

PERMAFROST DEGRADATION AND MONITORING IN ALASKA

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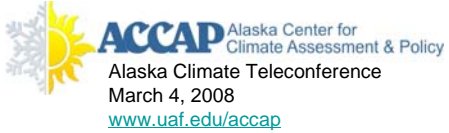
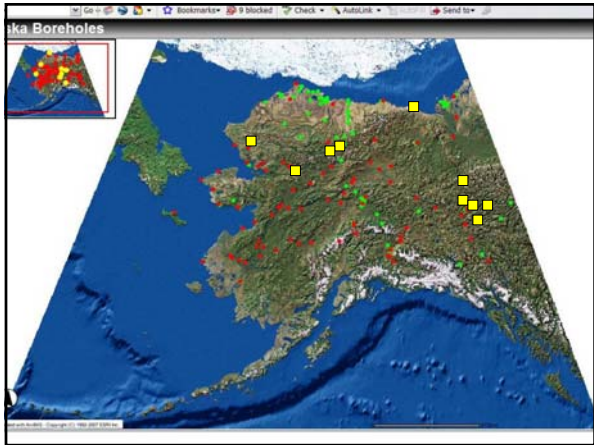


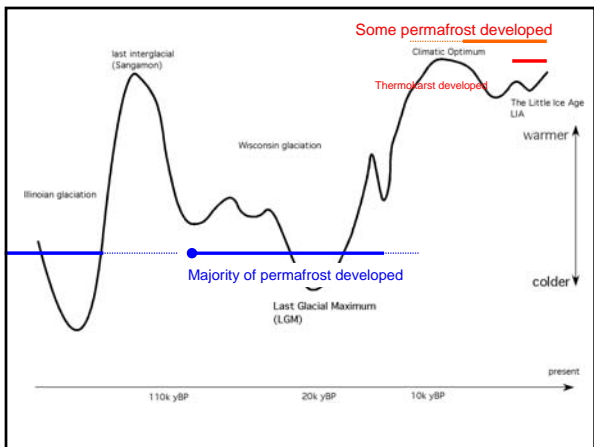


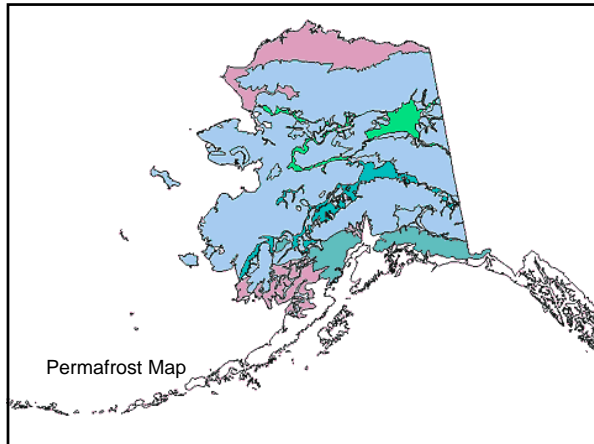


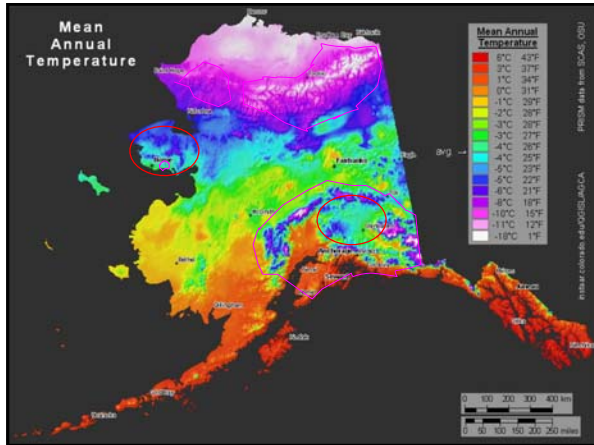
Photo by R. Hander







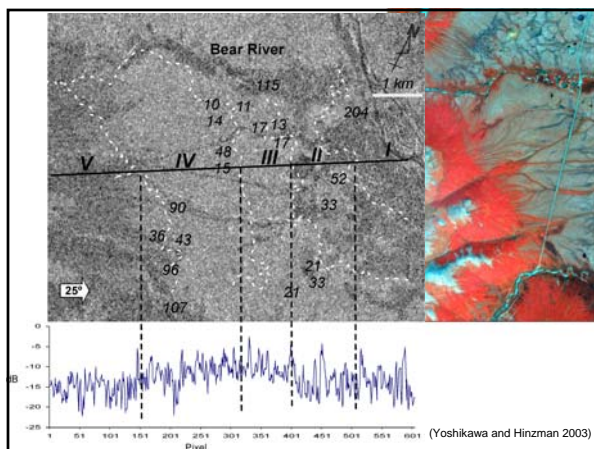




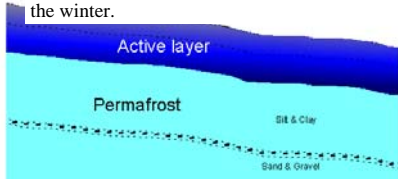




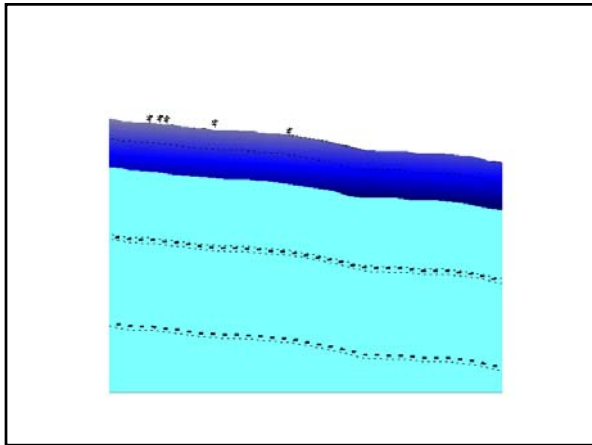


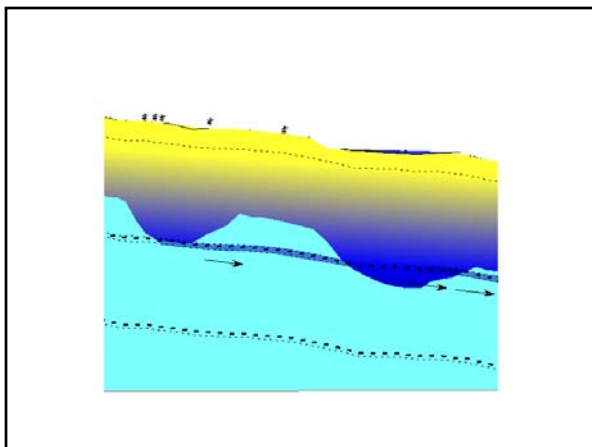


Active layer: the top layer of soil that thaws during the summer and freezes again during the winter.



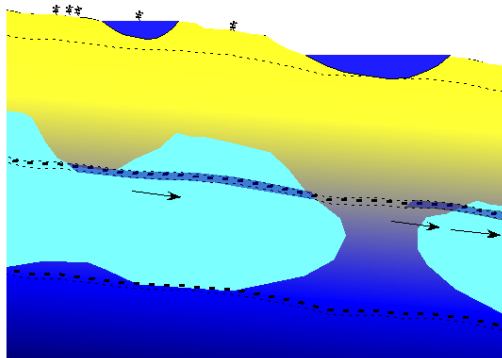
Permafrost: Thermal condition where ground material stays at or below 0 degree C for two or more years.



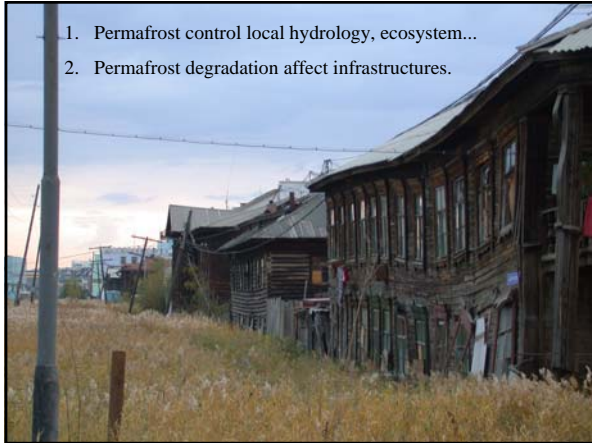


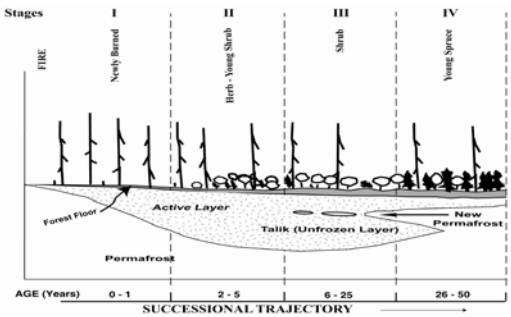
Why we need monitoring permafrost??

Permafrost control local hydrology, ecosystem...

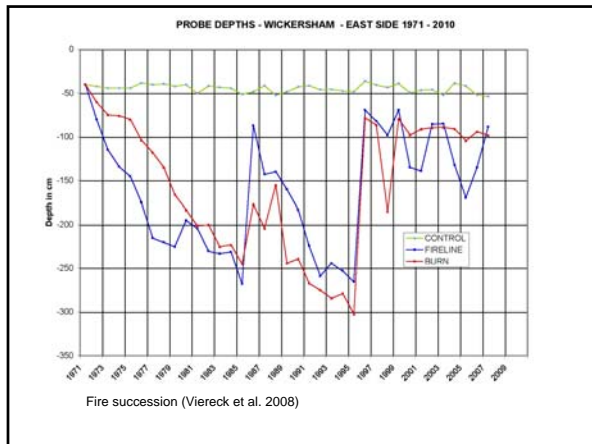


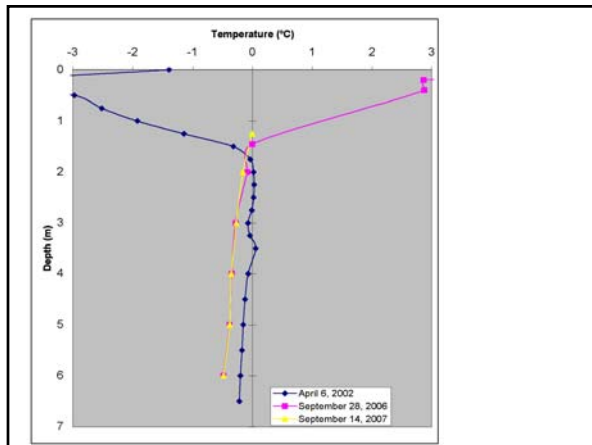
1. Permafrost control local hydrology, ecosystem...
2. Permafrost degradation affect infrastructures.

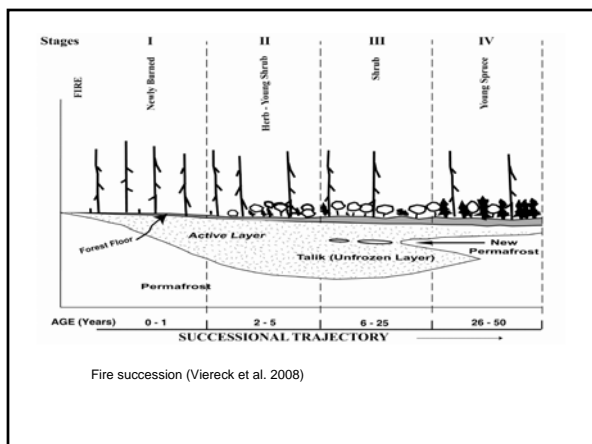


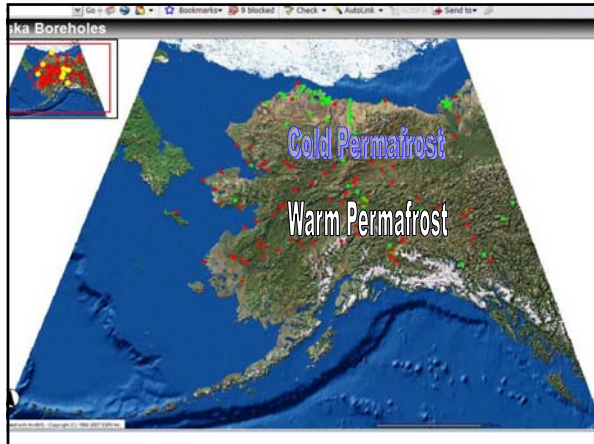


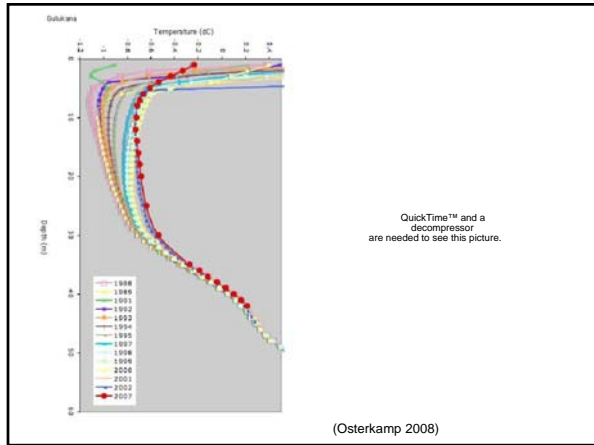
Fire succession (Viereck et al. 2008)

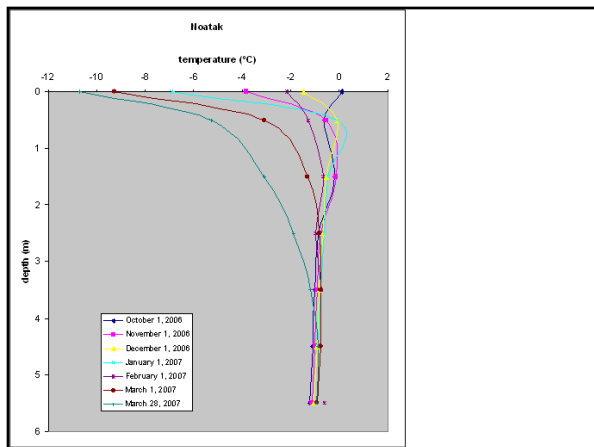








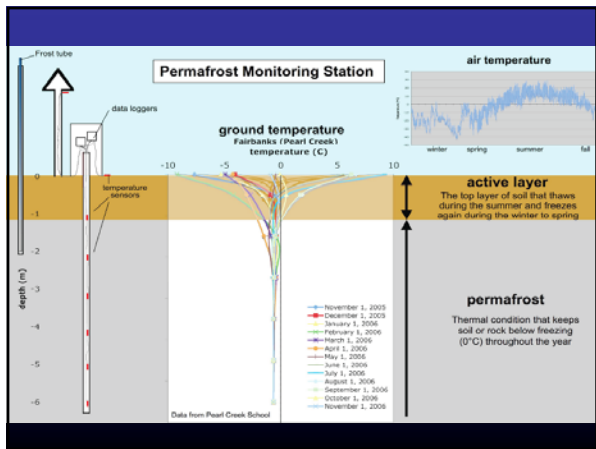






That why we should start action!
Students start monitoring permafrost temperature







Sensor calibration
sensors are calibrated in
ice bath (0°C)
(Healy, AK)



Cable connection
data loggers are checked
(Beaver, AK)



Sensor installation
sensors are lowered down the
borehole and the cables carefully
connected to the datalogger
(Healy, AK)



Looking at the data
final check with the instruments
(Noatak, AK)



Permafrost lecture
explaining the condition of the local
permafrost using the data from the station
(Ruby, AK)



Drilling: takes most time and effort. The depth
of the borehole may depend on the underlying
soil type. (Noatak, AK)

UAF UNIVERSITY OF ALASKA FAIRBANKS Permafrost Outreach Programs **Institute of Northern**

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Frost tube works great!

The students from Randy Smith Middle School visit their permafrost (frost tube) monitoring site to read the depth of the ground freezing!

posted by uaf permafrost # 2111 PM

Wednesday, November 7, 2007

Frost Tube at Randy Smith Middle School

Frost tube is great way to monitoring seasonal frost layer. It is easy to make just covered water fill in the clear tube. Whenever the ice formed, ice does not include water, the boundary of color and clear is boundary of freezing front!



