

User Guide for Fish Pathogen Data Classes

Fish Pathogen Management Zone
Fish Pathogen Management Zone Boundary Source
LIO Data Class

**Fisheries Section
Species Conservation Policy Branch
Policy Division
Ministry of Natural Resources and Forestry**

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Additional Information

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Executive Summary

Key Words

Fish

Fisheries

Fisheries Management

Baitfish

Game fish

Fish Diseases

Fish Pathogen Monitoring

Fishery Resources

Viral Hemorrhagic Septicemia

VHS

KOI Herpes Virus

Spring Viraemia of Carp

Water Management

Abstract

This user guide details the specifications for the Fish Pathogen Management Zone and Fish Pathogen Management Zone Boundary Source Land Information Ontario (LIO) Data Classes.

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List of Acronyms

GIS: Geographic Information System

LIO: Land Information Ontario

MNRF: Ontario Ministry of Natural Resources and Forestry

OGF: Ontario Geospatial Feature

VHS: Viral Hemorrhagic Septicemia

SVC: Spring Viraemia of Carp

KHV: Koi Herpes Virus

Introduction

Fish pathogens are viruses that cause deadly infectious fish diseases. Some of these fish pathogens are:

- Viral Hemorrhagic Septicemia (VHS) - First detected in Lake Ontario in 2005
- Spring Viraemia of Carp (SVC)
- Koi Herpes Virus (KHV) - First detected in United States in 1999

It is important for the province to track the existence of fish disease in the inland waters of Ontario to attempt to control the spread to other non-infected areas. The data class Fish Pathogen Management Zone exists here to identify the zones that are affected or not affected by fish pathogens so people transporting fish between lakes know not to cross certain boundaries with potentially infected fish. The Fish Pathogen Management Zone Boundary Source is exists to track which road boundaries were used to create the fish pathogen management zones. If a zone boundary changes, then the zone boundary source should also change.

Objectives

This guide is intended for users with a general interest in the Fish Pathogen Management Zone and Fish Pathogen Management Zone Boundary Source LIO Data Classes. The remainder of this document describes the extent and context of the information collected the data class.

Data Classes

Data Class: Fish Pathogen Management Zone

Zones created to manage the potential spread of fish pathogens. Each zone identifies an area that is affected, not affected, or not known to be affected by fish pathogens.

Model Diagram: Fish Pathogen Management Zone

FISH_PATHOGEN_MGMT_ZONE_FT

OGF_ID: NUMBER(13) NOT NULL
ZONE_IDENT: VARCHAR2(50) NOT NULL
ZONE_NAME: VARCHAR2(50) NULL
PATHOGEN_NAME: VARCHAR2(254) NULL
VHS_STATUS: VARCHAR2(10) NOT NULL
SVC_STATUS: VARCHAR2(10) NOT NULL
KHV_STATUS: VARCHAR2(10) NOT NULL
ZONE_COMMENTS: VARCHAR2(2000) NULL
GEOG_UNIT_DESCR: VARCHAR2(2000) NULL
SENSITIVITY_CLASS: VARCHAR2(15) NOT NULL
SENSITIVITY_DATE: DATE NOT NULL
SENSITIVITY_RATIONALE: VARCHAR2(50) NOT NULL
SENS_RATIONALE_OTHER_DESCR: VARCHAR2(250) NULL
VERIFICATION_STATUS_FLG: VARCHAR2(10) NULL
VERIFICATION_STATUS_DATE: DATE NULL
BUSINESS_EFF_DATE_FLG: VARCHAR2(10) NULL
BUSINESS_EFFECTIVE_DATE: DATE NULL
BUSINESS_EXPIRY_DATE: DATE NULL
GENERAL_COMMENTS: VARCHAR2(2000) NULL
GEOMETRY_UPDATE_DATETIME: DATE NULL
EFFECTIVE_DATETIME: DATE NOT NULL
SYSTEM_DATETIME: DATE NOT NULL

Figure 1: Fish Pathogen Management Zone Physical Data Model

Data Description

The main business area table(s) for this model can be found below. Associated lookup tables will be listed in [Appendix A](#) of this document.

FISH_PATHOGEN_MGMT_ZONE_FT

Zones created to manage the potential spread of fish pathogens. Each zone identifies an area that is either affected, not affected, or not known to be affected by fish pathogens.

Column Name	Column Type	Mandatory	Short Name	Description
OGF_ID	NUMBER(13)	Yes	OGF_ID	A unique numeric provincial identifier assigned to each object.
ZONE_IDENT	VARCHAR2(50)	Yes	ZONE_IDENT	Unique business identifier for Fish Pathogen Management Zones.
ZONE_NAME	VARCHAR2(50)	No	ZONE_NAME	Name of the Fish Pathogen Management Zone.
PATHOGEN_NAME	VARCHAR2(254)	No	PATHOGEN	Short name of one or more pathogens (bacteria, virus, or parasite) separated by commas in a concatenated list (ex. "Pathogen1, Pathogen2, Pathogen3").
VHS_STATUS	VARCHAR2(10)	Yes	VHS_STATUS	Identifies whether an area is affected, not affected or unknown to be affected by the fish pathogen Viral Hemorrhagic Septicemia. VALID VALUES: IN (Positive, Negative, Unknown)
SVC_STATUS	VARCHAR2(10)	Yes	SVC_STATUS	Identifies whether an area is affected, not affected or unknown to be affected by the fish pathogen Spring Viremia of Carp. VALID VALUES: IN (Positive, Negative, Unknown)

Column Name	Column Type	Mandatory	Short Name	Description
KHV_STATUS	VARCHAR2(10)	Yes	KHV_STATUS	Identifies whether an area is affected, not affected or unknown to be affected by the fish pathogen Koi Herpesvirus. VALID VALUES: IN (Positive, Negative, Unknown)
ZONE_COMMENTS	VARCHAR2(2000)	No	COMMENTS	Unstructured description, additional notes, or further explanation.
GEOG_UNIT_DESCR	VARCHAR2(2000)	No	GUNT_DES	Detailed description of the Geographic Unit.
SENSITIVITY_CLASS	VARCHAR2(15)	Yes	SENS_CLASS	The ranking of the sensitivity of the information embodied in the feature. Often wide-spread knowledge of the location of some rare aspect of our natural heritage will endanger it. On the other hand, this knowledge by some parties is also extremely important for its protection. High - information that is extremely sensitive and intended for use by named individuals only. Refers to information that could have negative impacts on human life or health if released. Currently no data classes meet this Medium - information that is sensitive and intended for use only by specified groups of employees and approved agents of the Crown. For OLIW/NRVIS refers to information where the entire data type has been flagged as sensitive (i.e. Stick Nests for Vulnerable Threatened and Endangered (VTE) species) Low - information generally available to employees and approved agents of the Crown. Refers to sensitive features within a data type not normally sensitive (i.e. specific instances of Pileated Wood

Column Name	Column Type	Mandatory	Short Name	Description
				pecker) Non-Sensitive - data and information that does not fall into any of the three sensitivity levels. If disclosed will not result in any injury to individuals, government or private sector institutions (i.e. base data).
SENSITIVITY_DATE	DATE	Yes	SENS_DATE	The date that the sensitivity classification was established.
SENSITIVITY_RATIONALE	VARCHAR2(50)	Yes	SENS_RAT	The primary reason for the information sensitivity classification. Examples: "VTE Species", "Data Provider Agreement", "No Restriction Needed" (for Non-Sensitive data), "Protect Feature Type", "Protect Single Feature", "Legislative or Legal Reqt", "Cultural HeritageSite", "Other". Note: For Species at Risk (SAR) features, please use "Legislative or Legal Reqt" as a rationale.
SENS_RATIONALE_OTHER_DESCR	VARCHAR2(250)	No	SENS_DESCR	Description of the reason(s) for the information classification when "Other" is selected as the rationale.
VERIFICATION_STATUS_FLG	VARCHAR2(10)	No	VERISTT_FL	An indication as to whether a qualified employee has verified the existence of the geographic unit.
VERIFICATION_STATUS_DATE	DATE	No	VERISTT_DT	Date that the geographic unit was verified/validated.
BUSINESS_EFF_DATE_FLG	VARCHAR2(10)	No	BUSEFFDTFL	Indication of whether the business effective date is an actual or estimated value.
BUSINESS_EFFECTIVE_DATE	DATE	No	BUS_EFF_DT	Date that the record becomes effective in relation to the business i.e. the date MNRF became aware of its existence.

Column Name	Column Type	Mandatory	Short Name	Description
BUSINESS_EXPIRY_DATE	DATE	No	BUS_EXP_DT	A date indicating when the record was determined to be invalid.
GENERAL_COMMENTS	VARCHAR2(2000)	No	GNL_CMT	General comments.
GEOMETRY_UPDATE_DATETIME	DATE	No	GEO_UPD_DT	Date/time the geometry was created or last modified in the source database.
EFFECTIVE_DATETIME	DATE	Yes	EFF_DATE	Date/time the record was created or last modified in the source database.
SYSTEM_DATETIME	DATE	Yes	SYS_DATE	Date/time the record was loaded into or last modified in the LIO database.

Data Class: Fish Pathogen Management Zone Boundary Source

The Fish Pathogen Boundary Segment layer forms the boundary of the Fish Pathogen Management Zones and is made up of segments the majority of which were taken from the Ontario Road Network. This data class was created in order to store the road name information associated with each segment that makes up the fish pathogen management zone boundary.

Model Diagram: Fish Pathogen Management Zone Boundary Source

FISH_PATHOGEN_BOUNDARY_SRC_FT

OGF_ID: NUMBER(13) NOT NULL
LABEL: VARCHAR2(150) NOT NULL BOUNDARY_COMMENTS: VARCHAR2(2000) NULL GEOG_UNIT_DESCR: VARCHAR2(2000) NULL SENSITIVITY_CLASS: VARCHAR2(15) NOT NULL SENSITIVITY_DATE: DATE NOT NULL SENSITIVITY_RATIONALE: VARCHAR2(50) NOT NULL SENS_RATIONALE_OTHER_DESCR: VARCHAR2(250) NULL VERIFICATION_STATUS_FLG: VARCHAR2(10) NULL VERIFICATION_STATUS_DATE: DATE NULL BUSINESS_EFF_DATE_FLG: VARCHAR2(10) NULL BUSINESS_EFFECTIVE_DATE: DATE NULL BUSINESS_EXPIRY_DATE: DATE NULL GENERAL_COMMENTS: VARCHAR2(2000) NULL GEOMETRY_UPDATE_DATETIME: DATE NULL EFFECTIVE_DATETIME: DATE NOT NULL SYSTEM_DATETIME: DATE NOT NULL

Figure 2: Fish Pathogen Management Zone Boundary Source Physical Data Model

Data Description

The main business area table(s) for this model can be found below. Associated lookup tables will be listed in [Appendix A](#) of this document.

FISH_PATHOGEN_BOUNDARY_SRC_FT

The Fish Pathogen Boundary Segment layer forms the boundary of the Fish Pathogen Management Zones and is made up of segments the majority of which were taken from the Ontario Road Network. This data class was created in order to store the road name information associated with each segment that makes up the fish pathogen management zone boundary.

Column Name	Column Type	Mandatory	Short Name	Description
OGF_ID	NUMBER(13)	Yes	OGF_ID	A unique numeric provincial identifier assigned to each object.
LABEL	VARCHAR2(150)	Yes	LABEL	The name of the road segment feature that was used as part of the boundary for Fish Pathogen Management Zone. This label can be used to label the roads that outline the boundary on a map.
BOUNDARY_COMMENTS	VARCHAR2(2000)	No	COMMENTS	Unstructured description, additional notes, or further explanation.
GEOG_UNIT_DESCR	VARCHAR2(2000)	No	GUNT_DES	Detailed description of the Geographic Unit.
SENSITIVITY_CLASS	VARCHAR2(15)	Yes	SENS_CLASS	The ranking of the sensitivity of the information embodied in the feature. Often wide-spread knowledge of the location of some rare aspect of our natural heritage will endanger it. On the other hand, this knowledge by some parties is also extremely important for its protection. High - information that is extremely sensitive and intended for use by named

Column Name	Column Type	Mandatory	Short Name	Description
				individuals only. Refers to information that could have negative impacts on human life or health if released. Currently no data classes meet this Medium - information that is sensitive and intended for use only by specified groups of employees and approved agents of the Crown. For OLIW/NRVIS refers to information where the entire data type has been flagged as sensitive (i.e. Stick Nests for Vulnerable Threatened and Endangered (VTE) species) Low - information generally available to employees and approved agents of the Crown. Refers to sensitive features within a data type not normally sensitive (i.e. specific instances of Pileated Wood pecker) Non-Sensitive - data and information that does not fall into any of the three sensitivity levels. If disclosed will not result in any injury to individuals, government or private sector institutions (i.e. base data).
SENSITIVITY_DATE	DATE	Yes	SENS_DATE	The date that the sensitivity classification was established.
SENSITIVITY_RATIONALE	VARCHAR2(50)	Yes	SENS_RAT	The primary reason for the information sensitivity classification. Examples: "VTE Species", "Data Provider Agreement", "No Restriction Needed" (for Non-Sensitive data), "Protect Feature Type", "Protect Single Feature", "Legislative or Legal Req", "Cultural Heritage Site", "Other". Note: For Species at Risk (SAR) features, please use "Legislative or Legal Req" as a rationale.

Column Name	Column Type	Mandatory	Short Name	Description
SENS_RATIONALE_OTHER_DESCR	VARCHAR2(250)	No	SENS_DESCR	Description of the reason(s) for the information classification when "Other" is selected as the rationale.
VERIFICATION_STATUS_FLG	VARCHAR2(10)	No	VERISTT_FL	An indication as to whether a qualified employee has verified the existence of the geographic unit.
VERIFICATION_STATUS_DATE	DATE	No	VERISTT_DT	Date that the geographic unit was verified/validated.
BUSINESS_EFF_DATE_FLG	VARCHAR2(10)	No	BUSEFFDTFLG	Indication of whether the business effective date is an actual or estimated value.
BUSINESS_EFFECTIVE_DATE	DATE	No	BUS_EFF_DT	Date that the record becomes effective in relation to the business i.e. the date MNRF became aware of its existence.
BUSINESS_EXPIRY_DATE	DATE	No	BUS_EXP_DT	A date indicating when the record was determined to be invalid.
GENERAL_COMMENTS	VARCHAR2(2000)	No	GNL_CMT	General comments.
GEOMETRY_UPDATE_DATETIME	DATE	No	GEO_UPD_DT	Date/time the geometry was created or last modified in the source database.
EFFECTIVE_DATETIME	DATE	Yes	EFF_DATE	Date/time the record was created or last modified in the source database.
SYSTEM_DATETIME	DATE	Yes	SYS_DATE	Date/time the record was loaded into or last modified in the LIO database.

Links to Additional Information

- [Official LIO Metadata Record for Fish Pathogen Management Zone](#)
- [Official LIO Metadata Record for Fish Pathogen Management Zone Boundary Source](#)
- [Government of Ontario \(Ontario.ca\) link about VHS](#)
- [Government of Ontario \(Ontario.ca\) link about KHV](#)

APPENDIX A: LIO Lookup Tables and Values

There are no look up tables associated with these data classes.

APPENDIX B: Table Key Dependency and Relationship Index

Keys are used to link or make relationships between tables through one or more columns. A Parent Table is the source of unique key columns used by a Child Table. The main key types are described below.

Primary Key (PK):

A Primary Key (PK) is a column that uniquely identifies each record in a table. There can be more than one PK defined for a table when additional rules for record uniqueness are needed. Primary Keys cannot contain null values.

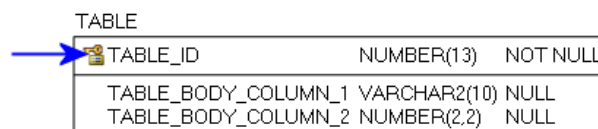


Figure 3: Primary Key example

Foreign Key (FK):

When a Primary Key from a Parent Table appears as a column in the Child Table it is referred to as a Foreign Key (FK). The FK may retain the same name of the Parent Table column, or it may be renamed.

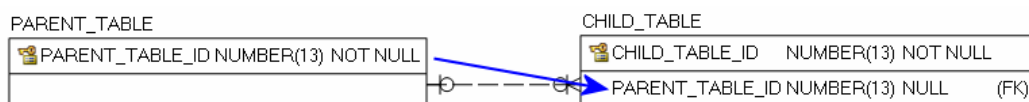


Figure 4: Foreign Key example

Alternate Key (AK):

Alternate Keys (AK) are secondary unique identifiers in a Parent Table. A Child Table can link to a Parent Table AK and use it as a Foreign Key (FK). The FK may retain the same name of the Parent Table column, or it may be renamed. Alternate Keys allow null values.

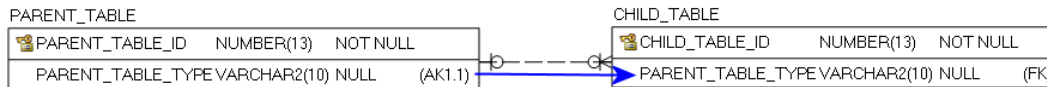


Figure 5: Alternate Key example

There are two relationship type options, identifying and non-identifying, which are described below.

An **Identifying Relationship** occurs when a column from the Parent Table is added to the key section of the Child Table. Though technically a Foreign Key (FK) in the child table, it now forms part of the Primary Key (PK). Identifying Relationships are symbolized with a solid line.

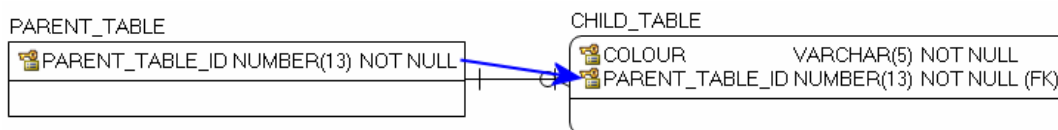


Figure 6: Example of an Identifying Relationship

A **Non-identifying Relationship** occurs when a column from the Parent Table is added to the main body of the Child Table where it is treated as a Foreign Key (FK). Non-identifying Relationships are symbolized with a dashed line.

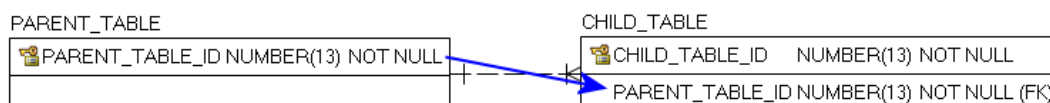


Figure 7: Example of a Non-identifying Relationship

The relationships between tables are set up with cardinality rules describing if the feature record in the Parent Table can relate to zero, one or more records in the associated Child Table and vice versa. These rules are symbolized in the model diagram as follows.

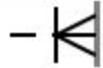
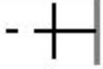
Symbol	Definition
	Zero or one (optional: 1 to 1)
	Zero, one or more (optional: one to many)
	One or more (mandatory: one to many)
	Nulls not allowed (mandatory: 1 to 1)

Figure 8: Model Diagram Relationship Symbology Table

The following section is an index of parent table primary keys identifying, where applicable, associated child table dependencies that have been implemented for the Fish Pathogen Management Zone and Fish Pathogen Management Zone Boundary Source data classes.

Fish Pathogen Management Zone - Main Business Area Tables

Index of main business area table primary and associated foreign keys.

NONE

Fish Pathogen Management Zone - Lookup Table Indexes

Where a lookup table primary key (PK) is used as a foreign key (FK) in other main business area tables in order to control permissible values.

NONE

Fish Pathogen Management Zone Boundary Source- Main Business Area Tables

Index of main business area table primary and associated foreign keys.

NONE

Fish Pathogen Management Zone - Lookup Table Indexes

Where a lookup table primary key (PK) is used as a foreign key (FK) in other main business area tables in order to control permissible values.

NONE