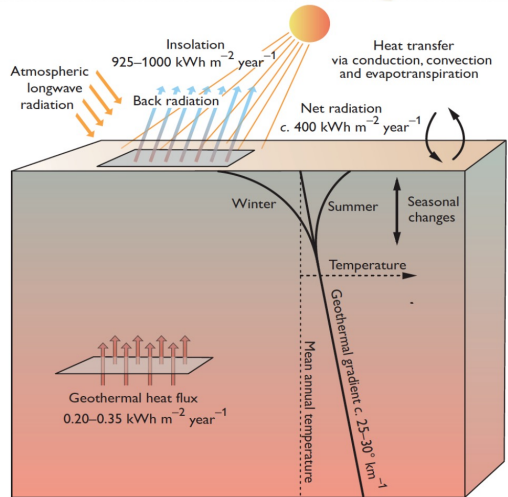


Courtesy LBNL



After Banks, 2008

Description of Issue

The actual physical processes of thawing permafrost are not that well studied. There is a huge opportunity for the scientific/engineering community to advance Arctic research. At the same time people of the north deserve protection and respect and must be engaged as knowledgeable partners in undertaking this work.

1 - Concept

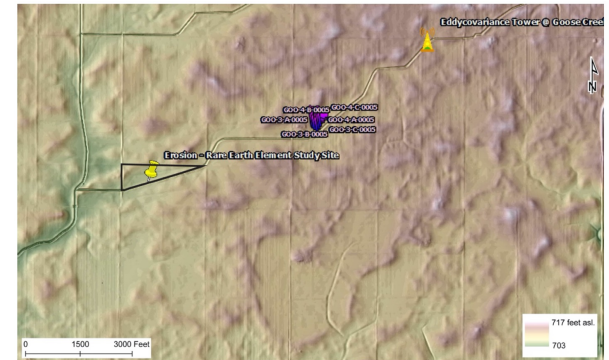
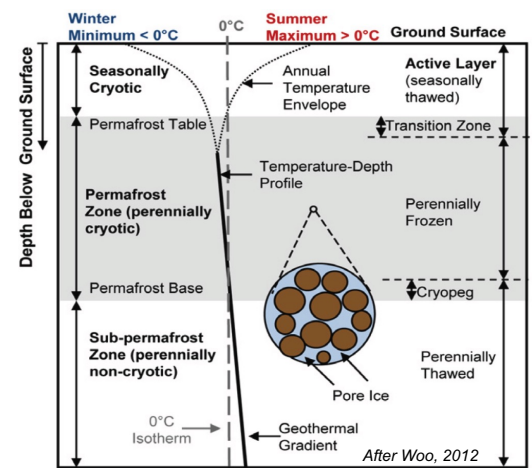
The thermal regime in northern landscapes is the most important driver in controlling the physical processes. The impacts propagate deep into the subsurface and controlled by the thermo-hydro-mechanical systems.

2 - Concept

With the potential development of additional infrastructure and installation of renewable energy systems in the Arctic it will be critical to fully understand the heterogeneity in the subsurface to mitigate geologic hazards.

3 - Concept

During the last glacial maximum, large areas of the central US lie under permafrost conditions. Could features of these ancient landscapes be used as proxies for future changes in the North?



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