

Le big data au secours des zones de pêche protégées

Avec Global Fishing Watch, l'association américaine de défense des océans Oceana utilise le big data pour repérer les bateaux situés dans les zones de pêches illégales. **Ars Technica fait le point.**

Lancé en 2014, Global Fishing Watch permet de croiser les données de localisation recueillies par les satellites qui suivent les bateaux de pêche **via le réseau AIS (Automatic Identification System)**, initialement créé pour éviter les collisions entre les navires en mer.

Le projet a démarré avec 3,7 milliards de points de données, provenant de 111 374 bateaux et collectés sur deux ans, permettant d'identifier où et quand les pêches se produisaient. Et de repérer les navires allant se servir dans des zones protégées...

Ainsi, grâce à ces données, l'équipage d'un bateau a été interdit de navigation et condamné en 2015 pour pêche illégale par les îles Kiribati, après avoir été repéré en stationnement dans la zone protégée des îles Phoenix, comme le précise **un rapport édité par le magazine Science.**

Article intégrale en anglais :

Global Fishing Watch claims success in big data approach to fighting illegal catches

The international marine advocacy group Oceana says big data analyses of satellite tracking data for fishing ships can be used to monitor fishing activity, and to spot illegal catches in marine protected areas.

Jacqueline Savitz, vice president for the US at Oceana, is [quoted as saying](#) in a press release: "This web-based technology will provide near real-time monitoring of global fishing activity to the public for free, to improve transparency and traceability in the global fishing fleet. It will allow journalists to track vessels of interest, scientists to study the interactions between fishing and ocean processes, governments to enforce policies aimed at rebuilding fisheries." Public access to the data is expected later this year.

Global Fishing Watch was [launched in November 2014](#) as a collaboration between [Oceana](#), the non-profit remote sensing and digital mapping organisation [SkyTruth](#), and [Google's Earth Outreach](#). According to Google, this is "a team dedicated to leveraging and developing Google's infrastructure to address environmental and humanitarian issues through partnerships with non-profits, educational institutions, and research groups."

Global Fishing Watch works by analysing data obtained from satellites monitoring the [Automatic Identification System](#) (AIS) network, which constantly broadcasts details about a ship's location. Although it was primarily designed as a safety mechanism to avoid collisions at sea, information about a vessel's behaviour can be derived by analysing the identity, speed, and direction of AIS broadcasting vessels, which is where the big data comes in.

The project started with [3.7 billion data points](#), more than a terabyte of data from two years of satellite collection, covering the movements of 111,374 vessels during 2012 and 2013. It applied a "behavioural classification model" to identify when and where fishing activity occurred, which took

things down to 300 million AIS data points, covering over 25,000 unique vessels. That set was whittled down further to 35 million detections from 3,125 vessels that Global Fishing Watch were able to verify were fishing vessels.

A freely-accessible report in the leading academic journal *Science* explains how [the technology was used to monitor compliance](#) with a new marine protected area (MPA) set up by Kiribati in the middle of the Pacific Ocean between Hawaii and New Zealand at the beginning of 2015:

We examined [AIS] activity data of known fishing vessels present within Kiribati's Phoenix Island Protected Area (PIPA), a California-sized MPA (i.e., ~410,000 km²) that was closed to all commercial fishing on 1 Jan 2015. Our data showed substantial fishing activity before closure, and a sharp drop at closure. Six months of postclosure monitoring revealed only one case of fishing activity in PIPA, and this vessel was interdicted and fined by Kiribati.

When the Global Fishing Watch project was first announced, a major concern was that ships engaged in illegal fishing would [manipulate the AIS data](#), or simply turn off the system for a while. However, as [Global Fishing Watch's FAQ](#) explains, that risk is mitigated by a number of factors.

First, dropping off the map or moving in odd ways is likely to draw attention from the authorities.

"Global Fishing Watch will enable us to flag suspicious behaviours like suddenly disappearing, or appearing as if from nowhere, or jumping 1,000 miles and appearing to fish in the middle of Asia. It will give us the opportunity to identify who may have something to hide, and who is operating openly and transparently."

Matters are helped by the fact that, increasingly, countries require the use of AIS: "For example, as of May 2014, all European Union-flagged fishing vessels over 15 meters in length are required to use AIS." There is also the safety aspect: "Turning off your AIS just to avoid being tracked puts your vessel and crew at risk of being run down by a cargo ship in the middle of the night."

Finally, those behind the project believe that a complete AIS record will become a mark of quality.

"We think the most important purpose for Global Fishing Watch is to provide an easy way for fishing vessel operators to show the world they are fishing legally. By consistently using an AIS transponder, those operators might be able to fetch a higher price for their catch—or get access to markets that some day may be closed to any fishing vessel that doesn't meet this basic transparency standard."

The hope is that as more vessels use AIS voluntarily to prove they are operating within the law, the size of the "dark fleet" making illegal catches will diminish, which in turn makes it easier to catch the remaining rogue ships.

Source : <http://www.rslmag.fr/post/2016/04/01/big-data-peche-protection.aspx>