



Invasive
Species
Centre

Invasive Species Centre: Aquatic Programs Update

June 27, 2018

Great Lakes Panel ANS Meeting

Chicago, Illinois

David Nisbet
Invasive Species Centre

INVASIVE SPECIES CENTRE

The Invasive Species Centre (ISC) was founded by the Governments of Canada and Ontario to act as a hub for collaboration and knowledge sharing between stakeholders.

Incorporated as a not-for-profit in 2011, the ISC has grown into a respected collaborator, knowledge broker, partner and leader in invasive species research and action in Ontario and beyond.



MISSION The Invasive Species Centre connects stakeholders, knowledge and technology to prevent and reduce the spread of invasive species that harm Canada's environment, economy and society.

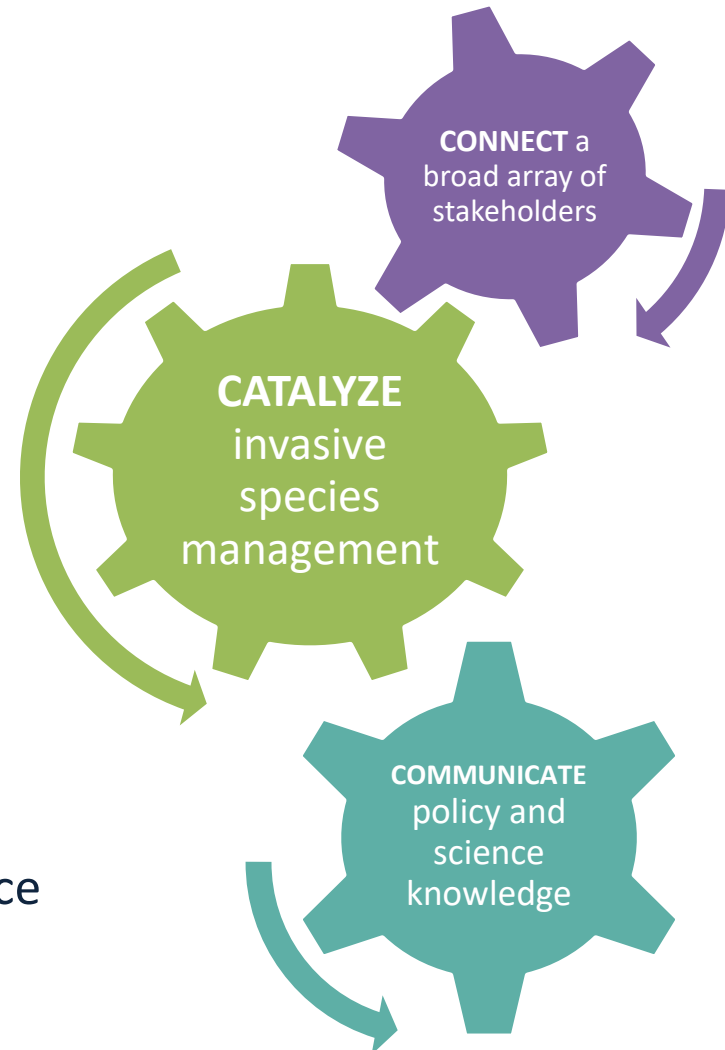


HOW WE ACHIEVE OUR MISSION

Thanks to funding provided by:

- Ontario Ministry of Natural Resources and Forestry
- Fisheries and Oceans Canada
- Ontario Trillium Foundation
- Northern Heritage Fund Corporation
- Canadian Food Inspection Agency
- Natural Resources Canada
- Canadian Forest Service

The Invasive Species Centre is able to achieve its mission by **connecting** with a broad array of stakeholders to **catalyze** invasive species management, and **communicate** policy and science knowledge.



Project highlights:

- Asian Carp Canada outreach program
- Economic Impacts Report and Factsheet
- International Conference on Aquatic Invasive Species (ICAIS) 2017



ASIAN CARP CANADA



Delivered in partnership with:



Fisheries and Oceans
Canada

Pêches et Océans
Canada



Ontario



Invasive
Species
Centre

And more...

Asian Carp Canada Outreach Program

Website

Webinar Series

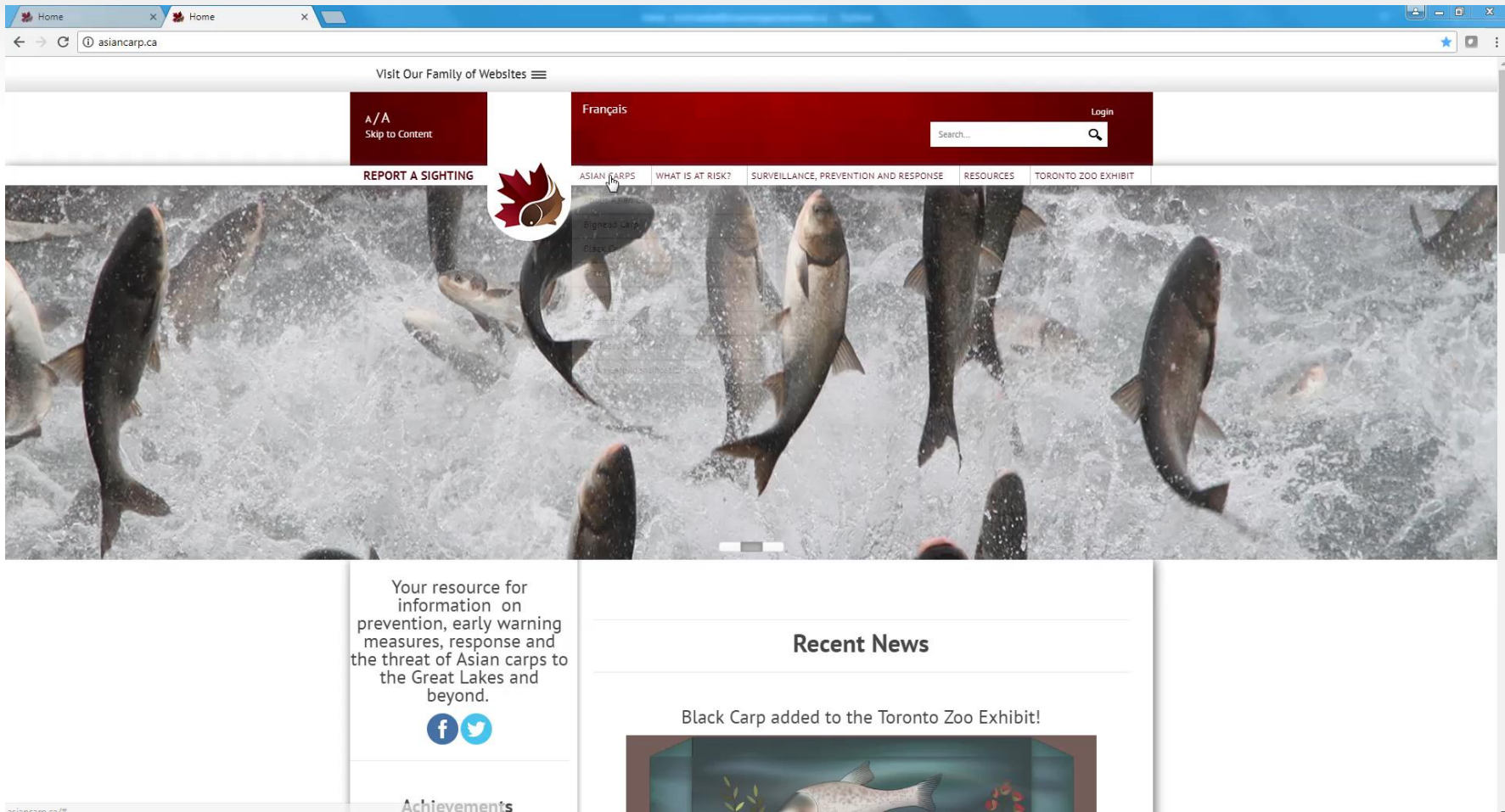
Public Information Sessions

Social Media Campaigns

Response Database

Toronto Zoo Exhibit

Website



Over 90,000 page views since 2014

New Webpage: Asian Carp Response Plan

Home Asian Carp > SURVEILLANCE > 2019_Project_Budgets_an

asiancarp.ca/SURVEILLANCE-PREVENTION-AND-RESPONSE/Asian-Carp-Response-Plan

Visit Our Family of Websites

A/A Skip to Content

Français Login

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REPORT A SIGHTING

ASIAN CARPS WHAT IS AT RISK? SURVEILLANCE, PREVENTION AND RESPONSE RESOURCES TORONTO ZOO EXHIBIT

Home SURVEILLANCE, PREVENTION AND RESPONSE Asian Carp Response Plan

Asian Carp Response Plan

The Plan

Fisheries and Oceans Canada (DFO), in partnership with the Ontario Ministry of Natural Resources and Forestry (MNRF), has developed an Asian Carp Response Plan under the Incident Command System (ICS) framework. This plan describes how DFO, MNRF, and their partners will respond if Asian carps are detected in the Great Lakes. As with any natural disaster or environmental emergency, a co-ordinated response effort is required when multiple responsible agencies are involved. These response efforts use the ICS framework to create a unified command structure (see figure below) across partner agencies that is scalable to the size and severity of the incident. Immediately following the verified capture of an Asian carp, an ICS structure is stood up and the response plan is implemented. **Click on the roles below to learn more.**

ASIAN CARP RESPONSE PLAN

Incident Commander

Current Research

Prevention Techniques

Great Lakes EDNA Monitoring Program

[Asian Carp Response Plan](#)

Acoustic Fish Deterrents

GLMRIS Report

U.S. Asian Carp Control Strategy

Efforts In The Chicago Area Waterway System

Response Database

Webinar Series

Over 700 attendees so far!

1	Asian Carp 101	Becky Cudmore, DFO
2	Multi-jurisdictional Approach to Asian carp in the Upper Illinois River and Chicago Area Waterway System	Kevin Irons, Illinois DNR
3	Overview of Canada's Asian Carp Early Detection Monitoring Program	Dave Marson, DFO
4	Canadian Research in Support of Asian Carp Management	Nicholas Mandrak, University of Toronto
5	Environmental DNA Monitoring for Detecting Invasive Species in Ontario Waterways	Chris Wilson, MNRF
6	Fisheries and Oceans Canada's Asian Carp Program - Where Are We Now	Becky Cudmore, DFO
7	Confused with Carp – ID and Reporting	Brook Schryer, OFAH
8	Grass Carp Initiatives in Ohio	John Navarro, Ohio DNR
9	Binational Risk Assessment on Grass Carp	Lisa Jones, DFO
10	Modeling Potential Effects of Bighead and Silver Carp on Great Lakes Food Webs	Doran Mason, Ed Rutherford, Hongyan Zhang, NOAA Jenny Apriesnig, University of Colorado
11	Asian Carps Enforcement Activities: Approaches Across Great Lakes Jurisdictions	Brenda Koenig, MNRF
12	Developing a Strategic Response Plan Using ICS for Asian Carps in the Great Lakes	John Saunders, SEEMS Becky Cudmore, DFO

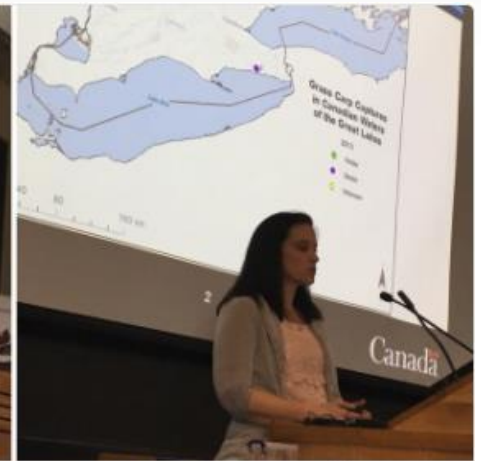
Have a webinar request? Contact us!

Public Information Sessions

5 sessions

- Sault Ste. Marie
- St. Catherine's
- Orillia
- Peterborough
- University of Toronto

Over 120 attendees



Social Media Campaigns

1.8 million impressions over 5 years across Facebook and Twitter accounts



Silver Carp jump up to 9ft out of the water, injuring boaters & skiers. We don't want these fish here! #CanadaWaterWeek #WorldWaterDay



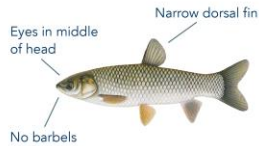
Silver and Bighead Carp consume plankton, filtering the water allowing for an increase in sunlight which can promote algal blooms #EcologicalConsequences



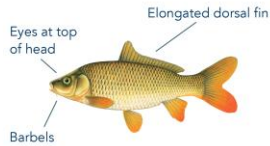
#DidYouKnow that in parts of the Mississippi River, Asian carps outnumber native species 9:1?

Confused With Carp

Confused with Carp



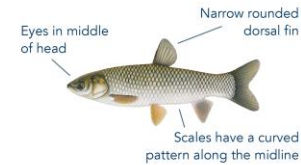
Grass Carp



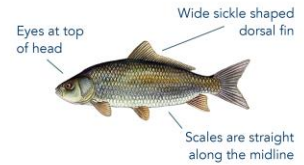
Common Carp



Confused with Carp



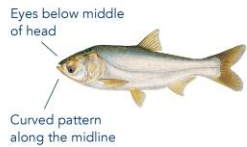
Grass Carp



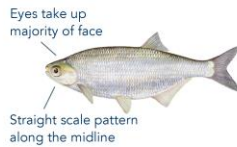
Bigmouth Buffalo



Confused with Carp



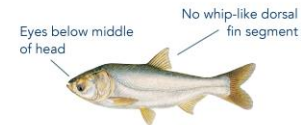
Silver Carp



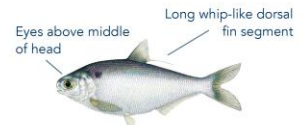
Mooneye



Confused with Carp



Silver Carp

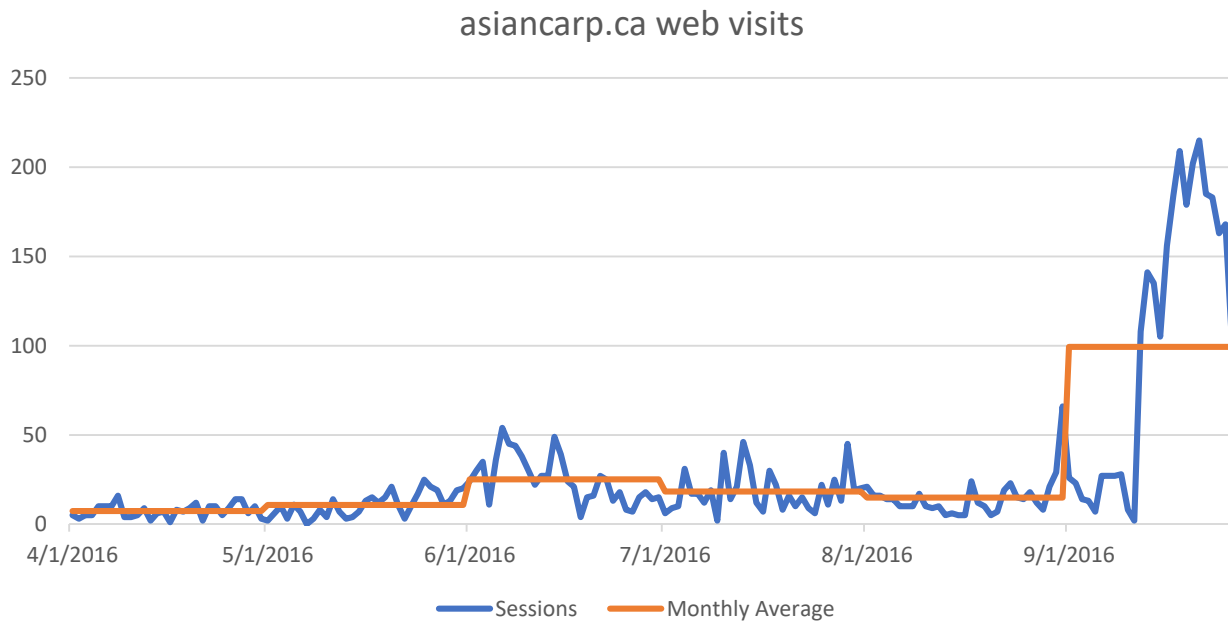


Gizzard Shad




Confused With Carp

Twitter	10,355 impressions
Facebook	95,488 impressions



Response Database



Home SURVEILLANCE, PREVENTION AND RESPONSE Response Database

[Logout](#)

[Video Tutorial](#)

Select Equipment: (Optional)

- Electrofishing Boats
- All Electrofishing Boats
- Electrofishing Boats (14' or less)
- Electrofishing Boats (15' - 18')
- Electrofishing Boats (19' +)
- Fishing Boats
- All Fishing Boats
- Fishing Boats (12' - 14')
- Fishing Boats (15' - 18')
- Fishing Boats (19' +)

Select Region:

- Algonquin Park
- Aurora
- Aylmer
- Bancroft
- Chapleau
- Cochrane
- Dryden
- Fort Frances
- Guelph
- Hearst

[Select from Map](#)

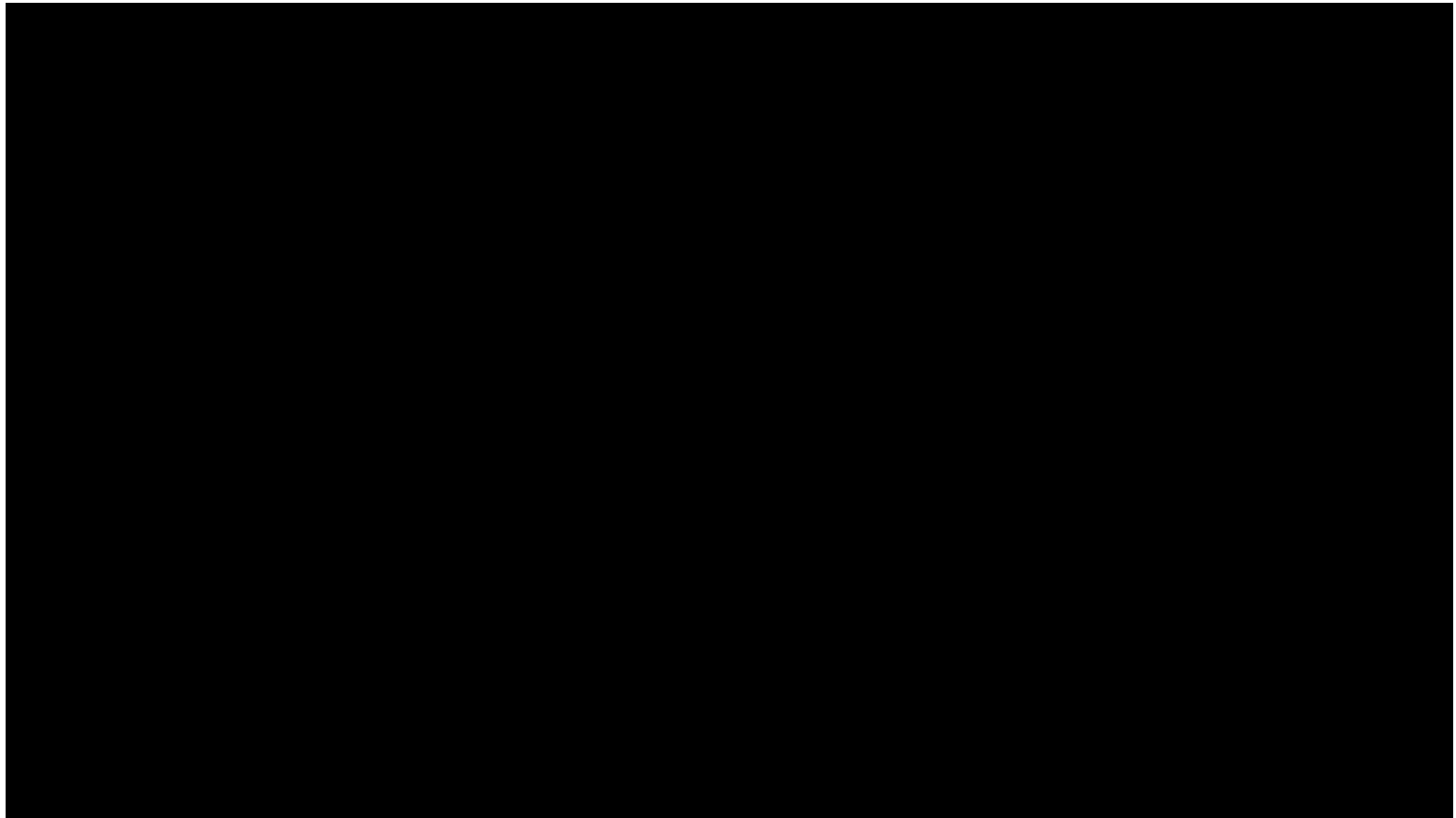
[Search](#) [Clear](#)

Your Plan: 0 Items

Office List	Office Information	Office Equipment Inventory	# Available	In Cart
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Toronto Zoo Exhibit

Opened February 2018
Bighead Carp, Black Carp & Grass Carp



Invasive Species Centre

PROJECT HIGHLIGHT:

Invasive Species Economic Impacts Analysis: Ontario Municipalities



Work crews removing EAB impacted trees in Oshawa, Ontario. Photo obtained from www.durhamregion.com; Ryan Pfeiffer / Metroland

Economic Impacts Analysis: Ontario Municipalities

GOAL:

To quantify Municipal **EXPENDITURES** associated with invasive species, not total **COSTS** in Ontario



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Economic Impacts Analysis: Ontario Municipalities

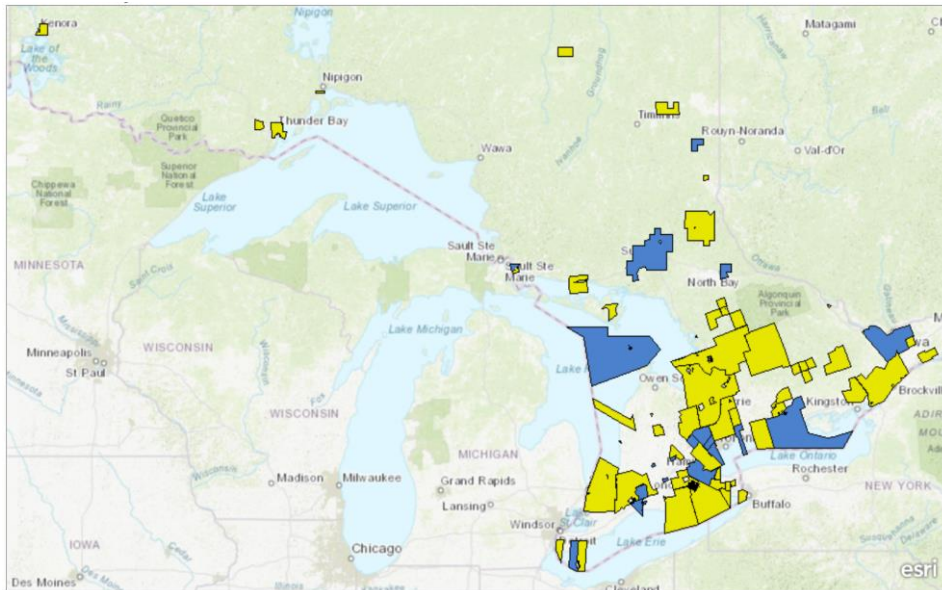
OVERVIEW OF ANALYSIS

- Results accumulated over 2 years:
 - **2017 Survey** (2015-16 expenditures)
 - **2018 Survey** (2016-17 expenditures)
- Obtained through telephone and online surveys
- All 444 Ontario municipalities contacted; responses received from **95 municipalities**
- All 36 Conservation Authorities were also contacted in 2018; responses received from **13 CA's**
- ISC conducted surveys and accumulated data; analysis was performed by an environmental economist (PhD, University of Guelph)



Economic Impacts Analysis: Ontario Municipalities

- What is the average annual expenditure on invasive species incurred by municipalities in Ontario?



Esri, HERE, Garmin, FAO, NOAA, USGS, EPA, NPS, AAFC, NRCAN

COMBINED DATA:

- Results from 2017 and 2018 combined for a total of **95 municipalities** (55% of Ontario's population)
- Total expenditure of **\$22,503,261** from **59 municipalities**
- Range **\$0 - \$6,208,000**
- Average expenditure of **\$381,403/year** per municipality
- Estimated municipal per capita expenditure **\$3.06/person**

Economic Impacts Analysis: Ontario Municipalities

EXTRAPOLATION (COMBINED DATA)

- Provides estimate of invasive species expenses across all Ontario municipalities
- Based on per-capita expenses to account for bias in sample toward higher populated municipalities

The total expenditure on invasive species
incurred by Ontario municipalities is estimated to be

\$36.4 million/year province wide

or

\$381,403/year average per municipality



Economic Impacts Analysis: Ontario

NEXT STEPS:

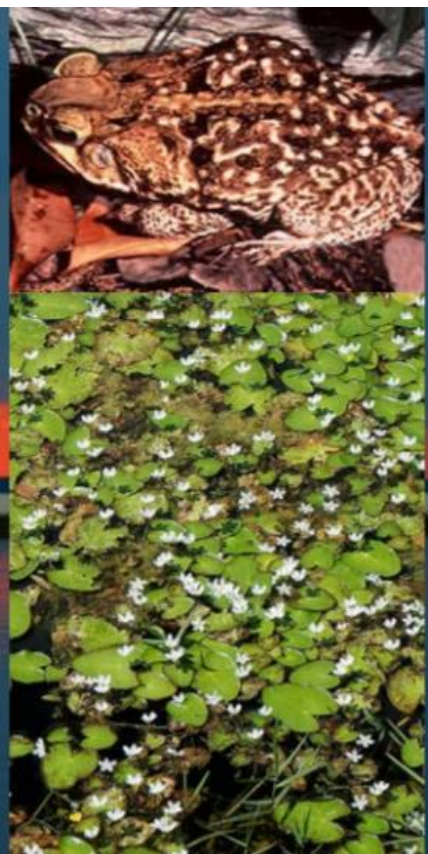
- Make Fact Sheets and Analysis reports available at www.invasivespeciescentre.ca
- Continue to monitor economic impacts and update survey as needed
- Provide support and seek opportunities to partner with municipalities on invasive species management
- Raise awareness and catalyze response



20th INTERNATIONAL CONFERENCE ON AQUATIC INVASIVE SPECIES



**October 22-26, 2017
Marriott Coral Springs
Fort Lauderdale, Florida**



ICAIS 2017



- ICAIS 2017 welcomed 204 participants from 17 countries

ICAIS 2017 hosts and plenary speakers: **David M. Lodge** Director, Atkinson Center for a Sustainable Future, Cornell University, **Paul Champion** National Institute of Water and Atmospheric Research, New Zealand, **Helen Roy** Centre for Ecology and Hydrology, UK, **Lyn A Gettys** University of Florida, IFAS Center for Aquatic and Invasive Plants, **Tracey Cooke**, Invasive Species Centre, and **Darren CJ Yeo** Department of Biological Sciences, National University of Singapore



ICAIS 2017 PARTNERS AND SPONSORS:



Conference Host
Lyn Gettys, University of Florida, IFAS



Conference Secretariat
Tracey Cooke, Executive Director



JOIN OUR NETWORK

FREE
MEMBERSHIP
PROGRAM

What are the benefits to being a member?

- Access to the ISC Quarterly Newsletter
- Program updates (Asian Carp Canada, EDRR, Forest Invasives)
- Invitations to Special Events and Webinars
- Bi-weekly Media Scan of Invasive Species news across the country

Visit www.invasivespeciescentre.ca

Annual Report

<http://www.invasivespeciescentre.ca/WHO-WE-ARE/Annual-Reports-and-Financial-Statements>



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