Centre for Environment Fisheries & Aquaculture Science

Cefas

RESEARCH VESSEL PROGRAMME

RV CEFAS ENDEAVOUR
Survey: C END 11 – 2018

Clean Seas Environmental Monitoring Programme (CSEMP) Western Channel, Irish Sea

STAFF:

Name	Berth
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John Bignell (Deck-Master)	Upper Sci 2
Matthew Green (FD)	Main Sci 1
Paul Nelson (data)	Main Sci 2
Michelle Stone (FD)	Main Sci 3
Caroline Daumich (FD)	Main Sci 4
Niall O'Rahelly	Main Sci 5

Name	Berth
Sara Stones (sediment)	Main Sci 6
Sara Losado (sediment Ch)	Main Sci 7
Helen Walton (Biomarker)	Main Sci 8
Oliver Twigge (Water sampling)	Lower Sci 2
	Lower Sci 3
Josie Russel (litter)	Lower Sci 4
Stephen Shaw (Fisheries Liaison)	Lower Sci 5

Staff joining during survey: John Bignell and Matthew Green to join on the 2nd July; Stephen Shaw to join on the 5th July
DURATION: 1st July from Lowestoft (10:00 High Tide) - 11th July in Fowey.

LOCATION: Western English Channel, Irish Sea.

AIMS:

The information generated during this survey will be used to meet UK's obligations for reporting of contaminant, eutrophication and marine litter data to MERMAN and the ICES database and for subsequent assessments for OSPAR and Good Environmental Status (GES descriptors 1, 4, 5, 8, 9 & 10) assessment. After discussions with EA and NRW staff a coordinated approach is being taken to help deliver additional EQSD requirements for the EA and NRW.

Specific aims:

1. To collect samples of demersal fish for chemical analysis from the Irish Sea, Celtic Sea and Western English Channel (Table 1; Figure 1) in support of the Clean Seas Environmental Monitoring Programme (CSEMP) (OSPAR Common indicator and UK specific Indicator assessments).

2. To collect fish samples at CSEMP sites for fish disease biochemical markers (e.g. EROD and bile metabolites analysis and AChE) (UK specific Indicator Assessments).

3. To sample representative CSEMP stations (Table 1; Figure 1) using day grab, for polycyclic

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aromatic hydrocarbons (PAHs), trace metal contaminants, organic contaminants (PCBs, PBDEs and HBCD), sediment particle size analysis (PSA) and marine litter (OSPAR Common indicator and UK specific Indicator assessments).

4. To conduct marine litter surveys (OSPAR Common indicator and UK specific Indicator assessments) by collecting benthic litter information from the trawls and collecting sediment samples for litter analysis.

5. To conduct surveys of marine animals (birds and cetaceans) and as part of the Sea Watch programme.

6. To collect water conductivity, temperature and depth information, and Plankton community information to provide additional knowledge on Eutrophication levels (OSPAR Common indicator and UK specific Indicator assessments).

7. Collect Fin clip samples for Cardiff University for eDNA analysis of fish

8. Water sampling to assess harmful algal blooms using a taw net

9. Zooplankton sample at Gabbard

10. To collect additional fish for the EA and NRW for a comparison study of whole fish, and fish muscle and liver in the quantity of contaminants).

PLAN:

30th June
Scientific staff board ship.

1st July
Inductions after breakfast at 08:30. Sailing from Lowestoft with the morning tide (10:00) and heading out into the southern North Sea. On route sampling water for chlorophyll and suspended particulate materials analysis at the West Gabbard SmartBuoy site. Moving through the English Channel in a westerly direction.

Taking plankton sample at West Gabbard Smartbuoy station

Station	**Latitude**	**Longitude**
Gabbard SB 2	51.95642	2.10703

2nd July
Around 17:30 small boat transfer/Pilot Boat to pick up Weymouth based staff (John Bignell, Matt Green, Michelle Stone and Caroline Daumich). Collecting sediment samples at CSEMP 536, 536_2, 536_3 and 536_4 overnight.

3rd July
Fishing CSEMP station 534 Inner Lyme Bay. Starting to fish straight away. Then moving on to collect the samples at CSEMP 575 (Off Tamar 1) and spatial stations 575_2, 575_4, 575_3, 585_3, 585_1 and 585_2.

In the afternoon we fish South Eddystone 584 (extra 9 fish for EA) before steaming for 20 hrs to Camarthen Bay CSEMP 616 fishing station.

4th July
Fishing Camarthen Bay CSEMP 616 fishing station. Then moving on to South Cardigan Bay (CSEMP 654) 160 miles away.

5th July
Small boat transfer to get Steve Shaw on board before fishing South Cardigan Bay (New Quay?).
Fishing South Cardigan Bay (CSEMP 654) before moving on to complete one spatial (655_2) and one temporal CSEMP 655 sediment stations. Then fishing the CSEMP 649 North Cardigan fishing station and complete the spatial CSEMP 655_1 and CSEMP 655_3 sediment stations.

6th July
Over daytime fishing CSEMP 715 (Liverpool Bay), CSEMP 706 (Burbo Bight; 9 extra fish for EA) and Liverpool Bay Trend (communications need to be held with windfarm operators). 9 extra fish for EA plus 3 from size class 2. Then in the evening/night collecting sediment samples at CSEMP 715 temporal and spatial sediment stations (715_1, 715_2, 715_3, 805_1, 805_2.

7th July
Fishing Morecambe Bay (CSEMP 796; 9 extra fish for EA) and SE Isle of Man (805). Then collecting sediment samples at 805 and 805_3, before moving on to St Bees Head. A pipeline is near bye.

8th July
Sampling St Bees Head (CSEMP 769; 9 extra fish for EA) fishing station and moving south to Red Wharf Bay (CSEMP 776) to sample in the afternoon.

9th July
We will collect the sediment stations 605_3, 605_2 and 605_1 and the trend station 605.
Arrival at Celtic Deep CSEMP 605 fishing station and starting fishing in the afternoon.

10th July
Moving East to conduct fishing at West Lundy fishing station, CSEMP 604. Then steaming back to Fowey.

11th July
Arrival in Fowey

Table 1. Positions of sampling stations

A: CSEMP fishing stations positions

CSEMP Number	Location	Mid tow Lat. Long.
534	Inner Lyme Bay	50 36.86 N 02 55.82 W

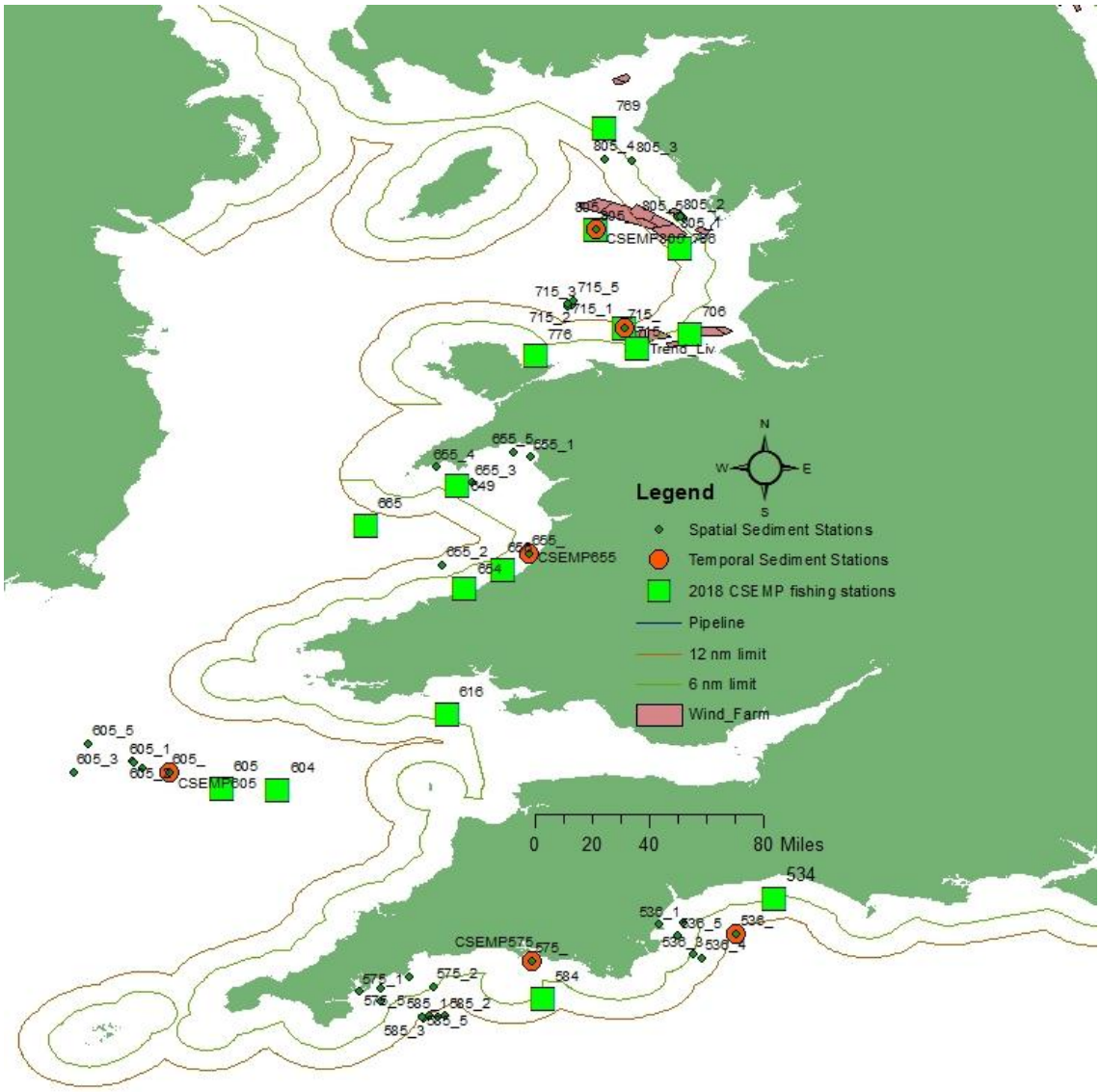
New	Off Eddystone	50 06.44 N 04 06.06 W
New	West Lundy	51 09.79 N 05 26.67 W
605	Celtic Deep	51 10.29 N 05 43.75 W
616	Camarthen Bay	51 32.82 N 04 35.13 W
649	North Cardigan Bay	52 42.44 N 04 32.29 W
654	South Cardigan Bay	52 10.90 N 04 29.87 W
656	Inner Cardigan Bay	52 18.00 N 04 16.35 W
665	Outer Cardigan Bay	52 23.76 N 04 53.72 W
706	Burbo Bight	53 28.24 N 03 20.47 W
715	Liverpool Bay	53 28.32 N 03 41.91 W
Trend_Liv	Liverpool Bay Trend	53 23.76 N 03 41.50 W
769	St Bees Head	54 30.71 N 03 47.63 W
776	Red Wharf Bay	53 22.46 N 04 12.84 W
796	Morecambe Bay	53 55.31 N 03 23.23 W
805	SE Isle of Man	54 03.36 N 03 52.47 W

B: CSEMP sediment stations

Latitude	Longitude	grouping	July_2018
-3.1217	50.43	CSEMP536	536
-4.1622	50.295	CSEMP575	575
-6	51.25	CSEMP605	605
-4.175	52.3583	CSEMP655	655
-3.6917	53.5	CSEMP715	715
-3.8333	54	CSEMP805	805
-3.51864	50.4794	536	536_1
-3.3907	50.4864	536	536_2
-3.33851	50.3272	536	536_3
-3.30106	50.308	536	536_4
-3.42341	50.4207	536	536_5
-5.03464	50.13879	575	575_1
-4.66144	50.16509	575	575_2
-4.9246	50.0888	575	575_3
-4.7833	50.21509	575	575_4
-4.92378	50.15438	575	575_5
-4.63349	50.01404	585	585_1
-4.59983	50.01662	585	585_2
-4.70992	50.00313	585	585_3

-4.68267	50.0177	585	585_4
-4.71266	50.01191	585	585_5
-6.17964	51.3	605	605_1
-6.18724	51.3063	605	605_2
-6.48421	51.251	605	605_3
-6.133	51.2704	605	605_4
-6.407	51.3928	605	605_5
-4.16649	52.8457	655	655_1
-4.61133	52.29819	655	655_2
-4.46528	52.71517	655	655_3
-4.6411	52.79411	655	655_4
-4.25126	52.8703	655	655_5
-3.97687	53.60896	715	715_1
-3.95482	53.61389	715	715_2
-3.97566	53.61827	715	715_3
-3.97078	53.62299	715	715_4
-3.94896	53.6356	715	715_5
-3.42177	54.0624	805	805_1
-3.40721	54.0611	805	805_2
-3.65172	54.3461	805	805_3
-3.79349	54.3553	805	805_4
-3.38928	54.0529	805	805_5

Figure 1. CSEMP fishing and temporal/spatial sediment stations



Manuel Nicolaus
Scientist in Charge
Date: 14 June 2018

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