ELECTRONIC MONITORING IN AUSTRALIA'S TUNA AND BILLFISH FISHERIES

The Australian Fisheries Management Authority regulates the nation's pelagic longliners and recently introduced a world-leading electronic monitoring system to keep watch on what they catch and where they go. It's all part of the management to protect both target and bycatch species in Australian waters.

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There is a saying in natural resource management that you can't manage what you don't measure. But getting verified catch and effort data from fisheries is an ongoing challenge for management.

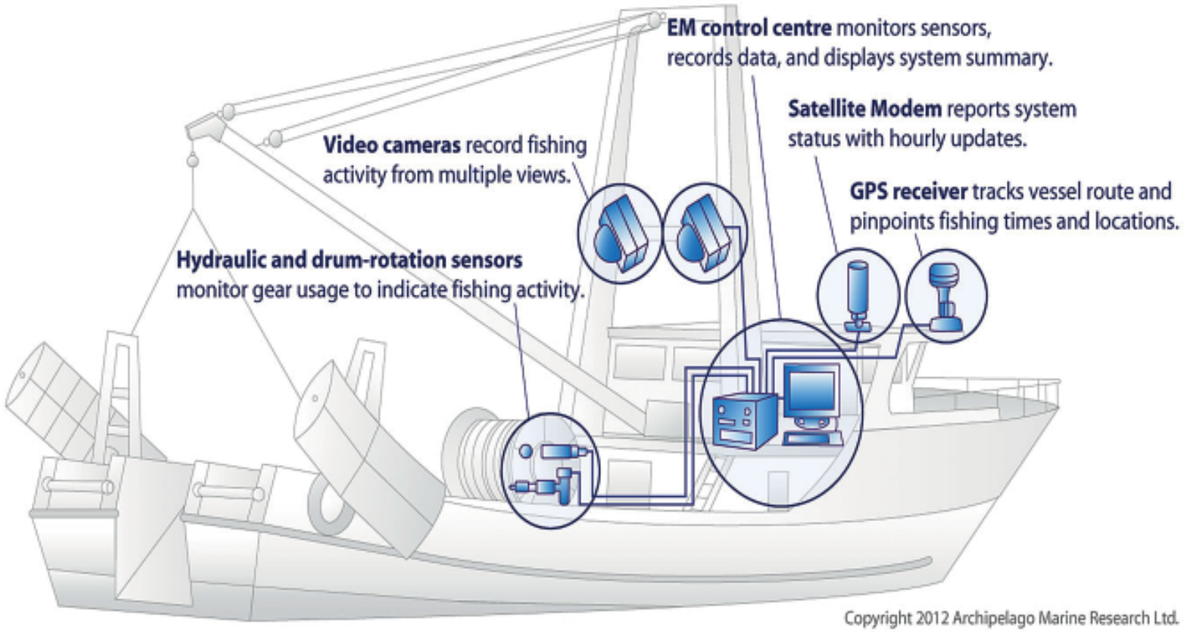
Australian fishers, both commercial and recreational, have always been quite fast to adopt and adapt to new technologies to get the job done. Likewise, Australian fisheries managers are also no different when it comes to the vital task of monitoring. To this end, the Australian Fisheries Management Authority (AFMA) and the commercial fishing industry have been trialling electronic monitoring (e-monitoring) technology for some years.

From 1 July this year, e-monitoring became compulsory on all full-time pelagic longliners in Australia.

WHAT IS E-MONITORING?

E-monitoring is a tamper-proof system of sensors and video cameras capable of monitoring and recording fishing activities, which can be reviewed later to verify logbook data. Typically, an e-monitoring system includes three or more video cameras, a hydraulic gear sensor, a line drum sensor, a GPS receiver, satellite communications and a control centre.

Sensors on the line drum and on the vessel's hydraulics system trigger the video cameras to switch on and record the longline gear being both set and hauled in. The GPS receiver is in addition to AFMA's existing Vessel Monitoring System (VMS), a satellite-based automatic location communicator, which is a mandatory requirement for all Commonwealth commercial fishing vessels.



While pelagic longline logbook reporting has been of a comparatively high standard in Australia, the benefits of e-monitoring on the reporting of minor and released species have been immediate. Within the first month of implementation, reporting of the number of species caught and the amount of fish released has significantly increased in comparison to last year.

E-MONITORING DATA USE

E-monitoring uses video and sensor data to independently validate fisheries' logbook information. It operates alongside AFMA's sea observer program and port inspections. In the future, feedback will be provided to skippers about the accuracy of their logbook data, and where improvements can be made. Overseas experience has shown that logbooks can be verified to over 99 per cent accuracy with e-monitoring and the right incentives to report. If this is achieved in the Eastern Tuna and Billfish Fishery, it will not only provide accurate and near real-time fisheries data, but can be used for making a range of fisheries management decisions.

One of the great benefits of e-monitoring is that it will enable management to be tailored to individual vessels. In the case of minimising risk to seabirds, for example, those boats able to demonstrate they can fish without catching seabirds will be allowed to continue to fish without additional regulation. However, those boats that do catch an unacceptable number of seabirds may be subject to additional regulation, such as a ban on setting during daytime – when birds are most actively feeding. Such a regulation can easily be enforced with e-monitoring.

E-monitoring can also be used to assess the effectiveness of education programs on the best ways to release black and blue marlin, mako sharks and turtles to maximise their survival.

LEADING THE WORLD

Australia's Commonwealth tuna and billfish fisheries and the US Atlantic tuna fleet are currently the only two pelagic longline fleets required to be fitted with e-monitoring. However, on-water trials are currently underway in the waters off Fiji and the Solomon Islands, as well as on Taiwanese boats. Indonesia has also committed to fitting e-monitoring systems to its industrial fleet and many other countries are investigating the use of this technology.

Over time, e-monitoring will lead to improved data, enabling AFMA to make better management decisions and improve compliance with measures designed to protect both target and non-target species.

For more information, visit *www.afma.gov.au*

Australian Government
Australian Fisheries Management Authority

Above: E-monitoring ensures that AFMA and scientists have an accurate record of all commercial fishing catch and effort in Australia's longline fishery. Typically, an e-monitoring system includes three or more video cameras, a hydraulic gear sensor, a drum sensor, a GPS receiver, satellite communications and a control centre.

Left: An e-monitoring set-up on a longliner generally involves the use of tamper-proof sensors and video cameras that enable fishing activities to be monitored and recorded. These recordings can later be reviewed by Fisheries officers to verify logbook data.

"E-monitoring can assess the best ways to release black and blue marlin to maximise their survival."