

RESEARCH PERFORMED TO-DATE

The Coalition Navigation research program has been conceived with the idea of supporting science-based regulations. Unlike other organizations which have expressed their discontent with the judicial void in the Canada Shipping Act with regards to the environmental impacts of motor boats, Coalition Navigation is unique in that it proposes solutions, solutions to put an end to futile community polarized debates.

To this end, two studies on the impacts of wake boats with ballast engaged have been performed to date. They are the 2014 Université du Québec à Montréal research on the impacts of the powerful waves of wake boats and the 2015 Université Laval investigation of the environmental consequences of the water columns that descend behind the propellers of wake boats. These two studies are described below.



A **2014** research project by the Université du Québec à Montréal revealed that the waves of wake boats with ballasts in operation [must travel 300 metres before their power dissipates below natural levels](#). Waves carry a great amount of energy and travel great distances. Arriving onshore, waves slow down and crest, disturbing the bottom and re-suspending sediments in the littoral zone. The energy and height of these unnatural waves are capable of significantly higher erosion rates of shorelines. Shoreline erosion also contributes to the filling in of waterways, nutrient release from the soil and eutrophication.



A **2015** study by Université Laval indicated that the water column behind the propeller of a wake boat with ballasts engaged, [descends at least 5 metres](#). The latter study suggests that in depths of 5 metres or less, the sediments are re-suspended, releasing phosphorous in the process and giving rise to the proliferation of aquatic plants, algae, plankton and cyanobacteria. The power and turbulent wash is susceptible to damage and perturb fauna and flora. Motorboats are the principle vector of propagation of invasive species such as Eurasian milfoil, the propeller and wash fragmenting the plant, making it

multiply.

This information could be applied to any bathymetric map to classify any given waterway, or sections of the waterway, to define parameters for a 300 metre minimal distance from shore and 5 metres of depth, regarding wake boats and the use of wave amplifiers.