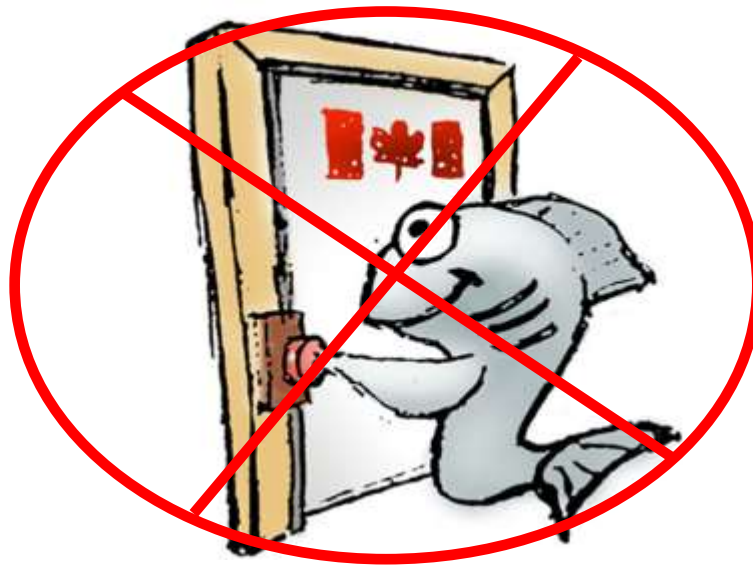




# *Working Together to Manage Aquatic Invasive Species in the Canadian Waters of the Great Lakes*



Erin Gertzen (DFO), Becky Cudmore (DFO), Sophie Monfette (OFAH), Alison Morris (OFAH), Deborah Sparks (ISC), Kristine Pinkney (ISC)

# Context

- Importance of the Great Lakes:
  - Sustain 90% of Ontario's population
  - Contain 40% of Canada's economic activity
- Complexity of the Great Lakes:
  - Vast size
  - Multijurisdictional
  - Multiple user groups
  - Many pathways of entry for AIS

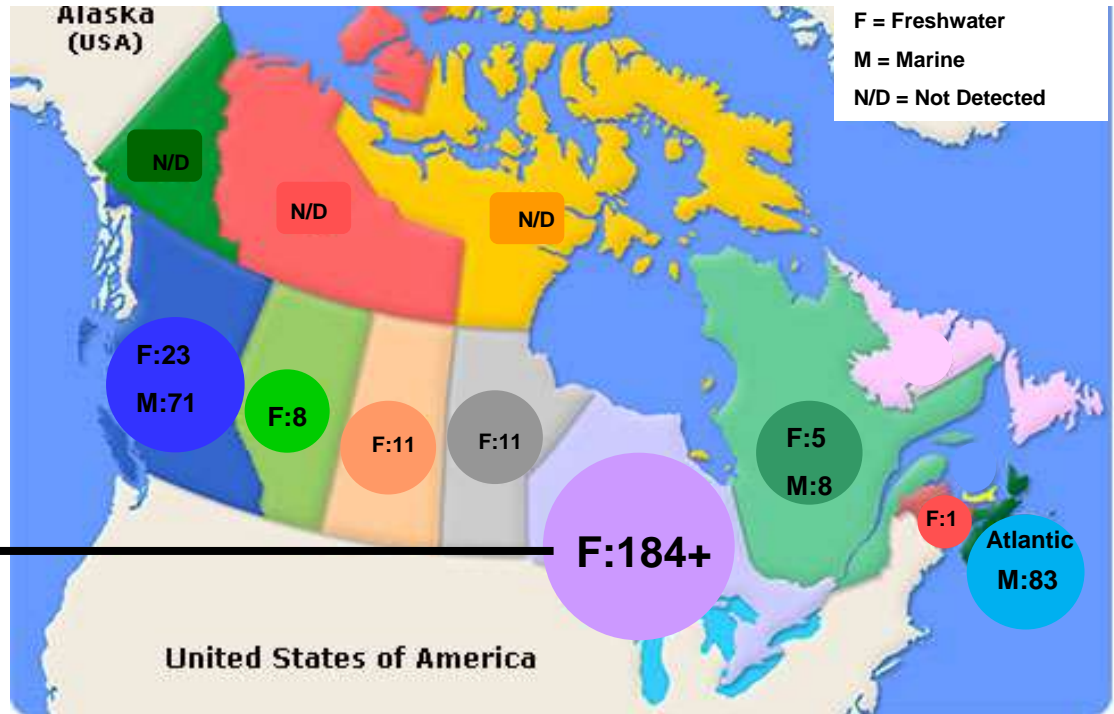
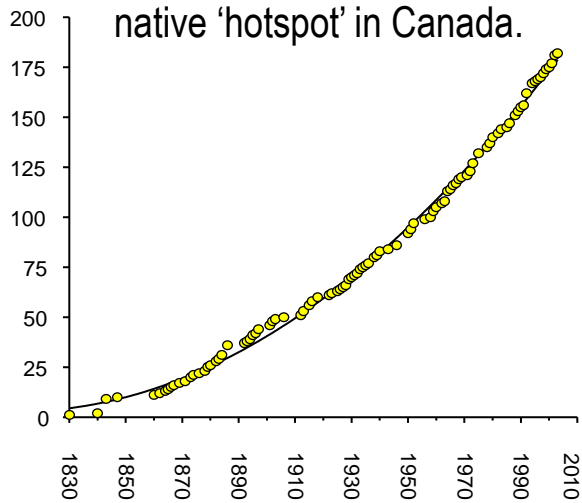


= *Complicated landscape with respect to AIS management, specifically for public outreach and education*



# Non-native Species in the Great Lakes

The Great Lakes basin is the non-native 'hotspot' in Canada.





# Asian Carps

- Asian carps are an emerging threat to the Great Lakes
- In invaded US waters, their impacts include: loss in native fish diversity, decline in the fishery, destruction of property, and injury
- Currently, the established populations of Bighead and Silver carps are ~203 km away from Lake Michigan



Bighead Carp



Silver Carp



Grass Carp



Black Carp



# DFO's Asian Carp Program (2012-2017)

## Program Goal

Protect the integrity of the Great Lakes basin by preventing the arrival, establishment and spread of all four species of Asian carps

## Program Framework

Multi-discipline approach within **4 Program Pillars**:

| 1. Prevention   | 2. Early Warning   | 3. Response   | 4. Management   |
|---|--|---|---|
| <ul style="list-style-type: none"><li>Risk assessment</li><li>Research</li><li>Outreach</li></ul> | <ul style="list-style-type: none"><li>Surveillance</li></ul> | <ul style="list-style-type: none"><li>Establish and align response plan with other agencies</li><li>Analysis</li><li>Action</li></ul> | <ul style="list-style-type: none"><li>National Aquatic Invasive Species Regulations</li></ul> |



## Outreach, Education and Media

- These activities were identified as key components of the prevention pillar of the program as, according to a baseline survey conducted on Asian carp knowledge in Ontario residents by the Invasive Species Centre:
  - 58% know Asian carps are invasive, but:
    - Only 3% know there are 4 species of Asian carps; and,
    - Only 12% know they are not established in the Great Lakes.
  - 77% don't know how to report invasive species correctly.
  - 77% think Canada should spend more money to prevent Asian carps from entering the Great Lakes.



## Outreach, Education and Media

- DFO's Asian Carp Program partnered with NGOs specializing in natural resource/invasive species outreach and education:
  - Ontario Federation of Anglers and Hunters
    - Audience: anglers and lake users
  - Invasive Species Centre
    - Audience: digital and general public
  - Royal Ontario Museum
    - Audience: urban and natural history public
- DFO also distributes resources to other groups



Invasive  
Species  
Centre



ROYAL  
ONTARIO  
MUSEUM

MUSÉE  
ROYAL DE  
L'ONTARIO



# Ontario Federation of Anglers and Hunters

- Largest fish and wildlife non-profit in Canada – focus on anglers and hunter
- Based in Peterborough, ON
- Asian carp outreach materials have made over 72 million impressions







# Targeted Anglers and Lake Users

- Avenues targeted at Canadians to increase awareness towards preventing Asian carp introduction:
  - 5 billboards placed near border crossings and in high traffic areas (>65 million impressions in 2014)
  - Public service announcements aired 826 times on the radio and television (7.28 million impressions since April 2014)
  - 207 Asian carp awareness signs posted at water access points across 80 communities in Ontario
  - Asian carp outreach was an OFAH highlight at over 100 trade shows and events each year





# Targeted Anglers and Lake Users

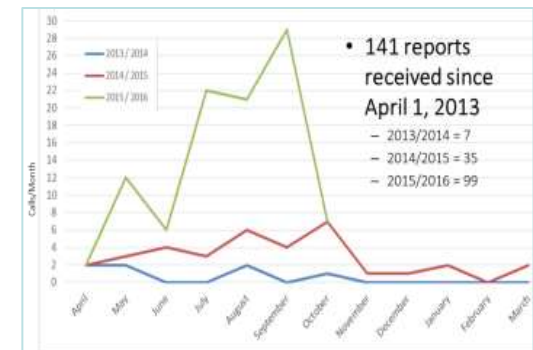
- Asian carp prevention ads with key information on how to identify and report Asian carps were featured in:
  - 14 issues of Ontario Out of Doors, reaching 90,000 readers;
  - 4 issues of the OFAH Angler and Hunter Hotline, reaching 80,000 readers; and,
  - 38 newspapers across Ontario with a total circulation of 2.3 million homes.





# Targeted Anglers and Lake Users

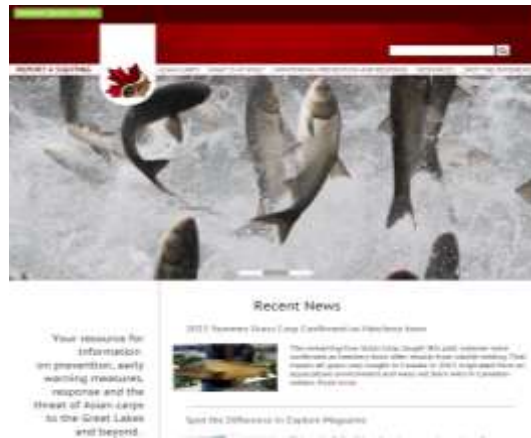
- Online and social media presence to increase awareness and how to report sightings included:
  - >20 Facebook posts related to Asian carps, reaching 38,000 people
  - 44 tweets to 1642 followers
  - 1500 views of Asian carp videos on YouTube
  - >125,000 visitors to [www.invadingspecies.com](http://www.invadingspecies.com) annually
- Operating the Invading Species Hotline:
  - Increased number of reports each year
  - 141 reports concerning Asian carps since 2013
- Thousands of Asian carp informational pamphlets, stickers, window clings and watch cards have been distributed and/or downloaded





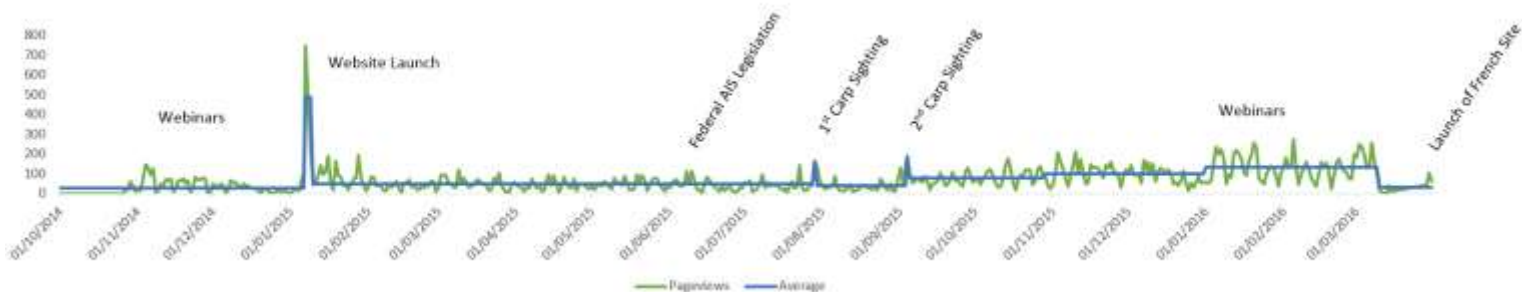
# Invasive Species Centre

- Non-profit focused on research, innovation, outreach and education to prevent the introduction and spread of invasive species
- Based in Sault Ste. Marie, ON
- Increased the online profile of Asian Carp Canada



# General Public & Digital Media

- Branded effort, using an Asian Carp Canada logo, to increase the online and social media profile of the issue of Asian carps:
  - Developed [www.asiancarp.ca](http://www.asiancarp.ca), a central resource on Asian carps in Canada, which has seen:
    - 13,369 visits, with 74.3% being new visitors
    - 27,445 page views
    - the average website traffic doubled from 20 daily visitors in January 2015 to 40 daily visitors within 7 months





## General Public & Digital Media

- Branded effort, using an Asian Carp Canada logo, to increase the online and social media profile of the issue of Asian carps (cont.):
  - Hosted and archived 5 Asian carp webinars (attended by >400 people)
  - Maintain an Asian Carp Canada Facebook page with over 18,000 total post reaches
  - Maintain an Asian Carp Canada Twitter account with over 80,000 impressions made



# General Public & Digital Media

- ISC is enhancing the public's engagement and education of Asian carps in other ways:
  - Hosted an Innovative Solutions Competition (March 2016) that challenged teams of university students in Ontario to develop innovative technological or other solutions to prevent the entry, or control, of Asian carps in Canadian waters
  - Developed “Spot the Difference” ads that appeared in Owl Magazine (74,000 copies), Explore Magazine (27,300 copies), Outdoor Canada (160,000 copies), and on Toronto subways (Dec 2015 to Jan 2016)





## Natural History Public

- Royal Ontario Museum's Biodiversity Gallery Asian Carp Exhibit:
  - Contract with DFO in 2015
  - Exhibit includes information and a video on the history, prevention and threats of Asian carps in Canadian waters, life-size models of all four species, and touchable materials including rubber fishes, a life-size Bighead Carp cut-out, and Asian carp teeth and skeletons with which visitors can interact closely
  - During the December 2015 holidays, the ROM averaged 7000-8000 visitors per day through the gallery







## Future Work

- Plan to continue working with non-profit organizations
- Examples of future projects:
  - Installing additional billboards in high traffic areas identifying possession of live Asian carps as illegal
  - Developing a resource user survey
  - Increasing targeted outreach campaigns
  - Launching an Asian carp display at the Toronto Zoo
- We are interested in talking to other groups interested in Asian carp outreach and education!



## Other Types of Partnerships

- Multijurisdictional Asian carp management
  - ACRCC
  - Coordination with Ontario and US
- Asian carp early detection surveillance
  - Training on new techniques from US counterparts
- Asian carp response activities
  - Training with US and other partners
  - Participation from the province and conservation authorities





# Thank you!

