

Land Information Ontario

**NRVIS/OLIW Data Management Model For
Nursery Area, Wildlife (v.3)
Fact Sheet Edition**

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Table of Contents

<i>1. Preface</i>	<i>4</i>
<i>2. Overview</i>	<i>4</i>
<i>3. Logical Data Model (Business View)</i>	<i>6</i>
<i>4. Data Dictionary</i>	<i>7</i>
<i>Appendix 1: Reading an Entity-Relationship Diagram</i>	<i>9</i>
<i>Appendix 2: Interpreting a Data Dictionary</i>	<i>11</i>

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Refer to the *DMM Users-Guide to the Fact Sheet Edition* for additional details about the context of information collected for a Data Management Model.

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1. Preface

Data modeling involves identifying the things of importance to an organization (entities), the properties of those things (attributes) and how they are related to one another (relationships). This document provides the logical view of the data model. Appendix 1 provides details on understanding data models.

2. Overview

Nursery Area, Wildlife (NURSAWLD) version 3

A Wildlife Nursery Area is a polygon feature that identifies an area where a wildlife species raises its newborn, if that area is different from the Birthing Area.

This is a NRVIS 3.2.1 and an OLIW 2.0 Data Class

Abstract Class:

SPSNTCREGION -

Abstract Spatial Single-Non-Tessellating-Constrained-Region User Object. One and only one contiguous region forms a single object. Regions may overlap each other only if their CONSTRAIN_BY value is not identical. Conversely regions may not overlap each other if their CONSTRAIN_BY value is identical. Gaps, holes, and islands are allowed. This class may be used to model habitat areas if we view all "habitat" as a single type of entity and if we do NOT allow disjoint areas of habitat to be considered a single object AND we don't allow habitat of a single species to overlap with habitat of the same species. E.g.: if the CONSTRAIN_BY value is SPECIES then moose habitat areas can overlap caribou habitat areas AND disjoint summer and winter caribou habitat areas are treated as a separate objects in the inventory, however a moose habitat area cannot overlap another moose habitat area. At the physical level this class of user objects may be implemented - within ARC/INFO - as a set of POLYGON layers, one per each unique occurrence of the CONSTRAINT_BY value.

Custodian: (DEFAULT)

Ministry of Natural Resources (MNR), Natural Resources Management Division (NRMD), Fish and Wildlife Branch (F&W)

Geographic Unit Types:

Caribou Nursery Area (1315)

Caribou Nursery Areas may be quite different from birthing areas. Caribou tend to calve on islands or in large bogs, but almost immediately after calving the cow(s) and calf(s) head for lakeshores or other islands (sometimes the same island) to spend the summer.

Deer Nursery Area (1317)

N/A

Eastern Wolf Nursery Area (2778)

A Wildlife Nursery Area is a polygon feature that identifies an area where a wildlife species raises its newborn, if that area is different from the Birthing Area.

Eastern Wolf (*Canis lupus lycaon*)

The eastern wolf is a smaller wolf, that preys on white-tailed deer, moose and in the northern part of its range caribou. This wolf as of May, 2001 has been designated by COSEWIC as "special concern". The determining factor in determining the difference between this wolf and the grey wolf (*canis lupus*) will be the known distribution as identified by the Canadian Wildlife Service, 2004. Any exception to the above should be clearly documented including the method used in identification (eg genetic testing)

Grey Wolf Rendezvous Site (1708)

A Nursery Area is a polygon feature that identifies an area where a species raises its newborn, if that area is different from the Birthing Area.

Grey Wolf (*Canis lupis*)

The grey wolf is a large wolf found mostly in the northern part of Ontario. The determining factor in determining the difference between this wolf and the eastern wolf (*canis lupis lycaon*) will be the known distribution as identified by the Canadian Wildlife Service, 2004. Any exception to the above should be clearly documented including the method used in identification (eg genetic testing)

Moose Nursery Area (1316)

Moose Nursery Areas are associated with birthing areas for up to five weeks after birth. These areas are frequently aquatic feeding areas with adjacent cover to provide the calves with shelter and shade. Nursery areas are usually restricted by the mobility of the calf. Once the calf is mobile, the nursery area may be a portion of the summer habitat that is near open water.

For more information, see Moose Habitat Interpretation in Ontario, page 43.

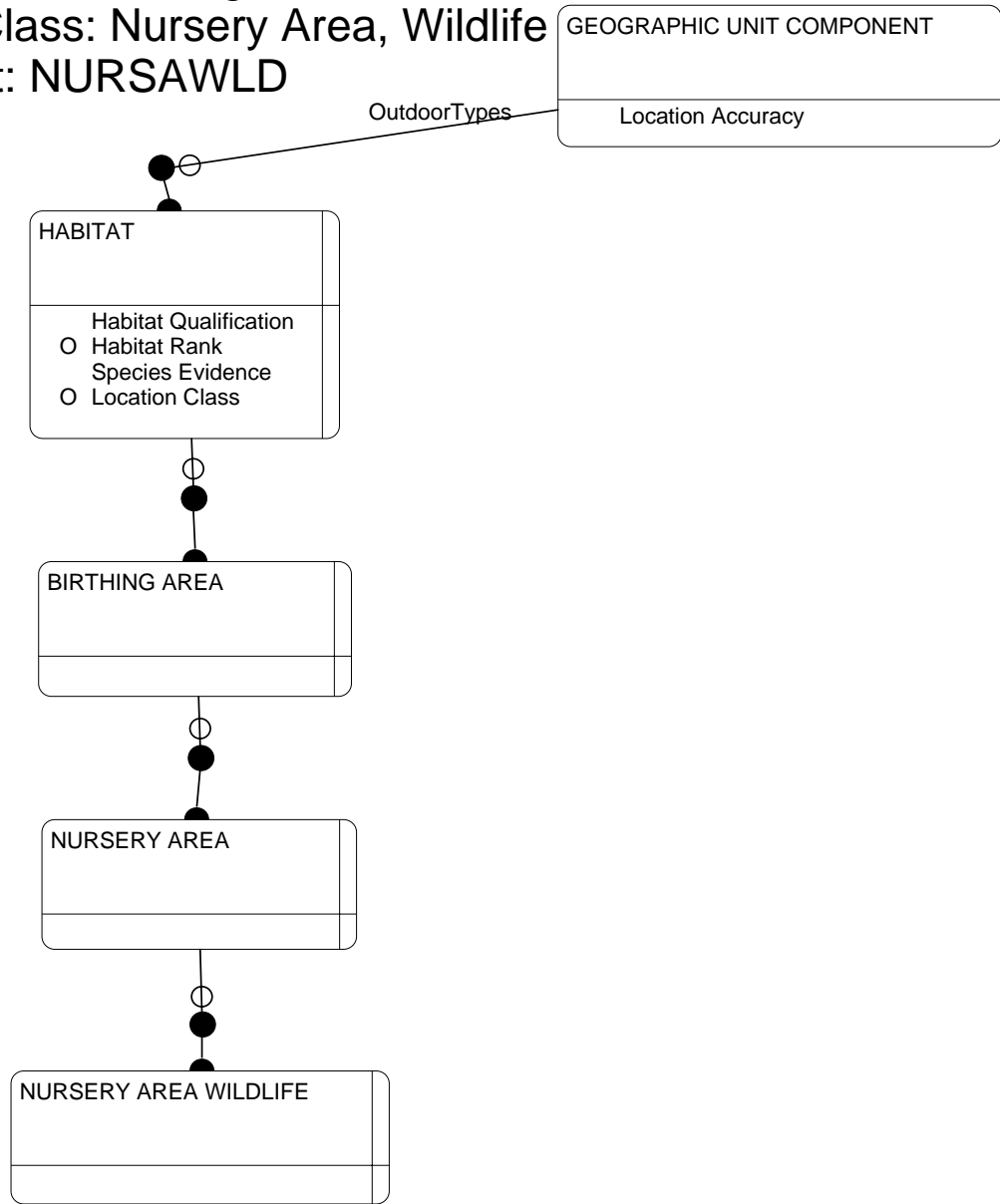
Waterfowl Nursery Area (1003)

N/A

3. Logical Data Model (Business View)

Refer to the Appendix 1 guide on how to read an Entity Relationship Diagram (ERD).

Business View Logical Data Model Data Class: Nursery Area, Wildlife Subset: NURSAWLD



4. Data Dictionary

Refer to the Appendix 2 for guide on how to interpret a data dictionary.

Entity : BIRTHING AREA

Description :

An area in which a particular species gives birth to its young.

Subtype Of HABITAT

Entity : GEOGRAPHIC UNIT COMPONENT

Description :

A Geographic Unit that may be included in a Geographic Unit Consolidation.

Location Accuracy

Character (variable length string) 25 Mandatory

The degree of conformity or closeness of a measurement within the database to its true value in the world.

Class : Description

Valid values in NRVIS_LOCATION_ACCURACY.

Subtype Of GEOGRAPHIC UNIT

Each GEOGRAPHIC UNIT COMPONENT May be One and only one FIRE DETAIL(s). Exclusive :

Each GEOGRAPHIC UNIT COMPONENT May be One and only one GEOGRAPHIC UNIT SENSITIVITY(s). Exclusive :

Each GEOGRAPHIC UNIT COMPONENT May be Defined By One or more DRAWING SCALE(s). Exclusive :

Entity : HABITAT

Description :

An area with the combination of resources (food, shelter, water) and environmental conditions (temperature, precipitation, presence or absence of predators and competitors) that promotes occupancy by individuals of a given species (or population) and allows those individuals to survive and reproduce.

Habitat Qualification

Character (variable length string) 1 Mandatory

An indication of what the habitat is qualified as e.g. not specified, presently suitable, presently unsuitable

Class : Code

Valid values in NRVIS_HABITAT_QUALIFICATION.

Habitat Rank

Character (variable length string) 1 Optional

A relative indicator of habitat quality according to a ranking system used to define and compare Habitat quality e.g. low, moderate, high, very high, not specified. A value of "nil" indicates that area has been surveyed but no suitable habitat has been found (this is an inventory practice for Moose Aquatic Feeding Areas).

Note: Assigning a 'Habitat Rank' will be mandatory for the Aquatic Feeding Area concrete class as of NRVIS 3.3.

Class : Code

Valid values in NRVIS_HABITAT_RANK.

Species Evidence Character (variable length string) 1 Mandatory
Indication of evidence of a specific species on the site e.g. yes, no, not evaluated.

Class : Code

Valid values in NRVIS_SPECIES_EVIDENCE.

Location Class Character (variable length string) 1 Optional
The landscape type or structure of the site e.g. island, peninsula, shoreline, upland I, wetland, upland II.

Class : Code

Valid values in NRVIS_LOCATION_CLASS.

Subtype Of GEOGRAPHIC UNIT COMPONENT

Subtype Of GEOGRAPHIC UNIT COMPONENT

Each HABITAT Must be Described By One and only one WILD LIFE USAGE ITEM(s). Exclusive :

Entity : NURSERY AREA

Description :

A type of RESTING AREA that provides cover and food for young animal species.

Subtype Of BIRTHING AREA

Entity : NURSERY AREA WILDLIFE

Description :

A type of RESTING AREA that provides cover and food for young wildlife species.

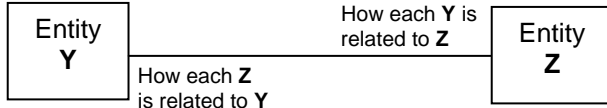
Subtype Of NURSERY AREA

Appendix 1: Reading an Entity-Relationship Diagram

A modeler can define the data needs of a business using an **entity relationship diagram** (ERD). An ERD is a schematic representation showing entities and their relationship to other entities. An **entity** is a data object and a **relationship** is a model of the association between objects of one or more different entities. In an ERD, entities are rectangles connected to other entities by relationship lines. (official definition excerpt from the *Information Modeling Handbook for the OPS – Ontario Government Management Board Secretariat Corporate Architecture Branch*)

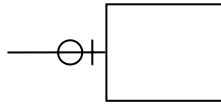
You will encounter the following symbology in an ERD.

General Notation: Text that describes a relationship between entities.

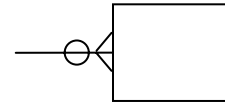


Relationship Cardinality Symbols:

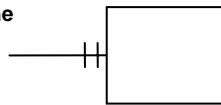
There *may* be **zero or one** occurrence of this entity. This means that the entity is optional.



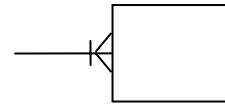
There *may* be **zero or more** occurrences of this entity. The relationship is optional.



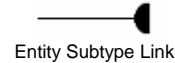
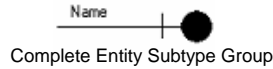
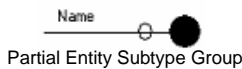
There *must* be **one and only one** occurrence of this entity. This means that the relationship is mandatory.



There *must* be **one or more** occurrences of this entity. The relationship is mandatory.

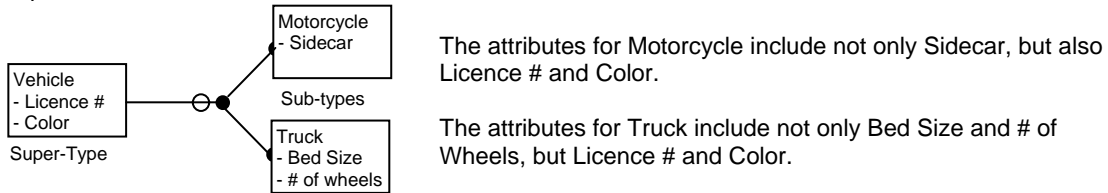


Entity Sub-type Groups: Entity subtype group icons link sub-type entities to the super-type entity. All subtype entities inherit the characteristics of the super-type entity. For example:



Group icons link subtype entities to the super-type entity. All subtype entities inherit the characteristics of the super-type entity. For example:

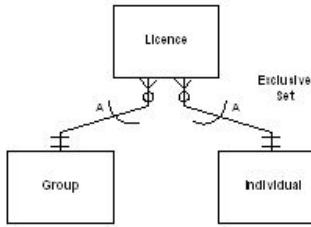
The circle indicates that the definition of subtypes for the super-type Vehicle is only partially complete. A line in this same location would indicate that all possible subtypes have been defined – indicating it as complete.



Types of vehicles that have not be explicitly defined would inherit only the characteristics of the Vehicle entity e.g. Car, ATV.

Exclusive Set:

An Exclusive Set describes a relationship between entities where, at any one time, only one of the relationships can be true. For example:



A Group *may* be the holder of one or more Licences.

An Individual *may* be the holder of one or more Licences.

A Licence *must* be Issued to one and only one Group **or** One and only one Individual.

One licence cannot be issued to both a group and an individual.

Additional Examples:

Interpreted as :

An Instructor *must* be teaching One or More Courses.

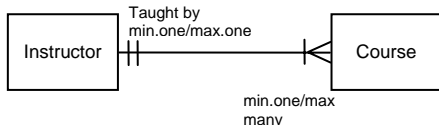
A Course *must* be taught by One and Only One Instructor.

An Instructor cannot exist unless they teach a course.

A Course cannot exist unless it has an Instructor. Tag-Team teaching by Instructors is not permitted.

A newly hired Instructor, not yet assigned to a course, may therefore not be part of this entity.

If the business rules dictate that this is not so, the relationship is incorrect. (See next example)



Interpreted as :

An Instructor *may* be teaching One or More Courses.

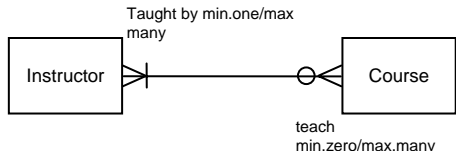
A Course *must* be taught by One or More Instructors.

A newly hired Instructor, not yet assigned to a course, can exist.

A new inexperienced Instructor, can be paired up with an experienced Instructor to teach a course until they are confident to teach solo.

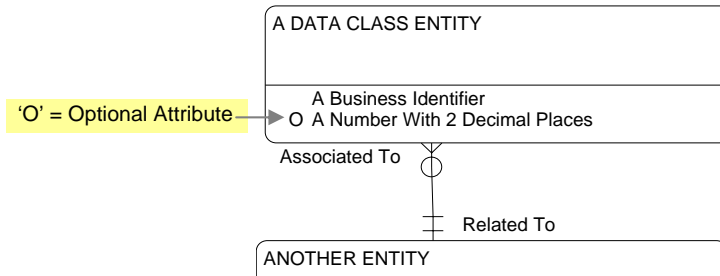
A Course cannot exist unless it has an Instructor.

Once again, if the business rules dictate that this is not so, the relationship is incorrect.



Appendix 2: Interpreting a Data Dictionary

General guidelines on how to interpret a Business View Logical Model Data Dictionary



Entity : A DATA CLASS ENTITY

2 Description :
This is an example of a Entity Description

4 A Business Identifier
This is the main Business Identifier.

8 Class : Business Identifier

4 A Number With 2 Decimal Places
This is an example of a Data Item description.
This is an example of an Attribute Description.

8 Class : Measurement

9 This is an example of a Business Definition.

10 Each A DATA CLASS ENTITY Must be Associated To One and only one ANOTHER ENTITY(s). Exclusive :

Character (variable length string) 25 Mandatory

Numeric 3 2 Optional

1. Entity Block
2. Entity Name and Description
3. Attribute Block
4. Attribute name (underlined) with item description (below). Sometimes, the item is also described at the attribute level to describe its specific usage within an entity.
5. Field Type. E.g.: Character, Numeric, Date etc...
6. Field Length and where applicable – number of decimal places. The maximum capacity for a field's content is determined by the Item's set length. With the examples above...
 - The 1st item, has been defined as a Character (Variable length string) field, with a maximum length of 25 characters.
 - The 2nd item has been defined a Numeric field with a width of 3 including 2 decimal places. (9.99)
 Other numeric definition examples: 99.99 would be defined as 4 2, 999.9 as 4 1, 999 as 3 0 etc...
 Whenever numeric data items are defined, it is good practice to include an example in the item's description.
7. Attribute Optionality within Entity. Optional attributes are prefixed with an 'O' within an Entity's ERD.
8. Logical Class of the Data Item. Examples include:
 - Business Identifier: a field used by a business area as a reference to obtain more information.
 - Code: Where values are stored as a code – with the full value sometimes stored in a corresponding lookup table.
 - Date: For storing date information e.g.: Year, full or partial dates, character dates etc...
 - Description: For storing long descriptions.
 - Flag: Where the field is used to store a condition that may be used by the business area to trigger an event.
 - Identifier: Where field is used to store an identifier e.g.: a Licence Number.
 - Indicator: Usually Boolean e.g. Yes/No
 - Measurement: The unit of measure is also defined e.g.: mm, feet, kilograms etc...
 - Name: Where field is used to store a name. e.g.: Lake Rome
 - Quantity: Where a field stores a value that measures quantity. E.g.: Number of Moose Observed: 12
9. Business Definition. E.g.: *Valid Values in NRVIS_2NUM Lookup Table*
10. Entity Relationship Description