

ASSESSING THE POTENTIAL IMPACT OF OIL AND GAS EXPLORATION OPERATIONS ON CETACEANS IN THE MORAY FIRTH

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1. Background

There is uncertainty over the distribution of cetaceans in offshore waters, and the extent to which these animals may be disturbed by offshore oil and gas exploration operations, particularly seismic surveys. This has led to concerns over the potential impact of further oil and gas exploration in some areas of UK waters, particular in the vicinity of the Moray Firth Special Area of Conservation (SAC).

In May 2009, the Department of Energy & Climate Change (DECC), with co-funding from the Scottish Government, COWRIE and Oil & Gas UK, contracted the University of Aberdeen to carry out a three year study to assess the potential impact of oil and gas operations on cetaceans in the Moray Firth. The project has two broad aims. First, to provide baseline data on the occurrence of cetaceans in the Moray Firth's offshore waters. Secondly, to understand the impacts of any seismic exploration undertaken during the course of the study on the distribution and behaviour of cetaceans using the area.

In the first phase of the study, existing data were reviewed and additional baseline data collected on the occurrence of cetaceans in the central area of the Moray Firth, adjacent to the SAC. This work was required to support assessment and mitigation of oil and gas exploration operations, particularly seismic surveys, and the results are available in the project's first year report (Thompson et al. 2010).

In the second phase of the project, studies were designed to assess the impact of seismic surveys that two companies, PA Resources and Caithness Oil, were intending to conduct during September 2010. Building on baseline passive acoustic studies in 2009, a broad-scale array of C-PODs was deployed in July 2010, and a programme of aerial surveys conducted through August and September 2010. However, the planned seismic programme did not go ahead during 2010. As a result, DECC and the Scottish Government provided additional funding so that the planned research could be repeated in 2011.

In this progress report, we outline the work carried out in 2011 including background to the seismic surveys that were completed in September 2011, describe the marine mammal and noise studies that were carried out around this work, and provide an overview of the data that will underpin the detailed analyses of the impacts of seismic exploration that we will conduct during the final year of the project.

2. Seismic Survey Characteristics

During 2011, seismic surveys were conducted from MV Sea Surveyor, operated by Gardline Geosurvey. The vessel arrived on site in the Moray Firth at 07:00 on 31st August 2011 and spent approximately two days balancing the streamer and undergoing trials before the first soft start was initiated at 15:15 on 1st September 2011. The first full survey line was carried out at 03:14 on 2nd September 2011 and

surveys were completed on 23rd September 2011. Details of the areas covered are presented in Figure 1, and Table 1 provides information on the timing of surveys in each area.

All surveys followed guidelines to reduce potential impacts on marine mammals developed by the UK Joint Nature Conservation Committee (JNCC). Prior to the start of seismic shooting, Marine Mammal Observers (MMO) onboard the vessel conducted visual and passive acoustic surveys of the area around the ship to ensure that no marine mammals were within 500 m of the guns. A soft start procedure was then initiated in which the volume of the air gun discharge was gradually increased to its full operating volume of 470 cu inches over a 20 to 30 minute period, using a shot point interval of approximately 4 seconds. During each line turn, the volume of the gun discharge was reduced to 60 cu inches and the shot point interval increased to 4 minutes. Prior to the start of the next line, a soft start was again initiated once the MMO had confirmed that the area was free of marine mammals.

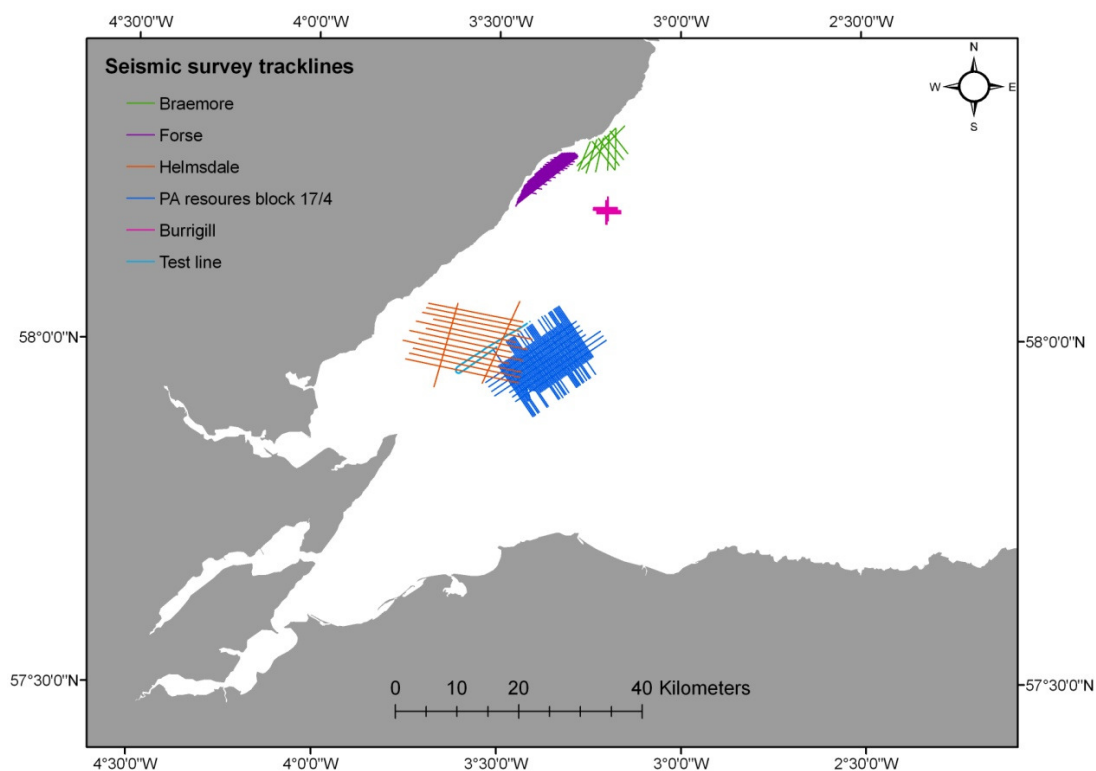


Figure 1. Map showing the location of seismic survey areas.

Table.1 Timing of seismic surveys in each area.

Area	No of lines	Length (km)	Survey Start		Survey End	
			Date	Time	Date	Time
Block 17/4b	62	490	1/9/11	15:15	9/9/11	18:22
Helmsdale	14	196	9/9/11	21:43	11/9/11	20:20
Forse	26	180	14/9/11	01:19	22/9/11	16:39
Braemore	11	62	19/9/11	14:30	20/9/11	20:42
Burrigill	18	54	22/9/11	19:52	23/9/11	19:56

3. Study Methods

3.1 Assessment of seismic noise

Measurements of seismic survey noise were made by Kongsberg Maritime Ltd. between 1st and 5th September 2011, during surveys of Block 17/4b. The survey design aimed to obtain a series of 1-2 minute recordings at a range of distances from the survey vessel. Samples were recorded from Moray First Marine Ltd's MV Solstice, along a transect that ran from the inner Moray Firth, through the seismic survey area and into the outer Moray Firth; the same transect used for the C-PODs and aerial surveys. Additional samples were collected on a second transect that ran from the seismic survey area to the southern coast of the Moray Firth. Where possible, we aimed to collect samples at 5 km intervals along these transects, ensuring that these were obtained during a period when the air guns were operating at full strength.

During each recording session, the vessel's engine and all electrical equipment other than that necessary for obtaining the noise measurements was turned off. The recording location was obtained by GPS throughout the duration of the recording, and the position of the seismic survey vessel was later supplied by Gardline Geosurvey.

Over the side measurements were made using a RESON TC-4032 hydrophone that was suspended by a float system that reduced vertical displacement in the water. The output from the hydrophone was fed via a RESON VP2000 conditioning amplifier into a National Instruments NI USB-6281 OEM 18-bit analogue to digital convertor. The signal was sampled continuously at 500,000 samples per second and recorded onto a laptop computer. Data were stored in separate one second

contiguous datafiles, and the GPS position of MV Solstice was recorded in the file header. The hydrophone, conditioning amplifier and analogue to digital convertor were all calibrated to international standards.

Given the intention of this study to provide baseline information on the characteristics and propagation of air-gun noise, we contracted Kongsberg to analyse recordings so that noise characteristics could be presented using each of the metrics commonly used in studies of this kind (Table 2).

Table 2. List of the metrics used to characterise biologically relevant noise levels for marine mammals.

Metric		Source
Maximum received peak pressure		OGP 2008
M-weighted filtered SEL	High frequency cetaceans	Southall et al. 2007
	Mid frequency cetaceans	
	Low frequency cetaceans	
	Pinnipeds in water	
dB _{ht}	Bottlenose dolphin	Nedwell et al. 2007
	Harbour porpoise	
	Harbour seal	

3.2 Passive acoustic monitoring

In 2011, we used the same passive acoustic monitoring array design that had been deployed in 2010. This was designed to permit two different analytical approaches to be used. First, a dense array of 20 C-PODs was placed in each of two 25 x 25 km blocks; an impact site over Block 17/4 b and Helmsdale seismic survey areas, and a control site further offshore (Figure 2). This was designed to allow a B-A-C-I analysis to determine whether acoustic detections of porpoises declined in the impact area during the seismic survey period. Second, C-PODs were deployed approximately every 5 km, with a randomised offset, along a 130 km transect that passed through the impact area. This was designed to allow a gradient analysis to be used to assess the spatial scale of any changes in occurrence. A second transect along the southern shore of the Moray Firth was used to monitor variation in detections of bottlenose dolphins in the parts of their core range that are closest to the seismic survey area.

All passive acoustic monitoring was carried out using V.0 and V.1 C-PODs (see www.chelonia.co.uk). These devices continuously monitored within the range of 20-160 kHz for possible cetacean clicks, and recorded the centre frequency, frequency trend, duration, intensity, and bandwidth of each click. C-POD data were later post-processed to differentiate between dolphins, porpoises and other high frequency sounds such as those from boat sonar. The output indicated the level of confidence in classification of the detection as a cetacean echolocation click by classing each as CetHi, CetMod or CetLow.

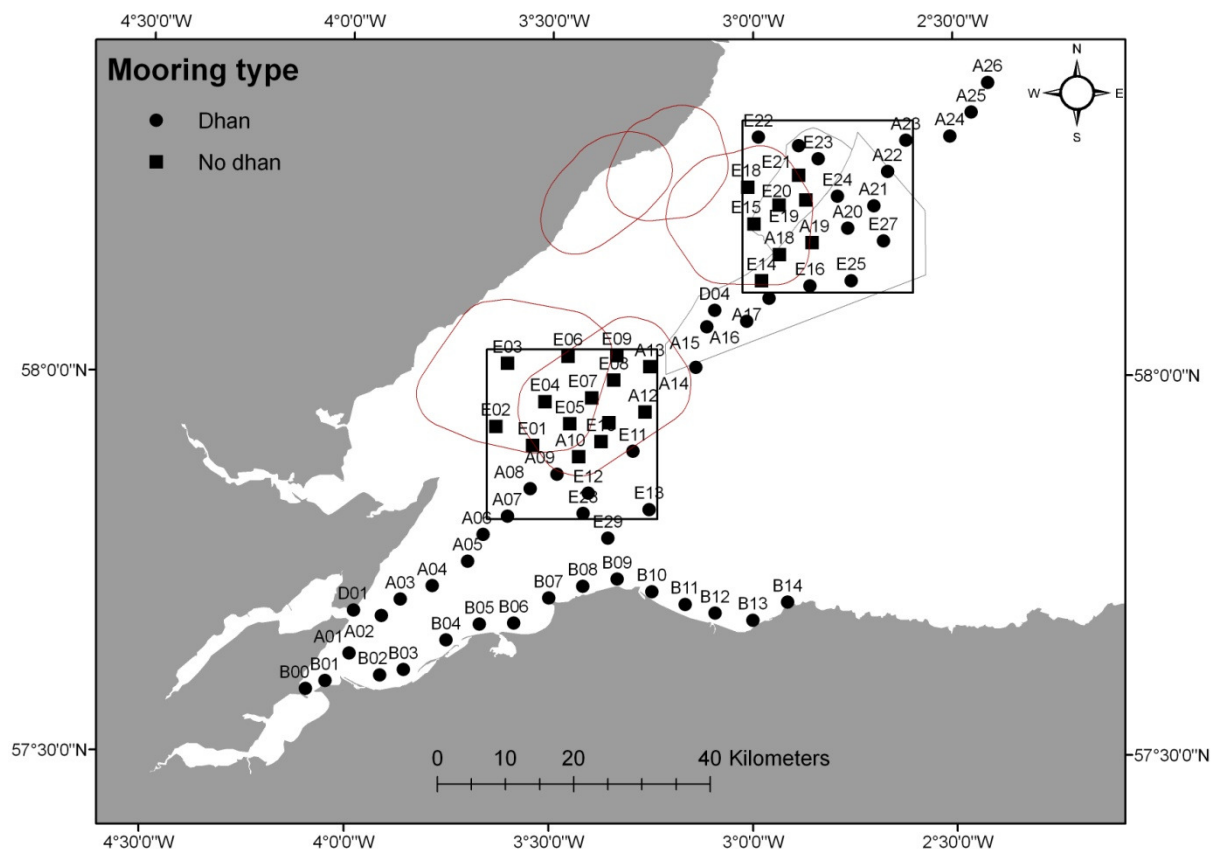


Figure 2. Map of the Moray Firth showing the position of the two survey blocks and all C-POD locations. The outline of the two offshore windfarm sites are also shown. Dhan buoy surface markers were used in all areas except those within the areas that were expected to surveyed by the seismic vessel (i.e. within the red boundaries).

All offshore deployments and recoveries were made from MV Solstice. As in 2010 and 2009, C-PODs were moored at a height of approximately 2-6 m above the seabed, generally on a single riser from a 100 kg or 150 kg weight, with a large surface Dhan Buoy with radar reflector and flag. However, within the proposed seismic survey areas, we used acoustic releases on short moorings with 50 kg

weights, to avoid the need for surface markers that could interfere with the seismic survey vessel (see Figure 2.).

Once recovered, data were downloaded and analysed using V2.025 of the C-POD train filter to identify detections of harbour porpoises and dolphins. In the preliminary analyses of data presented in this progress report, we used only CetHi and CetMod detections to estimate the number of hours that porpoises were detected at each sampling site on each day.

3.3 Aerial surveys across the seismic survey area

In 2010, visual aerial surveys provided valuable data on the density of porpoises and dolphins in the seismic and control blocks. However, this work required aircraft and survey teams to remain on site for extended periods to collect sufficient data. Alongside this work, pilot studies using high definition video surveys were funded by Moray Offshore Renewables Ltd. These surveys have been developed primarily for studies of seabirds (eg. Hexter 2009). Analyses of our 2010 pilot data indicated that the technique also offered good opportunities for surveying marine mammals in the short window available during the seismic survey period.

In 2011, we therefore carried out a series of high definition video surveys in the same 130 x 5 km transect block used for the C-POD deployments (Figure 3). Two surveys were planned to occur in each period before, during and after the seismic survey. This provided an additional data set to explore whether any changes in acoustic detections resulted from a change in echolocation behaviour or from behavioural avoidance.

Surveys were carried out from an Aztec aircraft operated by Ravenair Ltd., with an array of four high definition video cameras that were built and operated by Hi-Def Surveying Ltd. Twenty different pre-determined transect lines were used with each survey covering 10 of these lines in a randomly selected order. In practice, the plane occasionally had to deviate from the planned track line to avoid danger areas or low cloud, but all final tracks were recorded using GPS.

Videos were later reviewed by teams of trained observers at Hi-Def Surveying Ltd., and all non-avian objects were highlighted in purpose-written analysis software and submitted to experienced analysts at WWT Consulting Ltd. for identification. Identifications were assigned with a confidence level of “possible”, “probable” or “definite”. Identification and geo-referencing of these data was completed in January 2012. These data are awaiting further analysis in relation to seismic activity, and here we simply summarise the survey coverage and provide an indication of the data available for further analysis.

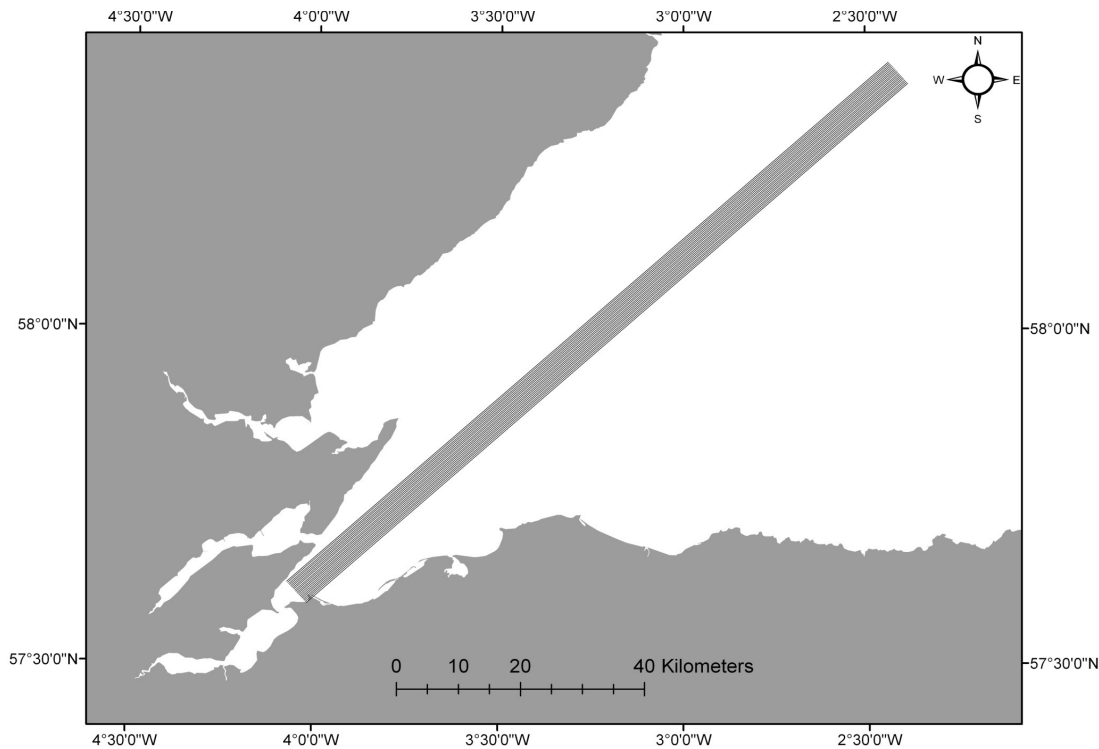


Figure 3. Map showing the transect block used for Hi-def video surveys during 2011.

3.4 Monitoring of protected bottlenose dolphins within the Moray Firth SAC

Noise propagation models indicated that any behavioural displacement was likely to be at relatively close range (<5km), and the seismic surveys were therefore not expected to influence the distribution or abundance of bottlenose dolphins in the more inshore areas that they frequent in the Moray Firth.

Nevertheless, given concern over this protected population, we carried out regular photo-identification surveys in the inner Moray Firth, and some additional surveys along the southern Moray Firth coast. These surveys followed standard procedures that have been used for bottlenose dolphin site condition monitoring as described in Cheney et al. (In Press).

4. Results

4.1 Assessment of seismic noise

Recordings were made at more than 40 sites, at distances between 1.5 and 62.0 km from the seismic vessel (Figure 4) . Analysis of received noise levels at each of these sampling points has recently been completed by Kongsberg, and these data are in the process of being compared with predictions from propagation models.

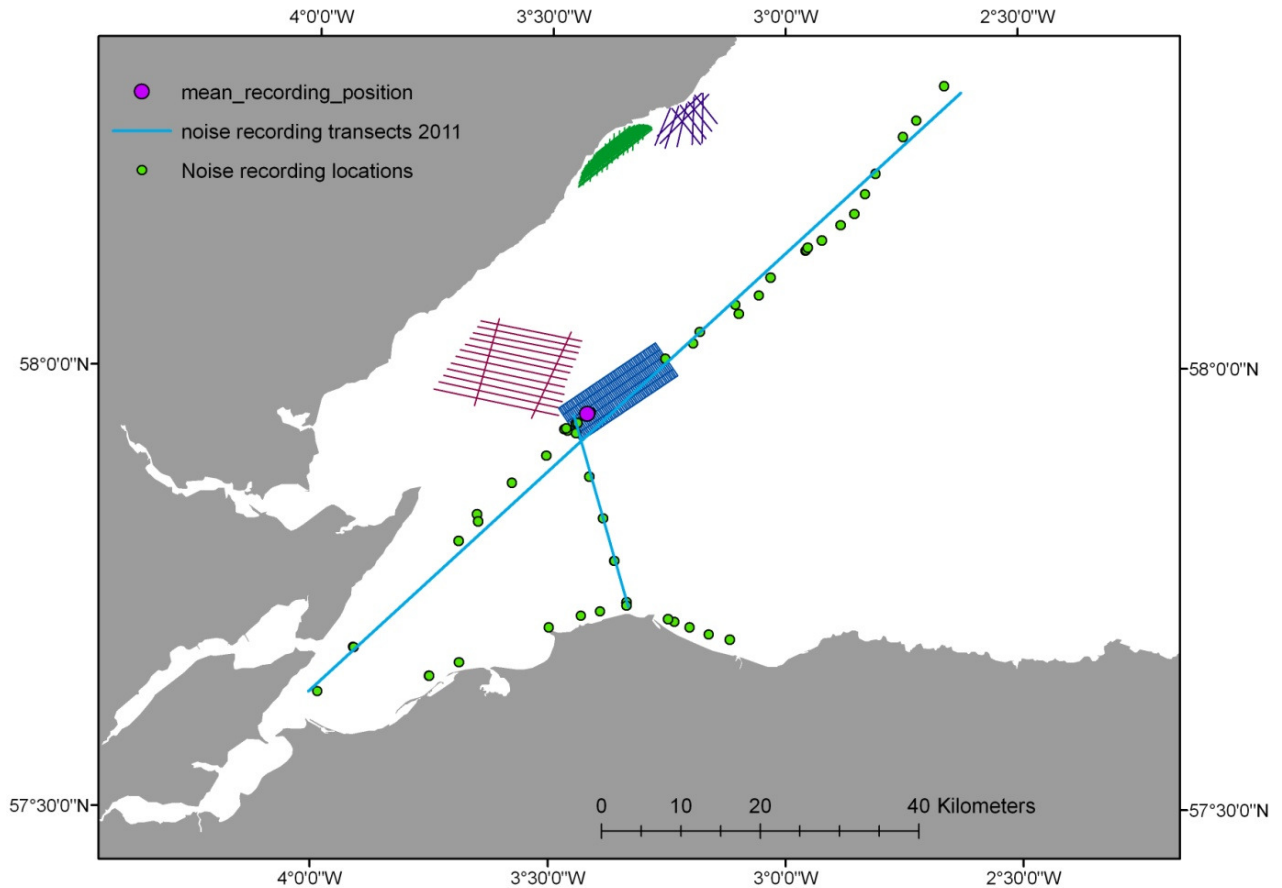


Figure 4. Map showing the seismic survey areas and recording locations. The mean position of the seismic boat during these noise recordings is shown as a purple dot.

4.2 Passive acoustic monitoring

C-PODs were deployed at 71 sites in July 2011, and recoveries were made from late October (Figure 5, Annex I). Eighteen devices were lost during the study, although five of these appear to still be present on the seabed. Further attempts are planned to recover these data with an ROV. Data from all the recovered devices have been train filtered, summarised, and are also awaiting detailed analysis.

An initial comparison of data from seismic and control blocks in both 2010 and 2011 indicates that porpoises were detected regularly through both summers, and that there was no broad scale displacement of these animals from the seismic survey area during 2011 (Figure 6). Further analyses will investigate whether displacement occurred at finer temporal and spatial scales.

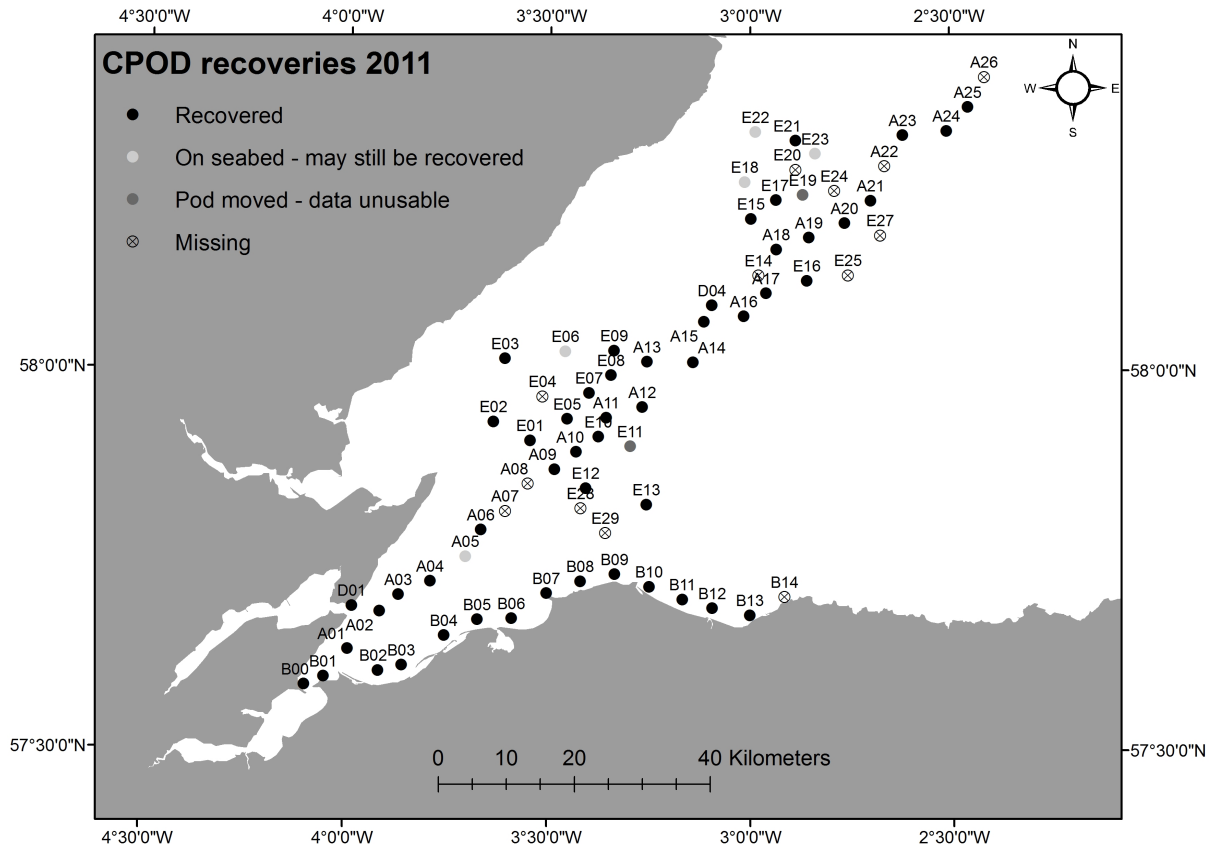


Figure 5. Map showing the location of all C-POD deployments and whether devices at each site were successfully recovered at the end of the study.

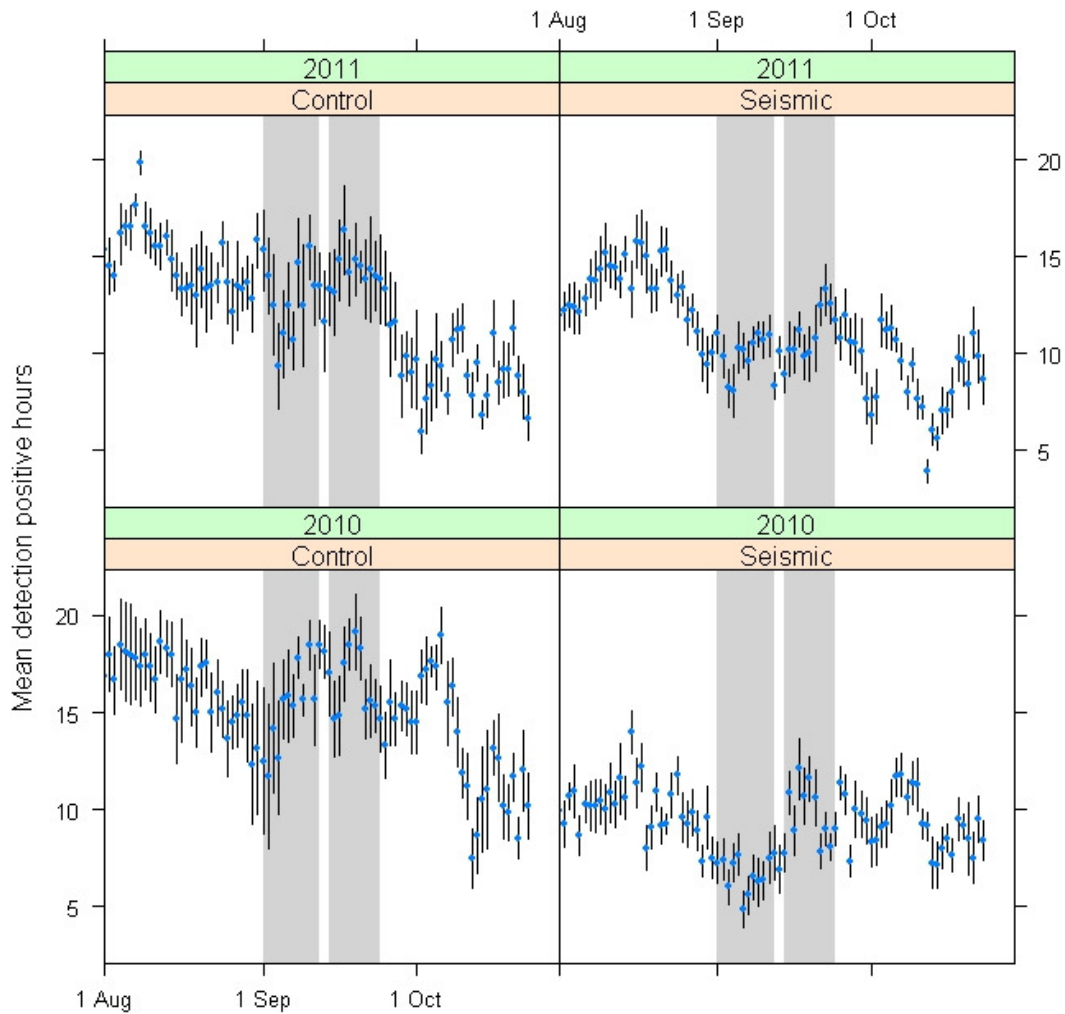


Figure 6. Variation in the mean number of hours that porpoises were detected on C-PODs in the seismic and control blocks in the summers of 2010 and 2011. Data from both 2010 and 2011 were available for 12 sites in the seismic block (A09, A10, A11, A12, E01, E02, E03, E05, E07, E08, E09 & E12) and 6 in the control block (A18, A20, A21, A23, E17 & E21). The timing of the 2011 seismic survey is shown as a shaded area in both years.

4.3 Visual Surveys

High definition aerial surveys were flown on eleven different days during the summer (Table 3). Suitable weather conditions for these surveys were rare during much of the summer, but good conditions in the few days over the start of the seismic survey allowed us to extend our anticipated coverage. Delays in the start of the seismic survey also provided an opportunity to collect some data during the first soft start periods.

Table 3. Details of when Hi-def video surveys were flown during 2011.

Date	No. of Transects	Start Time	End Time	Vessel Activity
6/8/11	10	09:50	15:35	Before Survey
22/8/11	10	12:45	18:18	Before Survey
31/8/11	6	16:01	19:16	Before Survey
1/9/11	5	11:03	13:33	Before Survey
1/9/11	11	16:13	18:40	Soft Start
2/9/11	4	11:24	13:49	During Survey
3/9/11	4	15:24	17:31	During Survey
4/9/11	8	12:17	15:52	During Survey
5/9/11	10	10:24	15:41	During Survey
6/11/11	10	09:14	15:20	After Survey
7/11/11	10	09:06	15:25	After Survey

Initial review of the data from these surveys highlights that many small cetaceans were detected during these surveys (Figure 7), most of them harbour porpoises. Ongoing analysis will explore finer-scale variation in these detections in relation to the location of the seismic survey vessel.

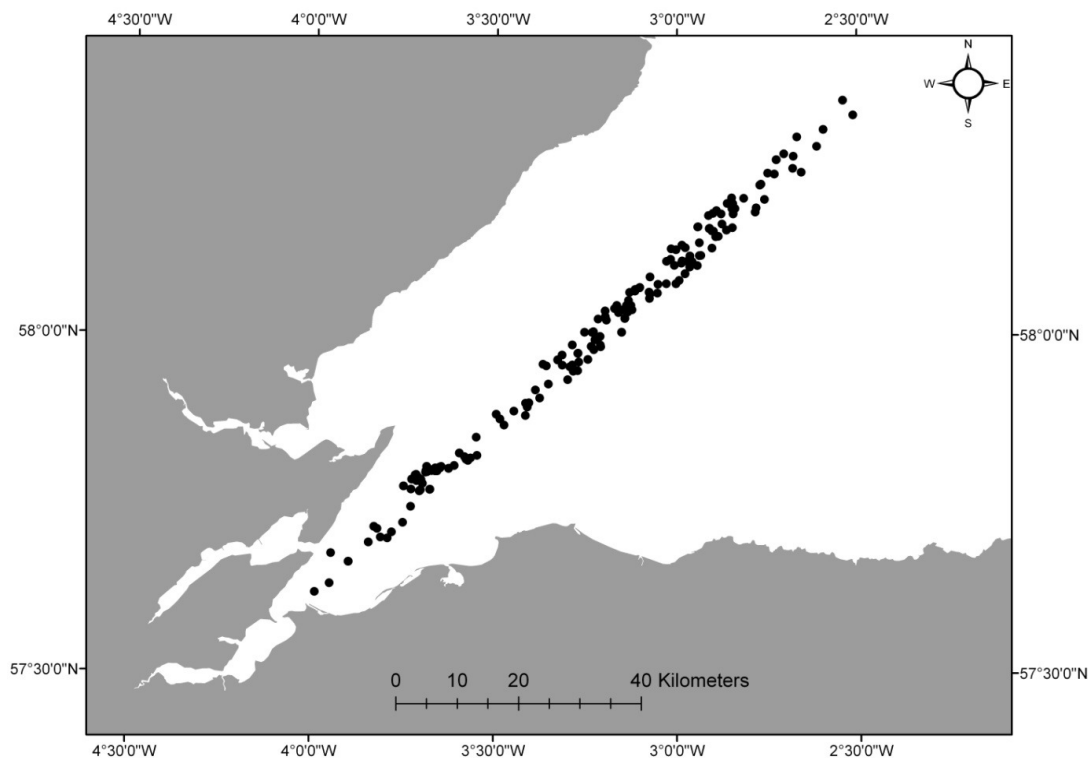


Figure 7. Map showing the distribution of porpoises recorded during the Hi-definition video aerial surveys.

4.4 Monitoring of protected bottlenose dolphins within the Moray Firth SAC

Between May and September 2011, we conducted 18 photo-identification surveys in the inner Moray Firth and three surveys along the southern Moray Firth coast, and bottlenose dolphins were encountered on 107 occasions (Figure 8). Photo-identification data are currently being analysed and an estimate of the number of individual bottlenose dolphins using the SAC will be available in the second quarter of 2012.

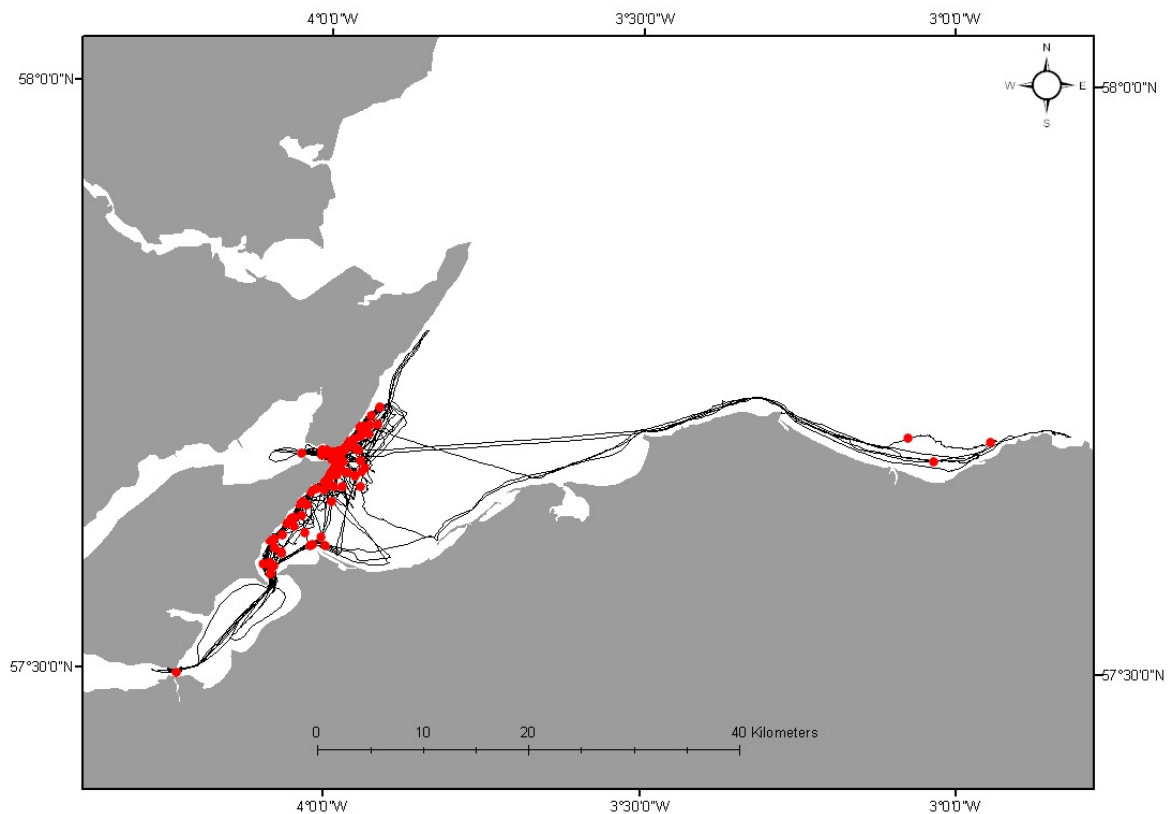


Figure 8. A map showing the areas covered by University of Aberdeen photo-identification surveys during 2011 (black lines), and the location of all encounters with groups of bottlenose dolphins (red dots).

5. Workplan & proposed final report structure.

Work during the final year of this project will focus on analyses and presentation of the data sets summarised in this progress report.

Our intention is to produce a final report that contains five main chapters, each of which will be written as a stand-alone manuscript, with the intention of submitting as many as possible to journals before the end of the contract. In addition, much of the data collected in 2010 is being integrated in to a Marine Scotland funded study that is comparing alternative approaches for monitoring cetaceans around offshore renewable sites. This study aims to deliver a report later in 2012.

Chapter 1. Integrating acoustic and visual surveys to characterize spatio-temporal variation in the distribution of bottlenose dolphins.

A key aim of this study was to provide more robust data on the distribution of bottlenose dolphins in the central area of the Moray Firth, adjacent to the SAC. In this chapter, we will combine our data from the array of C-PODs with data from a variety of different visual survey platforms to characterise the distribution of bottlenose dolphins in the Moray Firth, and illustrate how this information can be used to support other offshore energy developments.

Chapter 2. Testing predictions of porpoise habitat association models using broad scale passive acoustic monitoring. Habitat association models are often based on line transect survey data, which can only provide a snapshot in time. Static passive acoustic loggers can be used to monitor habitat use over longer time-scales, but suffer the converse problem, with limited spatial coverage. To date, there have been no studies comparing habitat association models with long term static acoustic monitoring. This chapter will develop a model of harbour porpoise habitat association from our Moray Firth survey data and compare the predictions with data from our array of C-PODs.

Chapter 3. Broad-band characterization and propagation of noise from seismic air guns.

Previous characterisations of seismic survey noise have focussed on lower frequencies, and little information is available on the higher frequency components that will be of more concern for small cetaceans. This chapter has two main aims. First, to characterise the noise from the airguns used in a full scale seismic survey. Second to measure received levels of noise at different distances from the survey vessel, and compare observed levels with those expected from the acoustic propagation models used for environmental assessment of anthropogenic noise.

Chapter 4. Responses of small cetaceans to seismic survey activity. The core of our report will focus on the project's central questions. First, whether or not the 2011 seismic survey had any measurable effect on the occurrence of harbour

porpoises. Second, if these animals did respond, at what distance were the effects seen? This chapter will use a gradient analysis of data from both C-PODs and high definition video surveys, and integrate these results with those of the noise studies to assess the levels of received noise that might elicit a behavioural response in this species.

Chapter 5. Long-term variation in the abundance of bottlenose dolphins using the Moray Firth SAC in relation to environmental variability and anthropogenic activity. This final chapter will present long term data on variation in the numbers of bottlenose dolphins using the Moray Firth SAC in each year, and explore whether any of this variation can be explained by variation in environmental conditions. Factors to be explored will include natural factors such as the size of salmon runs and changes in human activity, such as the presence of seismic surveys.

Annex I. Deployment and recovery details for C-PODs. Two pods were deployed concurrently at the following sites: A08, A11 and E07. * = records that were not complete for the whole period of before, during and after seismic, for example due to battery failure, loss of the C-POD, or movement of the mooring

Site ID	Site	Latitude (decimal degrees)	Longitude (decimal degrees)	Depth (m)	POD Version	Deployment date	Recovery date	Complete record
25	A01	57.63343	-3.99231	6.6	C-PoD v1	03/07/2011	07/11/2011	✓
29	A02	57.68351	-3.91442	18.1	C-PoD v1	03/07/2011	06/11/2011	✓
36	A03	57.70554	-3.86816	26.2	C-PoD v1	03/07/2011	06/11/2011	✓
37	A04	57.72370	-3.78985	25.8	C-PoD v1	03/07/2011	06/11/2011	✓
38	A05	57.75663	-3.70330	33.4	C-PoD v1	03/07/2011	TBC	*
39	A06	57.79184	-3.66584	38.8	C-PoD v1	03/07/2011	06/11/2011	✓
40	A07	57.81642	-3.60610	31.7	C-PoD v1	03/07/2011	Not found	*
41	A08	57.85252	-3.55047	40.1	C-PoD v1	03/07/2011	Not found	*
42	A09	57.87214	-3.48435	57.3	C-PoD v1	03/07/2011	30/10/2011	✓
43	A10	57.895033	-3.43155	57.1	C-PoD v1	11/07/2011	30/10/2011	*
44	A11	57.940283	-3.35675	48.9	C-PoD v1	11/07/2011	30/10/2011	✓
45	A12	57.95445	-3.26798	52.2	C-PoD v1	11/07/2011	30/10/2011	✓
46	A13	58.01423	-3.25647	51.0	C-PoD v1	11/07/2011	30/10/2011	*
47	A14	58.01346	-3.14234	47.9	C-PoD v1	12/07/2011	04/11/2011	✓
48	A15	58.06681	-3.11537	45.3	C-PoD v1	29/06/2011	04/11/2011	✓
49	A16	58.07415	-3.01591	48.8	C-PoD v1	29/06/2011	04/11/2011	✓
50	A17	58.10446	-2.96070	40.6	C-PoD v1	29/06/2011	04/11/2011	✓
51	A18	58.16210	-2.93447	38.0	C-PoD v1	12/07/2011	18/11/2011	✓
52	A19	58.17767	-2.853417	37.6	C-PoD v1	12/07/2011	18/11/2011	✓
53	A20	58.19657	-2.76366	43.2	C-PoD v1	29/06/2011	19/11/2011	✓
54	A21	58.22602	-2.69860	53.2	C-PoD v1	30/06/2011	19/11/2011	✓
55	A22	58.27114	-2.66371	49.1	C-PoD v1	30/06/2011	Not found	*
56	A23	58.31207	-2.61779	50.9	C-PoD v1	30/06/2011	19/11/2011	✓
57	A24	58.31743	-2.50804	52.4	C-PoD v1	30/06/2011	19/11/2011	✓
58	A25	58.34860	-2.45372	55.9	C-PoD v1	30/06/2011	19/11/2011	✓
59	A26	58.38767	-2.41157	69.4	C-PoD v1	30/06/2011	Not found	*
2	B00	57.58513	-4.09821	12.3	C-PoD v1	03/05/2011	07/11/2011	*
23	B01	57.59673	-4.05015	8.1	C-PoD v1	03/07/2011	31/10/2011	✓
60	B02	57.60535	-3.91615	11.9	C-PoD v1	03/07/2011	31/10/2011	✓
35	B03	57.61283	-3.85859	14.8	C-PoD v1	03/07/2011	31/10/2011	✓
61	B04	57.65233	-3.75421	14.0	C-PoD v0	04/07/2011	31/10/2011	✓
62	B05	57.67363	-3.67281	6.5	C-PoD v1	04/07/2011	31/10/2011	✓
63	B06	57.67544	-3.58864	5.7	C-PoD v0	04/07/2011	31/10/2011	✓
64	B07	57.70876	-3.50290	9.9	C-PoD v1	04/07/2011	31/10/2011	✓
65	B08	57.72476	-3.41963	12.7	C-PoD v0	04/07/2011	31/10/2011	✓
3	B09	57.73433	-3.33512	12.2	C-PoD v1	04/07/2011	08/11/2011	✓
66	B10	57.71800	-3.24963	8.9	C-PoD v0	02/07/2011	08/11/2011	✓
67	B11	57.70123	-3.16712	13.1	C-PoD v0	02/07/2011	08/11/2011	✓
4	B12	57.68985	-3.09367	10.1	C-PoD v1	02/07/2011	08/11/2011	✓
68	B13	57.68051	-3.00028	8.2	C-PoD v0	02/07/2011	08/11/2011	✓

69	B14	57.70427	-2.91523	15.4	C-PoD v0	02/07/2011	Not found	✘
1	D01	57.69028	-3.98265	8.0	C-PoD v1	03/07/2011	07/11/2011	✓
5	D04	58.08860	-3.09566	44.4	C-PoD v1	29/06/2011	04/11/2011	✓
88	E01	57.90983	-3.54607	55.0	C-PoD v1	11/07/2011	06/11/2011	✓
89	E02	57.93422	-3.63735	44.2	C-PoD v1	11/07/2011	06/11/2011	✓
90	E03	58.01758	-3.60967	41.6	C-PoD v1	11/07/2011	06/11/2011	✓
91	E04	57.96755	-3.516183	49.0	C-PoD v1	11/07/2011	Not found	✘
92	E05	57.93840	-3.45403	41.9	C-PoD v1	11/07/2011	30/10/2011	✓
93	E06	58.02745	-3.45932	43.7	C-PoD v1	11/07/2011	TBC	✘
94	E07	57.97295	-3.40022	44.3	C-PoD v1	11/07/2011	30/10/2011	✓
95	E08	57.99627	-3.34597	43.2	C-PoD v1	11/07/2011	30/10/2011	✓
96	E09	58.02878	-3.33855	51.7	C-PoD v1	11/07/2011	30/10/2011	✓
97	E10	57.91527	-3.376583	56.1	C-PoD v1	11/07/2011	30/10/2011	✓
98	E11	57.90280	-3.29762	58.6	C-PoD v1	11/07/2011	Pod moved	✘
99	E12	57.84752	-3.40745	50.1	C-PoD v1	03/07/2011	30/10/2011	✓
100	E13	57.82617	-3.25690	62.1	C-PoD v1	11/07/2011	30/10/2011	✓
101	E14	58.12765	-2.97900	36.4	C-PoD v0	12/07/2011	Not found	✘
102	E15	58.20244	-2.9979	39.3	C-PoD v1	12/07/2011	04/11/2011	✘
103	E16	58.12096	-2.85875	39.4	C-PoD v1	29/06/2011	27/07/2011	✘
78	E17	58.22717	-2.93523	40.1	C-PoD v1	12/07/2011	18/11/2011	✓
104	E18	58.25108	-3.01299	67.5	C-PoD v0	12/07/2011	TBC	✘
105	E19	58.23388	-2.86833	40.3	C-PoD v1	12/07/2011	Pod moved	✓
106	E20	58.26681	-2.88642	47.6	C-PoD v1	12/07/2011	Not found	✘
107	E21	58.30543	-2.88629	54.4	C-PoD v1	29/06/2011	18/11/2011	✓
108	E22	58.31670	-2.98721	73.4	C-PoD v1	29/06/2011	TBC	✘
76	E23	58.28814	-2.83690	46.8	C-PoD v1	29/06/2011	TBC	✘
109	E24	58.23875	-2.78973	44.9	C-PoD v1	29/06/2011	Not found	✘
110	E25	58.12754	-2.75605	48.1	C-PoD v1	29/06/2011	Not found	✘
112	E27	58.17993	-2.67520	48.1	C-PoD v0	13/07/2011	Not found	✘
113	E28	57.82040	-3.41965	60.9	C-PoD v1	03/07/2011	Not found	✘
114	E29	57.78804	-3.35786	64.2	C-PoD v1	03/07/2011	Not found	✘

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