



AQUATIC INVASIVE SPECIES

Alberta's Approach to Prevention & Response

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What a fun little fish...

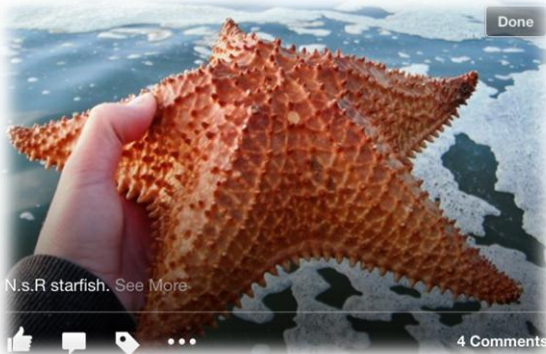


Fish farms and private ponds...



Cultural releases

- Merit releases
- Persian New Year
- Carp at Christmas

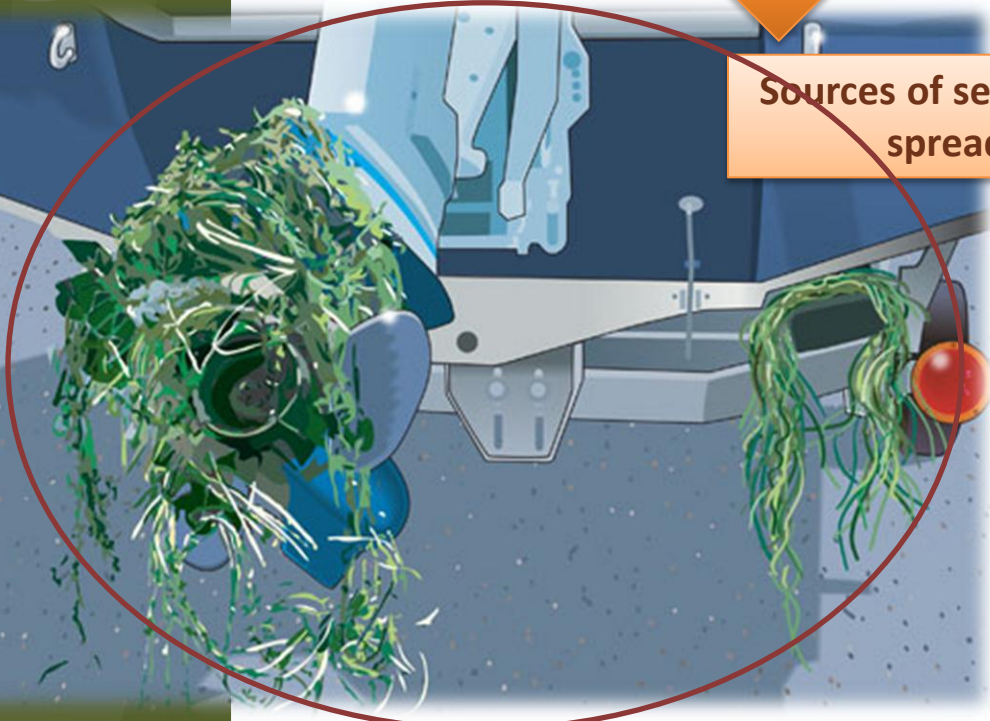


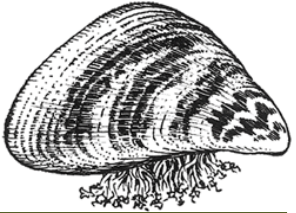


Sources of Initial introduction



Sources of secondary spread





Invasive Mussels



- Can live up to 30 days out of water

- Filter (per mussel)

- No

- Freshwater (veligers)



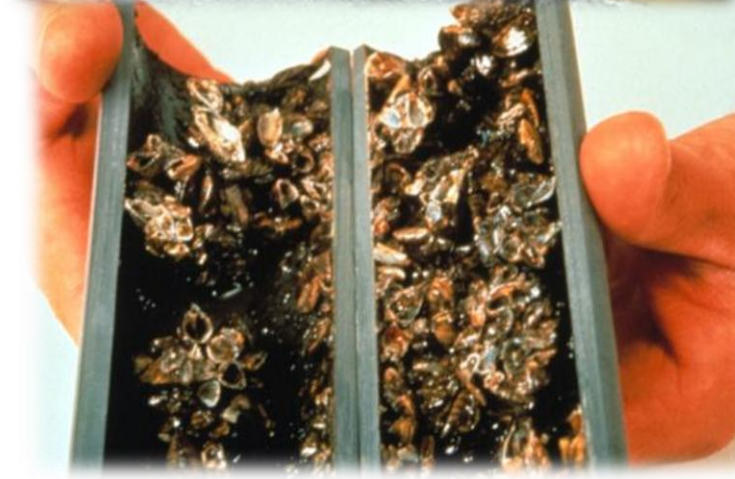
- Any attached mussel is an invasive mussel (freshwater)



Economic Impacts

- Filling intake pipes, irrigation lines, dam operations
- Clogging screens
- Requiring new capital and maintenance costs
- Increased costs to users
- Crop & food production; drinking water & waste water

Alberta water-operated infrastructure is valued at \$14 billion



Estimated annual costs of an Alberta invasive mussel infestation

<i>Impact category</i>	<i>Annual cost</i>
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
Total annual cost estimated	\$75,540,773



Before...



After...

El Dorado, KS, Zebra Mussels 2003

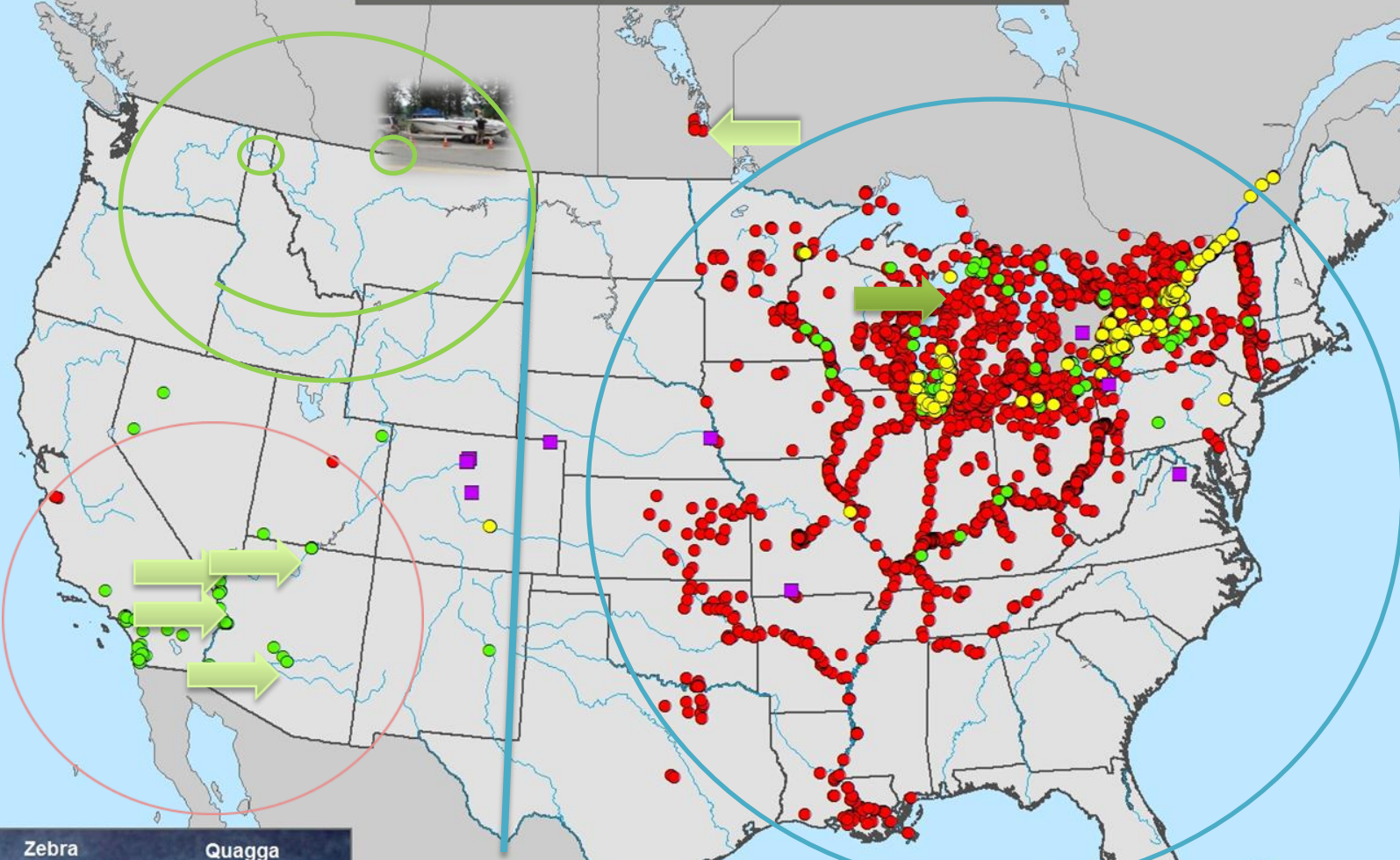


El Dorado, KS, Zebra Mussels 2006



Zebra and Quagga Mussel Sightings Distribution

Dreissena polymorpha and *D. rostriformis bugensis*



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

AIS Program Updates



CLEAN + DRAIN + DRY YOUR BOAT

prop motor hull bucket deck lines hull rollers trailer tanks bilge wells

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 **QUAGGA MUSSELS** **EURASIAN WATERMILFOIL**

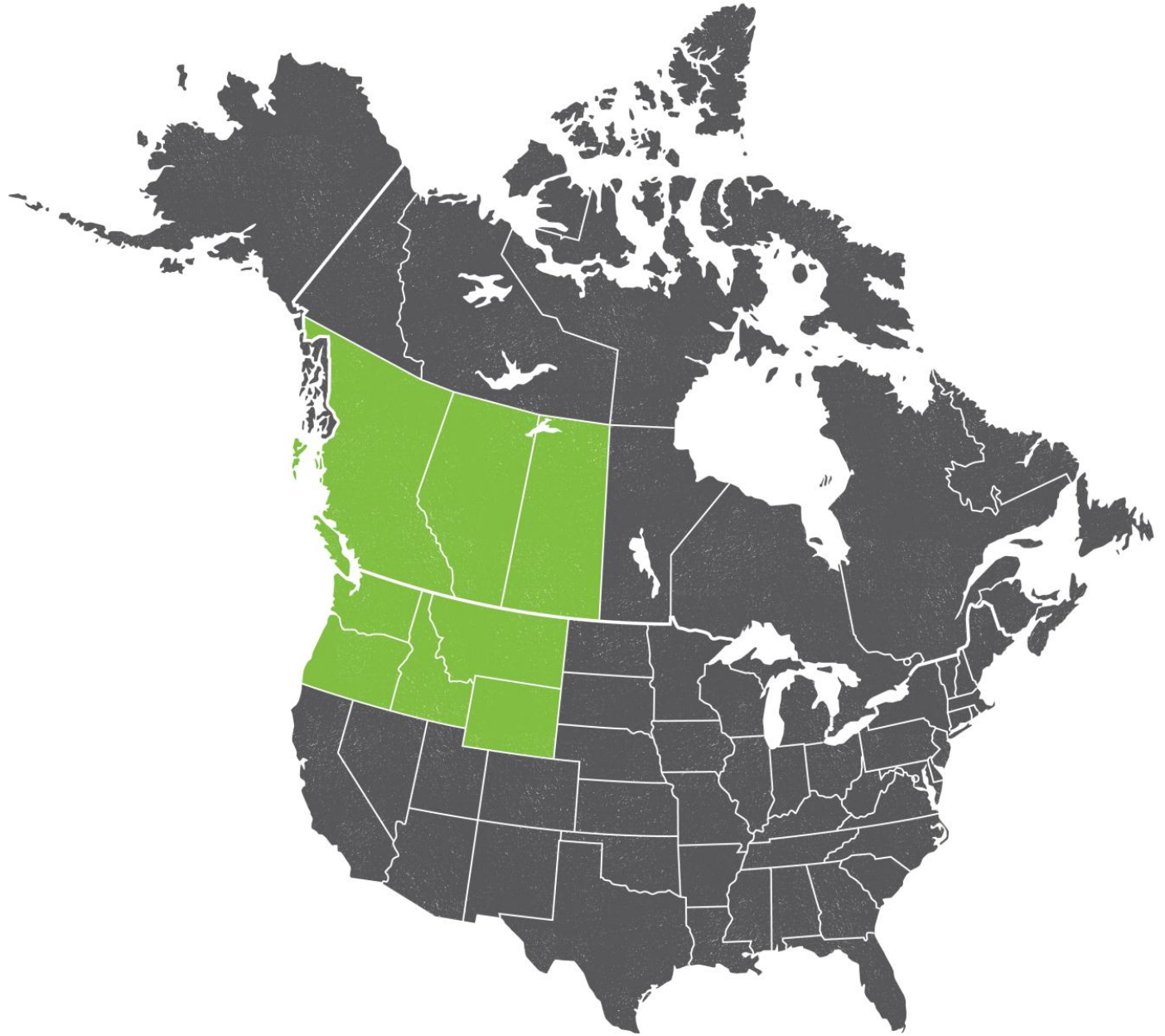
DON'T LET THEM CATCH A RIDE
STOP AQUATIC HITCHHIKERS

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

EID ALBERTA INVASIVE SPECIES Alberta

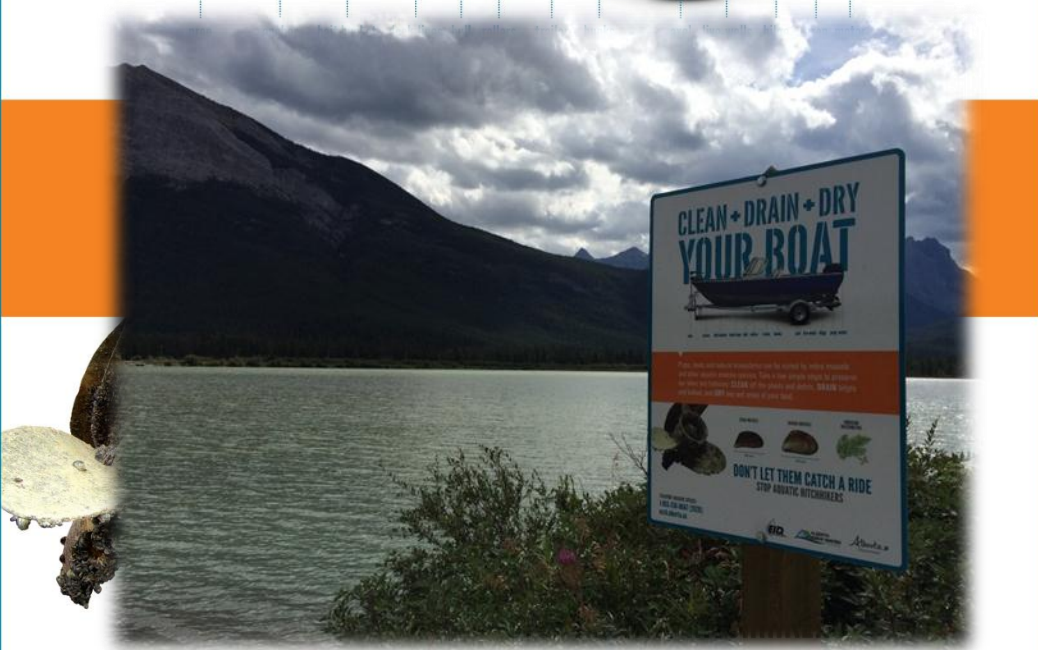
Inspections

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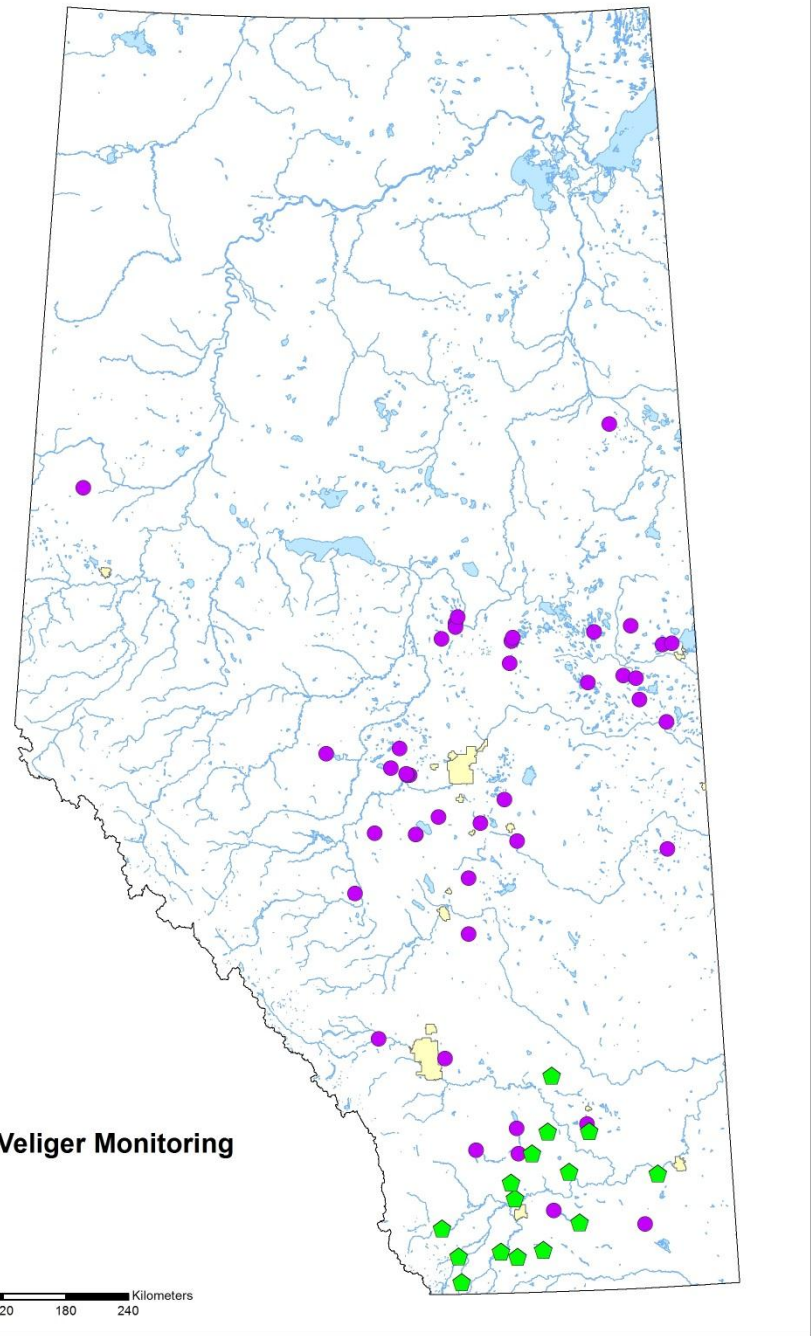
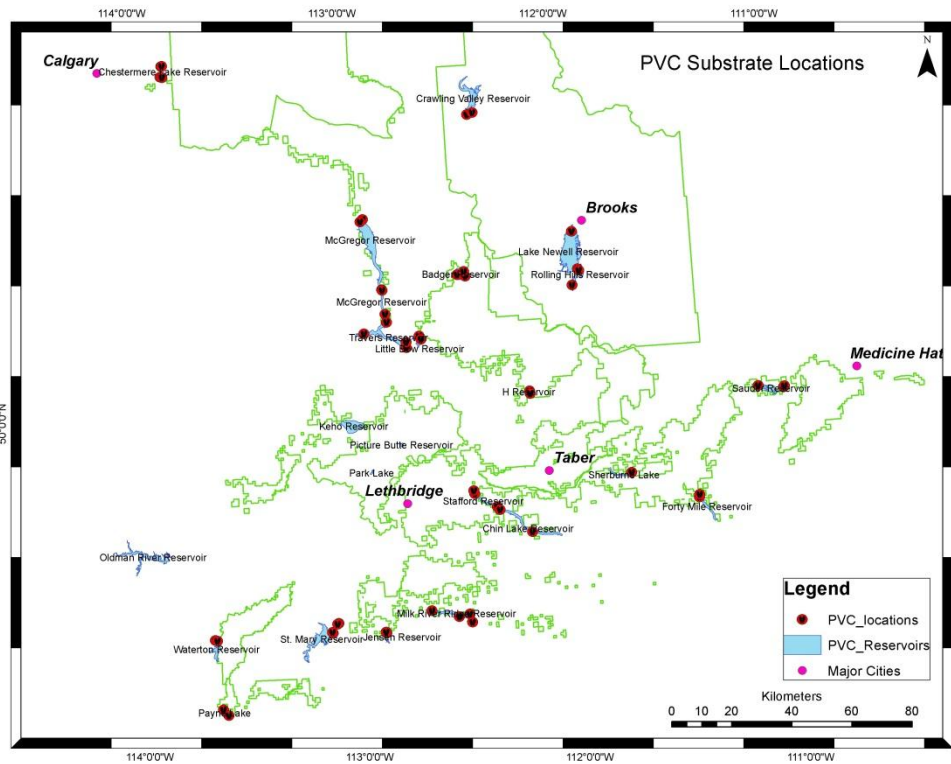
CLEAN DRAIN DRY campaign rollout

- Boat launch signs
- Billboards
- Radio & [TV PSAs](#)
- AIS materials for boaters/public
- Boat shops/marina outreach



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MUSSEL MONITORING

2013: 55 waterbodies

2014: 73 waterbodies



Provincial Policy & Legislative Updates

- ***Alberta Weed Control Act***
 - Aquatic/riparian invasive plants
- ***Fisheries (Alberta) Act***
 - GFAR 42: Restricted possession:
 - Zebra Mussels & Sea lamprey
 - 32(2): Ecological threats to fish health
 - Ministerial Order
 - Quagga mussels
 - Authority to Fishery Officers
 - *New: Transport Officers!*
 - » Great Partnership with CVEB!



AIS-Related Act Amendments

Policy &
Legislation

- ***Fisheries (Alberta) Act***

- Creation of controlled species list
 - Three categories (WCA, APA consistency)
 - Mussels, Asian carp, EWM, Flowering rush
 - Minister- level approval for changes
- Mandatory inspections of known vectors
 - “and other mitigating measures”
- Spring 2015 Legislative session



- ***Federal Fisheries Act AIS Regulations***

- Quagga & zebra mussels, Asian carp listing
- Assistance at US border?



AIS Response



Response

- **24/7 Hotline: public, other jurisdictions, US/CA border, etc.**

1-855-336-BOAT

- Operators triage calls & dispatch Fishery Officer
- 40+ calls this season
- **Rapid response plan for *Dreissenid* mussels**
- **Decontamination of mussel-fouled boats**
- **Mapping of new AIS reports**
- **ASERT = critical partner in response**



Mussel-fouled boats to AB (2013-2014):

1. Sylvan
 2. Pigeon
 3. Gull
 4. Wabamun
 5. Slave
 6. Whitefish
 7. Hay River
- *snowbirds
*used boats (US)
8. Chestermere
 9. St Mary's Reservoir
 10. Calgary







Fire management is on side!



Are we ready? Lessons learned from Manitoba and others...

- Have a plan!
- Consult with stakeholders early
- Convene a science advisory team (ahead of time)
- Clear protocol to decision
- Understand process & permits
- Pursue registration of treatment products
- Response “trailer” with materials



AIS Program Partners



Environment and Sustainable Resource Development



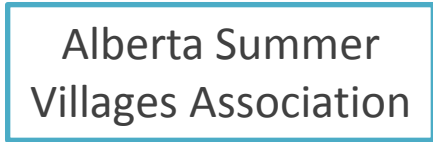
Agriculture and Rural Development



Alberta WPACs



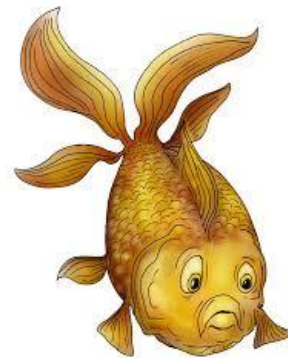
Alberta Irrigation
PROJECTS ASSOCIATION



Next steps



- Legislative amendments!
- Response Plan draft – spring 2015
- Control options for aquatic invasive species
 - Registration of new products
- Spread the word!
 - Local events & clubs
 - Calendar of water/boating events
 - Boat industry (shops, marinas, dealers)
 - Curriculum for schools
 - **CLEAN DRAIN DRY** Your Boat campaign
- Planning for 2015
- Coming soon: “DON'T LET IT LOOSE” campaign



Alberta

Help us spread the word!

1-855-336-BOAT



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