

celebrate water

World Water Day - 2014
Saturday March 22nd, 2-4 pm

Celebrating the new Water Kiosk !

A special celebration to show our gratitude to those who so generously gave of their time and resources to make the Elmvale Water Kiosk a reality!

elmvale
www.elmvale.org

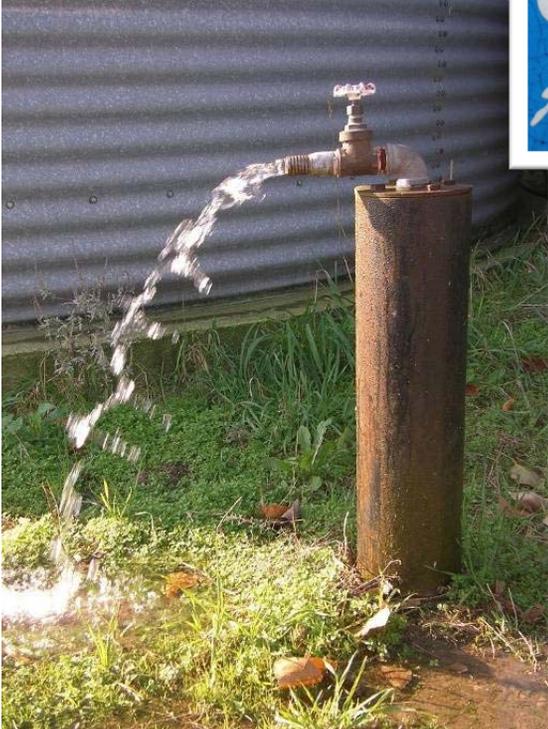
WELCOME TO WORLD WATER DAY 2014

- 1. First Nations Water Ceremony**
- 2. Elmvale Water Kiosk (+ display !)**
- 3. Elmvale Water Festival**
- 4. Elmvale Foundation**
- 5. Elmvale Groundwater Observatory**
- 6. Soil and Water**
- 7. The SWAMP lab, U Alberta**

The Elmvale Water Kiosk



TOWNSHIP OF
SPRINGWATER
A Refreshing Experience!





For decades, the late Mrs. Silvia Rimkus stopped at this flow, on her way to the cottage in Parry Sound, from her home in Toronto. "It's the best water I've ever had", she is quoted as saying.

The best known, and most visible expression of these flows, is the one on which is accessible to the general public, on County Road 27. There are cars stopping at this spot day and night, year round, to fill up jugs and bottles with this spring water.

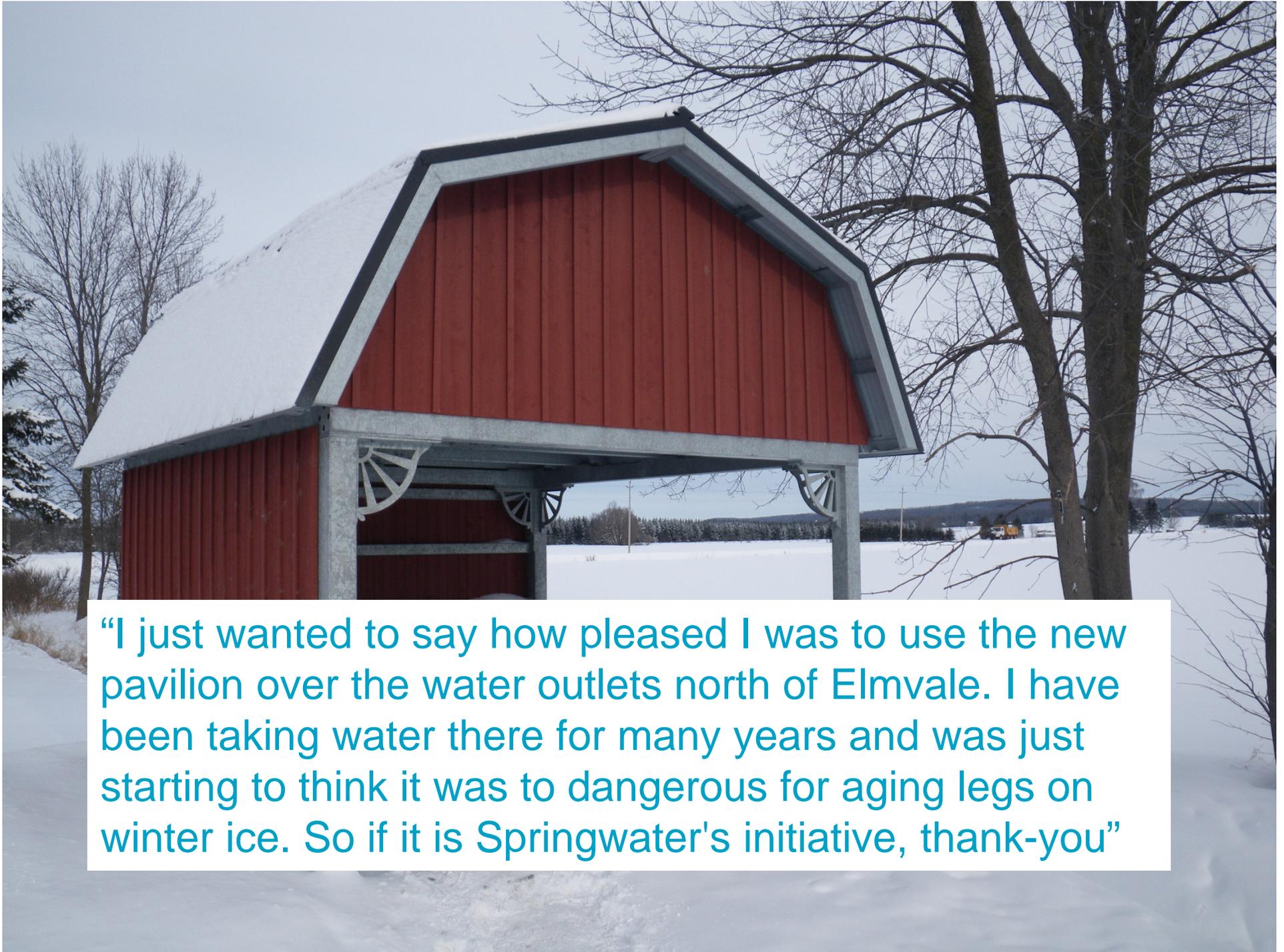


WE BRAKE FOR DONUTS

at Elmvale Bakery



705-322-1711 ELMVALE, ON



“I just wanted to say how pleased I was to use the new pavilion over the water outlets north of Elmvale. I have been taking water there for many years and was just starting to think it was too dangerous for aging legs on winter ice. So if it is Springwater's initiative, thank-you”





Barrie Welding and Machinery

THANK YOU

Canadian Well Drilling



Ainley and Associates

Georgian Paving

Midhurst Roofing

Sargeant Co. Ltd.

Elmvale and District Lion's Club

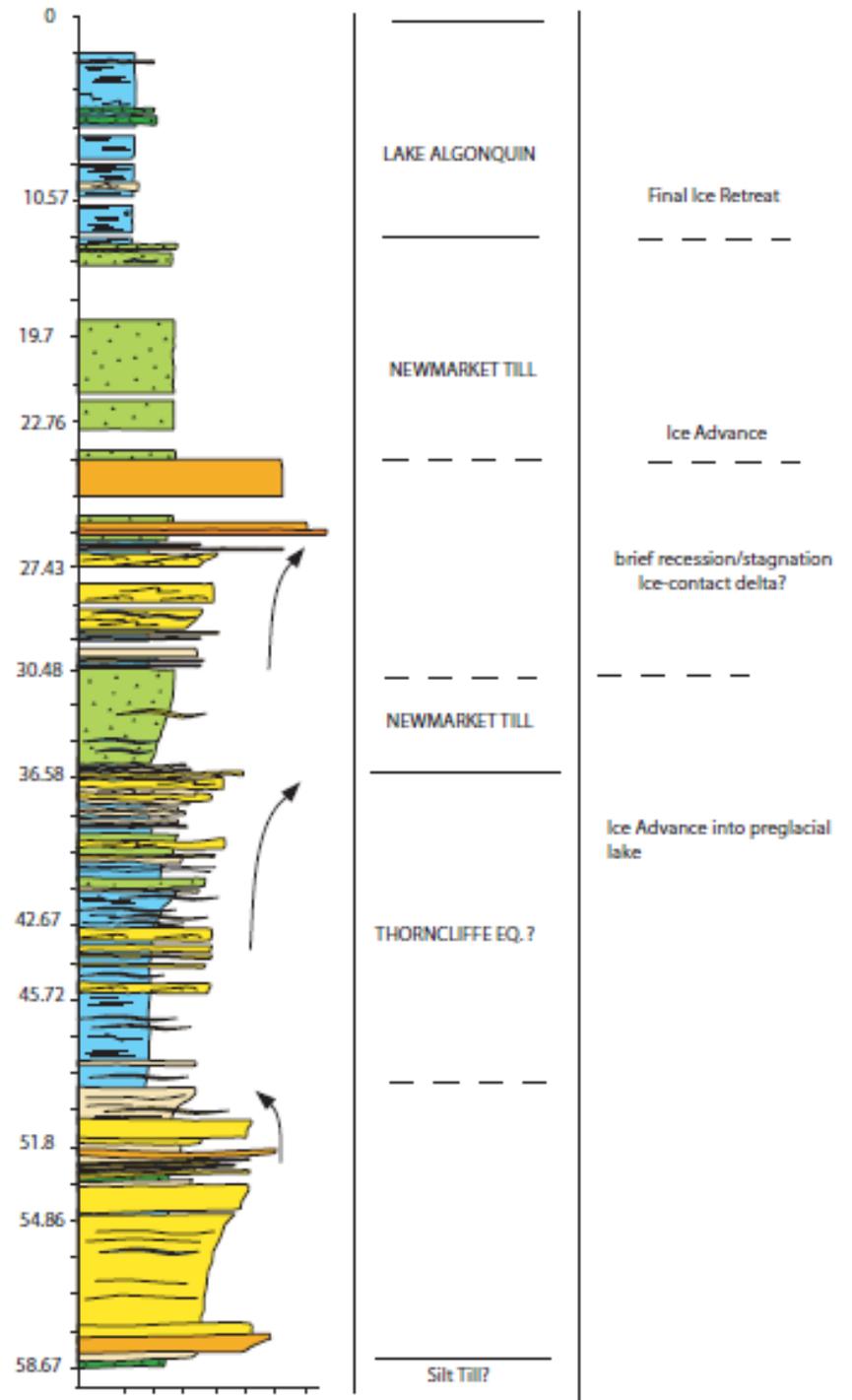
THANK YOU

Elmvale Home Building Centre

Springwater Township



Thanks to
Riley Mulligan,
M.Sc. Thesis,
McMaster University

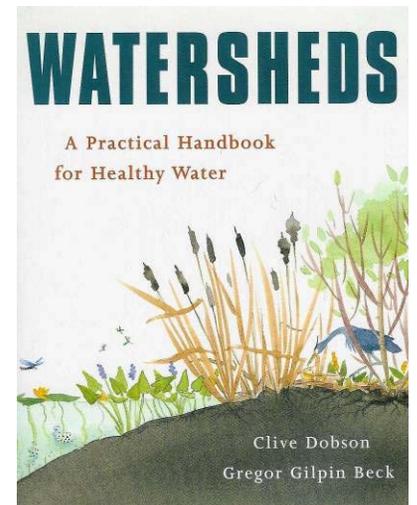


A River Through Time

WITH A PICTORIAL OVERVIEW OF WATER AND WASTEWATER TECHNOLOGIES



“A River Through Time”, by Clive Dobson, from the book “Watersheds”. As our watersheds are encroached by urban development, our artesian flow in Elmvale will only become more significant.





Water Spirit, 1974

81 cm x 183 cm (58¼" x 72")

Acrylic on brown kraft paper

National Museum of Man,

National Museums of Canada, Ottawa

(111-G-1102)

The painting was originally commissioned for the Canadian Indian Art Exhibition '74. It again depicts the Mishipashoo, the powerful spirit of the water which recurs so frequently in Ojibway legends.

Norval Morrisseau (Copper Thunderhead), 1932-2007

Macquarie Group Foundation Limited
ABN 26 002 883 034

No. 1 Martin Place
SYDNEY NSW 2000
GPO Box 4294
SYDNEY NSW 1164

Telephone (61 2) 8232 3333
Facsimile (61 2) 8232 0019
Internet <http://www.macquarie.com.au>

15 OCT 2013

Mr William Shotyk
President
Elmvale Foundation
1025 Mainland Street
London, ON N5Y 2X8
Canada



Dear Mr Shotyk,

I have much pleasure in enclosing a cheque

This donation is in support and encouragement
community groups and charities, and is made
Rasiuk gives to Elmvale Foundation.

Each year many Macquarie staff donate
organisations. The Macquarie Group Foundation
on Boards and Executive Committees
AUD10,000 to the community organisations

It would be appreciated if a receipt for this
Foundation, could be forwarded at your
Administrator at the above address.

If you wish to make a public acknowledgement of this donation, it would be appreciated
if this could be in the name of the Macquarie Group Foundation.

Yours sincerely

Lisa George
Head, Macquarie Group Foundation

enc

cex_mgf_syd_prd/54361_1

Dear Mr Shotyk,

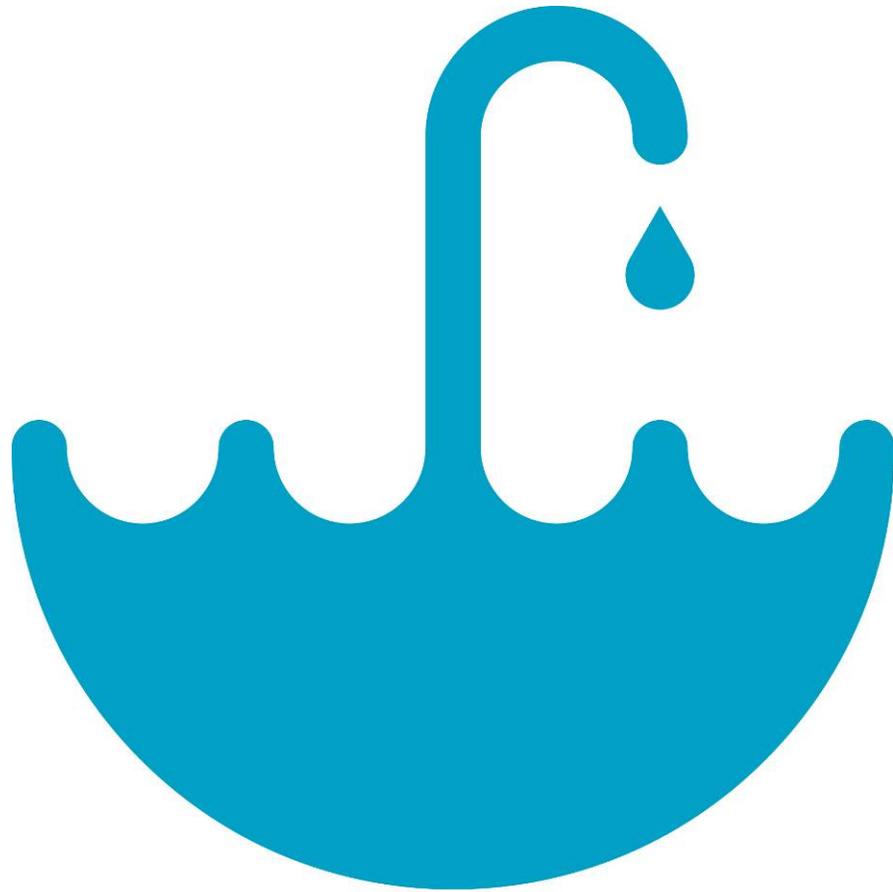
I have much pleasure in enclosing a cheque for CAD 9,589.75 to Elmvale Foundation.

This donation is in support and encouragement of staff who provide time and services to
community groups and charities, and is made on behalf of the time and services Gary
Rasiuk gives to Elmvale Foundation.

Gregoire Belland, Irene Berry, Ian Clarke,
Clive Dobson, Beth Elson, Chris Fraser,
Kerry Freak, Michele Locke, Riley
Mulligan, Ron Neville, Mike Powell,
William Shotyk

www.elmvalewater.org

The Elmvale Water Festival



celebrate water



“thanks so much for doing this”
“what an excellent idea”
“ this is really cool”



**reusable
water bottle**

BRANDCLAR®
dishwasher safe,
polypropylene bottle
made by Contalher
Corp. of Canada
contalhercorp.com

Logo and label designed by:
Sudanta Inc. | sudanta.com



celebrate water



**elmvale
water festival**

Presented by:
Elmvale Foundation
Environmental Science
Research + Education
elmvale.org

elmvale

**Reusable bottle
& Proud of it!**

elmvale

**SIMPLY
ECO
LOGICAL™**



SWISS MADE

SIGG+



Peter Brabeck-Letmathe, Chairman of the Nestlé Group, with an Elmvale Water Festival SIGG bottle.



Portia Clark, Host of “Radioactive”, CBC Radio, Edmonton, with an Elmvale Water Festival SIGG bottle.

www.elmvale.org

The Elmvale Foundation

The Elmvale Foundation

A federally registered charity

(84826 6193 RR0001)

for environmental science education

The logo for The Elmvale Foundation features the word "elmvale" in a bold, lowercase, sans-serif font. The letters 'e' and 'e' are in a standard weight, while the 'l' and 'v' are significantly thicker and more stylized, resembling the shape of an elm leaf. The entire logo is rendered in a solid blue color.

elmvale

www.elmvalefoundation.org

Elmvale Groundwater Observatory

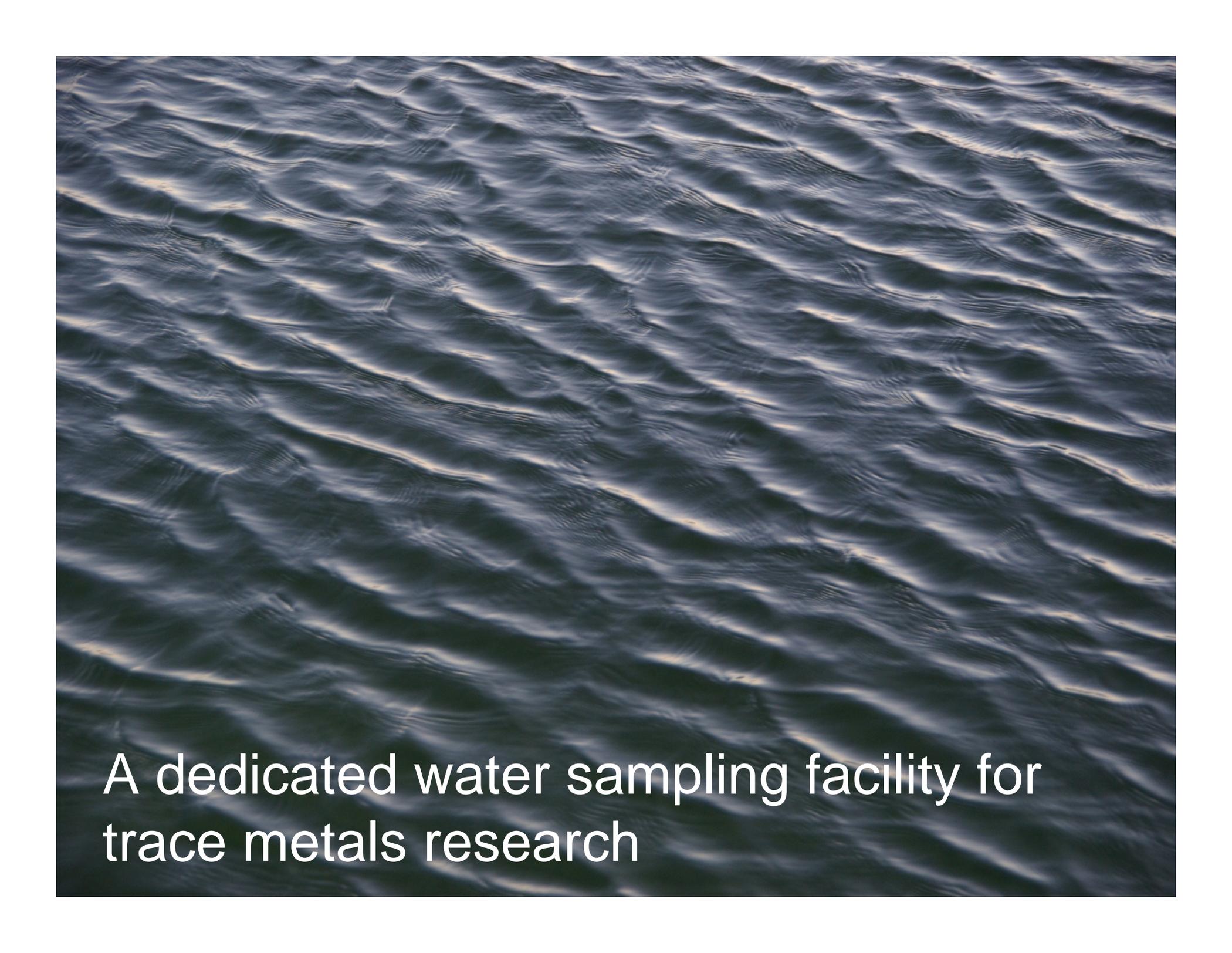
Elmvale Groundwater Observatory (EGO)



William Shotyk

Bocock Chair for Agriculture and the Environment
Department of Renewable Resources
University of Alberta, Edmonton, Alberta, Canada





A dedicated water sampling facility for
trace metals research



EGO-1
(May 2009)
Surgical (316)
stainless steel
well and valve



EGO-2
(Sept 2009)
Acid-washed,
high density
polyethylene
(Rotek, DK)
well with
polypropylene
and Teflon
valve

Both wells flow continuously at a rate of ca. 1 L/min.
The volume of water in the wells is exchanged ca. 50
times per day.

**to watch and listen to the water, check out
YouTube “groundwater research wells”**

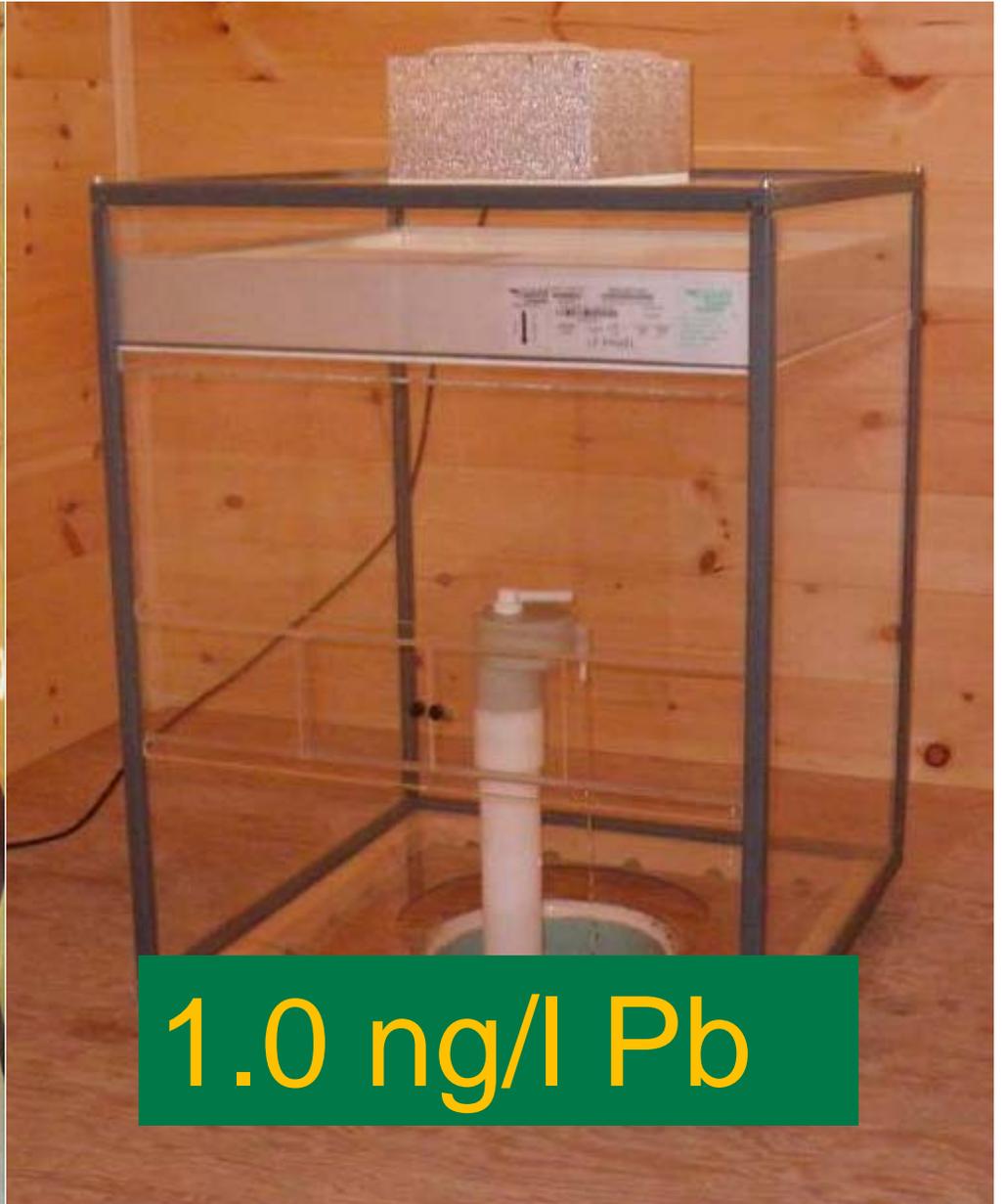


Sliding doors provide access for sampling the artesian flow at the height of the outlet, under the stream of filtered air

The cabinets each rest on a wooden frame (since replaced with plexiglas) with serrated edge to allow the filtered air to exit the base of the cabinets well below the sampling zone



5.1 ng/l Pb



1.0 ng/l Pb

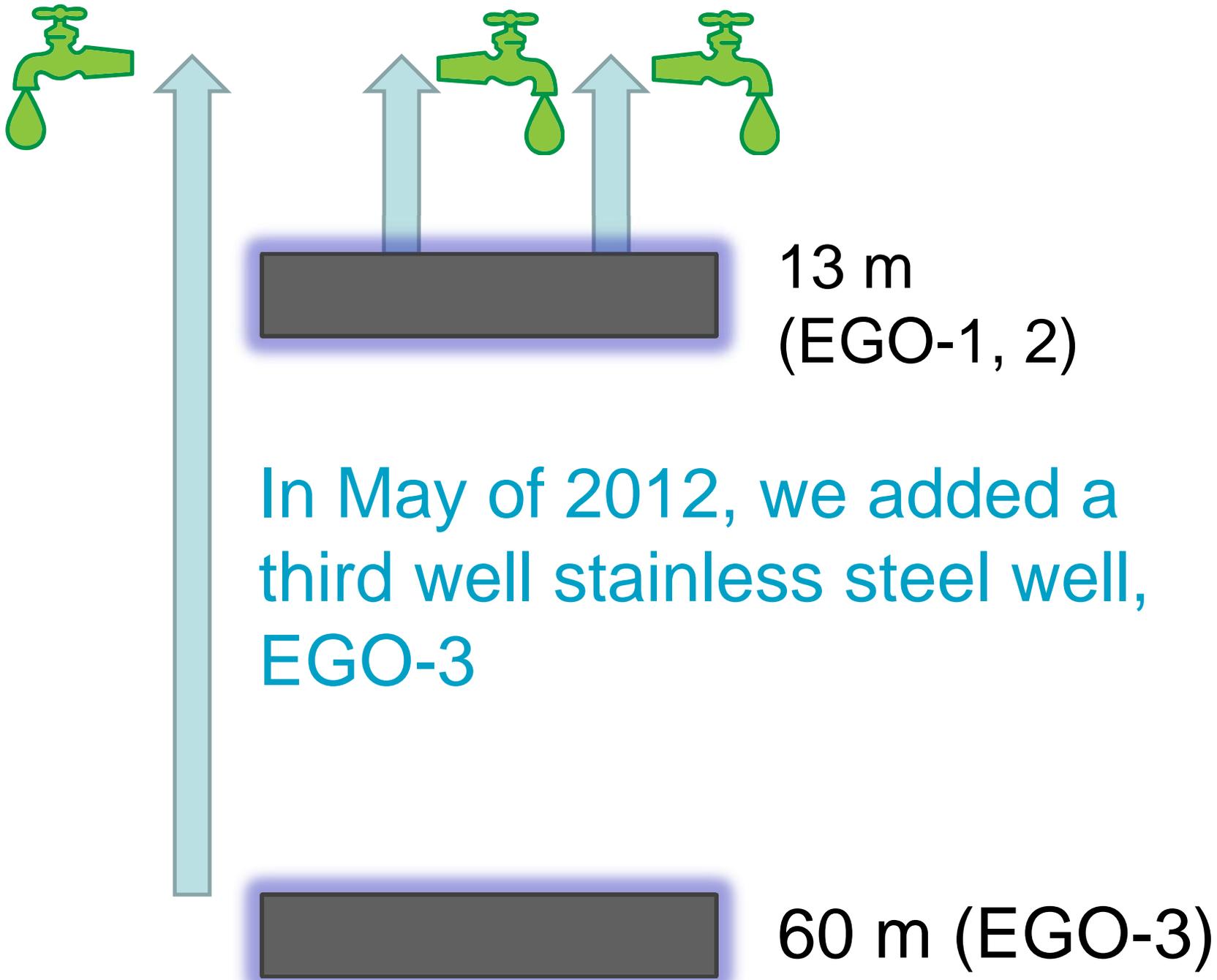
Elmvale Groundwater Observatory (EGO)



scientific reference standard of water quality



NEWS UPDATE: announcing EGO-3



13 m
(EGO-1, 2)

In May of 2012, we added a
third well stainless steel well,
EGO-3

60 m (EGO-3)



Installing EGO-3, Elmvale ONT May 2012



Approximately 60 m of sediment core was collected, requiring an additional 7 days. The stratigraphy varied from varved lacustrine sediments to glacial till.



But finally, at 190 ft, aquifer sand was reached and it proved to be artesian



The well was allowed to run for 2-3 days, to allow the particles to be flushed out



The well was constructed entirely of 316 surgical stainless steel, including this valve



Rick Buckley and Jamie Archer taking a drink from the new well



We are deeply indebted to Jamie Archer and his experienced crew at Canadian Soil Drilling for their time, skills, and expertise



A second cabin was constructed later that summer, again by Steve Ogden, to house the new well. This cabin is smaller than the first, but provides enough space for another clean air cabinet to protect the water during sampling.

SPECIAL THANKS TO:



Jamie Archer and Peter Fleming,
Canadian Well Drilling, Midhurst ONT

Rick Buckley, President,
Pro Core Drilling, Brantford, ONT

Stephen and Neil Ogden, Ogden Farms, Parry Sound, ONT

University of Heidelberg:

Werner Aeschbach-Hertig, Andreas Funke, Michael Krachler,
Stefan Rheinberger, Christian Scholz,

THANKS ALSO TO:

Andy Bajc, Ontario Geological Survey, Sudbury, ONT

Ian D. Clark, University of Ottawa

Michael Goodsite, Aarhus University, DK

Riley Mulligan, McMaster University, Hamilton ONT

Tommy Noernberg, University of Alberta

Martin Otz, NanoTrace Technologies, USA

Michael Powell, M Powell International, London ONT

Stephen Hillier, James Hutton Institute, UK

Claudio Zaccone, University of Foggia, IT

James Zheng, GSC, Ottawa, CAD

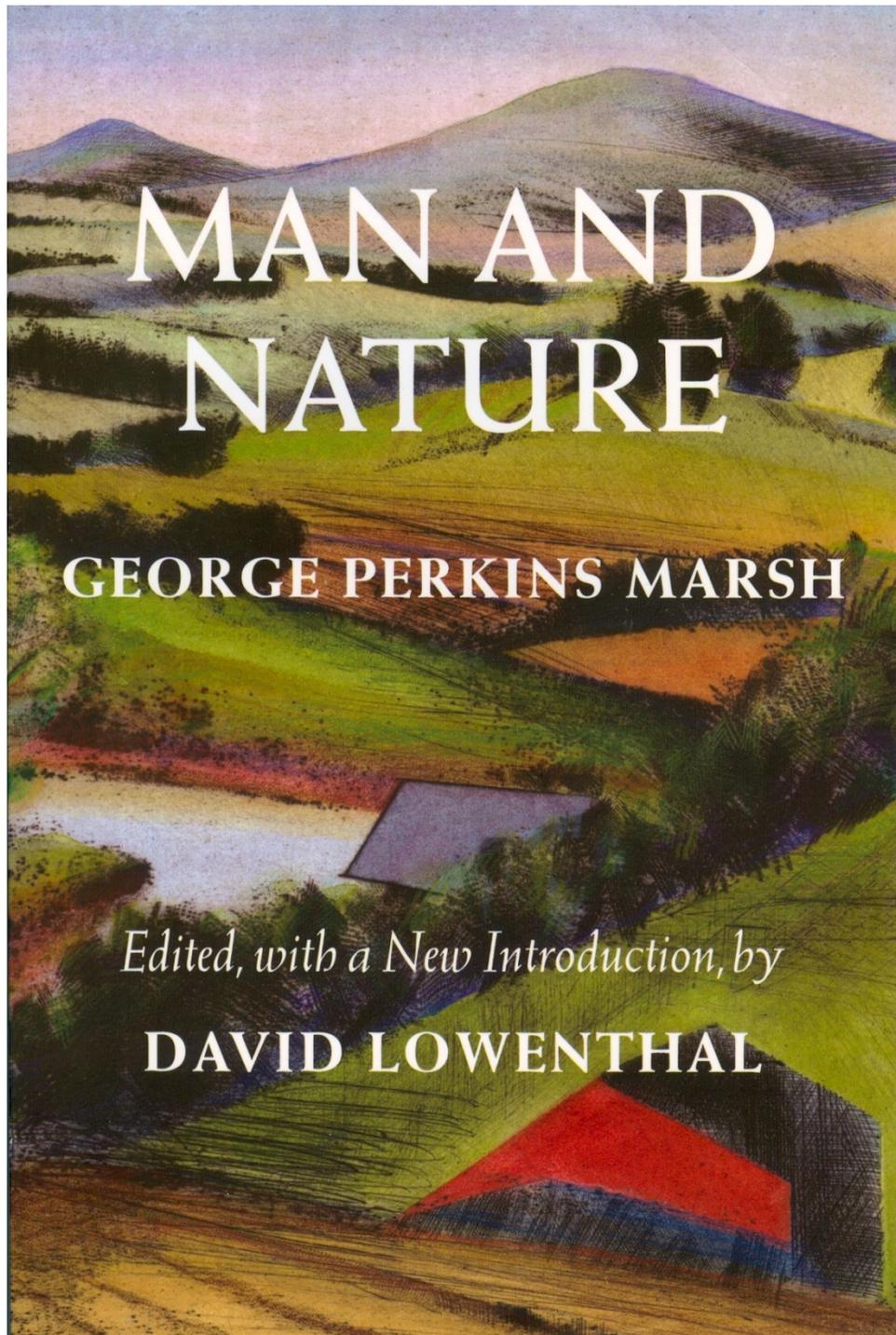
Soil and Water



Clive Dobson, "Watersheds"

There are parts of Asia Minor, of Northern Africa, of Greece, and even of Alpine Europe, where the operation of causes set in action by man has brought the face of the earth to a desolation almost as complete as that of the moon; and though, within that brief space of time which we call 'the historical period,' they are known to have been covered with luxuriant woods, verdant pastures, and fertile meadows, they are now too far deteriorated to be reclaimable by man, nor can they become again fitted for human use, except through great geological changes, or other mysterious influences or agencies of which we have no present knowledge, and over which we have no prospective control.

George Perkins Marsh
Man and Nature, (1864), 42-3.



In 1861, President Abraham Lincoln appointed Marsh the first United States minister to the Kingdom of Italy. Marsh would go on to be the longest-serving chief of mission in U.S. history, serving as envoy for 21 years until his death at Vallombrosa in 1882.

Graveyard of Empires



Fig. 2. This picture shows part of the excavated ruins of ancient Babylon; which was the capital of most of the civilized world only 4,000 years ago. When Babylon died, it remained dead and was buried under the sands of Mesopotamia; not because it was sacked and razed; but because the irrigation ditches which watered the lands that supported the city were permitted to fill with silt.

Lowdermilk (1942) Seven millenia of soil erosion

Looking for the forests of Lebanon



Fig. 6. Ancient rock-walled bench terraces protect this Lebanon hillside after thousands of years of use. It is estimated that the terracing of some Lebanon hillsides cost at least \$2,000 per acre, if we should figure the cost of labor at 40 cents per hour. Such expensive methods of protecting the land are practical only where people have no other land on which to produce their food.

China's Sorrow



Fig. 7. A severely gullied area in the loess hills of North China. These hills were once covered with trees and grass; but cultivation started the ruinous process of erosion. There are thousands of acres like this in China today. It produces nothing except yellow mud to clog the Yellow River with silt.

The Lost Granary of Rome



Fig. 9. (L-132) In the middle distance may be seen the ruins of the ancient Roman city of Cuicul. It was a rich and prosperous city in North Africa when that region was known as the "granary the Roman Empire." Note that the ruin of the land, as seen in the distance and foreground, is almost as complete as the ruin of the city.

SOIL

There is nothing in the whole of Nature which is more important than or deserves as much attention as the soil.....

the whole Creation depends on the soil which is the ultimate foundation of our existence.

Friedrich Albert Fallou, 1794-1877

“Civilization itself rests upon the soil”

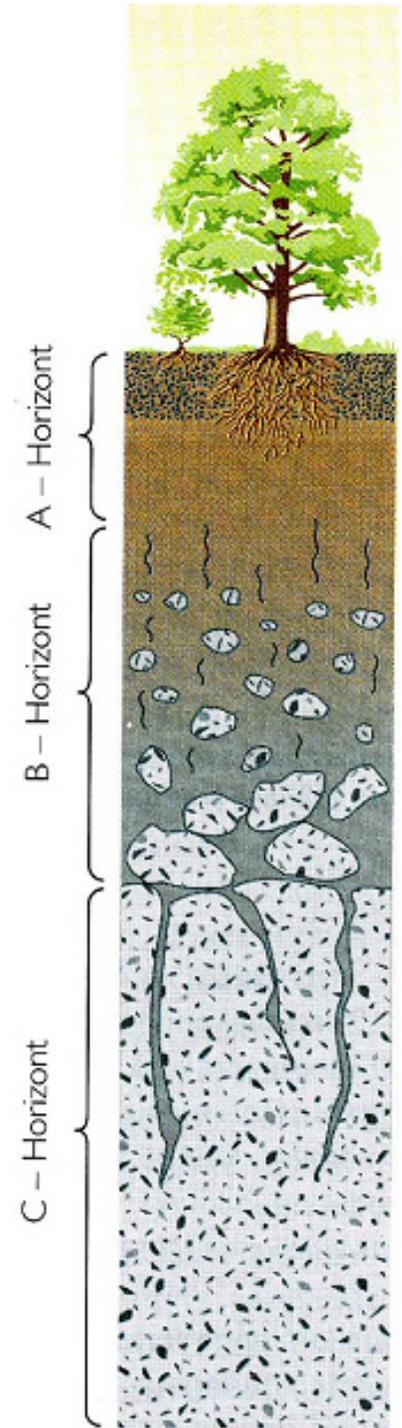
Thomas Jefferson

“To forget how to tend the soil is to forget ourselves”

Mahatma Gandhi

“The nation that destroys it’s soil, destroys itself”

Franklin D Roosevelt



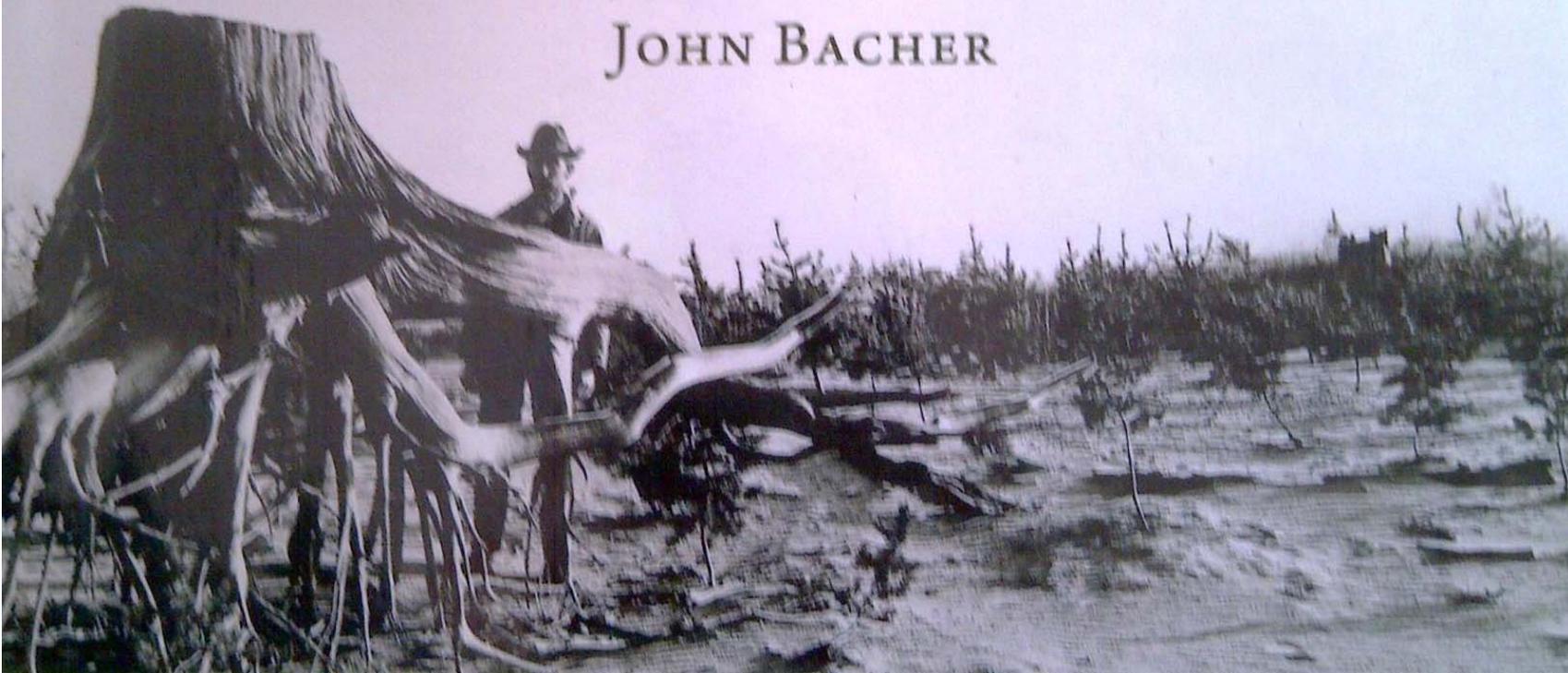
Soil Erosion: View from Simcoe County



TWO BILLION TREES AND COUNTING

— *The Legacy of Edmund Zavitz* —

JOHN BACHER





Midhurst Tree Nursery, Simcoe County, ONT



Hendrie Tract, Simcoe County Forest, today



Hendrie Tract, Simcoe County Forest, 1922











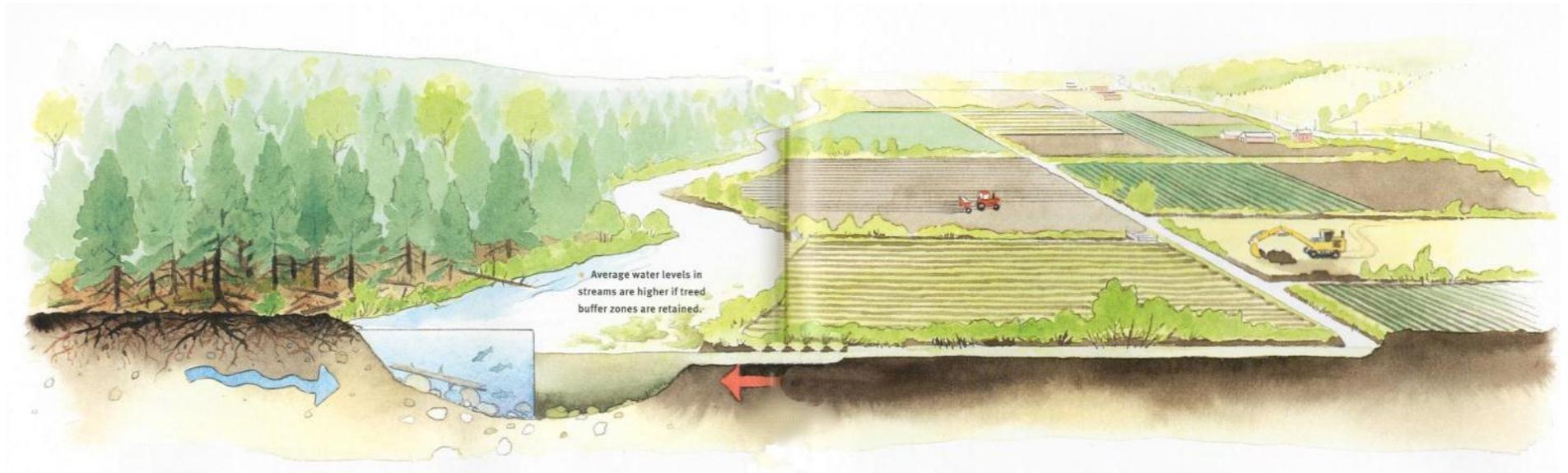


Recent view of Orr Lake road (from littlebanff.com). Originally called Cranberry Lake, this was a wetland until ca. 1850 when it was dammed to elevate the water level for several sawmills that were created for the lumber industry.



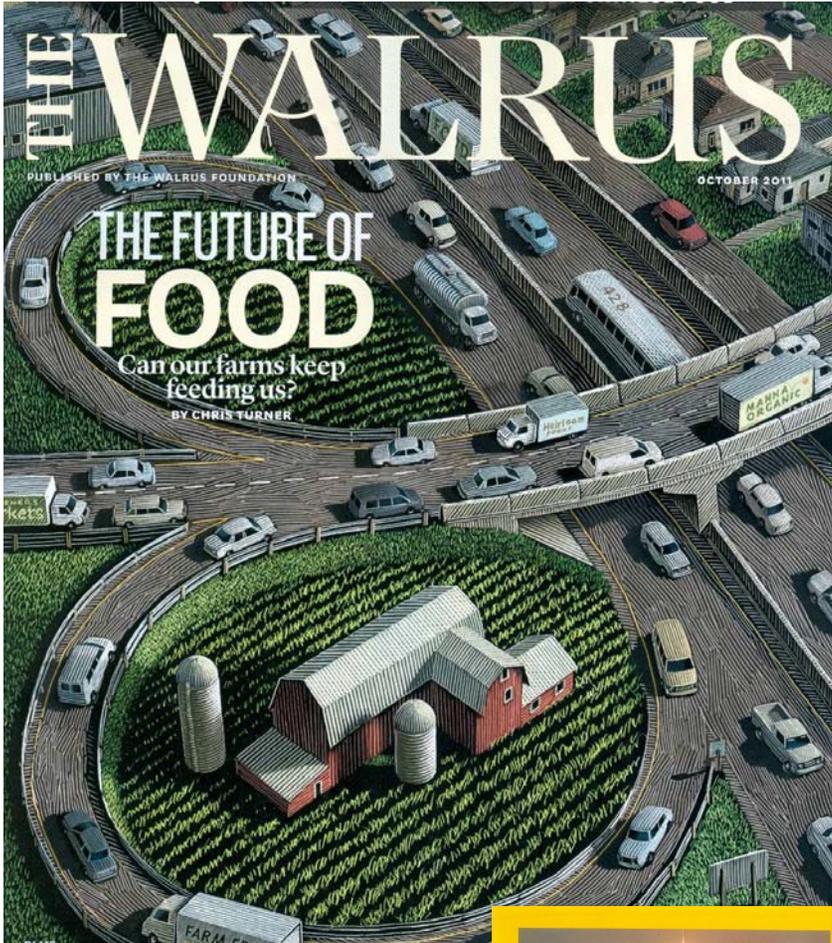
**FARMERS
FEED
CITIES**





FARM = natural water filtration system

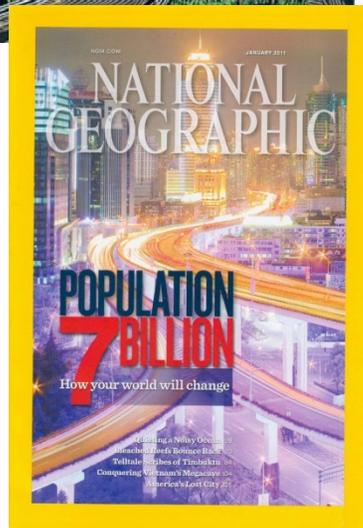
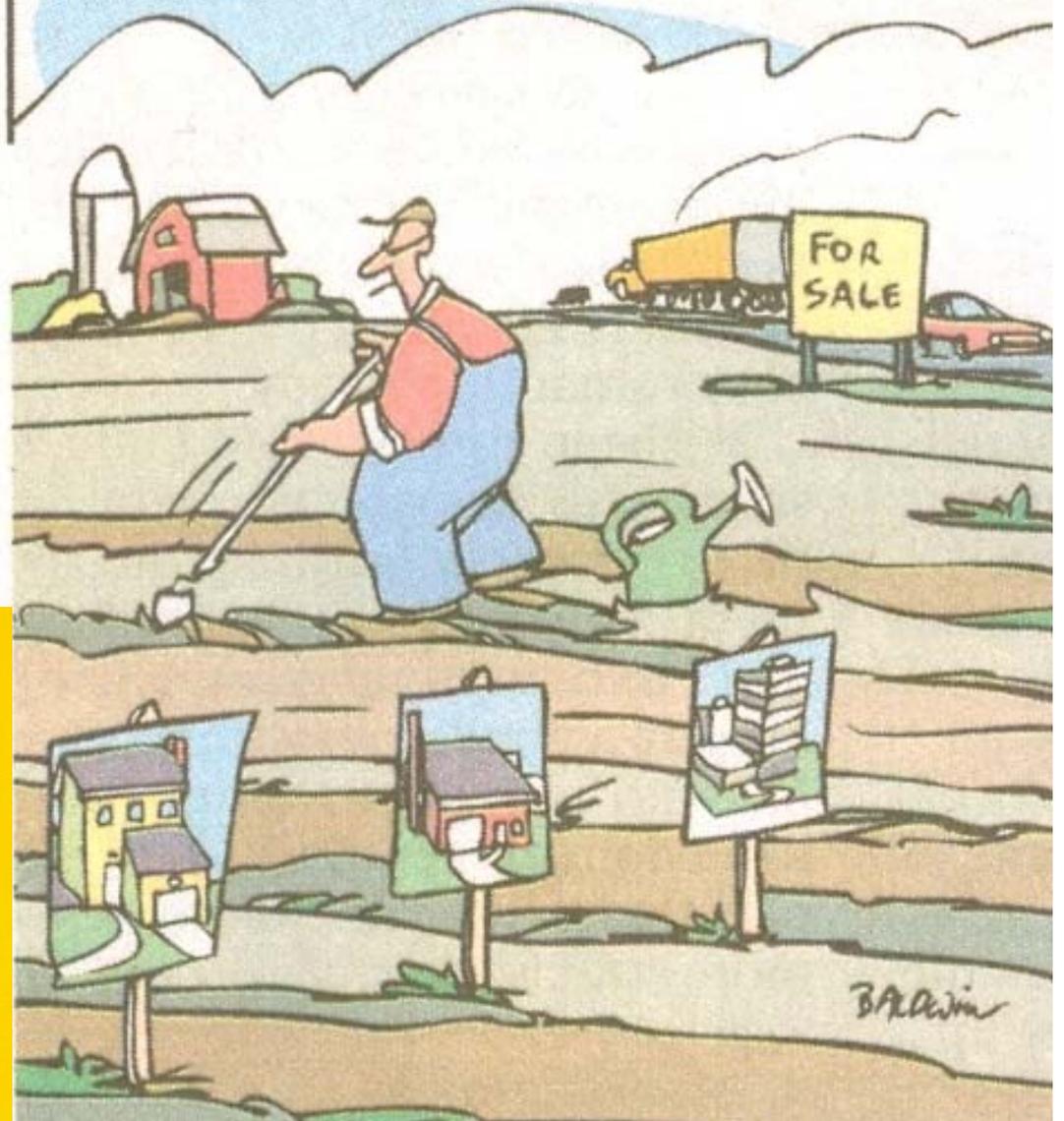
Clive Dobson, "Watersheds"

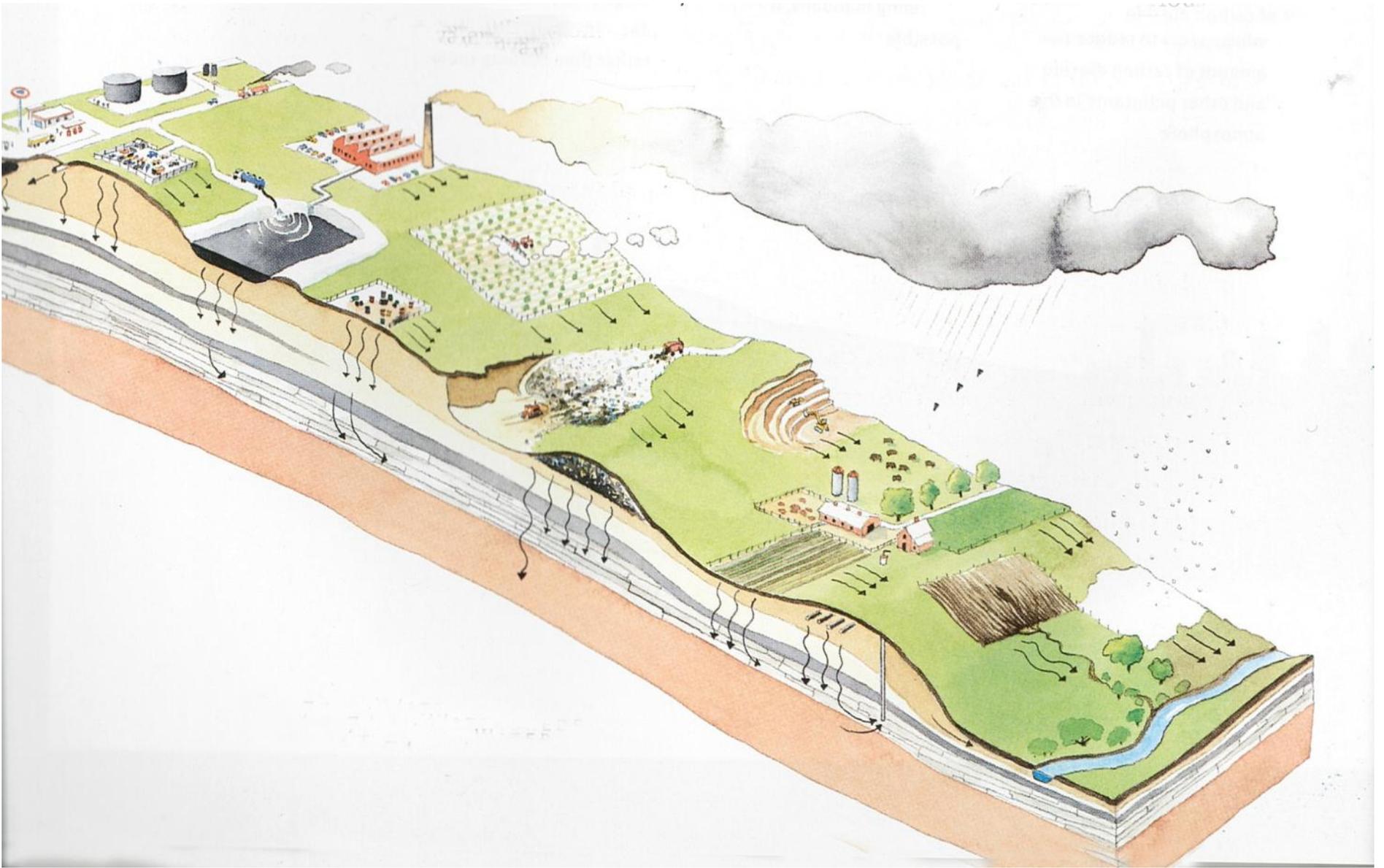


COMICS

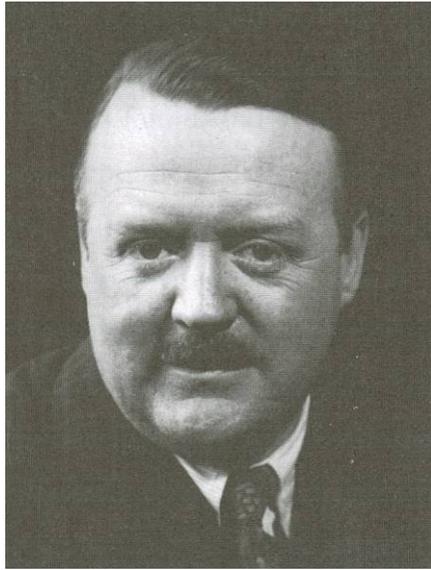
CORNERED

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 urcornered@gmail.com





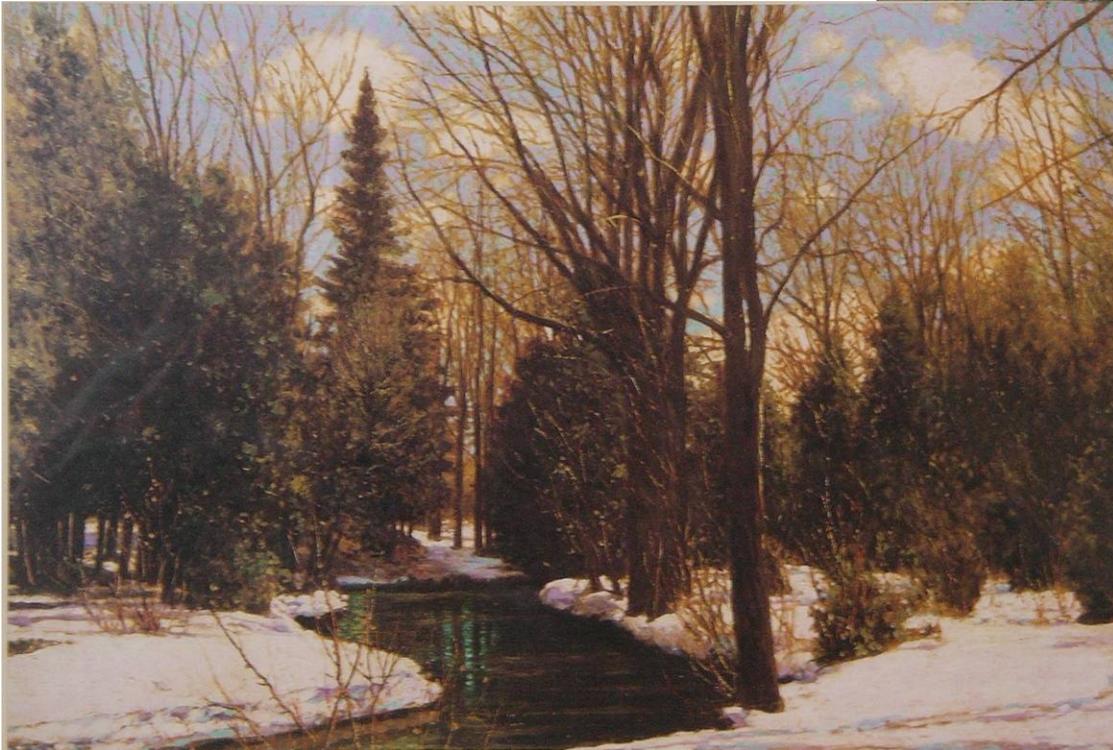
Clive Dobson, "Watersheds"



Franz Johnston, 1921

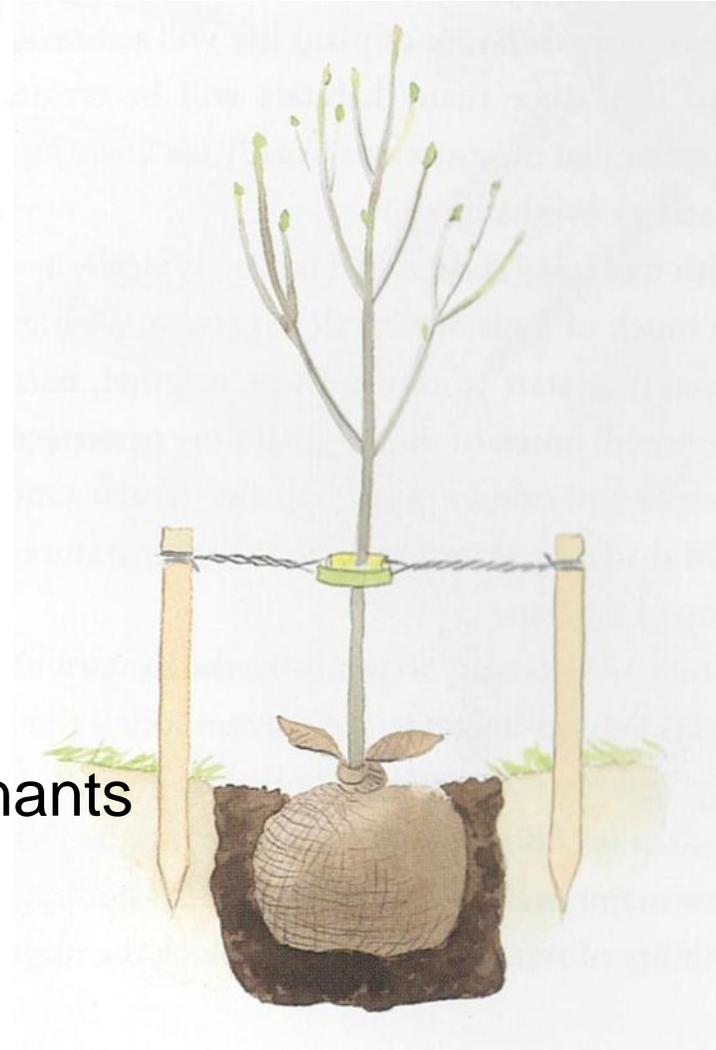


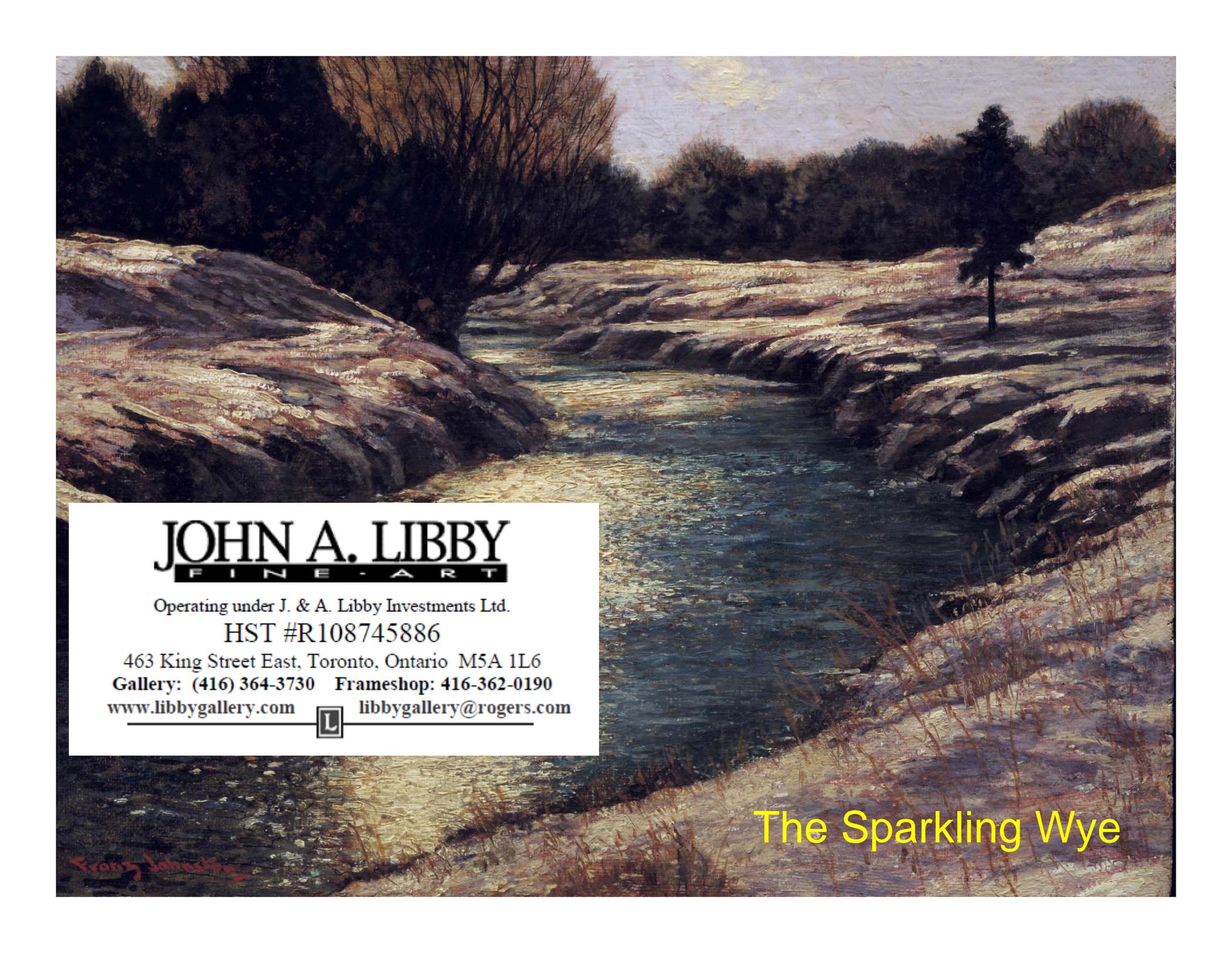
The Farm Stream, 1943





- Remove airborne pollutants
- Sequester carbon dioxide
- Shade for streams
- Promote interception
- Reduce runoff
- Remove nutrients and contaminants
- Stream erosion reduction
- Wildlife habitat incl. pollinators





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The Sparkling Wye

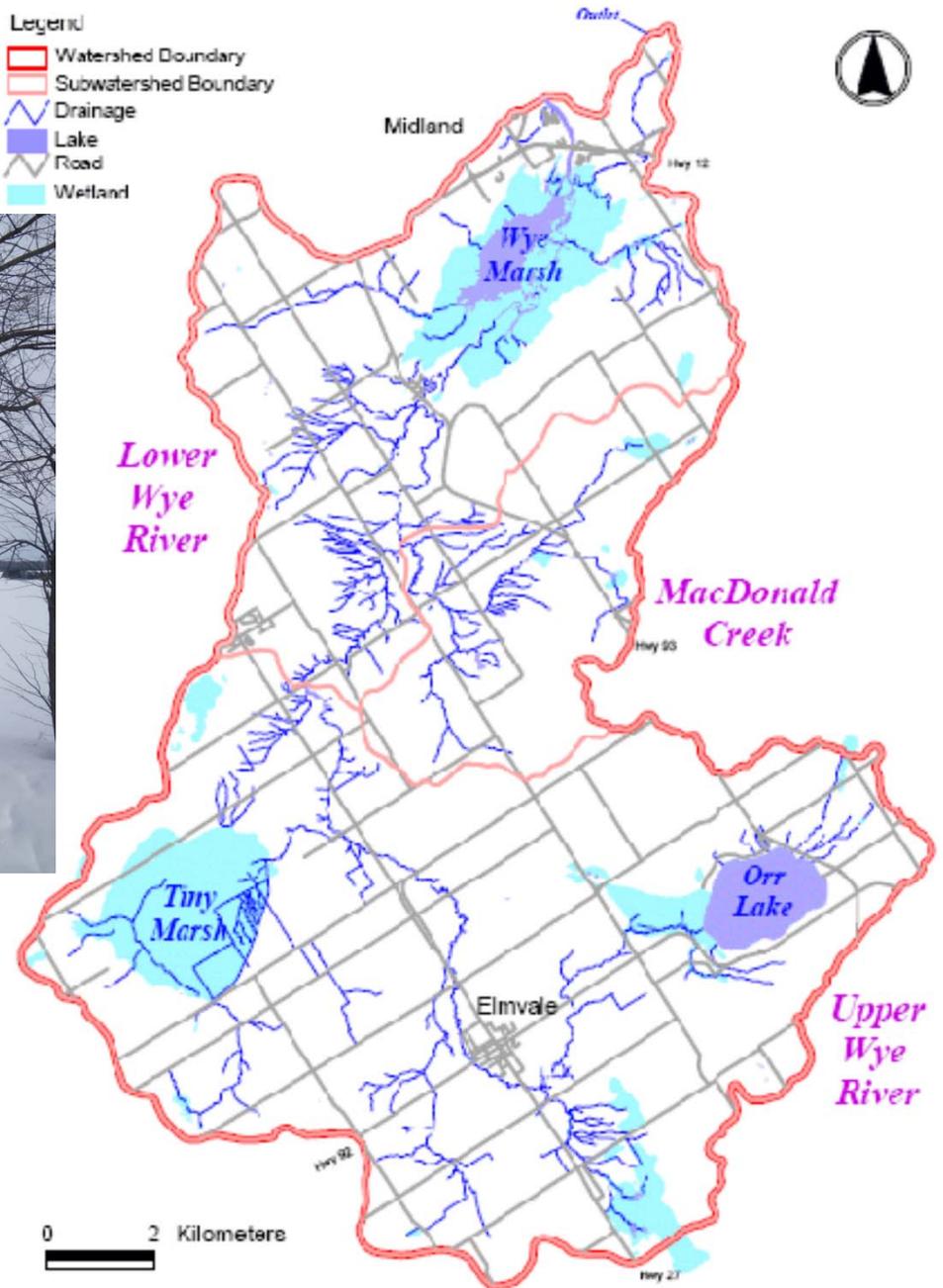


Beckoning Stream





- Legend
- ▬ Watershed Boundary
 - ▬ Subwatershed Boundary
 - ▬ Drainage
 - ▭ Lake
 - ▬ Road
 - ▭ Wetland



0 2 Kilometers

We protect what we value,
We value what we understand.

Baba Dioum, Senegal



2,000 years of water management on the prairies



Traditional Ecological (Aboriginal) Knowledge

UNIVERSITY OF ALBERTA

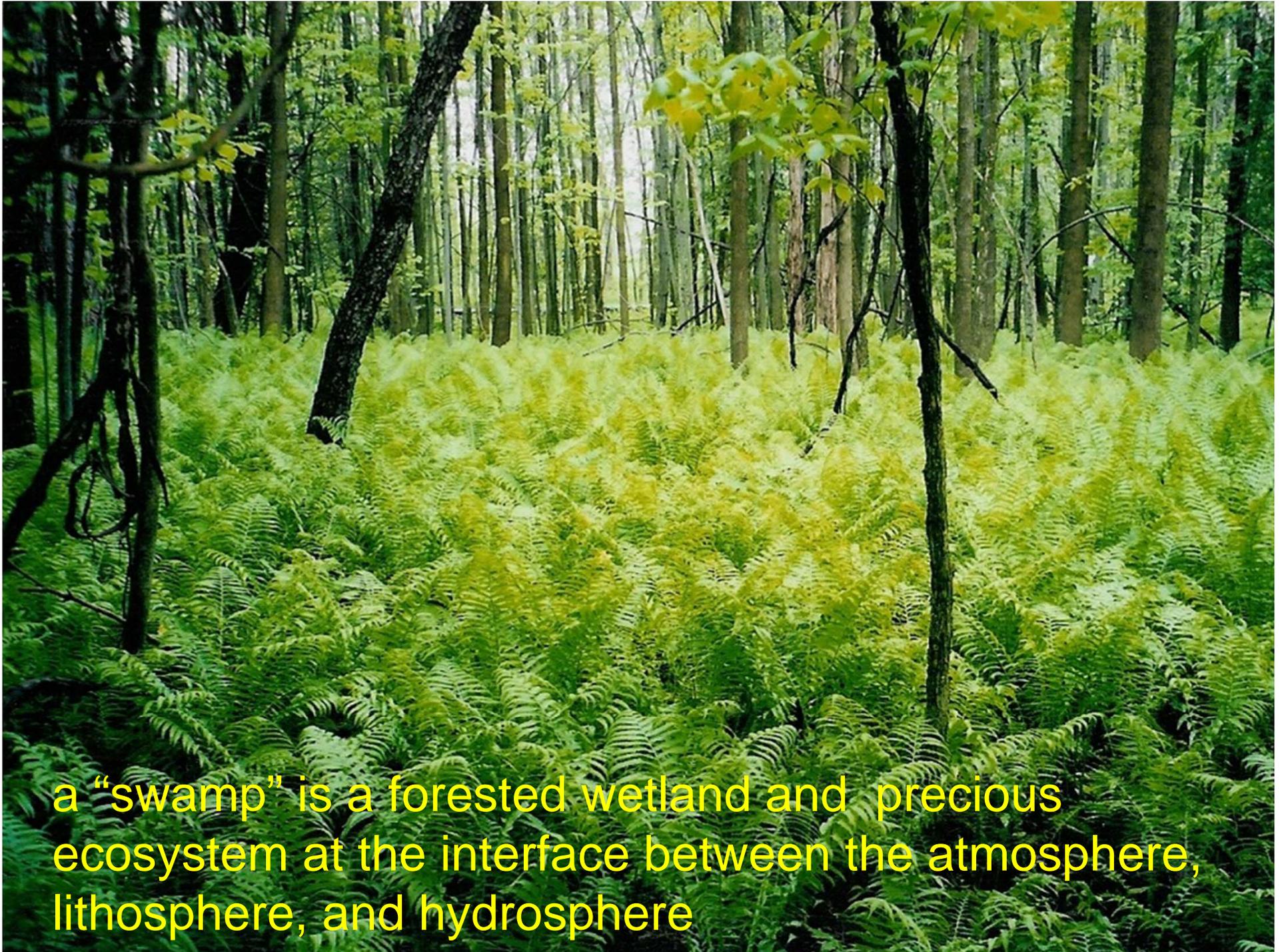


Since October, 2011

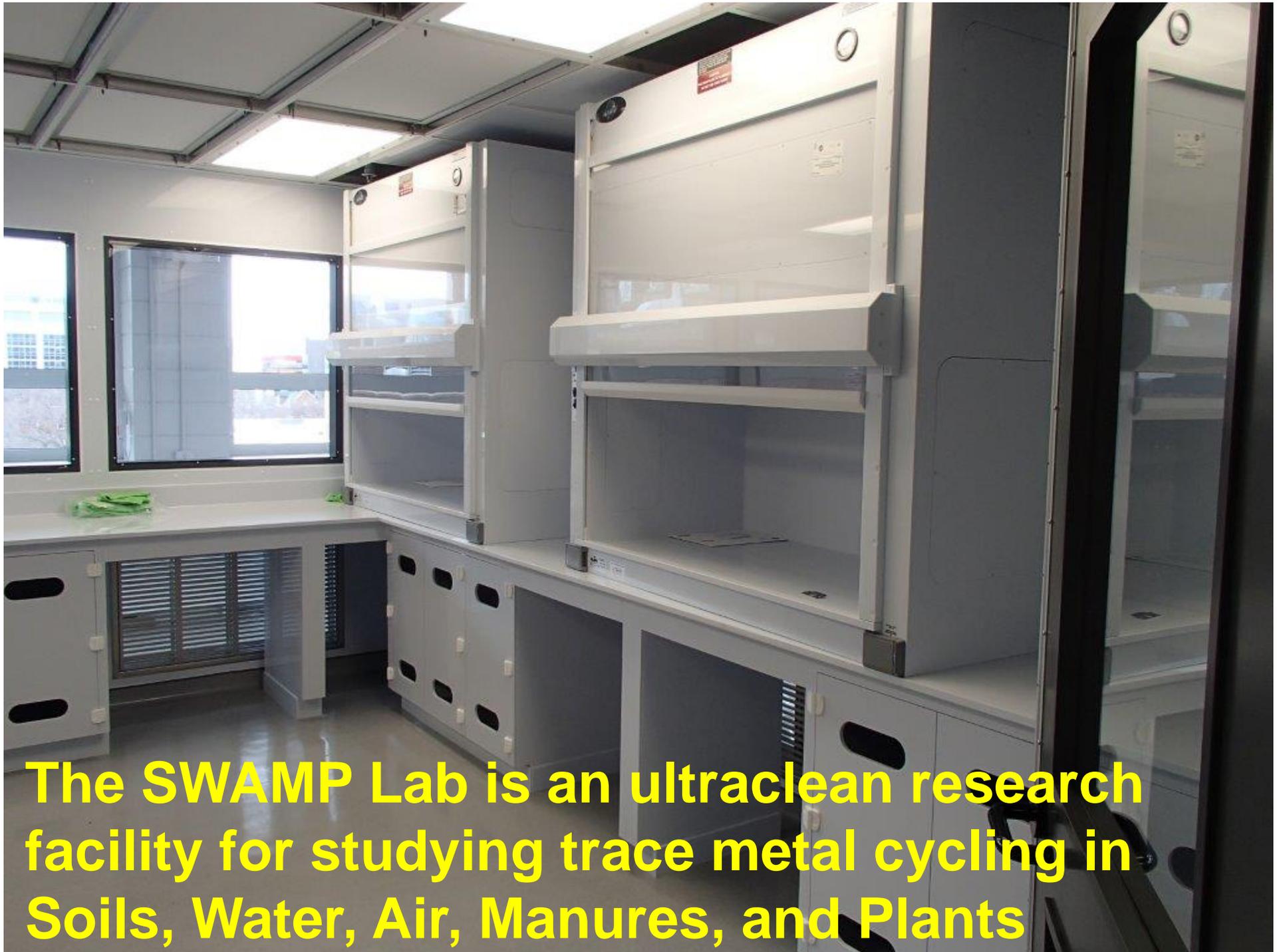
The SWAMP Lab

William Shotyk
Bocock Chair for Agriculture and the Environment
Department of Renewable Resources
University of Alberta
shotyk@ualberta.ca

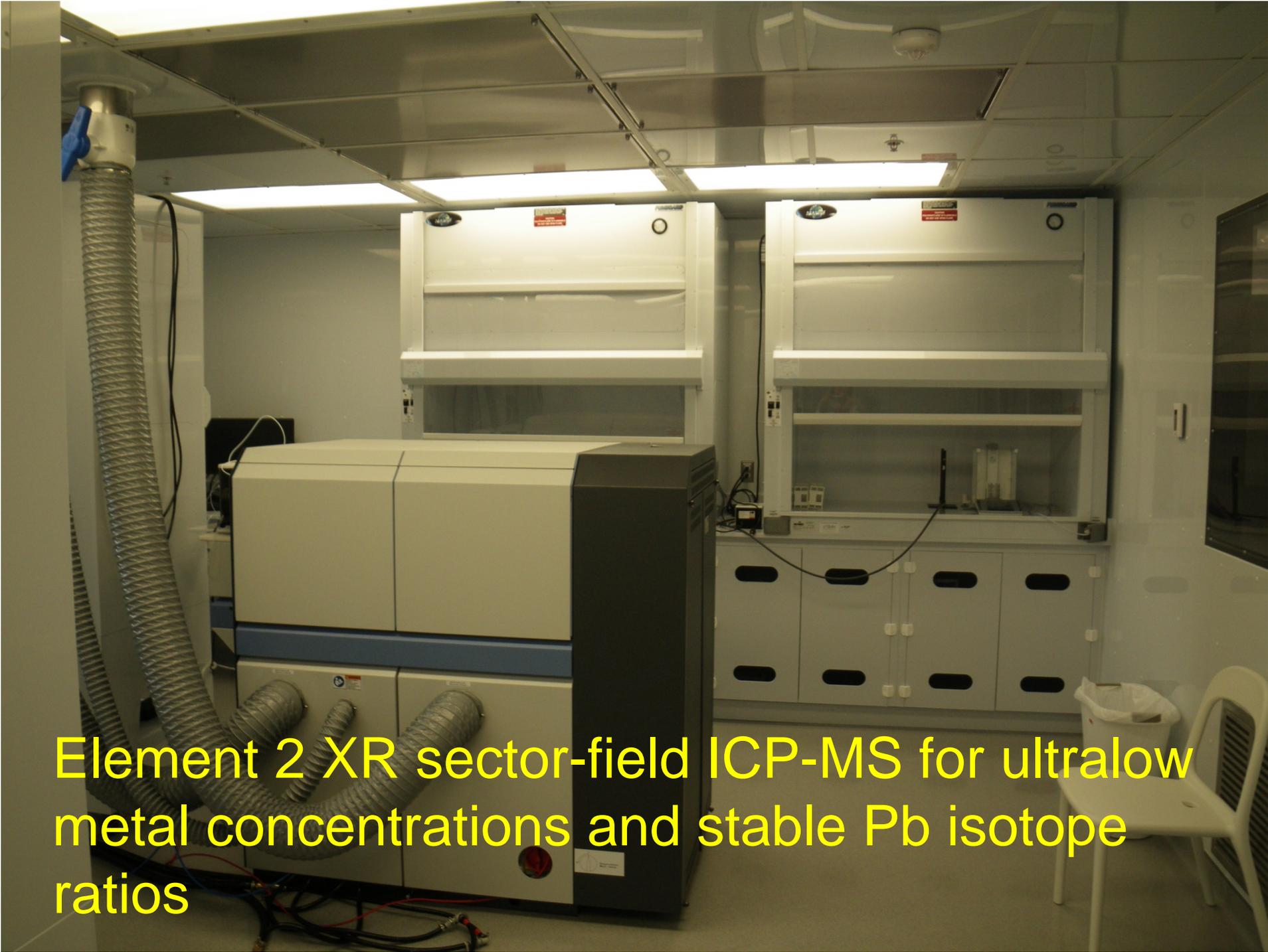




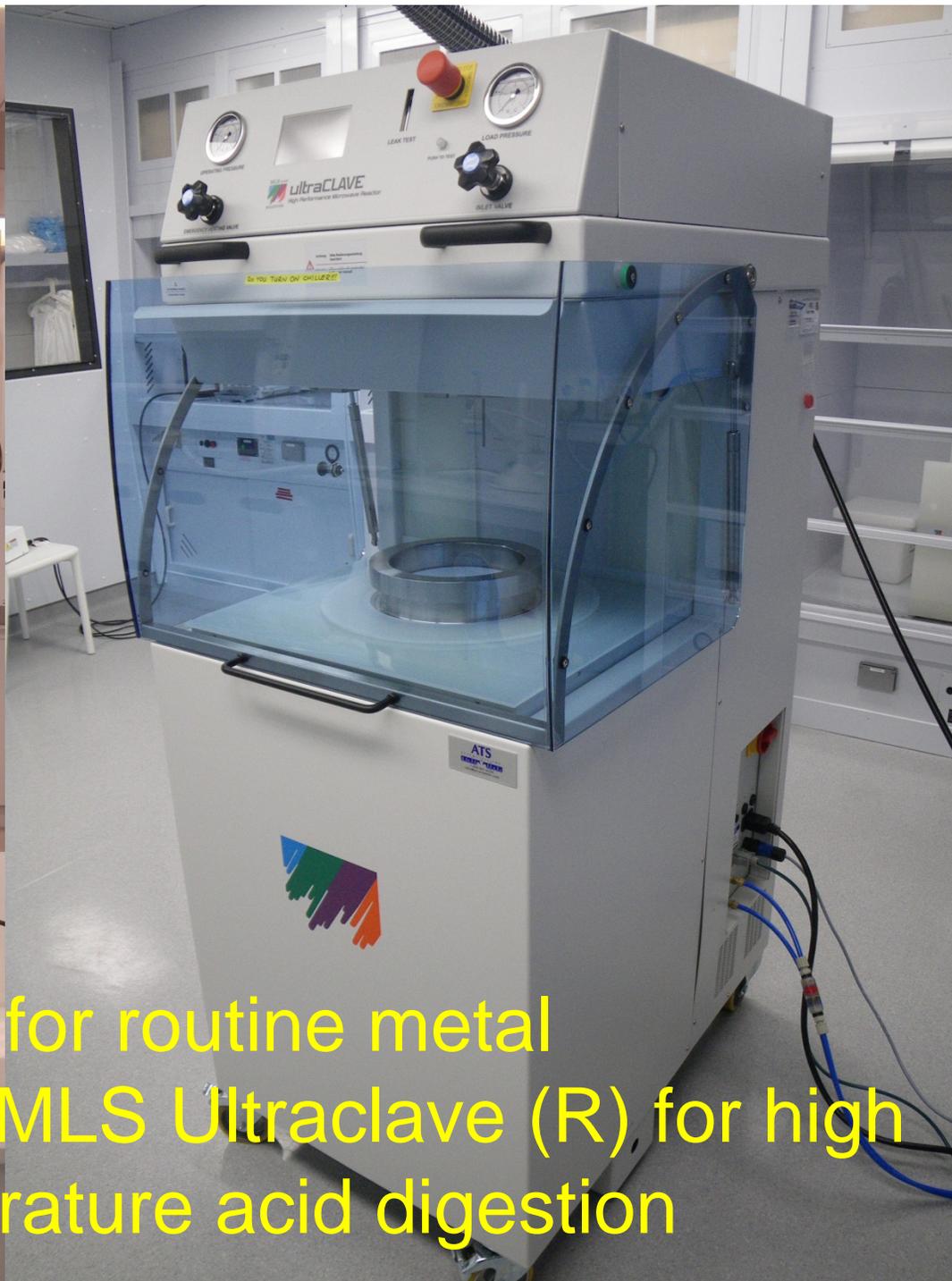
a "swamp" is a forested wetland and precious ecosystem at the interface between the atmosphere, lithosphere, and hydrosphere



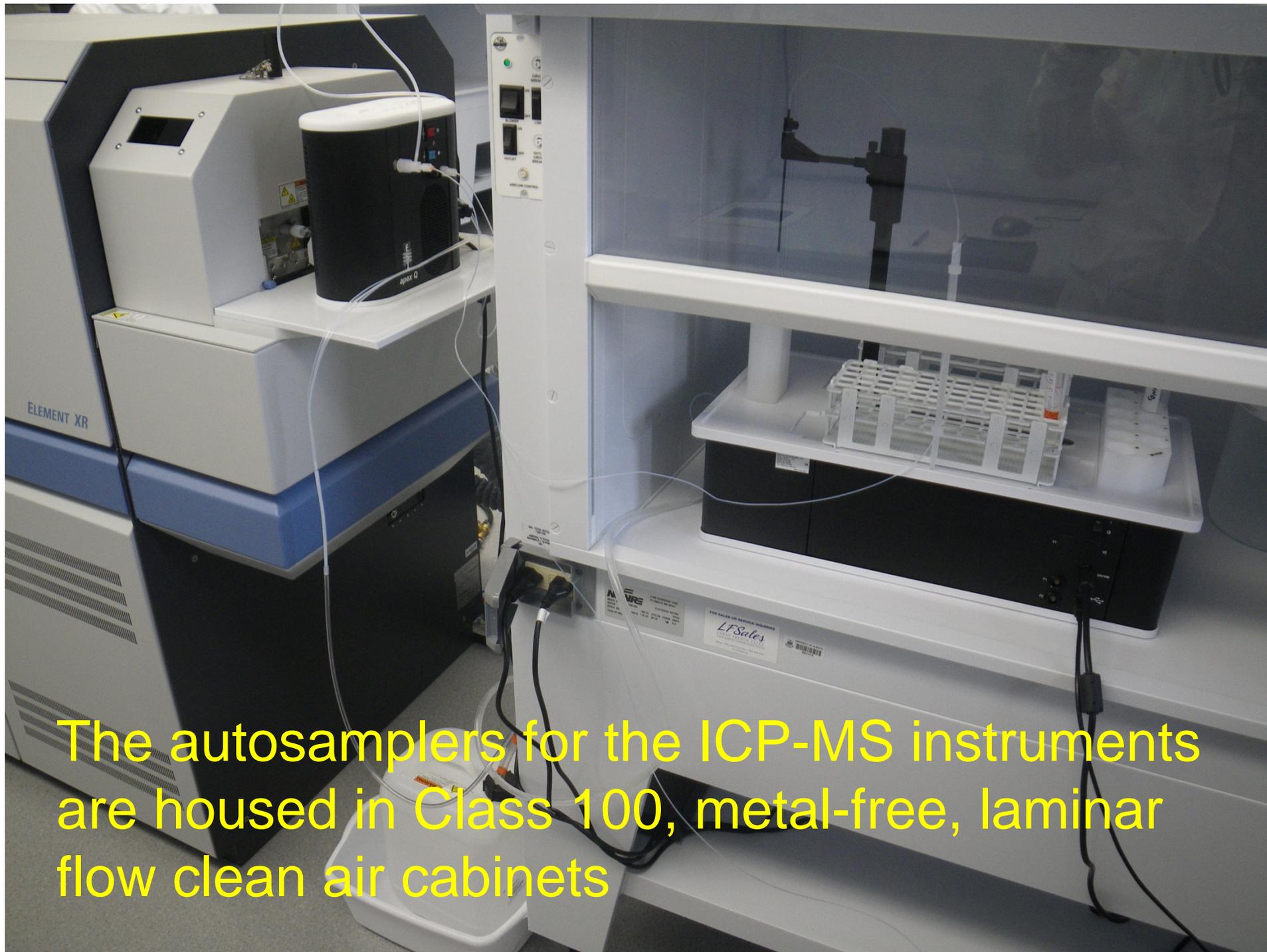
The SWAMP Lab is an ultraclean research facility for studying trace metal cycling in Soils, Water, Air, Manures, and Plants



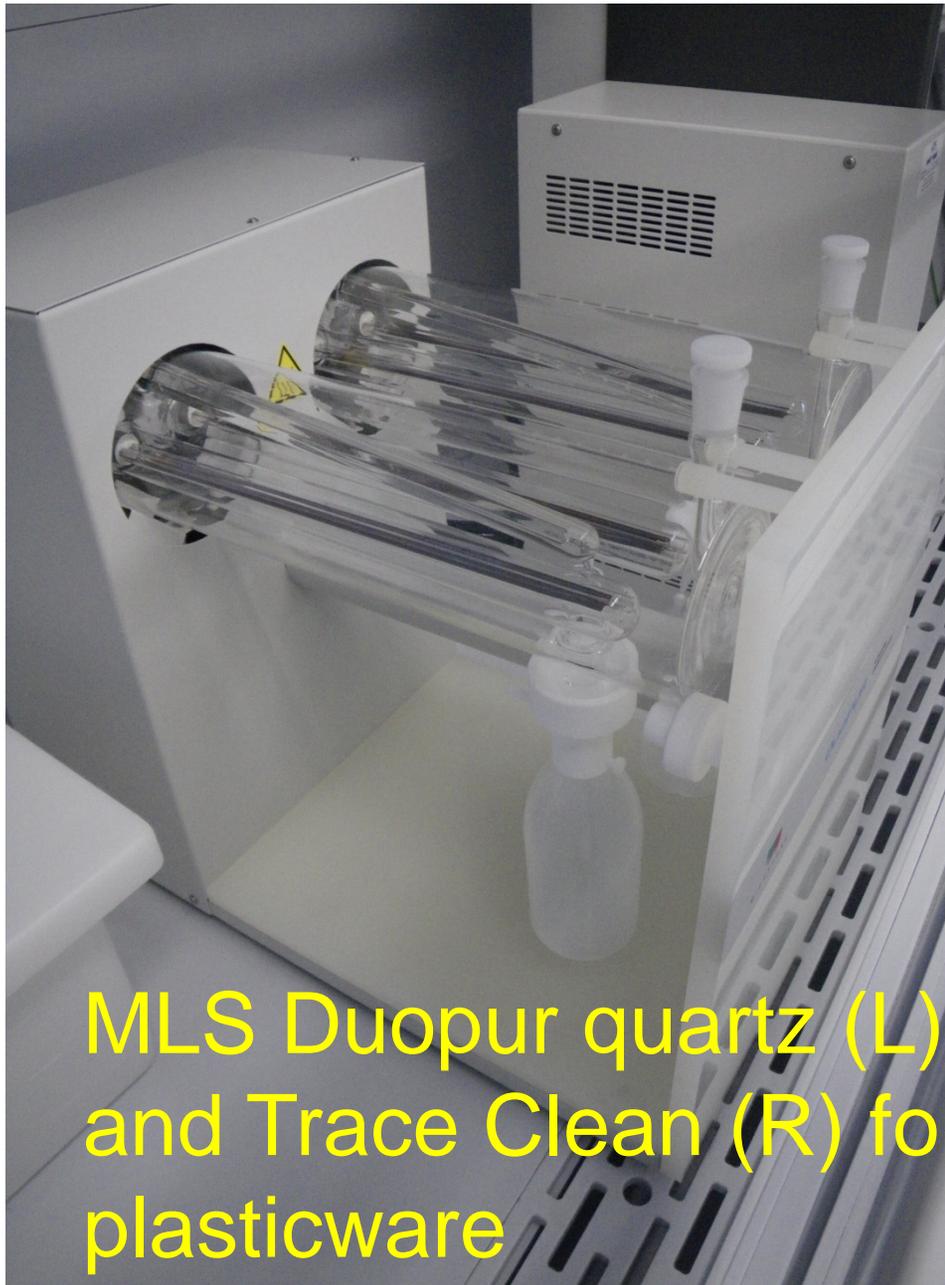
Element 2 XR sector-field ICP-MS for ultralow metal concentrations and stable Pb isotope ratios



ICAP-Q ICP-MS (L) for routine metal measurements and MLS Ultraclave (R) for high pressure and temperature acid digestion



The autosamplers for the ICP-MS instruments are housed in Class 100, metal-free, laminar flow clean air cabinets



MLS Duopur quartz (L) still for acid distillation and Trace Clean (R) for acid cleaning of plasticware



MilliQ water with dispenser in Class 100,
metal-free, laminar flow, clean air cabinet



Otters, Athabasca River at Fort McMurray



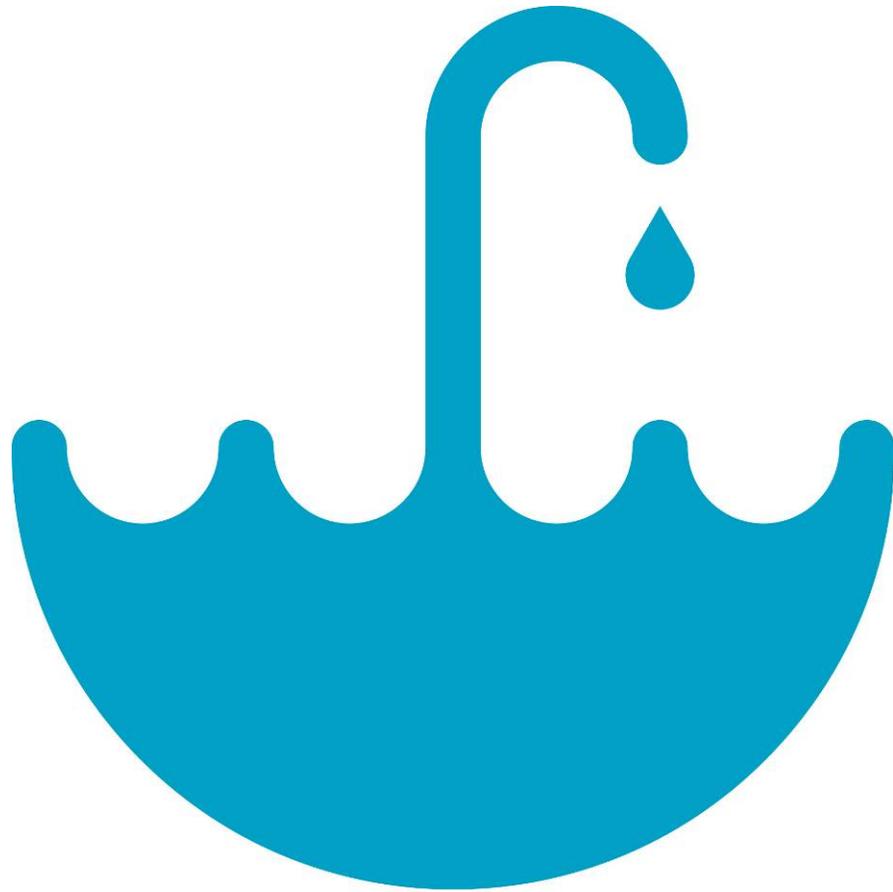
THANKS
for your attention



Castle Mountain, Banff National Park, Alberta







celebrate water