

The Crown Estate Electronic Monitoring System



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1. Introduction

Since 1993, The Crown Estate Commissioners have required that all vessels dredging Crown Estate minerals be fitted with an Electronic Monitoring System (EMS) which automatically records the date, time, and location of all dredging activities. EMS data are encoded for security purposes and analysed to ensure compliance with Marine Licence conditions.

EMS data play an important role in research and assisting in the targeting of annual monitoring studies undertaken by licensees. It also assists in shaping policy for future dredging initiatives and activities.

The Crown Estate collects information of a commercially sensitive nature from those vessels operating upon its ownership. The EMS records are analysed and processed by The Crown Estate as landowner and shared with the Regulators (the Marine Management Organisation and Welsh Government). It is the responsibility of the Regulators to undertake any compliance enforcement action under legislation.

The Crown Estate regularly publishes on its website information relating to aggregates dredging, this includes the annual Area of Seabed Dredged reports, and the twice yearly Licensed Dredge Area Charts and Active Dredge Zone Charts.

EMS data form the basis of the Area of Seabed Dredged reports as well as the 15 Year Review (1998-2012), published in 2014, and the forthcoming 20-year Review, to be published during 2018 for the period 1998-2017.

2. System Description

The Electronic Monitoring System comprises a standard PC which is linked to a GPS navigation system, and up to 4 dredging status indicators in addition to a pump running trigger switch. The dredging status indicators identify whether the vessel is pumping water or loading aggregates.

The EMS has 2 modes: standby and operational. In standby mode the system logs a record every 30 minutes to show that it is switched on and functioning correctly. In operational mode, when pumps are switched on, it logs a record every 30 seconds detailing the vessel's position and the output of the dredging status indicators.

From March 2011 monthly data has been copied to the Regulators to fulfil the data provision and monitoring requirements of dredging regulations.

3. Licensee Requirements

It is the licensee's responsibility to provide and maintain all the EMS equipment installed on their vessels, and this must comply with The Crown Estate EMS Specification and Guidance Notes (July 2005).

The EMS must be approved by The Crown Estate, and validation checks may be carried out before dredging is permitted.

Data recorded by the EMS or other equipment/systems must be provided to The Crown Estate or their appointed agent and the Regulators within 15 working days of the end of the calendar month.

4. Summary of 2017 EMS Data

a. Dredging Vessels

During 2017

- An average of 25 vessels per month operated on Crown Estate Production Agreement Areas.
- A maximum of 28 and a minimum of 22 vessels operated in any one month.

b. Reported EMS Breakdowns

Licensees are required to notify The Crown Estate immediately in the event of a breakdown of any kind of a vessel's EMS and give details of remedial measures being undertaken.

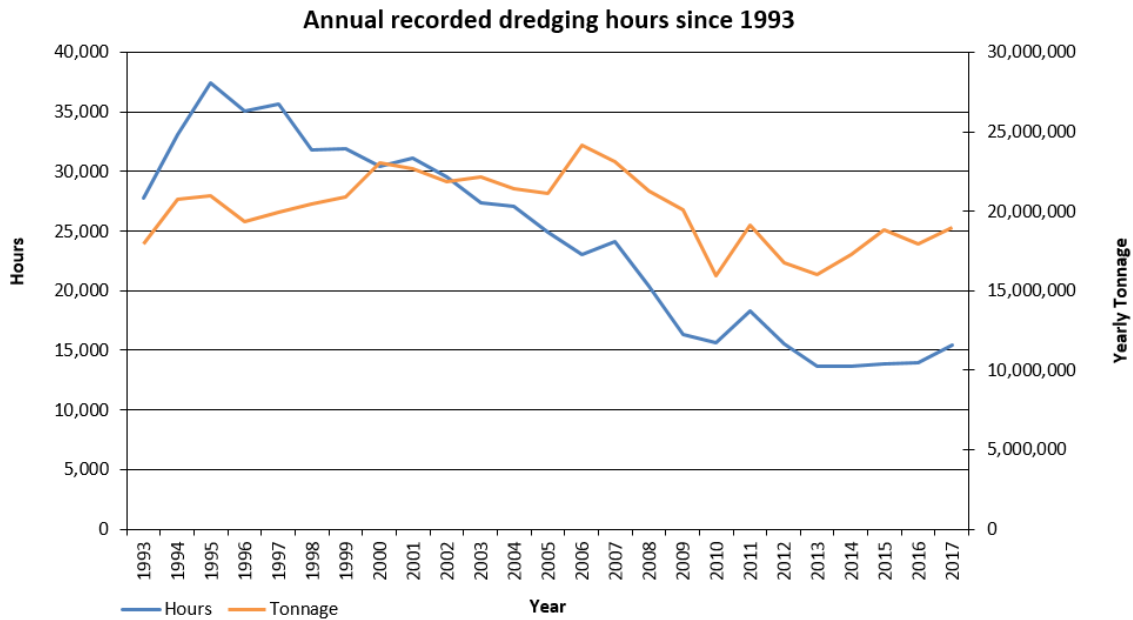
Subject to satisfactory alternative recording procedures, the licensee has 72 hours to rectify a fault, after which no dredging is permitted unless specific authorisation has been received from The Crown Estate.

There were 4 major EMS breakdowns during 2017. The breakdowns were rectified satisfactorily and full details of dredging activity during the period of missing data were supplied to The Crown Estate.

c. Dredging Activity

In 2017, there were a total of 15,405 hours of recorded dredging activity which is equivalent to approximately 1.8 million dredging positions, and approximately 46,000 km of dredge track*.

Dredging vessels were present on The Crown Estate Production Agreements for approximately 7 % of the total time available throughout the year†.



* Based on an average dredging speed of 3 km/hr

† Available time based on an average of 25 vessels multiplied by the total number of hours in a year

d. Time Gaps

EMS time gaps are classed as any periods when vessels are at sea and capable of dredging but the EMS did not log data, usually due to system errors or breakdowns. It is established whether a vessel was at sea primarily using Automatic Identification System (AIS) data. AIS is a separate vessel tracking system required by law. Periods when vessels are alongside in port are discounted.

Using the above methodology, in 2017 538 hours of time gaps were investigated. In each case vessel movements and dredging locations were monitored using alternative records such as outputs from other vessel tracking systems, deck logs, legally binding Master's statements and AIS track. In the majority of cases no dredging was found to have taken place during time gaps.

No evidence of unauthorised dredging during time gaps was found during 2017.

e. Out of Area/Out of Zone Dredging

In 2017 there was 1 confirmed incident of dredging outside of a Production Agreement Area, totalling 7 minutes.

In 2017 there were 3 confirmed incidents of dredging outside of an active zone (but within an overall Production Agreement Area) totalling 6 minutes.

The total confirmed unauthorised dredging in 2017 was therefore 13 minutes.

All out of zone and out of area incidents were reported to the relevant authority, together with copies of all correspondence with the licensee for subsequent action as appropriate. Any incidents are the responsibility of the licensee as they are held legally responsible for all dredging activities relating to the licensed area.

5. Conclusions

During 2017:

- Recorded dredging hours totalled 15,405 hours, compared to the 10-year annual average of 15,672.
- There was a total of 538 hours of time gaps compared to the 10-year annual average of 1785 hours.
- There was a total of 13 minutes of unauthorised dredging, compared to the 10-year annual average of 1 hour and 13 minutes.
- The percentage of licensed seabed dredged has remained low at 8.6 %, compared to the 10-year annual average of 10.6 %.