

Comparative analysis of bathymetric lidar and multibeam sonar for benthic habitat characterisation

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The need to classify and characterize benthic habitats is a core necessity in many scientific fields such as ecology and geology, with applications branching out to a variety of industries, from fisheries to oil and gas, including but not being restricted to seaway management, dredging operations, and many more.

To this end, improvements in bathymetric lidar technology are opening promising new opportunities for ultracoastal surveying. By leveraging the high speed and positional stability of aerial drones, bathymetric lidar allows precise and efficient surveying of the “white line” zone over large distances, a feat previously made difficult due to the hardships of navigating ships in very shallow waters, and land surveyors into the water respectively.

We present a comparative analysis between traditional acoustic methods using multibeam echosounders, and aerial lidar to measure the bathymetry of strategic locations located on the North Shore of the St-Lawrence River in Quebec.

We also present a categorization of habitats using digital terrain models extracted from these representations.

