National Hydro Network

NHN Distribution Profile Deviations

Edition 1.1

2010-11-18

Gouvernement du Canada
Ressources naturelles Canada
Centre canadien de la cartographie et d'observation de la Terre

Service à la clientèle de GéoGratis
Téléphone : +01-819-564-4857
1-800-661-2638 (Canada et États-Unis)
Télécopieur : +01-819-564-5698
Courriel : geoginfo@RNCan.gc.ca
URL : www.GeoGratis.gc.ca

Canada

RELEASES HISTORY

edition	Section	Description
1.1	Document	Revision of the use of the *italic* form instead of quotation marks (« ») Substitution of the term “initial NHN data model” by “NHN conceptual model” Substitution of the term “GeoBase portal” by “GeoBase Web portal”
1.1	1	Text reformulation
1.1	2	New section
1.1	3	Deletion of the deviation table Text reformulation and update
1.1	3	Sub-sections renumbering
1.1	3.2	Reformulation of the section and its sub-sections
1.1	3.4	Addition of a precision on the use of the sub-sections
1.1	3.4.1	Title reformulation Text reformulation and update
1.1	3.4.2	Title reformulation Text reformulation and update
1.1	3.5	New section
1.1	3.6	Text reformulation
1.1	3.7	Text reformulation Text simplification for each sub-section

TABLE OF CONTENTS

1 CONTEXT

NHN data available on the GeoBase Web portal according to the NHN Distribution Profile present some deviations (differences) compared with the NHN conceptual data model (hereafter called "NHN conceptual model"). To consult the NHN conceptual model please refer to the *National Hydro Network, Canada, Level 1, Data Model, Edition 1.0, 2004-08* document available on the GeoBase Web portal.

2 REFERENCES

NHN conceptual model	http://www.geobase.ca/doc/specs/pdf/GeoBase_NHNC1_Data_Model_UML_EN.pdf
GeoBase Web Portal	www.geobase.ca
Feature Catalogue, Distribution Profil	http://www.geobase.ca/doc/catalogue/GeoBase_NHN_Catalogue_1.0.1_EN.html
Product Distribution Formats	http://www.geobase.ca/doc/specs/pdf/GeoBase_NHN_Formats_EN.pdf

3 NHN DISTRIBUTION PROFILE DEVIATIONS

The differences or deviations described below apply to all NHN datasets, whether were produced using provincial hydro data or topographic data from Natural Resources Canada (NRCan), this regardless of their completeness level (NHN-CL1, NHN-CL2, NHN-CL3 or NHN-CL4).

3.1 Absence of the *Coastline* Feature

NHN data does not contain the *Coastline* feature initially present in the *Hydrographic* package. Instead, only the *Littoral* feature from the *Hydro Network* package is provided, which is anyway geometrically identical to the *Coastline* feature from the NHN conceptual model.

3.2 Absence of the *Metadata* Package

The NHN conceptual model contains five packages, namely: *Hydro Network*, *Hydrographic*, *Hydro Events*, *Toponymy* and *Metadata*. NHN data features offered on the GeoBase Web portal are however grouped in four packages, that is to say: *Hydro Network*, *Hydrographic*, *Hydro Events* and *Toponymy*. The *Metadata* package, as described in the NHN conceptual model, was put aside. It was replaced by dataset metadata and additional object metadata attributes to NHN features, as described hereafter.

3.2.1 *Polygon Metadata* and *Concerned Features* Features

The *Concerned Features* and *Polygon Metadata* features described in the NHN conceptual model are excluded from NHN data offered on the GeoBase Web portal. The information these features were to carry is essentially found in FGDC (*Federal Geographic Data Committee, USA*) dataset metadata files accompanying each NHN data files.

3.2.2 *Creation Metadata* and *Revision Metadata* Features

The *Creation Metadata* and *Revision Metadata* features described in the NHN conceptual model are not part of NHN data offered on the GeoBase Web portal. Instead, this information is provided in the form of attributes common to all NHN features. For more information, refer to the *Object Metadata Attributes* section in the *National Hydro Network, Feature Catalogue, Distribution Profile, Edition 1.0, 2007-06-01* document available on the GeoBase Web portal.

3.3 Simplification of the Toponymy Package

The Toponymy package described in the NHN conceptual model contains geometric features (with a geometric component), namely the *Named Line Feature*, *Named Point Feature* and *Named Polygon Feature*, as well as non geometric features (without a geometric component), namely the *Toponymy Collection* and *Hydro Traversal* features. In this model, the latter two are associated to NHN geometric features through explicit associations or definition relationships. In order to simplify access to toponymic information, the model was denormalized. It led to the addition of toponymic attributes directly to NHN features. The *Toponymy* package, as described in the NHN conceptual model, was thus partially put aside. The *Named Feature* (point, line and polygon) feature has remained, but not the *Toponymy Collection* and *Hydro Traversal* features.

3.3.1 *Toponymy Collection* and *Hydro Traversal* Features

The *Toponymy Collection* and *Hydro Traversal* features described in the NHN conceptual model are not part of NHN data offered on the GeoBase Web portal. Instead, this information is provided in the form of toponymic attributes added to NHN features. For more information, please refer to the document *National Hydro Network, Feature Catalogue, Distribution Profile, Edition 1.0, 2007-06-01* document available on the GeoBase Web portal.

3.4 Addition of the *NHN Work Unit Limit* Feature

NHN datasets contain an additonnal feature provided with the data, namely, the *NHN Work Unit Limit*. This feature delimits the extent of the NHN dataset drainage area in which NHN data are located. Strictly speaking, this feature is not -a NHN feature, since it is not part of the NHN conceptual model. The following sub-sections provide some precisions on the delineation of *NHN Work Unit Limits* and do not constitute NHN Standard deviations.

3.4.1 NHN Work Units temporarily delineated by an Interprovincial/Territorial Boundary

Generally, the limits of a drainage area obey the logic of flowing water and are normally independent from frontiers and geopolitical or administrative boundaries. However, in some circumstances NHN Work Unit (WU) Limits may end at an interprovincial/territorial boundary. This is a temporary situation in the creation of the NHN in Canada. It occurs generally following the production of NHN data from provincial hydro data where the WU only covers a territory of the said province. Eventually, a fusion process will be implemented to join together WU limits and NHN data from both sides of an interprovincial/territorial boundary to create complete and continuous drainage areas.

3.4.2 NHN Work Units naturally delineated by a an Interprovincial Boundary

Some interprovincial boundaries are defined by a line representing a natural water divide (ex. portions of the boundary between Quebec and Newfoundland and Labrador or between British Columbia and Alberta). NHN Work Unit limits that end at such provincial boundary often do not correspond perfectly with it, haven been defined using greater scale geospatial data (1:50,000 or more).

3.5 Absence of Data Segmentation at an Interprovincial/Territorial Boundary

The NHN Standard from the NHN conceptual model stipulates that NHN data are to be segmented at an interprovincial/territorial boundary. However, since boundaries from the GeoBase *Canadian Geopolitical Boundaries* product, used in the creation of NHN data, are not intended for legal use, as of January 2011, newly produced NHN data will no longer be segmented at an interprovincial/territorial boundary.

As a result, *NatProvTer Limit* type *Delimiter* features and *NatProvTer* type *Hydro Junction* features will not be present at the intersection of an interprovincial/territorial boundary. Only NHN data straddling the international boundary will be segmented at this later and will contain these types of *Delimiters* and *Hydro Junction*s.

3.6 Addition of a Text Type Attribute

A text type attribute aimed at providing the textual equivalence for some numerical attributes was added to certain NHN features in order to facilitate data interpretation. The name of this attribute varies according to data format (*Type_Text* in SHAPE format or the attribute name followed by the suffix *TEXT* in the FGDB and GML formats). This text type attribute is coupled with the following attributes: *Waterbody Definition*, *Manmade Type* and *Obstacle Type.*

For more information, please refer to the *National Hydro Network, Product Distribution Formats, Edition 1.0, 2007-06-01* document available on the GeoBase Web portal.

3.7 Standardization of Attribute Domains

Attribute value domains of some NHN attributes were modified, in order to standardize, as much as possible, value domains for all NHN attributes. These modifications generally apply to the addition of the value UNKNOWN (-1) or the deletion of the value NONE (0). For more information, please refer to the document *National Hydro Network, Feature Catalogue, Distribution Profile, Edition 1.0, 2007-06-01* document available on the GeoBase Web portal.

Attributes affected by this standardization are:

3.7.1 *Water Definition* Attribute

An attribute value UNKNOWN (-1) was added to the *Waterbody Definition* attribute value domain.

3.7.2 *Flow Direction* Attribute

An attribute value UNKNOWN (-1) was added to the *Flow Direction* attribute value domain.

3.7.3 *Coastal Island* Attribute

An attribute value UNKNOWN (-1) was added to the *Coastal Island* attribute value domain.

3.7.4 *Sand Island* Attribute

The attribute value NONE (0) was withdrawn from the *Sand Island* attribute value domain.

3.7.5 *Level Priority* Attribute

An attribute value UNKNOWN (-1) was added to the *Level Priority* attribute value domain.

3.7.6 *Permanency* Attribute

The attribute value NONE (0) was withdrawn from the *Permanency* attribute value domain.

3.7.7 *Manmade Status* Attribute

The attribute value NONE (0) was withdrawn from the *Manmade Status* attribute value domain.

3.7.8 *Obstacle Type* Attribute

The numerical attribute value “8” for the obstacle type OTHER was modified to “0”.