Bridging the gaps—5 ways to Improve Water Literacy in Alberta

Presentation to the Northern Alberta Development Council
October, 2016
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Overview

• Alberta Water Council and the project

• Methodology and findings

• 5 ways for improving water literacy in Alberta

• Next steps

• Questions
Alberta Water Council

- *Water for Life* partnership

- Multi-stakeholder group of 24 members (governments, NGOs, industry)

- Consensus decision making process

- Policy advice on provincial water management concerns
Water Literacy Project

- Government of Alberta Water Conversations

2013

- Project submitted to the Alberta Water Council
- Team established

2013-2014

- Team completed their work
- Report released

2016
The ideas keep pouring!

Alberta Water Council
Water Literacy Project Team 2016
Environmental literacy is the capacity to perceive and interpret the relative health of environmental systems and to take appropriate action to maintain, restore or improve the health of those systems. Water literacy is a narrower focus of environmental literacy. Being “water literate” means having an understanding of the significance of water in life, and understanding where water comes from and how to use it sustainably. Alberta Environment and Parks is committed to developing a water literacy strategy that will include actions to promote environmental stewardship among Albertans.
## Water Literacy Ladder

<table>
<thead>
<tr>
<th>Ladder Level</th>
<th>Desired Outcome</th>
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</thead>
<tbody>
<tr>
<td>Actions</td>
<td>Albertans are active stewards of water and watersheds.</td>
</tr>
<tr>
<td>Skills</td>
<td>Albertans have the skills and resources required to apply their knowledge and participate in the creation of water policies, plans and stewardship activities.</td>
</tr>
<tr>
<td>Attitudes</td>
<td>Albertans adopt attitudes of appreciation and concern for water and healthy watersheds.</td>
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<tr>
<td>Knowledge</td>
<td>Albertans understand watershed function and provincial water management functions.</td>
</tr>
<tr>
<td>Awareness</td>
<td>Albertans are aware of the significance of water within social, economic and ecological systems.</td>
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</tbody>
</table>
Water literacy practitioner is a working definition adopted in this report to refer to a group or an individual involved in planning, directing and delivering information about water to an audience. Water literacy practitioners are people who work in the formal education system (from K-12, colleges and universities) and also include federal, Indigenous, provincial and municipal governments; policy makers; regulators; not-for-profit organizations; industry and other communicators. Depending on the practitioners and their mandate, initiatives vary by topic, audience and delivery area. Throughout this report, sidebars feature examples of water literacy practitioners and their work.
Key Findings: Inventory Survey
Inventory Survey

122 participants

65 organizations

152 programs
Program Intent

- Educate or raise awareness
- Provide tools
- Facilitate informed discussions and decision making
Type of Organizations

- Watershed Planning and Advisory Councils and Watershed Stewardship Groups: 36
- Government of Alberta: 17
- Industries: 16
- Municipalities: 27
- Non-government Organizations: 56
Topics

Most Popular
- Watersheds
- Water Conservation and efficiency
- Water cycle

Least Popular
- Flood management
- Groundwater
- Surface water

Missing
- Water allocation
- Climate variability and adaptability
- Drinking water and wastewater systems
Delivery Areas

Province-Wide: 51 (34%)
Southern Alberta: 4 (3%)
Program Geographic Area not Identified: 18 (12%)
Mighty Peace Watershed Alliance: 2 (1%)
Lesser Slave Watershed Council: 1 (<1%)
Athabasca Watershed Council: 3 (2%)
Bovver River Watershed Alliance: 5 (3%)
North Saskatchewan Watershed Alliance: 16 (11%)
Battle River Watershed Alliance: 13 (9%)
Red Deer Watershed Council: 8 (5%)
Bow River Basin Council: 5 (3%)
Oldman Watershed Council: 2 (1%)
South East Alberta Watershed Council: 5 (3%)
Milk River Watershed Council Canada: 1 (<1%)

152 programs surveyed
Challenges

Geography

Funding

Promoting programs
# Main Gaps

**Overall:** connections between policy makers and practitioners

<table>
<thead>
<tr>
<th>Drinking water and Wastewater</th>
<th>Healthy Aquatic Ecosystems</th>
<th>Hydraulic Fracturing</th>
</tr>
</thead>
<tbody>
<tr>
<td>No public programs on threats to drinking water or how wastewater is treated. Some municipal programs on these topics are mainly delivered in larger urban areas.</td>
<td>Many NGOs programs but only delivered in larger urban areas. Few programs that link water and aquatic health issues.</td>
<td>Few non-industry programs exist to disseminate information on this topic. Most targeted by industry in fracking areas.</td>
</tr>
</tbody>
</table>
Key Findings: Northern Alberta
Organizations

- Athabasca Watershed Council
- Lesser Slave Watershed Council
- Mighty Peace Watershed Alliance
- ConocoPhillips
- Province-wide (e.g., the Government of Alberta, Alberta Council for Environmental Education, First Nations Alberta Technical Services Advisory Group)
Programs and Audiences

- conservation and efficiency - mayors, municipal administrators
- farm water use - ag producers
- lake health monitoring - lake users
- water well maintenance - landowners
- wetlands - students
- watershed - public
- water use - industry
- water treatment - First Nation technicians
- water quality - researchers and policy-makers
Water Literacy

Tools:
- social media
- mentorship
- information booths
- presentations
- website
- webinar
- policies
Key Findings: Best Practices
What is a Best Practice?

- method or process that represented a successful and/or effective way of achieving a desired program objective

- several best practices used by practitioners were documented

- organized into program success and program effectiveness
Successful versus Effective Programs

**Successful**
- accomplishes desired objectives while making use of time and resources but may not result in environmental or behavioural changes

**Effective**
- accomplishes desired objectives while making use of time and resources and results in environmental or behavioural changes
Key Findings: Assessment
Topics and Process

- lakes
- wetlands
- watershed
- water
- sector water use
- drinking water, wastewater and groundwater

Focus groups and phone interviews

Pre-test: 20 Albertans
Actual: 100 Albertans
Northern Alberta

n = 20 + 100

Places included:
- Fort McMurray (1)
- Grand Prairie (2)
- Hythe (1)
- Mayerthorpe (1)
- Peace River (1)
- Plamondon (1)
Q6: Whether or not you own lakeshore property, which of the following activities to improve lake health have you done in the last 12 months? (Choose all that apply)
Wetland Management

Q12: Which of the following wetlands activities have you done in the last 12 months?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don't know/not stated</td>
<td>2</td>
</tr>
<tr>
<td>Other action</td>
<td>3</td>
</tr>
<tr>
<td>I have not yet done any of these activities</td>
<td>10</td>
</tr>
<tr>
<td>None of these activities apply to me</td>
<td>32</td>
</tr>
<tr>
<td>I have spoken to a consumer advocacy or industry group about wetlands or wetland conservation</td>
<td>7</td>
</tr>
<tr>
<td>I have spoken to a government or elected official about wetlands or wetland conservation</td>
<td>9</td>
</tr>
<tr>
<td>I have participated in an initiative to conserve or restore a wetland</td>
<td>18</td>
</tr>
<tr>
<td>I have explored a wetland</td>
<td>47</td>
</tr>
</tbody>
</table>
Watershed Knowledge—Do you live in a Watershed?
Knowledge about WPACs—Do you know what a WPAC is?
Q22: I believe the GoA manages and allocates our available water supply effectively and fairly to meet a variety of social, economic and ecological needs.

- Strongly disagree: 8
- Disagree: 19
- Neither agree or disagree: 28
- Agree: 29
- Strongly agree: 9
- Don’t know/not stated: 7

N=100, (+/- 10% margin of error)
Q26: Many sectors require water in different amounts for different purposes. Who or what sector do you believe uses the most water in Alberta?

- Cooling for thermal power generation: 2
- Commercial (e.g., golf courses): 5
- Irrigation: 17
- Households: 23
- Oil and gas: 48
- Don’t know/not stated: 5

N=100, (+/- 10% margin of error)
Q28: From which of the following sources does your drinking water come? (choose all that apply)

- Lakes: 12
- Groundwater: 32
- Rivers: 70
- Glaciers/snowmelt: 43
- Other: 6
- Don’t know/not stated: 1

Number: N=100, (+/- 10% margin of error)
Wastewater

Q29: I am aware of where/how my wastewater and stormwater are returned to surface water sources (such as a river)?

- Not at all aware: 8
- Slightly aware: 12
- Somewhat aware: 14
- Moderately aware: 34
- Extremely aware: 29
- Don’t know/not stated: 3

N=100, (+/- 10% margin of error)
Q36: I believe the biggest contamination threat to Alberta’s groundwater is (choose one):

- Don’t know: 2
- None of the above: 3
- Other: 11
- Pharmaceuticals (medications): 12
- Nitrates (fertilizers): 21
- Hydraulic fracturing (fracking): 25
- Overuse and depletion: 26

N=100, (+/- 10% margin of error)
General Results

• higher levels of awareness and knowledge in some topics than others (e.g., lake management and sector water use)

• attitudes on some topics over than others (e.g., wetlands and water management)

• Albertans may have the skills to bring about change but these were not being translated into direct actions
5 ways for Improving Water Literacy in Alberta
Increase Collaboration among Water Literacy Practitioners

• diversity of programs offered in Alberta

• no formal process to facilitate collaboration among practitioners and avoid duplication of efforts

• Value in enhancing existing portals or creating a new one
Provide Tools and Knowledge to Assess Program Success and Effectiveness

• some practitioners did not measure the success and/or effectiveness of programs—did not know how, or lacked resources

• assessed Albertans demonstrated higher levels of awareness and knowledge and lower levels of skills and actions

• train the trainer workshops and guidebook and toolbox
Better Align Topics, Audiences, Delivery Areas and Methods

• many topics, audiences and delivery areas, but gaps in the concerns addressed, where and to whom

• low level of awareness and knowledge among Albertans on basic water topics and the role of Indigenous communities in its management

• water 101 campaign—books, information kits, posters, social media
Strengthen Capacity among Water Literacy Practitioner

- funding was a common challenge for NGOs—limits program design, delivery and evaluation

- new types of funding needed

- grants, in-kind support or other types of incentives
Assess Water Literacy among Albertans

- many practitioners do not know if the awareness, knowledge, skills, attitudes or actions of their program participants have changed with time

- create a baseline of information and assess at periodic intervals

- obtain information about what Albertans know about water and what they need to learn more about
What is happening now?

- Interim Water Literacy Strategy
- Water Literacy Survey Alberta
  https://extranet.gov.ab.ca/opinio6/s?s=29820
Contact and Resources

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  Website: https://extranet.gov.ab.ca/opinio6/s?s=29820
Thank you for listening!
Questions?