

Aquatic Invasive Species in Alberta – Background

The Issue

- Two aquatic invasive species (AIS) pose imminent threats to Alberta:
 - **Eurasian Watermilfoil** is an aquatic weed that grows quickly and reproduces from fragments. It forms dense floating mats of vegetation that can block irrigation and other conveyance infrastructure, hinder recreational activities, reduce biodiversity, and cause fish kills via reduced dissolved oxygen during fall die-offs.
 - **Dreissenid mussels (Zebra mussels, Quagga mussels)** are small mussels that are well known for being prolific breeders, and having the ability to attach to virtually any submerged surface. They can quickly clog pipelines and obstruct flow to water infrastructure, creating a permanent maintenance issue once established. They can also cause toxic algae blooms and excessive plant growth due to increased water clarity via filter feeding. As well, decomposition of dead mussels and associated plant growth can cause fish kills.
 - Currently, Alberta is believed to be free of mussels but is highly susceptible to infestation.
 - The most likely way invasive mussels could enter AB is ‘hitchhiking’ on trailered watercraft coming from infested areas outside of the province. Alberta does not have a mandatory boat inspection program.
- Alberta’s 8000km of irrigation infrastructure (canal and pipeline) is worth an estimated \$3.5 billion.
 - An infestation of invasive *Dreissenid* mussels would reduce water conveyance to crops and cost millions of dollars annually to manage. The impacts on water management structures are estimated to be \$8,841,373 annually.
 - Total estimated annual cost for all of AB should mussel infestation occur = \$75,540,773
- Once established, mussels are almost impossible to eradicate or control.
 - Mechanical, biological and chemical control mechanisms are either ineffective, highly labour intensive and costly, or are harmful to non-target organisms.
- Prevention is the least cost alternative.

The Action

- Provincial AIS Prevention Program:
 - Alberta ministries of Agriculture and Rural Development (ARD), Environment and Sustainable Resource Development (ESRD), and Tourism, Parks and Recreation partnered in 2013 to begin a pilot program that included voluntary boat inspections, and education and outreach campaign, monitoring waterbodies.
 - In late 2013 and continuing into 2014 and onward, a province-wide prevention program was created, headed by ESRD. Multi-stakeholder participation is focused into five task teams: Policy & Legislation, Education & Outreach, Monitoring, Inspections, and Rapid Response.
 1. *Policy and Legislation:*
 - Current policy:
 - Alberta Weed Control Act (Eurasian watermilfoil)
 - Alberta Fisheries Act (mussels)
 - 42: Restricted possession of zebra mussels
 - 32 (2), 32 (3) and 33: Authorizes fisheries officers to take action when mussel-fouled boats are intercepted
 - Department of Fisheries and Oceans planning on including Quagga and Zebra Mussels on prohibited list by late spring 2014, which permits inspectors to ban mussels from importation across international (but not domestic) borders
 - Provincial legislation still needs to be strengthened, either in amendments to the fisheries act, or the addition of a standalone AIS act.

2. *Inspections:*
 - Currently boat inspections are voluntary
 - Mandatory boat inspections are needed at all Alberta borders in order to better safeguard borders (US/Canada, provincial)

 3. *Education and Outreach:*
 - Focus on behaviour change (“Clean, Drain, Dry”)
 - Task team to address boaters, anglers, aquarium/pet stores, cultural release
 - Producing educational products and materials; and
 - Signage for boat launches

 4. *Monitoring:*
 - ESRD and ARD are monitoring several lakes and reservoirs throughout Alberta, including many southern reservoirs located within irrigation districts, for both juvenile and adult mussels
 - Partnerships and cooperation with irrigation districts have been developed to support the initiative
 - In 2013, all results of monitoring efforts were negative. This will help build a strong baseline for comparison: Alberta has never monitored for invasive mussels
 - In 2014, the plan is to increase monitoring efforts and frequency, including boat traffic data, as well as data on aquatic plants/weeds

 5. *Response:*
 - The public is encouraged to report aquatic invasive species at 1-855-336-BOAT (2628). Calls to this AIS hotline go through a radio control center. If the call is a general inquiry, the caller is directed to either the ESRD Info Center or the AIS Coordinator. If it is a concern, the call is directed to a fisheries officer, who then can receive support through a decontamination team if required.
 - Protocol for containment of infestation to limit the spread to other water bodies and jurisdictions will be developed
 - Control options involve different options for each water body type (e.g. high pressure hot water and manual removal from boats; mechanical, chemical and other control if the mussels are found in water)
- What can the Agriculture or Irrigation industries do?
 - Tell your clients, water users, etc. about the issue and the need for a proactive approach
 - Partnership and collaboration opportunities

 - What can the public do?
 - Be an advocate: keep your eyes on the water
 - Report aquatic invasive species or suspicious activity at 1-855-336-BOAT (2628)
 - Clean, Drain and Dry your boat and recreational gear
 - Get informed: <http://mywildalberta.com>
<http://www.dfo-mpo.gc.ca/science/enviro/ais-eae/index-eng.htm>
http://www.mnr.gov.on.ca/en/Business/Biodiversity/2ColumnSubPage/STDPROD_068689.html

For more information

Kate Wilson, AIS Program Coordinator, ESRD
Kathryn.wilson@gov.ab.ca, (780) 247-7791

Nicole Seitz, Water Research Specialist, ARD
Nicole.seitz@gov.ab.ca, (403)-382-4713