

# ATHABASCA WATERSHED INSTITUTE

July 2 - 5, 2014  
Whitecourt, Athabasca, Fort McMurray, Fort McKay



## IMMERSING EDUCATORS IN THE STORIES OF THE ATHABASCA WATERSHED.

*“The program enabled critical thinking and information accumulation. I will now examine my own and others perspective with a broader lens and with a certain informed hope.”*  
**Lorraine Fafard,**  
**King George School, Calgary**

The Athabasca Watershed, one of Alberta’s biggest river basins, is host to a diverse natural landscape and several communities, most of which are tied to natural resource development. Economic activity in the region includes coal mining, forestry, agriculture, pulp and paper mills, tourism, and oil sands operations. Inside Education’s dynamic four-day Education Institute took teachers on a learning journey through this majestic watershed to hear the stories of the stakeholders of the Athabasca.

We met experts in government, industry, environment, education, and research - all of whom enriched our understanding of current and future land-use issues as they relate to the state of the watershed. We spoke with the community members who live and work in the area; stopping in several communities and spending time with First Nations provided a peek into the rich human history of the area, bringing the landscape to life as we learned how these communities have changed over time.

### Program goals were:

1. To increase understanding of the complexity of watershed issues
2. To offer first-hand experiences and stories from diverse watershed stakeholders
3. Gain teaching tools and ideas to enhance watershed, environmental, and natural resources programming in the classroom



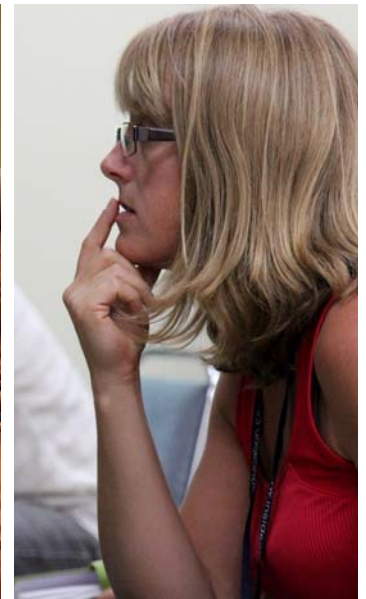
# Participants

20 teachers from across Alberta were selected from an impressive pool of applicants.

Participants were chosen based on their interest in the Athabasca Watershed, their passion in taking their learnings back to the classroom, and their willingness to hear and learn from multiple perspectives. Taking time from their summer vacation, our participants went above and beyond to participate in this professional development opportunity. Their enthusiasm and eagerness to learn the current state of the Athabasca Watershed and pass that up-to-date information on to their students speaks volumes about their value as educators. We were so lucky to have them with us for the tour!

*"This program was extremely valuable for increasing my own knowledge base and illustrating the diversity, bias, and complexity of the balance between stakeholders. Every presentation was informative and insightful."*  
**Toni Craig, Hines Creek Composite, Hines Creek**

- Terry Velma, Sunalta Elementary, Calgary
- John-Robert Boyle, J.J. O'Brien, Calgary
- Tonita Craig, Hines Creek Composite, Fairview
- Jaycee Doolittle, Supply Teacher, Taber
- Lorraine Fafard, King George School, Calgary
- Joann Gallucci, Calgary Board of Education, Calgary
- Susan Giesbrecht, Roland Michener Secondary School, Calgary
- David Johnson, Olds College, Olds
- Elizabeth Lahl, Langdon School, Strathmore
- Leanne Lakinn, Winterburn, Edmonton
- Malcolm Landry, Robert Rundle Elementary, St. Albert
- Bruce McGilvery, Onchaminahos, Saddle Lake
- Roger Moore, NorQuest College, University of Alberta, Edmonton
- Marcella Rhein, Spruce Grove Composite, Edmonton
- James Saby, Camrose Composite High, Camrose
- Nellie Sobkow, Mundare School, Lamont
- Douglas Stretch, Midsun School, Calgary
- Connie Toft, Calling Lake School, Athabasca
- Tonya Whelan, University of Alberta, Edmonton



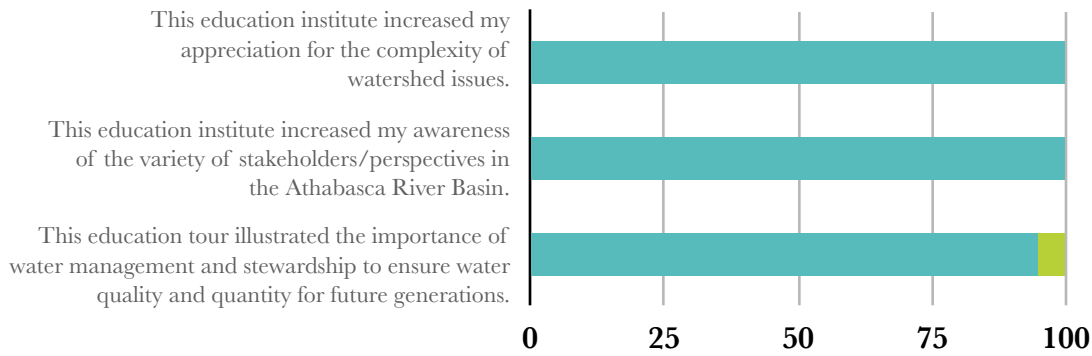
# Feedback

Inside Education has created a robust process of evaluation for our Teacher Professional Development programs, using a variety of lenses to capture participant feedback. We continually strive to improve our process, and so our formal post-program survey was provided to participants as they traveled homeward. We saw an increase in response, which has resulted in an even more comprehensive understanding of the level of satisfaction and the far-reaching impacts of the program.

*"It created a passion for me to explore new and interesting topics within my subject matter and expand my own knowledge base to bring to my students. It was an amazing experience that was extremely valued and appreciated."*  
**Liz Lahl, Langdon School, Langdon**

■ Strongly Agree    
 ■ Agree    
 ■ Disagree    
 ■ Strongly Disagree

## Program Evaluation

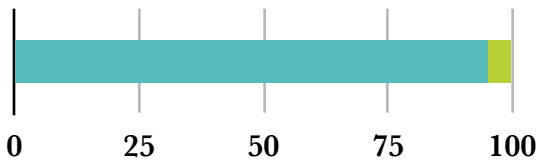


*"A wonderful opportunity to not only learn about who the multiple stakeholders in watershed stewardship are but also to learn about the science and what is being done first hand."*

**Tonya Whelan, University of Alberta, Edmonton**

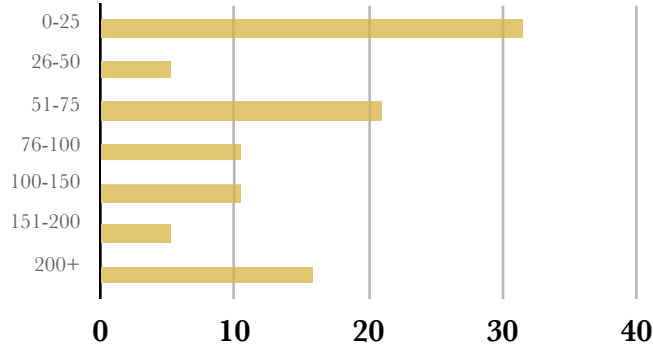
## Taking it Back to the Classroom

This experience will enhance my teaching and help me to provide an informative, accurate, and high quality educational experience for my students.



## Impact on Learning

How many students do you expect to share your experience with in the next year?

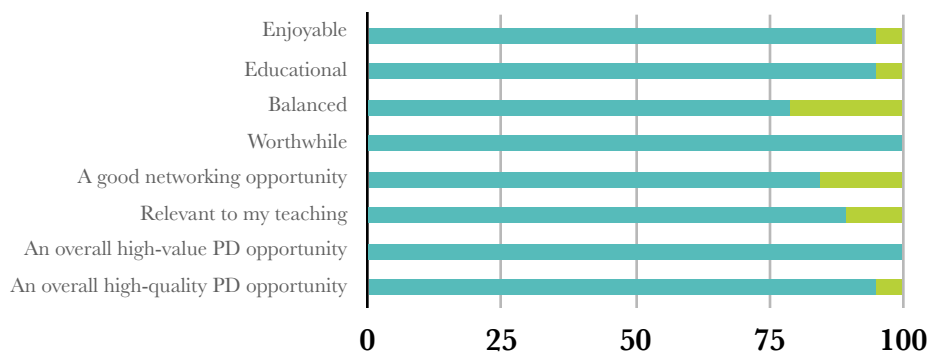


Based on survey results, the impact of this professional development opportunity will be felt by upwards of **1600+ students** across Alberta!

*"I have a much better appreciation for the complexity of the issues and the interconnected nature of the stakeholders and surrounding areas."*

**Douglas Stretch, Midsun, Calgary**

## In my opinion, the 2014 Athabasca Watershed Education Institute was:





# Program Partners

Inside Education extends a heartfelt thanks to all those who helped make this professional development opportunity a success. The *2014 Athabasca Watershed Education Institute* would not have been possible without your time and support. Many of our speakers traveled great distances or took time out of their busy lives to attend our event, in person or virtually, and we are incredibly grateful. Thank you to all of the organizations that provided expert speakers, site tours and resources; our teacher participants were inspired by the care and passion in every presentation. A special thank you to the partners who provided the financial support that made this program possible:



# Summary

The 2014 Athabasca Watershed Education Institute was an overwhelming success! The Institute brought together speakers from every major topic area impacting the Athabasca Watershed: mining, forestry, agriculture, wildfire, and oil and gas extraction. Participants were treated to a behind-the-scenes look at how the working sectors along the river are striving to find balance between natural resource development and maintaining the beauty and health of the ecosystem. Teachers were introduced in multiple local perspectives, and gained insights into the opportunities and challenges for watershed management in the Athabasca. Hearing from academics and researchers working diligently to expand baseline scientific data and further our understanding of the landscape helped our participants to understand how academic research feeds into the conversations and decisions made in the watershed. Touring the Wood Buffalo Wastewater Treatment Facility provided a different perspective on how the rapidly expanding populations in Fort McMurray are influencing urban design and waste management within a city constrained by Crown land. Speaking with First Nations provided a better understanding of the history of human settlement and how the coinciding growth in development has transformed not only the landscape itself, but our very connection to it. Our participants achieved a level of awareness that is unobtainable without learning directly from those who work, play, and live in the Athabasca watershed.

Our Professional Development programs provide valuable opportunities and experiences for teachers to become immersed in the science, technology and issues behind natural resource topics in Alberta. We strive to provide our participants with the knowledge, resources and confidence to guide their students – our stewards – with meaningful and locally relevant insights into natural resources and the environment. We are proud of our Teacher Professional Development programs and their role in advancing Inside Education’s vision of fostering the next generation of critically thinking stewards of our environment and natural resources.



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# Appendix

## Athabasca Watershed Education Institute Program Itinerary July 2-5, 2014

### Wednesday, July 2

#### ***Water 101 & Introduction to the Athabasca Watershed***

This session will provide a strong foundational understanding of water and watershed terminology, water issues, and an introduction to the Athabasca Watershed and its importance to all Albertans.

Presenter: Jim Martin, Centre for Environment-Economy Learning

#### ***Coal Mining along the Athabasca***

Closer to the headwaters in the Columbia Icefield/Jasper National Park, one of the upstream stakeholders along this mighty river is the coal industry. This session will explore how coal resources are extracted in the area and how that industry interacts with the river.

Presenter: Curtis Brinker, Coalspur

#### ***Pulp Mill Tour***

This segment of the program is a unique opportunity to go behind-the-scenes with some expert guides to see a fully functional pulp mill. We'll learn how pulp is made, what it's used for, and gain insights into how water is used and impacts minimized in the process.

Hosts: Jeff Shipton & Dale Holloway, Millar Western

#### ***Aquatic Invertebrate Sampling***

We'll finish off the afternoon programming with some hands-on aquatic invertebrate sampling right behind the mill at Rotary Park. Participants will learn to identify some of the pond life and make predictions about water quality.

Facilitator: Inside Education

### Thursday, July 3

Athabasca Rainbow Trout Recovery Plan: Species Biology, Threats, Objectives, & Strategies

To start our second morning, we'll be taking a close look at the Athabasca Rainbow Trout to learn more of the ecology of the Athabasca River and its tributaries, water quality, impacts, and management.

Presenter: George Sterling, Alberta Environment & Sustainable Resource Development

#### ***Ranching in the Athabasca Basin***

Participants will be going off the beaten path on this ranch tour, which will highlight best practices in the Athabasca Basin for achieving both economic and environmental sustainability while raising livestock. On our pasture walk, we'll get to see several initiatives aimed at minimizing impacts on water.

Host: Steve Kenyon, Greener Pastures Ranch

#### ***Multi-Stakeholder Stewardship in the Athabasca***

During this stop on our journey, we will be learning what a local multicultural, multi-stakeholder society is doing to unite people throughout the watershed to promote stewardship and protection of the water and the entire basin "for ecological, social, cultural, and community health and wellbeing" for present and future generations.

Presenter: Harvey Scott & Paula Evans, Keepers of the Athabasca

#### ***Outdoor Activities***

In Woods Cree, the word aḁapaskāw means "where there are plants one after another." Take your shoes off and dip your toes into this historic river and imagine the importance of the crucial gathering place that became the Town of Athabasca. We'll spend a relaxing time walking along the Riverfront Boardwalk with interpretive signage along Rotary Way and have a casual picnic supper before we head to our next

### Friday, July 4

#### ***Wildfire in the Athabasca Basin***

During this session, participants will learn about the role of wildfire in the boreal forest and the role of the forest in this watershed. The session will explore when, why, and how forest fires are fought, including some of the presenter's personal experiences in this field.

Presenter: Alex Drummond, University of Alberta

#### ***Waste Water Treatment in Wood Buffalo***

The Regional Municipality of Wood Buffalo is no doubt a collection of booming communities. Get your boots ready! We're going into the waste water treatment plant to see how municipal waste water is cleaned and learn how Wood Buffalo is managing the ever-increasing demands on its water.

Host: Jarrod Peckford, Wood Buffalo



# Appendix

## ***Cumulative Environmental Effects in the Athabasca Watershed***

With so much activity in the Athabasca Watershed, it's important to look at the cumulative effects on the environment. We'll learn from a local expert some of the local issues that are being studied, as well as how CEMA works to engage a wide variety of stakeholders, and to provide recommendations and management frameworks relating to natural resource development in the region.

Presenter: Glen Semenchuk, Cumulative Effects Management Association

## ***Oil Sands Tour***

All aboard! This part of the afternoon will give teachers the opportunity to see an oil sands operation first-hand, including a tour of the site and mine and a series of reclamation projects. We will learn how water is used in oil sands processing, as well as innovations to reduce impacts to water.

Host: Leithan Slade, Syncrude Canada

## ***Local First Nations Perspectives***

For this special evening excursion, participants will be welcomed to Fort McKay First Nation. We will hear stories to gain a better understanding of the history of Fort McKay and its people, as well as the challenges and opportunities they have encountered related to land use and industry activity in the area. This stop on our tour will include a visit to the Elders' Hall, as well as a tour of the community.

Host: Dayle Hyde, Fort McKay First Nations

## **Saturday, July 5**

### ***Oil Sands Discovery and Education***

Participants will have a chance to discover the oil sands at this interactive and educational facility! This portion of the program will provide opportunities to explore independently, as well as watch a short video and an oil sands separation demonstration that you could replicate in the classroom. Participants will also be able to learn more about in-situ operations and how they differ from the mining we saw at Syncrude.

Host: Oil Sands Discovery Centre

### ***Wetlands in the Athabasca***

Wetlands are an integral and invaluable part of any watershed. The Athabasca Basin is home to some world-renowned peatlands called patterned fens. Muskeg plays a major role in much of the lower Athabasca and, in this session, participants will hear from a wetlands reclamation scientist about the ecology and state of wetlands in the region. We'll also hear about frontline research to reclaim patterned fens in partnership with oil sands leasees.

Presenter: Katie Williams, University of Windsor

### ***Water Science and the Athabasca***

In the politicized realm of the Athabasca watershed, academic research is under constant scrutiny for data integrity and sound scientific methods. Using water quality sampling as an example, this session will discuss how methodology can affect scientific results and the political decisions made based on those results. Moving underground, we'll learn about how innovative new research projects on groundwater and surface water are contributing to a better understanding of the function and health of the Athabasca watershed.

Presenter: William Shotyck, University of Alberta

### ***Government Perspective: Land-Use Planning & Public Outreach for the Athabasca Watershed***

The final presentation of the institute will address questions of land-use planning. There are a lot of stakeholders... How does the provincial government address all of their needs, as well as the needs of the ecosystem? We'll learn about the plan for the basin, as well as initiatives in place to further education and understanding about the Athabasca.

Presenter: Carly Steiger, Alberta Environment & Sustainable Resource Development

### ***Education Workshop and Program Debrief & Evaluation***

This session will help pull it all together, allowing participants to reflect on what we've learned over four days, and how to bring the information and experiences of the institute back to students in a meaningful way. Resource-sharing and collaborative activities will help prepare teachers to make the most of this professional development program once school starts up again in September.

Facilitator: Inside Education