Aboriginal Lands

Data Product Specifications

Edition 1.1

2010-04-01

Natural Resources Canada
Earth Sciences Sector
Surveyor General Branch
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RELEASE HISTORY

Date	Edition	Description
2009-04-27	1.0	Initial version
2009-10-31	1.0.1	Update to document version references
2010-04-01	1.1	Addition of Aboriginal Lands in NWT and Nunavut

These specifications are produced in accordance with *International Standard ISO/TC 211, 19131: 2007 Geographic Information / Geomatics – Data Product Specification*, which refers in particular to standard *ISO 19115: 2003 Geographic information – Metadata.*

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1 OVERVIEW

1.1 Title

Aboriginal Lands (AL)

1.2 Reference date

Data product specifications creation date:

2010-04-01

1.3 Responsible party

Natural Resources Canada
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1.4 Language

Languages in which the data product specifications are available in accordance with the ISO 639-3 standard:

eng – English

fra – French

1.5 Terms and definitions

Attribute:
Characteristic of a feature, for example, the name of an Aboriginal Land in English.

Class:
Description of a set of objects that share the same attributes, operations, methods, relationships, and semantics.

Feature:
Digital representation of a real world, geographic phenomenon.

Object:
An instance of a class.

Universal Unique Identifier (UUID)
The definition and method used for the generation of a Universal Unique Identifier is defined in the document *National Vector Data – Identification Rules* [pdf 63 KB].

1.6 Abbreviations and acronyms

AL	Aboriginal Lands
CLAB	Canada Lands Administrative Boundaries
CLSR	Canada Lands Survey Records
CRSID	Coordinate Reference System Identifier
CCOG	Canadian Council on Geomatics
GML	Geography Markup Language
GPS	Global Positioning System
IACG	Inter-Agency Committee on Geomatics
ID	Identifier
ISO	International Organization for Standardization
KML	Keyhole Markup Language
NAD83(CSRS)	North American Datum 1983 (Canadian Spatial Reference System)
NID	National Identifier
NRCan	Natural Resources Canada
OGC	Open Geospatial Consortium
SGB	Surveyor General Branch
TC	Technical Committee

1.7 Informal description of the data product

The Aboriginal Lands dataset depicts the administrative boundaries (exterior limits) of lands where the title has been vested in specific Aboriginal Groups of Canada or lands which were set aside for their exclusive benefit. The Aboriginal Lands (AL) dataset includes, but is not limited to, Indian Reserves, Cree-Naskapi Category 1A and 1A-N Lands, Yukon First Nation Settlement Lands, Kanesatake Mohawk Interim Land Base, the Inuit Owned Lands, Tlicho Lands, Inuvialuit Lands, Gwich'in Lands and Sahtu Lands. The AL product is distributed in the form of one Canadian or thirteen provincial or territorial datasets and consists of one polygon entity with associated attributes such as type of land, names in English, French and aboriginal language if available.

The Aboriginal Lands are created and maintained on a monthly basis by the Surveyor General Branch (SGB). The AL polygon entities are generated from the cadastral land parcels which form part of the Canada Lands Survey System and updated as new survey plans are recorded in the Canada Lands Survey Records (CLSR).

The AL conceptual model was based on the Canada Lands Administrative Boundaries (CLAB) Dataset formally found on GeoGratis and modified to conform to GeoBase Principles, Policies and Procedures. The AL Conceptual Data Model has been adopted by the Canadian Council on Geomatics (CCOG).

2 SPECIFICATION SCOPE

2.1 Scope identification

Global

2.2 Level

005 - dataset

2.3 Level name

AL

2.4 Extent

This section describes the spatial and temporal extent of the scope.

2.4.1 Description

Canadian landmass

2.4.2 Vertical extent

The AL data are two-dimensional. There is no elevation (z) associated with the data.

2.4.2.1 Minimum value

Not applicable

2.4.2.2 Maximum value

Not applicable

2.4.2.3 Unit of measure

Not applicable

2.4.2.4 Vertical datum

Not applicable

2.4.3 Horizontal extent

2.4.3.1 West bound longitude

-141.0

2.4.3.2 East bound longitude

-53.7

2.4.3.3 South bound latitude

42.4

2.4.3.4 North bound latitude

83.3

2.4.4 Temporal extent

2.4.4.1 Beginning date

2003-04-07

2.4.4.2 Ending date

Today

2.5 Coverage

Full extent

3 DATA PRODUCT IDENTIFICATION

3.1 Title

Aboriginal Lands

3.2 Alternate title

AL

3.3 Abstract

The Aboriginal Lands product consists of polygon entities that depict the administrative boundaries (extent) of lands where the title has been vested in specific Aboriginal Groups of Canada or lands which were set aside for their exclusive benefit. More specifically it includes the following lands:

Indian Reserves that include:

- Surrendered lands or a reserve, as defined in the *Indian Act*. This definition excludes Indian Settlements and Indian Communities.
- Sechelt lands, as defined in the *Sechelt Indian Band Self-Government Act*, chapter 27 of the Statutes of Canada, 1986.

Land Claim Settlement Lands - Lands created under Comprehensive Land Claims Process that do not or will not have Indian Reserve status under the Indian Act. They include:

- Category IA land or Category IA-N land, as defined in the *Cree-Naskapi (of Quebec) Act*, chapter 18 of the Statutes of Canada, 1984. Category 1B and category II Lands are excluded from this definition.
- Settlement land, as defined in the *Yukon First Nations Self-Government Act*, and lands in which an interest is transferred or recognized under section 21 of that Act. Only Yukon First Nations Settlement Lands, which were surveyed and the survey plan recorded, are included in the dataset.
- Inuit Owned Lands (IOL) as defined in the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada* given effect and declared valid by the *Nunavut Land Claims Agreement Act.* It includes all parcels that have been surveyed and those that do not require a survey (this includes the islands). Survey plans may not all be recorded in the CLSR at this time.
- Gwich'in Lands as defined in the *Gwich'in Comprehensive Land Claim Agreement,* given effect and declared valid by the *Gwich'in Land Claim Settlement Act*.
- Inuvialuit Lands as defined in the *Western Arctic (Inuvialuit) Claims Settlement Act.*
- Sahtu Lands as defined in *The Sahtu Dene and Métis Comprehensive Land Claim Agreement* given effect and declared valid by the *Sahtu Dene and Métis Land Claim Settlement Act.* All parcels are included but not all survey plans are recorded in the CLSR at this time.
- Tlicho lands, as defined in the Tlicho Agreement, given effect and declared valid by the Tlicho Land Claims and Self-Government Act.

Indian Lands that include:

- Lands in the Kanesatake Mohawk interim land base, as defined in the *Kanesatake Interim Land Base Governance Act*, other than the lands known as Doncaster Reserve No. 17.

3.4 Purpose

Provide a national coverage and promote the use of a common geometric representation for Aboriginal Lands in Canada. This data set is not to be used for defining boundaries. Administrative decisions should be based on legal documents and legal survey plans.

3.5 Topic category

Main topics for the product, as defined by the ISO 19115 standard:

003 - boundaries

3.6 Spatial representation type

Type of spatial representation for the product, as defined by the ISO 19115 standard:

001 - vector

3.7 Spatial resolution

Spatial resolution denominators of the data:

10 000 – 250 000

The spatial resolution varies greatly as data originate from survey plans at various scales which describe small details as well as large tracts of lands.

3.8 Geographic description

3.8.1 Authority

International Organization for Standardization (ISO)

3.8.1.1 Title

Standard of the code of geographical regions:

ISO 3166-1:1997 Codes for the representation of names of countries and their subdivisions – Part 1: Country codes.

3.8.1.2 Date

Reference date of the ISO 3166-1 standard:

1997-10-01

3.8.1.3 Date type code

Type of date according to ISO 19115 standard:

002 – publication

3.8.2 Code

Code of the geographical region covered by the product according to the ISO 3166-1 standard:

CA – Canada

3.8.3 Extent type code

Type of code of the delimitation polygon of the extent according to the ISO 19115 standard:

1 – inclusion

3.9 Reference to specification scope

Global

4 DATA CONTENT AND STRUCTURE

4.1 Description

The AL product is distributed in the form of a single national dataset or thirteen provincial and territorial datasets and consists of polygonal entities with which are associated a series of descriptive attributes such as, land type, absolute accuracy, French, English and aboriginal names.

4.2 Feature information

4.2.1 Application schema

The conceptual model of the AL data is presented in the document *Aboriginal Lands: Conceptual Data Model – Edition 1.0.1* [pdf 37 KB].

For the Object Metadata, the conceptual model includes a creation date (*creationDate*) and a revision date (*revisionDate*). If a revision date is provided, the object metadata pertains to the modification made to the object and no longer to the creation of the object. In this case, only the creation date pertains to the original version of the object.

4.2.2 Feature catalogue

The feature catalogue entitled *Aboriginal Lands: Feature Catalogue – Edition 1.0.1* [pdf 88 KB].

4.3 Reference to specification scope

Global

5 REFERENCE SYSTEMS

5.1 Spatial reference system

Spatial data are expressed in latitude (φ) and longitude (λ) geographic coordinates in reference to the North American Datum 1983 Canadian Spatial Reference System (NAD83(CSRS)). The longitude is stored as a negative number to represent a position west of the prime meridian (0°). Coordinates measuring unit is the degree expressed as a 7-decimal real value.

5.1.1 Authority

5.1.1.1 Title

Coordinate reference system registry:

EPSG Geodetic Parameter Dataset

5.1.1.2 Date

Reference Date:

2007-02-08

5.1.1.3 Date type code

Date type according to ISO 19115 standard:

002 - publication

5.1.1.4 Responsible party

OGP – International Organization of Oil and Gas Producers
URL: http://www.epsg.org

5.1.2 Code

Coordinate reference system identifier (CRSID):

4617

5.1.3 Code space

EPSG - European Petroleum Survey Group

5.1.4 Version

6.12

5.2 Reference to specification scope

Global

6 DATA QUALITY

6.1 Completeness

The AL product does not include all Aboriginal Lands in Canada. Refer to the abstract (Section 3.3) to get a description of the specific Aboriginal Lands that are included in the AL product.

Commissions and omissions indicated below specifically apply to the Aboriginal Lands as described in the AL abstract (Section 3.3 in this document).

6.1.1 Commissions

No commissions are identified for the AL dataset. If any commissions arise, they will be indicated in the metadata file distributed with each AL dataset.

6.1.2 Omissions

Indian Reserves:

Some Indian Reserves may be missing from the AL dataset. Omissions are indicated in the metadata file included with each AL dataset.

Land Claim Settlement Lands:

Please note that, although not considered an omission as per section 3.3, the Yukon First Nations Settlement Lands, which are not surveyed or the survey plan not recorded in the Canada Lands Survey Records, are not included in the AL dataset.

6.2 Logical consistency

6.2.1 Conceptual consistency

The conceptual model of the AL data is presented in the document *Aboriginal Lands: Conceptual Data Model – Edition 1.0.1* [pdf 88 KB].

The physical implementation of the AL product is consistent with the conceptual model.

6.2.2 Domain consistency

The attribute values are validated against a list of authorized domain values defined in the feature catalogue.

6.2.3 Format consistency

The AL data formats conform to the distribution formats described in the document *Aboriginal Lands: Product Distribution Formats – Edition 1.1* [pdf 89 KB].

6.2.4 Topological consistency

Validation routines are performed on the source data to identify overlaps.

Naongashing Indian Reserve No. 31A and Naongashing Indian Reserve No. 35A overlap each other. Each Indian Reserve is made of 50% of the land described.

Aboriginal Lands which overlap provincial or territorial boundaries are included in both provincial and territorial dataset. Therefore, if provincial or territorial datasets are downloaded, it is possible that the same First Nation or Aboriginal land may be duplicated.

6.3 Positional accuracy

6.3.1 Absolute external positional accuracy

The absolute external positional accuracy of objects is given as the difference between objects position in the dataset and their real ground positions measured in reference to the coordinate reference system. The accuracy may vary from one object to another. It is thus provided as an attribute with each object occurrence and is expressed in metres at the 95% confidence level.

The absolute positional accuracy is dependent on the absolute accuracy of the known point(s) used as control point(s) to derive the coordinates of the local survey and the relative accuracy of the connection(s) to these known point(s). Each AL is derived by dissolving the interior boundaries of the surveyed parcels comprising the AL object. The accuracy value provided is an estimate determined using the accuracies of the various component parts, with the following exception. AL objects are often made of rectilinear and natural boundaries. The positional accuracy is typically determined using accuracy estimates of the rectilinear boundaries only. Therefore, the positional accuracy as specified in the metadata applies to the rectilinear boundaries and not to the natural boundaries.

The reason for applying the positional accuracy on rectilinear boundaries only is due to the fact that natural boundaries are formed by natural features such as bank stream, ordinary high water mark (O.H.M.W.), etc. The action of accretion and erosion plays a big role in the definition and the localisation

of the boundary. The exact positioning of the boundary is prone to move with time (without affecting the riparian rights)

Another reason is that there are many methods of determining a natural boundary. The method of choice is to survey the natural boundary. However this method is sometimes not possible or practical and other methods of showing a natural boundary are used. For example, all natural boundaries of Inuit Owned Lands in Nunavut were copied from the National Topographic Data Base at a scale of 1:250 000 (the only mapping sources at the time) and may show discrepancies from 10 to 500 meters.

The accuracy aimed for the AL product is 30 m or better. Nevertheless, four cases occur when assessing the positional accuracy of AL objects.

Case 1 – Coordinate geometry was used to define the position of all surveyed points relative to the control points. Positional accuracy of the control points in reference to NAD83(CSRS) is known through GPS observations documented on survey plans or reports recorded in the Canada Lands Survey Records. Absolute external positional accuracy of AL objects positioned using this method is usually better than 2 m.

Case 2 – Coordinate geometry was used to define the position of all surveyed points relative to the control points. Positional accuracy of the control points in reference to NAD83(CSRS) is not well established. For example, the source provider does not specify the accuracy in reference to NAD83(CSRS) and/or it was required to convert the coordinates of the control point to NAD83(CSRS) using various methods. Absolute external positional accuracy of AL objects positioned using this method is usually between 2 m and 10 m.

Case 3 – Coordinate geometry was used to define the relative position of all surveyed points. Absolute external positional accuracy of AL objects is established using sources other than control points such as mapping, satellite imagery or aerial photography. Absolute external positional accuracy of AL objects positioned using this method is usually between 10 m and 100 m.

Case 4 – External positional accuracy of AL objects cannot be determined, as it is not possible to establish with enough certainty the position of the AL object in reference to a NAD83(CSRS) source. This is the case at times with old survey plans, even if coordinate geometry methods are used to establish relative position. Absolute external positional accuracy of AL objects positioned using this method is usually set to “Unknown” (-1).

Under the current data maintenance strategy, no systematic validation of the positional accuracy is performed on all Aboriginal Lands. Positional accuracy issues are fixed as they are identified or when better accuracy information becomes available.

6.3.2 Relative internal positional accuracy

Unknown

6.4 Temporal accuracy

6.4.1 Accuracy of a time measurement

Not applicable

6.4.2 Temporal consistency

Not applicable

6.4.3 Temporal validity

Not applicable

6.5 Thematic accuracy

6.5.1 Thematic classification correctness

Unknown

6.5.2 Non quantitative attribute accuracy

There is no systematic validation of non quantitative attributes. Attribute issues are resolved as they are identified and reported.

6.5.3 Quantitative attribute accuracy

Not applicable

6.6 Reference to specification scope

Global

7 DATA CAPTURE

7.1 Description

For Indian Reserves, Land Claim Settlement Lands and Indian Lands, the AL polygon is generated by dissolving the cadastral land parcels associated with each specific AL object. Using this approach, parcels such as rights of way and parcels which do not form part of the AL are excluded. The source cadastral parcels are compiled from survey plans recorded in the Canada Lands Survey Records. The accuracy of each AL object is thus a function of the accuracy of the constituent parcels as described in Section 6.3.1.

7.2 Reference to the specification scope

Global

8 DATA MAINTENANCE

8.1 Description

Aboriginal Lands defined as Indian Reserves, Land Claim Settlement Lands and Indian Lands are maintained by Natural Resources Canada on a monthly basis. Changes to the extent of AL are the result of additions, surrenders and comprehensive land claim agreements, as well as accuracy improvement resulting from new cadastral surveys. From time to time, names of specific AL may also change.

Revision to the AL is performed the same way as the original creation, meaning that the polygon is generated by dissolving the cadastral parcels associated with the specific AL.

In order to help AL data users in their management of the various update releases, updates are packaged and distributed by change effects (addition, retirement, modification, confirmation). By proceeding in this fashion, identification rules as well as methods for classifying the modifications are established.

Identification rules on how to identify entity occurrences unequivocally are defined in the document entitled National Vector Data – Identification Rules [pdf 63 KB]. Further details on change management are available in the National Vector Data Change Management, Version 3.0, published under the Aboriginal Lands product. The methods for classifying updates by change effects (addition, retirement, modification and confirmation) are defined in the document. Of the various strategies that are defined for describing geometric modifications in that document, the fourth method pertains to AL data.

8.2 Reference to specification scope

Global

9 DATA PRODUCT DELIVERY

9.1 Delivery format information, GML

9.1.1 Format name

GML – Geography Markup Language

9.1.2 Version

2.1.2

9.1.3 Specification

Geography Markup Language – GML – 2.1.2, OpenGIS® Implementation Specifications, 17 September 2002, OGC Document Number 02-069 (http://portal.opengeospatial.org/files/?artifact_id=11339)

9.1.4 Language

Products are available in the following languages, with the codes as defined by ISO 639-3:

eng – English

fra – French

9.1.5 Character set

The character set is specified in ISO 10646:2003, including amendments 1 through 6. This includes the Unified Canadian Aboriginal Syllabic characters specified in Unicode version 5.2. The encoding of the characters is UTF-8 (8-bit Universal Character Set / Unicode Transformation Format).

9.2 Delivery format information, KML

9.2.1 Format name

KML – Keyhole Markup Language

9.2.2 Version

2.1

9.2.3 Specification

Open Geospatial Consortium Inc., KML 2.1 Reference – An OGC Best Practice, Version 0.0.9, 2007-05-02, Reference number of this OGC® project document: OGC 07-039r1 (http://www.opengeospatial.org/standards/bp)

9.2.4 Language

Products are available in the following languages, with the codes as defined by ISO 639-3:

eng – English

fra – French

9.2.5 Character set

The character set is specified in ISO 10646:2003, including amendments 1 through 6. This includes the Unified Canadian Aboriginal Syllabic characters specified in Unicode version 5.2. The encoding of the characters is UTF-8 (8-bit Universal Character Set / Unicode Transformation Format).

9.3 Delivery format information, Shapefile

9.3.1 Format name

Shapefile – ESRI™

9.3.2 Version

01

9.3.3 Specification

ESRI Shapefile Technical Description, an ESRI White Paper, July 1998 (http://www.esri.com/library/whitepapers/pdfs/shapefile.pdf)

9.3.4 Language

Products are available in the following languages, with the codes as defined by ISO 639-3:

eng – English

fra – French

9.3.5 Character set

The character set is specified in ISO 10646:2003, including amendments 1 through 6. This includes the Unified Canadian Aboriginal Syllabic characters specified in Unicode version 5.2. The encoding of the characters is UTF-8 (8-bit Universal Character Set / Unicode Transformation Format).

ESRI provides guidance on reading shapefiles with UTF-8 encoding in ArcSDE and ArcGIS

9.4 Delivery medium information

9.4.1 Units of delivery

National or Canadian Province/Territory

9.4.2 Medium

Data are available for ftp or http download on the GeoBase portal (http://www.GeoGratis.ca).

9.4.3 Other delivery information

The name of the files, entities and attributes are described in the document *Aboriginal Lands: Product Distribution Formats – Edition 1.1* [pdf 89 KB].

Use of the GeoBase data is subject to the Open Government Licence – Canada.

9.5 Reference to specification scope

Global

10 METADATA

10.1 Reference to specification scope

Global