**Poster Presentation**

**SEISMIC STRATIGRAPHY AND DEPOSITIONAL ARCHITECTURE OF HOLOCENE SEDIMENT IN KEUKA LAKE, NY**

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Keuka Lake, one of 11 Finger Lakes in central NY, preserves a detailed record of Holocene environmental and climate change. A combination of high-resolution seismic reflection profiles and sedimentological analyses were used to describe the seismostratigraphic unit and provide insight into the sedimentation processes responsible for the observed subsurface stratigraphy.

Approximately 145 km of high-resolution seismic reflection profiles were collected using an EdgeTech sub-bottom profiling system that uses CHIRP technology with a sweep frequency of 2-12 kHz, yielding a vertical resolution of 0.2 m. Fifty-six E-W transects and 2 N-S transects were made. The acquisition fish was towed at a speed of 4 knots at a depth of 1 m. A non-differential GPS shipboard satellite navigation system was employed to record latitude and longitude coordinates. Depths were determined assuming a velocity of sound of 1500 m/s. Twenty-four dredge samples and 2 piston cores were collected in order to ground-truth seismostratigraphic facies and provide a fairly complete stratigraphic and sedimentologic description.

The Holocene sequence is the uppermost acoustic package and consists of laterally continuous, low amplitude, parallel to subparallel reflections near the base of the unit but is more acoustically transparent closer to the sediment-water interface. The sequence is undeformed, blankets older sediment and is 0-12 m thick. The unit displays alternating olive gray and black laminae that are organic-rich (1-5%), carbonate-poor (3-14%) and have a median grain size of medium to very coarse silt (8-32 µm). At least 7 reflections are recognized in the bottom two-thirds of the unit that may correspond to variations in grain size. Concurrent high values of magnetic susceptibility and grain size in the cores suggest a greater flux of terrestrial material into the lake. This interpretation is substantiated by the presence of thicker, dark reflections closer to shore that become thinner and more diffuse basinward, which are inferred to be deltaic deposits. Discharge into the lake was likely greater during the early to mid-Holocene. This is consistent with lake level data from other Finger Lakes that reveal evidence for the highest lake levels during the Hyspithermal and relative lowstands during the Neoglacial.