

Dataset Title: Lake Water Level and Temperature from Pressure Sensors

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Project Title: Collaborative Research: Changes in Lake Dynamics on the Arctic Coastal Plain of North America Over the Past Half-Century

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Classification: Hydrology

Data Overview:

Water level and temperature measurements were collected hourly in June through August for the years 2008 through 2010 several lakes near Barrow and Atkasuk, Alaska. Solinst Levelogger Jr. water level and temperature sensors were used. Water level measurements were compensated for changes in barometric pressure using a Solinst Barologger Gold which was installed on the land surface near the lakes. Loggers were attached to a cable which had an anchor (sandbag) and float. Rafting lake ice moved sensors for the first weeks of each season until complete ice melt-out (generally in late June to early July). Data from the ice rafting periods has been removed from each sensor record.

Data Format:

The data are stored in one Microsoft Excel file (.xls) with multiple tabs (*water_level_sensors.xls*). The depth data are in cm and the temperature data, where available, is in Celsius. The contents of the tabs are as follows:

Lake Key: Metadata with *YearMeasured*, *LakeName*, *SensorName*, *LatDD*, *LongDD*, and *Notes* information for each lake included.

2008_water_level: Date/time at hourly time steps and depth measurements (cm)

2009_water_level: Date/time at hourly time steps and depth measurements (cm)

2009_water_temperature: Date/time at hourly time steps and temperature measurements (°C)

2010_water_level: Date/time at hourly time steps and depth measurements (cm)

2010_water_temperature: Date/time at hourly time steps and temperature measurements (°C)

Reference to Cite:

Lyons, E.A., Y. Sheng, L.C. Smith, J. Li, H.M. Hinkel, J.D. Lenters, J. Wang, 2011. Quantifying sources of error in multitemporal, Landsat-based lake mapping, *International Journal of Remote Sensing*, in review.