

GoNorth! Beringia 2011: Week 04 Chat Transcript

Background: Are you a New Yorker? A European expatriate? A refugee? An exchange student? However you define yourself, chances are at least one of the “frames” involves where you are from, or the place that you find yourself today. Culture—the clothes you wear, the language you speak, even traits like your personality and worldview—are defined at least in part by your sense of place. And this fact is part of what makes each of us a unique member of the human race.

In turn, our cultural practices have an impact on our natural surroundings. As humans build their homes, clear land for their crops, extract minerals for their iPods, and mine coal to burn for their electricity, they leave an indelible mark upon the environment. Slowly, this interrelationship evolves: Place defines culture, culture redefines place, and that redefinition requires cultural adjustment.

Today, with 6.8 billion people on the planet, this action and reaction is global in scale. Hence, the worldwide changes that are emerging in the environment, such as global climate change. Today, the scope and speed of environmental change exceeds the ability of cultures to adapt. If climate change is not checked immediately, we stand to face a wave of “cultural extinctions” as entire groups of people lose their connection to the local frames that define their culture. Some of these displaced peoples, like the Inupiaq of Shishmaref, will become literal refugees, as their regions become uninhabitable.

A teenager in Ohio leaves her computer on all night, burning another few ounces of coal. A teenager in Brazil cuts an acre of cropland out of the rainforest, reducing the rainforest carbon sink, to provide for his new family. A generation ago, such actions were both isolated and easily overlooked. But that’s no longer the case. In our shrinking world, the relationships between place, culture, and change are rapidly cohering into a single mandate for action.

In light of this new understanding of global interconnection—and the dramatic risks of widespread cultural extinction—what is the role of the individual? How are individuals and cultures accountable—or even culpable—for their impact on the global community? What steps can each of us and all humans take to insert positive change in the evolution of culture, place, and change?

Some questions to possibly open the chat with or discuss prior to the LIVE chat!

How is your culture defined by place? Has your culture changed your place?

What is our responsibility toward other cultures? If our cultural practices end up changing another place/culture, what should (or can) we do to reverse that change? Or should we not?

We live in a shrinking world in which all cultures are interconnected. How does this help or hurt our attempts to acknowledge and preserve cultural heritage and our sense of place?

GoNorth! Beringia 2011: Week 04 Chat Transcript

Education Basecamp: Welcome to the week 4 chat on The Human Connection! We are so glad you could join us today. Dr Loranty is here and ready for your questions.

Education Basecamp: We are going to adjust the screen a bit so that it displays properly for everyone. If you have any trouble, please send an email to bark@polarhusky.com

GoNorth! Chat Expert: Good morning everyone!

Education Basecamp: **question submitted to Basecamp:** What is the Woods Hole Research Center?

GoNorth! Chat Expert: The Woods Hole Research Center is a non-profit scientific research institution. We study how plants affect the climate, all over the world.

Minneapolis, MN: Hi Dr. Loranty - We looked at what you have been doing. Could you tell us a bit more about it, and also could you help us define tundra and why trees and larger shrubs cannot survive there?

GoNorth! Chat Expert: Tundra is an area where conditions are too harsh for trees to grow. Tundra can occur very far north, in places like Alaska, Canada, and Greenland. It can also occur at high elevation, usually on mountain slope, in places like Colorado. Trees and larger shrubs don't do well in these places because the summers are short - so grasses and small shrubs can get nutrients from the soil faster.

Education Basecamp: **question submitted to Basecamp:** Do you travel a lot for your work?

GoNorth! Chat Expert: Yes, I'm really lucky in that respect! I've been all over Alaska, and to far-eastern Siberia, in Russia, for my work. It is one of the things I really like about my job.

Sauk Centre: Do you know of changes to the climate from your travel and research?

GoNorth! Chat Expert: Yes, definitely. One change I observed in Siberia last summer was melting permafrost. In the Arctic the ground is permanently frozen - this is called permafrost. My colleagues and I visited several places where the ground was thawing, causing lots of changes.

Education Basecamp: **question submitted to Basecamp:** What inspired you to get involved with Woods Hole?

GoNorth! Chat Expert: When I was young I really liked the outdoors, and I was interested in the environment. Science seemed like a nice thing to do because I could keep learning new things and spend some of my time outside.

C.R.E.S 2: Why are there no trees in the tundra?

GoNorth! Chat Expert: It is too cold, and the growing seasons are too short for trees to grow there.

MR.: Have you been to Chukotka to study?

GoNorth! Chat Expert: No, I have not been to Chukotka yet. But I'm starting to do more work in Russia, so maybe soon!

GoNorth! Beringia 2011: Week 04 Chat Transcript

Ms. Roberts: What do you actually do?

GoNorth! Chat Expert: My main research area involves understanding how plants consume and store carbon. I use computer field data, satellite data, and computer models to study photosynthesis over really large areas, like all of Alaska.

CRES 4: If you could observe anywhere on earth where would it be and why?

GoNorth! Chat Expert: Well - I'm lucky, because it's the Arctic - so I already get to do it! The Arctic appeals to me because it is a very remote and wild place.

Minneapolis, MN: Thank you, that was very helpful! We know tundra is changing with the climate because the permafrost is melting, have you seen this yourself?

GoNorth! Chat Expert: Yes, I saw it several places in Siberia last summer. It was very dramatic.

Sauk Centre: How do you know the permafrost melting is not 'normal'? Is there a way to tell how long the ground has been frozen for?

GoNorth! Chat Expert: Good question. Yes - it is possible to measure the water chemistry of melting permafrost, and to tell the age by measuring something called isotopes. A friend of mine here at Woods Hole Research Center does this - last summer we collected water that was about 25,000 years old!

CRES 3: Have you ever observed any unusual observations on land?

GoNorth! Chat Expert: One of the more unusual things we are seeing is that warming is actually bad for the trees in lower parts of the Arctic. We expect them to grow more as it gets warming, but it is becoming to dry for them.

Minneapolis, MN: You should go there with Team GoNorth!!

GoNorth! Chat Expert: Maybe I can next time they go there!

Sauk Centre: Is it correct that tundra covers more of the earth than any other biome?

GoNorth! Chat Expert: I don't think tundra is the largest - that is probably either boreal forest or tropical forest.

Ms. Roberts: Should we be afraid of climate change?

GoNorth! Chat Expert: Climate change is a very serious problem, and it is important that we treat it as one. But it is not something that we should necessarily be scared of. We know it is occurring, but it is not too late to do something about it.

Cres1: Are you going on the expedition with the Polar Huskies this year?

GoNorth! Chat Expert: There was some talk of that - but no decisions have been made yet. I'll most certainly be traveling somewhere in the Arctic this year though.

GoNorth! Beringia 2011: Week 04 Chat Transcript

Ms. Roberts: Have you met people who are upset about climate change because it is changing their life?

GoNorth! Chat Expert: I haven't met anyone in the Arctic that is very directly impacted. But if you think about things like all the snow we've been seeing in the eastern US recently, and how this is linked with changing circulation patterns in the Arctic, then, yes - I know some people in places like New York and DC who don't like it very much.

Education Basecamp: We have about 10 minutes left. Just enough time for Dr Loranty to answer a few more questions.

Minneapolis, MN: What are your thoughts on our role as humans in the changing climate? Do you really think we can make a difference?

GoNorth! Chat Expert: Absolutely. We humans are pretty smart - so I think we can come up with safe, reliable, solutions to meet our energy needs. And we're smart enough to realize that we can make relatively small changes in the way we live, like car-pooling and stuff like that, small changes that will make a really big difference.

Neill Elementary: How does studying trees tell you about climate change?

GoNorth! Chat Expert: One of the easiest ways is to look at the growth rings - this can tell you how much carbon trees take from the atmosphere, and how this changes when it is warmer or colder, or wetter or drier.

Neill Elementary: Does melting permafrost change the way people live in the Arctic?

GoNorth! Chat Expert: Yes, it certainly does. When the permafrost melts, sometimes the ground sinks, so if the permafrost under your house melts then the building can shift or tilt.

Sauk Centre: Can we help in your research?

GoNorth! Chat Expert: Yes! One thing me and lots of other scientists are interested in is something called phenology - this involves looking at things like the date when leaves on trees appear each spring, and how this changes from year to year.

Ms. Roberts: We are talking about how we should feel about climate change and our own role in it. How do you feel?

GoNorth! Chat Expert: Ooh, this is a good one. I think it is serious problem, so serious that even the really small things that I do - like riding my bike to work, or wearing a sweater instead of turning up the heat - are really important.

Education Basecamp: While Dr Loranty answers his last question, we would like to thank you for joining us today. We hope you not only enjoyed yourself, but learned a few things too.

Education Basecamp: Lets thank him for sharing his time with us today!

Sauk Centre: So, you think we can really make a difference with all that small stuff. That is exciting. We have been learning about phenology and are excited this can be of value too

GoNorth! Beringia 2011: Week 04 Chat Transcript

Cres1: What do you think is the most important thing you've found out at the research center?

GoNorth! Chat Expert: That would probably be that we are learning, more generally, that climate change is causing the earth to respond in unexpected ways, like trees not growing more when it is warmer. We are learning a lot - but there are still a lot of surprising details being discovered all the time.

Neill Elementary: Thanks for chatting with us today Dr. Loranty!

C.R.E.S 2: Thank You!

C.R.E.S. 5: Thanks for your time!!!

Sauk Centre: Thank you Mr. Loranty. We learned a lot. Hope you will travel with Team GoNorth

CRES 4: Thank you for answering our questions. YOU ROCK!!!!!!!!!!

CRES19: Thank you for taking your time to answer are questions!!!!!!

Ms. Roberts: Thank you!!!!

GoNorth! Chat Expert: Bye everyone, thanks for all of the great questions!

Cres1: Thank you for taking your time to answer our questions we had a lot of fun!

CRES 4: BYE!!!!!!

Minneapolis, MN: You are really a cool scientists :) Thank you for taking the time with us today

CRES 3: Thank you for taking you're time to talk to us, and answer our questions!!!!

Thank You!

Be sure to join us again next week for our second chat on the topic of The Human Connection. Keep an eye on the chat schedule for details.