

# The Yukon River Basin Active Layer Network: A Cooperative Project between the Yukon River Inter-Tribal Watershed Council and the U.S. Geological Survey

## What is the Active Layer?

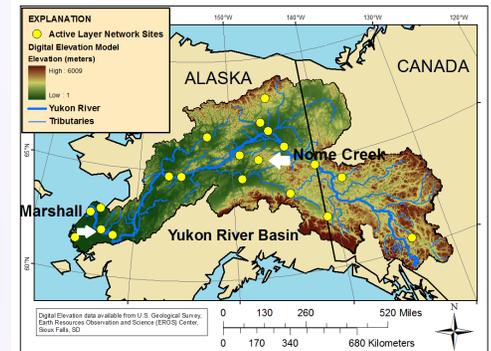
The layer of soil just above the permafrost that freezes and thaws seasonally.

## What is Permafrost?

Soil at or below 0°C for two or more years continuously.

In 2009 the U.S. Geological Survey (USGS) and the Yukon River Inter-Tribal Watershed Council (YRITWC) teamed up to install a network of sites across the Yukon River Basin to monitor the active layer. In the fall of 2009, 12 sites were successfully installed with the help of people from the local communities. Each site consists of a 50 meter x 50 meter grid, a sensor that measures air temperature, and two sensors that measure soil temperature and moisture (one just under the surface and one just above the permafrost). Within the grid, 100 measurements of the thickness of the active layer are taken and data are stored by the sensors every thirty minutes and retrieved once a year for analysis. In 2010, eight more sites were installed for a total of 20 across the basin. The 12 sites installed the previous year were also re-visited, the grid was re-measured, and the data were collected. The data collected in this project will allow USGS and YRITWC scientists to better understand the changes taking place in the active layer due to a warming climate.

## Where is the Yukon River Basin?



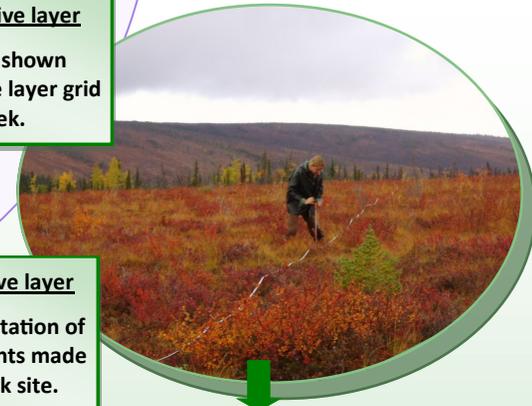
YRITWC scientist teaches students in Carcross, Yukon Territory, Canada how to set up the grid.

More information can be found at:  
<http://www.yritwc.org/Departments/Science/Reports.aspx>

For additional information contact: Paul Schuster USGS 303-541-3052 pschuste@usgs.gov  
 Carol Thomas YRITWC 907-258-3339 cthomas@yritwc.org

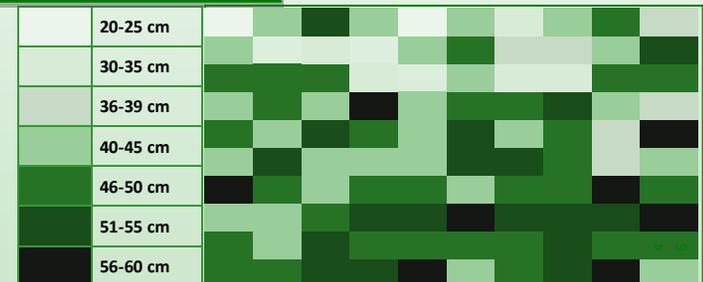
## Measuring the active layer

YRITWC scientist shown measuring the active layer grid at Nome Creek.

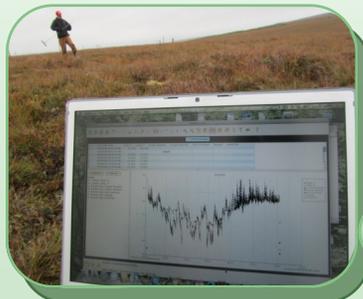


## Measuring the active layer

Plane view representation of the 100 measurements made at the Nome Creek site.



From the Field



To the office

