Intact shipwreck discovered in Lake Huron with the help of UNH mapping robot

A team of researchers from the University of New Hampshire recently made a groundbreaking discovery in Lake Huron. They were part of a world-renowned team that found an intact shipwreck deep below the lake's surface. The ship, called *Ironton*, sank in 1894 and had been preserved in a remarkable state ever since.

The discovery was made possible through the use of UNH's autonomous surface vehicle (ASV), known as BEN (Bathymetric Explorer and Navigator). BEN provided the team with state-of-the-art underwater mapping technology that was instrumental in the discovery of the shipwreck. The technology allowed the team to explore the lake's depths with precision and accuracy, uncovering the hidden secrets of *Ironton*'s final resting place.

3D topographic and acoustic backscatter maps

During the expedition, UNH collaborated with several search teams made up of scientists, historians and underwater archaeologists, including from the state of Michigan and the Ocean Exploration Trust. The latter was founded by famed explorer Robert Ballard, who is best known for his discovery of the wreckage of the *Titanic*. Together, these teams worked tirelessly to uncover the secrets of *Ironton* and shed light on its place in history.

"This was an exciting expedition for our researchers and students to be a part of and is exactly the kind of ocean mapping BEN was built to do", said Val Schmidt, principal research project manager and UNH team lead. "The autonomous surface vehicle is designed to explore the seafloor or lake-beds, especially in areas that may be too deep for divers or too shallow for larger ships."

BEN is operated by [UNH's Center for Coastal and Ocean Mapping](#) (CCOM) and contains state-of-the-art seafloor mapping systems. The 3.65-metre, diesel-powered, self-driving boat is equipped with a high-resolution multibeam sonar that allows it to make 3D topographic and acoustic backscatter maps of an ocean floor, or for this mission, a lake-bed. BEN worked in tandem with NOAA's Great Lakes Environmental Research Lab's RV *Storm*, which has similar equipment, to map the area where *Ironton* was thought to be located. After days of mapping, persistence and determination, the team produced an image of a shipwreck that matched the description of *Ironton*.

"The sonar images were spectacular", said Schmidt. "The vessel was preserved in the Great Lake resting right side up, masts still standing as though it just sailed down to the bottom of the lake."

BEN's seafloor mapping systems include a Kongsberg EM2040P multibeam echosounder and Applanix POS/MV navigation system. CCOM developed mission planning and 'back-seat driver' control software designed specifically for piloting BEN. BEN was manufactured by ASV Global, in a design collaboration with CCOM.

UNH's autonomous surface vehicle, BEN, departs from Rogers City Marina to assist in the discovery of the 1894 shipwreck, Ironton, in Lake Huron. (Image courtesy: University of New Hampshire)