

Land Information Ontario Data Description

Forest Insect Damage Event

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LIO Class Description

Forest Insect Damage Event

Class Short Name: INSCTDAM

Version Number: 2

Class Description:

Represents a mapped event where forest insect pests have damaged trees by defoliation, foliage mining and wood boring, or contributed to tree mortality. Only the outer perimeter of the damage events are generally mapped e.g. there is no distinction between smaller areas within that were unaffected. In addition to infestations, forest mortality areas caused by these insect pests are mapped as separate events.

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 Insect Damage Event

FOREST_INSECT_DAMAGE_EVENT_FT

Represents a mapped event where forest insect pests have damaged trees by defoliation, foliage mining and wood boring, or contributed to tree mortality. Only the outer perimeter of the damage events are generally mapped e.g. there is no distinction between smaller areas within that were unaffected. In addition to infestations, forest mortality areas caused by these insect pests are mapped as separate events.

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_INSECT_NAME	VARCHAR2 (80)	Yes	INSECT	'Agrilus sp. Damage to Balsam Poplar', 'Aspen Twoleaf Tier', 'Beech Scale Insect', 'Birch Casebearer', 'Birch Leafminer', 'Birch Skeletonizer', ... (See FOREST_INSECT_NAME_LIST table)

Identifies the forest insect responsible for the damage event. In most cases, a specific insect can be identified e.g. Jackpine Budworm, Forest Tent Caterpillar etc., whereas there may be a few events where only the Genus or other grouping is referenced e.g. Oak Defoliators Complex, Unknown Aspen Leafroller, Agrilus sp. Damage to Balsam Poplar.

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
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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
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OGF_ID	NUMBER (13,0)	Yes	OGF_ID
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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_INSECT_NAME_LIST

Lookup table of forest insect names, and where applicable, scientific names and NHIC Species Ids.

Column Name	Column Type	Mandatory	Short Name	Valid Values
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FOREST_INSECT_NAME	VARCHAR2 (80)	Yes	INSECT
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Identifies the forest insect responsible for the damage event. In most cases, a specific insect can be identified e.g. Jackpine Budworm, Forest Tent Caterpillar etc., whereas there may be a few events where only the Genus or other grouping is referenced e.g. Oak Defoliators Complex, Unknown Aspen Leafroller, Agrilus sp. Damage to Bal sam Poplar.

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
SOURCE_LIST				
A description of the source information that is the basis for creating or changing information about a geographic feature. It 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_INSECT_NAME_LIST

FOREST INSECT NAME	SCIENTIFIC NAME	BIOTICS ID	EXPIRY DATETIME
Agrilus sp. Damage to Balsam Poplar	Agrilus sp.	641151	
Aspen Twoleaf Tier	Enargia decolor	194196	
Beech Scale Insect	Cryptococcus fagisuga		
Birch Casebearer	Coleophora serratella	198492	
Birch Leafminer	Fenusa pusillus	194226	
Birch Skeletonizer	Bucculatrix canadensisella	194205	
Bronze Birch Borer	Agrilus anxius (Gory)	194457	
Bronze Poplar Borer	Agrilus liragus	194478	
Bruce Spanworm	Operophtera bruceata	194222	
Cedar Leafminer	Argyresthia spp.	641301	
Cherry Scallop Shell Moth	Hydria prunivorata (Ferguson)	199102	
Early Aspen Leafroller	Pseudexentera oregonana	194242	
Eastern Larch Beetle	Dendroctonus simplex LeConte		
Elm Spanworm	Ennomos subsignaria	198725	
Emerald Ash Borer	Agrilus planipennis Fairmaire	201487	
Fall Cankerworm	Alsophila pometaria	198065	
Fall Webworm	Hyphantrea cunea	199123	
Forest Tent Caterpillar	Malacosoma disstria	199310	
Gypsy Moth	Lymantria dispar	199295	
Hemlock Borer	Melanophila fulvoguttata	196413	
Hemlock Looper	Lambdina fiscellaria	199213	
Hickory Bark Beetle	Scolytus quadrispinosus	197351	
Hickory Leaf Roller	Argyrotaenia juglandana	198229	
Introduced Pine Sawfly	Diprion similis		
Jack Pine Budworm	Choristoneura pinus pinus	194209	
Larch Casebearer	Coleophora laricella	198470	
Large Aspen Tortrix	Choristoneura conflictana	194239	

Lesser Maple Spanworm	<i>Itame pustularia</i>	199186	
Maple Leaf Roller	<i>Sparganothis acerivorana</i>	199944	
Maple Leafcutter	<i>Paraclemensia acerifoliella</i>	199591	
Misc Beetle Damage to Jack Pine	<i>Monochamus scutellatus</i>		
Oak Defoliators Complex			
Oak Leaf Roller	<i>Argyrotaenia quercifoliana</i>	198234	
Oak Leafshredder	<i>Croesia semipurpurana</i>	194238	
Other Insect			
Pine Engraver Beetle	<i>Ips pini</i>	196131	
Pine False Webworm	<i>Acantholyda erythrocephala</i>	194208	
Pine Shoot Beetle	<i>Tomicus piniperda</i>		
Pink-striped Oakworm	<i>Anisota virginiensis</i>		
Poplar Flea Beetle	<i>Altica populi</i>	194547	
Poplar Serpentine Leafminer	<i>Phyllocnistis populiella</i>	194207	
Redheaded Pine Sawfly	<i>Neodiprion lecontei</i>	194223	
Redhumped Oakworm	<i>Symmerista canicosta</i>	200007	
Satin Moth	<i>Leucoma salicis</i>	199235	
Spruce Budworm	<i>Choristoneura fumiferana</i>	194210	
Unknown Aspen Leafroller			
White-Spotted Sawyer Beetle	<i>Monochamus scutellatus</i>		
Willow Leafminer	<i>Micrurapteryx salicifoliella</i>	199365	

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 Insect Damage Event

FOREST_INSECT_DAMAGE_EVENT_FT	<p>-----></p> <p>CLASS_SOURCE.OGF_ID = FOREST_INSECT_DAMAGE_EVENT_FT.OGF_ID</p>	CLASS_SOURCE	<p>-----<</p> <p>CLASS_SOURCE.SOURCE_NAME = SOURCE_LIST.SOURCE_NAME</p>	SOURCE_LIST
	<p>-----<</p> <p>FOREST_INSECT_DAMAGE_EVENT_FT.FOREST_INSECT_NAME = FOREST_INSECT_NAME_LIST.FOREST_INSECT_NAME</p>	FOREST_INSECT_NAME_LIST		
	<p>-----<</p> <p>FOREST_INSECT_DAMAGE_EVENT_FT.LOCATION_ACCURACY = LOCATION_ACCURACY_LIST.LOCATION_ACCURACY</p>	LOCATION_ACCURACY_LIST		