UK monitoring system sets out to catch illegal fishing

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A composite image of the Western hemisphere of the Earth. Credit: NASA

As many as one in five fish are landed outside of national or international regulations. These high numbers are not due to stray boats but are the result of industrial-scale pirate operations. The value of this trade could exceed more than $20bn (17bn euros) a year, according to some estimates. *New Scientist* said up to 9000 kilograms of seafood is stolen from the ocean every second. A satellite watchroom in Harwell, Oxfordshire, UK, is on the lookout for illegal fishing.

Reuters said the project is now live and capable of monitoring waters across the world's oceans. Chile and the Pacific island republic of Palau will be among the first to use the system to help protect their fishing interests, BBC science correspondent Jonathan Amos reported Thursday. The initiative is Project Eyes on the Seas at the UK Satellite Applications Catapult. Behind the project is the Pew Charitable Trusts and UK Satellite Applications Catapult. The system works through satellite and other data to watch the activities of vessels. With use of its built-in algorithms, the system can set off alarms if there is any suspicious activity. The vessels are tracked and their movements analyzed, taking into account sea conditions and fish locations.

In the words of *New Scientist*, "A giant map of the world displayed on a video wall can instantly detect if fish are being stolen from the ocean." On display is the location of large fishing vessels on top of satellite images combined with a topographical map of the ocean floor, said *New Scientist*. Transponder-tracked ships are represented by glowing blue dots.

The BBC turned to Pew's Tony Long who illustrated the kinds of conditions that are under watch: A proximity alert may tell them when vessels are coming together, maybe to exchange catch; a slow-speed alert indicates if a vessel has come down below five knots, which might be because fishing gear has been put into water. Algorithms were built using historical data. Safety and management transponders routinely

fitted to many vessels detail their whereabouts to satellites. This is not enough, however, Some of the smaller boats, "dark" boats, don't have transponders. In some boats where they are fitted, they may be disabled or spoofed. Sandrine Ceurstemont in *New Scientist* said "Although it is against the law to switch off the tracking device, a vessel may do so to fish illegally in a protected area, causing it to vanish from the display. The disappearance sends an alert to the system in 18 milliseconds, whereas previously it took a team of analysts up to 18 hours to pick up on a suspicious ship."

That is where satellite radar data comes of value, from which the larger boats cannot hide, said Amos. The hope is that by targeting the trans-shipment vessels, with their mid-ocean exchanges of illegal catch, many of the smaller boats can be disrupted as well. Amos said Palau's economic waters extend over an area the size of France, and has a challenge in the form of problematic boats from Asia. Koebel Sakuma, a presidential advisor, told the BBC that as a small country with limited resources they had to patrol the vast area, with a vessel that was donated by Australia, He said the technology will help them use their assets more efficiently. Amos added the information could also help out more developed nations to decide when to send up drones or spotter planes to investigate suspicious trawling.

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