

**RESEARCH VESSEL PROGRAMME**

**RV CEFAS ENDEAVOUR**

**Survey: C END 02-2021**

**STAFF:**

Name	Role	Cabin	Shift
Dave Sivyer	SIC	B2	Day
Eleanor Haigh	2IC/Water sample lead day	C6	12:00-0:00
Danja Hoehn	Moorings/water sampling	C7	12:00-00:00
Bryan Goodsir-Thompson	Moorings/water sampling	C2	00:00-12:00
Axayacatl Molina-Ramirez	Deck	D5	06:00-18:00
Paul Nelson	Water sample lead nights	C1	00:00-12:00
Elise Brabben	Water sampling	C3	06:00-18:00
Briony Silburn	NIOZ coring	C5	Flexi

**DURATION:** 3<sup>rd</sup> February 2021 - 11<sup>th</sup> February 2021 (9 days)

**LOCATION:** North Sea

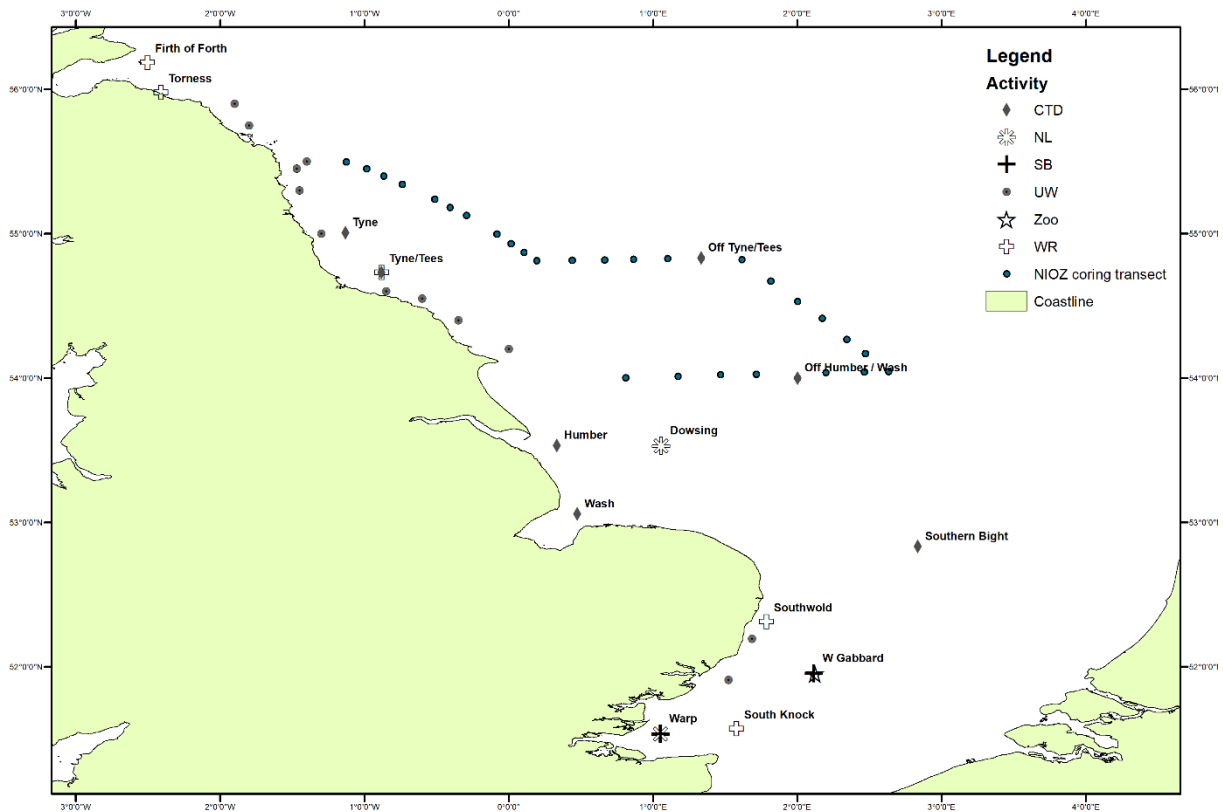
**Site**

Dowsing	53	31.778	N	1	3.204	E	53.530	1.053
W Gabbard	51	57.2599	N	2	6.6839	E	51.954	2.111
Wgab Zoo	51	57.2	N	2	7.2	E	51.953	2.120
Warp	51	32.0117	N	1	2.893	E	51.534	1.048
South Knock WR	51	34.223	N	1	34.675	E	51.570	1.578
Firth of Forth WR	56	11.26	N	2	30.288	W	56.188	-2.505
Tyne/Tees WR	54	43.943	N	0	52.917	W	54.732	-0.882
Torness WR	55	58.775	N	2	24.595	W	55.980	-2.410
Southwold WR	52	18.74	N	1	47.06	E	52.312	1.784
Wash CTD	53	3.5	N	0	28.5	E	53.058	0.475
Humber CTD	53	32	N	0	20	E	53.533	0.333
Tees CTD	54	44	N	0	53	W	54.733	-0.883
Tyne CTD	55	0.5	N	1	8	W	55.008	-1.133
Off Tyne/Tees CTD	54	50	N	1	20	E	54.833	1.333
Off Humber / Wash CTD	54	0	N	2	0	E	54.000	2.000
Southern Bight CTD	52	50	N	2	50	E	52.833	2.833
TP1	51	54.43	N	1	31.355	E	51.907	1.523
TP2	52	11.56	N	1	41.075	E	52.193	1.685
Hu1	54	12	N	0		E	54.2	0
Hu2	54	24	N	0	21	W	54.4	-0.35

Hu3	54	33	N	0	36	W	54.55	-0.6
Hu4	54	36	N	0	51	W	54.6	-0.85
Hu5	55	0	N	1	18	W	55	-1.3
Hu6	55	18	N	1	27	W	55.3	-1.45
Hu7	55	27	N	1	28.2	W	55.45	-1.47
EC1	55	54	N	1	54	W	55.9	-1.9
EC2	55	45	N	1	48	W	55.75	-1.8
EC3	55	30	N	1	24	W	55.5	-1.4

**Coring transect:**

STN no	deg	mins		deg	mins		CTD
Core 1	55	29.956	N	1	7.612	W	
Core 2	55	27.061	N	0	59.207	W	
Core 3	55	24.010	N	0	52.015	W	
Core 4	55	20.488	N	0	44.326	W	
Core 5	55	14.397	N	0	30.857	W	
Core 6	55	10.873	N	0	24.441	W	
Core 7	55	7.664	N	0	17.719	W	
Core 8	54	59.810	N	0	5.060	W	
Core 9	54	55.804	N	0	0.870	E	
Core 10	54	52.278	N	0	6.319	E	
Core 11	54	48.840	N	0	11.602	E	
Core 12	54	48.997	N	0	26.222	E	
Core 13	54	49.144	N	0	39.713	E	
Core 14	54	49.407	N	0	51.827	E	
Core 15	54	49.718	N	1	6.093	E	
Core 16	54	49.993	N	1	20.007	E	/
Core 17	54	49.309	N	1	36.946	E	/
Core 18	54	40.380	N	1	48.794	E	
Core 19	54	31.862	N	2	0.024	E	
Core 20	54	24.774	N	2	10.238	E	
Core 21	54	16.124	N	2	20.402	E	
Core 22	54	10.141	N	2	28.259	E	
Core 23	54	2.645	N	2	37.774	E	
Core 24	54	2.501	N	2	27.826	E	
Core 25	54	2.285	N	2	11.896	E	
Core 26	54	0.050	N	2	0.003	E	/
Core 27	54	1.636	N	1	42.848	E	
Core 28	54	1.492	N	1	27.999	E	
Core 29	54	0.771	N	1	10.411	E	
Core 30	54	0.194	N	0	48.498	E	



### AIMS:

1. Service Noise Landers at Dowsing and Warp (SLA20A 1 day)
2. Service SmartBuoys at West Gabbard and Warp (SLA25D 2 days)
3. Service Waveriders at South Knock, Southwold, Tyne/Tees, Firth of Forth, Torness (C6029A 3 days)
4. Continuous flow and CTD Rosette water sampling as required on various transects
5. Collection of zooplankton sample at West Gabbard
6. NIOZ coring at Dowsing, West Gabbard, and offshore transect sites (3 days)

### PLAN:

Boarding and sailing time TBC depending on testing schedule and results.

RV Cefas Endeavour will sail from Lowestoft, steaming south to the West Gabbard 2 site and carry out the following activities:

- WGab1 Pre-recovery CTD,
- WGab2 Recover and deploy SmartBuoy (51° 57'.256N, 002° 06'.684E)
- WGab3 Post-deployment CTD
- WGab4 Zooplankton net haul sample (in area of 51° 57'.2N, 002° 07'.2E).

WGab5 NIOZ core

During transit 2 hourly underway samples will be taken.

Endeavour will then transit to the South Knock site (51° 34.223 N, 001° 34.675E), where a waverider will be serviced and a NIOZ core taken.

Following completion underway sampling will be hourly.

Transit will then be to the Warp site to carry out the following activities:

Warp1	Pre-recovery CTD,
Warp2	Recover and deploy SmartBuoy (51° 32.010N 001° 2.896E)
Warp3	Recover and deploy Noise Lander (51° 31.947N 001° 02.804E)
Warp4	Post-deployment CTD.
Warp5	NIOZ core

Transit will then be to the Southwold waverider via two waypoints:

TP1	51° 54.43N, 001° 31.355E
TP2	52° 11.56N, 001° 41.075E

At the Southwold site (52° 18.74E, 001° 47.06E) the waverider will be serviced and a NIOZ core taken.

Transit will then be to the Wash (53° 3'.50N, 000° 28.5'E) and Humber (53° 32'.0N, 000° 20E) CTD sites.

During transit to Dowsing (53° 31.778N, 001° 3.204E) 2 hourly underway samples will be taken. At the Dowsing the following activities will be undertaken:

Dow1	Waverider recovery and deployment
Dow2	NIOZ core

Transit north will be via the following waypoints, taking hourly underway samples:

Hu1	54° 12.0N, 000° 0.0E
Hu2	54° 24.0N, 000° 21.0W
Hu3	54° 33.0N, 000° 36.0W
Hu4	54° 36.0N, 000° 51.0W

Transit will then be to the Tyne/Tees Waverider site (54° 43.943N, 000° 52.917W, where the following activities will be completed:

Tyn1	Waverider service
Tyn2	CTD deployment

Tyn3 NIOZ core

A CTD will then be completed at the Tyne station (55° 0.5N, 001° 8.0W).

Transit will be north via the following waypoints undertaking hourly underway sampling:

Hu5	55° 0.0N, 001° 18.0W
Hu6	55° 18.0N, 001° 27.0W
Hu7	55° 27.0N, 001° 28.2W

Transit will then be to the Torness Waverider and guard buoy service (55° 58.775N, 002° 24.595W) ensuring all necessary communications with the Torness Power Station personnel. Transit will then be to the Firth of Forth Waverider service (56° 11.26N, 002° 30.288W). NIOZ cores will be taken at both waverider sites.

Transit will then be south via the following waypoints undertaking hourly underway sampling:

EC1	55° 54.0N, 001° 54.0W
EC2	55° 54.0N, 001° 48.0W
EC3	55° 30.0N, 001° 24.0W

Endeavour will then follow a NIOZ coring transect of 30 stations. At coring stations 16, 17 and 26 a CTD will be taken, plus up to 100L of seawater will be taken from the underway system at coring station 17.

Underway samples will be taken throughout the coring transect.

Upon completion of the transect Endeavour will head to the Southern Bight CTD station (52° 50.0N, 002° 50.0E), before returning to Lowestoft allowing time for an additional CTD to be taken before crossing the 12nm limit.

Exact order of operations to be determined in consultation with the Master. If the weather is poor, the route may be revised.

**GEAR:** See gear list

Eleanor Haigh  
Second Scientist in Charge  
Dave Sivyer  
Scientist in Charge  
21/01/2021

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