



TEACHERS AND RESEARCHERS  
EXPLORING AND COLLABORATING

# Welcome to *PolarConnect*

With Melissa Barker and the Nutrient  
Transport in Arctic Watersheds

PolarTREC Expedition

**Thursday 17 May 2012**

7:45a.m. AKDT

(8:45am PDT, 9:45am MDT, 10:45am CDT, 11:45am EDT)

Slides will be shown here

Exit the presentation

Click to Talk, Unclick to finish talking

Raise your hand to ask a question

Share with emoticons

List of all participants

Chat with one person or the entire group

The screenshot displays the Blackboard Collaborate interface. On the right, a presentation slide titled "Welcome to Blackboard Collaborate" is shown, featuring the ARCUS logo and the text "Arctic Research Consortium of the United States". The left sidebar contains several panels: "AUDIO & VIDEO" with a "Talk" button and a "Video" button; "PARTICIPANTS" with a list of users including Sarah Crowley and Arctic Research Consortium of the US; "MAIN ROOM" with a list of users; and "CHAT" with a list of messages. A "Recording" indicator is visible in the top right corner of the interface.

### Please Note:

- Participants using the telephone can mute/unmute by **pressing \*6** on the phone.
- Today's event will be recorded and archived.



TEACHERS AND RESEARCHERS  
EXPLORING AND COLLABORATING

# Participant Introductions

**When called, please state your:**

- ✓ Name
- ✓ School / Institution
- ✓ The number of students and adults participating with you in the same location



TEACHERS AND RESEARCHERS  
EXPLORING AND COLLABORATING

# What is PolarTREC?

PolarTREC is a professional development experience in which K-12 teachers are paired with researchers for 2-6 week research experiences in the polar regions.

From 2010-2013, nearly 50 teachers from around the United States will join scientists in the Arctic and Antarctica to learn about science, the polar regions, and to share what they have learned with their students and communities.



TEACHERS AND RESEARCHERS  
EXPLORING AND COLLABORATING

# Questions

## During the Presentation:

- Type your question in the text chat box

## At the End of the Presentation:

- Raise your hand with the “hand button”.
- PolarTREC staff will call on you.
- Speak loud and clear and directly into the phone to ask your question.

**Click on the Talk button to speak.**

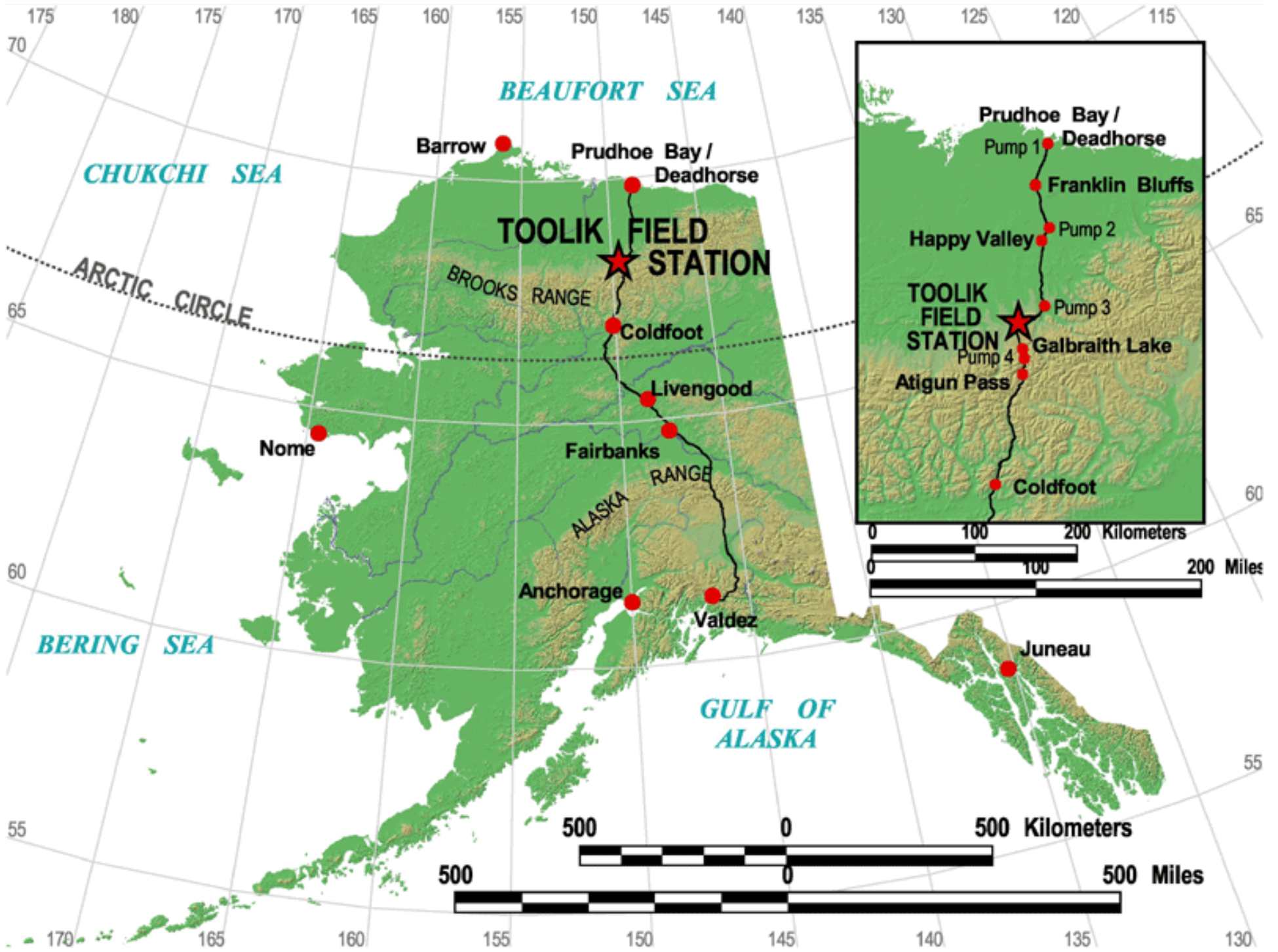
**Unclick when you are done.**

# Nutrient Transport in Arctic Watersheds





**View from Toolik Field Station**

















# My Room



# Arctic Living



# The Water Tracks Team



Jay Jones  
University of Alaska- Fairbanks



Tamara Harms  
University of Alaska-  
Fairbanks



Sarah Godsey  
Idaho State University



Mike Gooseff  
Penn State University



# The Water Tracks Team



Caitlin Rushlow  
PhD student at ISU



Melissa Barker  
Alexander Dawson School  
PolarTREC teacher



Molly Tedesche  
PhD student at UAF



Becca Risser  
Masters student at  
UAF



Margit Jaeger  
Undergrad at UAF

What is a water track?





Water Tracks

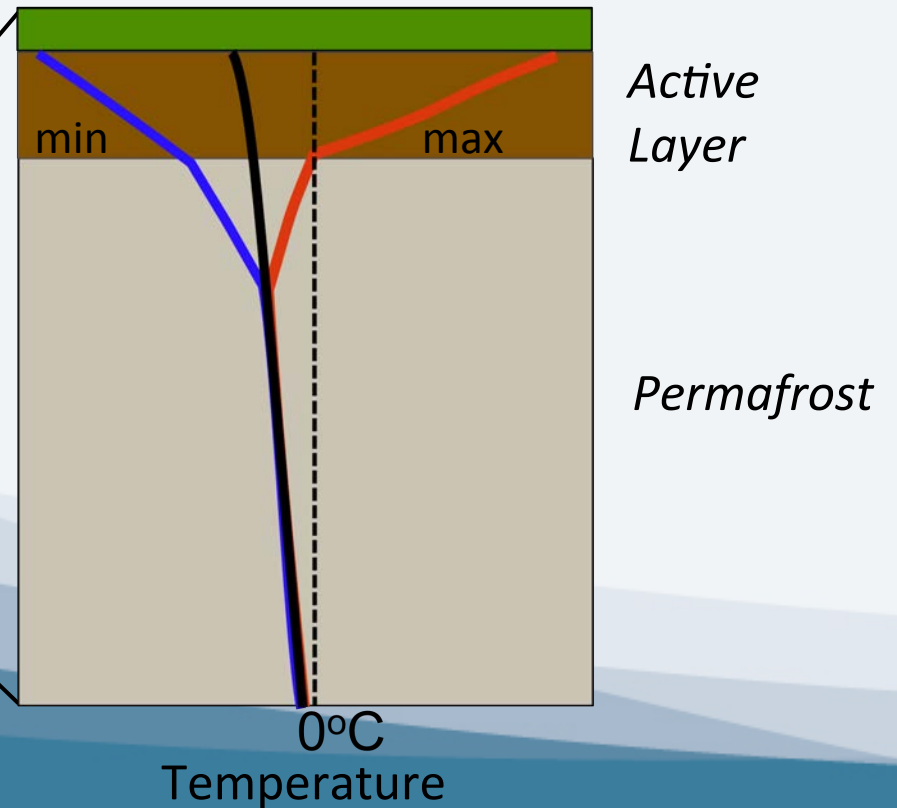
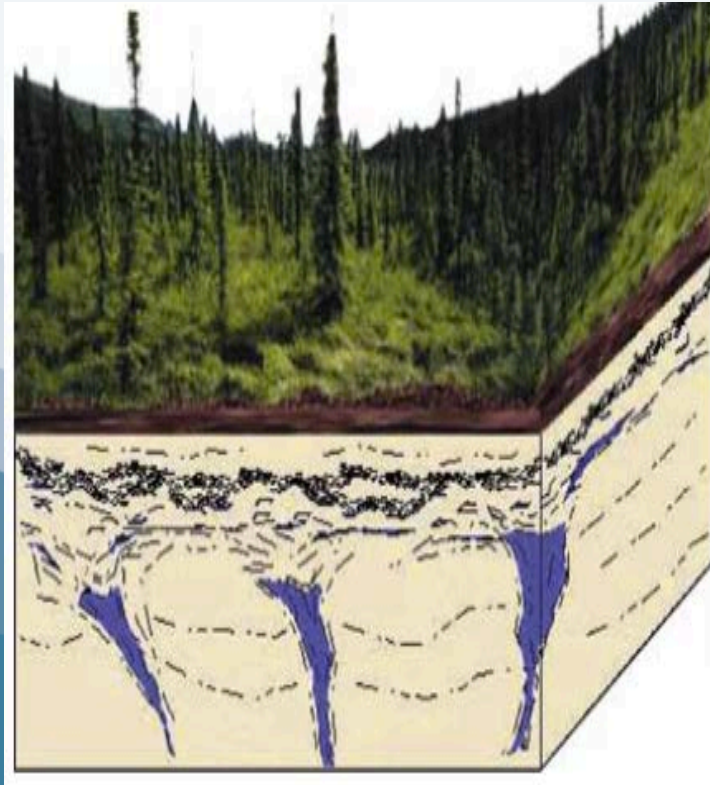


River valley



# Permafrost is ground that remains frozen for two or more consecutive years

Permafrost schematic

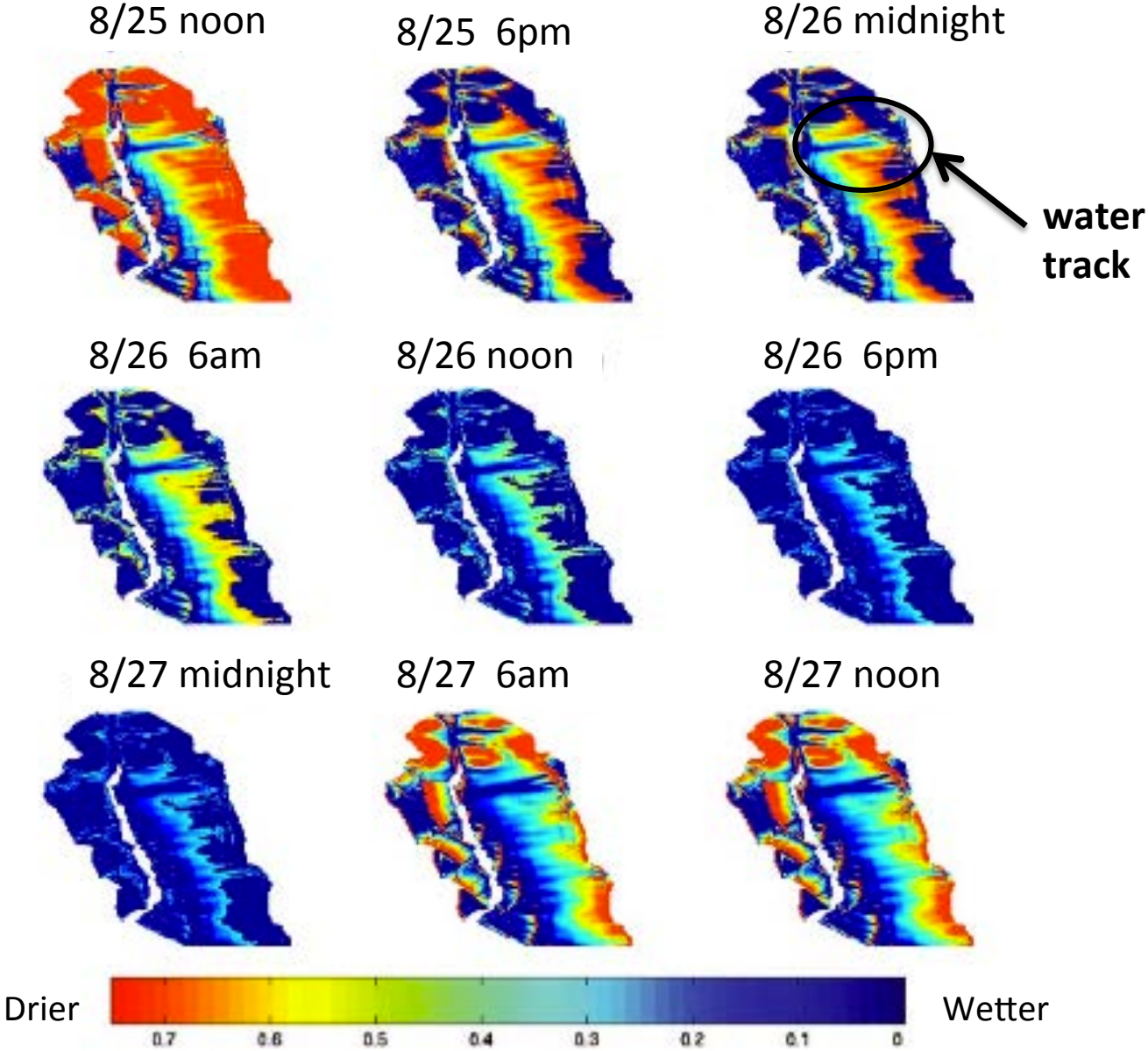


White et al. (2007)

# Importance of water tracks



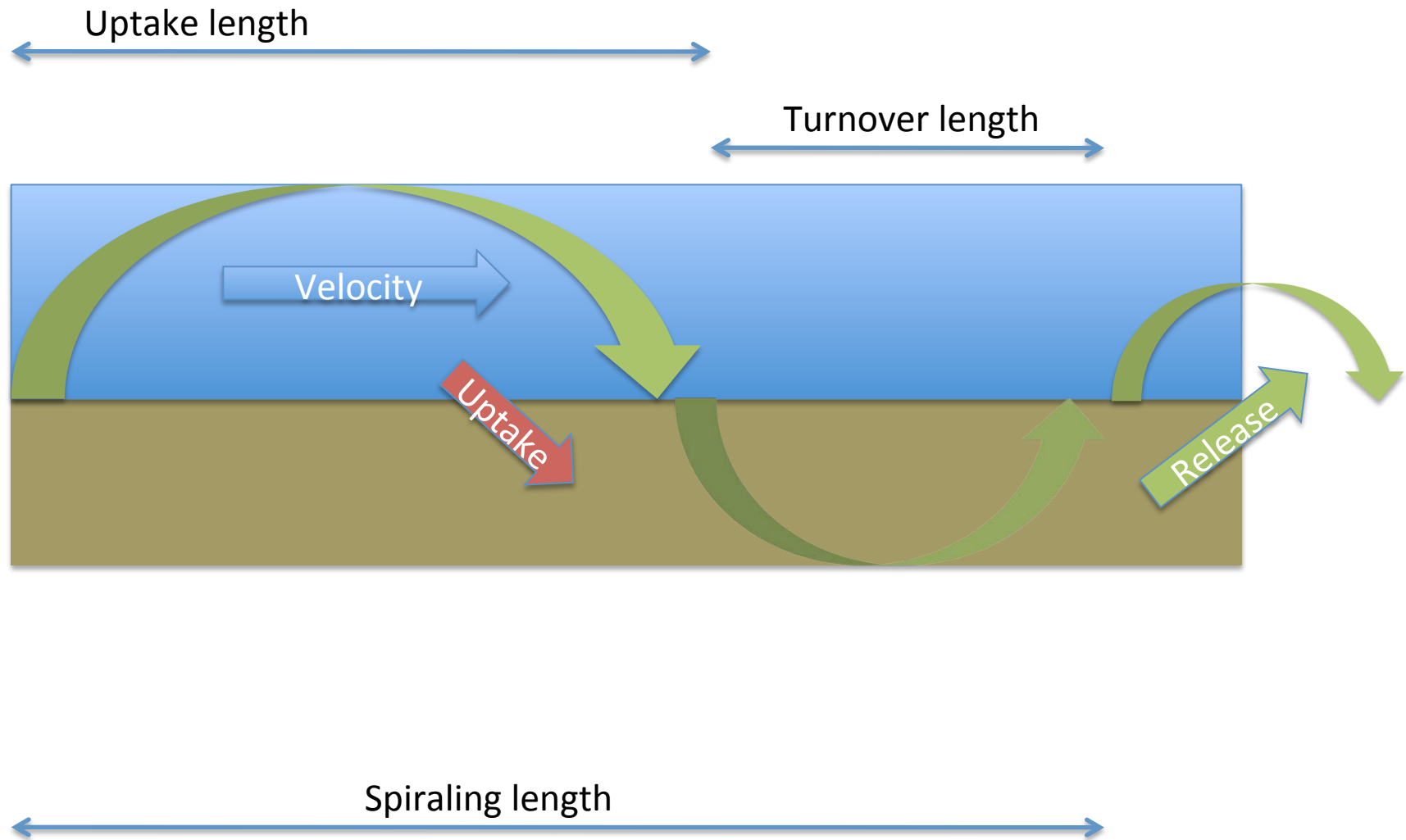
# Where are the water and solutes in the water tracks coming from?







# How far down slope do nutrients move as they cycle?



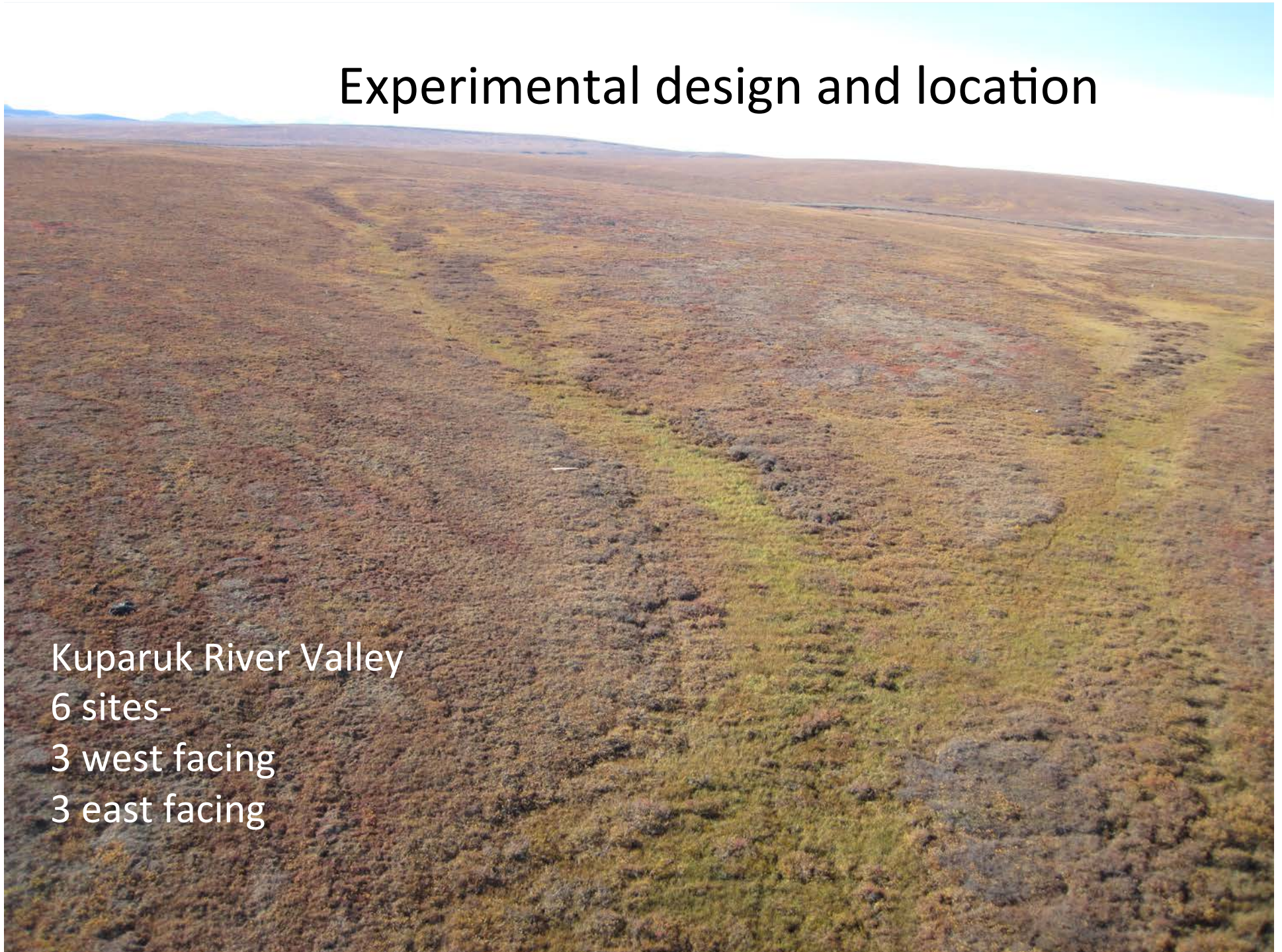
# Experimental design and location

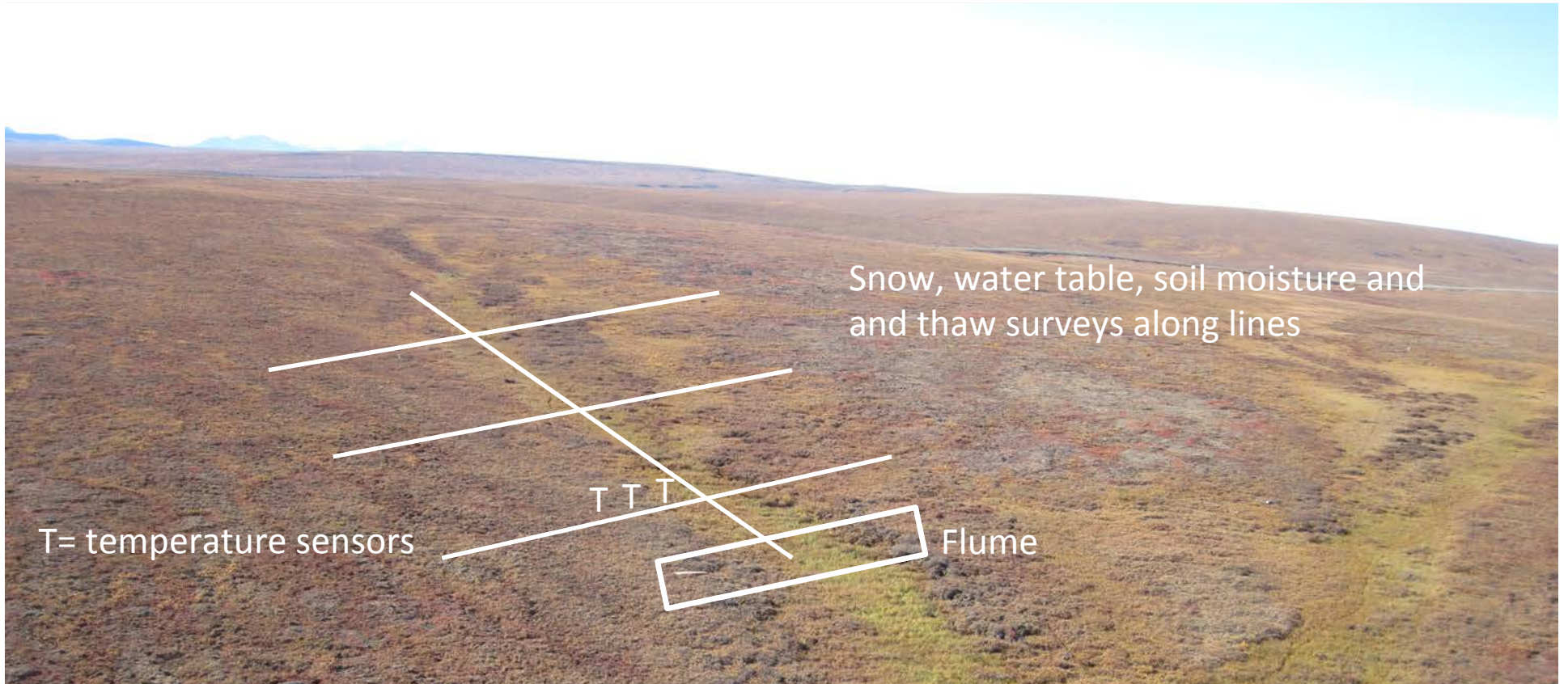
Kuparuk River Valley

6 sites-

3 west facing

3 east facing



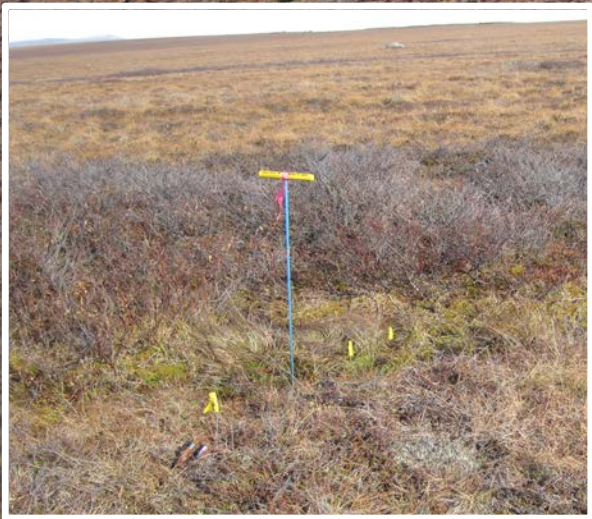


Snow, water table, soil moisture and and thaw surveys along lines

T= temperature sensors

T T T

Flume



# Measuring flow through notch



# Delivering equipment to sites



# Pre-snow melt field work

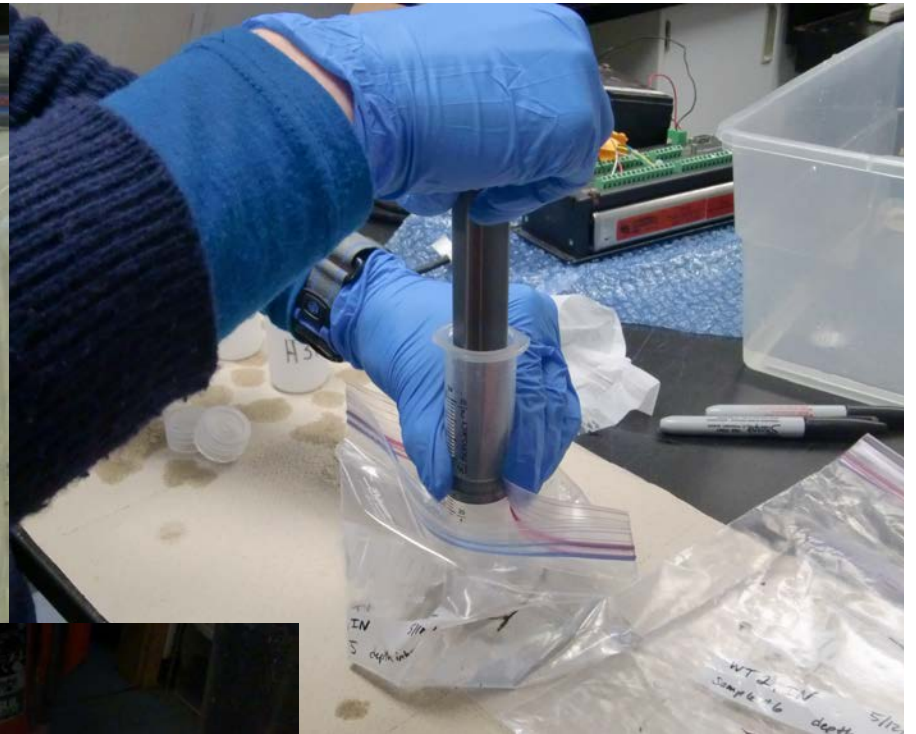
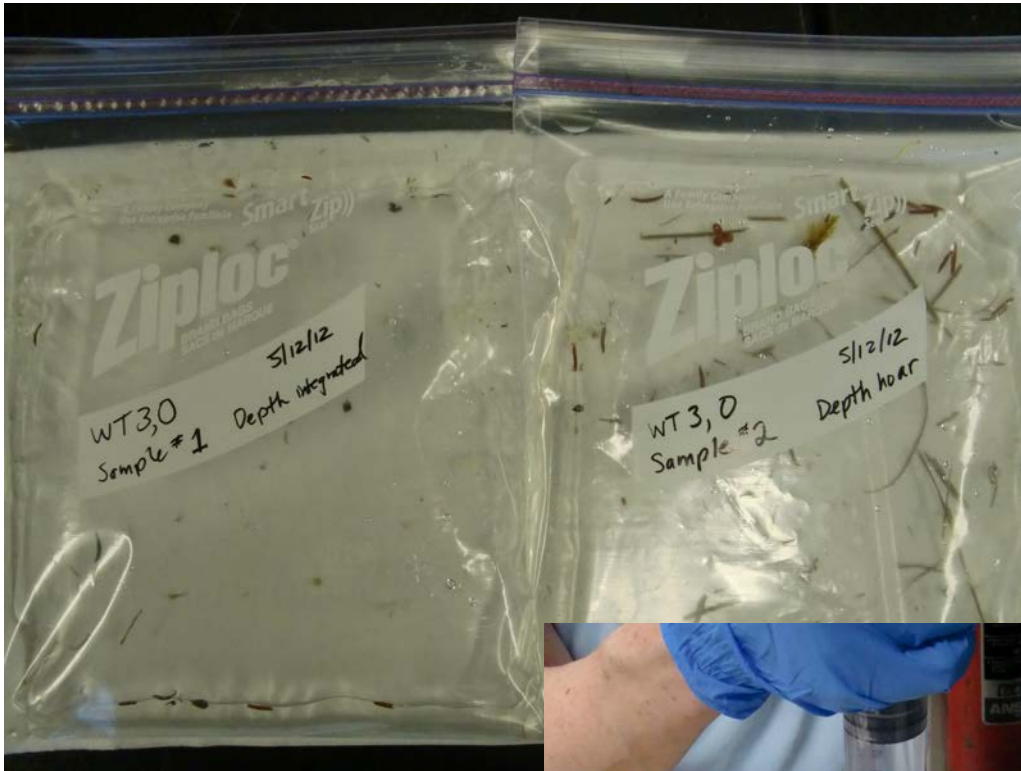









# Back at the lab...



Now we wait for the snow to melt...



An aerial photograph of a vast, flat, brownish landscape, possibly a dry lake bed or a large field. A winding river or path, appearing as a thin, light-colored line, runs diagonally across the scene from the upper right towards the lower right. The terrain shows subtle variations in color and texture, suggesting different soil types or vegetation. The overall tone is muted and earthy.

Thanks for listening!

Questions?



TEACHERS AND RESEARCHERS  
EXPLORING AND COLLABORATING

# Teachers: Join PolarTREC!

[www.polartrec.com/about/join](http://www.polartrec.com/about/join)

Every teacher can participate in different ways:

- **Following Expeditions**
- **Participate in PolarConnect Events**
- **Join the Polar Education Email List**
- **Take Online Professional Development Courses**
- **Become a PolarTREC Teacher!**



TEACHERS AND RESEARCHERS  
EXPLORING AND COLLABORATING

# Upcoming Events

Watch for and register for upcoming events at [www.polartrec.com!](http://www.polartrec.com)



TEACHERS AND RESEARCHERS  
EXPLORING AND COLLABORATING

# Thank You!

*An archive of the event will be available shortly.*  
<http://www.polar-trec.com/polar-connect/archive>

