

Reducing Ghost Gear in the Maine Lobster Pot and Trap Fishery using Smart Buoys

SFP, Blue Ocean Gear, Gulf of Maine Lobster Foundation

Project Description

In the Gulf of Maine, an estimated 175,000 lobster traps are lost on an annual basis. The economic value of this loss is staggering. It is estimated that both direct and indirect costs, including lost revenue from reduced catch, the replacement cost of the gear, and the impacts of derelict fishing gear can amount to \$16,000,000 in annual losses for the lobster fishery. Derelict fishing gear can be harmful to marine life and can be a navigational hazard. Cleaning up derelict fishing gear is not as easy as it sounds, as it's illegal to handle a lobster trap that you don't own. Until recently, preventing gear loss has been largely unachievable, and only cleanup, which is reactive and costly, has been a solution.

Blue Ocean Gear provides Smart Buoy technology for tracking and monitoring deployed gear. Smart Buoys can be attached to most types of fishing gear to prevent gear loss, derelict gear, or ghost gear. Last year fishermen used over 1,000 Smart Buoys and were alerted if anything anomalous happened to their gear, including, if their gear has moved due to a storm or another vessel or anything else.

In the Gulf of Maine, lobstermen have used Smart Buoys with on-demand gear as part of trials with on-demand gear to prevent potential impacts to the endangered North Atlantic Right Whale. It appears that the use of Smart Buoys alone, without the use of on-demand gear, is more desirable for lobstermen because it does not change the way they fish. They can simply attach it to their main surface buoy by replacing their pickup buoy with a Smart Buoy. With a Smart Buoy on the line, lobstermen have higher success finding their gear and avoid gear loss, because they can see from their phone and plotter where their gear is in real time. If a whale is suspected to be entangled, the lobsterman will receive a SMS alert and can forward the coordinates to the authorities to enable quicker response times for the rescue teams.

The Gulf of Maine Lobster Foundation (GOMLF) is a nonprofit organization based in Kennebunk, Maine that coordinates with lobstermen, scientists and local communities to support a healthy lobster fishery in the Gulf of Maine. GOMLF was established in 2000 and has been active in improving lobster science, management and the sustainability of the resource.

In the Gulf of Maine, lobstermen fish singles or strings of pots. Offshore lobstermen can set 40 strings of 20 lobster pots for each string. Blue Ocean Gear will provide 3 vessels with up to 40 Smart Buoys each (one buoy per string is recommended). In addition, 2 battery chargers and 1 Plotter Link transceiver will be provided per vessel. The lobstermen will be selected by Blue Ocean Gear and later approved by GOMLF. GOMLF would own the buoys so if the vessel owner leaves the fishery, GOMLF can transfer the buoys to another vessel. The initial training and ongoing support will be

conducted by Blue Ocean Gear, both in-person and virtually. The lobstermen will monitor their gear from the phone app and/or chart plotter. After the season Blue Ocean Gear will provide a report on the number of sets per vessel, any anomalous events to their gear, and % of gear unrecovered, if any.

The software plan includes the Iridium subscription per buoy, as well as access to their buoy data via the mobile app, web app, and plotter.

Training and implementation of the Smart Buoys is estimated to be complete after 60 days of receipt of the product. The time required per vessel is 2-4 hours upfront and 1-2 hours per month ongoing support if needed. The implementation timeline can begin mid-season as there are already captains accustomed to working closely with the Smart Buoy provider, especially around short timelines when vessels are in port. The 2025 end of year report will be available in January 2026. A mid-year report will be available in July 2025. The second mid-season report will be available in July 2026 and the Final Report will be available in January 2027.