Thames River Fish Facts

The Thames River and its Tributaries

- Support one of the most productive and diverse fish communities in Canada
- Approximately 94 fish species recorded (total for Ontario: 165 species)
- 13 species are currently considered Species at Risk
- Provide a range of habitats, favourable climate, nutrient-rich waters, and connection with the Great Lakes

Fish

- Have adapted to various habitat conditions and food preferences
- Play a crucial role in the aquatic food chain, providing food for other fish, wildlife and humans
- Move throughout a watercourse and travel long distances
- Indicate ecosystem health due to specific habitat requirements, varying water quality tolerances, and ability to accumulate substances
- Diverse fish communities indicate relatively healthy aquatic ecosystems
- Affected by many factors, including:
  - Habitat changes (e.g. barriers, channelization)
  - Water quality and quantity (e.g. nutrients, sediments, drought)
  - Urban and rural land uses (e.g. runoff, development)
  - Exotic and invasive species

Fish Monitoring

- Monitoring of the Thames River fish community has been done by:
  - Conservation Authorities – Lower Thames Valley CA, Upper Thames River CA
  - Fisheries and Oceans Canada
  - Ontario Ministry of the Environment
  - Ontario Ministry of Natural Resources
  - Royal Ontario Museum
- Programs that provide fisheries information:
  - Species at Risk
  - Municipal Drain Classification Project
  - Sportfish Contaminant Monitoring Program
  - Walleye Assessment
  - Benthic Monitoring Program
  - Invading Species Awareness Program
  - Mussel Monitoring Network
  - Habitat Monitoring
  - Fish Dot Program
- Techniques used to collect fish data in the Thames:
  - Seine and gill netting
  - Trawling
  - Minnow trapping
  - Electrofishing
  - Creel and angling surveys
  - Visual observations
  - Trap netting

Species at Risk (SAR)

- Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assigns status to species according to Canada's Species at Risk Act (SARA)
- COSEWIC categorizes species at risk as extirpated, endangered, threatened or of special concern
- 27 aquatic SAR found in the Thames River watershed, including 13 fish
- Sensitive to environmental change, provide warning signs of overall environmental health
- Thames River Aquatic Ecosystem Recovery Strategy has been prepared to guide activities in the Thames watershed in order to stabilise and improve SAR populations and reduce or eliminate threats to these species and their associated habitats

Invasive Species

- Also called non-native, alien, exotic, non-indigenous, or introduced species
- May threaten native fish through their ability to out-compete for food and habitat and to pass on diseases
- Over 160 non-native species of plants, fish, algae, invertebrates and mussels have been introduced into the Great Lakes watershed, either naturally, intentionally or accidentally since the 1800s
- Some invasive species may provide economic benefits
- Invasive species found in the Thames River watershed include:
  - Fish: sea lamprey, alewife, common carp, goldfish, round goby
  - Mollusc: zebra mussel
  - Plants: purple loosestrife, common reed or giant reed
- Invasives that have the potential to threaten the Thames River fish community include:
  - Fish: northern snakehead, rudd
  - Invertebrates: rusty crayfish, spiny water flea, fishhook water flea
  - Plants: fanwort, Eurasion watermilfoil

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Thames River Fish Species Summary

Common Name	Scientific Name	Abundance	Coldwater	Native	Migrant	Target	COSEWIC Status
Alewife	*Alosa pseudoharengus*	Rare	☑	☐	☑	☐	
American brook lamprey	*Lampetra appendix*	Uncommon	☑	☑	☐	☐	
Bigmouth Buffalo	*Ictiobus cyprinellus*	Rare	☐	☑	☑	☐	Special Concern
Black Buffalo	*Ictiobus niger*	Rare	☐	☑	☐	☐	Special Concern
Black Bullhead	*Ameiurus melas*	Common	☐	☑	☐	☐	
Black Crappie	*Pomoxis nigromaculatus*	Uncommon	☐	☑	☐	☑	
Black Redhorse	*Moxostoma duquesnei*	Uncommon	☐	☑	☐	☐	Threatened
Blacknose Dace	*Rhinichthys atratulus*	Abundant	☐	☑	☐	☐	
Blacknose Shiner	*Notropis heterolepis*	Uncommon	☐	☑	☐	☐	
Blackside Darter	*Percina maculata*	Abundant	☐	☑	☐	☐	
Bluegill	*Lepomis macrochirus*	Common	☐	☑	☐	☐	
Bluntnose Minnow	*Pimephales notatus*	Abundant	☐	☑	☐	☐	
Brassy Minnow	*Hybognathus hankinsoni*	Uncommon	☐	☑	☐	☐	
Brindled Madtom	*Noturus miurus*	Rare	☐	☑	☐	☐	
Brook Silverside	*Labidesthes sicculus*	Uncommon	☐	☑	☐	☐	
Brook Stickleback	*Culaea inconstans*	Abundant	☐	☑	☐	☐	
Brook Trout	*Salvelinus fontinalis*	Uncommon	☑	☑	☑	☑	
Brown Bullhead	*Ameiurus nebulosus*	Uncommon	☐	☑	☐	☐	
Brown Trout	*Salmo trutta*	Uncommon	☑	☐	☑	☑	
Central Mudminnow	*Umbra limi*	Abundant	☐	☑	☐	☐	
Central Stoneroller	*Campostoma anomalum*	Abundant	☐	☑	☐	☐	
Channel Catfish	*Ictalurus punctatus*	Common	☐	☑	☑	☑	
Chinook Salmon	*Oncorhynchus tshawytscha*	Rare	☑	☐	☑	☑	
Coho Salmon	*Oncorhynchus kisutch*	Rare	☑	☐	☑	☑	
Common Carp	*Cyprinus carpio*	Abundant	☐	☐	☐	☐	
Common Shiner	*Luxilus cornutus*	Abundant	☐	☑	☐	☐	
Creek Chub	*Semotilus atromaculatus*	Abundant	☐	☑	☐	☐	
Eastern Sand Darter	*Ammocrypta pellucida*	Uncommon	☐	☑	☐	☐	Threatened
Emerald Shiner	*Notropis atherinoides*	Common	☐	☑	☑	☐	
Fantail Darter	*Etheostoma flabellare*	Abundant	☐	☑	☐	☐	
Fathead Minnow	*Pimephales promelas*	Abundant	☐	☑	☐	☐	
Freshwater Drum	*Aplodinotus grunniens*	Uncommon	☐	☑	☑	☐	
Ghost Shiner	*Notropis buchanani*	Common	☐	☑	☐	☐	
Gizzard Shad	*Dorosoma cepedianum*	Common	☐	☑	☑	☐	
Golden Redhorse	*Moxostoma erythrurum*	Abundant	☐	☑	☐	☐	
Golden Shiner	*Notemigonus crysoleucas*	Common	☐	☑	☐	☐	
Goldfish	*Carassius auratus*	Uncommon	☐	☐	☐	☐	
Gravel Chub	*Erimystax x-punctata*	Rare	☐	☑	☐	☐	Extirpated
Greater Redhorse	*Moxostoma valenciennesi*	Common	☐	☑	☐	☐	
Green Sunfish	*Lepomis cyanellus*	Abundant	☐	☑	☐	☐	
Greenside Darter	*Etheostoma blennioides*	Abundant	☐	☑	☐	☐	Special Concern
Hornyhead Chub	*Nocomis biguttatus*	Abundant	☐	☑	☐	☐	
Iowa Darter	*Etheostoma exile*	Common	☐	☑	☐	☐	
Johnny Darter	*Etheostoma nigrum*	Abundant	☐	☑	☐	☐	
Lake Chubsucker	*Erimyzon sucetta*	Rare	☐	☑	☐	☐	Threatened
Largemouth Bass	*Micropterus salmoides*	Abundant	☐	☑	☐	☑	
Least Darter	*Etheostoma microperca*	Common	☐	☑	☐	☐	
Logperch	*Percina caprodes*	Common	☐	☑	☐	☐	
Longear Sunfish	*Lepomis megalotis*	Common	☐	☑	☐	☐	
Longnose Dace	*Rhinichthys cataractae*	Common	☐	☑	☐	☐	
Longnose Gar	*Lepisosteus osseus*	Uncommon	☐	☑	☑	☐	

Common Name	Scientific Name	Abundance	Coldwater	Native	Migrant	Target	COSEWIC Status
Mimic Shiner	*Notropis volucellus*	Abundant	☐	☑	☐	☐	
Mooneye	*Hiodon tergisus*	Uncommon	☐	☑	☑	☑	
Mottled Sculpin	*Cottus bairdi*	Uncommon	☑	☑	☐	☐	
Muskellunge	*Esox masquinongy*	Rare	☐	☑	☑	☑	
Northern Brook Lamprey	*Ichthyomyzon fossor*	Rare	☐	☑	☐	☐	Special Concern
Northern Hog Sucker	*Hypentelium nigricans*	Abundant	☐	☑	☐	☐	
Northern Madtom	*Noturus stigmosus*	Rare	☐	☑	☐	☐	Endangered
Northern Pike	*Esox lucius*	Common	☐	☑	☑	☑	
Northern Redbelly Dace	*Phoxinus eos*	Abundant	☐	☑	☐	☐	
Pearl Dace	*Margariscus margarita*	Uncommon	☑	☑	☐	☐	
Pugnose Minnow	*Opsopoeodus emiliae*	Rare	☐	☑	☐	☐	Special Concern
Pumpkinseed	*Lepomis gibbosus*	Abundant	☐	☑	☐	☐	
Quillback	*Carpiodes cyprinus*	Uncommon	☐	☑	☑	☐	
Rainbow Darter	*Etheostoma caeruleum*	Uncommon	☐	☑	☐	☐	
Rainbow Trout	*Oncorhynchus mykiss*	Common	☑	☐	☑	☑	
Redfin Shiner	*Lythrurus umbratilis*	Uncommon	☐	☑	☐	☐	
River Chub	*Nocomis micropogon*	Common	☐	☑	☐	☐	
River Darter	*Percina shumardi*	Rare	☐	☑	☐	☐	
River Redhorse	*Moxostoma carinatum*	Rare	☐	☑	☑	☐	Special Concern
Rock Bass	*Ambloplites rupestris*	Abundant	☐	☑	☐	☐	
Rosyface Shiner	*Notropis rubellus*	Abundant	☐	☑	☐	☐	
Round Goby	*Neogobius melanostomus*	Rare	☐	☐	☐	☐	
Sauger	*Sander canadensis*	Rare	☐	☑	☑	☑	
Sea Lamprey	*Petromyzon marinus*	Rare	☑	☐	☑	☐	
Shorthead Redhorse	*Moxostoma macrolepidotum*	Common	☐	☑	☑	☐	
Silver Lamprey	*Ichthyomyzon unicuspis*	Rare	☐	☑	☑	☐	
Silver Redhorse	*Moxostoma anisurum*	Common	☐	☑	☑	☐	
Silver Shiner	*Notropis photogenis*	Uncommon	☐	☑	☐	☐	Special Concern
Smallmouth Bass	*Micropterus dolomieu*	Abundant	☐	☑	☐	☑	
Spotfin Shiner	*Cyprinella spiloptera*	Abundant	☐	☑	☐	☐	
Spottail Shiner	*Notropis hudsonius*	Uncommon	☑	☑	☑	☐	
Spotted Sucker	*Minytrema melanops*	Rare	☐	☑	☐	☐	Special Concern
Stonecat	*Noturus flavus*	Abundant	☐	☑	☐	☐	
Striped Shiner	*Luxilus chrysocephalus*	Abundant	☐	☑	☐	☐	
Tadpole Madtom	*Noturus gyrinus*	Uncommon	☐	☑	☐	☐	
Trout-perch	*Percopsis omiscomaycus*	Uncommon	☑	☑	☐	☐	
Walleye	*Sander vitreus*	Uncommon	☐	☑	☑	☑	
White Bass	*Morone chrysops*	Uncommon	☐	☑	☑	☑	
White Crappie	*Pomoxis annularis*	Common	☐	☑	☐	☑	
White Perch	*Morone americana*	Uncommon	☐	☐	☑	☑	
White Sucker	*Catostomus commersoni*	Abundant	☐	☑	☑	☐	
Yellow Bullhead	*Ameiurus natalis*	Common	☐	☑	☐	☐	
Yellow Perch	*Perca flavescens*	Common	☐	☑	☑	☑	

Thames River Fish Species Summary - Definitions

Abundance: Refers to the relative abundance or common occurrence of the species within the waters of the Thames River watershed based on sampling results. Consideration was given to accurately reflect the species' presence within the watershed due to the sampling capture method, effort, biases, difficulty in capturing certain species and anecdotal reporting.

- Abundant: more than 50 sample records in the database
- Common: between 15 and 50 sample records in the database
- Uncommon: between 5 and 15 sample records in database
- Rare: fewer than 5 sample records in database
- Historical: species that have been previously recorded in the Thames

Thames River Fish Species Summary - Definitions (continued)

Coldwater: Life history information was reviewed in Morphological and Ecological Characteristics of Canadian Freshwater Fishes, to identify species habitat, including thermal preferences. These species are found in coldwater habitats, defined as having water temperatures of less than 19°C.

Native: A species indigenous to a particular region or area.

Migrant: A species that moves to a riverine area from a lake in order to carry out one of its life history requirements such as spawning.

Target: Indicates if the species is a sportfish and considered a top level predator. Generally speaking, any species that is targeted for angling purposes would be a sportfish. Most sportfish feed on smaller fish, and baitfish can be used when angling for sportfish.

COSEWIC Status: Status assigned by the Committee on the Status of Endangered Wildlife in Canada for the Species at Risk Act (SARA).

- Extinct: A species that no longer exists.
- Extirpated: A species no longer existing in the wild in Canada, but occurring elsewhere in the wild.
- Endangered: A species facing imminent extirpation or extinction.
- Threatened: A species likely to become endangered if limiting factors are not reversed.
- Special Concern: A species that may become threatened or endangered because of a combination of biological characteristics and identified threats.