

Fishing gear as a data collection platform: Opportunities to fill gaps in ocean observation networks

Abstract – While the open oceans are covered by automatic collection devices, there is a lack of sub-surface physical oceanographic data in coastal and shelf-seas. Commercial fishing gear such as bottom trawls, pots, traps and long lines can act as platform for oceanographic sensors, which measure physical oceanographic data during normal fishing operations. The lack of ocean data in coastal and shelf-seas holds back operational oceanography, weather forecasting, maritime industries, and climate change monitoring. This same data can benefit fishing operations and fisheries management. We quantify and compare the existing sub-surface data coverage with the spatial distribution of fishing activities, showing that integration with fishing could fill in some of the most pressing gaps in existing ocean observation systems in coastal and shelf-seas. An emerging network of international scientific and industry programs are collecting oceanographic data with fishing gears. Bering Data Collective is an initiative working with EMODnet to promote communication and data standardization between existing programs, and centralized distribution pathways. Progress and future plans on data flows and management are showcased.

Keywords – profiles, CTD, data gaps, shelf-seas, science-industry collaboration, observation networks, fishing, data management.