

Ministry of Natural Resources  
and Forestry

Ministère des Richesses naturelles  
et des Forêts

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May 15, 2019

Dear Stakeholder,

**SUBJECT: Broad-scale Monitoring Program on Cross, Net and Temagami**

The Ministry of Natural Resources and Forestry (MNRF) is writing to provide you with information about the 2019 broad-scale monitoring program.

In 2008 the MNRF began a long-term fisheries program, known as broad-scale monitoring. The broad-scale program is designed to monitor the current and changing state of fisheries across Ontario's inland lakes. The program is in now its third five-year cycle. Information collected through the broad scale program is used to evaluate the health of fish populations and inform management decisions for Fisheries Management Zones. Attached is a fact sheet with more information about the broad-scale monitoring program. A summary of the first cycle is available on the Fish ON-Line website at [Ontario.ca/fishing](http://Ontario.ca/fishing).

From approximately June 3 to September 14, 2019, MNRF science crews are proposing to conduct netting operations on several lakes in Fisheries Management Zones 7, 8, 10 and 11. Approximately 48 lakes will be assessed this summer in the Northeast region. MNRF science field crews will collect information on fish species, take water samples, and check for invasive species. Netting will take five to eight days to complete. Nets are checked and moved daily to a new location. Notices will be posted at various locations like the public boat launch on the lake during the netting operations. While the lakes are being monitored all nets will be clearly marked with yellow MNRF buoys. Please don't lift the nets or buoys and avoid recreational activities between and around the buoys.

If you have any questions about the fieldwork, please contact Michelle Gillespie at 705-465-4467 ([michelle.gillespie@ontario.ca](mailto:michelle.gillespie@ontario.ca)) or Preston Lennox at 705-235-1214 ([preston.lennox@ontario.ca](mailto:preston.lennox@ontario.ca)).

Sincerely,

**David Etheridge**

David Etheridge  
Co-ordinator  
Northeast Biodiversity and Monitoring Unit

Attach.

# Broad-scale Monitoring Program

Science and Research Branch

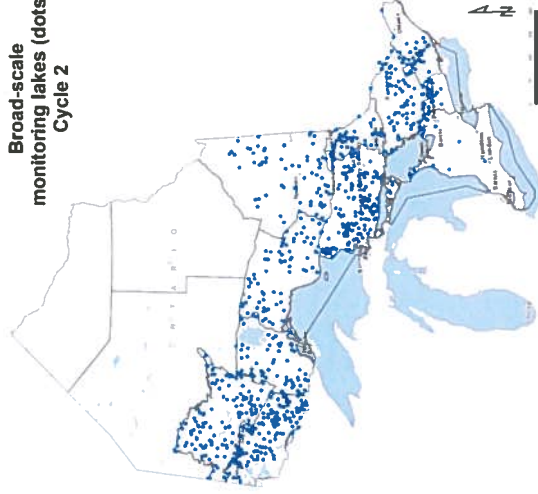
## Monitoring the health of Ontario's inland lakes

Every year, over 1.3 million anglers enjoy recreational fishing, contributing nearly \$2.5 billion to the Ontario economy. To ensure that present and future generations continue to enjoy high-quality fishing and the associated social and economic benefits, the Ministry of Natural Resources and Forestry (MNRF) works to maintain healthy fish stocks, which are an important environmental indicator. The Ecological Framework for Fisheries Management, introduced in 2004, supports fisheries management by simplifying regulations and increasing opportunities for public involvement. An important part of this approach is increasing our understanding of inland lakes and their fisheries.

## Broad-scale monitoring

To monitor the health of Ontario's inland lakes, MNRF has coordinated the broad-scale fisheries monitoring program since 2008. This long-term program is helping the ministry understand stresses on fisheries and other aquatic resources, including angling pressure, and report changes over time. Within a five year monitoring cycle approximately 700 lakes are sampled for water quality, aerial activity, large and small fish species, invasive species, contaminants in fish flesh and habitat. Some lakes are re-surveyed every five years for trend through time analysis.

Broad-scale  
monitoring lakes (dots)  
Cycle 2



## Monitoring highlights

In 2018, we sampled 141 lakes and completed the first year of the third cycle. Over the first two cycles of monitoring, science staff visited over 1300 waterbodies and sampled a variety of fish species to collect biological information such as weight, length, age, sex, maturity, diet and contaminants and to estimate abundance.

Fish netting results for individual lakes are summarized as lake bulletins and are available at FISHONLINE ([www.ontario.ca/page/fishing](http://www.ontario.ca/page/fishing)).

Contaminant sampling results are included in the Guide to Eating Ontario Fish ([www.ontario.ca/fishguide](http://www.ontario.ca/fishguide))

published by the Ministry of the Environment and Climate Change.

By netting a lake that may have never been assessed, the broad-scale monitoring program has increased our knowledge about the distribution of rare native species in Ontario including pygmy whitefish, northern sunfish, and deepwater sculpin. This also allows us to track the distribution of non-native species such as rusty crayfish and spiny waterflea.



MNRF crew members record length, weight and other measures which are used to evaluate the health of Ontario's inland lakes.

## Want to know more?

### Southern Ontario

Steve Vandermeer (705) 324-5851  
[steve.vandermeer@ontario.ca](mailto:steve.vandermeer@ontario.ca)

### Northeastern Ontario

Michelle Gillespie (705) 465-4467  
[michelle.gillespie@ontario.ca](mailto:michelle.gillespie@ontario.ca)

### Northwestern Ontario

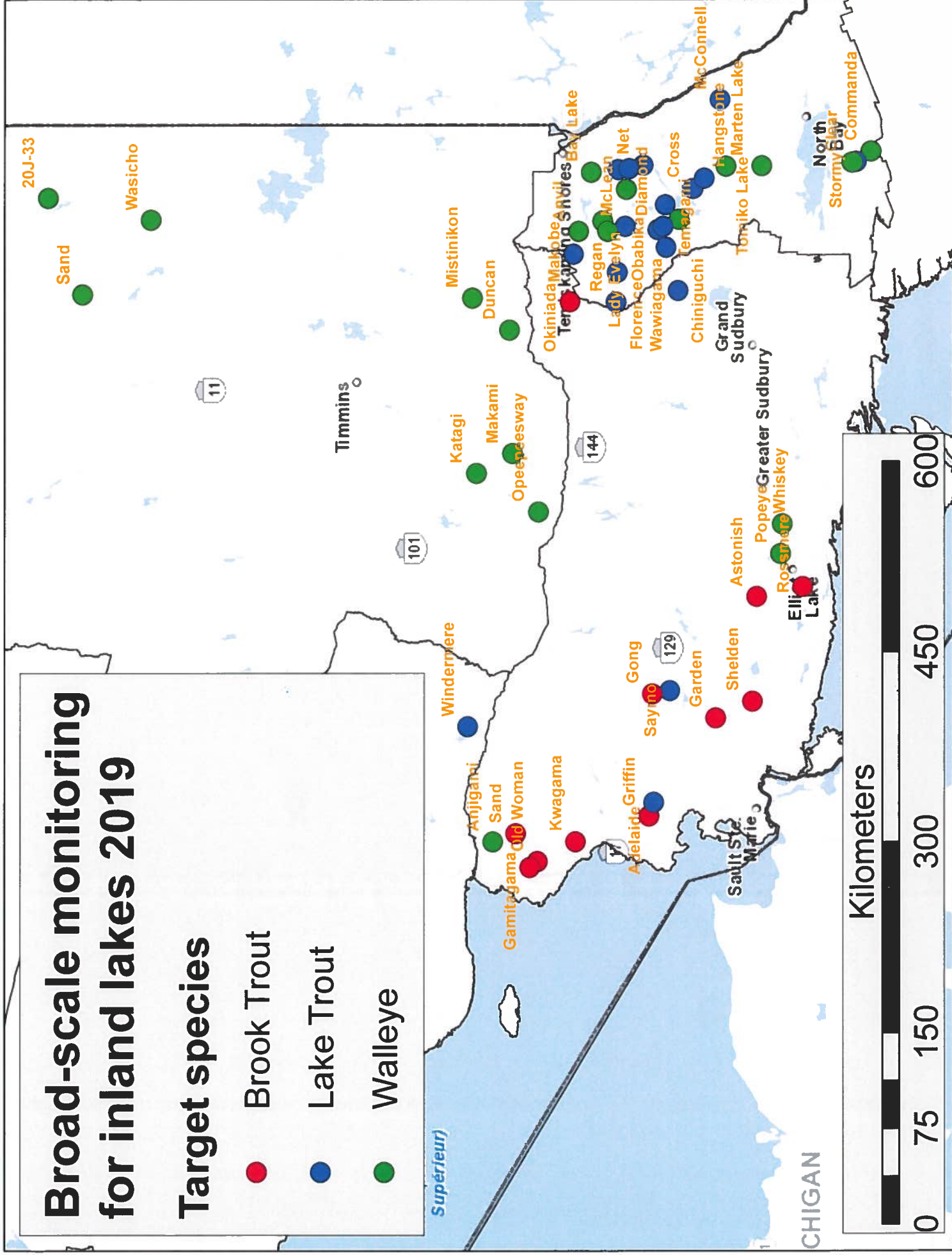
Steve Peters (807) 939-2501  
[steve.peters@ontario.ca](mailto:steve.peters@ontario.ca)



# Broad-scale monitoring for inland lakes 2019

## Target species

- Brook Trout
- Lake Trout
- Walleye





# Broad-scale Fisheries Monitoring Program Bulletin

## CROSS LAKE - FMZ 11 - 2013-2017

### Cross Lake facts

Location: TORRINGTON

Surface area: 1734 ha

Maximum depth: 54.9 m

Average depth: 11.8 m

Water clarity: 5.3 m



### Monitoring activities

- ☒ Fish netting
- ☒ Fish contaminants
- ☐ Zooplankton
- ☒ Water chemistry
- ☐ Bathymetry
- ☒ Water temperature/dissolved oxygen
- ☒ Aquatic invasive species

### Netting summary

Netting period: Jun 23 to Jun 28 2014

Number of nets set: 43

Number of fish species caught: 17

### About Broad-scale Fisheries Monitoring

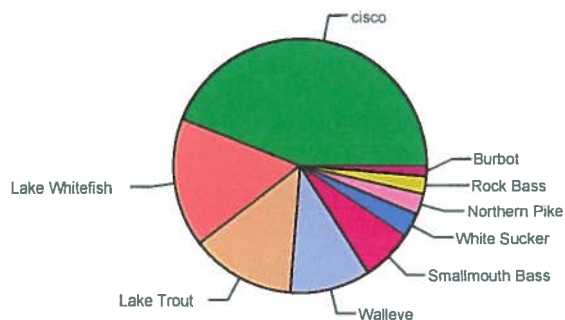
The Broad-scale Fisheries Monitoring program collects information from representative lakes in fisheries management zones across the province to help biologists manage our fisheries effectively. This bulletin provides a snapshot of recent monitoring activities and netting results. The sampling approach allows us to measure and evaluate the health of Ontario's lakes and their fish communities, and track changes through time over broad areas of Ontario. To learn more about the sampling program visit [Methods for monitoring fish populations](#).

### Fish netting results

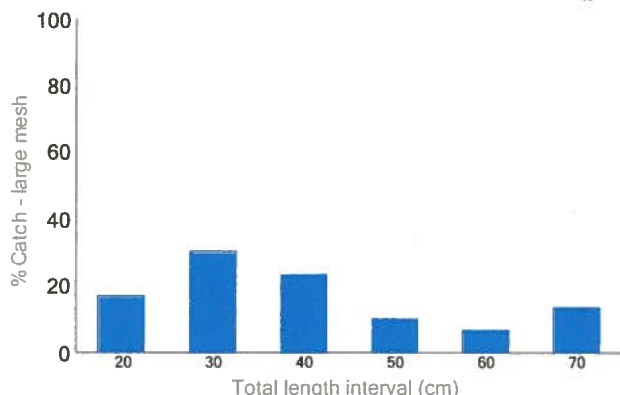
Fish populations were surveyed using large and small mesh nets to provide information on fish species present and their characteristics, such as growth, age, and abundance. The catch data (depicted in the chart below) show that 9 species were surveyed in large mesh nets. Additional fish species observed in small mesh nets were Blackchin Shiner, Bluntnose Minnow, carps and minnows, Common Shiner, Logperch, Pumpkinseed, Spoonhead Sculpin, and Yellow Perch.

Fish species	Total catch %	Maximum length (cm)	Minimum length (cm)	Average length (cm)
cisco	44	42.4	16.3	26.7
Lake Whitefish	16	62.0	24.3	46.9
Lake Trout	13	78.2	20.5	45.1
Walleye	10	67.9	24.4	41.8
Smallmouth Bass	7	50.3	14.6	29.0
White Sucker	3	59.4	18.2	44.7
Northern Pike	3	101.5	55.5	82.5
Rock Bass	2	17.2	11.9	16.0
Burbot	1	48.5	28.7	36.4

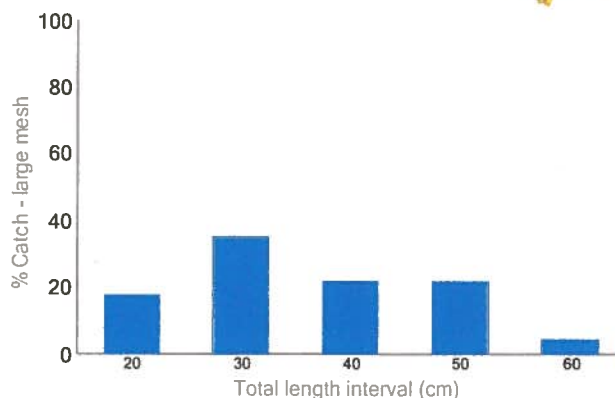
### Proportion of fish caught in large mesh nets



## Length distribution of Lake Trout



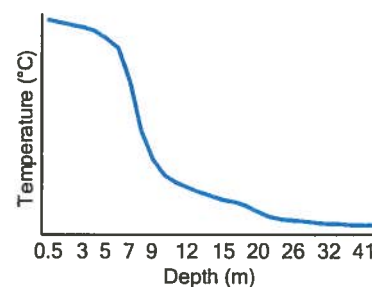
## Length distribution of Walleye



Catch results are presented in 10-cm length intervals, labelled with the lower limit (e.g., the "20 cm" interval represents fish between 20 cm and 29 cm). The size of Lake Trout ranged from 20 to 78 cm and the size of Walleye ranged from 24 to 67 cm in large mesh nets.

## Water chemistry and temperature

Water samples were collected in May 2014 and sent to the Ministry of Environment and Climate Change for analysis. Water temperature, oxygen levels, and water transparency were measured in June 2014. The graph shows the temperature of Cross Lake with increasing depth. The temperature at the surface was 21.6 degrees Celsius and declined to 4.8 degrees Celsius at the bottom of the lake.



## Aquatic invasive species

Field crews searched for aquatic invasive species and Error. Could not get plural AIS name. were observed during monitoring. Any species new to Ontario or an invasive species that is a new record for a waterbody is reported to the Invading Species Hotline ([www.invasivespecies.com](http://www.invasivespecies.com)).

## Fish contaminants

Levels of contaminants in fish flesh (e.g., mercury, PCB's, mirex, organochlorine pesticides, and other organic chemicals) will be reported in the [Guide to Eating Ontario Sport Fish](#).  
[Ontario Sport Fish](#).

For more information please contact Ministry of Natural Resources and Forestry at 1-800-667-1940, send an email to [mnr.nric.mnr@ontario.ca](mailto:mnr.nric.mnr@ontario.ca), or visit [www.ontario.ca/fishing](http://www.ontario.ca/fishing).

# Broad-scale Fisheries Monitoring Program Bulletin

## NET LAKE - FMZ 11 - 2013-2017

### Net Lake facts

Location: STRATHY

Surface area: 759 ha

Maximum depth: 42.7 m

Average depth: 8.1 m

Water clarity: 4.0 m



### Monitoring activities

- ☒ Fish netting
- ☒ Fish contaminants
- ☒ Zooplankton
- ☒ Water chemistry
- ☐ Bathymetry
- ☒ Water temperature/dissolved oxygen
- ☒ Aquatic invasive species



### Netting summary

Netting period: Aug 18 to Aug 24 2014

Number of nets set: 33

Number of fish species caught: 17

### Fish netting results

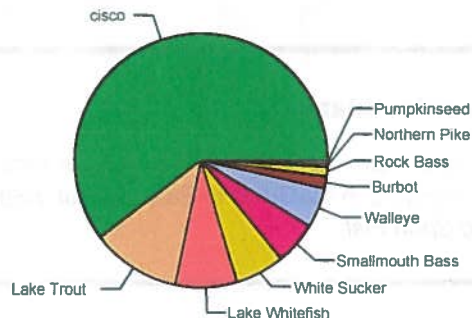
Fish populations were surveyed using large and small mesh nets to provide information on fish species present and their characteristics, such as growth, age, and abundance. The catch data (depicted in the chart below) show that 10 species were surveyed in large mesh nets. Additional fish species observed in small mesh nets were Bluntnose Minnow, Common Shiner, Logperch, Mottled Sculpin, Slimy Sculpin, Trout-perch, and Yellow Perch.

Fish species	Total catch %	Maximum length (cm)	Minimum length (cm)	Average length (cm)
cisco	60	39.4	18.7	28.1
Lake Trout	11	66.1	26.1	38.7
Lake Whitefish	8	51.2	32.2	42.8
White Sucker	6	55.4	24.9	46.2
Smallmouth Bass	5	48.2	23.4	33.6
Walleye	5	61.3	18.2	34.0
Burbot	2	48.9	26.9	38.0
Rock Bass	1	14.2	10.8	12.9
Northern Pike	< 1	53.7	53.7	53.7
Pumpkinseed	< 1	17.7	17.7	17.7

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### Proportion of fish caught in large mesh nets





# Broad-scale Fisheries Monitoring Program Bulletin

## LAKE TEMAGAMI - FMZ 11 - 2013-2017

### Lake Temagami facts

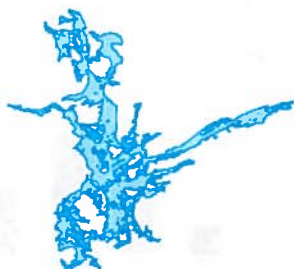
Location: JOAN

Surface area: 20714 ha

Maximum depth: 75.9 m

Average depth: 16.7 m

Water clarity: 6.7 m



### Monitoring activities

- ☒ Fish netting
- ☒ Fish contaminants
- ☒ Zooplankton
- ☒ Water chemistry
- ☐ Bathymetry
- ☒ Water temperature/dissolved oxygen
- ☒ Aquatic invasive species



### Netting summary

Netting period: Aug 5 to Aug 12 2014

Number of nets set: 77

Number of fish species caught: 20

### Fish netting results

Fish populations were surveyed using large and small mesh nets to provide information on fish species present and their characteristics, such as growth, age, and abundance. The catch data (depicted in the chart below) show that 10 species were surveyed in large mesh nets. Additional fish species observed in small mesh nets were Bluntnose Minnow, Common Shiner, Emerald Shiner, Lake Chub, Logperch, Mimic Shiner, Mottled Sculpin, Pumpkinseed, Spottail Shiner, and Trout-perch.

Fish species	Total catch %	Maximum length (cm)	Minimum length (cm)	Average length (cm)
Smallmouth Bass	30	49.4	14.1	26.4
Rock Bass	27	21.7	7.4	13.4
cisco	12	42.5	16.8	31.4
Walleye	12	81.5	18.1	36.6
Lake Whitefish	8	52.5	31.4	44.4
White Sucker	5	54.0	24.5	44.5
Lake Trout	4	105.4	17.0	48.0
Northern Pike	1	83.9	38.6	57.6
Burbot	< 1	35.5	28.7	32.1
Yellow Perch	< 1	16.9	16.9	16.9

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