CENTRE FOR ENVIRONMENT, FISHERIES AND AQUACULTURE SCIENCE LOWESTOFT LABORATORY, LOWESTOFT, SUFFOLK NR33 0HT

2011 RESEARCH VESSEL PROGRAMME

PROGRAMME: RV CEFAS ENDEAVOUR: 05/11

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DURATION: 6 March – 22 March.

LOCATION: Western Channel (ICES area VIIE)

NARRATIVE:

The RV Endeavour sailed from Portland on the 6th of March at 12 o'clock. Having driven down from Lowestoft the previous day, we managed to sample one station off Portland as a shakedown tow. This identified some teething problems with the EDC, so the decision was made to fix these and prepare for the next day's sampling by steaming to the western edge of the sampling grid. Sampling commenced on the 7th of March around the Scilly Isles, completing the five stations in stratum 1. Catches were characterized by megrims and monkfish. On the second day we completed a further five stations in the middle of the western approaches, completing 2 bongo and five manta (micro litter trawl) stations. Bongo stations were collected as part of the mnemiopsis project and sampled concurrently with the twice daily CTD samples. Manta trawl samples were collected concurrent with beam trawl samples (extended 20 minutes past the tow) weather permitting. Station numbers, including profiler stations are shown in Figure 1 with Figure 2 displaying the associated validity codes for the beamtrawl stations and the cruise track by date.

Day three saw sampling in Mounts Bay initially sampling proceeded as planned, but stations further inshore presented some issues with static gear and fisheries interactions. After finally resolving these local problems we sampled one further station on which the warp parted about 20m ahead of the starboard beam. The rest of the day was spent successfully recovering the beam first by retracing our steps on the Transas and then grappling using the port warp. Reviewing the incidence it was possible to identify the crag on the multibeam that had caused the beam to get stuck. Basically this represented a

sudden change in depth from an otherwise very much trawlable ground. Whilst unfortunate, one has to expect such incidences on a stratified random survey and the situation itself had not presented a danger to either Cefas staff or ship's crew. Retrieval of the gear was complicated, but performed in a very professional manner. The tow was abandoned and an alternate one fished. Catches of interest for the day were largely made up of monk, a good number of lemons and a couple of large catches of sole. At this point it became apparent, that the ring-net sampling took considerably longer than suggested by the project proposal, and neither would it be possible to achieve the necessary sample sizes using the proposed sampling design. The decision was made that additional samples could be collected during the night, although this presented James with an extended daily schedule. To compensate for this, sampling in the morning was conducted by fisheries staff, leaving him to carry out sample sorting later in the day and after the beam trawl work was concluded in the evening.

On the 10th of March we were positioned off the Lizard, but getting the first couple of tows in was complicated by a large number of nets deployed in the area on neap tides. With potters working the inshore ground of Falmouth bay finding suitable positions took further time, but we eventually managed to fish the planned stations. Interestingly a number of megrim were caught on these stations that are usually only found west of the lizard. Abundances of small monk are still high, accompanied with decent catches of medium sized monk.

Off the Edie Stone catches of cuttle-fish started to increase dramatically with some very good catches off the Start and into Lyme bay over the next two days. Further inshore we also encountered plaice catches of a magnitude not previously observed in the area. We managed 8 stations on the 13th of March, although this meant long hours due to the time taken by the bongo nets and the additional time dedicated to manta sampling. The next couple of days were spent sampling Lyme bay proper, and completing the UK section of the survey. Species compositions were usual for the area with lots of solenettes etc. but catches of plaice remained higher than usual. Two additional samples were also collected on these days to fill the available time, managing 7 and 8 stations a day due to the proximity of samples in the area. After the days sampling the gear inspection indicated some interference of the stone mat with the frame chain as the mat had stretched. One row of three linkers was removed to improve fishing and reduce the incidence of rocks.

Given the very good weather we had enjoyed during the trip and potentially expecting worse to come we headed back out west on the French side to sample stratum 13. The stations were very far apart so that for a time we used three engines to manage the five stations planned for the day. Catches were poor in terms of commercial fish species as expected, but as usual we encountered substantial catches of benthos and rock, despite the adjustment to the gear.

On the 16th of March we started the day around the Hurd deep, but required three tows until lunch to collect a single valid sample at the first station, with the last haul being shortened to one mile, as the cod end on the port beam was out. Consequently, only four stations were fished on the day with some good catches of monk and cuttle fish, but also including substantial catches of benthos. Dave Brown received some training as SIC on the bridge and logged a couple of the stations.

On the 18th of March seven stations were fished in the tricky shallow and rocky waters around the southern Channel Islands. Due to the detours required for these samples and the large tides involved three engines were used on the critical transects. Catches in the area were very poor, poorer than usual and yielded virtually no samples of commercial value with dog fish and gurnards dominating the catches. As we headed into deeper water at the end of the day the usual problem of brittle stars raised its head and the last station of the day had to be cut short to a 1 mile tow in order to bring the sample aboard.

Heading out towards mid-channel on the following day we started the day with some more brittle star catches and had to shorten a further tow to 1 mile. Rob Bush was SIC training during the day and we managed 7 samples with a few monkfish and a spattering of sole. The Angel Emil was fishing in the area, particularly around the Bank de Langustine a known spawning ground of sole, but our catches there had been low and judging by her frequent movements they were scratching also probably making a living on the good abundance of scallops seen in the area. Possibly sole are spawning later this year as would also be suggested by the maturity information collected on this survey. We finished the day west of Guernsey.

On the 20th we hoped to complete the survey, but managed only five stations in the strong tides between Guernsey and Sark. Based on fishermen's information we should have seen some undulate rays in the area, but only managed to catch a couple of juveniles too small for tagging. We did however see the first noticeable catches of sole on the French side. In previous years, the area south had been productive, but this year we had no stations in that area, but these catches suggest that sole are still prevalent. The order of the final stations of the day needed to be changed as it resided in the east bound lane of the TSA and fishing operations required fishing into the tide so that the station had to be fished in the early evening, leaving two stations for the morning to finish the survey.

On the 21 the final two stations were completed with Dave Brown SIC training with large catches of flustra making up the majority of what was caught. The decision was made to use the extra available time to increase sample numbers in stratum 6, but on the first tow after clearing the TSA we came fast on an unmarked wreck after 1.04 miles. Beams were successfully retrieved, but the port beam was terminally damaged with the back-sheet almost completely removed and the starboard gear was severely damaged, with the ground gear, fishing line and flip-up parted as well as the codend and liner torn. At this late stage and with the survey grid complete it would have been easy to call it a day, but the Endeavour crew were insistent on being ready for the mornings additional tows. The port gear was changed for the spare and the star board beam was temporarily fixed under the expert guidance of Ray Reynolds.

Because it was not possible to complete the random sequence in stratum 6 effort was redirected to stratum 5 for the final day, picking up a further 3 stations in Lyme bay, which will allow us to better estimate the within stratum variance components. Catches showed the usual species composition, and yielded further decent catches of sole, including the smaller individuals that are known to be resident in the area of the NE soft-grounds. James was able to collect a further two bongo net stations before sampling ceased at 12 o'clock in order to reach Portland by 17:00 where we docked.

A total of 81 litter samples were also collected using the Manta trawl and 37 sets of ring-nets for the mnemiopsis project. Other secondary aims were also completed apart from the Thornback ray project for an Aberdeen student, as no suitable samples were collected on this trip. Also no running plaice or soles were encountered this year. It may be that spawning is slightly retarded this year due to the cold winter, but this years cruise was also moved forward by one week compared to the usual time and by 2 weeks compared to last years cruise. No suitable photos for the DCF photo collection could be taken.

Fish distributions for the main commercial species of interest are shown in Figure 5, and are largely consistent with the area distribution in previous years. Length frequency distributions are shown in Figure 6 for the same species. Sole are encountered at a large proportion of the stations with highest abundances found in mounts bay, off start point as usual, but he normal concentration observed in previous years east of Guernsey is less obvious in 2011, mainly because of the random selection of stations not falling within the area. Length distributions are virtually identical to previous years. Plaice were much more abundant in 2011 with the majority of the difference in abundance coming from intermediate length (230-330mm).The areas around the start continue to yield the highest abundances as in previous years. Monk fish were very widely distributed as in previous years, but their overall abundance was down. The 220-310mm length group is the major difference in the size distributions suggesting that last years recruitment was small than the previous years, with this years recruitment (< 200 mm) being about the same as the previous one. Megrim abundances were consistently up across the stations west of lands end compared to previous years, in addition there appears to be a distributional shift with megrim being more consistently found as far east as Start point, with the major change in the length distribution showing up at length less than 270mm. Catches of lemon sole were slightly down on previous years although length distributions appear to be very similar overall and largely restricted to UK coastal waters in their distribution. Cuttle-fish catches were again largely restricted to the central channel, with abundances down from the previous year. The length distributions indicate that this is mainly due to the abundance of cuttlefish less than 100mm and as such likely to represent lower recruitment compared to the previous year.

Species composition plots (Figure 3) show the sample composition in 2011, with Figure4 illustrating the consistency in the species composition over time for the whole timeseries. Some possible minor improvements to the stratification scheme are now becoming apparent, although it seems unlikely that such changes would have much impact on the perception of the ecosystem as based on this survey.

I would like to take this opportunity to thank all of the crew of the Endeavour and the cefas scientific staff for a successful completion of the survey. Particularly note worthy was Brian Salters contribution in managing the often complex shipside operations whilst still being very accommodating and helpful with his fisheries knowledge, Rolly's dedication to the gear and getting me up in time every morning to start sampling and Sophy McCully's contribution in deck mastering, particularly because she took on the role on this unusual survey with only a days notice.

AIMS & RESULTS:

1. *To carry out a beam trawl survey of the Western Channel for stock assessment purposes using standardized 4m beam trawls in order to obtain information on:*

   a) *Distribution, size composition and abundance of all fish species caught.*

   A total of 80 valid beam trawl samples were collected over the period of the cruise in accordance with the relative effort by stratum as per the original cruise plan. Five additional samples were collected inn stratum in order to provide more information on survey precision estimates. Such analysis will require many more additional samples over time, but can increase precision of abundance estimates immediately. Station positions of all beam trawl samples are provided in table 1 and plotted in Figures 1 and 2 with catch by species shown in Table 2.

   b) *Age – length distribution of selected species.*

   A total of 2585 otolith / length / weight and maturity samples were collected for commercial fish species of interest to the DCF. Sample numbers by species / sex groups are shown in table 3. Length frequency distributions for selected species are shown in Figure 6 separated by port and starboard gears.

   c) *Distribution of fish in relation to their environment.*

   QTC and multibeam data was collected on stations and in transit between stations for the entire cruise. Data quality was high due to favorable weather conditions. However on one day sampling stratum 9 the transducers on the drop keel had to be raised due to the areas very shallow depth during transit, so that this data may be of an unsuitable quality. Unfortunately the ferry box was defective for the entire trip so no additional environmental information for surface waters was collected away from stations as had been possible in previous years.

   d) *Distribution of macrobenthos and anthropogenic debris.*

   Presence and absence of epifaunal species was collected from the starboard beam (with blinder), with anthropogenic debris now recorded in the new litter sampling protocol (see secondary aims point 5)

   e) *Surface and bottom temperature and salinity data using CTD.*

   Temperature and salinity information, using a net based mini CTD was collected with all trawl samples. At least two additional CTD casts using the EM2 logger were performed daily in association with fishing stations

   f) *Length weight & maturity information using individual fish measurements, in support of the EU Data Regulation.*

2. *To collect fisheries acoustic data at three operating frequencies (38, 120 & 200 kHz) and multibeam data continuously throughout the cruise. An attempt will be made to use this data to determine habitats and the scale at which these vary.*

3. *Collect micro plastic samples at each station using the manta-trawl towed for about an hour at 4-8 knots.*

   A total of 81 micro litter samples were collected throughout the cruise almost all of which were collected in association with beam trawl samples. In very few cases were weather

conditions not suitable for manta deployment and in general the work ended up being much less time consuming and disruptive than might have been thought and generally impinged on trawl samples only due to the speed with which the ship was able to move between stations for 10-20 minutes following a trawl station. Some difficulties were encountered mostly due to weather, in advertent alterations of ships speed or large amounts of seaweed collecting on the manta hydrofoils which tended to flip the gear and invalidate samples.

SECONDARY AIMS:

1. *Collect length weight information for DCF work*.
   In addition to the individual weight data collected in association with otolith information 3426 length weight data were collected over 90 species / sex combinations to supplement the previous years sampling. Sample numbers by species / sex are shown in Table 3.
2. *All dead shad (Allis and Twaite) and all dead lampreys are to be frozen and returned to the lab marking samples with the cruise, station and date.*
   No shad or lamprey were collected in 2011.
3. *Tag rays not needed for DCF maturity work (Joana undulate, cuckoo, common skate and blonde ray)*
   The number of rays of a taggable size, but not required for DCF maturity work was small, but those individual collected were tagged, as were a good number of other elasmobranchs.
4. *Collect radiology water samples for Trevor Bailey'*
   Eleven water samples were collected for radiology including the usual sampling station located over the Hurd Deep dumping grounds.
5. *Use and evaluate the litter evaluation protocol where time permits.*
   All litter items collected in trawl samples were categorized and recorded according to the litter sampling protocol developed by Cefas. Litter sampling has been standardized and could with some additional effort now be collected on all fisheries surveys, although the efficiencies of different fishing gears may not be comparable and may require additional staff resources to continue collecting this information.
6. *Collect 30 vertical lift net samples for mnemiopsis project.*
   In total 37 ring net samples with associated environmental information were collected in the UK sector of the western channel. A considerable amount of time was dedicated to this aim and is unlikely to be repeated in future years unless additional sea-time can be made available from this project.

Initialled. Brian Harley
BH

DISTRIBUTION:
Basic list +

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S. Pitois
T. Maes
T. Bailey
S. Bossy
D. Wilkinson

Table 1: Station Log information:

Cruise	Station	Time	Stratum	LatS	LongS	LatH	LongH	Distance	LogS	LogH	DepthS	DepthH	Tdir	Wdir	SeaH	SwlH	Tspeed	Wspeed	Barom	SwlDir	Gear
CEND 5/11	1	3/6/2011 14:58	6	50.255266	-2.603133	50.255266	-1.206266	0	25	25	62	62	260	85	1	2	2	18	1039	85	Profiler
CEND 5/11	4	3/6/2011 16:44	6	50.262433	-2.5225	50.262516	-0.9409	2	31.9	33.9	61	62	231	100	1	2	1	28	1038	90	Beams
CEND 5/11	5	3/7/2011 7:00	1	49.7774	-6.34955	49.7774	-2.0973	0	196.4	196.4	99	99	93	100	0.5	1	1.2	18	1036	120	Profiler
CEND 5/11	8	3/7/2011 7:45	1	49.772666	-6.3753	49.767716	-2.5596	2	197.7	199.7	99	100	119	110	0.5	1	1	16	1036	120	Beams
CEND 5/11	9	3/7/2011 8:59	1	49.717766	-6.503683	49.69555	-3.2652	2	204.1	206.1	102	102	175	100	0.5	1	0.9	17	1037	110	Beams
CEND 5/11	10	3/7/2011 11:29	1	49.922233	-6.522583	49.938866	-2.8638	1.9	222.3	224.2	92	91	238	80	0.5	1	1.2	14	1037	70	Beams
CEND 5/11	11	3/7/2011 16:30	1	49.906133	-6.759916	49.906133	-4.5595	0	245.2	245.2	111	111	355	70	0.5	1	0.4	12	1034	80	Profiler
CEND 5/11	12	3/7/2011 16:55	1	49.912616	-6.754683	49.877333	-4.5602	2.2	247	249.2	110	112	10	70	0.5	1	1.2	12	1034	80	Beams
CEND 5/11	13	3/7/2011 18:49	1	49.699866	-6.789116	49.66885	-4.8733	2.1	260	262.1	111	114	111	85	0.5	1	0.4	9	1034	60	Beams
CEND 5/11	14	3/8/2011 6:04	8	49.18745	-6.879366	49.18745	-5.2762	0	313.4	313.4	132	132	95	270	0	0.5	1.1	3	1031	90	Profiler
CEND 5/11	15	3/8/2011 6:56	8	49.185166	-6.904716	49.1842	-5.7399	2	315.1	317.1	131	131	112	270	0	0.5	0.5	4	1032	90	Beams
CEND 5/11	16	3/8/2011 10:24	8	49.414366	-6.491483	49.437083	-2.7157	2	341.1	343.1	117	117	228	30	0	0.5	1	6	1030	90	Beams
CEND 5/11	17	3/8/2011 13:25	8	49.27585	-6.1203	49.2583	-0.4736	2	360.1	362.1	117	116	272	200	0	1	1.1	5	1031	270	Beams
CEND 5/11	18	3/8/2011 15:47	8	49.155666	-5.89875	49.155666	-4.49375	0	372	372	119	119	324	310	0	1	0.8	13	1030	270	Profiler
CEND 5/11	19	3/8/2011 16:29	8	49.146783	-5.894033	49.112366	-4.533833	2.1	373.8	375.9	119	120	8	310	0	1	1	13	1030	270	Beams
CEND 5/11	20	3/8/2011 19:22	8	49.284716	-5.3237	49.276666	-1.866	2	403.4	405.4	106	107	77	270	0	1	1.4	12	1030	240	Beams
CEND 5/11	21	3/9/2011 7:05	2	49.85235	-5.809533	49.85235	-4.047666	0	452.1	452.1	92	92	92	300	1	1.5	0.9	25	1030	270	Profiler
CEND 5/11	22	3/9/2011 7:52	2	49.853133	-5.825816	49.863933	-4.37325	2	454.7	456.7	91	91	139	300	1	1.5	0.9	25	1030	280	Beams
CEND 5/11	23	3/9/2011 9:21	2	49.883933	-5.86695	49.863283	-4.543583	2.1	461.4	463.5	84	85	162	290	1	1.5	0.9	20	1031	300	Beams
CEND 5/11	24	3/9/2011 11:26	2	49.928366	-5.713783	49.928366	-3.568916	0	473.6	473.6	77	77	177	270	1	1.5	1.5	21	1032	280	Profiler
CEND 5/11	25	3/9/2011 12:15	2	49.913983	-5.713116	49.9455	-3.469916	2.1	476	478.1	80	71	199	270	1	2	1.4	22	1031	290	Beams
CEND 5/11	26	3/9/2011 14:26	2	50.101733	-5.504233	50.07565	-2.35625	2	491.5	493.5	27	30	280	270	1	1	0.7	10	1032	270	Beams
CEND 5/11	27	3/9/2011 16:19	2	50.03065	-5.317066	50.0249	-1.58225	0	501.1	501.1	29	29	311	290	1	1	0.3	18	1030	250	Beams
CEND 5/11	28	3/10/2011 7:09	2	49.9674	-5.505016	49.9674	-2.525083	0	543.1	543.1	66	66	62	250	1	1.5	0.2	28	1026	260	Profiler
CEND 5/11	29	3/10/2011 7:46	2	49.9644	-5.49195	49.967016	-2.734583	2.1	544.8	546.9	64	67	79	260	1	1.5	0.4	31	1026	260	Beams
CEND 5/11	30	3/10/2011 11:14	13	49.888133	-5.181133	49.887833	-1.172083	2	567.1	569.1	86	84	138	270	1	1.5	0.2	28	1028	260	Beams
CEND 5/11	31	3/10/2011 13:28	13	49.977166	-5.130166	49.977166	-0.650833	0	570.1	570.1	34	34	229	270	0.5	1	1.2	23	1025	260	Profiler
CEND 5/11	32	3/10/2011 15:09	13	49.981466	-5.008516	49.980966	-0.297916	2	589.3	591.3	75	76	210	270	0.5	2.5	0.5	24	1026	250	Beams

CEND 5/11	33	3/10/2011 17:29	3	50.126216	-4.857733	50.108733	-3.6234	2.1	606.2	608.3	68	66	77	270	1	1.5	0	18	1025	240	Beams
CEND 5/11	34	3/10/2011 19:27	13	49.9411	-4.825716	49.915883	-3.4404	2.1	619.3	621.4	85	86	38	270	0.5	1.5	0.6	18	1027	260	Beams
CEND 5/11	35	3/11/2011 6:59	3	50.075233	-4.690683	50.075233	-2.762733	0	661.7	661.7	74	74	23	270	0	1	0.2	10	1026	230	Profiler
CEND 5/11	36	3/11/2011 7:37	3	50.070416	-4.6774	50.0619	-2.913266	2.1	663.4	665.5	74	75	38	270	0	1	0.3	6	1025	250	Beams
CEND 5/11	37	3/11/2011 8:29	3	50.061366	-4.764766	50.054233	-3.266066	2.1	666.9	669	75	75	49	260	0	1	0.5	6	1024	240	Beams
CEND 5/11	38	3/11/2011 10:40	3	50.2185	-4.7272	50.231366	-2.708333	2.1	680.9	683	57	57	57	180	0	1	0.1	6	1026	210	Beams
CEND 5/11	39	3/11/2011 12:45	3	50.294466	-4.490033	50.294466	-1.960133	0	691.3	691.3	49	49	180	200	0	1	0.1	7	1025	240	Profiler
CEND 5/11	40	3/11/2011 13:26	3	50.296766	-4.496716	50.298533	-1.781466	2.1	692.8	694.9	48	47	222	190	0	1	0.2	6	1025	210	Beams
CEND 5/11	41	3/11/2011 15:04	4	50.262	-4.430666	50.26505	-1.517666	2	701.8	703.8	54	51	248	170	0	1	0.5	6	1023	180	Beams
CEND 5/11	42	3/11/2011 16:12	4	50.261866	-4.281633	50.2582	-0.920866	2	707.6	709.6	53	53	263	180	0	1	0.4	10	1022	160	Beams
CEND 5/11	43	3/11/2011 17:58	4	50.206983	-4.061133	50.182983	-0.401133	2	717.9	719.9	57	64	302	220	0	1	0.3	12	1021	260	Beams
CEND 5/11	44	3/11/2011 19:20	4	50.099633	-4.23135	50.07455	-1.058266	2.1	6.6	8.7	73	75	62	180	0	1	0.2	12	1021	250	Beams
CEND 5/11	45	3/11/2011 20:55	0	50.048333	-4.309	50.048333	-1.236				80	80									Profiler
CEND 5/11	46	3/12/2011 21:54	0	50.044166	-4.1585	50.044166	-0.634				79	79									Profiler
CEND 5/11	47	3/12/2011 22:59	0	50.085166	-4.397833	50.085166	-1.591333				79	79									Profiler
CEND 5/11	48	3/12/2011 7:00	4	50.060716	-4.398416	50.060716	-1.593666	0	48	48	74	74	68	140	0.5	1	0	14	1011	250	Profiler
CEND 5/11	49	3/12/2011 7:36	4	50.053983	-4.401016	50.019383	-1.5768	2	51.1	53.1	75	77	86	150	0.5	1	0.1	14	1011	150	Beams
CEND 5/11	50	3/12/2011 9:36	13	49.85635	-4.39945	49.844166	-1.397333	2	63.6	65.6	82	80	75	160	0.5	1	0.8	12	1009	330	Beams
CEND 5/11	51	3/12/2011 11:28	7	49.743216	-4.124383	49.7339	-0.2904	2	76.5	78.5	80	79	66	170	0.5	1	0.3	14	1009	170	Beams
CEND 5/11	52	3/12/2011 14:30	7	49.7922	-3.6976	49.792433	-1.93265	2.1	93.9	96	72	73	256	190	0.5	1	0.4	9	1007	120	Beams
CEND 5/11	53	3/12/2011 13:53	7	49.788583	-3.71985	49.788583	-2.15955	0	93	93	75	75	252	190	0.5	1	0.3	9.1	1007	120	Profiler
CEND 5/11	54	3/12/2011 16:03	7	49.814566	-3.50135	49.818483	-1.3614	2	101.6	103.6	72	72	247	170	0.5	1	0.7	10	1007	140	Beams
CEND 5/11	55	3/12/2011 18:34	6	49.892533	-3.058166	49.901583	-0.02145	2.1	119.6	121.7	69	69	223	170	0.5	1	0.8	14	1006	160	Beams
CEND 5/11	56	3/12/2011 19:50	0	49.896	-3.037666	49.896	-0.113				74	74									Profiler
CEND 5/11	57	3/13/2011 21:01	0	49.9365	-3.189833	49.9365	-0.5695				76	76									Profiler
CEND 5/11	58	3/13/2011 22:22	0	49.9625	-3.293333	49.9625	-0.88				77	77									Profiler
CEND 5/11	59	3/12/2011 23:12	0	49.976166	-3.3135	49.976166	-0.9405				76	76									Profiler
CEND 5/11	60	3/13/2011 7:11	4	50.028933	-3.86045	50.028933	-2.58135	0	214.4	214.4	72	72	286	320	1	1	0.3	16	1009	260	Profiler
CEND 5/11	61	3/13/2011 7:43	4	50.031483	-3.852916	50.047133	-2.69915	2.1	173.8	175.9	72	74	117	330	0.5	1	0	16	1009	260	Beams
CEND 5/11	62	3/13/2011 9:06	4	50.076783	-3.804266	50.08905	-2.235	2.4	181	183.4	72	72	95	330	0.5	1	0.3	15	1010	270	Beams
CEND 5/11	63	3/13/2011 10:55	4	50.104683	-3.625566	50.127483	-1.7661	2.1	188.9	191	70	70	61	270	0.5	1	0.7	12	1010	270	Beams

CEND 5/11	64	3/13/2011 12:50	4	50.096033	-3.57165	50.096033	-1.71495	0	194.6	194.6	68	68	63	30	0.5	1	0.7	12	1012	270	Profiler
CEND 5/11	65	3/13/2011 13:30	4	50.0854	-3.575633	50.060166	-1.83135	2	195.6	197.6	68	69	59	300	0.5	1	0.5	12	1012	270	Beams
CEND 5/11	66	3/13/2011 15:28	7	49.983366	-3.449033	49.9994	-1.21175	2	206.5	208.5	70	69	53	300	0.5	1	0.1	9	1014	270	Beams
CEND 5/11	67	3/13/2011 17:44	7	50.0703	-3.166416	50.094433	-0.60235	2	219.5	221.5	65	66	222	270	0.5	1	0.6	7	1015	260	Beams
CEND 5/11	68	3/13/2011 18:57	4	50.117533	-3.30115	50.147016	-0.97645	2.1	226	228.1	63	64	223	300	0	1	0.6	3	1016	270	Beams
CEND 5/11	69	3/13/2011 20:42	7	50.192666	-3.432833	50.192666	-1.2985				61										Profiler
CEND 5/11	70	3/13/2011 21:43	7	50.193166	-3.505166	50.193166	-1.5155				66										Profiler
CEND 5/11	71	3/13/2011 22:29	7	50.228666	-3.485166	50.228666	-1.4555				65										Profiler
CEND 5/11	72	3/14/2011 6:45	0	50.308166	-3.443916	50.306666	-1.33175	0	258.4	258.4	55	55	223	20	0.5	0.5	0.3	11	1021	270	Profiler
CEND 5/11	73	3/14/2011 7:11	5	50.310466	-3.442716	50.339483	-1.2516	2.1	259.2	261.3	55	54	229	30	0.5	0.5	0.5	11	1021	270	Beams
CEND 5/11	74	3/14/2011 8:48	5	50.450733	-3.378616	50.47365	-1.0257	2	268.2	270.2	36	34	211	30	0.5	0.5	0.2	15	1021	30	Beams
CEND 5/11	75	3/14/2011 10:25	5	50.523083	-3.131466	50.532816	-0.2286	2.2	278.8	281	38	38	17	90	0.5	0.5	0.1	16	1023	90	Beams
CEND 5/11	76	3/14/2011 12:01	5	50.423166	-3.020566	50.391583	-0.03275	1.9	288.9	290.8	54	56	69	40	0.5	0.5	0.2	18	1023	10	Beams
CEND 5/11	77	3/14/2011 13:21	5	50.402516	-2.917216	50.402516	-1.834433	0	295.2	295.2	54	54	70	90	0.5	1	0.3	19	1022	90	Profiler
CEND 5/11	78	3/14/2011 13:43	5	50.39905	-2.910266	50.36595	-1.796666	2	295.9	297.9	54	56	72	90	0.5	1	0.3	19	1022	90	Beams
CEND 5/11	79	3/14/2011 15:08	5	50.387083	-2.84475	50.420233	-1.672333	2	302.2	304.2	54	52	84	120	1	1.5	0.3	20	1023	90	Beams
CEND 5/11	80	3/14/2011 17:45	5	50.557733	-2.929416	50.5562	-1.744133	2.2	317.2	319.4	35	36.5	211	100	1	2	0.1	24	1022.1	100	Beams
CEND 5/11	81	3/14/2011 19:30	0	50.553666	-2.804333	50.553666	-1.608666				35	35									Profiler
CEND 5/11	82	3/15/2011 20:25	0	50.512666	-2.8275	50.512666	-1.655				45	45									Profiler
CEND 5/11	83	3/15/2011 7:06	5	50.623916	-2.900333	50.623916	-1.800666	0	363.4	363.4	29	29	253	60	0.5	1.5	0.1	8	1024	120	Profiler
CEND 5/11	84	3/15/2011 7:31	5	50.6244	-2.8951	50.62075	-1.686466	2.1	364	366.1	30	30	266	80	0.5	1.5	0.3	12	1024	120	Beams
CEND 5/11	85	3/15/2011 9:10	5	50.624133	-2.685883	50.629883	-1.266866	2.1	372.2	374.3	31	31	300	110	0.5	1	0.5	16	1024	130	Beams
CEND 5/11	86	3/15/2011 10:24	5	50.560483	-2.652266	50.5263	-1.3206	2	379.1	381.1	34	40	329	90	0.5	1	0.5	13	1021	130	Beams
CEND 5/11	87	3/15/2011 12:42	6	50.5467	-2.353633	50.520316	-0.641466	2	395.6	397.6	28	32	12	90	0.5	1.5	0.2	23	1020	120	Beams
CEND 5/11	88	3/15/2011 14:50	0	50.420316	-2.044633	50.420316	-0.089266	0	410	410	41	41	74	90	1	1.5	0.8	21	1019	90	Profiler
CEND 5/11	89	3/15/2011 15:24	6	50.4126	-2.040666	50.3944	-0.166666	1.9	411.3	413.2	43	47	76	90	0.5	1.5	1	18	1019	110	Beams
CEND 5/11	90	3/15/2011 17:43	6	50.30905	-2.430966	50.305116	-0.967166	2.1	427.7	429.8	57	57	93	90	0.5	1.5	0.8	12	1020	90	Beams
CEND 5/11	91	3/15/2011 20:20	0	50.288666	-2.687666	50.288666	-1.375333				55	55									Profiler
CEND 5/11	92	3/16/2011 21:15	0	50.262166	-2.7965	50.262166	-1.593				61	61									Profiler
CEND 5/11	93	3/16/2011 7:03	13	49.269833	-4.609083	49.269833	-2.436333	0	538.2	538.2	95	95	247	50	0.5	1	0.9	15	1021	50	Profiler
CEND 5/11	95	3/16/2011 7:27	13	49.269516	-4.610633	49.284533	-2.256133	2.1	539.7	541.8	95	95	249	50	0.5	1	0.9	14	1021	50	Beams

CEND 5/11	96	3/16/2011 9:59	12	49.1974	-4.102066	49.20085	-0.225066	1.8	561.4	563.2	89	87	257	60	1	2	0.5	16	1021	60	Beams
CEND 5/11	97	3/16/2011 13:00	12	48.832683	-3.949466	48.832683	-2.8484	0	586.9	586.9	82	82	77	60	1	2	1.3	15	1020	60	Profiler
CEND 5/11	98	3/16/2011 13:22	12	48.820466	-3.960766	48.804	-0.0204	1.9	588.2	590.1	79	80	79	90	1	1.5	1.3	16	1020.5	50	Beams
CEND 5/11	99	3/16/2011 16:49	12	48.6715	-4.693516	48.68465	-2.7098	1	621.3	622.3	91	94	246	40	1	1.5	1.1	14	1021	60	Beams
CEND 5/11	100	3/16/2011 19:15	12	48.92565	-4.36545	48.942916	-1.283133	2.1	641.4	643.5	93	91	266	300	0.5	0.5	1.3	2	1021.8	80	Beams
CEND 5/11	101	3/17/2011 7:06	0	49.54165	-3.614716	49.54165	-1.84415	0	708.5	708.5	79	79	353	320	1	1.5	0.3	15	1025	330	Profiler
CEND 5/11	102	3/17/2011 7:22	9	49.54575	-3.5989	49.554416	-1.64775	2	709.4	711.4	77	77	340	320	1	1.5	0.4	16	1025	330	Beams
CEND 5/11	103	3/17/2011 9:25	9	49.546	-3.5802	49.563983	-1.61765	2.1	721.3	723.4	73	74	246	310	10	1.5	0.9	15	1026.3	300	Beams
CEND 5/11	104	3/17/2011 11:35	9	49.547	-3.573933	49.554416	-1.6472	1	730.6	731.6	77	77	225	330	1	1.5	1	9	1027	330	Beams
CEND 5/11	105	3/17/2011 12:54	9	49.594333	-3.3745	49.606083	-0.9808	2	739.1	741.1	74	73	209	310	1.5	1.5	0.6	12	1027.5	300	Beams
CEND 5/11	106	3/17/2011 15:32	9	49.335433	-3.364083	49.335433	-1.09225	0	759.2	759.2	79	79	72	280	0.5	1.5	1.1	13	1027	280	Profiler
CEND 5/11	107	3/17/2011 15:50	9	49.327983	-3.36995	49.312716	-1.246	2	760	762	79	76	72	280	0.5	1.5	1.1	13	1027	280	Beams
CEND 5/11	108	3/17/2011 18:31	12	49.084166	-3.458	49.085433	-1.2219	2	777.2	779.2	77	76	281	260	0.5	1.5	1.1	10	1029	280	Beams
CEND 5/11	109	3/18/2011 6:40	10	48.831916	-2.182616	48.831916	-0.365233	0	833.3	833.3	39	39	304	270	0.5	1	0.2	11	1030	300	Profiler
CEND 5/11	110	3/18/2011 6:52	10	48.831783	-2.170416	48.83395	-0.2886	1.2	833.9	835.1	37	37	297	270	0.5	1	0.7	11	1030	300	Beams
CEND 5/11	111	3/18/2011 9:23	11	49.034883	-1.928883	49.02625	-0.879083	2	857	859	21	18	271	210	0.5	1	0.9	10	1030	270	Beams
CEND 5/11	112	3/18/2011 10:55	11	49.168916	-1.8937	49.163866	-0.843983	2	869.4	871.4	18	16	170	160	0	0.5	0.3	12	1030	210	Beams
CEND 5/11	113	3/18/2011 14:02	11	49.132683	-2.194016	49.134516	-0.482333	1.9	894.4	896.3	29	35	105	180	0.5	1	3.4	8	1030	180	Beams
CEND 5/11	114	3/18/2011 15:22	11	49.157816	-2.255283	49.166516	-0.553766	1	898.2	899.2	35	26	130	210	0.5	1.5	2.3	18	1029	250	Beams
CEND 5/11	115	3/18/2011 17:41	10	48.957516	-2.474666	48.9569	-1.050066	2.1	914.6	916.7	54	51	66	30	1	1.5	0.5	18	1031	310	Beams
CEND 5/11	116	3/19/2011 6:48	0	49.061383	-2.572066	49.061383	-1.144133	0	971.6	971.6	60	60	10	50	1	1.5	0.7	15	1041	350	Profiler
CEND 5/11	117	3/19/2011 7:06	10	49.064166	-2.5818	49.0344	-1.211333	2	972.8	974.8	58	56	334	50	1	1.5	0.9	15	1041	350	Beams
CEND 5/11	118	3/19/2011 8:34	10	48.969283	-2.723133	48.954116	-1.417133	1.1	981.3	982.4	52	47	306	90	1	1.5	3.3	6	1041	50	Beams
CEND 5/11	119	3/19/2011 11:24	10	49.097383	-3.287516	49.0965	-0.7077	2	1009.1	1011.1	71	69	262	80	0.5	1	2.3	11	1044	250	Beams
CEND 5/11	120	3/19/2011 13:35	10	49.203466	-3.008666	49.203466	-0.026	0	1022.7	1022.7			213	80	0.5	1	1.3	9	1044	260	Profiler
CEND 5/11	121	3/19/2011 13:48	10	49.211616	-3.002933	49.241633	-1.9577	2	1023.3	1025.3	68	69	213	80	0.5	1	1.3	9	1044	260	Beams
CEND 5/11	122	3/19/2011 15:11	10	49.3298	-2.96725	49.357016	-1.9968	2	1031.1	1033.1	71	72	122	30	0.5	1	2.4	2	1042	260	Beams
CEND 5/11	123	3/19/2011 17:46	10	49.3119	-2.547533	49.30925	-1.196866	2	1053.2	1055.2	66	69	69	40	0.5	1	2.3	11	1041	240	Beams
CEND 5/11	124	3/19/2011 19:46	10	49.452316	-2.774316	49.434316	-1.5636	1.1	1067.2	1068.3	72	72	18	10	0.5	1	2.9	9	1041	240	Beams
CEND 5/11	125	3/20/2011 7:25	11	49.567266	-2.623783	49.543766	-1.320333	2.1	1116.4	1118.5	74	74	47	190	0.5	0.5	1.3	5	1041	250	Beams
CEND 5/11	126	3/20/2011 9:19	0	49.600483	-2.442316	49.600483	-0.884633	0	1128.7	1128.7	59	59	326	210	0.5	0.5	2.2	6	1042	240	Profiler

CEND 5/11	127	3/20/2011 9:40	11	49.6124	-2.434533	49.582383	-0.817733	2.1	1130.5	1132.6	61	55	317	210	0.5	0.5	2.7	5	1042	240	Beams
CEND 5/11	128	3/20/2011 11:43	11	49.562933	-2.189483	49.588533	-0.311666	2	1142.4	1144.4	35	41	248	130	0	0.5	2.3	2	1042	230	Beams
CEND 5/11	129	3/20/2011 13:29	0	49.59075	-2.066366	49.59075	-0.132733	0	1149.7	1149.7	32	32	188	240	0.5	0.5	3.3	7	1043	220	Profiler
CEND 5/11	130	3/20/2011 13:46	11	49.596666	-2.059166	49.630383	-0.097666	2.1	1150.3	1152.4	30	34	186	240	0.5	0.5	3.3	7	1043	220	Beams
CEND 5/11	131	3/20/2011 17:29	9	49.891316	-2.54455	49.898383	-0.9841	2.2	1181.7	1183.9	70	68	70	210	0.5	1	1.2	7	1042	240	Beams
CEND 5/11	132	3/21/2011 6:57	11	49.777016	-2.18875	49.777016	-0.3775	0	1237.2	1237.2	61	61	81	0	0.5	1	3.8	0	1043	270	Profiler
CEND 5/11	133	3/21/2011 7:15	11	49.773916	-2.0323	49.764933	-0.467	2.1	1238.2	1240.3	61	62	81		0.5	1	3.8	0	1043	270	Beams
CEND 5/11	134	3/21/2011 9:03	9	49.862766	-2.27915	49.851916	-0.643766	1.9	1247.5	1249.4	150	155	29	300	0	1	3.7	2	1043	270	Beams
CEND 5/11	135	3/21/2011 12:35	0	50.1732	-2.236566	50.1732	-0.473133	0	1270.5	1270.5	58	58	256		0	0.5	1.7	0	1044	270	Profiler
CEND 5/11	136	3/21/2011 15:22	6	50.183783	-2.262316	50.190933	-0.4517	1.5	1281.2	1282.7	55	55	265		0	0.5	4	0	1043	270	Beams
CEND 5/11	137	3/22/2011 6:19	0	50.341933	-2.975216	50.341933	-1.950433	0	1345.5	1345.5	58	58	20	350	0	1	0.4	5	1045	270	Profiler
CEND 5/11	138	3/22/2011 6:49	5	50.34375	-2.990933	50.3416	-0.1401	2	1346.3	1348.3	56	57	44	340	0	1	0.6	5	1045	270	Beams
CEND 5/11	139	3/22/2011 8:10	5	50.389266	-3.147166	50.386833	-0.60935	2.1	1353.6	1355.7	56	53	52	340	0	1	1	5	1045	270	Beams
CEND 5/11	140	3/22/2011 10:20	5	50.600966	-3.299066	50.621466	-0.7673	2.1	1370.4	1372.5	20	22	135	0	0	0.5	1.5	0	1046.5	270	Beams
CEND 5/11	141	3/22/2011 11:42	5	50.603133	-3.166733	50.603133	-0.5002	0	1376.4	1376.4	27	27	110	0	0	0.5	0.2	0	1047	270	Profiler

Table 2: Total Catch by species:

SCIENTIFIC	SampledCatch	TotalCatch	MAFF code
Epibenthic mixture	7913.317	7913.317	BEN
Symphodus bailloni	1.371	1.371	BLW
Eunicella verrucosa	0.63	0.63	EUV
Pentapora spp	34.957	34.957	PET
Gobiidae	1.263	1.263	POM
Pecten maximus	103.992	103.992	SCE
Rossia macrosoma	0.242	0.242	ROM
Sepiola atlantica	0.039	0.039	SPA
Sepia elegans	1.518	1.518	SEE
Sepia officinalis	94.846	94.846	CTC
Loligo forbesi	1.737	1.737	NSQ
Loligo vulgaris	0.59	0.59	LLV
Alloteuthis subulata	0.242	0.242	ATS
Ommastrephes (todaropsis) eblanae	0.509	0.509	OME
Eledone cirrosa	66.315	66.315	EDC
Homarus gammarus	5.265	5.265	LBE
Palinurus elephas/palinurus-vulgaris	3.2	3.2	SLO
Dromia personata	1.551	1.551	DRP
Maia squinado	209.734	209.734	SCR
Cancer pagurus	74.14	74.14	CRE
Squilla mantis	0.006	0.006	Mts
Styela partita	0.009	0.009	Sep
Scyliorhinus canicula	427.018	427.018	Lsd
Scyliorhinus stellaris	14.511	14.511	Dgn
Mustelus asterias	1334.924	1334.924	Sds
Torpedo marmorata	7.14	7.14	Mer
Raja brachyura	4.753	4.753	Blr
Raja montagui	12.448	12.448	Sdr
Raja batis	2.025	2.025	SKT
Raja naevus	31.266	31.266	CUR
Raja undulata	7120.791	7120.791	UNR
Raja clavata	4.563	4.563	THR
Conger conger	19.675	19.675	COE
Sprattus (clupea) sprattus	1	1	SPR
Sardina (clupea) pilchardus	3.76	3.76	PIL
Engraulis encrasicolus	0.013	0.013	ANE
Argentinidae	0.841	0.841	ARG
Diplecogaster bimaculata	0.006	0.006	TSC
Lophius piscatorius	329.54	329.54	MON

Lophius budegassa	16.225	16.225	WAF
Gadus morhua	35.22	35.22	COD
Pollachius pollachius	7.625	7.625	POL
Melanogrammus aeglefinus	54.247	54.247	HAD
Enchelyopus cimbrius	0.057	0.057	FRR
Phycis blennoides	0.085	0.085	GFB
Trisopterus minutus	153.524	169.254	POD
Trisopterus luscus	157.73	157.73	BIB
Trisopterus esmarki	0.815	0.815	NOP
Merlangius merlangus	36.75	36.75	WHG
Molva molva	16.609	16.609	LIN
Gaidropsarus vulgaris	3.065	3.065	TBR
Micromesistius poutassou	6.764	6.764	WHB
Ciliata mustela	0.238	0.238	FVR
Merluccius merluccius	6.94	6.94	HKE
Zeus faber	23.257	23.257	JOD
Capros aper	5.015	5.015	BOF
Syngnathus rostellatus	0.002	0.002	NPF
Syngnathus acus	0.636	0.636	GPF
Hippocampus hippocampus	0.004	0.004	SNH
Hippocampus ramulosus	0.006	0.006	SHE
Trigla lucerna	49.484	49.484	TUB
Eutrigla gurnardus	7.746	7.746	GUG
Trigloporus lastoviza	31.121	31.121	GUS
Aspitrigla cuculus	104.765	104.765	GUR
Aspitrigla obscura	0.185	0.185	GUL
Myoxocephalus scorpius	0.018	0.018	BRT
Taurulus bubalis	0.139	0.139	SSN
Agonus cataphractus	2.031	2.386	POG
Liparis liparis	0.016	0.016	SSL
Trachurus trachurus	15.512	42.112	HOM
Spondyliosoma cantharus	8.878	8.878	BKS
Mullus surmuletus	11.228	11.228	MUR
Cepola rubescens	0.311	0.311	RPF
Dicentrarchus (morone) labrax	5.73	5.73	ESB
Centrolabrus exoletus	0.038	0.038	SMW
Ctenolabrus rupestris	2.317	2.317	GDY
Labrus bergylta	18.325	18.325	BNW
Labrus mixtus	9.115	9.115	CUW
Trachinus (echiichthys) vipera	0.744	0.744	WEL
Trachinus draco	0.015	0.015	WEG
Blennius ocellaris	0.44	0.44	BBY
Blennius(parablennius)gattorugine	0.18	0.18	TBY

Chirolophis ascanii	0.03	0.03	YBY
Pholis gunnellus	0.004	0.004	BTF
Ammodytes tobianus	0.011	0.011	TSE
Hyperoplus lanceeolatus	0.221	0.221	GSE
Callionymus lyra	91.792	97.557	CDT
Callionymus maculatus	0.495	0.495	SDT
Callionymus reticulatus	0.036	0.036	RDT
Gobius niger	0.332	0.332	BLG
Buenia jeffreysii	0.008	0.008	JYG
Scomber scombrus	9.13	9.13	MAC
Scophthalmus maximus	12.989	12.989	TUR
Scophthalmus rhombus	26.896	26.896	BLL
Arnoglossus laterna	11.231	11.971	SDF
Arnoglossus imperialis	5.789	5.789	ISF
Zeugopterus punctatus	9.405	9.405	TKT
Phrynorhombus norvegius	1.184	1.184	NKT
Phrynorhombus regius	0.604	0.604	EKT
Lepidorhombus whiffiagonis	54.918	54.918	MEG
Glyptocephalus cynoglossus	3.315	3.315	WIT
Hippoglossoides platessoides	0.225	0.225	PLA
Limanda limanda	23.339	23.339	DAB
Microstomus kitt	46.527	46.527	LEM
Platichthys flesus	2.823	2.823	FLE
Pleuronectes platessa	229.559	229.559	PLE
Solea solea (s.vulgaris)	83.862	83.862	SOL
Pegusa (solea) lascaris	5.49	5.49	SOS
Buglossidium luteum	12.955	30.466	SOT
Microchirus variegatus	38.113	45.013	TBS

Table 3: Biological samples, including length weight information collected:

	Length weight sample	Otolith
Agonus cataphractus u	113	0
Alloteuthis subulata u	29	0
Ammodytes tobianus u	3	0
Argentinidae u	20	0
Arnoglossus imperialis u	13	0
Arnoglossus laterna u	1	0
Aspitrigla cuculus f	0	93
Aspitrigla cuculus m	0	40
Aspitrigla cuculus u	1	11
Blennius ocellaris u	22	0
Blennius(parablennius)gattorugine u	6	0
Buenia jeffreysii u	3	0
Buglossidium luteum u	107	0
Callionymus lyra u	43	0
Callionymus maculatus u	58	0
Callionymus reticulatus u	5	0
Cancer pagurus b	11	0
Cancer pagurus f	54	0
Cancer pagurus m	39	0
Capros aper u	15	0
Centrolabrus exoletus u	2	0
Cepola rubescens u	6	0
Chirolophis ascanii u	3	0
Ciliata mustela u	15	0
Conger conger u	8	0
Ctenolabrus rupestris u	79	0
Dicentrarchus (morone) labrax f	0	3
Dicentrarchus (morone) labrax m	0	2
Diplecogaster bimaculata u	5	0
Enchelyopus cimbrius u	4	0
Engraulis encrasicolus u	1	0
Eutrigla gurnardus f	0	43
Eutrigla gurnardus m	0	14
Eutrigla gurnardus u	1	5
Gadus morhua f	0	22
Gadus morhua m	0	8
Gaidropsarus vulgaris u	18	0
Glyptocephalus cynoglossus u	17	0
Gobiidae U	36	0
Gobius niger u	30	0

Hippocampus hippocampus u	1	0
Hippocampus ramulosus u	1	0
Hippoglossoides platessoides u	1	0
Homarus gammarus b	1	0
Homarus gammarus f	5	0
Homarus gammarus m	3	0
Hyperoplus lanceeolatus u	3	0
Labrus bergylta u	31	0
Labrus mixtus u	50	0
Lepidorhombus whiffiagonis f	0	262
Lepidorhombus whiffiagonis m	0	53
Limanda limanda u	397	0
Liparis liparis u	2	0
Loligo forbesi u	7	0
Loligo vulgaris u	3	0
Lophius budegassa f	0	7
Lophius budegassa m	0	4
Lophius budegassa u	0	2
Lophius piscatorius f	0	137
Lophius piscatorius m	0	140
Lophius piscatorius u	0	49
Maia squinado b	20	0
Maia squinado f	207	0
Maia squinado m	172	0
Maia squinado u	8	0
Melanogrammus aeglefinus f	0	86
Melanogrammus aeglefinus m	0	54
Melanogrammus aeglefinus u	0	1
Merlangius merlangus f	0	98
Merlangius merlangus m	0	83
Merluccius merluccius f	0	7
Merluccius merluccius m	0	5
Merluccius merluccius u	0	1
Microchirus variegatus u	17	0
Micromesistius poutassou u	73	0
Microstomus kitt f	0	86
Microstomus kitt m	0	78
Molva molva u	9	0
Mullus surmuletus f	0	26
Mullus surmuletus m	0	20
Mullus surmuletus u	0	7
Mustelus asterias f	26	0
Mustelus asterias m	27	0

Myoxocephalus scorpius u	2	0
Ommastrephes (todaropsis) eblanae u	9	0
Pecten maximus u	270	0
Pegusa (solea) lascaris u	26	0
Pholis gunnellus u	1	0
Phrynorhombus norvegius u	135	0
Phrynorhombus regius u	21	0
Phycis blennoides u	1	0
Platichthys flesus f	2	0
Platichthys flesus u	5	0
Pleuronectes platessa f	1	286
Pleuronectes platessa m	0	255
Pollachius pollachius u	3	0
Raja batis m	0	1
Raja brachyura f	0	3
Raja brachyura m	0	2
Raja clavata f	0	6
Raja clavata m	0	7
Raja montagui f	0	4
Raja montagui m	0	12
Raja naevus f	0	30
Raja naevus m	0	22
Raja undulata f	0	7
Raja undulata m	0	9
Sardina (clupea) pilchardus u	52	0
Scomber scombrus u	90	0
Scophthalmus maximus f	0	5
Scophthalmus maximus m	0	3
Scophthalmus rhombus f	0	13
Scophthalmus rhombus m	0	11
Scyliorhinus canicula f	16	0
Scyliorhinus canicula m	26	0
Scyliorhinus stellaris f	6	0
Scyliorhinus stellaris m	1	0
Scyliorhinus stellaris u	1	0
Sepia elegans u	59	0
Sepia officinalis u	193	0
Solea solea (s.vulgaris) f	0	190
Solea solea (s.vulgaris) m	0	98
Spondyliosoma cantharus u	98	0
Sprattus (clupea) sprattus u	82	0
Symphodus bailloni U	12	0
Syngnathus acus u	32	0

Syngnathus rostellatus u	1	0
Taurulus bubalis u	3	0
Torpedo marmorata f	3	0
Torpedo marmorata m	3	0
Trachinus (echiichthys) vipera u	4	0
Trachinus draco u	1	0
Trachurus trachurus u	226	0
Trigla lucerna f	0	56
Trigla lucerna m	0	36
Trigla lucerna u	0	1
Trigloporus lastoviza f	0	47
Trigloporus lastoviza m	0	33
Trigloporus lastoviza u	0	1
Trisopterus esmarki u	24	0
Trisopterus luscus u	55	0
Zeugopterus punctatus u	59	0
Zeus faber u	71	0
TOTAL FOR ALL SPECIES	**3426**	**2585**

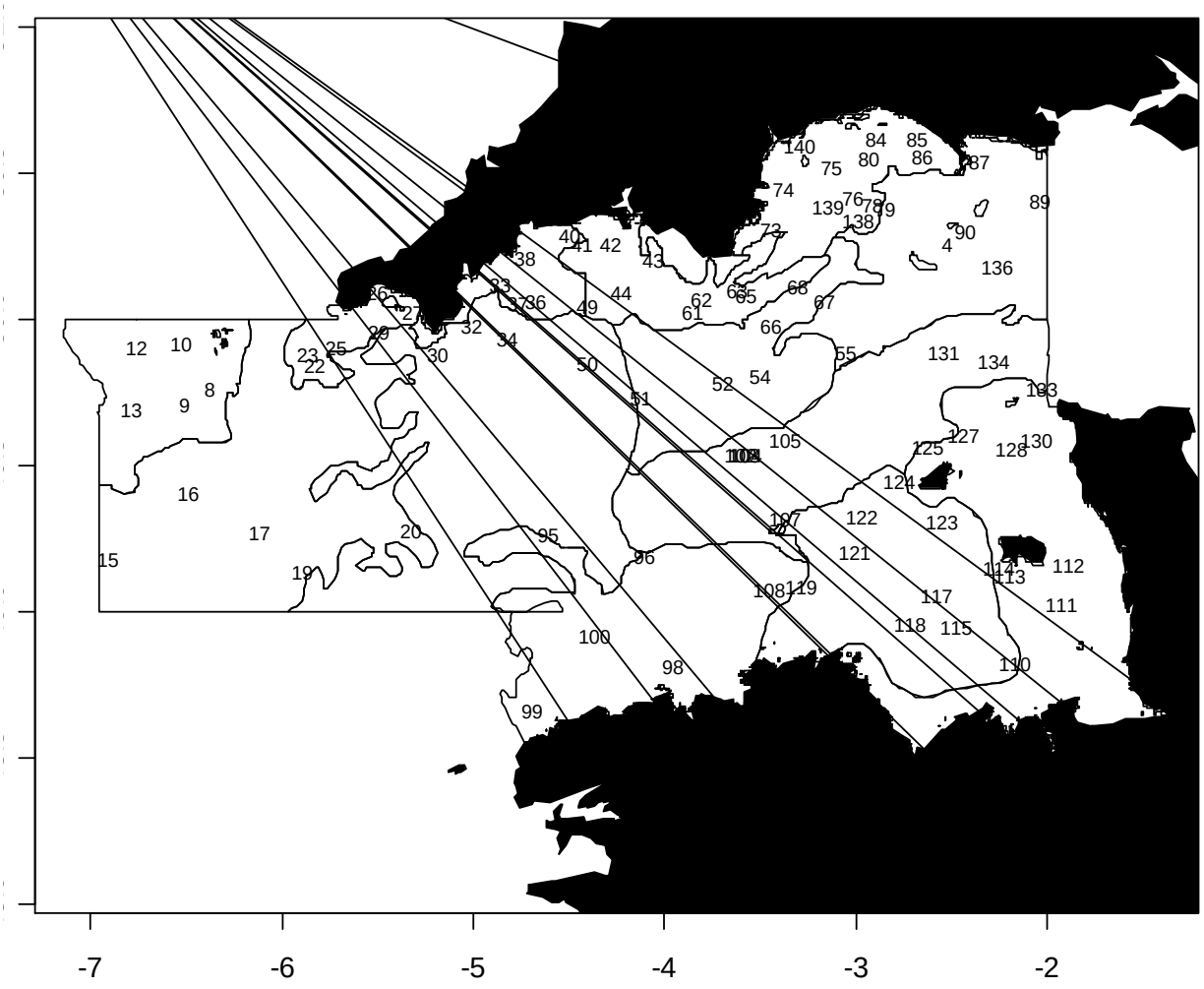

Figure 1: Chart of station numbers for CEND 5/11 including profiler stations:

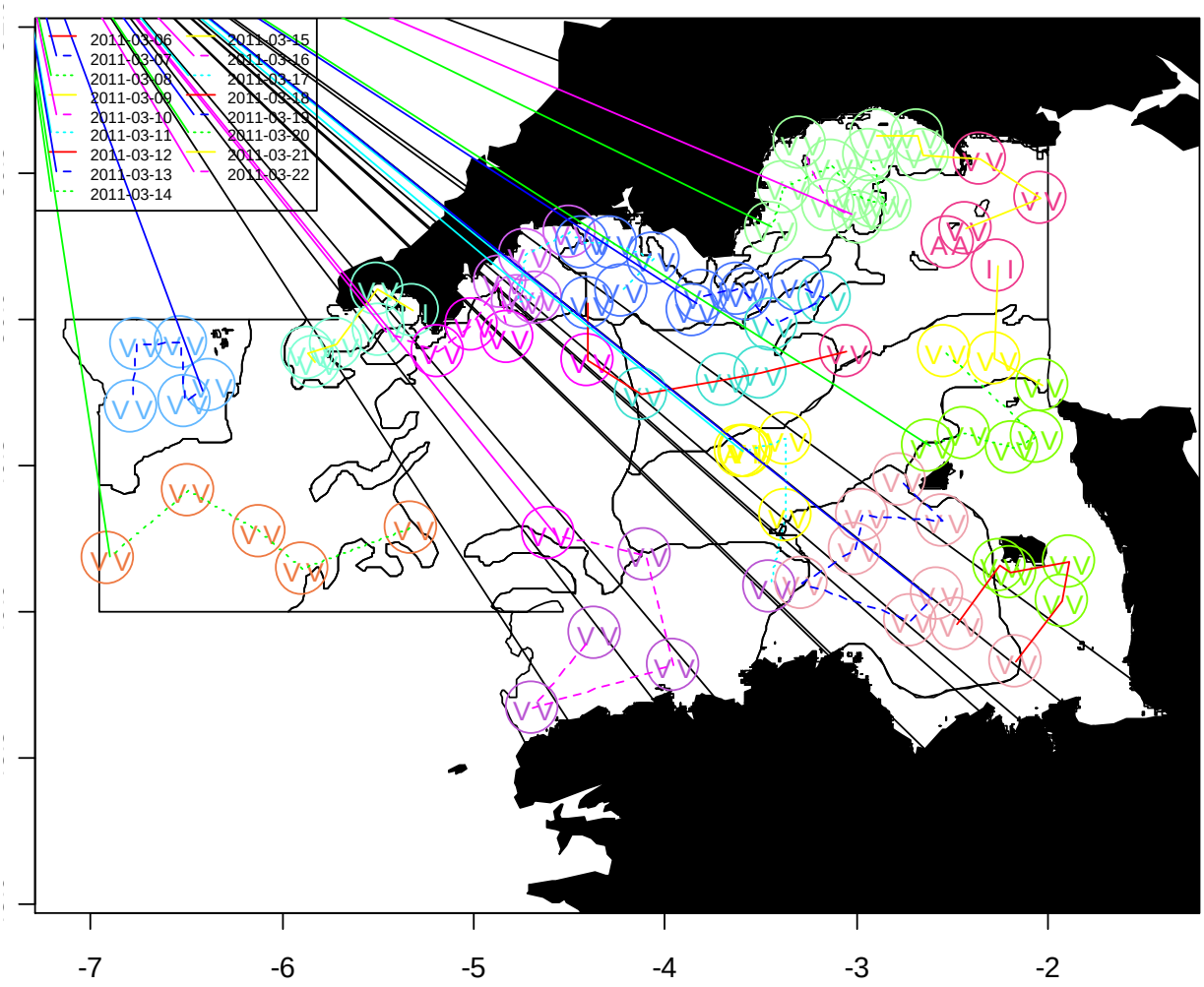

Figure 2: Survey Track showing beam trawl stations and validity codes by day

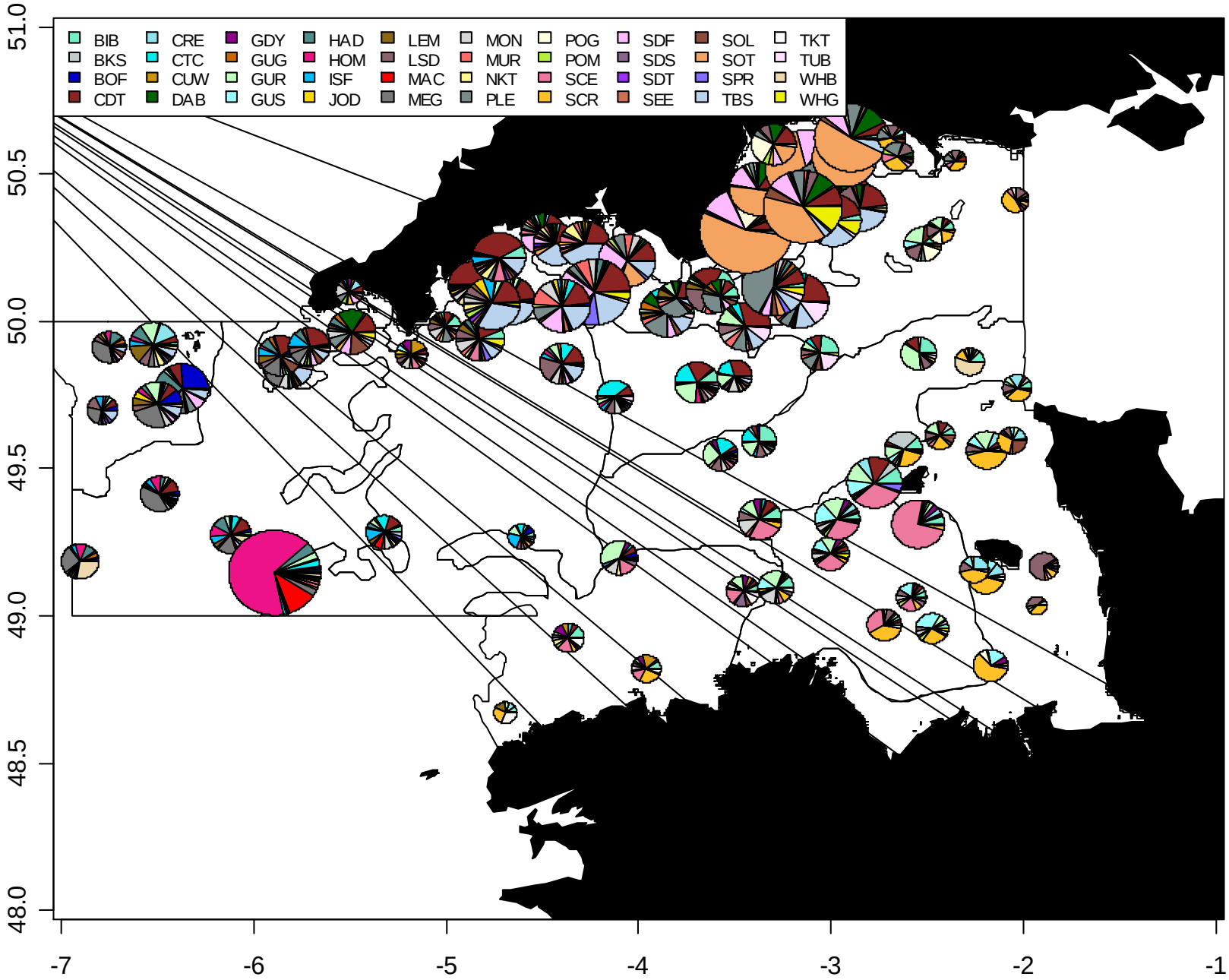

Figure 3: Species composition pie plots for Cend 5/11. Size of circles represents the size of the overall catch in numbers of the 40 most abundant species at a station with the size of the slice representing the relative proportion of each species encountered.

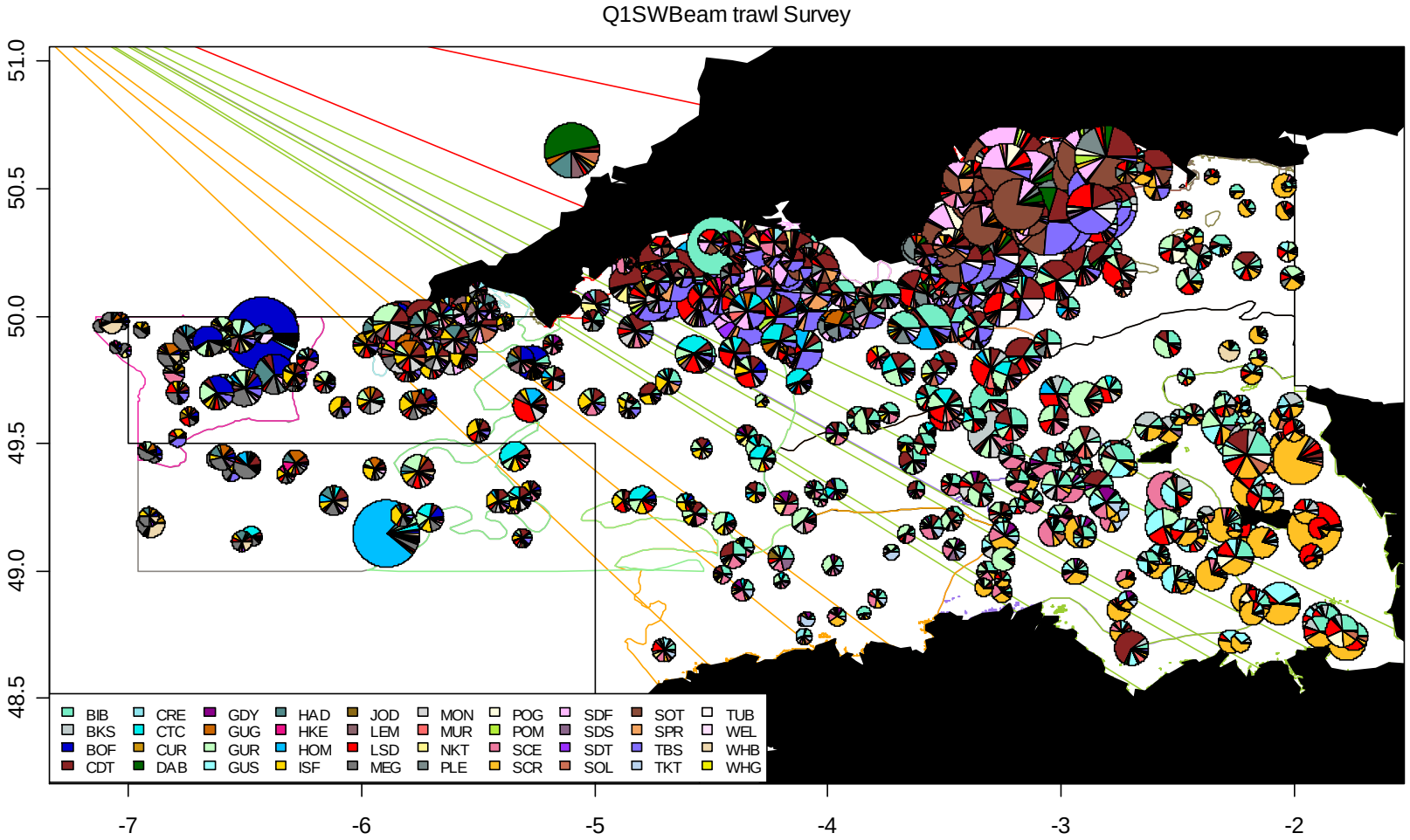

Figure 4: Species composition pie plots for the entire timeseries of the Q1SWBeam survey. Size of circles represents the size of the overall catch in numbers of the 40 most abundant species at a station with the size of the slice representing the relative proportion of each species encountered illustrating the general appropriateness of the stratum design although small improvements should be considered.

Figure 5: Distribution of major commercial species by station

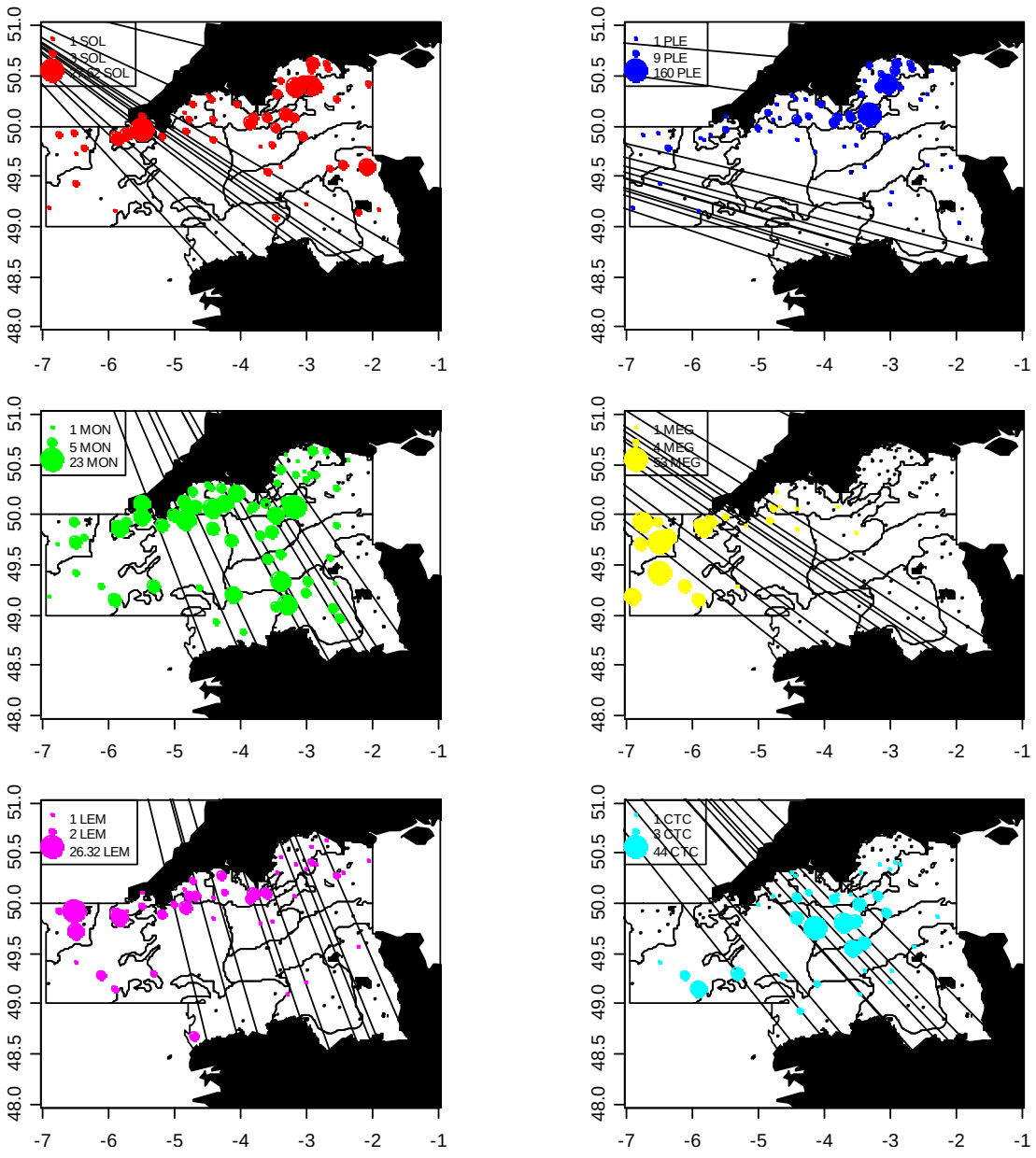

Figure 6: Length distributions for the major commercial species with total catch numbers by the two different gear types.