

# The Crown Estate Electronic Monitoring System



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**THE CROWN  
ESTATE**

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## 1. Introduction

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Since 1993, The Crown Estate Commissioners have required that all vessels dredging The 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.

See <http://www.thecrownestate.co.uk/energy-minerals-and-infrastructure/aggregates/working-with-us/electronic-monitoring-system/> for more information.

## 2. System Description

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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 pumps 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.

Since 30 June 2006 all dredging vessels have used a second generation EMS which utilises modern technology to improve data transmission.

The principles of the EMS have remained the same in the latest version. The biggest change is in the type of hardware used and the method of data transfer. The updated system utilises modern specification Microsoft Windows PCs and wireless GPRS technology to transmit dredging data to the office of the Managing Agent automatically on a weekly and monthly basis. Little crew input is required.

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

### **3. Licensee Requirements**

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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. Year 2014 – Summary of EMS Data

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##### a) Dredging Vessels

During 2015

- An average of 24 vessels per month operated on The Crown Estate Production Agreement Areas.
- A maximum of 26 and a minimum of 21 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.

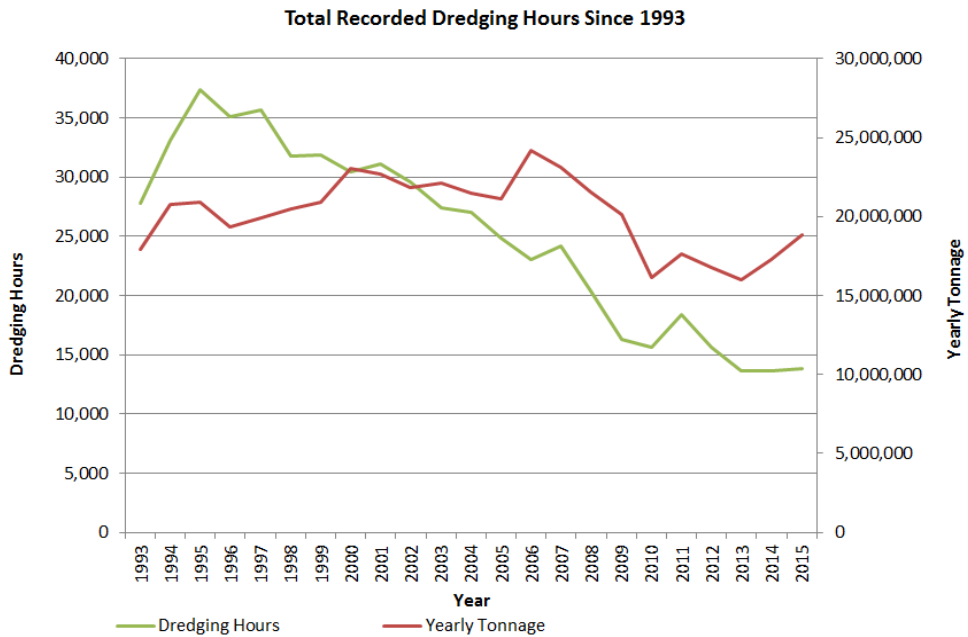
Details of 9 major EMS breakdowns were received by email, fax or telephone during 2015. The breakdowns were rectified satisfactorily and full details of dredging activity during the period of missing data were supplied to The Crown Estate.

**c) Dredging Activity**

In 2015, there were a total of 13,817 hours of recorded dredging activity which is equivalent to approximately 1.65 million dredging positions, and approximately 41,000 km of dredge track\*.

Dredging vessels were present on The Crown Estate licences for approximately 6% of the total time available throughout the year†.

Total recorded dredging hours have stabilised this year. There has been an increase in tonnage. This can be attributed to an improving economic situation and recovery in the construction market, leading to an increase in demand for aggregates.



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

† Available time based on an average of 24 vessels multiplied by the total number of hours in a year

**d) Time Gaps**

Irregularity Notices are issued for all time gaps found in EMS data lasting over 1 hour in standby mode and over 2 minutes during pumps running/dredging mode. Notices are also issued if the data is found to be corrupt or missing.

During 2015 there were a total of 42 hours of time gap irregularities, compared to 1,546 in 2014. The considerable decrease in time gap irregularities is due to the use of an AIS service to verify vessel movements and activity prior to time gap irregularities being issued.

Dredging hours that take place during time gaps are not recorded by the EMS, and do not therefore contribute towards total dredging hours for the year.

In each case of missing EMS data, alternative records such as deck logs, legally binding Master's statements, and company track plots are provided to confirm vessel movements and activity. In the majority of cases no dredging took place during time gaps, and the vessels were instead in port or on passage.

No evidence of unauthorised dredging during time gaps was found during 2015.

**e) Out of Area/Out of Zone Dredging**

In 2015 there was 1 incident of dredging outside of a Production Agreement Area for a total of 1 minute. This compares to 2 incidents for a total of 7 minutes in 2014.

In 2015 there were 6 incidents of dredging outside of an active zone (but within overall Production Agreement Area) totalling 1 hour 17 minutes. This compares to 13 minutes in 2014.

There were therefore a total of 1 hour 18 minutes of unauthorised dredging during 2015 (0.009% of all recorded dredging hours). This compares to a total of 20 minutes during 2014.

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

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### During 2015:

- Recorded dredging hours remained low at 13,817 hours, compared to the 10 year average of 17,451.
- There was a total of 42 hours of time gaps compared to the 10 year annual average of 2,136 hours.
- There was a total of 1 hour 18 minutes of unauthorised dredging, compared to the 10 year average of 1 hour 42 minutes.
- The percentage of licensed seabed dredged has remained low at 8.87%.