



National Hydro Network

NHN Distribution Profile Deviations

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1 CONTEXT

All NHN data available on the GeoBase portal (Distribution Profile) present some differences or deviations compared to the initial NHN data model. To consult the initial NHN data model, please refer to the « *National Hydro Network, Canada, Level 1, Data Model, Edition 1.0, 2004-08* », which can be found under the NHN Documentation section of the GeoBase portal (www.geobase.ca), under NHN Standard (conceptual description).

2 NHN DISTRIBUTION PROFILE DEVIATIONS

The differences or deviations described below apply to all NHN datasets, whether it is NHN-BC (British Columbia) data, NHN-NRCan (Natural Resources Canada), NHN-CL1 (Completeness Level 1), NHN-CL2 (Completeness Level 2), NHN-CL3 (Completeness Level 3), NHN-CL4 (Completeness Level 4) or else. The following table shows those deviations in an abridged manner. It contains a reference to the detailed description of the situation provided further in the text after the table.

Deviation Description			Deviation Status		
Topic	Summary	Reference to item	Absence	Addition	Difference
Coastline	Removal of the Hydrographic package « Coastline » feature.	1	X		
Metadata Package	The Metadata package, as described in the initial NHN data model, was put aside.	2	X		
Polygon Metadata, Concerned Features	« Polygon Metadata » and « Concerned Features » features are excluded from NHN data available on the GeoBase portal.	2.1	X		
Creation Metadata, Revision Metadata	« Creation Metadata » and « Revision Metadata » features are excluded from NHN data available on the GeoBase portal.	2.2	X		
Toponymy Package	The Toponymy package, as described in the initial NHN data model, was partially put aside.	3			X
Toponymy Collection, Hydro Traversal	« Toponymy Collection » and « Hydro Traversal » features are excluded from NHN data available on the GeoBase portal.	3.1	X		
NHN Work Unit Limit	New feature describing the extent of the NHN drainage area.	4		X	
NHN Work	Cases where NHN drainage areas	4.1		X	

Deviation Description			Deviation Status		
Topic	Summary	Reference to item	Absence	Addition	Difference
Units straddling a boundary	are subdivided by an international or provincial/territorial boundary.				
NHN Work Units bounded by a boundary	NHN drainage areas partially bounded by a boundary whose position is assumed identical to the « NHN Work Unit Limit » position.	4.2		X	
Text type attribute	A text type attribute was added to some NHN data features.	5		X	
Standardization of attribute domains	The domain of values of some NHN attributes was modified.	6			X
Water Definition attribute	The « UNKNOWN » (-1) attribute value was added.	6.1			X
Flow Direction attribute	The « UNKNOWN » (-1) attribute value was added.	6.2			X
Coastal Island attribute	The « UNKNOWN » (-1) attribute value was added.	6.3			X
Sand Island attribute	The value « NONE » (0) was withdrawn from the domain of attribute values.	6.4			X
Level Priority attribute	The « UNKNOWN » (-1) attribute value was added.	6.5			X
Permanency attribute	The value « NONE » (0) was withdrawn from the domain of attribute values.	6.6			X
Manmade Status attribute	The value « NONE » (0) was withdrawn from the domain of attribute values.	6.7			X
Obstacle Type attribute	The value « NONE » (0) was added to the domain of attribute values whereas the value « OTHER » (8) was withdrawn.	6.8			X

- 1- **[Coastline]** 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 initial NHN data model.

- 2- **[Metadata Package]** The initial NHN data model contains five packages, namely : Hydro Network, Hydrographic, Hydro Events, Toponymy and Metadata. NHN data features offered on the GeoBase Web portal come from four packages only, that is to say: Hydro Network, Hydrographic, Hydro Events and Toponymy. The Metadata package, as described in the initial NHN data model, was put aside. It was actually replaced by dataset metadata and additional object metadata attributes to NHN features, the whole as further described below:
- 2.1- **[Polygon Metadata, Concerned Features]** The « Concerned Features » and « Polygon Metadata » features described in the initial NHN data model are excluded from NHN data offered on the GeoBase Web portal (Distribution Profile). The information these features were supposed to carry is now essentially found in FGDC (*Federal Geographic Data Committee, USA*) dataset metadata files accompanying NHN data files offered on the portal.
- 2.2- **[Creation Metadata, Revision Metadata]** The « Creation Metadata » and « Revision Metadata » features described in the initial NHN data model are not part of NHN data offered on the GeoBase Web portal (Distribution Profile). Instead, this information is found under the form of attributes common to all NHN features. For more information, please refer to the section on « Object Metadata Attributes » in the document « *National Hydro Network, Feature Catalogue, Distribution Profile, Edition 1.0, 2007-06-01* », which can be found under the GeoBase portal NHN data Documentation section, under NHN Product (data description).
- 3- **[Toponymy Package]** The Toponymy package described in the initial NHN data 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 initial NHN data 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.
- 3.1- **[Toponymy Collection, Hydro Traversal]** The « Toponymy Collection » and « Hydro Traversal » features described in the initial NHN data model are not part of NHN data offered on the GeoBase Web portal (Distribution Profile). Instead, this information is found under 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* », which can be found under the GeoBase portal NHN data Documentation section, under NHN Product (data description).
- 4- **[NHN Work Unit Limit]** NHN datasets contain a non NHN feature provided with NHN data, namely, the « NHN Work Unit Limit ». This feature delimits the extent of the NHN dataset drainage area inside of which NHN data are located. Strictly speaking, this feature is not an NHN feature, since it is not part of the initial NHN data model.
- 4.1 **[NHN Work Units straddling a 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, for the country's initial NHN data production, NHN drainage areas are, in many cases, subdivided at the boundary when they extend on both sides of an international or provincial/territorial boundary. This situation is probably temporary in the process of creating the NHN in Canada. The ultimate goal is to create complete transborder or transjurisdictional drainage areas, both for international boundaries and provincial/territorial boundaries in Canada.
- 4.2 **[NHN Work Units bounded by a boundary]** Actually, many NHN Work Units (NHN drainage areas) are bounded by a frontier or boundary. In most cases, the position of the boundary is considered identical to the « NHN Work Unit Limit » position, even if this boundary does not exactly and perfectly coincide with the said « NHN Work Unit Limit ».

- 5- **[Text type attribute]** A text type attribute was added to some NHN data features, in order to transpose the numerical value of some attributes into their textual equivalence (text description), the whole in order to facilitate data interpretation. The name of this attribute varies according to data format (eg Type_Text in SHAPE format). For more information, please refer to the « *National Hydro Network, Product Distribution Formats, Edition 1.0, 2007-06-01* » document, which can be found under the GeoBase portal NHN data Documentation section, under Data Formats. This text type attribute is coupled with the following attributes: « Waterbody Definition », « Manmade Type », « Obstacle Type ».
- 6- **[Standardization of attribute domains]** The domain of values of some NHN attributes was modified, in order to standardize, as much as possible, domains of values for all NHN attributes, for example, by adding the attribute value « UNKNOWN » (-1) or adding or deleting 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* », which can be found under the GeoBase portal NHN data Documentation section, under NHN Product (data description). Attributes affected by this standardization are:
- 6.1- **[Water Definition attribute]** An attribute value « UNKNOWN » (-1) was added to the « Waterbody Definition » attribute domain of values for standardization purposes.
- 6.2- **[Flow Direction attribute]** An attribute value « UNKNOWN » (-1) was added to the « Flow Direction » attribute domain of values for standardization purposes.
- 6.3- **[Coastal Island attribute]** An attribute value « UNKNOWN » (-1) was added to the « Coastal Island » attribute domain of values for standardization purposes.
- 6.4- **[Sand Island attribute]** The attribute value « NONE » (0) was withdrawn from the « Sand Island » attribute domain of values, because it was ambiguous compared to the remaining values.
- 6.5- **[Level Priority attribute]** An attribute value « UNKNOWN » (-1) was added to the « Level Priority » attribute domain of values for standardization purposes.
- 6.6- **[Permanency attribute]** The attribute value « NONE » (0) was withdrawn from the « Permanency » attribute domain of values, because it was ambiguous compared to the remaining values.
- 6.7- **[Manmade Status attribute]** The attribute value « NONE » (0) was withdrawn from the « Manmade Status » attribute domain of values, because it was ambiguous compared to the remaining values.
- 6.8- **[Obstacle Type attribute]** The attribute value « NONE » (0) was added to the « Obstacle Type » attribute domain of values, and the attribute value « OTHER » (8) was withdrawn from its domain of values for standardization purposes.