



**PUBLIC AGENDA  
SASKATOON ENVIRONMENTAL  
ADVISORY COMMITTEE**

**Thursday, February 9, 2017, 11:30 a.m.  
Committee Room A, Second Floor, City Hall  
Committee Members:**

**Ms. K. Aikens, Chair  
Mr. B. Sawatzky, Vice-Chair  
Ms. E. Akins  
Ms. A. Bugg  
Ms. K. Engele-Carter  
Ms. A. Garg  
Councillor S. Gersher  
Ms. S. Harrison  
Mr. S. Homenick  
Dr. D. McGrane  
Ms. K. Palmer**

**Pages**

**1. CALL TO ORDER**

**2. CONFIRMATION OF AGENDA**

**Recommendation**

That the agenda be confirmed as presented.

**3. ADOPTION OF MINUTES**

**Recommendation**

That the minutes of Regular Meeting of the Saskatoon Environmental Advisory Committee held on January 12, 2017, be approved.

**4. UNFINISHED BUSINESS**

**4.1 Aquatic Invasive Species: Response to PARCS [CK. 277-1, x 7550-1]**

**4 - 14**

Attached is a report of the General Manager, Corporate Performance, dated November 14, 2016, which was considered at the Standing Policy Committee on Environment, Utilities & Corporate Services Meeting held on November 14, 2016; it was resolved, in part, that the report be referred to SEAC to review and report back with input to the Standing Policy Committee on Environment, Utilities & Corporate Services.

Due to time constraints the matter was deferred to SEAC's February meeting.

**Recommendation**

That the Committee provide direction.

**5. REPORT OF THE CHAIR [CK. 175-9]**

*Verbal Update* - K. Aikens

**Recommendation**

That the information be received.

**6. COMMUNICATIONS**

**7. REPORTS FROM ADMINISTRATION**

**7.1 Environmental & Corporate Initiatives [CK. 7550-1]**

*Verbal Update* - B. Wallace

**Recommendation**

That the information be received.

**8. GREENHOUSE GAS EMISSIONS SUBCOMMITTEE - UPDATE [CK. 375-4]**

*Verbal Update* - regarding the launch plan and release date for the social media campaign pertaining to climate change.

**Recommendation**

That the Committee provide direction.

**9. 2017 GOALS AND OBJECTIVES [CK. 175-9]**

The Committee, at its meeting held on January 12, 2017, determined to set its 2017 Goals and Objectives, an update will be provided in this regard.

**Recommendation**

That the Committee provide direction.

**10. STATEMENT OF EXPENDITURES [CK. 1704-5]**

15 - 15

Attached is a current Statement of Expenditures for the Committee's information.

**Recommendation**

That the information be received.

## 11. ADJOURNMENT

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## Aquatic Invasive Species: Response to PARCS

### Recommendation

That the report of the General Manager, Corporate Performance Department, dated November 14, 2016, be forwarded to City Council for information.

### Topic and Purpose

This report is the Administration's response to the letter from the Provincial Association of Resort Communities of Saskatchewan (PARCS) regarding aquatic invasive mussels and provides an overview of City of Saskatoon (City) activities in support of provincial aquatic invasive species programming.

### Report Highlights

1. The City receives drinking water from the South Saskatchewan River. Lake Diefenbaker, upstream of the city along the river, is at risk for aquatic mussel infestation.
2. The City does not currently have programming targeted at educating residents about aquatic invasive mussels as it is a member of the South Saskatchewan River Watershed Stewards (SSRWSI), which receives funding from the province to carry out an awareness campaign about aquatic invasive mussels within our watershed.
3. The province has installed a sign outside of city limits on Highway 11 to Prince Albert and has offered additional free highway signs to the City to help raise awareness of aquatic invasive mussels.

### Strategic Goal

This report supports the Strategic Goal of Asset and Financial Sustainability by supporting programs that protect our drinking water source and our municipal water infrastructure. It also supports the Strategic Goal of Quality of Life by protecting our primary service of providing affordable, high quality drinking water to our citizens.

### Background

The Standing Policy Committee on Environment, Utilities and Corporate Services received a letter from PARCS on May 9, 2016, asking for support, by motion, and with a letter to the Premier, for a comprehensive systematic border inspection program for invasive mussel species that are commonly carried on boats. The Committee forwarded the letter to the Administration for further reporting. Attachment 1 is a copy of the letter.

### Report

#### Lake Diefenbaker at Risk for Aquatic Invasive Species

Saskatoon's drinking water comes from the South Saskatchewan River. Upstream of our community, the river flows through Lake Diefenbaker and the Gardiner Dam, which also houses an integrated hydroelectric station. The Lake is at high risk of infestation

by aquatic invasive mussels because of the many out-of-province boats that visit the lake for recreational purposes.

Invasive mussel populations are very difficult to control and have profound negative effects on the ecosystems and infrastructure they impact. If mussels became established in Lake Diefenbaker, impacts to Saskatoon residents would likely include higher costs for utilities (water and power) related to increased infrastructure maintenance and changing treatment requirements, as well as reduction in the recreational opportunities available in and around Saskatoon.

### Current Awareness and Education Initiatives

Awareness and education initiatives are implemented by local watershed groups using funding provided by the province. The City is a member of the SSRWSI, who have been carrying out an awareness and education campaign on invasive mussels in our watershed for the past two years. Activities have included:

- Television and radio interviews,
- Presentations throughout the watershed,
- Establishment of 30 monitoring stations for mussels, and
- Installation of signage at boat docks on high-risk lakes and along the river.

The City is also represented on the Saskatchewan Invasive Species Council (SISC) and has partnered with SISC in the past for awareness and education programming about other invasive species.

Invasive species are sometimes purchased or transported unknowingly by residents, and cause problems when released back into the environment. Those that are now banned in Saskatchewan include several species of insects, fish, crabs, snails, clams, mussels, and plants. Information about these species can be found on the websites of the Ministry of Environment, Ministry of Agriculture, and Saskatchewan Invasive Species Council.

Education initiatives in Saskatoon are currently linked to municipal public health concerns (West Nile virus), urban forestry management (emerald ash borer, gypsy moth, Asian long-horned beetle, Dutch elm disease), and weed management. There is currently no municipal programming targeting awareness of aquatic invasive mussels.

### Additional Awareness through Signage in Saskatoon

Highway signage has been produced by the province as part of education and awareness programming for aquatic invasive mussels. The province has installed one sign on the outskirts of Saskatoon and offered free signage to the City for installation within city limits. The Administration is currently considering the feasibility of this installation.

The province has previously provided signage to the City in support of the ban on firewood transportation related to the Dutch elm disease prevention campaign.

**Public and/or Stakeholder Involvement**

Stakeholders are currently being consulted regarding the potential need for a municipal education initiative regarding aquatic invasive mussels and the installation of highway signage within city limits.

**Environmental Implications**

The City’s membership with the SSRWSI has indirectly supported the provincial campaign to prevent the spread of aquatic invasive mussels in our local watershed. Any further direct actions by the City will also help to spread education and awareness of this threat and will demonstrate the City’s commitment to protecting our drinking water supply from aquatic invasive species.

**Other Considerations/Implications**

There are no policy, financial, privacy or CPTED implications or considerations and a communication plan is not required.

**Due Date for Follow-up and/or Project Completion**

Further information about aquatic invasive mussel education and awareness will be provided in the annual membership renewal report for the SSRWSI.

**Public Notice**

Public Notice pursuant to Section 3 of Policy No. C01-021, Public Notice Policy, is not required.

**Attachment**

1. Letter from PARCS

**Report Approval**

Written by: Twyla Yobb, Watershed Protection Manager, Environmental & Corporate Initiatives  
Reviewed by: Jeff Boone, Acting Superintendent of Forestry and Pest Management, Parks  
Brenda Wallace, Director of Environmental and Corporate Initiatives  
Approved by: Catherine Gryba, General Manager, Corporate Performance Department



**AIM to STAB**

**Aquatic Invasive Mussels - Stop Them at the Border**

A coalition of Saskatchewan Communities supported by:

- SUMA (Saskatchewan Urban Municipalities Association)
- SARM (Saskatchewan Association of Rural Municipalities)
- SAW (Saskatchewan Association of Watersheds)

**From:** Lynne Saas, Coordinator of Member Services  
The Provincial Association of Resort Communities of Saskatchewan (PARCS)  
[parcs@sasktel.net](mailto:parcs@sasktel.net), (306) 630-9698

**Date:** April 19, 2016

**To:** Administrator

**Re:** The threat to communities on the North/South Sask Rivers and the Qu'Appelle lakes

The Provincial Association of Resort Communities (PARCS) with the support of SUMA, SARM and SAW is undertaking an initiative to inform many Saskatchewan communities about the threat posed by aquatic invasive species, in the hopes of persuading the government to implement border inspections to stop this threat.

Please distribute a copy of our letter and the enclosed informational material to your Mayor and Council. We urge them to support our position both by motion and with a letter to our Premier.

Thank you for your assistance in forwarding this material to your Mayor and Council.



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## AIM to STAB

### Aquatic Invasive Mussels - Stop Them at the Border

A coalition of Saskatchewan Communities supported by:

- SUMA (Saskatchewan Urban Municipalities Association)
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- SAW (Saskatchewan Association of Watersheds)

**From:** The Provincial Association of Resort Communities of Saskatchewan (PARCS)  
[parcs@sasktel.net](mailto:parcs@sasktel.net), (306) 630-9698

**Date:** April, 2016

**To:** Mayor Don Atchison & Council  
City of Saskatoon  
Box 222-3<sup>rd</sup> Ave N.  
Saskatoon, SK, S7K 0J5

**Re:** The threat to communities on the North/South Sask Rivers and the Qu'Appelle lakes

If your community is one of the many communities in the province that draw their **drinking water** from the North Saskatchewan or South Saskatchewan Rivers<sup>1</sup>, you need to closely examine the enclosed AIM to STAB document.

Since lakes in Ontario became infected with Zebra and Quagga mussels, the annual cost for managing those mussels has been estimated at \$75 to \$90 million a year<sup>2</sup>. The **majority of those costs are born by municipalities annually having to clean their clogged intake pipes for their municipal water systems.**

These same mussels have now travelled from the east and infected Lake Winnipeg and smaller lakes at our eastern doorstep in Manitoba. The Manitoba government has recently announced plans to spend a million dollars annually on a boat inspection program. Alberta has a comprehensive border inspection program to stop these mussels at their border. Last summer their inspectors stopped and decontaminated 11 infected boats that had travelled across our province. Had one of those boats put into the North or South Saskatchewan, or into the Qu'Appelle chain, your municipality would now be facing huge costs for maintaining your water system.

During the recent provincial election, PARCS member communities wrote to candidates asking them to describe their party's plan for dealing with this threat. While the Green Party announced its support for an inspection program, the NDP and Liberals were silent, and the Sask Party, in a letter signed by Premier Brad Wall, stated that their government would "stand on its record". An examination of page 3 of the attached document details how our province has been the only western province to fail to take a stand to stop these mussels at the border

The coalition of PARCS, SUMA, SARM and SAW are pledged to raise this matter to the new government when it next sits. We are asking you to send a letter expressing your concerns about the threat of an infestation of these mussels into the waters that feed your municipal water supply. We are asking that **your letter go forward as soon as possible before the new government is called to sit.**<sup>3</sup>

We need to stand together to protect our drinking water infrastructure from costly infection.

<sup>1</sup> These river systems include Lake Diefenbaker and Tobin Lake. The South Sask feeds into Buffalo Pound Lake, Last Mountain Lake and the Qu'Appelle chain. One mussel in this system will ultimately contaminate the entire interconnected waterways.

<sup>2</sup> <http://news.nationalpost.com/news/canada/why-are-zebra-mussels-in-lake-winnipeg-such-a-calamity-when-theyve-been-in-the-great-lakes-for-decades>

<sup>3</sup> Address your letter to Premier Wall at Room 226, 2405 Legislative Drive, Regina, SK, S4S 0B3, or fax 787-0885, or email [premier@gov.sk.ca](mailto:premier@gov.sk.ca)



# AIM to STAB

## *Aquatic Invasive Mussels - Stop Them at the Borders*

### BACKGROUND

#### 1. What is STAB?

STAB is a group of individuals, communities and organizations sharing a belief that the only way to save our Saskatchewan lakes and rivers from aquatic invasive mussels is to stop those mussels at the border before they enter the province. Although initiated by PARCS, STAB includes membership from many other groups and organizations across the province.

#### 2. What is PARCS?

PARCS is the Provincial Association of Resort Communities of Saskatchewan. <sup>i</sup>

#### 3. What are aquatic invasive mussels?

These tiny Zebra and Quagga mussels (as small as a grain of rice, as large as a fingernail) are much smaller than our Saskatchewan mussels (or clams as they are often called)<sup>ii</sup>. Also, unlike native mussels which bury into the bottoms of lakes and rivers, these foreign mussels attach themselves to hard surfaces like the hulls of boats, docks, motors, anchors, and most dangerous of all, to the insides of the intake pipes leading to water treatment plants, to hydroelectric generators and to irrigation systems. Any mussel seen attached to a hard surface is a foreign mussel.

#### 4. How did these mussels get into Canada?

It is believed that they arrived in the USA in 1986 via the ballast water of cargo vessels. The species spread from the eastern USA into Canada's eastern waterways. In 2009 zebra mussels were found in Saskatoon on a recreational vehicle from the USA. The boat was decontaminated. In 2011 these mussels were detected in the Red River, in North Dakota. In 2012 officials in the State of Utah intercepted a contaminated boat returning from Lake Mead, Nevada, and heading for Saskatchewan. It was quarantined and decontaminated. By 2013 Lake Winnipeg, Cedar Lake and the Red River in Manitoba were infected.

#### 5. Why are these mussels so dangerous?

***"Once introduced it is virtually impossible to eradicate them making prevention key to stopping their spread to the west".*** <sup>iii</sup> The north western states (shown on the right) have implemented aggressive prevention programs that have been successful to date.



#### 6. How do these mussels reproduce?

An adult mussel will spawn up to a million eggs which thrive in temperatures of 10 to 17 degrees C in depths of 4 to 7 metres. They can live up to 30 days out of water, which enables them to hitchhike from other provinces and states, attached to infested boats.

#### 7. How far west have these mussels travelled to date?

The mussels have spread from the east toward the west. BC, Alberta, Saskatchewan and the five north-western states have been called upon to adopt aggressive practices to prevent the spread of these destructive mussels into the north-west part of the continent. In 2015, 11 mussel boats were stopped on the Alberta border and decontaminated. ALL OF THESE BOATS HAD TRAVELLED FROM EASTERN CANADA THROUGH SASKATCHEWAN.<sup>iv</sup> ***Saskatchewan is very vulnerable.***

## IMPACTS

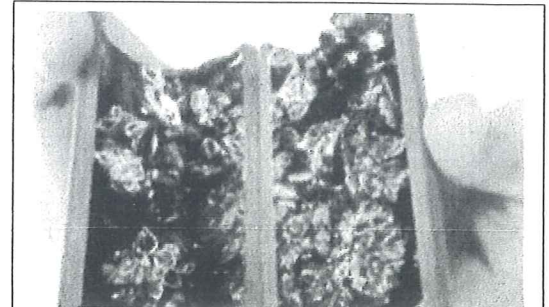
### 8. What are the major economic impacts of an invasive mussel infestation?

In 2013, the **Alberta** Department of Environment and Renewable Resources estimated that the **ANNUAL COST** of an invasive mussel infestation would be **\$75 million:** <sup>v</sup>

<b>Power generation</b>	\$ 5,938,487
<b>Drinking water systems</b>	\$ 20,839,921
Boat maintenance	\$ 390,600
Recreational fishing	\$ 21,830,892
<b>Water management structures</b>	\$ 8,841,373
Water diversion intakes	\$ 3,910,000
Property value	<u>\$ 13,789,500</u>
Total annual cost estimated at	\$ 75,540,773 <sup>vi</sup>

The largest part of these costs would come from an infestation on Alberta's water-operated infrastructure due to:

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



**Clogged intake pipes for drinking water, irrigation and hydroelectric power will cost millions for Saskatchewan tax payers every year.**

An impact study in Ontario shows that they are spending \$75 to \$91 million annually as a result of the mussel invasion. <sup>vii</sup> A study conducted by the Okanagan Basin Water Board estimated a cost of at least \$43 million each year in lost revenue and added maintenance of aquatic infrastructures. <sup>viii</sup>

### 9. What is the impact of these mussels on fish populations?

An infestation causes an increase in fish species such as yellow perch that feed on shallow-bottom organism and a decrease in fish that feed on deep water organisms, such as northern Pike and native trout. Mussels eat plankton, causing rapid changes to the food web and physical environment of fish.

### 10. Will these mussels like it in Saskatchewan?

Biologists feel that the ecological risk is high. We have the correct water quality for mussels to survive and a growing number of boats both leaving and coming into our province. Most of Saskatchewan is classified as having "a very high probability of invasion".<sup>ix</sup>

### 11. Which Saskatchewan lakes are most at-risk?

While all lakes are at risk, the Fisheries Branch<sup>x</sup> have stated that the Boundary Dam Reservoir, the South Saskatchewan (Lake Diefenbaker) system, the Qu'Appelle Lakes and Tobin Lake are most likely to be visited by out-of-province boats. Saskatchewan boats leaving our province also pose a risk.

### 12. How many Saskatchewan people would be affected by an infestation of foreign mussels?

We know that about half of Saskatchewan's drinking water comes from the fresh waters flowing into our province through the South Saskatchewan River, flowing north out of Gardiner Dam, through Saskatoon and on to Tobin lake, and flowing south through Buffalo Pound which provides water to Moose Jaw and Regina, into Last Mountain Lake and into the Qu'Appelle Chain of lakes. All of these people could face higher utility bills for drinking water. The effect on the hydroelectric power could have a similar effect on electrical bills. Consider the impact on the irrigation industry, the decrease in property values for cottage owners, and the loss of tourism and fisheries. A mussel infestation would be devastating on any lake and mean significant costs for all the tax payers of Saskatchewan.<sup>xi</sup>

# PREVENTION

## 13. What have the Prairie Provinces been doing to prevent the infection of their lakes?

This chart summarizes the initiatives undertaken taken by the Prairie Provinces to date. <sup>xii</sup>

Program	Description	Effect	Alberta	Manitoba	Sask.
CLEAN / DRAIN / DRY EDUCATIONAL PROGRAM	<ul style="list-style-type: none"> <li>An informational program to train boaters to act responsibly.</li> <li>Posters at boat launches, marinas</li> <li>Aimed at effecting behavior change</li> </ul>	<ul style="list-style-type: none"> <li><b>Most useful in areas that are already infected, to prevent spread of infection</b></li> <li>Not really applicable to stay-at-home boaters in Sask</li> </ul>	✓	✓	✓
MONITORING	<ul style="list-style-type: none"> <li>Volunteers taking samples from lakes to check for adults (substrates) and/or juveniles (veliger)</li> </ul>	<ul style="list-style-type: none"> <li><b>BUT - If the samples come back positive – it's TOO LATE TO DO ANYTHING BY THAT TIME</b></li> </ul>	✓ 73 lakes in 2015	✓ 30 lakes in 2015	✓ 5 lakes in 2015
HOTLINE	<ul style="list-style-type: none"> <li>24/7 response to send out decontamination unit</li> </ul>	<ul style="list-style-type: none"> <li><b>Works best in combination with an inspection program</b></li> </ul>	✓ 1-855 336-BOAT	✓ 1-877-667-2470	✓ 1-800 667-7561
LEGISLATION	<ul style="list-style-type: none"> <li>Recent Alberta Ministerial Order gives authority to fishery officers</li> </ul>	<ul style="list-style-type: none"> <li>Necessary in order to implement border inspections</li> </ul>	✓	✓ New regulations recently announced	✗
DECONTAMINATION UNITS	<ul style="list-style-type: none"> <li>Portable hot-water sprayers used to clean contaminated boats</li> </ul>	<ul style="list-style-type: none"> <li>A necessary part of border of border inspections</li> </ul>	✓ BC has units at its highway & entrances to parks	✓ Alberta has 1 at each of 9 highway stations plus 4 roving units	? Sask has only 2 units in the province
BORDER INSPECTIONS	<ul style="list-style-type: none"> <li>Based on the model used in the western states</li> <li>Focus is on major highways</li> <li>Seasonal wage staff</li> <li>Focus on adult mussels</li> </ul>	<ul style="list-style-type: none"> <li>The only way to keep infected boats out of the province!</li> </ul>	4000 inspections in 2014 2 fouled boats 20+ washes	\$1 million pledged <sup>xiii</sup>	✗

**THE SASKATCHEWAN GOVERNMENT HAS BEEN THE ONLY WESTERN PROVINCE TO REFUSE TO PASS THE NECESSARY LEGISLATION AND REGULATIONS OR TO ALLOCATE THE FUNDS FOR IMPLEMENTING BORDER INSPECTIONS.**

## 14. If many of these boats are coming in from the US and Manitoba for our fishing derbies, could the province not enact mandatory inspections of boats at these derbies?

Organizers of major fishing derbies are quick to explain that many of the out-of-province competitors arrive several days or even a week prior to the tournament and 'practice fish', checking out the best spots on the lake prior to the tournament. Inspections on the day of the tournament are, for a large part, too little too late.

## MAKING IT HAPPEN

### 15. Has there been recent correspondence with the government on this matter?

#### Letters to Premier & Minister of Environment

**March 9, 2015** – “PARCS asked Minister to allocate a trained staff person to assume leadership for preventing contamination of our lakes.”

**October 27, 2015** – Sask Association of Watersheds asked Minister why there was no information about invasive mussels at border crossings.

**Sept. 22, 2014** – PARCS applauded the the Ministry’s educational efforts and warned that more was needed..

**Nov. 17, 2015** – PARCS President Jimmy reviewed previous correspondence & insisted that “education alone will not prevent the spread of these mussels into our lakes. ... ***It is time for our government to consider an ounce of prevention in the form of border inspections.***”

#### Replies

**May 6, 2015** – Minister’s letter announced of a new watercraft decontamination unit and Aquatic Invasive Species Awareness Week in Saskatchewan

**October 28, 2015** Minister to PARCS member stated that it was up to Manitoba to prevent contaminated boats from leaving that province & claimed to be monitoring of high-risk lakes.

#### **No reply received**

**December 2, 2015** – Minister spoke of 2 new decontamination units, plans to “explore options for boat inspection training for border officers”, plus continued focus on education.

### 16. What might it cost to implement a border inspection program?

The following projection has been based on the same variables as the model used in Alberta and the states immediately to the south.

WHERE	HIGHWAYS	SITES	WEEKS	DAYS	HOURS	WAGES
On the Manitoba Border	#106 from Flin Flon #9 from The Pas #10 from Roblin #16 Yellow Head #! Trans Canada #18 To Estevan	10 sites	Mid-May, to Mid-Sept = 19 weeks	X7 days  = 1330 days	X 24 hours per day (2 staff x 12 hours per day)  = 31,920 hours	X \$20 per hour = <b>\$636,400 per year</b> (includes benefits & training) Plus equipment and coordination
On the US Border	#47 to Estevan #6 to Regina #4 to Swift Current		X19 weeks for 10 sites			
	1 roving		= <b>190 weeks</b>			

**NOTE:** The Manitoba Government has **pledged to spend one million dollars in 2016:**

- \$ 800,00 for inspection and decontamination at more key locations
- \$ 170,00 for public awareness, additional signs and advertising
- \$50,000 for enforcement and \$25,000 for a new research and development fund.
- Fines will be imposed for carrying zebra and quagga mussels.

## WHAT WE NEED FROM OUR GOVERNMENT

The members of STAB urge that the government of Saskatchewan<sup>1</sup>:

1. Continue and expand the building of **AWARENESS** via the Clean/Drain/Dry program and the **MONITORING** of our lakes, **plus**
2. Adopt new legislation, new regulations and new funding to implement **border checks**, along with **PENALTIES** to ensure **ENFORCEMENT**.

*Stop them at the borders.*

*Can we afford not to?*



*Keep Saskatchewan lakes free from these dangerous mussels.*

*Can we afford not to?*



*“In the summer of 2015, Alberta inspected 21,000 boats at their border with Sask and found 11 mussel boats which were then decontaminate. All of those boats travelled from Ontario across Saskatchewan.”<sup>2</sup>*

*How long can we dodge the bullet?  
Can we afford not to act?*

<sup>2</sup> *Kate Wilson*

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<sup>1</sup> Kate Wilson, Alberta Department of Environmental and Sustainable Resources, states that a typical AIS program has four components: 1) education and outreach, 2) monitoring, 3) enforcement response, 4) policy and legislation

## REFERENCES

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- <sup>i</sup> PARCS members include resort villages, hamlet cottage communities, rural municipalities with cottage communities and cottage owner associations.
- <sup>ii</sup> Adults are 1 to 3 cm in size. Young zebra and quagga mussels (called veligers) are so tiny that they can look and feel like sandpaper.
- <sup>iii</sup> After the infection of Lake Winnipeg, Manitoba officials claimed that infusions of potash would kill the mussels. However subsequent reports from scientists state that "the problem is irreversible".  
<http://globalnews.ca/news/2266803/lake-winnipeg-is-a-lost-cause-due-to-zebra-mussels-expert/>
- <sup>iv</sup> Kate Wilson, Alberta Department of Environmental and Sustainable Resources, "Provincial Aquatic Invasive Species Prevention Program".
- <sup>v</sup> Neupane, A. "An Estimate of Annual Economic Cost of Invasive Dreissenid Mussels to Alberta", Alberta ESRD, Nov. 2013
- <sup>vi</sup> It should be noted that a predicted annual cost of \$75 million is for approximately 100 lakes in Alberta. There are 100,000 lakes in Saskatchewan!
- <sup>vii</sup> See number IV above.
- <sup>viii</sup> Okanagan Basin Water Board, pamphlet "Spread the Message, Not the Mussel", 2012.
- <sup>ix</sup> Just google Department of Fisheries and Oceans and Dreissenid mussel risk to read about it.
- <sup>x</sup> Fisheries Branch of Saskatchewan Environment.
- <sup>xi</sup> <http://www.southsaskriverstewards.ca/water-quality-assessment.html>
- <sup>xii</sup> Early in 2016, the Manitoba Minister of Conservation and Water Stewardship, Tom Nevakshonoff announced that the Manitoba Government will dedicated \$1 million toward the fight against invasive mussels in 2016.

01-5536-103 - SASKATOON ENVIRONMENTAL ADVISORY COMMITTEE - 2017 BUDGET - \$6,800								
DATE	NUMBER	DESCRIPTION	DEBIT	CREDIT	BALANCE	GL	TOTAL SPENT	BUDGET REMAINING
		Beginning Balance						\$6,800

<b>2017 Budget</b>		
Student Action for a Sustainable Future (SASF)		1,800
Public Education/Information Gathering		5,000
<b>2017 Total</b>		<b>6,800.00</b>
<b>2017 Forecast</b>		
<b>2017 Variance</b>		<b>6,800.00</b>