



Ministry of
Environment and
Climate Change Strategy



BC AIS Update

Martina Beck, Invasive Fauna Unit Head
Columbia River Basin Meeting
Dec 4th 2018
Boise, Idaho



Ministry of
Environment and
Climate Change Strategy

Invasive Mussel Defence Program



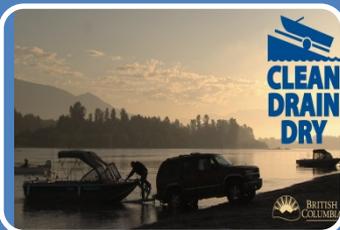
Watercraft Inspection Stations

- Launched in 2015, program has grown to 64 inspectors
- Delivery partnership with Conservation Officer Service



Early Detection Lake Monitoring

- Sampling for presence of invasive mussels since 2011
- All samples negative to date, efforts doubling in 2018



Outreach & Education

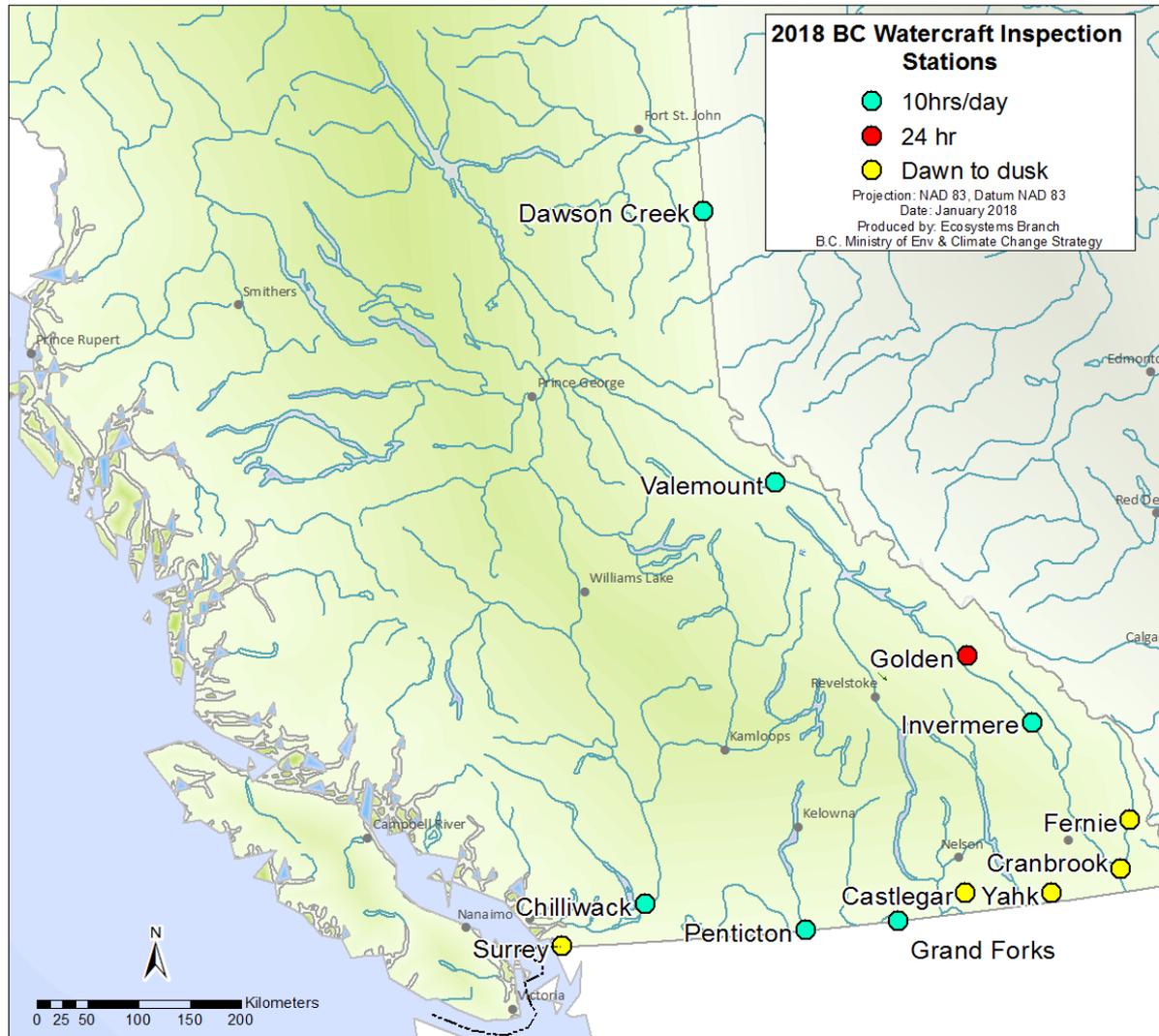
- Clean, Drain, Dry messaging for invasive mussels and other AIS
- Over 130,000 outreach interactions at inspection stations

2018 Season

	2015	2016	2017	2018
Inspection Stations	Roving	8	10	12
Number of Auxiliary Conservation Officers	12	32	65	64*
Hours of Operation	5 days/week & 7hrs/day	7 days/week & 10hrs/day	9 stations dawn-dusk 7 days/week, 1 station 24hrs	1 station 24hrs, 5 dawn to dusk, 6 10hrs/day
Inspection Season	June-October	April to Sept/Oct	April/June to mid November	April to end of Sep and Oct

*Plus two dedicated Sgt's in COS touring inspection stations

2018 Inspection Stations



2018 Watercraft Inspections

- 38,000 inspections
- 1,700 high risk inspections
- 373 commercially hauled
- 450 decontaminations performed
- 300 notifications from Border Services
- 25 mussel fouled boats
 - Advanced notification for 20
 - From POE, AB, ID, MB, ANS alerts

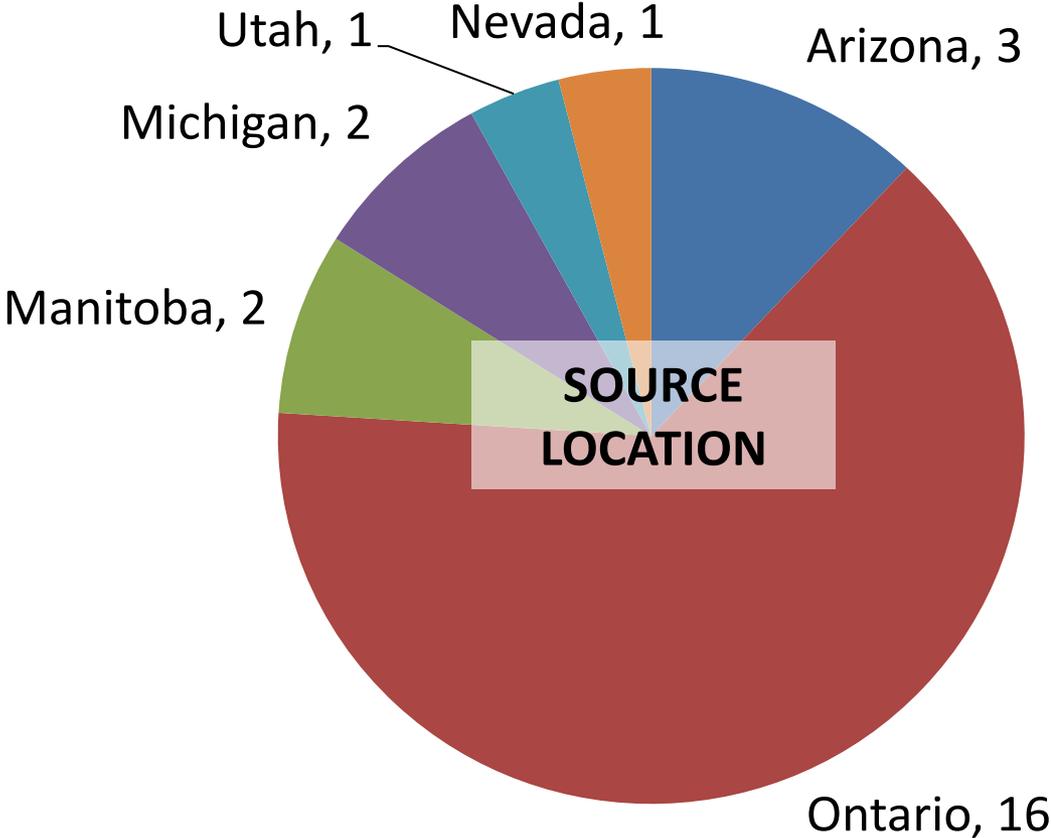


BC CO Service @_BCCOS · May 30

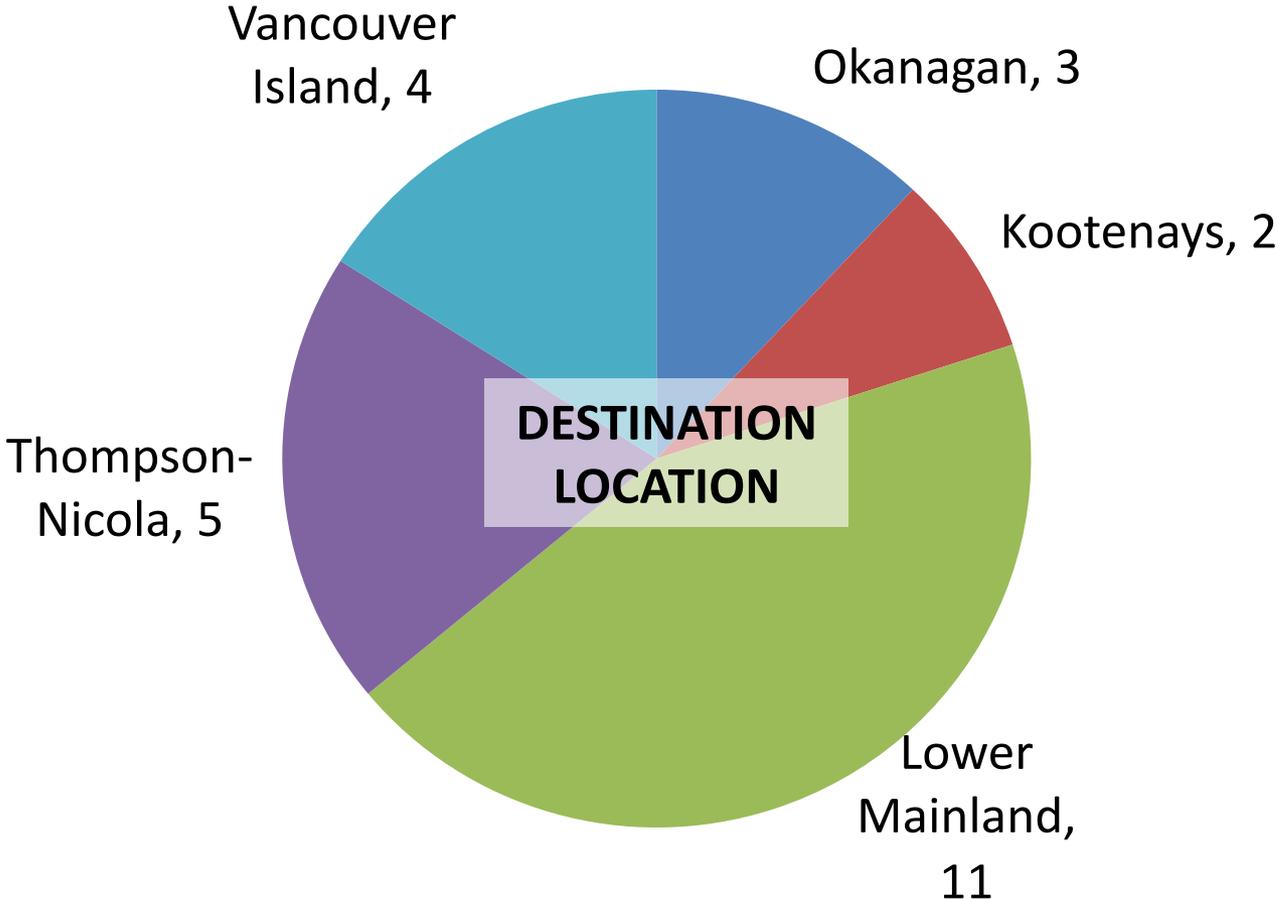
The Surrey AIS Unit were busy decontaminating a boat this morning. This is a good reminder for everyone to please clean, drain, dry your boat! #bccos #coquitlam #cleandraindry



2018 Mussel Fouled Watercraft

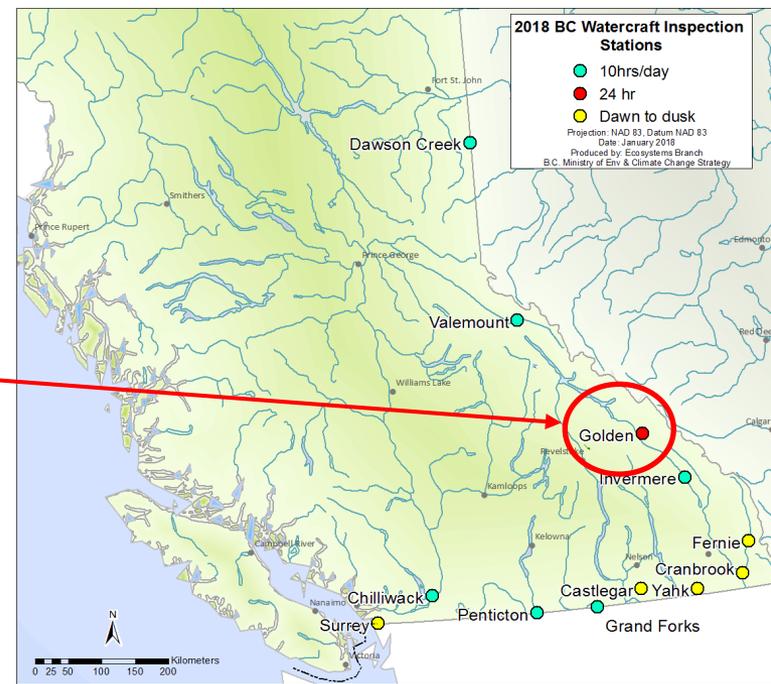


2018 Mussel Fouled Watercraft



Nighttime Operations

- 24hr station on eastern border
- Most mussel fouled boats intercepted
- Primary commercial hauler route
- In 2018 between 22:00 – 05:00:
 - 391 inspections
 - 22 high risk inspections
 - 2 mussel fouled boats @ 12:00AM and 5AM



Marine mussels

- Dead marine mussels (*Mytilus edulis*) found floating in Okanagan lake
- Generated significant attention through social media posts
- News articles and radio interview
- Highlighted need for more information on how to ID marine vs. freshwater mussels

Kalamalka Lake and the case of the mysterious B.C. mussel



A saltwater marine mussel somehow found its way into a freshwater B.C. lake

Matt Humphrey · CBC News · Posted: Sep 02, 2018 11:00 AM PT | Last Updated: September 2

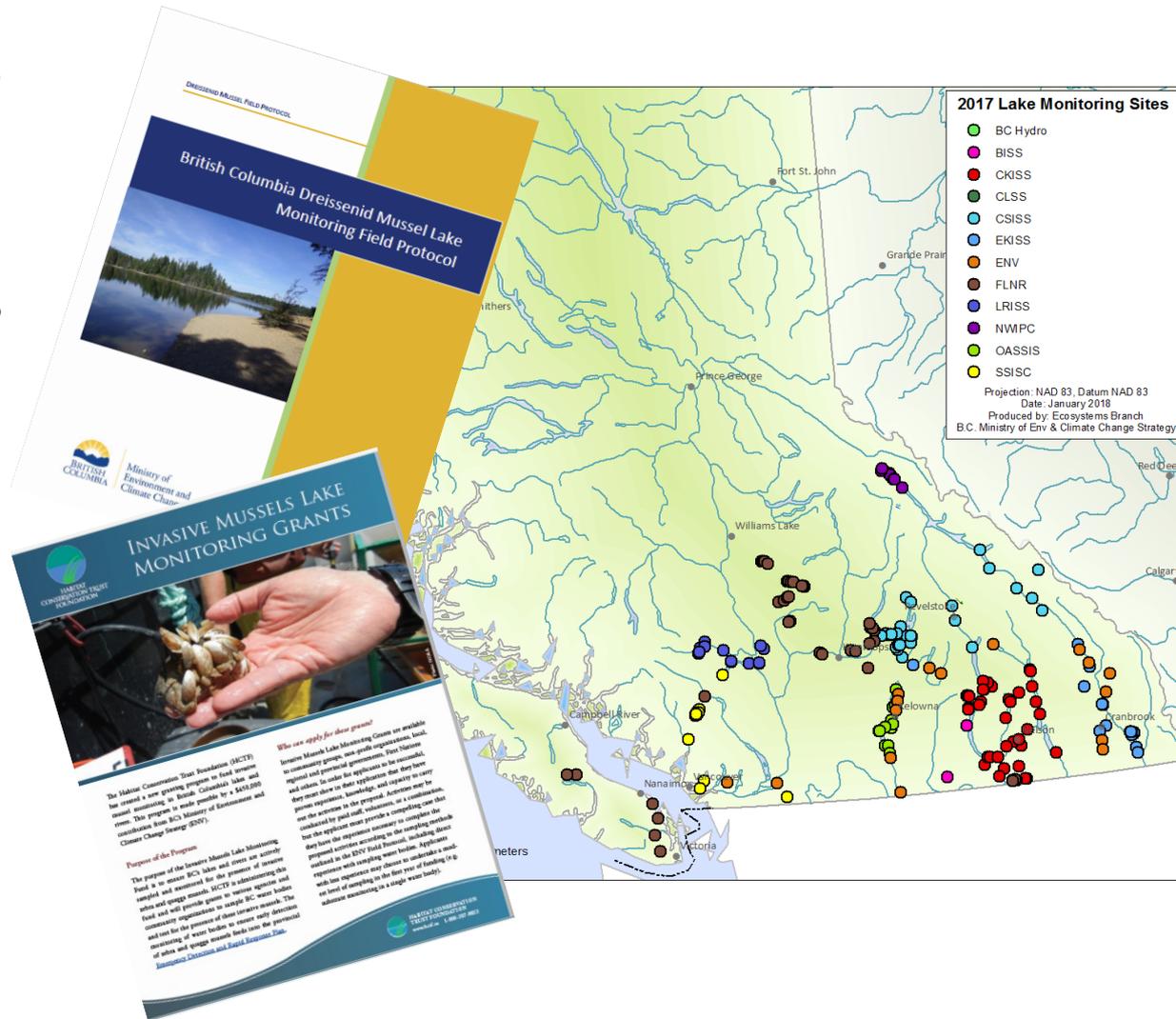


Boat owner Randall Yakuchuk found a common marine mussel — similar to ones shown here — attached to the hull of his boat in a freshwater lake. Mysteriously, the creatures can't live in freshwater. (Emily Carrington)



2018 Lake Monitoring

- 812 plankton samples from 85 different lakes
- 77 substrate samplers across 38 lakes
- All samples negative for ZQM veligers from microscopy analysis
- Updating protocol for 2019 season
- Grant applications opening soon



Federal funding for Invasive Mussels

The Government of Canada is investing in research and education to prevent Zebra and Quagga mussels invasion in the Okanagan region

From: [Fisheries and Oceans Canada](#)

News release

August 6, 2018

Kelowna, British Columbia

Aquatic invasive species pose a threat to Canada's waterways and native species, and have negative economic impacts. The Government of Canada is committed to taking action on aquatic invasive species, including Zebra and Quagga mussels, by investing in the necessary research to understand the threat, and to educate the public on how they can help to prevent the spread.

Today, Stephen Fuhr, Member of Parliament for Kelowna-Lake County, on behalf of the Honorable Jonathan Wilkinson, Minister of Fisheries, Oceans and the Canadian Coast Guard, announced that Simon Fraser University (SFU) will receive \$100,000 over four years to conduct research that will help assess the risk of spread and predict the ecological impacts of these non-native mussels in the Okanagan region. With this research, the Okanagan area will be better prepared in case of a mussel invasion and will have the knowledge of where to focus management efforts.

Mr. Fuhr also announced that an additional \$400,000 over three years will be invested for education and outreach purposes to complement the current efforts deployed by the Province of British Columbia and other partners within the Okanagan Basin. The Canadian Council on Invasive Species (CCIS) will use this funding to create new and updated signage at boat launches, television commercials and informative articles, as well as online resources. These resources will be beneficial in creating consistent messaging across British Columbia.

Zebra and Quagga mussels have not yet been recorded in British Columbia waters, however, this region is at high risk of invasion due to the relative proximity of established populations and the discovery of these mussels on recreational boats intercepted en route to the Okanagan.



The federal government has committed to funding research and education about invasive mussels. File photo

Feds jump in to fund invasive mussels research in B.C.

Funding to help combat zebra and quagga mussels

Next Steps

- Annual review of the watercraft inspection data based on:
 - Watercraft inspection data
 - lessons learned & health and safety
 - feedback from inspectors, partners, and neighbouring jurisdictions
- Adjustments to program operations for the 2019 season will be made based on the annual review
- Coordination of watercraft inspection programs in Western Canada (BC, AB, SK, MB, and YK), call Dec 11th
- **Aquatic Invasive Species Specialist job posting closing Dec 9th**

Priority AIS Species & Pathways

Priority species:

- Zebra and quagga mussels
- Northern Pike
- Bass & Perch
- Goldfish
- Bullfrogs (Kootenay)
- Spartina spp. (intertidal)
- New crayfish detection

Priority Pathways:

- Watercraft / equipment
- Pet/Aquarium trade
- Live food trade
- Illegal movement of live fish (bucket brigade)



New detection in BC (crayfish)

Potential Impacts:

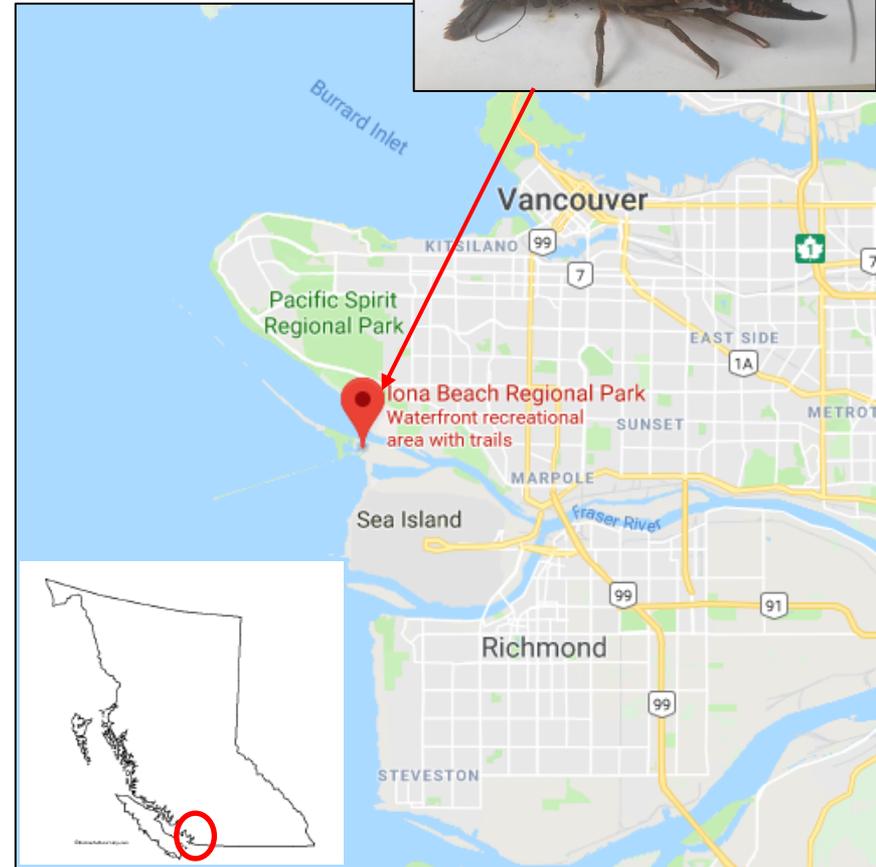
- Builds burrows that can alter habitat. Wide ranging diet (plants, detritus, animals). Can spread diseases.

Current Activities:

- Public report in Aug 2018 and sampling confirmed it is a new species (*Procambarus sp.*) detection in BC
- Working with taxonomist in Illinois to identify to species level

Next Steps:

- Next steps: assess eradication options and signage for public outreach



BC Invasive Species Priorities

- The development of long-term sustainable funding solutions for preventing the spread of high-risk invasive species and threats in western Canada (including zebra and quagga mussels);
- Enabling jurisdictions to quickly access pesticides and other means to ensure access to safe control options for responding to early detections of highly invasive aquatic species (such as zebra and quagga mussels);
- Strengthen Early Detection Rapid Response (EDRR) preparedness through coordinated rapid response training and exercises
- Work with Canada Border Services Agency on integrating protocols associated with high risk boaters to enhance security against invasive mussels

Questions?

Martina.Beck@gov.bc.ca

250-208-6520