

**Soil Description and Sampling:**

A soil pit (1.5 m x 1 m x 1 m deep) was dug at each grid site. A gas-powered jackhammer was used to dig the frozen portion of the soil pit. Soil profiles exposed in the pits were described and sampled according to USDA-NRCS procedures. Samples were analyzed according to NRCS-NSSL procedures (pH: 1:1 water, EC: water-paste, available nitrogen by 2N- KCl, available P and cations by Mehlich-3 extract, CEC and cations by 1M-ammonium acetate pH 7, water content by drying to 100C, bulk density by dimensional block measurement-weight, texture by hydrometer, TC and TN by LECO carbon analyzer, IC by acid dissolution/carbon evolution measurement, OC by difference of TC-IC, carbon stocks calculated using horizon areas in pit OC and BD, and water content on BD samples by drying to 100C).

Soil samples to represent surface soil conditions (*crust soils*), were taken from areas within frost boils that were under various conditions ranging from bare to crusted and fully vegetated with vascular plants (having thin O-horizons). Small soil pits were opened adjacent to these areas on the boils, exposing the surface 10 cm profile and samples were collected from the pit walls in an area of 15 cm x 15 cm to the 10 cm depth. These samples were collected with a knife, in incremental depths, usually about 2 cm increments down to the 10 cm depth. Soils from each incremental depth were analyzed by the same methods mentioned for the horizon samples above.

Chien-Lu Ping ([pfclp@uaa.alaska.edu](mailto:pfclp@uaa.alaska.edu)) and Gary J. Michaelson ([pngjm@uaa.alaska.edu](mailto:pngjm@uaa.alaska.edu))

Agriculture and Forestry Experiment Station  
Palmer Research Center  
533 E. Fireweed  
Palmer, Alaska 99645  
Tel: 907-746-9462