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Netting the poachers

Terri Freemantle and Natalie Tellwright outline how modern technology is helping gather crucial evidence in the battle to protect threatened marine species

The activities earlier this year of Fu Yuan Yu Leng 999, the Chinese fish carrier caught with more than 300 tonnes of frozen shark along with numerous endangered species in Galapagos waters, has been well publicised, and the quick actions of the Ecuadorian Navy and other authorities has been commended. However, it takes more than simply catching a fishing vessel suspected of carrying illegally caught fish to make a legal case.

Arrest

Following the arrest of the Fu Yuan Yu Leng 999, OceanMind's fisheries analysts analysed its earlier AIS vessel tracks in and around the Galapagos Islands as part of the investigation into its activities. This would hopefully provide additional evidence for the prosecution.

As part of its work, the OceanMind Business Unit of the Satellite Application Catapult (www.oceanmind.global), helps governments and NGOs understand what is happening in their waters and oceanic areas of interest.

OceanMind's team of expert fisheries analysts use geospatial technology - including Synthetic Aperture Radar (SAR) imagery and satellite Automatic Identification System (AIS) - to locate, identify and investigate abnormal or potentially illegal fishing activity across the world's oceans. This detailed monitoring and analysis provides accurate third party validation of potential illegal, unreported and unregulated fishing (IUU) which also supports seafood retailers and their supply chain in demonstrating the sourcing provenance of their produce.

During the inspection of Fu Yuan Yu Leng 999, 6623 sharks were found on board. Species included hammerhead, silky, mako, bigeye thresher and pelagic thresher sharks, some of which are endangered and on The International Union for the Conservation of Nature (IUCN) Red List. Under Article 247 of the Comprehensive Criminal Organic Code, it is a criminal offence to transport threatened species.

Building a case

Five days prior to the vessel entering the Galapagos Marine Reserve, OceanMind's analysts identified that the Fu Yuan Yu Leng 999 displayed the behaviour that characterises possible at-sea transshipments, with four Chinese longline vessels positioned over 1,200 nautical miles west of the Galapagos. As all five vessels were transmitting on AIS, the analysts used this data to track the vessel positions.

OceanMind's approach when assessing vessel activity and compliance, is firstly to check that the vessels are appropriately registered and licenced to fish in the area of interest and that these licenses are both valid and current. Expert fisheries analysts then assess whether the vessels have continuously transmitted on the required tracking systems, and specifically search for any gaps in AIS transmissions. Then the vessels' behaviour is examined.

In OceanMind's Galapagos investigation, analysts found that the length of all four possible at-sea transshipments may have enabled a considerable transfer of catch. All four longline vessels appeared to be authorised by the Regional Fishery Management Organisation in the Eastern Pacific; Inter-America Tropical Tuna Commission (IATTC), but no authorisation record of the reefer Fu Yuan Yu Leng 999 was found. IATTC regulations (Resolution

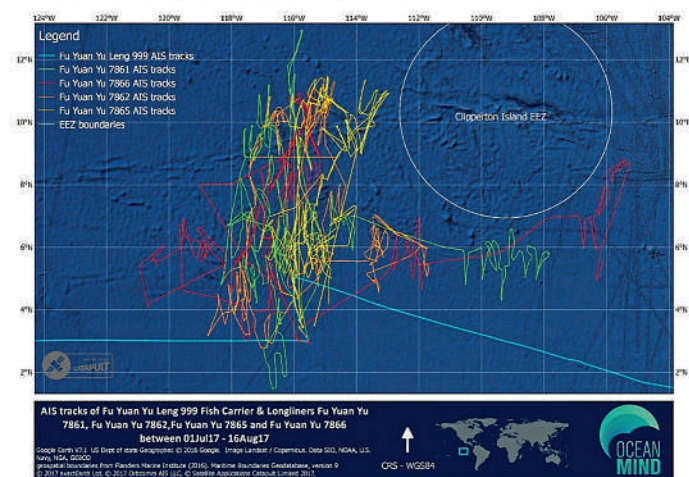
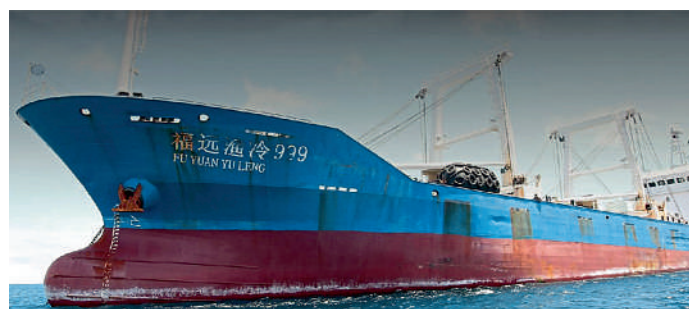
C-12-07) stipulate that vessels must be authorised to conduct at-sea transshipments inside the IATTC convention area.

Conviction

To help gather evidence for a subsequent successful prosecution in Ecuador, OceanMind cross referenced and delivered its conclusions, which in turn helped inform both Conservation International and the Charles Darwin Foundation who were involved in the Galapagos case and suggested several recommendations to further assist in their investigations.

The Ecuadorian court ruling, which handed down prison sentences to 20 crew members of the Fu Yuan Yu Leng 999 plus a fine of more than US\$5 million, was a significant win for the Galapagos Marine Reserve and the fight against IUU fishing. Even though these vessels were visible on AIS, there is significant fishing pressure from 'dark' vessels not visible on AIS, which will require greater monitoring, control and surveillance, and the use of more innovative technologies to track.

OceanMind will be attending October's Our Ocean Conference in Malta to discuss how the combined effort of state-of-the art geospatial technology, coupled with expert fisheries analysis, can help protect Marine Protected Areas.



Analysis of the movements of the Fu Yuan Yu Leng 999 and its sister ships in Galapagos waters pointed to at-sea transshipments. *Image © OceanMind*