

Land Information Ontario Data Description

Aquatic Resource Area Summary

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LIO Class Description

Aquatic Resource Area Summary

Class Short Name: ARASUMRY

Version Number: 1

Class Description:

Description of the physical characteristics and fish species of lakes rivers or streams and links to more detailed external fish survey information for that waterbody. This attribute information for ARA Summary is contained in a consolidation class that does not have its own geographic representation. Instead ARA Summary is represented spatially by existing classes, the Water Segment (Poly and Line) data classes, via a unique ID. Since spatial information does not exist for this ARA class, edits can only be made to attribute information. The information in ARA Summary is based on a combination of many sources, including ARA Survey Point information. A body of water should have one record containing ARA summary information and may have zero to many ARA Survey Point data locations, the data of which may have been rolled up into the ARA Summary Information.

Abstract Class Name: AGGREGATE

Abstract Class

Description:

One or more spatial objects are collectively associated to a single record stored in a separate, but related table. In return, the tabular record must be associated at a minimum to one spatial object. Example: A number of recreational trail line segments may be known collectively as the "Voyageur Trail" in the Trail table.

Metadata URL:

**Tables in LIO Class:
Aquatic Resource Area Summary**

ARA_SUMMARY

Description of the physical characteristics and fish species of lakes rivers or streams and links to more detailed external fish survey information for that waterbody. This attribute information for ARA is contained in a non spatial class that does not have its own geographic representation. Instead it is represented geographically by an existing class, the Water Polygon Segment data class, via a unique ID. Since spatial information does not exist for this ARA class, edits can only be made to attribute information. The information in ARA Summary Polygon is based on a combination of many sources, including ARA Survey Point information. A body of water should have one record containing ARA summary information and may have zero to many ARA Survey Point data locations, the data of which may have been rolled up into the ARA Summary Polygon data

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.				
ARA_IDENT	VARCHAR2 (11)	Yes	ARA_IDENT	
A unique identifier for an aquatic resource area, composed of a user-defined combination of letters and numbers. The letters can represent the name of a waterbody, township, county, location or some other identifier which will help users identify waterbody segments that belong to one aquatic resource area (e.g. PTBO-001). It is suggested that district staff create ARA Identifiers in a manner similar to the way they were created in the original ARA layer.				
WATERBODY_TYPE	VARCHAR2 (30)	No	WBY_TYPE	Combination, Drain, Lake or Pond, Stream or River, Wetland (See ARA_WATERBODY_TYPE_LIST table)
The type of waterbody. Possible entries include: Lake/Pond, Stream/River, Drain, Wetland or Combination.				
WATERBODY_TYPE_COMBINATION	VARCHAR2 (200)	No	WBY_TYPE_C	
More information about the combination waterbody type, if the "Combination" option is chosen for the "Waterbody Type" attribute in the ARA Summary Table.				
WATERBODY_LID	VARCHAR2 (13)	No	WBY_LID	
A location code that uniquely identifies a waterbody, based on the visual centroid of the waterbody or the mouth of a river as represented in the Corporate Waterbody Table. The Waterbody LID is a manually derived identifier based on the UTM coordinates (datum NAD27), stored in the following format: NNNNNN(N)NNNNN(N) e.g. 17290052000 whereas ? UTM Zone: 2 digits (e.g. 17) UTM Easting: Rounded to the first 4 digits (e.g. 2900) UTM Northing: Rounded to the first 5 digits (e.g. 52000) --- Adding an additional digit to the UTM Easting and Northing (N) is optional, and is used to maintain identifier uniqueness. --- The Waterbody LID should not be confused with actual coordinates. This attribute is required for linking ARA data to other external databases such as FISHNETV3 and the Fish Stocking Information System (FSIS).				
CORPORATE_WATERBODY_NAME	VARCHAR2 (100)	No	WBY_NAME	
Corporate Waterbody Table name for a waterbody. This name may either be the same as the official name or local name(s) as assigned by MNR District staff. This name along with the Waterbody LID uniquely identifies a waterbody in Ontario for MNR Fisheries applications. Common descriptors (e.g. Lake, River, Creek, etc) are abbreviated and always placed at the end of the name. If the official name begins with a descriptor, the descriptor is still placed at				

the end but with a comma after the root name (ie. Lake Ontario is written as Ontario, L.). The custodian for this field lies with Inventory, Monitoring and Assessment Section (SIB).

OFFICIAL_WATERBODY_NAME	VARCHAR2 No (100)	OFF_NAME
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The official name for the waterbody if it exists which is the name formally laid down, sanctioned, or imposed by a governing body.

WATERBODY_ALIAS_NAME1	VARCHAR2 No (100)	WBY_ALIAS1
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First alternate name for a waterbody or river/stream (e.g. local name, name of main river, name of tributary). Helpful for identifying aquatic resource areas that may not have Official names, or if waterbodies are officially known as "Not Listed". Also useful for identifying stream segments that belong to a larger stream/river system.

WATERBODY_ALIAS_NAME2	VARCHAR2 No (100)	WBY_ALIAS2
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Second alternate name for a waterbody or river/stream (e.g. local name, name of main river, name of tributary). Helpful for identifying aquatic resource areas that may not have Official names, or if waterbodies are officially known as "Not Listed". Also useful for identifying stream segments that belong to a larger stream/river system.

FISHERIES_MANAGEMENT_ZONE_ID	NUMBER Yes (2,0)	FMZ_ID
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A number that identifies a Fish Management Zone. A zone can consist of one area or multiple geographically separated areas.

THERMAL_REGIME	VARCHAR2 No (10)	REGIME	Cold, Cool, Warm, Unknown
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Thermal regime describes the typical summer water temperature of a waterbody. Waterbodies may be classified as cold, cool or warm. Thermal regime is determined using measures of water temperature and/or inferred from knowledge of the existing fish or invertebrate community present. Where thermal regime classification indicators overlap, the local District biologist will have to use their professional judgment. Typically, the most thermally sensitive regime will apply. For example, in a deep oligotrophic lake where the fish community composition is lake whitefish, walleye and northern pike, the thermal regime would be classified as cold water. However, for a shallow mesotrophic or eutrophic lake where stream resident brook trout may be found in the lake near stream mouths in certain seasons of the year, the lake should be classified as either coolwater or warmwater dependent on summer water temperature and/or resident fish community. An aquatic resource area is classified as "unknown" if there is no temperature information or data is not sufficient to classify as either cold, cool, or warm. Lentic (lakes, reservoirs, ponds, etc.) thermal regime can be classified based on fish community (adapted from Ryder and Edwards 1985): · Coldwater - an assemblage of fishes in north-temperate oligotrophic lakes, dominated by taxon swarms of salmonines and coregonines. Lake trout, brook trout and lake whitefish are species typically found in cold water lakes. · Coolwater - an assemblage of fishes-of north-temperate mesotrophic lakes dominated by percids and esocids. Walleye and northern pike are species typically found in cool water communities. · Warmwater - an assemblage of fishes in north-temperate eutrophic lakes dominated by centrarchids (largemouth bass), cyprinids (carp) and ictalurids (bullheads) Lotic (rivers, streams, creeks, etc.) thermal regime can be classified based on water temperature, fish community or invertebrate community: 1. Mean summer surface water temperature (Coker et al. 2001): · Coldwater - <19 °C · Coolwater - 19 °C -25 °C · Warmwater - > 25 °C 2. Fish community (adapted from Coker et al. 2001): · Cold water - an assemblage of fishes characterized by the presence of salmon, trout and sculpin species. Slimy sculpin, brook trout and American brook lamprey are the best indicator species of a cold water environment. · Coolwater - an assemblage of fishes often characterized by percids (e.g. walleye, Iowa darter), esocids (northern pike). · Warmwater - an assemblage of fishes often characterized by largemouth bass, bluegill, carp, bullheads, or bowfin 3. Invertebrate community (adapted from Kilgour and Barton 1999): · Characteristic cold water benthic invertebrates include mayflies (Ephemeroptera - eg. Siphonuridae), stoneflies (Plecoptera - eg. Leuctridae, Perlidae) and caddisflies (Trichoptera - eg. Psychomyidae, Phryganeidae). · Warm water communities are typically dominated by snails (eg. Planorbidae, Valvatidae), glossiphoniids (leeches) and planariids (flatworms)

THERMAL_REGIME_REASON	VARCHAR2 No (30)	REGIME_R	Water Temperature, Invertebrate Species Present, Fish Species Present, Interpolation, Combination
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The rationale for the ARA Thermal Regime. It may be determined by: water temperature, invertebrate species present, fish species present, interpolation or a combination of factors.

FISH_SPECIES_SUMMARY	No	SPECIES
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VARCHAR2
(2000)

A concatenation of all fish species common names found in the aquatic resource area, derived through the ARA Survey or Summary Species tables. This attribute would be queried to select aquatic resource areas by species. The ARA Survey or Summary Species tables could then be used for further information pertaining to each species. An example of how information in this field may look is: "American brook lamprey, American shad, Aurora trout, Brown trout, Lake sturgeon, Longnose gar, Rainbow trout"

SURFACE_AREA	NUMBER (12,4)	No	SURF_AREA
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A measure of the bounded region of the surface of a lake, excluding islands of a lake/reservoir or pond. Measure may be defined from an existing survey or derived using GIS. Measured in hectares.

MAXIMUM_DEPTH	NUMBER (6,2)	No	MAX_DEPTH
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An observed value that identifies the maximum vertical distance between the lake surface at a period of high-water and the lake bed. The maximum depth is recorded only for lake environments. Measured in units of meters.

MEAN_DEPTH	NUMBER (6,2)	No	MEAN_DEPTH
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The average vertical distance between the lake surface and the lake bed. It is calculated by dividing the volume of the lake by the area of the lake. Recorded only for lake environments. Measured in units of meters.

SECCHI_DEPTH	NUMBER (5,1)	No	SECCHI_DEP
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The mean depth at which a weighted 20 cm disk with alternate black and white quadrants disappears from view when lowered into the water of a lake on the shaded side of a boat and the depth where it reappears when being raised, measured in meters (m). This information is recorded for lakes only.

CONDUCTIVITY	NUMBER (6,1)	No	CONDUCTIV
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Conductivity is the ability of an aqueous solution to carry an electric current. The value entered should be the most recent point in time single reading, or if more than one sample a mean of all samples collected 2 m below the surface. If more than one sample has been taken within a segment, the mean should be calculated based on samples taken at a pproximately the same time (i.e. calculate the mean conductivity readings taken at approximately the same time from three basins of a lake) during one year. Measured in units of mhos/sec at 25 C.

MORPHOEDAPHIC_INDEX	NUMBER (10,2)	No	MORPH_INDX
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Measurement of the trophic state of a lake based on the square root of the ratio of total dissolved solids (or conductivity) and mean depth. Morphoedaphic Index is also used to estimate fish production. This information should be recorded for lakes only. This information is used to calculate potential yield. The index can be used to estimat e relative yield to provide a good first order indicator of over-exploitation.

AT_DEVELOPMENT_CAPACITY_IND	VARCHAR2 (3)	No	AT_CAP	Yes, No
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Lakes or basins of lakes that cannot support any more shoreline development based on either the MOEE Provincial Water Quality Objectives (PWQO) for phosphorous, the OMNR dissolved oxygen criterion for the protection of lake trout habitat, or other criteria (e.g. shoreline capability, recreational boating, etc.) set by the local planning authority. A lake (or basin of a lake) is at capacity if: - It is a designated lake trout lake where the current measured Mean Volume Weighted Hypolimnetic Dissolved Oxygen (MVWHDO) level is below the OMNR criterion of 7mg/L - Modeling/analysis indicates that any additional proposed development will degrade the water quality of the lake below the OMNR criterion of 7mg/L - Phosphorous levels are above the MOEE PWQO - The planning authority has designated the lake at capacity for planning purposes. Rationale: Useful for identifying lakes which are at Development Capacity. For lakes at development capacity, OMNR needs to ensure that all crown land dispositions, and any development applications received for these waterbodies will not result in the degradation of water quality.

AT_DEVELOPMENT_CAPACITY_REASON	VARCHAR2 (30)	No	AT_CAP_R	MVWHDO Less Than 7mg per L, MVWHDO Low, Phosphorous High, Planning
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The reason a lakes or basins of lakes is declared at development capacity from the following options: A lake (or basin of a lake) is defined as being at capacity using the following measures: "MVWHDO less than 7mg/L" It is a

designated lake trout lake where the current measured Mean Volume Weighted Hypolimnetic Dissolved Oxygen (MVWHDO) level is below the MNR criterion of 7mg/L "MVWHDO Low" Estimate derived by modeling or analysis which indicates that any additional proposed development will degrade the water quality of the lake below the MNR criterion of 7mg/L "Phosphorous High" Phosphorous levels are above the MOE Provincial Water Quality Objectives. "Planning" The planning authority has designated the lake at capacity for planning purposes.

COLDWATER_REHAB_POTENTIAL_IND	VARCHAR2	No	COLD_REHAB	Yes,No
	(3)			

Indication of whether an aquatic resource area has a reasonable potential of being rehabilitated to a coldwater system. Segments which historically contained coldwater fish species, but due to a deterioration in habitat quality, the stream temperature has increased and the stream no longer contains coldwater species.

COMMENTS	VARCHAR2	No	COMMENTS
	(2000)		

Unstructured description, additional notes, or further explanation.

SPLIT_FEATURE_IND	VARCHAR2	No	SPLIT_FEAT	Yes, No
	(3)			

Indicates whether a feature has additional, more detailed, geometry associated with it that is not stored or edited in NRVIS, but within individual MNR Districts. Users interested in a feature indicated to have more detailed geometry should contact the GSO of the district they are working with. This attribute was created for instances when the geometry of a large lake or river needs to be split to accurately represent aquatic values. Ex. when a lake has more than one basin and each basin has a different thermal regime.

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

ARA_FISHERY_SEGMENT_USE_LIST

Look up table for possible uses of aquatic resource areas.

Column Name	Column Type	Mandatory	Short Name	Valid Values
USE_DESCR	VARCHAR2 (35)	Yes	USE_DESCR	

Uses of the aquatic resource area.

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.

ARA_MANAGEMENT_OBJECTIVE_LIST

Look up table for information on fisheries management objectives.

Column Name	Column Type	Mandatory	Short Name	Valid Values
MANAGEMENT_OBJECTIVE	VARCHAR2 (100)	Yes	MGMT_OBJ	

The fisheries management objective defines how a species is managed in a lake. This provides a designation for how MNR is managing a species in a waterbody. This field should be viewed along with reproduction status (in the Reproduction table) and stocking objective (in the Stocking Objective table). N1 Native population, self sustaining N2 Native population augmented with stocking N3 Native population, put-grow -take fishery N4 Native population, ongoing rehabilitation N5 Native population, deferred restoration N6 Native population remnant or extinct, alternate species management I1 Introduced population, self sustaining I2 Introduced population, augmented with stocking I3 Introduced population, put-grow-take fishery I4 Introduced population, ongoing rehabilitation I5 Introduced population, deferred restoration I6 Introduced population remnant or extinct, alternate species management I7 Introduced population, current management objective undefined U1Unknown population, current management objective undefined

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.

ARA_MASTER_FISH_LIST

Look up table for list of fish species in Ontario.

Column Name	Column Type	Mandatory	Short Name	Valid Values
COMMON_NAME	VARCHAR2 (75)	Yes	COMMON_NAM	
The common name of a fish species according to the MNR Master Fish Species Code Numbers and Names List.				
SCIENTIFIC_NAME	VARCHAR2 (100)	Yes	SCIENTIFIC	
The scientific name of a fish species according to the MNR Master Fish Species Code Numbers and Names List.				
MNR_FISH_CODE	NUMBER (4,0)	Yes	FISH_CODE	
The code number of a fish species according to the OMNR Master Fish Species Code Numbers and Names List.				
WILD_LIFE_ID	NUMBER (13,0)	No	WILDLIFEID	
A value that uniquely identifies a taxonomic item or wild life category according to a recognized standard.				
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.				

ARA_SPECIES_MGMT_OBJECTIVE

Information about the management objectives for fish species in the aquatic resource area.

Column Name	Column Type	Mandatory	Short Name	Valid Values
ARA_SUMMARY_SPECIES_ID	NUMBER (13,0)	Yes	SUMMARY_ID	
A unique number for each aquatic resource area. System Generated.				
MANAGEMENT_OBJECTIVE	VARCHAR2 (100)	Yes	MGMT_OBJ	I1 Introduced population, self sustaining, I2 Introduced population, augmented with stocking, I3 Introduced population, put-grow-take fishery, I4 Introduced population, ongoing rehabilitation, I5 Introduced population, deferred restoration, I6 Introduced population remnant or extinct, alternate species management, ... (See ARA_MANAGEMENT_OBJECTIVE_LIST table)

The fisheries management objective defines how a species is managed in a lake. This provides a designation for how MNR is managing a species in a waterbody. This field should be viewed along with reproduction status (in the Reproduction table) and stocking objective (in the Stocking Objective table). N1 Native population, self sustaining N2 Native population augmented with stocking N3 Native population, put-grow -take fishery N4 Native population, ongoing rehabilitation N5 Native population, deferred restoration N6 Native population remnant or extinct, alternate species management I1 Introduced population, self sustaining I2 Introduced population, augmented with stocking I3 Introduced population, put-grow-take fishery I4 Introduced population, ongoing rehabilitation I5 Introduced population, deferred restoration I6 Introduced population remnant or extinct, alternate species management I7 Introduced population, current management objective undefined U1 Unknown population, current management objective undefined

MANAGEMENT_OBJECTIVE_YEAR	NUMBER	Yes	MGMT_YEAR
	(4,0)		

Indicates year that the present fisheries management objective of the waterbody was established.

COMMENTS	VARCHAR2	No	COMMENTS
	(250)		

General comment about the management objective of a fish population.

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

ARA_SPECIES_REPRODUCTION

Information about the reproduction status of fish species in the aquatic resource area.

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

A unique number for each aquatic resource area. System Generated.

REPRODUCTION_STATUS	VARCHAR2 (40)	Yes	REP_STATUS	Self-sustaining, Partly self-sustaining, Minimal, No Reproduction - Remnant or Extinct, Unknown
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The reproductive status of a fish population in a lake defined by self-sustaining, partly self-sustaining, minimal, no Reproduction - Remnant/Extinct or Unknown. This attribute useful for identifying the status of a fish population in a lake and for tracking changes in population distribution.

REPRODUCTION_YEAR	NUMBER (4,0)	Yes	REP_YEAR	
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The first year the reproduction status of a species in a waterbody applies. Where populations have always been self sustaining users should enter "0000".

COMMENTS	VARCHAR2 (250)	No	COMMENTS	
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General comment about the reproduction status of a fish population.

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

ARA_SPECIES_STOCKING_OBJECTIVE

Information about the stocking objectives for fish species in the aquatic resource area.

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

A unique number for each aquatic resource area. System Generated.

STOCKING_OBJECTIVE	VARCHAR2 (25)	Yes	STOCK_OBJ	None, Rehabilitation, Put-grow-take, Supplemental, Species Introduction
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A descriptor of the type of stocking that is occurring reflecting the current management of a species in a lake. This attribute is used to assist with fisheries management planning and with making management decisions.

STOCKING_OBJECTIVE_YEAR	NUMBER (4,0)	Yes	STOCK_YEAR
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The first year the stocking objective for a species in a waterbody applies. This will allow tracking of objectives through time.

COMMENTS	VARCHAR2 (250)	No	COMMENTS
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General comments about the stocking objective for a fish population.

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

ARA_SUMMARY_RELATED_FEATURE

Column Name	Column Type	Mandatory	Short Name	Valid Values
ARA_SUMMARY_ID	NUMBER (13,0)	Yes	ARA_ID	
A unique number for each aquatic resource area. System Generated.				
RELATED_FEATURE_ID	NUMBER (13,0)	Yes	SEGMENT_ID	
The number that uniquely identifies the related segment that corresponds to the location where an aquatic resource area survey or summary point is located. Primary key for related layer. Provides the necessary means to join ARA data to the FMF Object ID a related layer. Currently an object in the Water Polygon Segment or Water Line Segment, if required. This potential join is not mandatory and is not permanent.				
RELATED_CLASS_SHORT_NAME	VARCHAR2 (8)	Yes	CLASS_NAME	
Identifies the class for a record in the ARA SUMMARY WATER INTERSECTION table as being from Water Polygon Segment or Water Line Segment.				
SPATIAL_VERIFICATION_FLG	VARCHAR2 (15)	Yes	VERIF_FLG	History, Verified, Unverified, Questionable, Removed
An indication as to whether the spatial information associated with an ARA has been verified as accurate. When a water feature that is associated with an ARA is updated to the point that its FMF object id is changed, the link between ARA and Water will be lost. The spatial information will automatically be rejoined to a feature in the closest proximity to the previous feature and this field for that newly assigned feature will be set to 'unverified'.				
SPATIAL_EXTENT	VARCHAR2 (200)	No	SP_EXTENT	
Coordinates for the spatial extent of the related features that have been flagged as removed.				
EFFECTIVE_DATETIME	DATE	Yes	EFF_DATE	
Date/time the record was created or last modified in the source database.				

ARA_SUMMARY_SPECIES

Information related to each fish species associated with each ARA summary. It is also used to generate the "Fish Species Summary" attribute in the ARA Summary 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.				
ARA_SUMMARY_ID	NUMBER (13,0)	Yes	ARA_ID	
A unique number for each aquatic resource area. System Generated.				
COMMON_NAME	VARCHAR2 (75)	Yes	COM_NAME	Alosa sp., Amazon sailfin catfish, Ameiurus sp., American brook lamprey, American eel, American shad, ... (See ARA_MASTER_FISH_LIST table)
The common name of a fish species according to the MNR Master Fish Species Code Numbers and Names List.				
SPECIES_PRESENCE_IND	VARCHAR2 (10)	Yes	SP_PRE	Yes, No, Unknown
Indicator that identifies whether or not a species occurs in the ARA. The default is "Yes" indicating that based on our existing knowledge the species is present in the ARA (including remnant populations). "No" means the species was present historically but is no longer present (i.e. extirpated or no longer stocked) in the ARA. Default: Yes				
FIRST_OBSERVATION_DATE	DATE	No	FIRST_OBS	
The date when a species was first observed, entered as yyyy/mm/dd. (ex. 2007/05/31)				
FIRST_OBSERVATION_DATE_FLG	VARCHAR2 (10)	No	F_OBS_FLG	Actual, Estimated
Indicator of whether the date in the Species First Observation Date Field is the actual observation date or estimated observation date. Options include: "Actual" or "Estimated".				
FIRST_OBS_ORIG_DATA_SRC	VARCHAR2 (75)	No	F_OBS_SRC	Scientific Collectors Permit Database, FISHNET2, FISHNET3, Aquatic Habitat Inventory, HABPROGS - FWIS, Department of Fisheries and Oceans Research DB, Department of Fisheries and Oceans Drains DB, Canadian Museum of Nature, Recreational Fishing Survey of Canada Database, Provincial Lake Trout Lakes at Development Capacity Database, Provincial Walleye Database, Provincial Brook Trout Database, Other, None
The name of the original source dataset that contains the first species record for a waterbody. Examples include: Scientific Collectors Permit Database, FISHNET2, Aquatic Habitat Inventory etc.				
FIRST_OBSERVATION_DESCR		No	F_OBS_DESC	

VARCHAR2
(250)

This attribute should be filled in if the option "Other" or "None" was selected from the "Species First Observation Original Data Source" attribute. Where "Other" is selected the description should name the database and organization that owns the database that contains the first species record for a waterbody. Where "None" is selected this field may be used to describe why the ARA is not included in an alternate source database. For example, the record may be a result of an informal non-standard sampling event or an observation (i.e. by a conservation officer), where the ARA is the only repository for this data.

LAST_OBSERVATION_DATE	DATE	No	L_OBS_DATE
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The date when a species was last observed, entered as yyyy/mm/dd. (ex. 2007/05/31)

LAST_OBSERVATION_DATE_FLG	VARCHAR2 (10)	No	L_OBS_FLG	Actual, Estimated
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Indicator of whether the date in the Last Observation Date Field is the actual observation date or estimated observation date. Options include: "Actual" or "Estimated".

LAST_OBSERVATION_DESCR	VARCHAR2 (250)	No	L_OBS_DESC
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This attribute should be filled in if the option "Other" or "None" was selected from the "Species Last Observation Original Data Source" attribute. Where "Other" is selected the description should name the database and organization that owns the database that contains the first species record for a waterbody. Where "None" is selected this field may be used to describe why the ARA is not included in an alternate source database. For example, the record may be a result of an informal non-standard sampling event or an observation (i.e. by a conservation officer), where the ARA is the only repository for this data.

LAST_OBS_ORIG_DATA_SRC	VARCHAR2 (75)	No	L_OBS_SRC	Scientific Collectors Permit Database, FISHNET2, FISHNET3, Aquatic Habitat Inventory, HABPROGS - FWIS, Department of Fisheries and Oceans Research DB, Department of Fisheries and Oceans Drains DB, Canadian Museum of Nature, Recreational Fishing Survey of Canada Database, Provincial Lake Trout Lakes at Development Capacity Database, Provincial Walleye Database, Provincial Brook Trout Database, Other, None
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The name of the original source dataset that contains the last species record for a waterbody. Examples include: Scientific Collectors Permit Database, FISHNET2, Aquatic Habitat Inventory etc.

STOCK_ORIGIN	VARCHAR2 (10)	No	STOCK_ORIG	Native, Introduced, Unknown
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The origin of a fish population in a lake defined as native, introduced or unknown. This attribute is useful for setting fisheries management objectives and making management decisions.

STOCK_ORIGIN_COMMENT	VARCHAR2 (100)	No	STOCK_COMM
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Additional comments about the stock origin of a given species.

COMMENTS	VARCHAR2 (2000)	No	COMMENTS
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Unstructured description, additional notes, or further explanation.

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

ARA_USE

Column Name	Column Type	Mandatory	Short Name	Valid Values
ARA_SUMMARY_ID	NUMBER (13,0)	Yes	ARA_ID	
A unique number for each aquatic resource area. System Generated.				
USE_DESCR	VARCHAR2 (35)	Yes	USE_DESCR	Aquaculture, Baitfish, Canoe Route, Closed For Research, Commercial Fishery, Fish Viewing, ... (See ARA_FISHERY_SEGMENT_USE_LIST table)
Uses of the aquatic resource area.				
EFFECTIVE_DATETIME	DATE	Yes	EFF_DATE	
Date/time the record was created or last modified in the source database.				

ARA_WATERBODY_TYPE_LIST

Look up table of possible waterbody types.

Column Name	Column Type	Mandatory	Short Name	Valid Values
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WATERBODY_TYPE	VARCHAR2 (30)	Yes	WBY_TYPE	
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The type of waterbody. Possible entries include: Lake or Pond, Stream or River, Drain, Wetland, Combination.

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.

LIO Lookup Table Values:
ARA_FISHERY_SEGMENT_USE_LIST

USE_DESCR	EXPIRY_DATETIME
Aquaculture	
Baitfish	
Canoe Route	
Closed For Research	
Commercial Fishery	
Fish Viewing	
Hydro Power	
Mining	
Native Subsistence Fishery	
Recreation	
Recreational Fishery	
Remote Tourism	
Snowmobile Trail	
Tourism Based Fishery	
Tourism Lake	
Water Taking	
Winter Road	

LIO Lookup Table Values:
ARA_MANAGEMENT_OBJECTIVE_LIST

MANAGEMENT OBJECTIVE	EXPIRY DATETIME
I1 Introduced population, self sustaining	
I2 Introduced population, augmented with stocking	
I3 Introduced population, put-grow-take fishery	
I4 Introduced population, ongoing rehabilitation	
I5 Introduced population, deferred restoration	
I6 Introduced population remnant or extinct, alternate species management	
I7 Introduced population, current management objective undefined	
N1 Native population, self sustaining	
N2 Native population augmented with stocking	
N3 Native population, put-grow-take fishery	
N4 Native population, ongoing rehabilitation	
N5 Native population, deferred restoration	
N6 Native population remnant or extinct, alternate species management	
U1 Unknown population origin, self-sustaining	
U2 Unknown population origin, augmented with stocking	
U3 Unknown population origin, put-grow-take fishery	
U4 Unknown population origin, ongoing rehabilitation	
U5 Unknown population origin, deferred restoration	
U6 Unknown population origin, remnant or extinct, alternate species management	
U7 Unknown population origin, current management objective undefined	

**LIO Lookup Table Values:
ARA_MASTER_FISH_LIST**

COMMON NAME	SCIENTIFIC NAME	MNR FISH CODE	WILD LIFE ID	EXPIRY DATETIME
Alosa sp.	Alosa sp.	64		
Amazon sailfin catfish	Pterygoplichthys pardalis	472		
Ameiurus sp.	Ameiurus sp.	243		
American brook lamprey	Lampetra appendix	11		
American eel	Anguilla rostrata	251		
American shad	Alosa sapidissima	62		
Arctic char	Salvelinus alpinus	79		
Arctic grayling	Thymallus arcticus	111		
Atlantic salmon x brown trout	Salmo trutta x Salmo salar	421		
Atlantic salmon	Salmo salar	77		
Baitfish	Baitfish	997		
Bowfins	AMIIDAE	50		
CATOSTOMIDAE - Hybrids	CATOSTOMIDAE - Hybrids	550		
CENTRARCHIDAE - Hybrids	CENTRARCHIDAE - Hybrids	700		
COREGONINAE - Hybrids	COREGONINAE - Hybrids	450		
COTTIDAE - Hybrids	COTTIDAE - Hybrids	800		
CYPRINIDAE - Hybrids	CYPRINIDAE - Hybrids	600		
Carps and Minnows	CYPRINIDAE	180		
Catostomus sp.	Catostomus sp.	176		
Characins	CHARACIDAE	460		
Chinook salmon	Oncorhynchus tshawytscha	75		
Cichlids	CICHLIDAE	480		
Cods	GADIDAE	270		
Coregonus sp.	Coregonus sp.	106		
Cottus sp.	Cottus sp.	385		

Drums	SCIAENIDAE	370		
ESOCIDAE - Hybrids	ESOCIDAE - Hybrids	500		
Esox sp.	Esox sp.	134		
Etheostoma sp.	Etheostoma sp.	348		
European Flounder	Platichthys flesus	396		
Florida gar	Lepisosteus platyrhinchus	44		
Freshwater Eels	ANGUILLIDAE	250		
Gars	LEPISOSTEIDAE	40		
Gobies	GOBIIDAE	365		
Grayling subfamily	THYMALLINAE	110		
Herrings	CLUPEIDAE	60		
Hybognathus sp.	Hybognathus sp.	222		
Hybopsis sp.	Hybopsis sp.	228		
ICTALURIDAE - Hybrids	ICTALURIDAE - Hybrids	650		
Ichthyomyzon sp.	Ichthyomyzon sp.	15		
Ictalurus sp.	Ictalurus sp.	241		
Ictiobus hybrids	Ictiobus hybrids	551		
Ictiobus sp.	Ictiobus sp.	178		
Iowa darter	Etheostoma exile	338		
Lampreys	PETROMYZONTIDAE	10		
Lepisosteus sp.	Lepisosteus sp.	43		
Lepomis hybrids	Lepomis hybrids	701		
Lepomis sp.	Lepomis sp.	320		
Lumpfishes	CYCLOPTERIDAE	390		
Luxilus sp.	Luxilus sp.	229		
MORONIDAE - Hybrids	MORONIDAE - Hybrids	690		
Micropterus sp.	Micropterus sp.	321		
Mooneyes	HIODONTIDAE	150		
Morone hybrids	Morone hybrids	691		
Morone sp.	Morone sp.	303		
Moxostoma sp.	Moxostoma sp.	177		
Mudminnows	UMBRIDAE	140		
Myoxocephalus sp.	Myoxocephalus sp.	386		

New World Silversides	ATHERINOPSIDAE	360		
Nipigon cisco	Coregonus nipigon	98		
Nocomis sp.	Nocomis sp.	223		
North American Catfishes	ICTALURIDAE	230		
Notropis hybrids	Notropis hybrids	610		
Notropis sp.	Notropis sp.	224		
Noturus sp.	Noturus sp.	242		
Oncorhynchus sp.	Oncorhynchus sp.	84		
PERCIDAE - Hybrids	PERCIDAE - Hybrids	750		
Paddlefishes	POLYODONTIDAE	20		
Perches	PERCIDAE	330		
Percina sp.	Percina sp.	349		
Phoxinus hybrids	Phoxinus hybrids	602		
Phoxinus sp.	Phoxinus sp.	221		
Pikes	ESOCIDAE	130		
Pimephales sp.	Pimephales sp.	225		
Pomoxis sp.	Pomoxis sp.	322		
Prosopium sp.	Prosopium sp.	107		
Pterygoplichthys sp.	Pterygoplichthys sp.	473		
Rhinichthys sp.	Rhinichthys sp.	226		
Righteye Flounders	PLEURONECTIDAE	395		
SALMONIDAE - Hybrids	SALMONIDAE - Hybrids	400		
SALMONINAE - Hybrids	SALMONINAE - Hybrids	420		
Salmo sp.	Salmo sp.	85		
Salmon and Trout subfamily	SALMONINAE	70		
Salvelinus sp.	Salvelinus sp.	86		
Sander sp.	Sander sp.	347		
Sculpins	COTTIDAE	380		
Semotilus sp.	Semotilus sp.	227		
Skipjack herring	Alosa chrysochloris	66		
Smelts	OSMERIDAE	120		
Sticklebacks	GASTEROSTEIDAE	280		

Sturgeons	ACIPENSERIDAE	30		
Suckermouth Armoured Catfishes	LORICARIIDAE	470		
Suckers	CATOSTOMIDAE	160		
Sunfishes	CENTRARCHIDAE	310		
Temperate Basses	Moronidae	300		
Topminnows	FUNDULIDAE	260		
Trout-perches	PERCOPSIDAE	290		
Unidentifiable	Unidentifiable	990		
Whitefish subfamily	COREGONINAE	90		
alewife	<i>Alosa pseudoharengus</i>	61		
aurora trout	<i>Salvelinus fontinalis timagamiensis</i>	83		
banded killifish	<i>Fundulus diaphanus</i>	261		
bighead carp	<i>Hypophthalmichthys nobilis</i>	632		
bigmouth buffalo	<i>Ictiobus cyprinellus</i>	166		
black buffalo	<i>Ictiobus niger</i>	174		
black bullhead x brown bullhead	<i>Ameiurus melas</i> x <i>Ameiurus nebulosus</i>	651		
black bullhead	<i>Ameiurus melas</i>	231		
black carp	<i>Mylopharyngodon piceus</i>	633		
black crappie	<i>Pomoxis nigromaculatus</i>	319		
black redhorse	<i>Moxostoma duquesnei</i>	169		
blackchin shiner	<i>Notropis heterodon</i>	199		
blackfin cisco	<i>Coregonus nigripinnis</i>	97		
blacknose shiner	<i>Notropis heterolepis</i>	200		
blackside darter	<i>Percina maculata</i>	344		
blackstripe topminnow	<i>Fundulus notatus</i>	262		
bloater	<i>Coregonus hoyi</i>	94		
blue pike	<i>Sander vitreus glaucus</i>	333		
blueback herring	<i>Alosa aestivalis</i>	65		
bluegill	<i>Lepomis macrochirus</i>	314		
bluntnose minnow	<i>Pimephales notatus</i>	208		
bowfin	<i>Amia calva</i>	51		

brassy minnow	Hybognathus hankinsoni	189		
bridle shiner	Notropis bifrenatus	197		
brindled madtom	Noturus miurus	237		
brook silverside	Labidesthes sicculus	361		
brook stickleback	Culaea inconstans	281		
brook trout	Salvelinus fontinalis	80		
brown bullhead	Ameiurus nebulosus	233		
brown trout	Salmo trutta	78		
burbot	Lota lota	271		
central mudminnow	Umbra limi	141		
central stoneroller	Campostoma anomalum	216		
chain pickerel	Esox niger	135		
channel catfish	Ictalurus punctatus	234		
channel darter	Percina copelandi	343		
chestnut lamprey	Ichthyomyzon castaneus	16		
chub	Coregonus sp. (Cisco species other than C. artedi)	103		
chum salmon	Oncorhynchus keta	72		
cisco	Coregonus artedi	93		
coho salmon x Chinook salmon	Oncorhynchus kisutch x Oncorhynchus tshawytscha	423		
coho salmon	Oncorhynchus kisutch	73		
common carp	Cyprinus carpio	186		
common shiner x brassy minnow	Luxilus cornutus x Hybognathus hankinsoni	615		
common shiner x creek chub	Luxilus cornutus x Semotilus atromaculatus	612		
common shiner x longnose dace	Luxilus cornutus x Rhinichthys cataractae	613		
common shiner x river chub	Luxilus cornutus x Nocomis micropogon	614		
common shiner x rosyface shiner	Luxilus cornutus x Notropis rubellus	611		
common shiner	Luxilus cornutus	198		
creek chub x redbside dace	Semotilus atromaculatus x Clinostomus elongatus	624		

creek chub	<i>Semotilus atromaculatus</i>	212		
cutlip minnow	<i>Exoglossum maxillingua</i>	188		
deepwater cisco	<i>Coregonus johanna</i>	95		
deepwater sculpin	<i>Myoxocephalus thompsonii</i>	384		
eastern blacknose dace x creek chub	<i>Rhinichthys atratulus</i> x <i>Semotilus atromaculatus</i>	621		
eastern blacknose dace	<i>Rhinichthys atratulus</i>	210		
eastern sand darter	<i>Ammocrypta pellucida</i>	335		
eastern silvery minnow	<i>Hybognathus regius</i>	190		
emerald shiner	<i>Notropis atherinoides</i>	196		
fallfish	<i>Semotilus corporalis</i>	213		
fantail darter	<i>Etheostoma flabellare</i>	339		
fathead minnow x bluntnose minnow	<i>Pimephales promelas</i> x <i>Pimephales notatus</i>	620		
fathead minnow	<i>Pimephales promelas</i>	209		
finescale dace x pearl dace	<i>Phoxinus neogaeus</i> x <i>Margariscus margarita</i>	605		
finescale dace	<i>Phoxinus neogaeus</i>	183		
flathead catfish	<i>Pylodictis olivaris</i>	239		
fourhorn sculpin	<i>Myoxocephalus quadricornis</i>	387		
fourspine stickleback	<i>Apeltes quadracus</i>	284		
freshwater drum	<i>Aplodinotus grunniens</i>	371		
ghost shiner	<i>Notropis buchanani</i>	218		
gizzard shad	<i>Dorosoma cepedianum</i>	63		
golden redhorse	<i>Moxostoma erythrurum</i>	170		
golden shiner	<i>Notemigonus crysoleucas</i>	194		
goldeye	<i>Hiodon alosoides</i>	151		
goldfish x carp	<i>Carassius auratus</i> x <i>Cyprinus carpio</i>	601		
goldfish	<i>Carassius auratus</i>	181		
grass carp	<i>Ctenopharyngodon idella</i>	219		
grass pickerel	<i>Esox americanus vermiculatus</i>	133		
gravel chub	<i>Erimystax x-punctatus</i>	187		
greater redhorse	<i>Moxostoma valenciennesi</i>	172		
green sunfish x bluegill		705		

	Lepomis cyanellus x Lepomis macrochirus			
green sunfish x longear sunfish	Lepomis cyanellus x Lepomis megalotis	704		
green sunfish x pumpkinseed	Lepomis cyanellus x Lepomis gibbosus	703		
green sunfish	Lepomis cyanellus	312		
greenside darter	Etheostoma blennioides	336		
hornyhead chub	Nocomis biguttatus	192		
jaguar guapote	Cichlasoma managuense	482		
johnny darter	Etheostoma nigrum	341		
johnny darter/tesselated darter	Etheostoma nigrum/Etheostoma olmstedii	351		
kiyi	Coregonus kiyi	96		
lake chub	Couesius plumbeus	185		
lake chubsucker	Erimyzon sucetta	164		
lake sturgeon	Acipenser fulvescens	31		
lake trout	Salvelinus namaycush	81		
lake whitefish x cisco	Coregonus clupeaformis x Coregonus artedi	451		
lake whitefish	Coregonus clupeaformis	91		
largemouth bass	Micropterus salmoides	317		
least darter	Etheostoma microperca	340		
logperch x blackside darter	Percina caprodes x Percina maculata	753		
logperch x channel darter	Percina caprodes x Percina copelandi	752		
logperch	Percina caprodes	342		
longear sunfish	Lepomis megalotis	315		
longjaw cisco	Coregonus alpenae	92		
longnose dace x lake chub	Rhinichthys cataractae x Couesius plumbeus	623		
longnose dace x river chub	Rhinichthys cataractae x Nocomis micropogon	622		
longnose dace	Rhinichthys cataractae	211		
longnose gar	Lepisosteus osseus	41		
longnose sucker	Catostomus catostomus	162		

lumpfish	Cyclopterus lumpus	391		
margined madtom	Noturus insignis	238		
mimic shiner	Notropis volucellus	206		
mooneye	Hiodon tergisus	152		
mottled sculpin x slimy sculpin	Cottus bairdii x Cottus cognatus	801		
mottled sculpin	Cottus bairdii	381		
muskellunge	Esox masquinongy	132		
ninespine stickleback	Pungitius pungitius	283		
northern brook lamprey	Ichthyomyzon fossor	12		
northern hog sucker	Hypentelium nigricans	165		
northern madtom	Noturus stigmosus	244		
northern pike x grass pickerel	Esox lucius x Esox americanus vermiculatus	501		
northern pike	Esox lucius	131		
northern redbelly dace x finescale dace	Phoxinus eos x Phoxinus neogaeus	603		
northern redbelly dace x pearl dace	Phoxinus eos x Margariscus margarita	604		
northern redbelly dace	Phoxinus eos	182		
orangespotted sunfish	Lepomis humilis	324		
oscar	Astronotus ocellatus	481		
paddlefish	Polyodon spathula	21		
pearl dace	Margariscus margarita	214		
pink salmon	Oncorhynchus gorbuscha	71		
pugnose minnow	Opsopoeodus emiliae	207		
pugnose shiner	Notropis anogenus	195		
pumpkinseed x bluegill	Lepomis gibbosus x Lepomis macrochirus	702		
pumpkinseed x orangespotted sunfish	Lepomis gibbosus x Lepomis humilis	707		
pumpkinseed	Lepomis gibbosus	313		
pygmy whitefish	Prosopium coulterii	101		
quillback	Carpoides cyprinus	161		
rainbow darter	Etheostoma caeruleum	337		

rainbow smelt	Osmerus mordax	121		
rainbow trout	Oncorhynchus mykiss	76		
red-bellied pacu	Piaractus brachypomus	461		
redfin shiner	Lythrurus umbratilis	205		
redside dace	Clinostomus elongatus	184		
river chub	Nocomis micropogon	193		
river darter	Percina shumardi	345		
river redhorse	Moxostoma carinatum	173		
rock bass	Ambloplites rupestris	311		
rosyface shiner	Notropis rubellus	202		
round goby	Neogobius melanostomus	366		
round whitefish	Prosopium cylindraceum	102		
royal panaque	Panaque nigrolineatus	471		
rudd	Scardinius erythrophthalmus	220		
ruffe	Gymnocephalus cernuus	350		
sand shiner	Notropis stramineus	204		
sauger	Sander canadensis	332		
saugeye	Sander canadensis x Sander vitreus	751		
sea lamprey	Petromyzon marinus	14		
shorthead redhorse	Moxostoma macrolepidotum	171		

* Not a complete list.

LIO Lookup Table Values:
ARA_WATERBODY_TYPE_LIST

WATERBODY TYPE	EXPIRY DATETIME
Combination	
Drain	
Lake or Pond	
Stream or River	
Wetland	

**LIO Table Relationships for Class:
Aquatic Resource Area Summary**

