Ontario

Land Information Ontario

NRVIS/OLIW Data Management Model For
Calving Fawning Site (V.1)
Fact Sheet Edition

Issued: May 31, 2007

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Additional Information

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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

Calving Fawning Site (CALVFAWN) *version 1*

A Calving Fawning Site is a polygon feature that identifies an area to which a particular species habitually migrates to give birth.

This is a NRVIS 1.0 and an OLIW 1.0 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 Calving Site *(1033)*

Caribou Calving Sites are generally located on islands and peninsulas, usually within 80 kilometres of identified, recently used winter habitat, and usually in traditional sites year after year. These sites are marked by the presence of caribou tracks or other signs. Unlike wintering areas, calving sites have long-term fidelity.

For more information, see Selected Wildlife and Habitat Features: Inventory Manual, W.B. Ranta, Kenora District, Section 2.2b.

Deer Fawning Site *(1062)*

N/A

Elk Calving Site *(1884)*

Elk Calving Site

Moose Calving Site *(1148)*

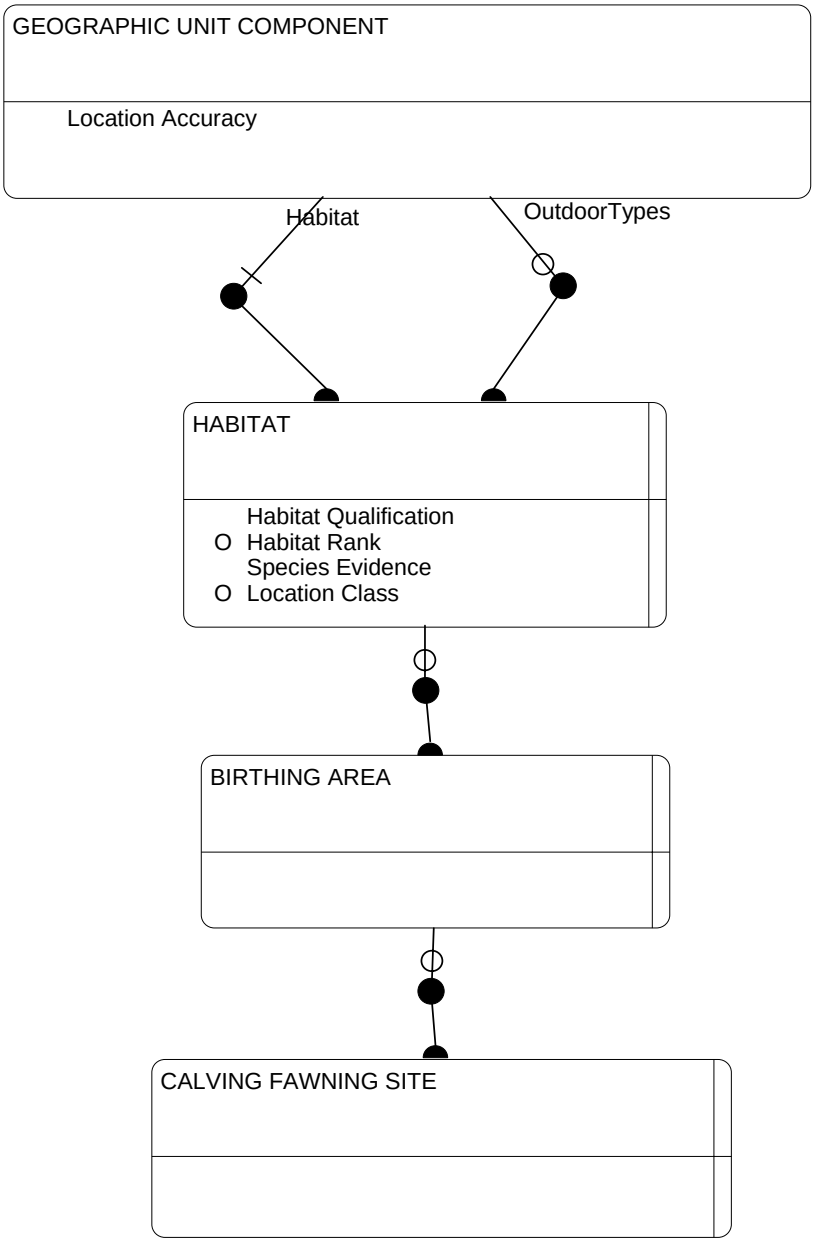
Moose Calving Sites are generally isolated sites such as islands or peninsulas. Mainland calving sites include islands in open bogs or residual shelter patches in cutovers. Other calving sites may occur in poorly drained areas and wetlands or the upper slopes of hills close to water. The calving location is usually well trampled.

For more information, see Moose Habitat Interpretation in Ontario, 1991, page 28.

3. Logical Data Model (Business View)

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

Business View Logical Model
Data Class: Calving Fawning Site
Subset: CALVFAWN



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 : CALVING FAWNING SITE

Description :
An area in which certain species (eg. moose, deer, caribou) give birth to their young.

Subtype Of BIRTHING AREA

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

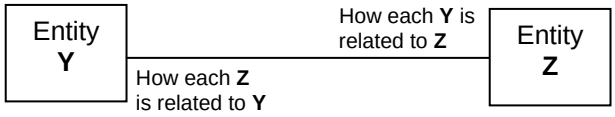
Each HABITAT Must be Described By One and only one WILD LIFE USAGE ITEM(s). Exclusive :

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)

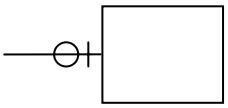
You will encounter the following symbology in an ERD.

General Notation: Text that describes a relationship between entities.

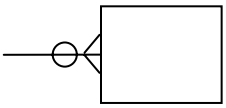


Relationship Cardinality Symbols:

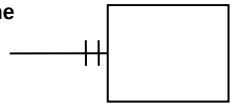
There *may* be **zero or one** occurrence of this entity. This means that the entity is optional.



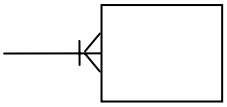
There *may* be **zero or more** occurrences of this entity. The relationship is optional.



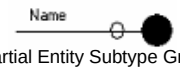
There *must* be **one and only one** occurrence of this entity. This means that the relationship is mandatory



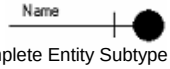
There *must* be **one or more** occurrences of this entity. The relationship is mandatory.



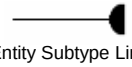
Entity Sub-type Groups: Entity subtype group icons link sub-type entities to the super-type entity. All subtype entities inherit the characteristics of the super-type entity. For example:



Partial Entity Subtype Group

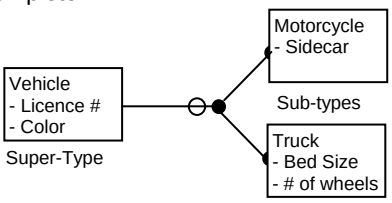


Complete Entity Subtype Group



Entity Subtype Link

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.

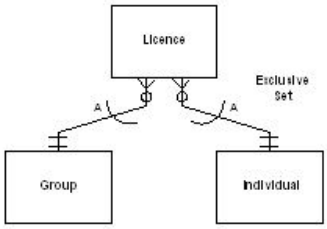


The attributes for Motorcycle include not only Sidecar, but also Licence # and Color.

The attributes for Truck include not only Bed Size and # of Wheels, but Licence # and Color.

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:



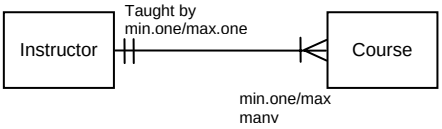
A Group *may* be the holder of one or more Licences.

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.

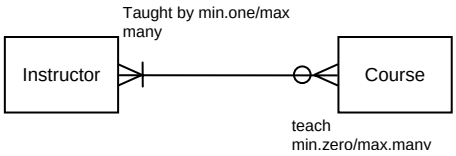
A Course *must* be taught by One and Only One Instructor.

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.

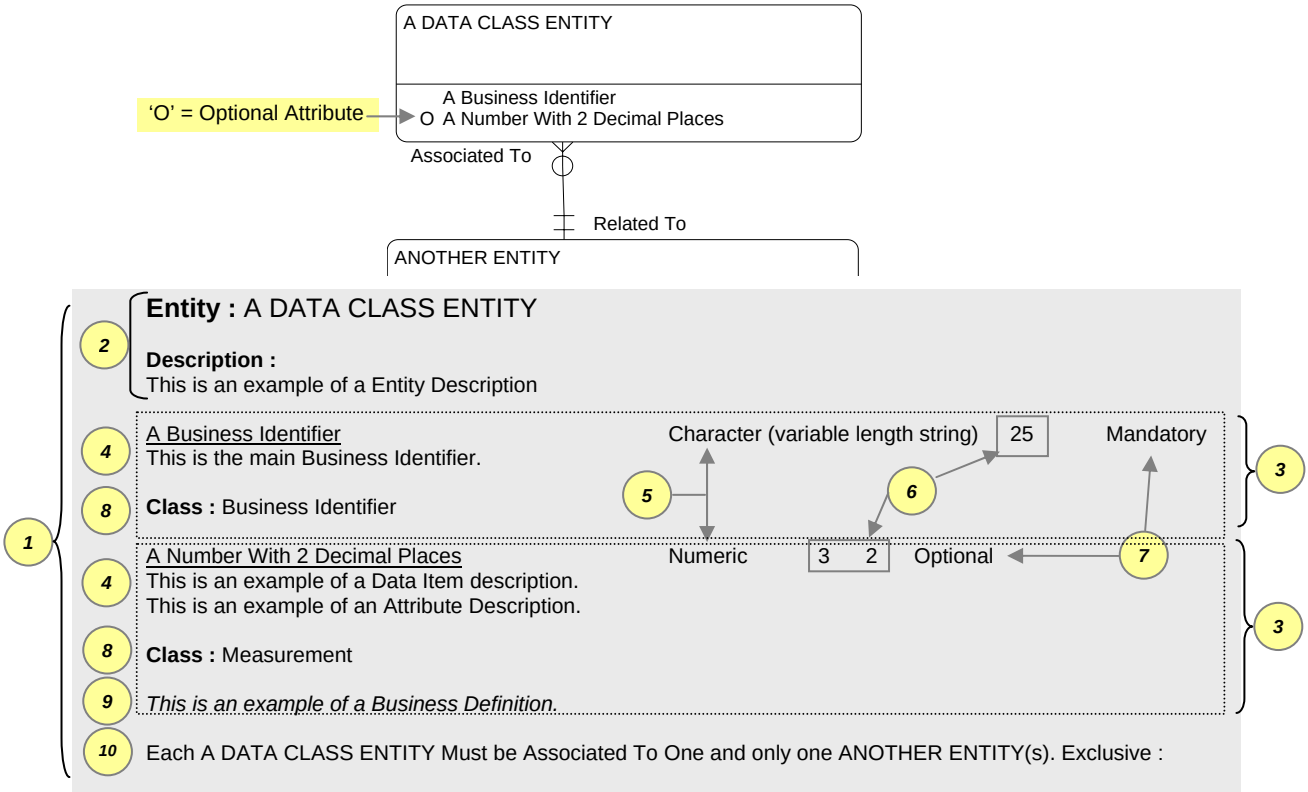
A new inexperienced Instructor, can be paired up with an experienced Instructor to teach a course until they are confident to teach solo.

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



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