



## **Ocean Gliders in Eastern Canada**

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Since 2010 the Ocean Tracking Network (OTN), the Marine Environmental Observation, Prediction and Response (MEOPAR) Network of Centres of Excellence and the Ocean Frontier Institute (OFI) have jointly funded Dalhousie University's glider program. Our fleet of autonomous ocean vehicles (7 Teledyne Webb Slocum gliders & 2 Liquid Robotics wave gliders) has traversed more than 78 000 km in support of investigators across Canada and the USA. Data collected have been used to augment and complement various monitoring programs in Canadian marine waters related to: validating models of ocean temperature and salinity; tracking acoustically tagged animals; environmental assessments; ocean conditions and salmon migration; quantifying marine mammal distribution and habitat on the east and west coasts of Canada. This presentation will focus on the use of ocean gliders to monitor baleen whale presence through acoustic detection and identification on the Scotian Shelf and in the Gulf of St. Lawrence (GSL). In 2017 there were 18 known deaths of the endangered North Atlantic right whale in the NW Atlantic, including the GSL. Such mortality rates may render right whales functionally extinct in ~25 years. In 2017 and 2018 the government of Canada instituted static and dynamic fisheries closures and vessel speed restrictions in the GSL to reduce the risk of fishing gear entanglement and vessel strikes. Such measures may have contributed to the reduction in observed right whale deaths and entanglements in the GSL, though they have likely impacted regional fishing and shipping economies. Starting in 2015, OTN/MEOPAR gliders equipped with passive acoustic monitoring systems used to report whale species and presence and location in near-real time, echosounders used to measure right whale food concentrations, and additional sensors to measure physical and chemical water mass properties, have been providing data essential for research and for guiding management of fishing and shipping practices. With recent additional support from Fisheries and Oceans Canada, the program has successfully provided near real-time data to government, research, industry, and public agencies that have proven to be instrumental in mitigating risks faced by North Atlantic right whales.