Lake Rescue is a natural, but artificially controlled lake located near Ludlow, VT that was profoundly impacted by Tropical Storm Irene in August 2011, causing turbidity for several weeks because of the influx of sediment during the storm. Prior to this event, two sediment cores were collected from Lake Rescue in June 2011 in order to address concerns of eutrophication and increased sediment/nutrient influx into the lake. These cores, along with new ones collected in February 2012, provided an opportunity to compare the pre- and post-Irene conditions within Lake Rescue.

The six 2012 short cores (up to 45 cm in length) were collected from the ice surface using a gravity corer, one in Lake Rescue itself, and a transect of five others in a smaller section of the lake, Round Pond, located near where Black River enters the lake. A longer core was also collected using a piston corer. Visual logs of each of these were made prior to sediment extrusion. Organic carbon and nitrogen content in the sediment was determined at a resolution of 1 cm with an elemental analyzer and carbon to nitrogen ratios were calculated. These ratios help to identify episodes of increased input of material from the watershed, and provide information on nutrient sources and levels of productivity.

A subset of samples was analyzed on a Beckman Coulter LS230 laser scattering particle size analyzer to help determine sediment grain size. This will determine storm magnitude since particle size of sediment is directly related to run off intensity.

Two of the short cores will be ^{210}Pb dated and wood fragments from the longest core radiocarbon dated to determine an age model and sedimentation rates. Establishing a sediment chronology will contribute to our understanding of the variability in the occurrence and magnitude of extreme hydrological events like Irene.