

CGKN Data Catalogue FGDC Metadata Profile

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Derived from the Content Standard for Digital Geospatial Metadata, Federal Geographic Data Committee, FGDC-STD-001-1998.

Prepared by: The CGKN Data Catalogue Working Group

Introduction

It has been agreed, by Canadian government geological surveys, that the Canadian Geoscience Knowledge Network (CGKN) should be developed to provide a single Internet portal to their geoscience knowledge and integrate into the Canadian Geospatial Data infrastructure. The first priorities for CGKN development are a catalogue containing consistent metacontent describing all government geoscience data and implementation of an Internet search engine. The search engine will allow discovery of data and publications based on a user-specified text or geographical search and direct the user to the source of the data. Efficient access to information describing available government data will be a valuable service to support the exploration for mineral resources in Canada.

In order to collect and share the information that will be in this catalogue, a consistent set of information must be collected. This set of information is what we are calling a profile and it is derived from the Federal Geographic Data Committee's Content Standard for Geospatial Metadata. This document describes a minimum set of mandatory information fields and a set of desirable information fields that will allow the discovery of geoscience information. The adoption of this profile does not limit the implementation of more of the FGDC information fields.

Conventions:

Calendar Dates (Years, Months, and Days)

- A.D. Era to December 31, 9999 A.D. -- Values for day and month of year, and for years, shall follow the calendar date convention (general forms of YYYY for years; YYYYMM for month of a year (with month being expressed as an integer), and YYYYMMDD for a day of the year) specified in American National Standards Institute, 1986, Representation for calendar date and ordinal date for information interchange (ANSI X3.30-1985): New York, American National Standards Institute (adopted as Federal Information Processing Standard 4-1).
- B.C. Era to 9999 B.C. -- Values for day and month of year, and for years, shall follow the calendardate convention, preceded by the lower case letters "bc" (general forms of bcYYYY for years; bcYYYYMM for month of a year (with month being expressed as an integer), and bcYYYYMMDD for a day of the year).
- B.C. Era before 9999 B.C. -- Values for the year shall consist of as many numeric characters as needed to represent the number of the year B.C., preceded by lower case letters "cc" (general form of ccYYYYYYY...).
- A.D. Era after 9999 A.D. -- Values for the year shall consist of as many numeric characters as needed to represent number of the year A.D., preceded by the lower case letters "cd" (general form of cdYYYYYYY...).

Time of Day (Hours, Minutes, and Seconds)

Because some geospatial data and related applications are sensitive to time of day information, three conventions are permitted. Only one convention shall be used for metadata for a data set. The conventions are:

- Local Time. For producers who wish to record time in local time, values shall follow the 24-hour timekeeping system for local time of day in the hours, minutes, seconds, and decimal fractions of a second (to the precision desired) without separators convention (general form of HHMMSSSS) specified in American National Standards Institute, 1986, Representations of local time of day for information interchange (ANSI X3.43-1986): New York, American National Standards Institute.
- Local Time with Time Differential Factor. For producers who wish to record time in local time and the relationship to Universal Time (Greenwich Mean Time), values shall follow the 24-hour timekeeping system for local time of day in hours, minutes, seconds, and decimal fractions of a second (to the resolution desired) without separators convention. This value shall be followed, without separators, by the time differential factor. The time differential factor expresses the difference in hours and minutes between local time and Universal Time. It is represented by a four-digit number preceded by a plus sign (+) or minus sign (-), indicating hours and minutes local time is ahead of or behind Universal Time, respectively. The general form is HHMMSSSSshhmm, where HHMMSSSS is the local time using 24-hour timekeeping (expressed to the precision desired), 's' is the plus or minus sign for the time differential factor, and hhmm is the time differential factor. (This option allows producers to record local time and time zone information. For example, Eastern Standard Time has a time differential factor of -0500, Central Standard Time has a time differential factor of -0600, Eastern Daylight Time has a time differential factor of -0400, and Central Daylight Time has a time differential factor of -0500.) This option is specified in American National Standards Institute, 1975, Representations of universal time, local time differentials, and United States time zone reference for information interchange (ANSI X3.51-1975): New York, American National Standards Institute.
- Universal Time (Greenwich Mean Time). For producers who wish to record time in Universal Time (Greenwich Mean Time), values shall follow the 24-hour timekeeping system for Universal Time of day in hours, minutes, seconds, and decimal fractions of a second (expressed to the precision desired) without separators convention, with the upper case letter "Z" directly following the low-order (or extreme right hand) time element of the 24-hour clock time expression. The general form is HHMMSSSSZ, where HHMMSSSS is Universal Time using 24-hour timekeeping, and Z is the letter "Z". This option is specified in American National Standards Institute, 1975, Representations of universal time, local time differentials, and United States time zone reference for information interchange (ANSI X3.51-1975): New York, American National Standards Institute.

Latitude and Longitude

Values for latitude and longitude shall be expressed as decimal fractions of degrees. Whole degrees of latitude shall be represented by a two-digit decimal number ranging from 0 through 90. Whole degrees of longitude shall be represented by a three-digit decimal number ranging from 0 through 180. When a decimal fraction of a degree is specified, it shall be separated from the whole number of degrees by a decimal point. Decimal fractions of a degree may be expressed to the precision desired.

- Latitudes north of the equator shall be specified by a plus sign (+), or by the absence of a minus sign (-), preceding the two digits designating degrees. Latitudes south of the Equator shall be designated by a minus sign (-) preceding the two digits designating degrees. A point on the Equator shall be assigned to the Northern Hemisphere.
- Longitudes east of the prime meridian shall be specified by a plus sign (+), or by the absence of a minus sign (-), preceding the three digits designating degrees of longitude. Longitudes west of the meridian shall be designated by minus sign (-) preceding the three digits designating degrees. A point on the prime meridian shall be assigned to the Eastern Hemisphere. A point on the 180th meridian shall be assigned to the Western Hemisphere. One exception to this last convention is permitted. For the special condition of describing a band of

latitude around the earth, the East Bounding Coordinate data element shall be assigned the value +180 (180) degrees.

- Any spatial address with a latitude of +90 (90) or -90 degrees will specify the position at the North or South Pole, respectively. The component for longitude may have any legal value.

With the exception of the special condition described above, this form is specified in American National Standards Institute, 1986, Representations of Geographic Point Locations for Information Interchange (ANSI X3.61-1986): New York, American National Standards Institute.

Network Addresses and File Names

Values for file names, network addresses for computer systems, and related services should follow the Uniform Resource Locator convention of the Internet when possible. See <http://www.ncsa.uiuc.edu/demoweb/url-primer.html> for additional details about the Uniform Resource Locator.

Production Rules

A production rule specifies the relationship between a compound element, and data elements and other (lower-level) compound elements. Each production rule has a left side (identifier) and a right side (expression) connected by the symbol "=", meaning that the term on the left side is replaced by or produces the term on the right side. Terms on the right side are either other compound elements or individual data elements. By making substitutions using matching terms in the production rules, one can explain higher-level concepts using data elements. The symbols used in the production rules have the following meaning:

Symbol Meaning

= is replaced by, produces, consists of

+ and

[] selection - select one term from the list of enclosed terms (exclusive or).

Terms are separated by "|"

m{n} iteration - the term(s) enclosed is(are) repeated from "m" to "n" times

() optional - the term(s) enclosed is(are) optional

Examples:

a = b + c

"a consists of b and c"

a = [b | c]

"a consists of one of b or c"

a = 4{b}6

"a consists of four to six occurrences of b"

a = b + (c)

"a consists of b and optionally c"

CGKN Metadata Profile

The CGKN Metadata Profile is a subset of the FGDC Standard for Digital Metadata. This subset contains mandatory fields, indicated by **bold** print, as well as desirable fields.

1) Identification Information

FGDC Ref. #	Element	Definition
8.4	Title	the name by which the data set is known.
8.1	1 { Originator }n	the name of an organization or individual that developed the data set. If the name of editors or compilers are provided, the name must be followed by "(ed.)" or "(comp.)" respectively.
8.2	Publication_Date	the date when the data set is published or otherwise made available for release.
8.5	0 {Edition} 1	the version of the title.
8.6	0 {Geospatial_Data_Presentation_Form} 1	the mode in which the geospatial data are represented. One of: "atlas" "audio" "diagram" "document" "globe" "map" "model" "multimedia presentation" "profile" "raster digital data" "remote-sensing image" "section" "spreadsheet" "tabular digital data" "vector digital data" "video" "view" free text
8.7	0 {Series_Information} 1 = Series_Name + Issue_Identification	
8.7.1	Series_Name	the name of the series publication of which the data set is a part.
8.7.2	Issue_Identification	information identifying the issue of the series publication of which the data set is a part.
8.8	0 {Publication_Information} 1 = Publication_Place + Publisher	
8.8.1	Publication_Place	the name of the city (and state or province, and country, if needed to identify the city) where the data set was published or released.
8.8.2	Publisher	the name of the individual or organization that published the data set.
8.9	0 {Other_Citation_Details} 1	other information required to complete the citation
8.10	0 {Online_Linkage}n	the name of an online computer resource that contains the data set. Entries should follow the Uniform Resource Locator convention of the Internet.
8.11	0 {Larger_Work_Citation} 1	the information identifying a larger work in which the data set is included.

1.2.1	Abstract	a brief narrative summary of the data set.
1.2.2	Purpose	a summary of the intentions with which the data set was developed
1.2.3	Supplemental_Information	Other descriptive information about the data set but must contain the language of the data set. “In English”, “In French”, “In English & French”
9.3.1	Beginning_Date	the first year (and optionally month, or month and day) of the event.
9.3.3	Ending_Date	the last year (and optionally month, or month and day) for the event.
1.4.1	Progress	the state of the data set. "Complete" "In work" "Planned"
1.4.2	Maintenance_and_Update_Frequency	the frequency with which changes and additions are made to the data set after the initial data set is completed. "Continually" "Daily" "Weekly" "Monthly" "Annually" "Unknown" "As needed" "Irregular" "None planned" free text
1.5.1	Bounding_Coordinates = West_Bounding_Coordinate + East_Bounding_Coordinate + North_Bounding_Coordinate + South_Bounding_Coordinate	
1.5.1.1	West_Bounding_Coordinate	western-most coordinate of the limit of coverage expressed in longitude.
1.5.1.2	East_Bounding_Coordinate	eastern-most coordinate of the limit of coverage expressed in longitude.
1.5.1.3	North_Bounding_Coordinate	northern-most coordinate of the limit of coverage expressed in latitude.
1.5.1.4	South_Bounding_Coordinate	southern-most coordinate of the limit of coverage expressed in latitude.
1.5.2	(0{Data_Set_G-Polygon}n) = Data_Set_G-Polygon_Outer_G-Ring + 0{Data_Set_G-Polygon_Exclusion_G=Ring}n	polygon of longitude, latitude pairs that describe the area of coverage
1.5.2.1	Data_Set_G-Polygon_Outer_G-Ring = 4{G-Ring_Point}n	
1.5.2.2	Data_Set_G-Polygon_Exclusion_G-Ring = 4{G-Ring_Point}n	
1.5.2.1.1	G-Ring_Point = G-Ring_Longitude + G-Ring_Latitude	
1.6.1.2	1{ Theme Keyword }n	common-use word or phrase used to describe the subject

		of the data set.
1.6.1.1	Theme_Keyword_Thesaurus	reference to a formally registered thesaurus or a similar authoritative source of theme keywords.
1.6.2.2	1{ Place_Keyword }n	the geographic name of a location covered by a data set.
1.6.2.1	Place_Keyword_Thesaurus	reference to a formally registered thesaurus or a similar authoritative source of place keywords.
1.8	Use_Constraints -	restrictions and legal prerequisites for using the data set after access is granted. These include any use constraints applied to assure the protection of privacy or intellectual property, and any special restrictions or limitations on using the data set. "none" or free text.
1.10	0{Browse_Graphic}n = Browse_Graphic_File_Name + (Browse_Graphic_File_Description + Browse_Graphic_File_Type)	
1.10.1	Browse_Graphic_File_Name	name of a related graphic file that provides an illustration of the data set.
1.10.2	Browse_Graphic_File_Description	a text description of the illustration.
1.10.3	Browse_Graphic_File_Type	graphic file type of a related graphic file. "CGM" Computer Graphics Metafile "EPS" Encapsulated Postscript format "EMF" Enhanced Metafile "GIF" Graphic Interchange Format "JPEG" Joint Photographic Experts Group format "PBM" Portable Bit Map format "PS" Postscript format "TIFF" Tagged Image File Format "WMF" Windows metafile "XWD" X-Windows Dump "PNG" Portable Network Graphic
6.4.3	Fees	the fees and terms for retrieving the data set.

2) Contact Information

FGDC Ref. #	Element	Definition
1.9	Point_of_Contact = Contact_Information	contact information for an individual or organization that is knowledgeable about the data set.
6.1	Distributor = Contact_Information	contact information for an individual or organization that is responsible for the distribution of the data set
7.4	Metadata_Contact = Contact_Information	contact information for an individual or organization that is responsible for the metadata.
10	Contact_Information = Contact_Person + Contact_organization + Address_Type + 0{Address}n + City + State_or_Province + Postal_Code + Country + Contact_Voice_Telephone + Contact_Facsimile_Telephone + Contact_Electronic_Mail_Address	
10.1.1	Contact_Person	the name of the individual to which the contact type applies.
10.1.2	Contact_Organization	the name of the organization to which the contact type applies.
10.4.1	Address_Type	the information provided by the address. "mailing" "physical" "mailing and physical", free text
10.4.2	Address	an address line for the address.
10.4.3	City	the city of the address.
10.4.4	State_or_Province	the province of the address.
10.4.5	Postal_Code	the postal code of the address.
10.4.6	Country	the country of the address.
10.5	Contact_Voice_Telephone	the telephone number by which individuals can speak to the organization or individual.
10.7	Contact_Facsimile_Telephone	the telephone number of a facsimile machine of the organization or individual.
10.8	Contact_Electronic_Mail_Address	the address of the electronic mailbox of the organization or individual.

3) Metadata Reference Information

FGDC Ref. #	Element	Definition
7.3	Metadata_Future_Review_Date	the date to review the metadata for content relevance.
7.1	Metadata_Date	the date that the metadata was created or last updated.