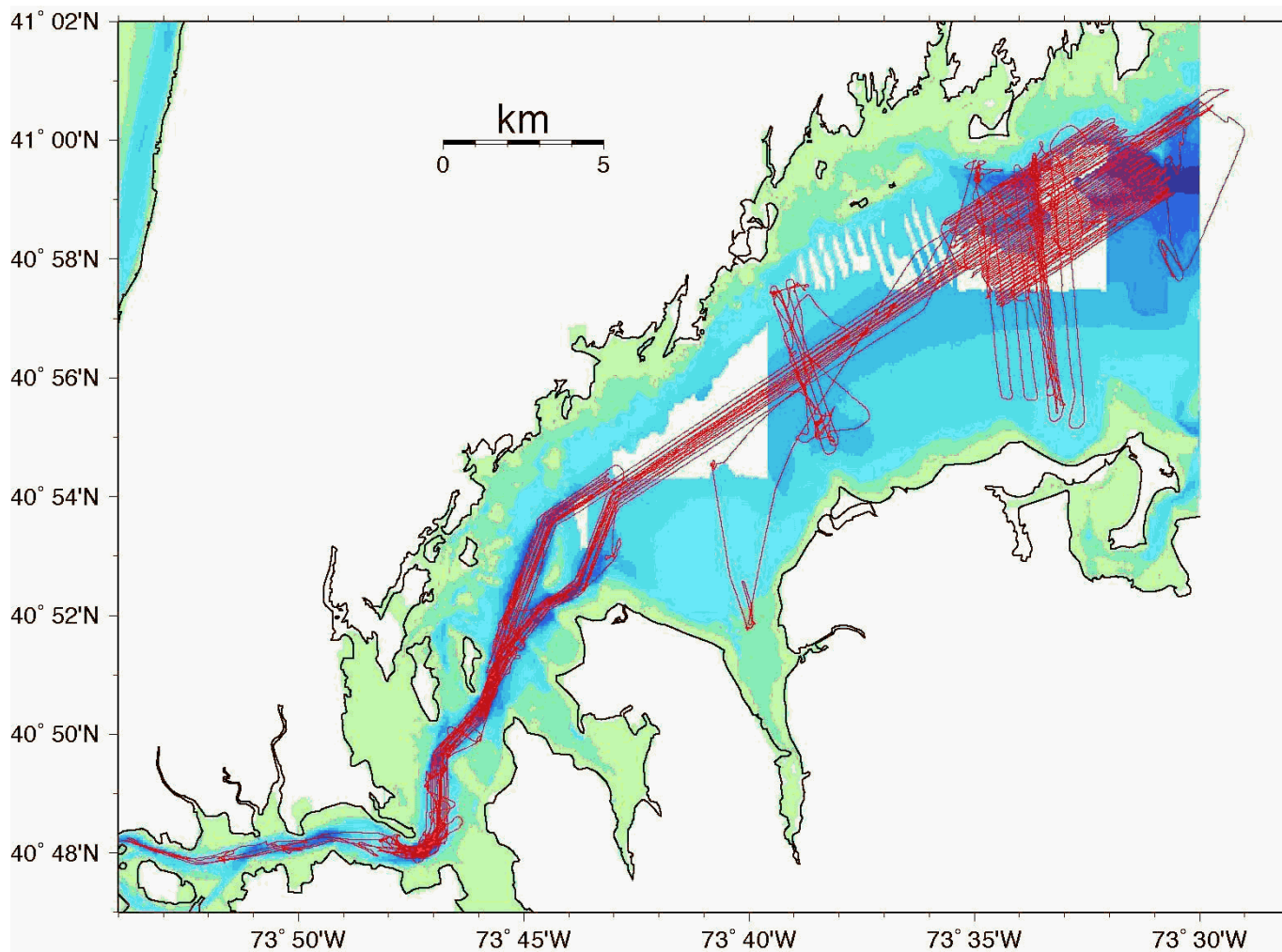


HIGH RESOLUTION GEOPHYSICAL SURVEY OF WESTERN LONG ISLAND SOUND OFFSHORE NEW YORK: A SEAFLOOR MORPHOLOGY SHAPPED BY GLACIAL FEATURES, TIDAL CURRENTS, AND HUMAN ACTIVITY

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Western Long Island Sound, near metropolitan New York, averages 16m in water depth, with elongated depressions up to 10m deep occurring around its axis. These depressions are currently interpreted as ancient drainage channels that were cut into lake deposits some 15,500 years ago, when glacial Lake Connecticut occupied the Long Island Sound estuary and completely drained away. In June 2006, as part of a geoscience educational project, we surveyed areas of Western Long Island Sound, with the *R/V HUGH SHARP*, Using its high-resolution multibeam bathymetric sonar and a chirp seismic profiler that imaged the Holocene sedimentary strata. Preliminary analysis details fields of sand waves, scour marks, outcropping moraines, pipeline and other human artifacts. Together, this data suggest that the eastward deepening trough within the study area exposes a glacial-sculpted surface, and that tidal currents produce long E-W drift in the shadow of a shallow outcrops (possibly, some moraine block). This interpretation is consistent with that proposed by Poppe et al [Geo-Marine Letters, 26, 59-68, 2006] for Eastern Long Island Sound based on a similar high resolution survey, and may characterize most of Long Island Sound. Grain size analysis for 9 gravity cores collected within the survey area will test the energy of the current regime, and confirm (or not) this interpretation.

Additional Resources: <http://www.explore-the-sound.org>



Red lines indicate survey tracks of the R/V Hugh Sharp