



# **“TURNS OUT THEY CAN LIVE HERE!”**

## **Alberta’s Approach to AIS Prevention & Management**

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**Alberta Environment & Parks**  
**ICAIS, April 14, 2016**





# **Dreissenids: Perfect Poster Child**

- Irrigation infrastructure
- Costs to end user
- Proximity/movement
- Excellent for engaging partners, public

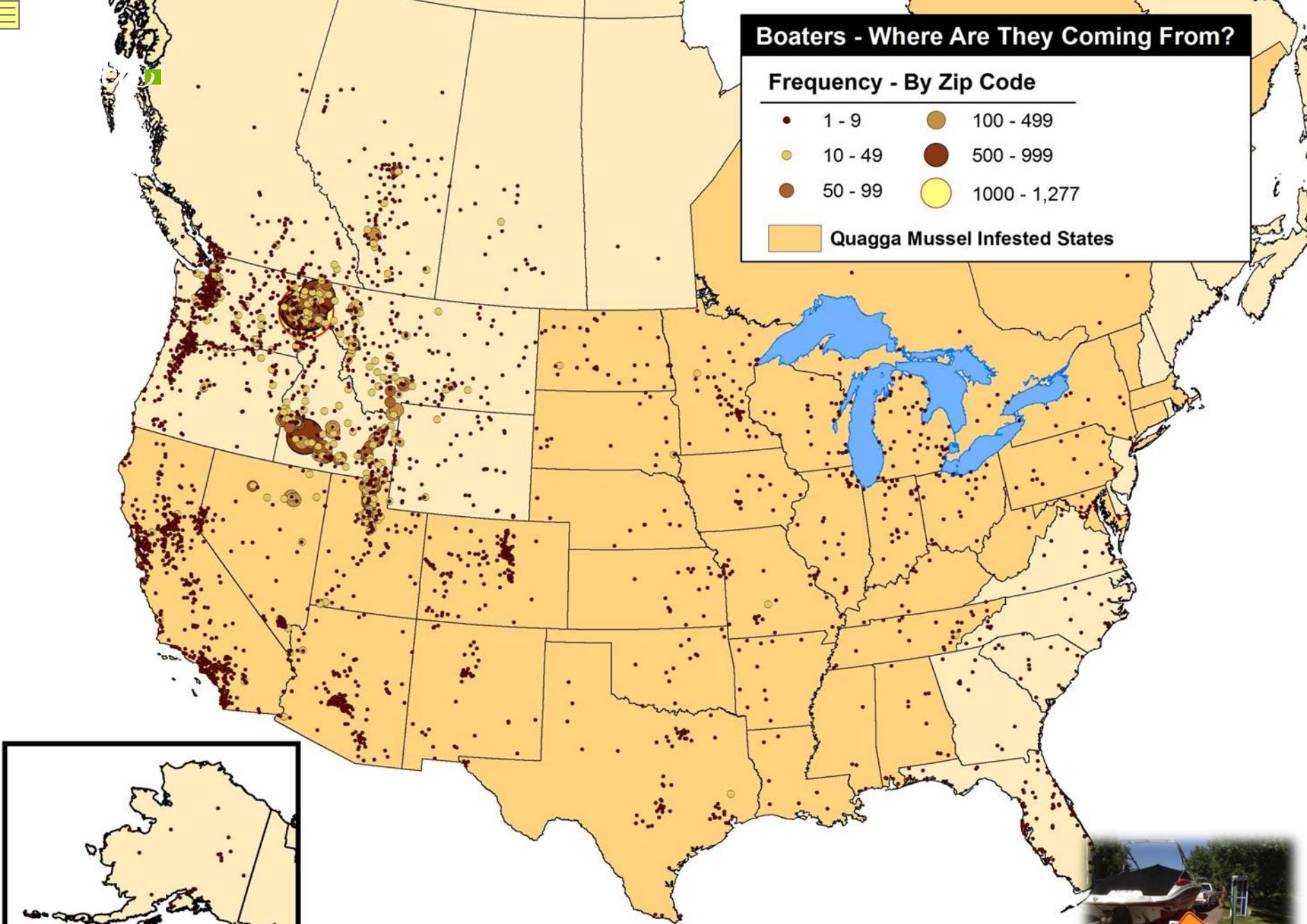


# Boaters - Where Are They Coming From?

## Frequency - By Zip Code

- 1 - 9
- 10 - 49
- 50 - 99
- 100 - 499
- 500 - 999
- 1000 - 1,277

Quagga Mussel Infested States



**#1 vector: Trailered Watercraft**





# Estimated annual costs of an Alberta invasive mussel infestation



Impact category	Annual cost
Power generation	\$5,938,487
Drinking water systems	\$20,839,921
Boat maintenance	\$390,600
Recreational fishing	\$21,830,892
Water management structures	\$8,841,373
Water diversion intakes	\$3,910,000
Property value	\$13,789,500
Non-use	No quantified at this time
<b>Total annual cost estimated</b>	<b>\$75,540,773</b>



# ACTUAL annual costs of an Ontario invasive mussel infestation

Impact category	Annual cost
Residential water	\$21 - \$27 million
Industrial water	\$1.5 - \$3 million
Golf courses	\$11,000 – \$16,000
Recreational fishing	\$2.3 – \$3.3 million
Commercial fishing & aquaculture	\$500,000 - \$700,000
Recreational boating	\$37 - \$51 million
Navigational boating	\$870,000 - \$1.2 million
Power generation	\$7 million – 8.3 million
<b>Total annual cost estimated</b>	<b>\$75 - \$ 91 million</b>

**Zebra and Quagga Mussel Sightings Distribution**  
*Dreissena polymorpha* and *D. rostriformis bugensis*

Lake Winnipeg a lost cause thanks to zebra mussels, expert warns

Zebra mussels detected in Manitoba's Cedar Lake

Zebra mussels cover boats in Gimli Harbour







- Zebra mussel occurrences
- Quagga mussel occurrences
- Both species occurrences
- Zebra/Quagga mussels eradicated/extirpated



Alberta

**AQUATIC INVASIVE SPECIES PARTNERS**



-  CROWN OF THE CONTINENT
-  GREAT NORTHERN LANDSCAPE REGION
-  COLUMBIA RIVER BASIN
-  PACIFIC NORTHWEST ECONOMIC REGION

Base Data provided by the Government of Alberta under the Alberta Open Government License of November 2014.  
 Produced by Alberta Environment and Sustainable Resource Development, South Saskatchewan Region, Regional Informatics Unit, Lethbridge, January 2015.  
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## 2) Aquarium & pet trade





# The Alberta Approach



# Monitoring

Monitoring



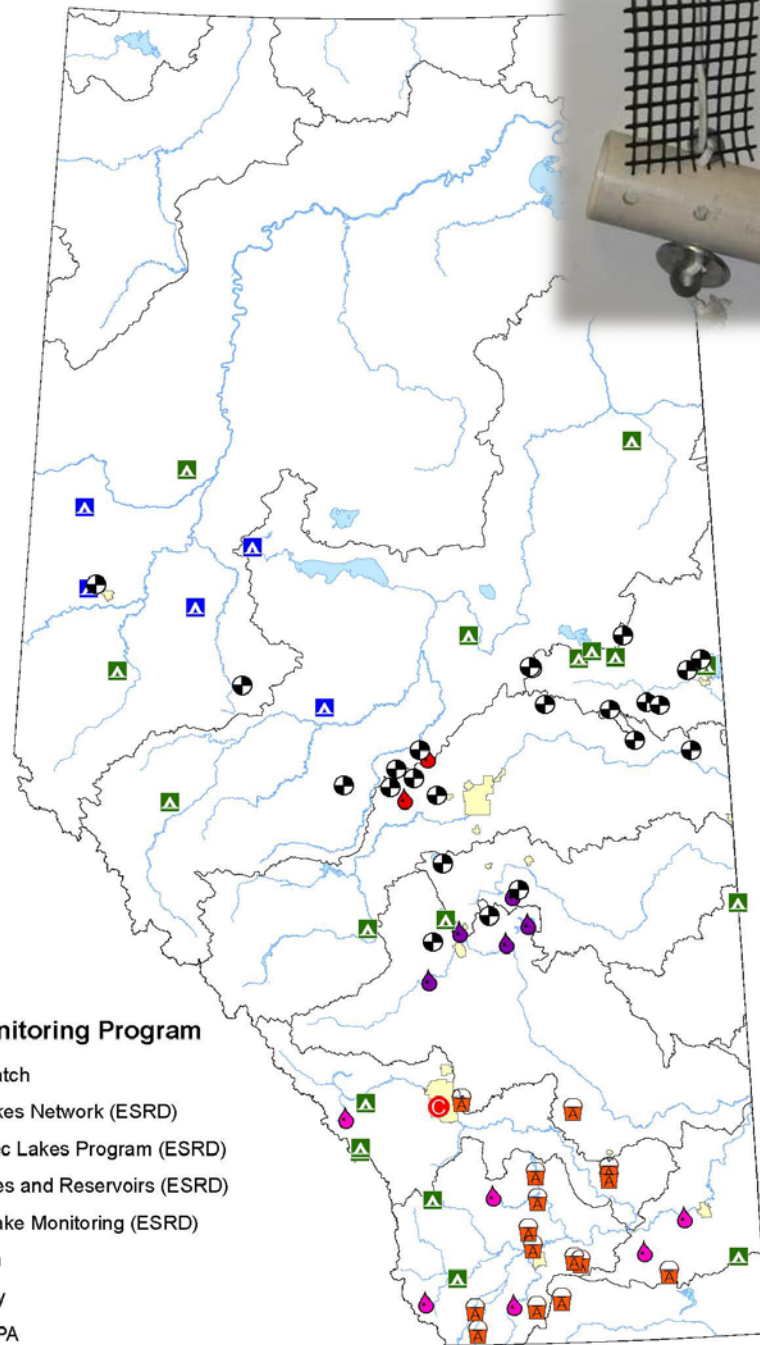
2013: 55 waterbodies

2014: 73 waterbodies; 3 aq. plants

2015: 66 waterbodies; 3 aq. plants

Future: **MULTI-TAXA!?!**

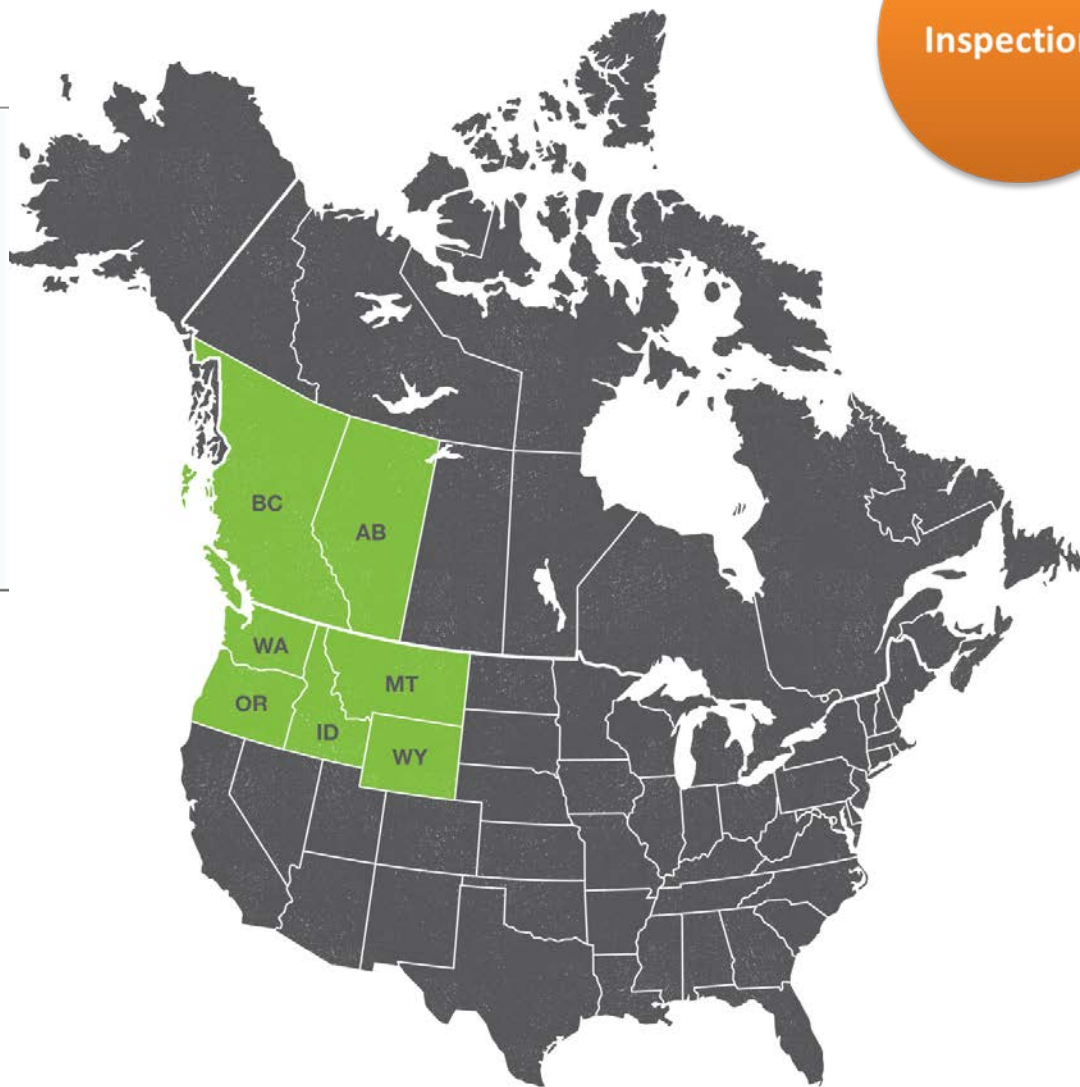
**EDDMapS**



# Watercraft Inspections

Inspections

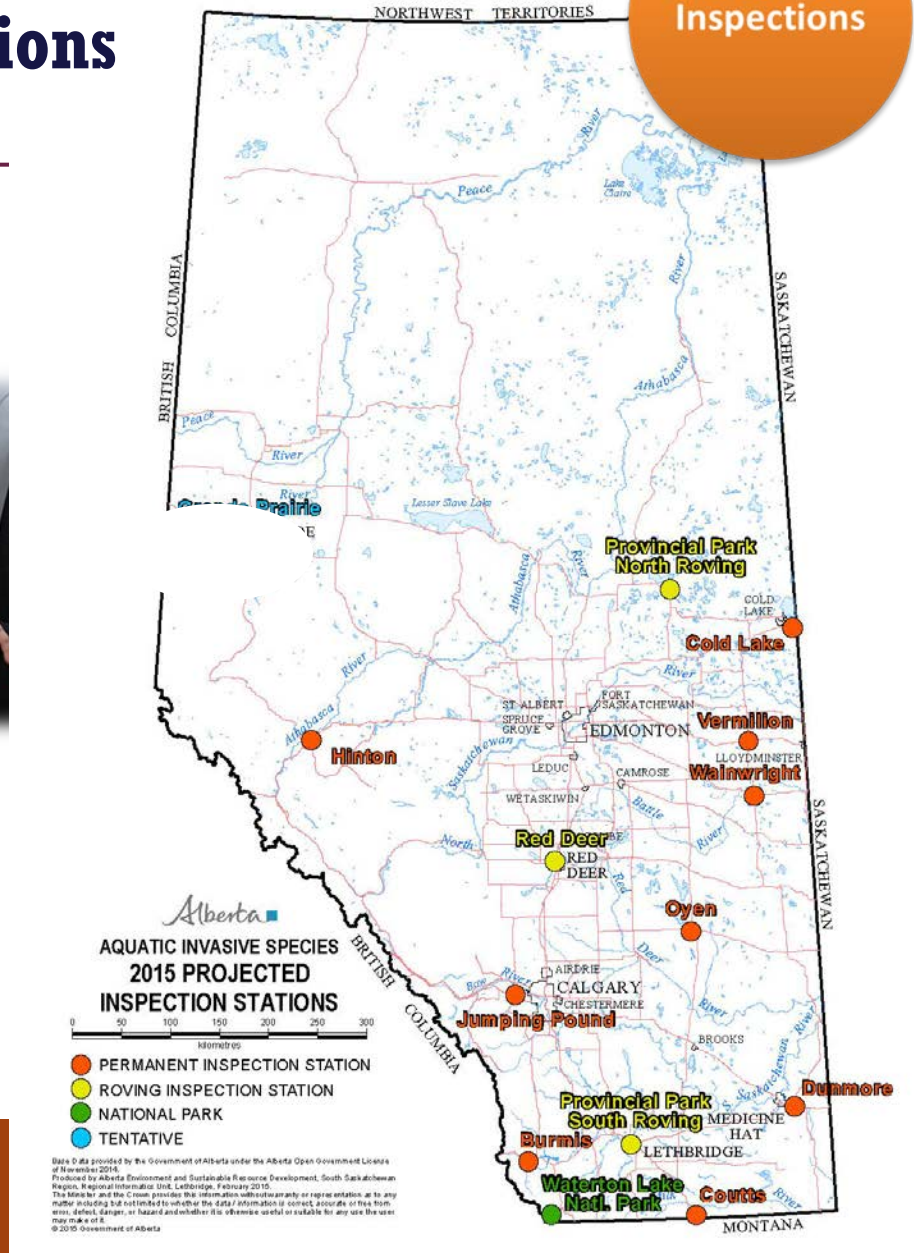
NO WATER  
NO MUD  
NO MUSSELS  
NO PLANTS



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# 2015 Watercraft Inspection Stations

1. Coutts
2. Burmis
3. Dunmore
4. Wainwright
5. Oyen
6. Vermillion
7. Cold Lake
8. Hinton
9. Jumping Pound
10. Red Deer x 2
11. Parks – north
12. Parks – South







**PREVENT  
THE SPREAD OF  
ZEBRA MUSSELS**

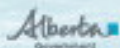


**WATERCRAFT  
INSPECTIONS ARE  
NOW MANDATORY**

Expect to be inspected  
– watch for watercraft  
inspections province-wide.

All watercraft including  
non-motorized are required  
to stop.

FOR MORE INFORMATION ON INVASIVE SPECIES, CALL:  
**1-855-336-BOAT (2628)**



**AIS TV ads**



**Alberta**

Education  
& Outreach

**CLEAN + DRAIN + DRY  
YOUR BOAT**



prop anchor bait bucket dock-lines hull rollers trailer bunks axle live-wells bilge prop motor

Props, boats and natural ecosystems can be ruined by zebra mussels and other aquatic invasive species. Take a few simple steps to preserve our lakes and fisheries: **CLEAN** off the plants and debris, **DRAIN** bilges and ballast, and **DRY** any wet areas of your boat.



ZEBRA MUSSELS



2.0 cm

QUAGGA MUSSELS



2.5 cm

EURASIAN  
WATERMILFOIL



**DON'T LET THEM CATCH A RIDE**  
STOP AQUATIC HITCHHIKERS

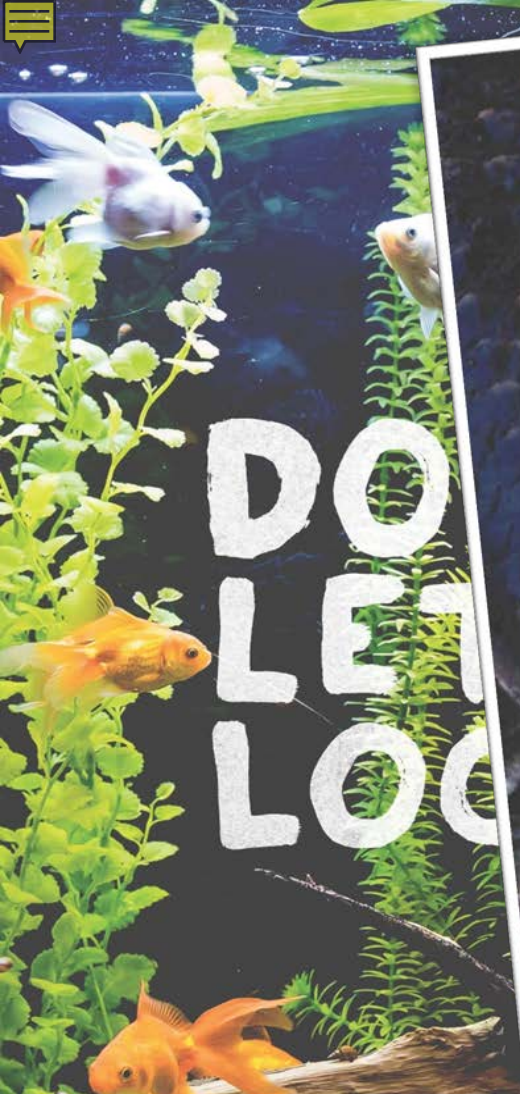
TO REPORT INVASIVE SPECIES:  
**1-855-336-BOAT (2628)**  
esrd.alberta.ca



**DO  
LET  
LOOSE**

**DON'T  
LET IT  
LOOSE**

**DON'T  
LET IT  
LOOSE**



**DON'T  
LET IT  
LOOSE**

It is illegal to release fish into waterbodies! Species that are not native to Alberta can become invasive when released into the wild, increasing competition for resources and spreading diseases to native species. Don't Let It Loose!

FOR MORE INFORMATION  
1-855-33



CALL: (28)



Government

# *Fisheries (Alberta) Act* Amendments

- **Creation of prohibited species list**
  - Aquatic invasive plants, inverts and fish (52!)
  - Prohibition on possession, transportation, importation
- **Mandatory stopping at designated inspection stations**
  - Highways as defined by *Traffic Safety Act*
- **Quarantine provisions and enhanced authority**
  - Response activities
  - Pet/aquarium trade...
- **Fishery Officers/Guardians/Inspectors**
  - Creative solutions to enforcement
  - Limited authority to watercraft inspectors



# Policy & Legislation

Policy &  
Legislation

## 2016 Fisheries Regulations (April 1)

- PULL THE PLUG! – all watercraft must be transported with drain plug out
- Mandatory reporting of AIS (in water)
- Possession licence

## Federal Fisheries Act – AIS Regulations

- Prohibition on dreissenids, Asian carp
- Canadian Border Services Agency
- Response abilities enhanced
- No release of non-indigenous species







Response



Alberta

# Partnerships



Stop Aquatic Invasive Species

# Clean, Drain, Dry Your Boat

Inspections are Mandatory 

## DON'T LET IT LOOSE

Never release aquarium or domestic pond water, plants, dead or live animals into waterbodies. Common aquarium and pond plants and animals can become invasive when released in the wild, potentially causing both ecological and economic harm.

FOR MORE INFORMATION ON INVASIVE SPECIES, CALL:  
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**CLEAN • DRAIN • DRY YOUR BOAT**

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**Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it is the only that ever has.**

**-Margaret Mead**