





Fig. 1 UAF and USGS boreholes locations where long-term permafrost temperature observations have been performed for the last 35 to 40 years.



Fig. 4 (a) Map of Alaska showing the continuous and discontinuous permafrost zones (separated by the broken blue line) and location of a north-south transect of permafrost temperature measurement sites; (b) and (c) time series of mean annual temperature at depths 20 m and 15 m below the surface, respectively, at the measurement sites.



Fig. 6. Measured permafrost temperature profiles in the mid 1980s, in 1996 and in 2011 at two northernmost UAF permafrost observatories (West Dock and Deadhorse) in the Prudhoe Bay region, Alaska.

-7.0 -	
-8.0 -	
-9.0 -	
-10.0 -	
-11.0 -	
-12.0 -	
-13.0 -	
-14.0 -	
-15.0 -	
-16.0 -	

Changes in permafrost and active-layer thickness due to climate in the Prudhoe Bay region and North Slope, AK

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Fig. 2. One of the UAF permafrost observatory visited by our collaborators from Denmark and Greenland.

Fig. 5. Mean annual air (black squares), ground surface (red diamonds), permafrost surface (blue or red circles), and permafrost temperature at 20 m depth (green triangles) at two northernmost UAF permafrost observatories (West Dock and Deadhorse) in the Prudhoe Bay region, Alaska.



Fig. 7. (a) Daily snow depth (1950-2012) and (b) mean annual air temperatures (1921-2013) measured at the Barrow meteorological station.



