

Land Information Ontario Data Description

Forest Disease Damage Event

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LIO Class Description

Forest Disease Damage Event

Class Short Name: FORDISEA

Version Number: 1

Class Description:

Represents the mapped events where forest fungal, bacterial and viral pathogens have caused damage by reducing growth rates, tree vigour or have caused tree mortality. Only the outer perimeter of the damage events are generally mapped e.g. no distinction between smaller areas within that were unaffected. Examples of forest diseases include White Pine Blister Rust, Armillaria Root Rot etc.

Abstract Class Name: SPMNTUREGION

Abstract Class

Description:

Spatial Multi-Non-Tessellating-Unconstrained Region: An object is represented by ONE or MORE polygons. Polygons MAY overlap WITHOUT any restrictions. HOLES within and GAPS between polygons ARE allowed. Example: Forest "Insect Damage Area". Mapped "Spruce Budworm" defoliated areas may overlap "Forest Tent Caterpillar" damaged areas. Likewise, mapped "Gypsy Moth" tree mortality areas may overlap mapped other "Gypsy Moth" defoliated areas from current and previous years.

Metadata URL:

Tables in LIO Class:

Forest Disease Damage Event

FOREST_DISEASE_DAMAGE_EVENT_FT

Represents the mapped events where forest fungal, bacterial and viral pathogens have caused damage by reducing growth rates, tree vigour or have caused tree mortality. Only the outer perimeter of the damage events are generally mapped e.g. no distinction between smaller areas within that were unaffected. Examples of forest diseases include White Pine Blister Rust, Armillaria Root Rot etc.

Column Name	Column Type	Mandatory	Short Name	Valid Values
OGF_ID	NUMBER (13,0)	Yes	OGF_ID	
A unique numeric provincial identifier assigned to each object.				
FOREST_DISEASE_NAME	VARCHAR2 (80)	Yes	DISEASE	'Anthracnose', 'Armillaria root rot', 'Beech bark disease', 'Brown spot needle blight of pine', 'Butternut canker', 'Comandra blister rust', ... (See FOREST_DISEASE_NAME_LIST table)
Identifies the name of the pathogen responsible for the forest disease damage event that was mapped. The agent could be fungal, bacillial or viral.				
YEAR_OF_EVENT	NUMBER (4,0)	Yes	EVENT_YEAR	
The calendar year that a specific event took place e.g.: 2007				
FOREST_DAMAGE_RANKING	VARCHAR2 (15)	Yes	RANKING	'Light', 'Light-Moderate', 'Moderate', 'Moderate-Severe', 'Severe', 'Mortality', 'Unknown'
The ranking assigned to gauge the level of impact or damage on trees by a forest insect, disease or abiotic event. Forest damage rankings are described as follows: Light: 0-25 percent. Light-Moderate: 0-75 percent (see footnote). Moderate: 25-75 percent. Moderate-Severe: 25-100 percent (see footnote). Severe: 75-100 percent. Mortality: Tree mortality is present within the mapped event (see footnote). Unknown: The impact or damage rank was not determined or is unavailable for the mapped event (see footnote). Footnote: values Light-Moderate, Moderate-Severe: Mapped events were often summarized under these categories for national reporting purposes. Mortality: To avoid misinterpretation, it should be noted that mapped tree mortality events for any given year represent the cumulative mortality to that year of previous event years. It does not imply that tree mortality occurred suddenly and solely during the year that it is noted. Mortality events are mapped separately in addition to mapped impact events, so overlaps can be expected e.g. for the year 2000, mapped Spruce Budworm defoliation event vs. separately mapped Spruce Budworm cumulative mortality. Unknown: This value will be typically and temporarily reserved for 3rd party mapped events that will be stored in the Forest Health Event Pending layer until Forest Health experts have the opportunity to assess its impact on the forest. Users should also refer to the Damage Event Notes for more details and context about the impact/damage of the event.				
DAMAGE_EVENT_NOTES	VARCHAR2 (2000)	No	EVENT_NOTE	

Additional descriptive notes or details about a specific damage event.

LOCATION_ACCURACY	VARCHAR2 (25)	Yes	ACCURACY	'Not Applicable', 'Over 10,000 metres', 'Within 1 metre', 'Within 10 metres', 'Within 10,000 metres', 'Within 100 metres', ... (See LOCATION_ACCURACY_LIST table)
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The accuracy of the location of the feature at an OBM scale. The degree of conformity or closeness of a measurement to the true value.

SYSTEM_CALCULATED_AREA	NUMBER (16,3)	No	SYS_AREA
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The area of a polygon measured in square metres by the system.

GEOMETRY_UPDATE_DATETIME	DATE	No	GEO_UPD_DT
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Date/time the geometry was created or last modified in the source database.

EFFECTIVE_DATETIME	DATE	Yes	EFF_DATE
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Date/time the record was created or last modified in the source database.

CLASS_SOURCE

Intersection table between the data class and Source List table.

Column Name	Column Type	Mandatory	Short Name	Valid Values
OGF_ID	NUMBER (13,0)	Yes	OGF_ID	

A unique numeric provincial identifier assigned to each object.

SOURCE_NAME	VARCHAR2 (100)	Yes	SOURCE_NAM	'AFFM Provincial Administrative Maps', 'Aerial Photography', 'Aerial Survey', 'Book/Publication', 'CIR Photography', 'City of Ottawa Borehole Database', ... (See SOURCE_LIST table)
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The name of the source.

SOURCE_DETAIL	VARCHAR2 (254)	Yes	SOURCE_DET
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What part of the source pertains to the feature. Examples: Summary data from a data base, pages in a book or atlas, figure number and page from a publication, a section of a map, record in a database.

CLASS_SHORT_NAME	VARCHAR2 (8)	Yes	CLASS_NAME
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Unique abbreviation of the concrete class name (primary key)

SOURCE_DESCR	VARCHAR2 (2000)	No	SOURCE_DES
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Text providing details about the source.

METHOD_DESCR	VARCHAR2 (2000)	No	METHOD
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The type of method, tools, and techniques used in observing/collecting/recording the Source. It may also include a URL where users could get further information on the method used.

SOURCE_APPLICABILITY	VARCHAR2 (20)	No	APPLICABIL
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How the source contributes to the feature's definition.

EFFECTIVE_DATETIME	DATE	Yes	EFF_DATE
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Date/time the record was created or last modified in the source database.

FOREST_DISEASE_NAME_LIST

Lookup table of forest disease names.

Column Name	Column Type	Mandatory	Short Name	Valid Values
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FOREST_DISEASE_NAME	VARCHAR2 (80)	Yes	DISEASE	
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Identifies the name of the pathogen responsible for the forest disease damage event that was mapped. The agent could be fungal, bacillial or viral.

SCIENTIFIC_NAME	VARCHAR2 (254)	No	SCIENTIFIC
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The scientific name of the organism which identifies the genus and species.

BIOTICS_ID	NUMBER (38,0)	No	BIOTICS_ID
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An identifier used by the Natural Heritage Information Centre (NHIC) for creating unique species profiles for biota in Ontario. Unique identifiers are assigned to every species in Ontario that is of interest to the Ontario Ministry of Natural Resources (OMNR). Corresponds to the field SPECIES_SID in the NRVIS Species Table and the OMNR's Biotics database.

EFFECTIVE_DATETIME	DATE	Yes	EFF_DATE
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Date/time the record was created or last modified in the source database.

EXPIRY_DATETIME	DATE	No	EXP_DATE
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Date/time that the record was expired from use.

LOCATION_ACCURACY_LIST

List of valid location accuracies associated to a mapped feature.

Column Name	Column Type	Mandatory	Short Name	Valid Values
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SOURCE_LIST

A description of the source information that is the basis for creating or changing information about a geographic feature. In may be an observation, possibly resulting from a field survey or an adhoc

report or a reference to a published or unpublished document.

Column Name	Column Type	Mandatory	Short Name	Valid Values
SOURCE_NAME	VARCHAR2 (100)	Yes	NAME	
The name of the source.				
SOURCE_DATE	VARCHAR2 (50)	No	SRC_DATE	
The date of the source.				
SOURCE_ORIGINATOR	VARCHAR2 (75)	No	ORIGINATOR	
The originator or author of the source. Includes the author(s) of a book; the originator(s) of a survey or project, etc.Examples: Smith, J. Smith, J. and Jones, K. Smith, J., Jones, K. and White, T. Anon. (where no author identified) OMNR (where authorship is corporate) Northwest District (lead and delivered the data collection project)				
SOURCE_SCALE	VARCHAR2 (15)	No	SCALE	
The scale of the vector base or aerial photography, the cell resolution of a grid, or the pixel resolution of an image used to record the location of the feature. Examples: For a vector source or aerial photography: 1:10,000 1:20,000 1:250,000. For a grid or imagery source: 1 km, 10 m, 15 seconds.				
HORIZONTAL_DATUM	VARCHAR2 (10)	No	H_DATUM	
Identifies the reference system used for defining the coordinates of points. There are three common horizontal datum systems used in Ontario: NAD83, NAD27, NAD27 with 1974 adjustment. The datum models the shape of the earth.				
VERTICAL_DATUM	VARCHAR2 (30)	No	V_DATUM	
The zero surface to which elevations or heights are referred is called a vertical datum. Traditionally, surveyors and mapmakers have tried to simplify the task by using the average (or mean) sea level as the definition of zero elevation, because the sea surface is available worldwide. MSL is a close approximation to another surface, defined by gravity, called the geoid, which is the true zero surface for measuring elevations. Example: WGS-84 EGM96 Geoid.				
SOURCE_PROJECTION	VARCHAR2 (40)	No	PROJECTION	
The name of a systematic representation of all or part of the surface of the Earth on a plane or developable surface.				
EFFECTIVE_DATETIME	DATE	Yes	EFF_DATE	
Date/time the record was created or last modified in the source database.				
EXPIRY_DATETIME	DATE	No	EXP_DATE	
Date/time that the record was expired from use.				

LIO Lookup Table Values:

FOREST_DISEASE_NAME_LIST

FOREST DISEASE NAME	SCIENTIFIC NAME	BIOTICS ID	EXPIRY DATETIME
Anthracnose	Aureobasidium apocryptum (Ellis and Everh.) Herm.-Nijh.		
Armillaria root rot	Armillaria spp.		
Beech bark disease	Nectria coccinea (Pers.:Fr.) Fr.var. faginata Lohman, Watson and Ayers Nectria galliginea Bres. Cryptococcus fagisuga Lind		
Brown spot needle blight of pine	Mycosphaerella dearnessii M.E. Barr		
Butternut canker	Sirococcus clavigignenti-juglandacearum V.M.G. Nair, Kostichka and Kuntz		
Comandra blister rust	Cronartium comandrae Peck		
Conifer/aspens rust	Melampsora medusae Thüm.		
Cyclaneusma needle cast of pine	Cyclaneusma minus (Butin) DiCosmo, Peredo and Minter		
Cytospora canker Hardwood	Valsa sordida Nitschke		
Cytospora canker Softwood	Leucostoma kunzei (Fr.:Fr.) Munk		
Cytospora dieback of balsam fir	Valsa friesii (Duby) Fuckel		
Diplodia tip blight of conifers	Sphaeropsis sapinea (Fr.) Dyko and B. Sutton		
Dothichiza canker of poplar	Cryptodiaporthe populea (Sacc.) Butin		
Dutch elm disease	Ophiostoma ulmi (Buisman) Nannf.		
Eastern dwarf mistletoe	Arceuthobium pusillum Peck		
Eutypella canker of maple	Eutypella parasitica R.W. Davidson and R.C. Lorenz		
Fir broom rust	Melampsorella caryophyllacearum J. Schröt.		
Fomes root rot	Heterobasidion annosum (Fr.:Fr.) Bref.		
Hypoxylon canker	Hypoxylon mammatum (Wahlenb.) P. Karst.		
Ink spot of aspen	Ciborinia whetzellii (Seaver) Seaver		
Leaf spot of aspen	Septoria betulae		

Linospora leaf blight	Linospora tetraspora G.E. Thomps.		
Lophodermium needle cast of pine	Lophodermium seditiosum Minter, Staley and Millar		
Marssonina leaf spot	Marssonina populi (Lib.) Magnus		
Mountain-ash¿juniper rust	Gymnosporangium cornutum Arthur ex Kern		
Nectria canker of hardwoods	Nectria galligena Bres.		
Nectria dieback	Nectria cinnabarina (Tode:Fr.) Fr.		
Needle cast of balsam fir	Isthmiella faullii (Darker) Darker		
Needle rust of balsam fir	Pucciniastrum epilobii G.H. Otth		
Other disease			
Phyllosticta leaf spot	Phyllosticta minima (Berk. and M.A. Curtis) Underw. and Earle		
Pine needle rust	Coleosporium asterum (Dietel) Syd. and P. Syd.		
Powdery mildew	Uncinula adunca (Wallr.: Fr.) Lév.		
Red band needle blight	Mycosphaerella pini Rostr.		
Rhizina root rot	Rhizina undulata Fr.:Fr.		
Scleroderris canker	Gremmeniella abietina (Lagerb.) M. Morelet		
Scoleconectria canker and dieback	Scoleconectria cucurbitula (Tode:Fr.) C. Booth		
Septoria leaf spot and canker	Mycosphaerella populorum G.E. Thomps.		
Shoot blight of aspen	Venturia macularis (Fr.:Fr.) E. Müll. and Arx		
Sirococcus shoot blight	Sirococcus conigenus (DC.) P.F. Cannon and Minter		
Snow blight	Phacidium abietis (Dearn.) J. Reid and Cain		
Sooty mold	Capnodium spp. and Scorias spp.		
Spruce cone rust	Chrysomyxa pirolata G. Winter		
Spruce needle blight	Gymnosporangium cornutum Arthur ex Kern		
Spruce needle rust	Chrysomyxa ledi (Alb. & Schwein.) de Bary var. ledi and Chrysomyxa ledicola Lagerh.		
Stem decay of hardwoods and conifers			
Sweet fern blister	Cronartium comptoniae Arthur		

rust			
Tar spot needle cast	Davisomycella ampla (Davis) Darker		
Tar spot	Rhytisma spp. and Atopospora betulina (Fr.:Fr.) Petr.		
Tomentosus root rot	Inonotus tomentosus (Fr.:Fr.) S. Teng		
Velvet top fungus	Phaeolus schweinitzii (Fr.:Fr.) Pat.		
Verticillium wilt	Verticillium albo-atrum Reinke and Berth old and Verticillium dahliae Kleb.		
Western gall rust	Endocronartium harknessii (J.P. Moore) Y. Hirats.		
White pine blister rust	Cronartium ribicola J.C. Fisch.		

LIO Lookup Table Values:

LOCATION_ACCURACY_LIST

LOCATION ACCURACY	EXPIRY DATETIME
Not Applicable	
Over 10,000 metres	
Within 1 metre	
Within 10 metres	
Within 10,000 metres	
Within 100 metres	
Within 1000 metres	
Within 2 metres	
Within 20 metres	
Within 200 metres	
Within 2000 metres	
Within 5 metres	
Within 50 metres	
Within 500 metres	
Within 5000 metres	
AC Accurate (to 10m)	2007-01-12
AP Approximate (to 500m)	2007-01-12
GE General (to 10,000m)	2007-01-12
MO Moderate (to 1000m)	2007-01-12
RE Reliable (to 100m)	2007-01-12
VA Very Accurate (to 2m)	2007-01-12
VG Vague (to 100,000m)	2007-01-12
^ Data Load	2007-01-12

LIO Lookup Table Values:

SOURCE_LIST

SOURCE NAME	SOURCE DATE	SOURCE ORIGINATOR	SOURCE SCALE	HORIZONTAL DATUM	VERTICAL DATUM	SOURCE PROJECTION	EXPIRY DATETIME
AFFM Provincial Administrative Maps		Ministry of Natural Resources	600000				
Aerial Photography		Ministry of Natural Resources	15840				
Aerial Survey							
Book/Publication							
CIR Photography		Ministry of Natural Resources					
City of Ottawa Borehole Database	1883 - 2006	City of Ottawa	Varies		Mean Average Sea Level	Geodetic and UTM	
Digital File							
Digital Map							
Field Survey\Site Visit							
File System/Filing Cabinet Information							
Forest Resources Inventory		Ministry of Natural Resources		NAD27		UTM	
GPS Data Collection							
Google Street View		Google Inc.					
Hard Copy/Paper Map							
IKONOS Multispectral		Ministry of Natural Resources					
IKONOS Panchromatic		Ministry of Natural Resources					
IRS Multispectral		Ministry of Natural Resources					
IRS Panchromatic		Ministry of Natural Resources					

IRS Pansharpened		Ministry of Natural Resources					
Landsat-1,2,3 MSS		Ministry of Natural Resources					
Landsat-4,5 MSS		Ministry of Natural Resources					
Landsat-7 ETM		Ministry of Natural Resources					
Local Borehole Drilling Program Results	2006	Ministry of Northern Development and Mines			Mean Average Sea Level		
Local Knowledge							
MNDM Assessment File							
MNDM Client/Company Information							
MNR Based Observation							
MTO Engineering Reports	Varies	Ministry of Transportation	Varies		Mean Average Sea Level		
NRCan - CanVec	2008	Natural Resources Canada	50000	NAD83			
NRCan - National Hydro Network	2008	Natural Resources Canada	50000	NAD83			
NTS Map 1:250000	1970 to 2003	Department of Natural Resources	250000	NAD27			
NTS Map 1:50000	1970 to 2003	Department of Natural Resources	50000	NAD27			
Ontario Base Map 1:10000	1978 to 1995	Ministry of Natural Resources	10000	NAD27		UTM	
Ontario Base Map 1:20000	1978 to 1995	Ministry of Natural Resources	20000	NAD27		UTM	
Ontario Geological Survey Fieldwork Mapping	Varies to 2004	Ontario Geological Survey	1:50,000	NAD83	Mean Average Sea Level	Universal Transvers Mercator	
Ontario Parcel				NAD83			
OrthoImagery		Ministry of					

		Natural Resources					
Public Observation							
Quaternary Geology Study	Varies	Ministry of Northern Development and Mines			Mean Average Sea Level		
Unknown	11-12-02						
Urban Geology Automated Information System (UGAIS)	1956-1972	Geological Survey of Canada	Varies	NAD27	Mean Average Sea Level	Universal Transverse Mercator	
Water Well Data Improvement Project	2006	Ministry of Natural Resources, Water Resources Information Program	Varies	NAD83	Mean Average Sea Level	Geodetic	
Water Well Information System (WWIS)	1899 - 2003	Ministry of the Environment, Environmental Monitoring and Reporting Branch	Varies	NAD27	Mean Average Sea Level	Universal Transverse Mercator	
Waterloo Area Geology Automated Information System (WAGAIS)	1900 - 1977	Geological Survey of Canada	Varies	NAD27	Mean Average Sea Level	Universal Traverse Mercator	
External Source from NRVIS 2							2007-01-12
Internal Source from NRVIS 2							2007-01-12
Material Source from NRVIS 2							2007-01-12
Ontario Base Map	1978 to 1995	Ministry of Natural Resources		NAD27		UTM	2007-01-12
Source Observation from NRVIS 2							2007-01-12
Unknown Imagery							2007-01-12

LIO Table Relationships for Class:
Forest Disease Damage Event

FOREST_DISEASE_DAMAGE_EVENT_FT	-----> CLASS_SOURCE.OGF_ID = FOREST_DISEASE_DAMAGE_EVENT_FT.OGF_ID	CLASS_SOURCE	<----- CLASS_SOURCE.SOURCE_NAME = SOURCE_LIST.SOURCE_NAME	SOURCE_LIST
	<----- FOREST_DISEASE_DAMAGE_EVENT_FT.FOREST_DISEASE_NAME = FOREST_DISEASE_NAME_LIST.FOREST_DISEASE_NAME	FOREST_DISEASE_NAME_LIST		
	<----- FOREST_DISEASE_DAMAGE_EVENT_FT.LOCATION_ACCURACY = LOCATION_ACCURACY_LIST.LOCATION_ACCURACY	LOCATION_ACCURACY_LIST		