

# Manitoba Perspectives on Zebra Mussels

Jeff Long

Manitoba Sustainable Development – Wildlife & Fisheries Branch

# MB AIS Staff – Beaconia Beach - 2016



# Balsam Bay Harbour / Beach – July 20, 2019



# Grand Beach - 2019



# Grand Beach, 2019





# Winnipeg Beach marina - 2019



# Winnipeg Beach marina - 2019





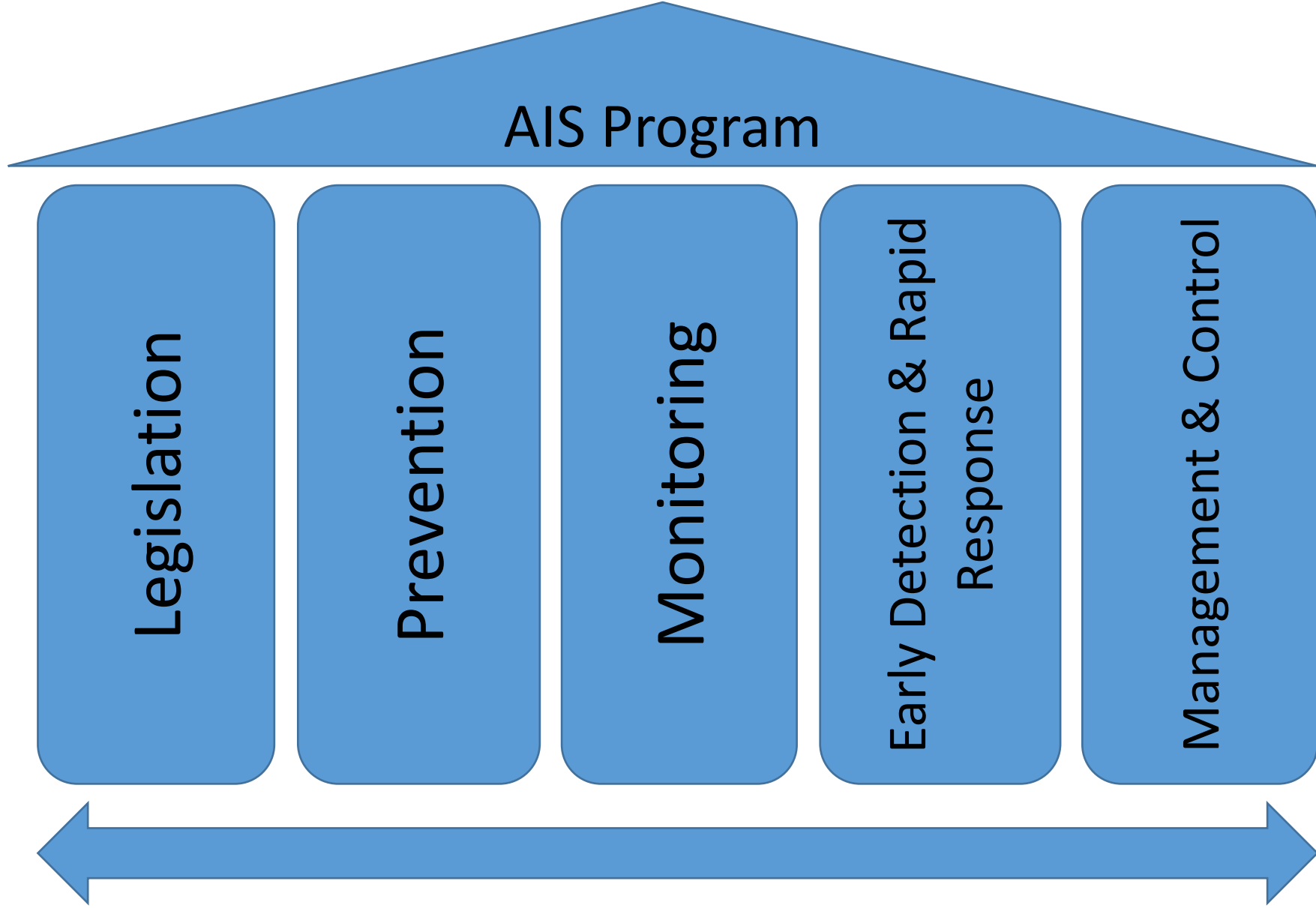
# Winnipeg Beach marina - 2019



# Winnipeg Beach marina - 2019



The “How”



AIS Program

Legislation

Prevention

Monitoring

Early Detection & Rapid  
Response

Management & Control

# Legislation

## Highlights of Canadian Federal AIS Regulation

- Manitoba is delegated fisheries management authority as well as administration and enforcement of the AIS Regulation.
- Ability to use a registered deleterious substance to eradicate an AIS.
- Prohibited Species List in the *Manitoba Fishery Regulations, 1987* was grandfathered in.
- Prohibition against importation, possession, transportation and release of zebra mussels, quagga mussels and invasive carp anywhere in Canada.
- Prohibition against importation is to be enforced by CBSA



# Legislation

## Highlights of Provincial AIS Legislation:

- Additions to the **Prohibited Species List** (includes both live and dead organisms).
- Clean, Drain Dry is the law (i.e. general provisions).
- Stopping at watercraft inspection stations is a legal requirement.
- Ability for officers to stop conveyances to conduct AIS inspections.
- Laws for more than just watercraft.
  - e.g. water-related equipment, aircraft, and ORVs.
- Stricter measures in place when leaving invaded areas or where AIS will naturally move (i.e. control zones).



**CLEAN, DRAIN, DRY AND DISPOSE.**  
**IT'S THE LAW!**

# Prevention

## Watercraft Inspection

### Objective:

*To prevent and slow the spread of AIS from invaded water bodies within MB to non-invaded water bodies.*



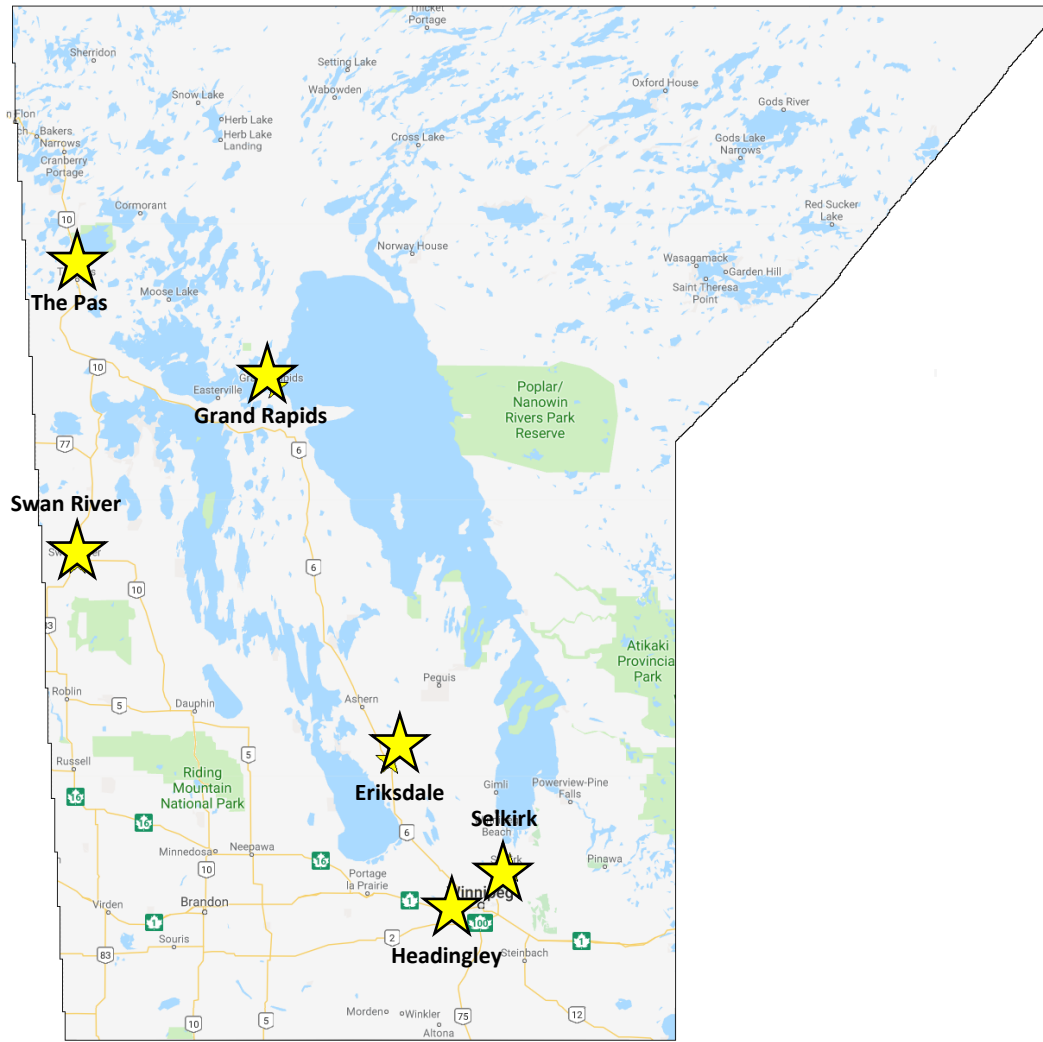
### Achieved by:

- Educating the public
- Demonstrating how to CLEAN, DRAIN, and DRY watercraft and equipment properly
- Assessing the risk of AIS transfer and ensuring compliance with the law through triage and inspection
- Performing decontaminations and issuing decontamination orders for those who present a risk

# Prevention

## Watercraft Inspection

### 2017-2019 Watercraft Inspection Locations



- Strategic highway “pinch-points” to intercept traffic coming from invaded water bodies and high-volume boat launches



# 2018 WaterCraft Inspection Data

	INSPECTOR ACTIVITY								CONSERVATION OFFICER ACTIVITY				
	INSPECTIONS	DECONS.	DECON. ORDERS	% DECONS. (DECON/INSPECT)	MUSSEL-FOULED BOATS	DRIVE-BYS	NON-COMPLIANCE DRIVE-BYS/TOTAL BOATS	PUBLIC INTERACTIONS	OFFICER VISITS	TOTAL TIME ON SITE (hrs)	DRIVE-BYS PULLED OVER	WRITTEN WARNINGS	TICKETS (LONG FORM)
HEADINGLEY	1775	166	3	9.5%	3	749	30%	93	17	16.33	19	16	0
SELKIRK PARK BOAT LAUNCH	4494	510	1	11%	0	170	3.6%	305	14	11.42	0	0	0
ERIKSDALE	2173	211	19	9.7%	1	439	17%	69	23	54.16	38	46	0
GRAND RAPIDS BOAT LAUNCH	1484	479	1	32%	0	1208	45%	0	9	22.5	27	10	1
SWAN RIVER	886	26	1	3%	0	172	16%	42	40	159.3	55	39	1
THE PAS	2053	117	0	5.7%	0	253	11%	47	18	14.42	10	2	0
<b>TOTAL</b>	<b>12,865</b>	<b>1509</b>	<b>25</b>	<b>12%</b>	<b>4</b>	<b>2991</b>	<b>19%</b>	<b>556</b>	<b>121</b>	<b>278</b>	<b>149</b>	<b>113</b>	<b>2</b>

# Prevention

## Public Engagement

### OUTREACH MATERIAL:

- Checklists
- Fact sheets
- Specimens

### PRESENTATIONS:

- Industries (e.g. Manitoba Float Plane Council)
- educators

### TRAINING:

- Park patrol officers
- MB Conservation Officers
- Canadian Border Services Agency

# Prevention Partnerships

## LOCAL PARTNERSHIPS:

- Cottage Associations
- Indigenous Communities
- Biosphere Reserve



## NATIONAL & REGIONAL PARTNERSHIPS



# Prevention

## Certified Service Providers

- Began development of program to train and certify for-profit service providers to deliver decontamination services to the public
- Planning to be in place by 2020 open water season

# Monitoring

1. Non-invaded water bodies
  - Early detection & rapid response
  - Inform about new invasions
2. Newly invaded water bodies
  - Confirm presence and reproduction
  - Follow magnitude and extent of invasion
3. Established invaded water bodies
  - Monitor rate and extent of population
  - Inform public adaptation strategies

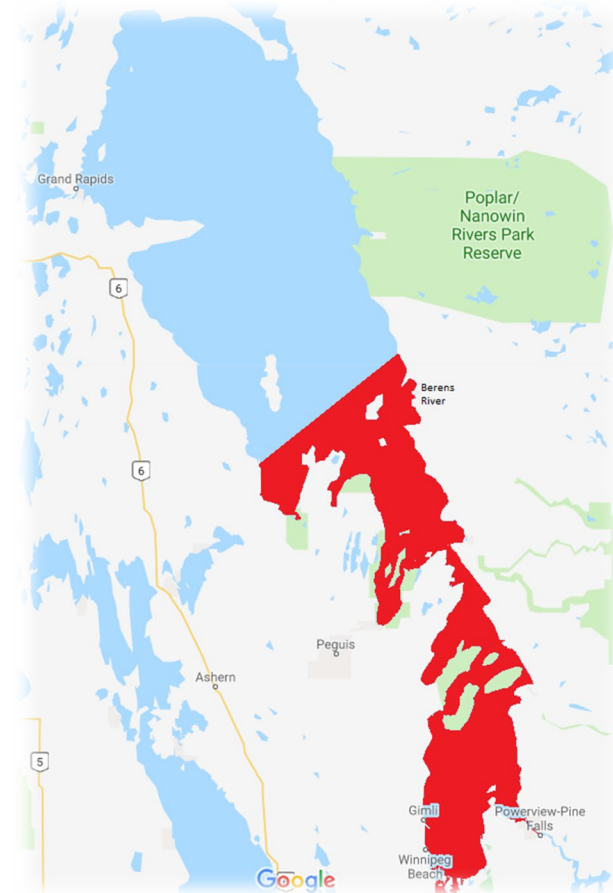


# Monitoring

## 2017 Monitoring Summary

### ESTABLISHED INVADED WATER BODIES:

- **Lake Winnipeg** – No further monitoring in south basin. Monitoring continues in narrows and north basin. Veligers found at all stations in the narrows and in greater numbers than 2016. Veligers found in 3 stations at the south end of the north basin and adults were found on substrate samplers set at Princess Harbour and McBeth Harbour.
- **Red River** – ZM are considered to be well established throughout the Red River and were also found in the lower reach of Netley Creek at Chelsey Resort and Netley Campground. There were also reports of ZMs in the lower reaches of the Manigotagan River.

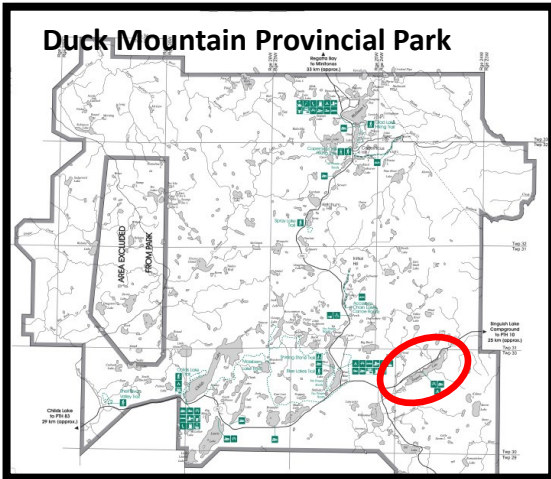


# Monitoring Summary - 2018

GENCY	WATER BODIES SAMPLED	WATER SAMPLES (for veligers)	SUBSTRATE SAMPLERS (for settled mussels)	WATER SAMPLES (for eDNA)
Sustainable Development (SD) <sup>1</sup> /DFO Prairies Area AIS	32	174	19	67
DFO Winnipeg Environmental DNA Program	11			48
Lake Winnipeg Research Consortium	1	62	10	
Manitoba Hydro	4	60	8	
Riding Mountain National Park	33	157	36	121
Swan Valley Sport Fish Enhancement	11		12	
Saskatchewan Environment	1	-		-
Anishinaabe Agowidiwinan Treaty No. 2	4	-	5	-
<b>TOTAL</b>	<b>97<sup>2</sup></b>	<b>456</b>	<b>90</b>	<b>236</b>

# Early Detection & Rapid Response

## Singush Lake



- Suspect adult zebra mussel found on substrate sampler set in 2016 and detected in lab winter 2016-17.
- Provincial staff worked with the Singush Lake Cottage Owner's association to determine the best method for containing the potential invasion.
- Day use boating activity was restricted.
- Control order issued to cottage owners allowing them to access the lake in 2017.
- Program and regional staff worked with the association to implement the same containment plan in 2018 and 2019.

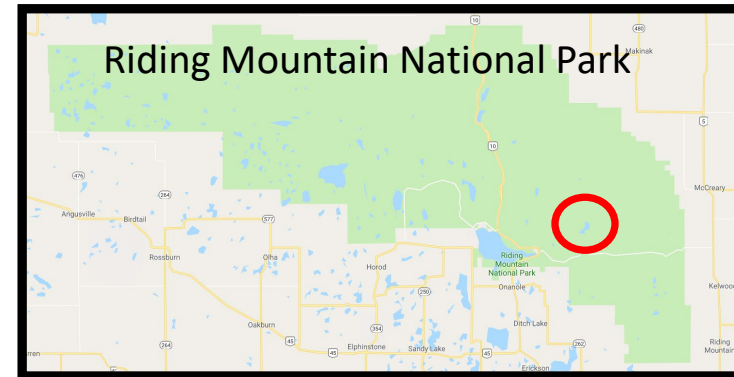




# Early Detection & Rapid Response

## Whirlpool Lake

- Parks Canada has jurisdictional authority.
- Parks Canada informed the AIS program that ZM eDNA was detected. Public announcement made **Dec 12, 2017**.
- Headwater lake which flows into Lake Manitoba

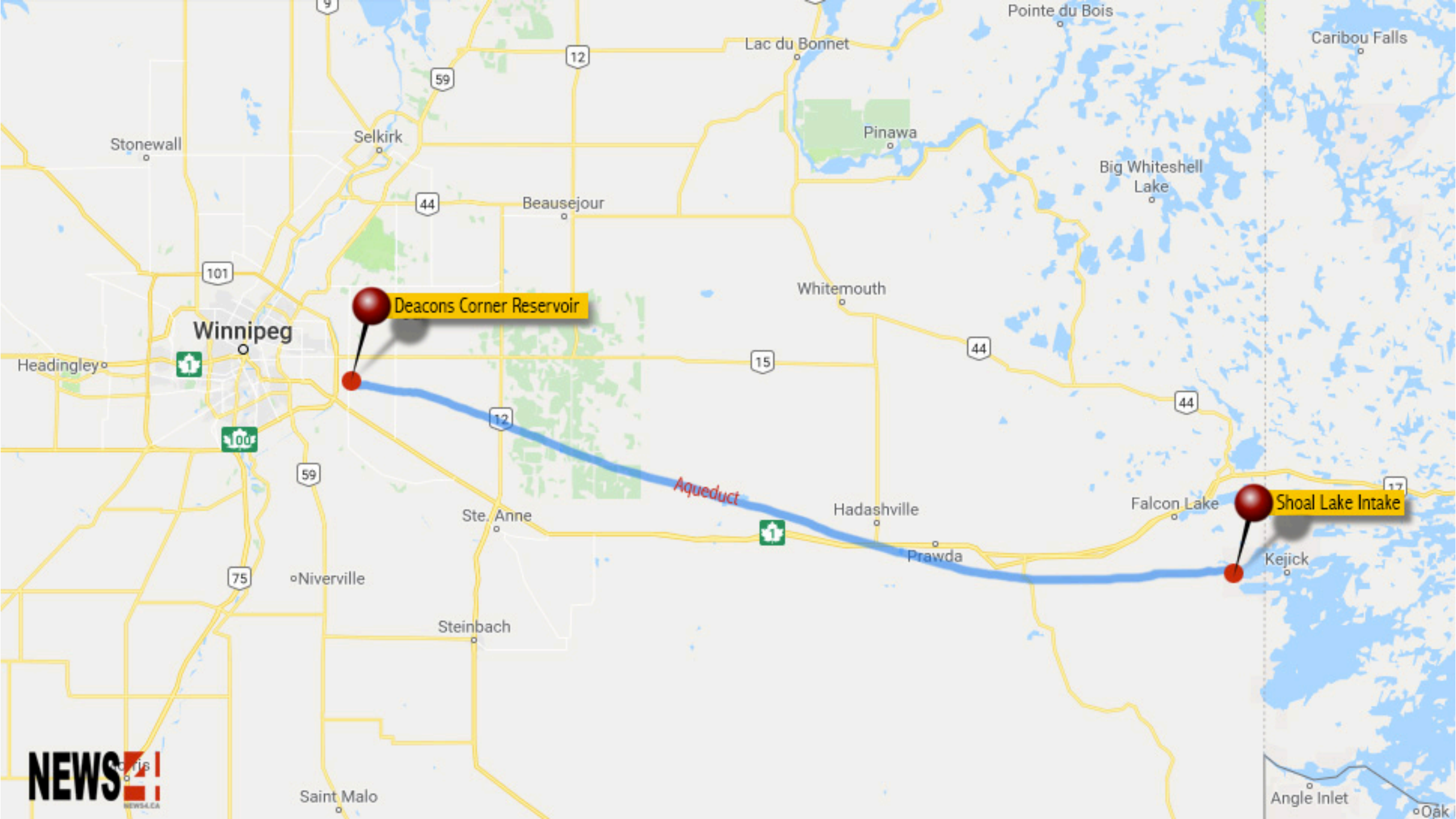


- eDNA indicates DNA is present but does NOT mean there is a viable population.
- RMNP carried out extensive monitoring but did not detect any veligers or adults.
- RMNP closed Whirlpool Lake to camping and boating activity as a precaution and monitored to confirm or refute ZM presence.
- Whirlpool Lake was re-opened for use in 2019

## Shoal Lake – 2019 Detection



City of Winnipeg's  
single source for  
Drinking Water



Deacons Corner Reservoir

Aqueduct

Shoal Lake Intake

## Management & Control

- AIS works with several jurisdictions to determine management & control options
- Interprovincial-Territorial Agreement on Coordinated Defence
  - Health Canada PMRA
  - DFO
- MB Hydro
- Office of Drinking Water
- Indigenous Services Canada

