

 <p>Agreement on the Conservation of Albatrosses and Petrels</p>	<p><b>Seventh Meeting of the Seabird Bycatch Working Group</b></p> <p><i>La Serena, Chile, 2 - 4 May 2016</i></p> <p><b>Australia's electronic monitoring program</b></p> <p><b><i>Australian Fisheries Management Authority</i></b></p>
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### **SUMMARY**

Information is provided about the electronic monitoring program implemented in Commonwealth-managed fisheries in Australian jurisdiction. Australian experience is that electronic monitoring is a cost-effective data collection and logbook verification tool that improves the accuracy and reliability of logbook data. As electronic monitoring becomes an established data collection and verification tool, there is an opportunity to review how data are collected by regional fisheries and conservation bodies. This review should include consideration of how electronic monitoring and onboard observers may be used together to ensure that scientific data needs are met in a cost-effective way.

**Citation:** Australian Fisheries Management Authority (2014). *Australian Fisheries Management Authority electronic monitoring program: program overview*. Australian Fisheries Management Authority, Canberra, Australian Capital Territory, September 2014. Available on the Internet: <http://www.afma.gov.au/fisheries-services/e-monitoring-requirements/>.

## 1. BACKGROUND

Electronic monitoring is a system of sensors and video cameras (figure 1) capable of monitoring and recording fishing activities which can be reviewed later to independently verify logbook data. The specific configuration varies with gear and individual boat layouts, but an electronic monitoring system typically includes several key components: three or more video cameras, a hydraulic gear sensor, a drum sensor, a global positioning system (GPS) receiver, satellite communications and a control centre.

The electronic monitoring cameras are activated during fishing operations, specifically when the hydraulics are running during the set and haul. The cameras remain activated for a period of time after the haul to record the processing of catch and all video and sensor data are recorded to a hard drive on the boat. Hard drives are encrypted and tamper evident.

Sensor data are transmitted back to the regulatory authority in real-time and include information on whether the system is fully operational, the location of the boat and whether fishing gear has been set or hauled. Hard drives with video data are exchanged frequently (monthly or at the end of any trip longer than four weeks) and submitted to the regulatory authority for analysis.

A random portion of the video footage is analysed and the data on catch, effort and protected species interactions are compared to logbook reports. This provides independent verification of catch, discards and interactions with protected species, and ensures that the same reporting standards are followed across the fleet. At a minimum 10% of the video footage is analysed at random with a risk-based approach used to audit more footage from boats that are suspected of misreporting.

After the hard drives have been analysed, operators receive individual reports on their accuracy of reporting to encourage improved logbook reporting. With improved accuracy in the logbook reporting in the fishery, more accurate data will go into the stock assessments for target species and there will be more reliable information on protected species interactions in the fishery.

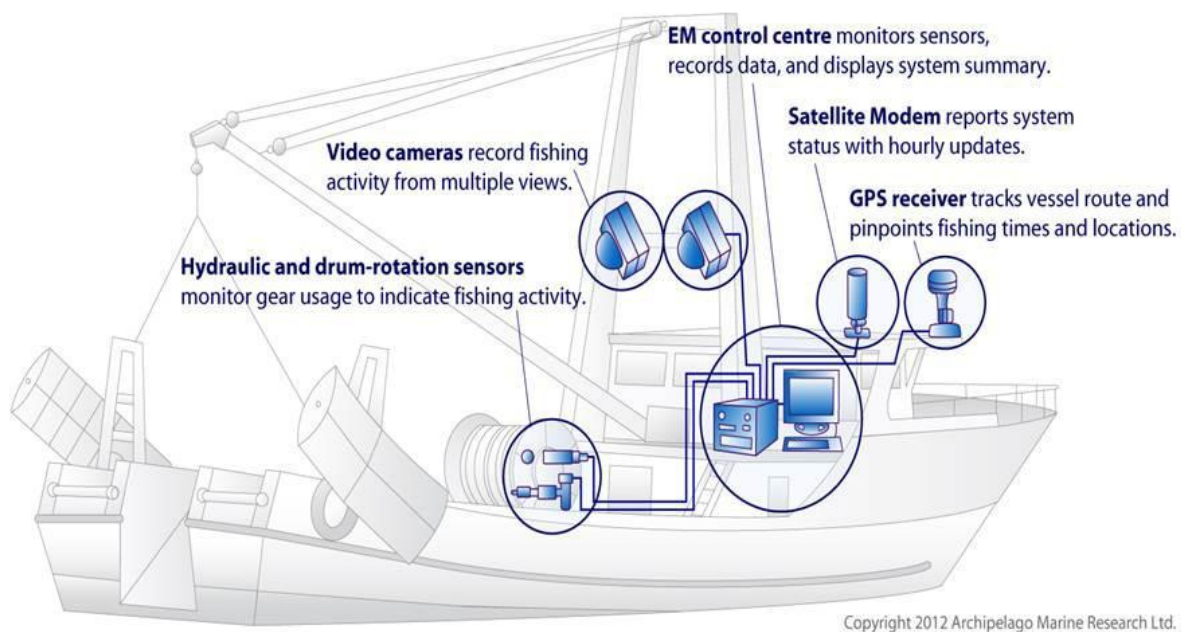


Figure 1: Example of an electronic monitoring system vessel setup.

## 2. AUSTRALIA'S ELECTRONIC MONITORING PROGRAM

Electronic monitoring has been installed on Australian longline and gillnet fishing vessels that fish in Australian waters and on the high seas in the South Pacific Ocean since September 2014. The electronic monitoring systems monitor 100% of fishing activity and complement existing observer coverage that is used to collect biological data that are required in that area.

Electronic monitoring is also operational in three Australian domestic fisheries and Australia is planning to expand the program to more domestic fisheries. Existing domestic fisheries include the demersal longline, demersal gillnet and pelagic longline fisheries managed by the Australian Government through the Australian Fisheries Management Authority. A more detailed overview of how electronic monitoring is used in the domestic fisheries is included as an attachment to this paper (AFMA, 2015). A flyer informing fishing operators about their obligations concerning the electronic monitoring program is also included as an attachment (AFMA, 2014).

## 3. POTENTIAL APPLICATION TO OTHER FISHING METHODS

A similar electronic monitoring program could be used to complement the observer program and strengthen monitoring in high seas fisheries under the jurisdiction of regional fisheries and conservation bodies. Electronic monitoring can monitor 100% of fishing activity, and be used to audit logbook records of discards, bycatch, interactions with protected species and impacts on habitats (vulnerable marine ecosystems). When used in conjunction with electronic monitoring on boats, observer coverage could be reduced to a lower level that provides biological and catch composition data required by the relevant scientific committees of regional fisheries and conservation bodies. This would ensure that data continue to be collected to support future stock assessments and that monitoring is cost-effective.

## REFERENCES

- AFMA (Australian Fisheries Management Authority) (2014). Your e-monitoring responsibilities. Flyer prepared by Australian Fisheries Management Authority, Canberra, Australian Capital Territory, December 2014.  
Available on the internet: <http://www.afma.gov.au/wp-content/uploads/2014/12/EM-flyer.pdf>
- AFMA (2014). *Australian Fisheries Management Authority electronic monitoring program: program overview*. Australian Fisheries Management Authority, Canberra, Australian Capital Territory, September 2014, pp. 26.  
Available on the Internet: <http://www.afma.gov.au/fisheries-services/e-monitoring-requirements/>