/thes-eng.html) Date: February 1, 2000 Keywords: Terrestrial ecosystems, Ecology, Ecosystems
Scope Identification	series
Feature Attribute Names	Ecodistrict Identifier, Ecoregion Identifier, Ecoprovince Identifier or Ecozone Identifier, Component Number, Landform Percentage, Landform Code, English Description, French Description

3.1.6. National Ecological Framework for Canada - Permafrost

Title	National Ecological Framework for Canada - Permafrost
Abstract	<p>The "National Ecological Framework for Canada – Permafrost" dataset series contains tables that provide permafrost information for components within an ecological framework polygon. It provides permafrost codes and their English and French-language descriptions as well as information about the percentage of the polygon that the component occupies.</p> <p>This series provides an individual dataset for each level of generalization used in the ecological framework of Canada: ecodistrict, ecoregion, ecoprovince and ecozone.</p> <p>Permafrost is defined as a state of the ground, whether soil or rock, that remains at or below a temperature of 0° C for long periods (NRC, Permafrost Subcommittee, 1988). The minimum period is from one winter, through the following summer, and into the next winter; however, most permafrost has existed for much longer. This formal definition considers only the temperature of the ground, and thus permafrost is a strictly thermal phenomenon, and not a material. At temperatures below 0° C, almost all of the soil moisture occurs in the form of ground ice. Ground ice usually exists at temperature close to its melting point and so is liable to melt if the ground warms.</p> <p>The extent and nature of permafrost, including estimated ice content and typical ground ice forms are derived from the map "Canada - Permafrost" (Natural Resources Canada, 1995).</p>
Purpose	This dataset supplies the permafrost class definitions for components for each polygon for the corresponding level of generalization. It depicts current knowledge of the distribution, characteristics and boundaries of permafrost and ground ice in Canada, using a physiographic approach for the delineation of mapping units. It presents information on the distribution and extent of ground ice in a consistent manner for the entire country.
Topic category	Biota
Spatial Reference Type	textTable
Geographic Description	Canada
Constraints	Open Government Licence - Canada (http://data.gc.ca/eng/open-government-licence-canada)
Keywords	Thesaurus: Government of Canada Core Subject Thesaurus (http://www.thesaurus.gc.ca/recherche-search/thes-eng.html) Date: February 1, 2000 Keywords: Terrestrial ecosystems, Ecology, Ecosystems, Permafrost
Scope Identification	series
Feature Attribute Names	Ecodistrict Identifier, Ecoregion Identifier, Ecoprovince Identifier or Ecozone Identifier, Component Number, Permafrost Percentage, Permafrost Code, English Description, French Description

3.1.7. National Ecological Framework for Canada - Surficial Geology

Title	National Ecological Framework for Canada - Surficial Geology
Abstract	<p>The “National Ecological Framework for Canada - Surficial Geology” dataset series contains tables that provide surficial geology information for ecological framework polygons. It provides codes that characterise surficial geology (unconsolidated geologic materials) and their English and French-language descriptions as well as information about the area and percentage of the polygon that the material occupies.</p> <p>This series provides an individual dataset for each level of generalization used in the ecological framework of Canada: ecodistrict, ecoregion, ecoprovince and ecozone.</p>
Purpose	This dataset supplies the surficial geology class definitions for components for each polygon for the corresponding level of generalization. These definitions are important characterizing features that contribute to the delineation of the ecological units in the national framework.
Topic category	Biota
Spatial Reference Type	textTable
Geographic Description	Canada
Constraints	Open Government Licence - Canada (http://data.gc.ca/eng/open-government-licence-canada)
Keywords	<p>Thesaurus: Government of Canada Core Subject Thesaurus (http://www.thesaurus.gc.ca/recherche-search/thes-eng.html) Date: February 1, 2000 Keywords: Terrestrial ecosystems, Ecology, Ecosystems</p>
Feature Attribute Names	<p>Ecodistrict Identifier, Ecoregion Identifier, Ecoprovince Identifier or Ecozone Identifier, Surficial Geology Area, Surficial Geology Code, English Description, French Description, Surficial Geology Percent</p>

3.1.8. National Ecological Framework for Canada - Soil Development

Title	National Ecological Framework for Canada - Soil Development
Abstract	<p>The “National Ecological Framework for Canada - Soil Development” dataset series contains tables that provide soil development information for components within an ecological framework polygon. It provides soil development codes and their English and French-language descriptions as well as the percentage of the polygon that the component occupies.</p> <p>This series provides an individual dataset for each level of generalization used in the ecological framework of Canada: ecodistrict, ecoregion, ecoprovince and ecozone.</p> <p>The soil development descriptions are based on the second edition of the Canadian System of Soil Classification (Agriculture Canada Expert Committee on Soil Survey, 1987).</p>
Purpose	These datasets supply the soil development class definitions for components for each polygon for the corresponding level of generalization.
Topic category	Biota
Spatial Reference Type	textTable
Geographic Description	Canada
Constraints	Open Government Licence - Canada (http://data.gc.ca/eng/open-government-licence-canada)
Keywords	<p>Thesaurus: Government of Canada Core Subject Thesaurus (http://www.thesaurus.gc.ca/recherche-search/thes-eng.html) Date: February 1, 2000 Keywords: Terrestrial ecosystems, Ecology, Ecosystems, Soil taxonomy</p>
Scope Identification	series
Feature Attribute Names	<p>Ecodistrict Identifier, Ecoregion Identifier, Ecoprovince Identifier or Ecozone Identifier, Component Number, Soil Development Percentage, Soil Development Code, English Description, French Description</p>

3.1.9. National Ecological Framework for Canada - Soil Texture

Title	National Ecological Framework for Canada - Soil Texture
Abstract	<p>The “National Ecological Framework for Canada - Soil Texture” dataset series contains tables that provide soil texture information for components within an ecological framework polygon. It provides soil texture codes and their English and French-language descriptions as well as the percentage of the polygon that the component occupies.</p> <p>This series provides an individual dataset for each level of generalization used in the ecological framework of Canada: ecodistrict, ecoregion, ecoprovince and ecozone.</p> <p>Soil texture indicates the relative proportions of the various soil separates (sand, silt, clay) as described by classes of texture. Soil separates are mineral particles, 2.0 mm in diameter and include: gravel 0.2 -7.5 cm and cobbles 7.5-25.0 cm. There are 12 texture group classes definitions and one class definition for Not Applicable (which indicates, for example, water, ice or urban areas).</p>
Purpose	This dataset series supplies the soil texture class definitions for components for each polygon for the corresponding level of generalization.
Topic category	Biota
Spatial Reference Type	textTable
Geographic Description	Canada
Constraints	Open Government Licence - Canada (http://data.gc.ca/eng/open-government-licence-canada)
Keywords	<p>Thesaurus: Government of Canada Core Subject Thesaurus (http://www.thesaurus.gc.ca/recherche-search/thes-eng.html) Date: February 1, 2000 Keywords: Terrestrial ecosystems, Ecology, Ecosystems, Soil taxonomy</p>
Scope Identification	series
Feature Attribute Names	<p>Ecodistrict Identifier, Ecoregion Identifier, Ecoprovince Identifier or Ecozone Identifier, Component Number, Soil Texture Percentage, Soil Texture Percentage, English Description, French Description</p>

3.1.10. National Ecological Framework for Canada - Surface Material

Title	National Ecological Framework for Canada - Surface Material
Abstract	<p>The “National Ecological Framework for Canada - Surface Material” dataset series provides surface material information for components within an ecological framework polygon. It provides surface material codes and their English and French-language descriptions as well as information about the percentage of the polygon that the component occupies.</p> <p>This series provides an individual dataset for each level of generalization used in the ecological framework of Canada: ecodistrict, ecoregion, ecoprovince and ecozone.</p> <p>Surface material includes the abiotic material at the earth's surface. The materials can be:</p> <p>ICE and SNOW - Glacial ice and permanent snow ORGANIC SOIL - Contains more than 30% organic matter as measured by weight ROCK - Rock undifferentiated MINERAL SOIL - Predominantly mineral particles: contains less than 30% organic matter as measured by weight URBAN - Urban areas. Note that only a few major urban area polygons are included on SLC source maps, therefore, do not use for tabulating total urban coverage</p>
Purpose	This dataset series supplies the surface material class definitions for components for each polygon for the corresponding level of generalization.
Topic category	Biota
Spatial Reference Type	textTable
Geographic Description	Canada
Constraints	Open Government Licence - Canada (http://data.gc.ca/eng/open-government-licence-canada)
Keywords	Thesaurus: Government of Canada Core Subject Thesaurus (http://www.thesaurus.gc.ca/recherche-search/thes-eng.html) Date: February 1, 2000 Keywords: Terrestrial ecosystems, Ecology, Ecosystems
Scope Identification	series
Feature Attribute Names	Ecodistrict Identifier, Ecoregion Identifier, Ecoprovince Identifier or Ecozone Identifier, Component Number, Surface Material Percentage, Surface Material Code, English Description, French Description

3.1.11. National Ecological Framework for Canada - Surface Form

Title	National Ecological Framework for Canada - Surface Form
Abstract	<p>The “National Ecological Framework for Canada - Surface Form” dataset series contains tables that provide surface form information for components within an ecological framework polygon. It provides surface form codes and their English and French-language descriptions as well as information about the percentage of the polygon that the component occupies.</p> <p>This series provides an individual dataset for each level of generalization used in the ecological framework of Canada: ecodistrict, ecoregion, ecoprovince and ecozone.</p> <p>Surface form descriptions describe assemblages of slopes or recurring patterns of forms that occur at the earth's surface. When applied to consolidated materials (material that has been transformed to hard rock), it refers to the form produced after modification by geological processes.</p> <p>The mineral soil surface forms are: dissected; hummocky (irregular); inclined; level, rolling; ridged; steep; terraced; undulating. The wetland surface forms are: bog; fen; marsh; swamp.</p>
Purpose	This dataset series supplies the surface form class definitions for components for each polygon for the corresponding level of generalization.
Topic category	Biota
Spatial Reference Type	textTable
Geographic Description	Canada
Constraints	Open Government Licence - Canada (http://data.gc.ca/eng/open-government-licence-canada)
Keywords	Thesaurus: Government of Canada Core Subject Thesaurus (http://www.thesaurus.gc.ca/recherche-search/thes-eng.html) Date: February 1, 2000 Keywords: Terrestrial ecosystems, Ecology, Ecosystems
Scope Identification	series
Feature Attribute Names	Ecodistrict Identifier, Ecoregion Identifier, Ecoprovince Identifier or Ecozone Identifier, Component Number, Surface Form Percentage, Surface Form Code, English Description, French Description

3.2. Data product identification

3.2.1. National Ecological Framework for Canada – Terrestrial Ecodistricts

Title	National Ecological Framework for Canada - Terrestrial Ecodistricts
Abstract	<p>The “National Ecological Framework for Canada – Terrestrial Ecodistricts” dataset provides representations of ecodistricts.</p> <p>An ecodistrict is a subdivision of an ecoregion and is characterized by distinctive assemblages of relief, landforms, geology, soil, vegetation, water bodies and fauna. For example, the Jeddore Lake ecodistrict (no. 473) is one of five ecodistricts within the Maritime Barrens ecoregion.</p>
Purpose	This dataset provides location information for ecodistricts and links them to tables of associated attributes.
Topic category	Biota
Spatial Reference Type	vector
Spatial Resolution	1:3 000 000 to 1:1 000 000
Geographic Description	Canada
Constraints	Open Government Licence - Canada (http://data.gc.ca/eng/open-government-licence-canada)
Keywords	Thesaurus: Government of Canada Core Subject Thesaurus (http://www.thesaurus.gc.ca/recherche-search/thes-eng.html) Date: February 1, 2000 Keywords: Terrestrial ecosystems, Ecology, Ecosystems
Scope Identification	dataset
Feature Attribute Names	ECODISTRICT IDENTIFIER, ECOREGION IDENTIFIER, ECOZONE IDENTIFIER, ECOPROVINCE IDENTIFIER,

3.2.2. National Ecological Framework for Canada – Terrestrial Ecoprovinces

Title	National Ecological Framework for Canada - Terrestrial Ecoprovinces
Abstract	<p>The “National Ecological Framework for Canada – Terrestrial Ecoprovinces” dataset provides representations of ecoprovinces.</p> <p>An ecoprovince is a subdivision of an ecozone and is characterized by major assemblages of structural or surface forms, faunal realms, and vegetation, hydrology, soil, and macro climate. For example, the Newfoundland ecoprovince (no. 6.4) is one of six ecoprovinces within the Boreal Shield Ecozone</p>
Purpose	This dataset provides location information for ecoprovinces and links them to tables of associated attributes.
Topic category	biota
Spatial Reference Type	vector
Spatial Resolution	1:7 500 000 to 1:5 000 000
Geographic Description	Canada
Constraints	Open Government Licence - Canada (http://data.gc.ca/eng/open-government-licence-canada)
Keywords	Thesaurus: Government of Canada Core Subject Thesaurus (http://www.thesaurus.gc.ca/recherche-search/thes-eng.html) Date: February 1, 2000 Keywords: Terrestrial ecosystems, Ecology, Ecosystems
Scope Identification	dataset
Feature Attribute Names	ECOZONE IDENTIFIER,, ECOPROVINCE IDENTIFIER, ENGLISH ECOPROVINCE NAME, FRENCH ECOPROVINCE NAME

3.2.3. National Ecological Framework for Canada – Terrestrial Ecoregions

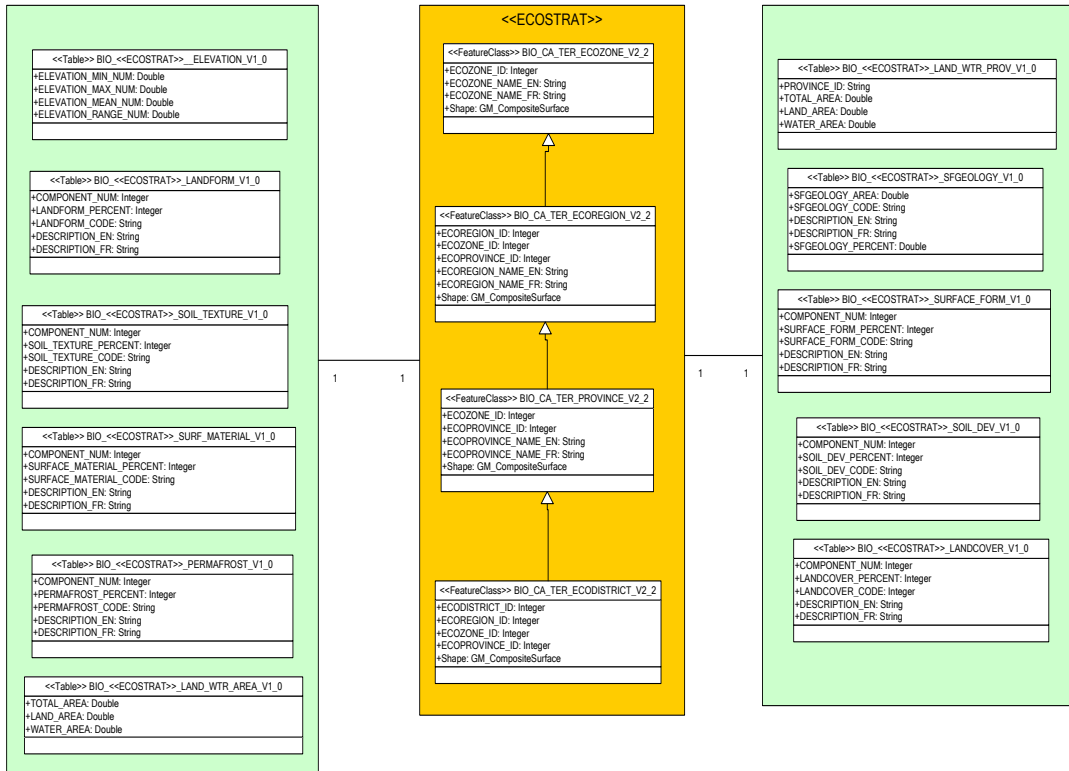
Title	National Ecological Framework for Canada - Terrestrial Ecoregions
Abstract	<p>The “National Ecological Framework for Canada – Terrestrial Ecoregions” dataset provides representations of ecoregions.</p> <p>An ecoregion is a subdivision of an ecoprovince and is characterized by distinctive regional ecological factors, including climate, physiography, vegetation, soil, water, and fauna. For example, the Maritime Barrens ecoregion (no. 114) is one of nine ecoregions within the Newfoundland ecoprovince.</p>
Purpose	This dataset provides location information for ecoregions and links them to tables of associated attributes.
Topic category	Biota
Spatial Reference Type	vector
Spatial Resolution	1: 5 000 000 to 1:2 000 000
Geographic Description	Canada
Constraints	Open Government Licence - Canada (http://data.gc.ca/eng/open-government-licence-canada)
Keywords	Thesaurus: Government of Canada Core Subject Thesaurus (http://www.thesaurus.gc.ca/recherche-search/thes-eng.html) Date: February 1, 2000 Keywords: Terrestrial ecosystems, Ecology, Ecosystems
Scope Identification	dataset
Feature Attribute Names	ECOREGION IDENTIFIER, ECOZONE IDENTIFIER, ECOPROVINCE IDENTIFIER, ENGLISH ECOREGION NAME, FRENCH ECOREGION NAME

3.2.4. National Ecological Framework for Canada – Terrestrial Ecozones

Title	National Ecological Framework for Canada - Terrestrial Ecozones
Abstract	<p>The “National Ecological Framework for Canada – Terrestrial Ecozones” dataset provides representations of ecozones.</p> <p>An ecozone is the top level of the four levels of ecosystems that the National Ecological Framework for Canada defines. The framework divides Canada into 15 terrestrial ecozones that define its ecological mosaic on a sub-continental scale. Ecozones represent an area of the earth’s surface as large and very generalized ecological units. These units are characterized by interactive and adjusting abiotic and biotic factors.</p>
Purpose	This dataset classifies the major ecologically distinctive areas of Canada's surface area, called ecozones. It provides location information for ecozones and links them to tables of associated attributes.
Topic category	biota
Spatial Reference Type	vector
Spatial Resolution	1: 7 500 000
Geographic Description	Canada
Constraints	Open Government Licence - Canada (http://data.gc.ca/eng/open-government-licence-canada)
Keywords	<p>Thesaurus: Government of Canada Core Subject Thesaurus (http://www.thesaurus.gc.ca/recherche-search/thes-eng.html)</p> <p>Date: February 1, 2000</p> <p>Keywords: Terrestrial ecosystems, Ecology, Ecosystems</p>
Scope Identification	dataset
Feature Attribute Names	ECOZONE IDENTIFIER, ENGLISH ECOZONE NAME, FRENCH ECOZONE NAME

4. DATA CONTENT AND STRUCTURE

4.1. Feature-based application schema



4.2. Feature catalogue – National Ecological Framework for Canada

Title	National Ecological Framework for Canada – Feature Catalogue
Scope	Biota
Version Number	1
Version Date	March 20, 2013
Producer	Agriculture and Agri-Food Canada, Government of Canada

System-generated attributes (for example, OBJECTID, Shape, Shape Length and Area) are not defined in the feature catalog.

4.2.1. Feature attributes

4.2.1.1. Ecodistrict ID

Name	Ecodistrict ID (ECODISTRICT_ID)
Definition	Specifies a unique identifier that relates an ecodistrict number from the spatial dataset to the attribute data.
Aliases	
Producer	Agriculture and Agri-Food Canada, Government of Canada
Value Data Type	integer
Value Domain Type	0

4.2.1.2. Ecoregion ID

Name	Ecoregion ID (ECOREGION_ID)
Definition	Specifies a unique identifier that relates an ecoregion number from the spatial dataset to the attribute data.
Aliases	
Producer	Agriculture and Agri-Food Canada, Government of Canada
Value Data Type	integer
Value Domain Type	0

4.2.1.3. Ecoprovince ID

Name	Ecoprovince ID (ECOPROVINCE_ID)
Definition	Specifies a unique Identifier that relates an ecoprovince number from the spatial dataset to the attribute data.
Aliases	
Producer	Agriculture and Agri-Food Canada, Government of Canada
Value Data Type	integer
Value Domain Type	0

4.2.1.4. Ecozone ID

Name	Ecozone ID (ECOZONE_ID)
Definition	Specifies a unique Identifier that relates an ecozone number from the spatial dataset to the attribute data.
Aliases	
Producer	Agriculture and Agri-Food Canada, Government of Canada
Value Data Type	integer
Value Domain Type	0

4.2.1.5. Minimum Elevation

Name	Minimum Elevation (ELEVATION_MIN_NUM)
Definition	Specifies the minimum elevation associated with an ecological framework polygon.
Aliases	
Producer	Agriculture and Agri-Food Canada, Government of Canada
Value Data Type	real
Value Domain Type	0

4.2.1.6. Maximum Elevation

Name	Maximum Elevation (ELEVATION_MAX_NUM)
Definition	Specifies the maximum elevation associated with an ecological framework polygon.
Aliases	
Producer	Agriculture and Agri-Food Canada, Government of Canada
Value Data Type	real
Value Domain Type	0

4.2.1.7. Mean Elevation

Name	Mean Elevation (ELEVATION_MEAN_NUM)
Definition	Specifies the mean elevation associated with an ecological framework polygon.
Aliases	
Producer	Agriculture and Agri-Food Canada, Government of Canada
Value Data Type	real
Value Domain Type	0

4.2.1.8. Range of Elevation

Name	Range of Elevation (ELEVATION_RANGE_NUM)
Definition	Specifies the difference between the minimum and maximum elevation.
Aliases	
Producer	Agriculture and Agri-Food Canada, Government of Canada
Value Data Type	real
Value Domain Type	0

4.2.1.9. Total Area

Name	Total Area (TOTAL_AREA)
Definition	Specifies the total area of an ecological framework polygon, in hectares.
Aliases	
Producer	Agriculture and Agri-Food Canada, Government of Canada
Value Data Type	real
Value Domain Type	0

4.2.1.10. Land Area

Name	Land Area (LAND_AREA)
Definition	Specifies the total area that land occupies in an ecological framework polygon, in hectares.
Aliases	
Producer	Agriculture and Agri-Food Canada, Government of Canada
Value Data Type	real
Value Domain Type	0

4.2.1.11. Water Area

Name	Water Area (WATER_AREA)
Definition	Specifies the total area that water occupies in an ecological framework polygon, in hectares.
Aliases	
Producer	Agriculture and Agri-Food Canada, Government of Canada
Value Data Type	real
Value Domain Type	0

4.2.1.12. Province

Name	Province (PROVINCE_ID)
Definition	Specifies the province or territory.
Aliases	
Producer	Agriculture and Agri-Food Canada, Government of Canada
Value Data Type	integer
Value Domain Type	0

4.2.1.13. Component Number

Name	Component Number (COMPONENT_NUM)
Definition	Specifies the number of an ecological framework polygon component.
Aliases	
Producer	Agriculture and Agri-Food Canada, Government of Canada
Value Data Type	integer
Value Domain Type	0

4.2.1.14. Land Cover Percentage

Name	Land Cover Percentage (LANDCOVER_PERCENT)
Definition	Specifies the area of the ecological framework polygon occupied by the land cover component, in percent.
Aliases	
Producer	Agriculture and Agri-Food Canada, Government of Canada
Value Data Type	integer
Value Domain Type	0

4.2.1.15. Land Cover Code

Name	Land Cover Code (LANDCOVER_CODE)	
Definition	Specifies the land cover code for an ecological framework polygon component.	
Aliases		
Producer	Agriculture and Agri-Food Canada, Government of Canada	
Value Data Type	integer	
Value Domain Type	1	
Feature Attribute Value:		
	Code	Definition
	1	Mixed Forest: Canopy 26-75% coniferous/broadleaf trees
	2	Broadleaf Forest: Canopy > 75% broadleaf trees
	4	Transitional Forest: Forest land < 50% of the area
	5	Coniferous Forest: Canopy > 75% coniferous trees
	6	Tundra: Treeless arctic and alpine vegetation
	7	Sparsely Vegetated/Barren Land: Plant cover generally < 25%
	8	Perennial Snow or Ice: Perennial snowfields or glaciers
	9	Cropland: Cultivated land
	10	Rangeland and Pasture: Native vegetation with < 10% tree cover
	11	Built-up Area: Cities and towns

4.2.1.16. English Description

Name	English Description (DESCRIPTION_EN)
Definition	Provides an English description for the associated code attribute.
Aliases	
Producer	Agriculture and Agri-Food Canada, Government of Canada
Value Data Type	character
Value Domain Type	0

4.2.1.17. French Description

Name	DESCRIPTION_FR
Definition	Provides a French description for the associated code attribute.
Aliases	
Producer	Agriculture and Agri-Food Canada, Government of Canada
Value Data Type	character
Value Domain Type	0

4.2.1.18. Landform Percentage

Name	Landform Percentage (LANDFORM_PERCENT)
Definition	Specifies the percentage of the associated ecological framework area that the landform occupies.
Aliases	
Producer	Agriculture and Agri-Food Canada, Government of Canada
Value Data Type	integer
Value Domain Type	0

4.2.1.19. Landform Code

Name	Landform Code (LANDFORM_CODE)	
Definition	Specifies the code for an individual landform type.	
Aliases		
Producer	Agriculture and Agri-Food Canada, Government of Canada	
Value Data Type	character	
Value Domain Type	1	
Feature Attribute Value:		
	Code	Definition
	B	PLATEAU
	H	HILLAND
	M	MOUNTAIN
	O	ORGANIC WETLAND
	P	PLAIN
	S	SCARP
	V	VALLEY

4.2.1.20. Permafrost Percentage

Name	Permafrost Percentage (PERMAFROST_PERCENT)
Definition	Specifies the percentage of the ecological framework area that is occupied by the permafrost component.
Aliases	
Producer	Agriculture and Agri-Food Canada, Government of Canada
Value Data Type	integer
Value Domain Type	0

4.2.1.21. Permafrost Code

Name	Permafrost Code (PERMAFROST_CODE)	
Definition	Specifies a code that describes the type of permafrost present in the component.	
Aliases		
Producer	Agriculture and Agri-Food Canada, Government of Canada	
Value Data Type	character	
Value Domain Type	1	
Feature Attribute Value:		
	Code	Definition
	Ch	Continuous (>90%) Permafrost: High (>20%) Ground Ice
	Cl	Continuous (>90%) Permafrost: Low (<10%) Ground Ice
	Cm	Continuous (>90%) Permafrost: Medium (10-20%) Ground Ice
	Cmh	Continuous (>90%) Permafrost: Medium-High (>10%) Ground Ice
	Cml	Continuous (>90%) Permafrost: Medium-Low (<20%) Ground Ice
	EI	Extensive Discontinuous (50-90%) Permafrost: Low (<10%) Ground Ice
	Elm	Extensive Discontinuous (50-90%) Permafrost: Medium-Low (<20%) Ground Ice
	Em	Extensive Discontinuous (50-90%) Permafrost: Medium (10-20%) Ground Ice
	Enl	Extensive Discontinuous (50-90%) Permafrost: Low to Nil (0-10%) Ground Ice
	Il	Isolated Patches (0-10%) Permafrost: Low (<10%) Ground Ice
	Ilm	Isolated Patches (0-10%) Permafrost: Low -Medium (<20%) Ground Ice
	In	Isolated Patches (0-10%) Permafrost: Nil (0%) Ground Ice
	Inl	Isolated Patches (0-10%) Permafrost: Low-Nil (0-10%) Ground Ice
	N	No Permafrost

	Slm	Sporadic Discontinuous (<10%) Permafrost:Low-Medium(<20%) Ground Ice
	Snl	Sporadic Discontinuous (<10%) Permafrost:Low-Nil(0-10%) Ground Ice

4.2.1.22. Surficial Geology Area

Name	Surficial Geology Area (SFGEOLOGY_AREA)
Definition	Specifies the area occupied by the surficial geology described in the associated code.
Aliases	
Producer	Agriculture and Agri-Food Canada, Government of Canada
Value Data Type	real
Value Domain Type	0

4.2.1.23. Surficial Geology Code

Name	Surficial Geology Code (SFGEOLGY_CODE)	
Definition	Specifies a code that corresponds to a type of surficial geology.	
Aliases		
Producer	Agriculture and Agri-Food Canada, Government of Canada	
Value Data Type	character	
Value Domain Type	1	
Feature Attribute Value:		
	Code	Definition
	I	Glaciers: Ice and minor morainal debris
	A	Alluvial Deposits: stratified silt
	mM	Marine Mud: Fluid silty clay and clayey silt; deposited as quiet water sediments
	sM	Marine Sand: Sand and locally gravel; deposited as sheet sands
	mL	Lacustrine Mud: Fluid silty clay and clayey silt; deposited as quiet water sediments
	sL	Lacustrine Sand: Sand and locally gravel; deposited as sheet sands
	E	Eolian Deposits: sand and minor silt; dunes
	O	Organic deposits: peat
	bC	Colluvial Blocks: Blocks
	rC	Colluvial Rubble: Rubble and silt; derived from carbonate and consolidated fine classic sedimentary rock substrate
	fC	Colluvial Fines: Silt
	sC	Colluvial Sand: Sand and gravel; derived from poorly lithified sandstone and conglomerate substrate
	fM	Fine Grained: Fine grained silt and clay
	cL	Coarse Grained: sand
	cM	Coarse Grained: Sand and gravel; deposited as sheet sands
	Mv	Lag: Sand

	Gp	Plain: Sand and gravel; deposited as outwash sheets
	Gx	Complex: Sand and gravel and locally diamicton; undifferentiated ice contact stratified drift
	Tb	Till Blanket: Thick and continuous till
	Tv	Till Veneer: Thin and discontinuous till; may include areas of rock outcrop
	V	Quaternary Volcanics: Consolidated lava
	Ra	Undivided: Rock with minor Quaternary deposits.
	fL	Fine grained (Glacio)lacustrine

4.2.1.24. Surficial Geology

Name	Surficial Geology (SFGEOLOGY_PERCENT)
Definition	Percent of surficial deposits
Aliases	
Producer	Agriculture and Agri-Food Canada, Government of Canada
Value Data Type	real
Value Domain Type	0

4.2.1.25. Soil Development Percentage

Name	Soil Development Percentage (SOIL_DEV_PERCENT)
Definition	Specifies the percentage of the ecological framework area that is occupied by the soil development component.
Aliases	
Producer	Agriculture and Agri-Food Canada, Government of Canada
Value Data Type	integer
Value Domain Type	0

4.2.1.26. Soil Development Code

Name	Soil Development Code (SOIL_DEV_CODE)	
Definition	Specifies a code that corresponds to a type of soil development.	
Aliases		
Producer	Agriculture and Agri-Food Canada, Government of Canada	
Value Data Type	character	
Value Domain Type	1	
Feature Attribute Value:		
	Code	Definition
	A	Brown Chernozem
	B	Dark Brown Chernozem
	C	Black Chernozem
	D	Dark Gray Chernozem/Luvisol
	E	Gray Brown Luvisol
	F	Gray Luvisol
	G	Brown Solonetz
	H	Dark Brown Solonetz
	I	Brunisol Gray Luvisol
	J	Black Solonetz
	K	Gray Solonetz
	L	Melanic Brunisol
	M	Eutric Brunisol
	N	Sombric Brunisol
	O	Organic Cryosol
	P	Dystric Brunisol
	Q	Humic Podzol
	R	Regosol
	S	Static Cryosol
	T	Turbic Cryosol
	U	Gleysol
	V	Ferro-Humic Podzol
	W	Humo-Ferric Podzol
	X	Fibrisol
	Y	Mesisol
	Z	Humisol
	#	Water
	*	Unknown (urban development)
	\$	Gleysolic Static Cryosolic
	2	Folisol
	3	Podzolic Gray Luvisolic
	4	Orthic Turbic Cryosolic

	5	Brunisolic Turbic Cryosolic
	6	Regosolic Turbic Cryosolic
	7	Orthic Static Cryosolic
	8	Brunisolic Static Cryosolic
	9	Regosolic Static Cryosolic

4.2.1.27. Soil Texture Percentage

Name	Soil Texture Percentage (SOIL_TEXTURE_PERCENT)
Definition	Specifies the percentage of the ecological framework area that is occupied by the soil texture component.
Aliases	
Producer	Agriculture and Agri-Food Canada, Government of Canada
Value Data Type	integer
Value Domain Type	0

4.2.1.28. Soil Texture Code

Name	Soil Texture Code (SOIL_TEXTURE_CODE)	
Definition	Specifies a code that describes the type of soil texture present in the component.	
Aliases		
Producer	Agriculture and Agri-Food Canada, Government of Canada	
Value Data Type	character	
Value Domain Type	1	
Feature Attribute Value:		
	Code	Definition
	CL	CLAY LOAM
	CY	CLAY
	LM	LOAM
	KLM	LOAM >35% Coarse Fragments
	SD	SAND
	KSD	SAND >35% Coarse Fragments
	SL	SANDY LOAM
	KSL	SANDY LOAM >35% Coarse fragments
	O	ORGANIC
	#	Not Applicable (water

4.2.1.29. Surface Material Percentage

Name	Surface Material Percentage (SURFACE_FORM_PERCENT)
Definition	Specifies the percentage of the ecological framework area that is occupied by the surface material component.
Aliases	
Producer	Agriculture and Agri-Food Canada, Government of Canada
Value Data Type	integer
Value Domain Type	0

4.2.1.30. Surface Material Code

Name	Surface Material Code (SURFACE_FORM_CODE)	
Definition	Local surface form	
Aliases		
Producer	Agriculture and Agri-Food Canada, Government of Canada	
Value Data Type	character	
Value Domain Type	1	
Value Domain		
Feature Attribute Value:		
	Code	Definition
	D	Dissected
	H	Hummocky
	I	Inclined
	L	Level
	O	Rolling
	R	Ridged
	S	Steep
	T	Terraced
	U	Undulating
	B	Bog
	F	Fen
	M	Marsh
	S	Swamp
	#	NOT APPLICABLE

4.2.1.31. Surface Form Percentage

Name	Surface Form Percentage (SURFACE_FORM_PERCENT)
Definition	Specifies the percentage of the ecological framework area that is occupied by the surface form component.
Aliases	
Producer	Agriculture and Agri-Food Canada, Government of Canada
Value Data Type	integer
Value Domain Type	0

4.2.1.32. Surface Form Code

Name	Surface Form Code (SURFACE_FORM_CODE)	
Definition	Specifies a code that corresponds to a surface form.	
Aliases		
Producer	Agriculture and Agri-Food Canada, Government of Canada	
Value Data Type	character	
Value Domain Type	1	
Feature Attribute Value:		
	Code	Definition
	IC	Ice and Snow
	OR	Organic Soil
	RK	Rock
	SO	Mineral Soil
	UR	Urban

5. REFERENCE SYSTEM**5.1. Spatial reference system**

Horizontal coordinate reference system: WGS 84

Map projection: Web Mercator Auxiliary Sphere; EPSG: 3857; Version 8.1.4

5.2. Temporal reference system

Gregorian calendar

6. DATA QUALITY

6.1. Completeness

6.2. Logical consistency

6.3. Positional accuracy

6.4. Temporal accuracy

6.5. Thematic accuracy

6.6. Lineage statement

6.6.1. National Ecological Framework for Canada

Lineage Statement	<p>The National Ecological Framework for Canada was developed between 1991 and 1999 by the Ecosystems Science Directorate of Environment Canada, and the Center for Land and Biological Resources Research, of Agriculture and Agri-Food Canada.</p> <p>The first report, A National Ecological Framework for Canada, was released in 1996 and focused on three priority levels of stratification: ecozones, ecoregions and ecodistricts. Subsequently, a number of new materials associated with the framework have been published providing broader, in-depth studies and data, ranging from provincial, through national, to North American continental perspectives.</p> <p>In 1999, a revised and expanded attribute database (the subject of the second report, National Ecological Framework for Canada: Attribute Data) replaced the earlier version (Selby and Santry, 1996). It includes attribute data for the ecoprovince level of generalization.</p>
Scope	Series (National Ecological Framework for Canada - Elevation)

6.6.2. National Ecological Framework for Canada - Elevation

Lineage Statement	<p>The series data is derived from the ETOPO5 5-minute gridded elevation data of the United States NOAA National Geophysical Data Center/World Data Center for Marine Geology and Geophysics.</p> <p>For a complete description of the original data source, visit http://www.ngdc.noaa.gov/mgg/global/etopo5.html.</p>
Scope	Series (National Ecological Framework for Canada - Elevation)

6.6.3. National Ecological Framework for Canada - Land Cover

Lineage Statement	<p>The landcover classes are based on the digital and hard-copy land cover maps of Canada produced by the Manitoba Remote Sensing Centre (MRSC) of the Surveys and Mapping Branch, Department of Natural Resources in 1992. The maps were produced through the classification of Advanced Very High Resolution Radiometer (AVHRR) United States National Oceanic and Atmospheric Administration (NOAA) satellite imagery. Imagery from several years (summer coverage, 1988-1991) was required to produce a cloud-free composite for the entire country that was suitable for classification and interpretation.</p>
Scope	Series (National Ecological Framework for Canada - Land Cover)

6.6.4. National Ecological Framework for Canada – Surficial Geology

Lineage Statement	<p>The extent and nature of the surficial materials in these datasets are derived from the Surficial Materials Map of Canada (Fulton, 1996). There are 24 types of materials. These datasets do not capture the linear features identified on the "Surficial Materials of Canada". The original source map identifies: the former Wisconsin and maximum glaciation ice-limits; general ice flow direction based on drumlins, fluting, etc.; areas of hummocky topography; end and interlobate moraines; and eskers. All are important characterizing features that contribute to the delineation of the ecological units in the national framework. A table on the back of the "Surficial Materials of Canada" map lists the sources of surficial materials maps in Canada through 1993.</p>
Scope	Series (National Ecological Framework for Canada - Surficial Geology)

7. DATA CAPTURE

Elevation

Data values are in whole meters, representing the elevation of the CENTER of each cell. Accuracy of the data is hard to define, due to the disparate sources of the data. In general, the data sets for the USA, Western Europe, Korea/Japan, Australia and New Zealand are the most precise, having a horizontal resolution of five minutes of latitude and longitude, and vertical resolution of 1 meter. Data for Africa, Asia, and South America vary in resolution from +/- a few meters to only representing every 150m (500 feet), depending on the available source data. Very little detail is contained in the oceanic data shallower than 200 m; the interpolation algorithm used by the US Navy to create the oceanic grid from contour charts was set to an arbitrary cut-off of -10m wherever the algorithm would have "overshot" and marked points as above sea level. An example of such an area is off Argentina, near 45S, 60W. All oceanic data are coded at least -1m; land data are at 0 or greater, except where lake bottoms or other landlocked features go below sea level (Dead Sea, Death Valley, and in central Australia).

Total Land and Water

Area values (in hectares) for terrestrial ecozones, ecoprovinces, ecoregions and ecodistricts of Canada have been calculated using a Lambert Equal Area projection hydrologic map coverage created by the Canadian Soil Information System (CanSIS), Research Branch, Agriculture and Agri-Food Canada. This hydrographic coverage represents land, freshwater, and marine water within Canada. This coverage was merged with the ecozone, ecoprovince, ecoregion and ecodistrict map polygons to provide land and freshwater area values for each. The standard of what does constitute the official land and freshwater area of Canada is described in Sebert and Munro (1972). Land and freshwater bounded by coastline are included. Bodies of freshwater shared by Canada and the USA, such as the Great Lakes and the St. Lawrence River are included to the international boundary. The mouth of the St. Lawrence River to the western tip of Anticosti Island is considered freshwater, as well as Bras d'Or Lake on Cape Breton Island, Nova Scotia. Lake Melville in Labrador is considered marine water.

The hydrographic coverage, which was derived from 1:1,000,000 scale source data (National Topographic Series), includes only relatively large water bodies. Most lakes included in this hydrographic coverage are greater than 1 square kilometer in size. There are a significant number of smaller lakes not included in the calculation of land and freshwater in this database. This results in a slight over-estimate of land area, and a serious under-estimate of the water area. In comparison with previously calculated national total for land and freshwater (9,970,610 km²) in the Canada Yearbook (Statistics Canada 1994), the CanSIS estimates of land area (9,948,445 km²) account for 101.4% of all land area in Canada, and 80.4% of all freshwater area in Canada. Pro-rating of these areas will not account for local variation in the density and distribution of small water bodies, and is not an accurate reflection of their natural distribution.

TOTAL_AREA, LAND_AREA, WATER_AREA fields were derived from the AREA_TOTAL, AREA_LAND and HYDRO_FRESH fields in the SLC v2.2 LAT table. There are some errors due to rounding, so the totals for the country are not consistent between the estimates in the SLC LAT and the Ecological Framework tables.

Land Cover

The land cover map of Canada project was conducted for the National Atlas Information Service (NAIS) of Energy, Mines and Resources Canada with the cooperation of the Petawawa National Forest Institute of Forestry Canada and the Canada Centre for Remote Sensing (Pokrant et. Al. 1991). Canadian Forest Inventory members from across Canada assisted in the review and revision process. Limitations of the approach include the level of accuracy of the data (maximum resolution of 1 km), timeframe to obtain cloud free scenes, and the limited number of cover categories that were identified. It proved to be a reliable source for mapping land cover at scales of 1:2 000 000 and 1:7.5 000 000.

Terrestrial Ecodistricts

When the ecodistricts were originally mapped, they were numbered consecutively from 1 to 1031. In the final review it was necessary to delete a total of ten ecodistricts. Rather than re-number all the ecodistricts, the ten unique numbers (172, 240, 330, 673, 719, 721, 722, 725, 842, and 845) were removed from the map and database.

Terrestrial Ecoregions

Although there are 194 named ecoregions, they are not all single contiguous map units. Ecoregion map unit polygons are numbered from 1 to 217. Eleven of the ecoregions consist of two or more non-contiguous map unit polygons. They include the following ecoregions:

Ellesmere and Devon Islands Ice Caps (1, 2,3,4)

Ellesmere Mountains (8, 10)

Northern Alberta Uplands (66, 67)

Kingurutik-Fraser Rivers (77, 81)

Mecatina River (80, 83, 86)

Long Range Mountains (108, 110, 111)

Mid Boreal Uplands (139, 140, 141, 144, 147, 150, 151, 152, 153, 154)

Western Alberta Upland (145, 146)

Aspen Parkland (156, 161)

Southwest Manitoba Uplands (163, 164)

Northern Coastal Mountains (185, 186)

The first number listed, in the brackets following the ecoregion name above is the identifying map unit number for the ecoregion in the supporting database. Only a single set of attribute characteristics is provided for the combined map unit polygons which comprise the ecoregion. The attribute characteristics for all the individual map unit polygons comprising the ecoregion can be obtained from the ecodistrict database files.

Terrestrial Ecozones

A range of stakeholders from federal, provincial, and territorial governments, environmental interest groups, and the private sector, were consulted to incorporate wherever possible, the most recent provincial ecological mapping products to provide seamless national coverage at each level. This involved correlating existing ecological maps and, where needed, revising maps. Regionalization was guided by the previous national terrestrial ecoregion map (Wiken et al. 1993), as well as by other published national map sources, such as the Ecoclimate Regions of Canada (Ecoregions Working Group 1989), and the Physiographic Regions of Canada (Bostock 1970). A pre-existing ecodistrict coverage (Environment Canada 1985), the Soil Landscapes of Canada series of 1:1 million scale soil maps (Shields et al. 1991), and the Northern Land Use Information Series of 1:250 000 scale maps (Environment Canada and Indian and Northern Affairs Canada 1978-1986) were used in delineating map units at the ecodistrict level of the framework.

Finally, the process included the use of LANDSAT imagery as a broad correlation tool to ensure that the defined biological and physical patterns of the landscape were consistently captured across boundaries and between provinces and territories, particularly in northern Canada where detailed ecological information was less available.

8. DATA MAINTENANCE

9. PORTRAYAL

Not applicable.

10. DATA PRODUCT DELIVERY

File Geodatabase

format name: Esri Geodatabase (File-based)
format version: 10.1
specification: A collection of various types of GIS datasets held in a file system folder.
(<http://arcgis.com>)
languages: eng
character set: utf8

CSV

format name: Comma Delimited
format version: 1.0
specification: A delimited data format that has fields/columns separated by the comma character
languages: eng
character set: utf8

11. METADATA

The metadata requirements follow the Government of Canada's Treasury Board Standard on Geospatial Data (ISO 19115).