What Are Ropeless Fishing Systems?

Emerging technologies offer multiple benefits

In trap and pot fishing, typically used for lobster and crab, vertical ropes connect gear on the seafloor to buoys on the surface, enabling fishermen to find and haul their catch. New acoustic ropeless fishing systems, by contrast, connect to existing traps or pots and enable fishermen to remotely signal their gear to surface with fewer—or even no—vertical lines.

1 A ropeless system sits on the seafloor attached to the first trap and contains an acoustic modem, a stowed rope and buoy or a lift bag, and GPS, which records the location when fishermen deploy their gear.

2 Fishermen return to the last known location, and a second, paired modem, mounted on the vessel, uses high-frequency sound waves to remotely contact the underwater modem and trigger the lift bag to inflate or buoy to surface.

3 At the surface, a buoy, blinking light, or reflective lift bag helps fishermen find their gear.

4 The pots or traps connected to the ropeless system can then be hauled up.

Ropeless systems offer many benefits, including:

Reduced gear loss (ghost gear). Expensive trap and pot gear can become tangled or lost at sea because of interactions with other gear, storms, and strong currents. Ropeless systems can actually increase fishermen's ability to retrieve their gear.

Increased efficiency and safety. Ropeless systems can save fishermen time finding and hauling gear, and using fewer ropes reduces the risk of injury.

Expanded fishing opportunities. Ropeless systems may allow fishermen to access areas otherwise closed when endangered species are present.

Improved fisheries management. These systems provide greater and more accurate data about lobster fishing, which can contribute to a more sustainable fishery.

Protection of wildlife. Ropeless systems present minimal threat of entanglement to marine mammals and turtles and can also be programmed to inform vessels when whales are nearby, helping to prevent ship strikes.

Lift bag system ← **1** → Buoy and stowed rope system