

**RESEARCH VESSEL PROGRAMME**

**RV CEFAS ENDEAVOUR  
Survey: C END 17 - 2021**

**STAFF:**

Name	Role	Cabin	Shift
Eleanor Haigh	SIC	D4	Days
Dave Sivyer	2IC/Water/Coring lead	B2	12:00-00:00
Manuel Nicolaus	Shift lead coring	B1	00:00-12:00
Axayacatl Molina-Ramirez	Deck/coring	C8	12:00-00:00
Bryan Goodsir-Thompson	Deck/coring	D2	00:00-12:00
Tom Hull	Deck/coring	C6	12:00-00:00
Elise Brabben	Water lead/Core processing trainee	C5	12:00-00:00
Isobel Lake	Water lead /Pore water	D6	00:00-12:00
Mollie Allerton	Water	C7	12:00-00:00
Freya Mickleburgh	Core processing/water	C3	12:00-00:00
EEL Geotech	Coring	C2	12:00-00:00
EEL Geotech	Coring	D3	00:00-12:00
Martin Clifflen	Core processing/water	D5	00:00-12:00
Danja Hoehn	Deck/coring	C1	00:00-12:00

**DURATION: 11<sup>th</sup> to 15<sup>th</sup> Nov**

**LOCATION:**

**SmartBuoy/Noiselanders/Waverider activities:**

Dow NL (MIA):	53° 31.749N	1° 3.228E	53.52915	1.0538
Dow NL clump (MIA):	53° 31.74N	1°3.36E	53.529	1.056
Dow NL:	53° 31.797N	1°3.12E	53.52995	1.052
Dow NL clump:	53° 31.763N	1°3.01E	53.529	1.050
Dow WR:	53° 31.911N	1°3.233E	53.532	1.054
WestGab SB:	51° 57.242N	2°6.661E	51.954	2.111
WestGab WR:	51° 57.178N	2°6.543E	51.953	2.109
WestGab2 ZP:	51° 57.2N	2° 07.2 E	51.953	2.12
Warp NL:	51° 31.937N	1°2.803E	51.532	1.047
Warp NL clump:	51° 32.014N	1°2.808E	51.534	1.047
Warp SB:	51° 31.983N	1°2.919E	51.53305	1.04865
TP1 Underway	51° 54.430N	1° 31.355E	51.907	1.523
TP2 Underway	52° 11.560N	1° 41.075 E	52.193	1.685
Humb1CTD	53° 32.0N	0° 20.0 E	53.533	0.333

Wash1 CTD	53° 3.50N	0° 28.5 E	53.058	0.475
MA1 underway:	51° 30.085N	0° 55.087E	51.501	0.918
MA2 underway	51° 29.374N	0° 46.609E	51.489	0.777
MA3 underway	51° 30.086N	0° 39.017E	51.501	0.650
MA4 underway	51° 30.084N	0° 30.822E	51.501	0.514

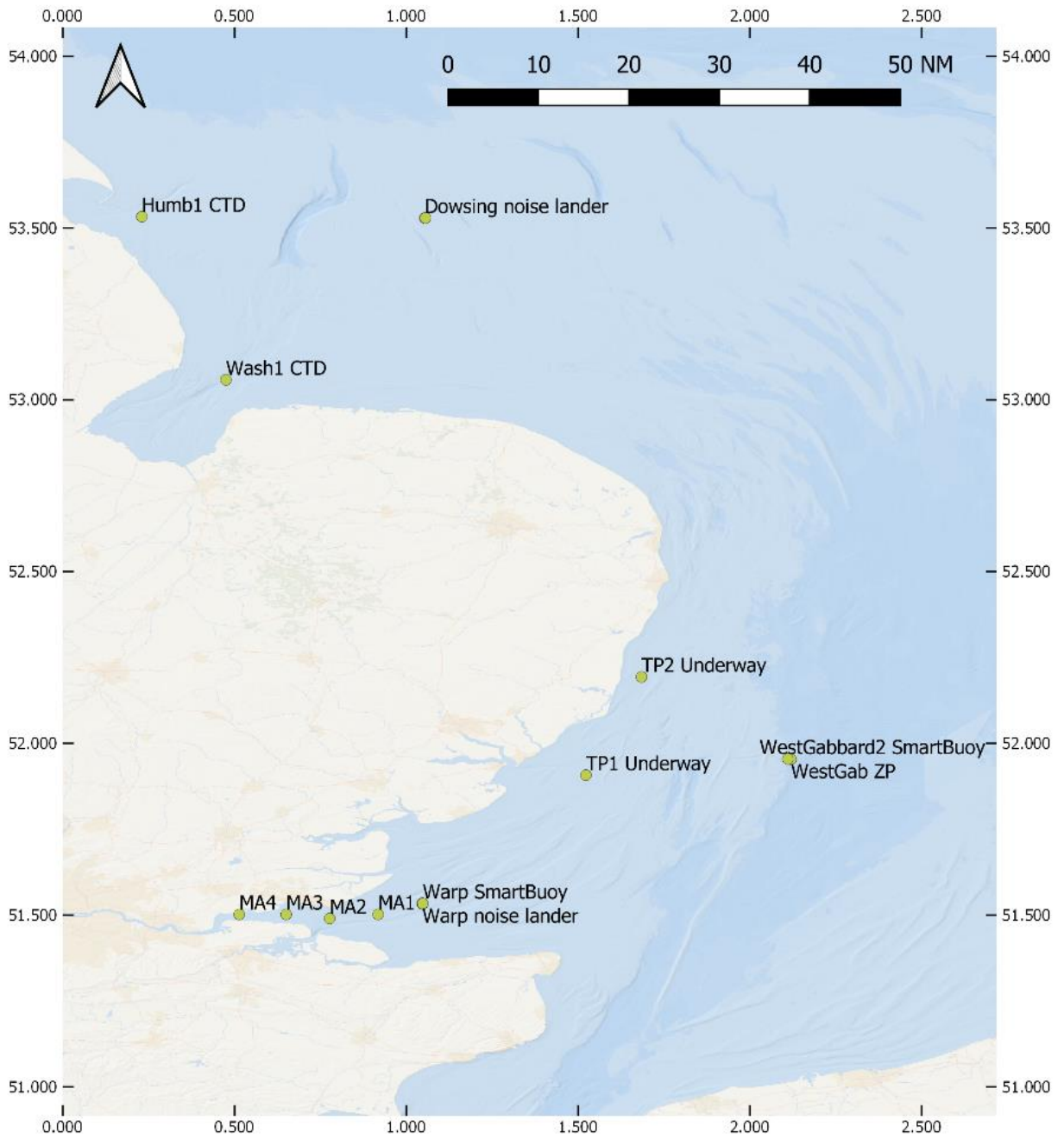
**Coring activities-most feasible stations marked with \***

Stn	Lat Dec Deg	Long Dec Deg	Deg Lat	Min Lat	N/S	Deg Long	Min Long	E/W
1	55.49927	-1.12687	55	29.95632	N	1	7.6122	W
2	55.45102	-0.98678	55	27.06108	N	0	59.20674	W
3	55.40016	-0.86691	55	24.0096	N	0	52.0146	W
4	55.34146	-0.73877	55	20.48766	N	0	44.3259	W
5	55.23995	-0.51428	55	14.39724	N	0	30.85674	W
6	55.18122	-0.40736	55	10.87326	N	0	24.44148	W
*7	55.12774	-0.29532	55	7.66434	N	0	17.7192	W
*8	54.99684	-0.08433	54	59.8101	N	0	5.05962	W
9	54.93007	0.014507	54	55.80426	N	0	0.87042	E
*10	54.87131	0.105322	54	52.2783	N	0	6.31932	E
11	54.814	0.193359	54	48.84018	N	0	11.60154	E
12	54.83322	1.333446	54	49.99344	N	1	20.00676	E
13	54.82181	1.615765	54	49.30866	N	1	36.9459	E
*14	54.67299	1.813238	54	40.37958	N	1	48.79428	E
15	54.4129	2.170641	54	24.774	N	2	10.23846	E
*16	54.26874	2.340032	54	16.12422	N	2	20.40192	E
17	54.16903	2.47098	54	10.1415	N	2	28.2588	E
*18	54.04408	2.629559	54	2.64504	N	2	37.77354	E
19	54.04168	2.463772	54	2.50086	N	2	27.82632	E
*20	54.03808	2.198272	54	2.28462	N	2	11.89632	E
*21	54.00084	2.000049	54	0.0501	N	2	0.00294	E
*22	54.02727	1.714126	54	1.6359	N	1	42.84756	E
23	54.02486	1.466646	54	1.49172	N	1	27.99876	E
24	54.01285	1.173516	54	0.77088	N	1	10.41096	E
25	54.00324	0.808303	54	0.19422	N	0	48.49818	E
*26	54.81662	0.437034	54	48.99732	N	0	26.22204	E
27	54.81907	0.661888	54	49.14414	N	0	39.71328	E
28	54.53104	2.000404	54	31.86234	N	2	0.02424	E
29	54.82345	0.863788	54	49.40712	N	0	51.82728	E
30	54.82863	1.101557	54	49.7175	N	1	6.09342	E
31	53.52963	1.0534	53	31.77798	N	1	3.204	E
32	51.95433	2.111398	51	57.25992	N	2	6.68388	E
33	52.087	2.668	52	5.22	N	2	40.08	E
N1	55.49699	-1.1285	55	29.81922	N	1	7.71024	W
N2	55.55915	-0.99199	55	33.54894	N	0	59.51946	W

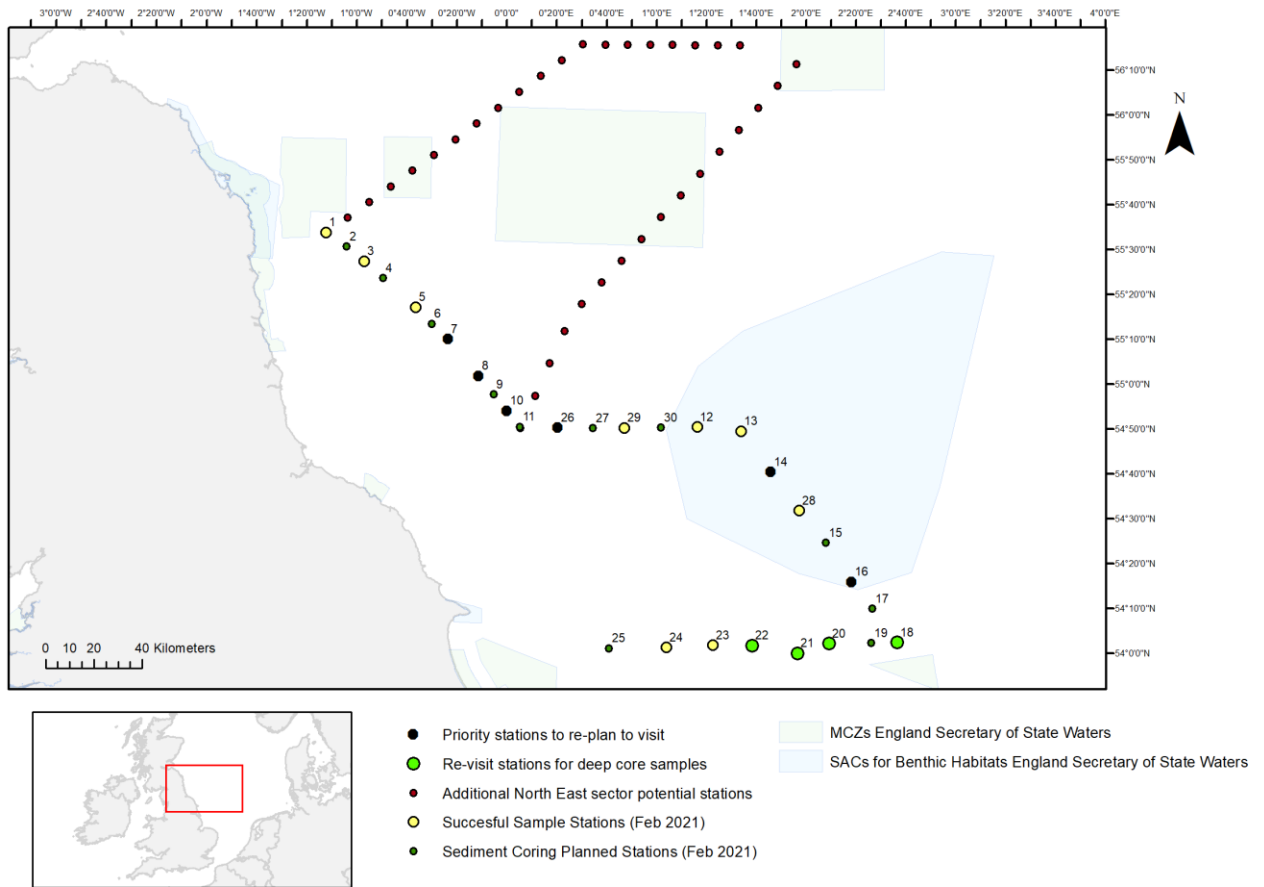
N3	55.62131	-0.85548	55	37.27872	N	0	51.32868	W
N4	55.68347	-0.71896	55	41.00844	N	0	43.13784	W
N5	55.74564	-0.58245	55	44.73816	N	0	34.94706	W
N6	55.8078	-0.44594	55	48.46788	N	0	26.75628	W
N7	55.86996	-0.30943	55	52.19766	N	0	18.5655	W
N8	55.93212	-0.17291	55	55.92738	N	0	10.37472	W
N9	55.99429	-0.0364	55	59.6571	N	0	2.18388	W
N10	56.05645	0.100115	56	3.38682	N	0	6.0069	E
N11	56.11861	0.236628	56	7.1166	N	0	14.19768	E
N12	56.18077	0.373141	56	10.84632	N	0	22.38846	E
N13	56.24264	0.50972	56	14.5584	N	0	30.5832	E
N14	56.24459	0.659708	56	14.67528	N	0	39.58248	E
N15	56.24654	0.809695	56	14.79216	N	0	48.5817	E
N16	56.24848	0.959682	56	14.90904	N	0	57.58092	E
N17	56.25043	1.10967	56	15.02592	N	1	6.5802	E
N18	56.25238	1.259657	56	15.1428	N	1	15.57942	E
N19	56.25433	1.409644	56	15.25968	N	1	24.57864	E
N20	56.25628	1.559632	56	15.3765	N	1	33.57792	E
S21	54.80983	0.194648	54	48.5895	N	0	11.67888	E
S22	54.93167	0.282129	54	55.90044	N	0	16.92774	E
*S23	55.05352	0.36961	55	3.21132	N	0	22.1766	E
*S24	55.17537	0.457091	55	10.52226	N	0	27.42546	E
*S25	55.27813	0.56297	55	16.68768	N	0	33.7782	E
*S26	55.36104	0.687972	55	21.66246	N	0	41.27832	E
*S27	55.44395	0.812974	55	26.63724	N	0	48.77844	E
*S28	55.52687	0.937976	55	31.61196	N	0	56.27856	E
*S29	55.60978	1.062977	55	36.58674	N	1	3.77862	E
*S30	55.69269	1.187979	55	41.56152	N	1	11.27874	E
*S31	55.7756	1.312981	55	46.53624	N	1	18.77886	E
S32	55.85852	1.437983	55	51.51102	N	1	26.27898	E
S33	55.94143	1.562985	55	56.4858	N	1	33.7791	E
S34	56.02434	1.687987	56	1.46052	N	1	41.27922	E
S35	56.10726	1.812989	56	6.4353	N	1	48.77934	E
S36	56.19017	1.937991	56	11.41008	N	1	56.27946	E



**SmartBuoy sites:**



**Blue carbon coring sites:**



**AIMS:**

1. Service Noise Landers at Dowsing and Warp (GIA6H)
2. Service SmartBuoys at West Gabbard and Warp (GIA03D)
3. Continuous flow and CTD Rosette water sampling as required on various transects
4. Collection of zooplankton sample at West Gabbard
5. Coring and water sampling at blue carbon sites

**PLAN:**

**Leaving 11<sup>th</sup> November (tide dependent on test results)**

RV Cefas Endeavour will initially steam south to the Warp site and carry out the following activities:

- |       |   |
|-------|---|
| Warp1 | Pre-recovery CTD,                                       |
| Warp2 | Recover and deploy SmartBuoy (51° 31.983-001°02.919)    |
| Warp3 | Recover and deploy Noise Lander (51° 31.937-001°02.803) |
| Warp4 | Post-deployment CTD.                                    |

Transit will be through two waypoints in the Thames plume:

- TP1 Underway sample-steam through (51° 54'.430N 001° 31'.355E)
- TP2 Underway sample-steam through (52° 11'.560N 001° 41'.075E)

During transit hourly underway water samples will be taken.

In the event of early arrival at Warp, an additional steam into the Thames will be taken following suggested waypoints MA1-4. A transect of underway samples will be taken along the Thames route (low priority).

Endeavour will then transit to the West Gabbard 2 site and carry out the following activities:

- WGab1 Pre-recovery CTD,
- WGab2 Recover and deploy SmartBuoy (51° 57.242N-002°06.661E)
- WGab3 Post-deployment CTD
- WGab4 Zooplankton net haul sample (in area of 51° 57'.2N, 002° 07'.2E).

If time allows a Waverider will be serviced:

- WGab5 Recover and deploy Waverider (51° 57.178N-002°06.543E)

During transit 2 hourly underway water samples will be taken.

Transit will then be to the following CTD sites:

- Humb1 CTD (53° 32'.0N, 000° 20'.0E)
- Wash1 CTD (53° 3'.50N, 000° 28'.5E)

Upon entry to the Humber and Wash plume areas underway sampling will increase to hourly.

Endeavour will then continue to the Dowsing site and carry out the following activities:

- Dow1 Recover and deploy Noise Lander (53° 31.797N-001°03.12E)
- Dow2 CTD

If time allows a Waverider will be serviced:

- Dow3 Recover and deploy Waverider (53° 31.911N-001°03.233E)

Attempts will be made to locate and recover a Noise Lander deployed at the Dowsing site in May 2021, using side scan sonar. The last know location of the lander was 53° 31.749N 001° 03.228E.

Once the mooring work is complete, Endeavour will then make its way North to Station 22 to undertake Piston coring, working through the following stations:

- Station 22 Piston Corer (54° 1.6359 N - 001° 42.84756 E)
- Station 21 Piston Corer (54° 0.0501 N – 002° 0.00294 E)
- Station 20 Piston Corer (54° 2.28462 N – 002° 11.89632 E)

Station 18      Piston Corer (54° 2.64504 N - 002° 37.77354 E)

Transit will then be to Station 16 to complete NIOZ coring followed by deeper coring if the returned sample indicated the site is viable, a CTD rosette will also be deployed at all below stations:

Station 16      NIOZ corer, CTD, possible piston corer (54° 16.12422 N – 002° 20.40192 E)  
Station 14      NIOZ corer, CTD, possible piston corer (54° 40.37958 N – 001° 48.79428 E)  
Station 26      NIOZ corer, CTD, possible piston corer (54° 48.99732 N – 000° 26.22204 E)  
Station 10      NIOZ corer, CTD, possible piston corer (54° 52.2783 N -000° 6.31932 E)  
Station 8        NIOZ corer, CTD, possible piston corer (54° 59.8101 N -000° 5.05962 W)  
Station 7        NIOZ corer, CTD, possible piston corer (55° 7.66434 N -000° 17.7192 W)

Dependent on remaining time available transit will then be to station S31, a NIOZ core will be taken, followed by deeper coring if the returned sample indicates the site is viable, a CTD rosette will also be deployed at all below stations:

Station S31      NIOZ corer, CTD, possible piston corer (55° 46.53624 N – 001° 18.77886 E)  
Station S30      NIOZ corer, CTD, possible piston corer (55° 41.56152 N – 001° 11.27874 E)  
Station S29      NIOZ corer, CTD, possible piston corer (55° 36.58674 N - 001° 3.77862 E)  
Station S28      NIOZ corer, CTD, possible piston corer (55° 31.61196 N – 000° 56.27856 E)  
Station S27      NIOZ corer, CTD, possible piston corer (55° 26.63724 N – 000° 48.77844 E)  
Station S26      NIOZ corer, CTD, possible piston corer (55° 21.66246 N -000° 41.27832 E)  
Station S25      NIOZ corer, CTD, possible piston corer (55° 16.68768 N -000° 33.7782 E)  
Station S24      NIOZ corer, CTD, possible piston corer (55° 10.52226 N – 000° 27.42546 E)  
Station S23      NIOZ corer, CTD, possible piston corer (55° 3.21132 N -000° 22.1766 E)

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

Scientist in Charge: Eleanor Haigh  
Second Scientist in Charge: Dave Sivyer

Date: 29/10/2021

**DISTRIBUTION:**

BODC  
MarOps  
AWSM  
Staff