



Assessment of Risk to Diving Birds from Underwater Marine Renewable Devices in Welsh Waters

Phase 2 - Field Methodologies and Site Assessments

On Behalf of

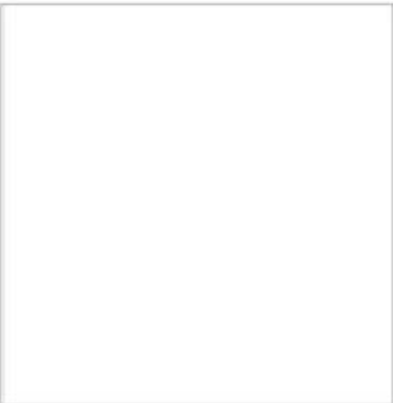
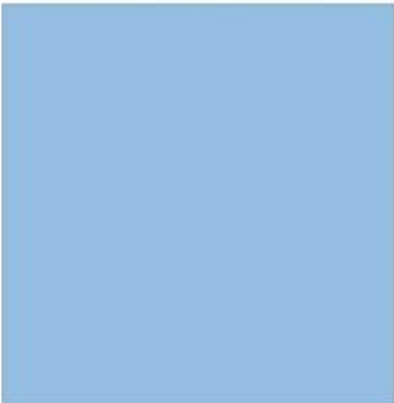
The Welsh Assembly Government



Date: 28th February 2011
Our Ref: JER3688


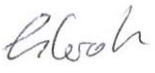

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Quality Management

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Date:	28 th February 2011	
Project Number:	JER3688	
Document Reference:	JER3688R100920MT Diving Birds and Underwater Renewables Devices - Site Surveys v5	
Document File Path:	O:\JER3688 - Marine renewable Strategy for Wales\STAGE 2\Project File\Task 3 Bird Collision Risk\Diving Bird Distribution\JER3688R100920MT Diving Birds and Underwater Renewables Devices - Site Surveys v5.doc	

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Executive Summary

- S.1 Wave and tidal renewable energy developments have the potential to impact on seabird populations. The sensitivity of Welsh seabirds to such devices has been reviewed and is presented in an accompanying report to the current one (RPS, 2011). Here we present seabird survey methods, suitable for collecting data to inform an Environmental Impact Assessment (EIA) at sites identified as suitable for wave and/or tidal stream energy generation.
- S.2 Methods were developed at two Welsh sites, Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire. Because of the coastal nature of these sites, and the parallels between tidal energy extraction and wind turbines, the starting points for method development were vantage point surveys for birds (typically used in relation to proposed onshore wind farms), and boat surveys (typically used for offshore wind farm assessments).
- S.3 The land based vantage point survey method incorporated time spent undertaking seabird distribution scans, behavioural observations to record diving activity and flight activity. Alternative methods to estimate the location of birds on the sea were trialled. This led to the adoption of an arc-based grid, using landmarks as references, for recording bird locations on the sea.
- S.4 Boat based survey methods were adapted from those used for offshore wind farms (Macleane *et al.*, 2009). The main modification was the inclusion of stationary points for undertaking behavioural observations. At predetermined locations along the route the survey vessel was held in position for a fixed period (i.e. 20 minutes) while individuals of diving species of seabird were monitored. The duration of time the bird was monitored and the duration of any observed dives were recorded. The remainder of the survey technique was the same as that employed for offshore wind farms.
- S.5 It is proposed that both land and boat based surveys should be carried out monthly in order to capture seasonal variations in site use by different seabird species. It is recommended that survey effort should be distributed throughout the tidal range (high to low and spring to neap) in order to capture variations in site use during changes in tidal state.
- S.6 Surveys conducted at the two study sites recorded 19 and 14 seabird species at Carmel Head and Ramsey Sound respectively. The five most numerous species recorded at

Carmel Head were razorbill, Manx shearwater, guillemot, kittiwake and herring gull, while the five most numerous species at Ramsey Sound were razorbill, gannet, black-headed gull, fulmar and herring gull.

- S.7 Preliminary analysis of the survey data suggests that different species may favour different phases of the tide, and also that for any particular species these differences may vary between sites. Hence, razorbill was recorded in highest numbers on ebbing and low tides at Carmel Head, while the same species was recorded most frequently on ebbing and flooding tides at Ramsey Sound.
- S.8 A total of 448 individual dives were recorded for seven different species. The species with the shortest dive duration was gannet (mean of 3 seconds although based on only 4 observed dives). The other six species had much longer mean dive durations ranging from 35 seconds (razorbill) to 57 seconds (shag).
- S.9 Due to poor weather and logistical reasons, no boat surveys were conducted at Ramsey Sound, however four boat surveys were conducted at the Anglesey site between September 2009 and June 2010. A key contrast between the results of the boat surveys and the land based ones was the relative densities of near-shore species (e.g. shag) and more pelagic ones (such as Manx shearwater). The former were recorded at higher densities from the land based surveys while the latter were recorded at higher densities by the boat surveys. Thus for proposed sites which extend beyond 1-2 km from shore, boat surveys will probably be essential. In contrast at sites which lie within 1-2 km of shore (e.g. Ramsey Sound) it is probable that the whole site can be surveyed with confidence from land.
- S.10 A trial of a scanning 3D sonar system was conducted to investigate the potential for such technology to provide detailed information about seabird diving behaviour. In this trial the sonar was mounted on a boat, recording images to the side of the vessel. During this trial, two razorbills were successfully observed using the sonar. One of these individuals made repeated dives and was tracked for several minutes through a combination of sonar trace and surface observations. While observing diving seabirds using a sonar system such as this does appear to be possible, practical difficulties will need to be overcome, in particular in relation to mounting, since the diving behaviour of the birds seen during this trial appeared to be influenced by the presence of the boat.
- S.11 It is anticipated that impact assessments for underwater devices will need to include collision risk estimates for diving seabirds. Generating such estimates is not considered to be possible due to the lack of detailed knowledge on seabird diving behaviour. An

alternative approach, advocated here, is to employ a population model for seabirds of concern, based on estimates of the local population size in conjunction with a site activity model which will determine the possible population at risk due to the proposed development. Dive data, such as that obtained through the survey methods described in this report will enable refinement of the 'at-risk' population estimate, improving confidence in the outputs. However, it is recognised that this is currently an active field of research and more detailed methods are likely to be developed in relation to these assessments.

- S.12 The results of the surveys at the two sites indicated the probable species for which more detailed work would be required as part of an EIA for any proposed developments. At Carmel Head these included razorbill, guillemot, shag and cormorant, with all remaining species observed either at low densities or not actively foraging. Within Ramsey Sound only shag appeared to forage within the Sound itself, with most other species concentrating their feeding activity at the northern and southern ends of the Sound. Amongst the remaining species present in sufficient numbers that further assessment would be required were razorbill, guillemot and gannet. Although black-headed gull, herring gull and fulmar were also observed in moderate numbers in the Sound, since none of these species dive beyond a few metres, they are not expected to be of conservation concern when assessing the risk of collision with underwater devices.
- S.13 The best approach to obtaining bird data at a wave or tidal site will depend on the specifics of the location, in particular the proximity to land and the availability of elevated vantage points from which the area can be observed. If a site cannot be adequately covered in this way then boat surveys will be required, and these should probably be considered for near shore sites too, at least until the validity of using land only observations has been established. Surveys should record distribution and behavioural data in order to determine the importance of the site for diving species. The survey timetable should also be designed to ensure surveying occurs during all tide states.

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1 Introduction

1.1 Developing Bird Survey Methods Appropriate to Potential Wave and Tidal Stream Sites

1.1.1 RPS has been commissioned by the Welsh Assembly Government to undertake surveys of seabirds in areas identified as suitable for wave and tidal renewable energy projects. A key component of this work has included the development of appropriate field methods for determining the potential risks which tidal and wave energy conversion devices may pose to diving seabirds. The methods were developed following a review of the seabird species present in Welsh waters and consideration of the potential risks associated with a range of generic tidal and wave device types, presented in RPS 2010a¹.

1.1.2 The aims of this fieldwork were twofold: to assess methods suitable for undertaking Environmental Impact Assessments (EIA) for marine underwater renewable energy devices, whilst also providing a baseline assessment for key locations in Welsh waters. It should be noted that while the development of standardised survey protocols would provide a useful 'road-map' of the survey work necessary to assess potential impacts, the site specific requirements of individual projects will necessitate a degree of flexibility in approach.

1.1.3 The final methods, refined during the survey period, are attached in Appendix 1.

1.2 Fieldwork Report

1.2.1 Two sites on the Welsh coast have been used to test and develop the land-based and boat-based field methods. This document provides full details of the ornithological fieldwork undertaken, between autumn 2009 and summer 2010, including:

- The sites at which the ornithological work has been undertaken;
- The methods used, including a full description of the trials undertaken of different methodologies, along with their outcome;

- A trial undertaken of the use of sonar equipment to collect underwater bird behaviour data;
- Full results and analysis;
- A description of the methodologies we recommend for survey work at wave and tidal development sites in Welsh waters.

¹ RPS 2010a. Assessment of Risk to Diving Birds from Underwater Devices in Welsh waters: Phase 1 – Desktop Review of Birds in Welsh waters and Preliminary Risk assessment. Report to the Welsh Assembly Government.

2 Site Descriptions

2.1 Introduction

2.1.1 The fieldwork trials have been undertaken at two locations in Wales (Figure 2-1). Both sites have been identified in the Marine Renewable Energy Strategic Framework (MRESF), as having a tidal stream resource of potential commercial interest. The MRESF is being undertaken by RPS for the Welsh Assembly Government, with the current project forming part of Stage 2. A brief description of both locations and suitability for development is provided below.

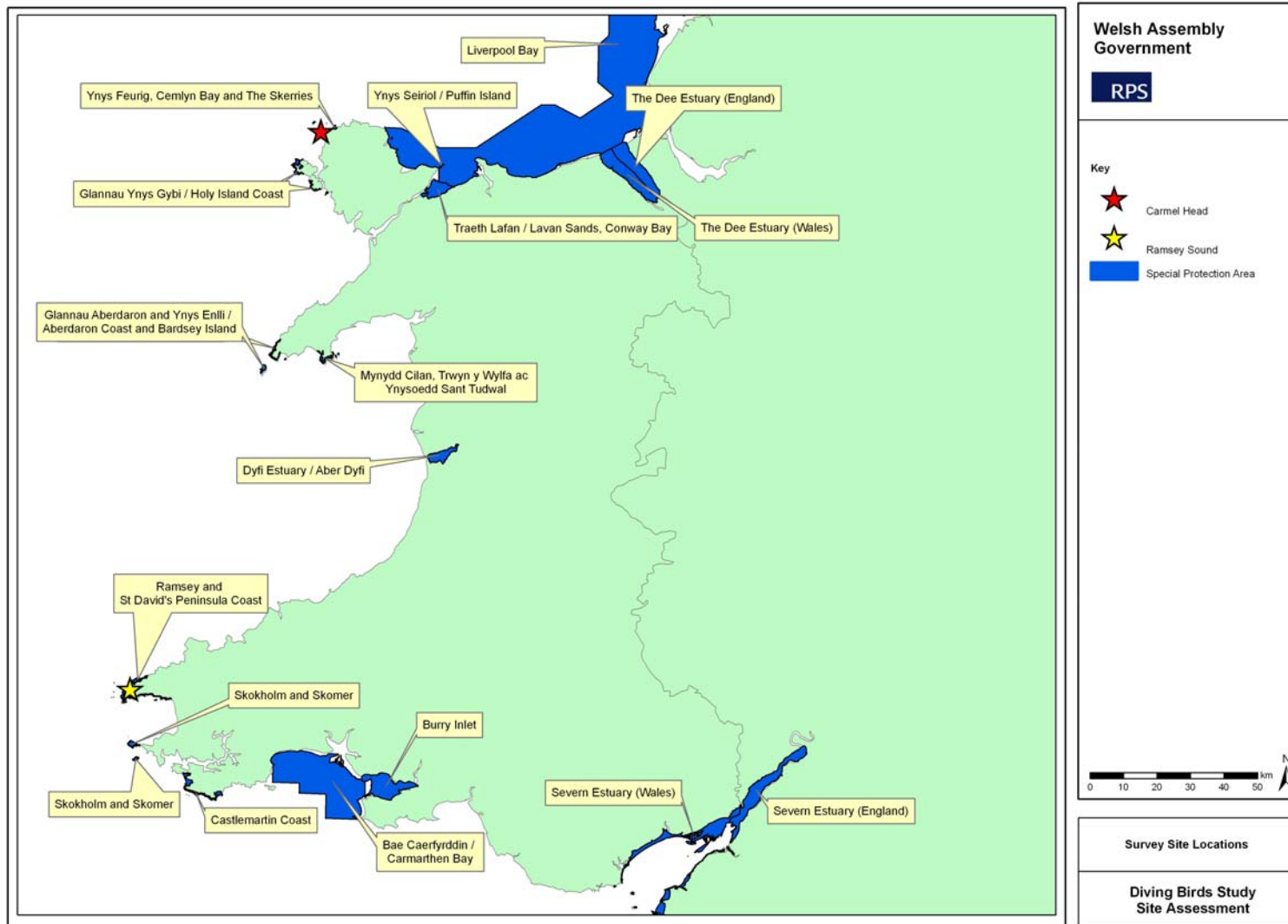


Figure 2-1 Locations of sites used for fieldwork trials

2.2 Carmel Head, Anglesey

2.2.1 Carmel Head is a remote headland on Anglesey, north-western Wales (Figure 2-2; and 2-2). Several small islands occur near-shore to the headland, including the Skerries approximately 3 km to the north west of Carmel Head and West Mouse which is approximately 1.5 km north-north-west of Carmel Head.

2.2.2 The MRESF project has highlighted this area of sea as a tidal stream resource sufficient to have commercial interest. The area of sea between the Skerries and Carmel Head has a high tidal race where fast moving tides pass through a point of constriction resulting in the formation of large waves, eddies and currents. The tidal range on average in this area is approximately 5.4 m with a mean spring tide current of 3.19 m/s.

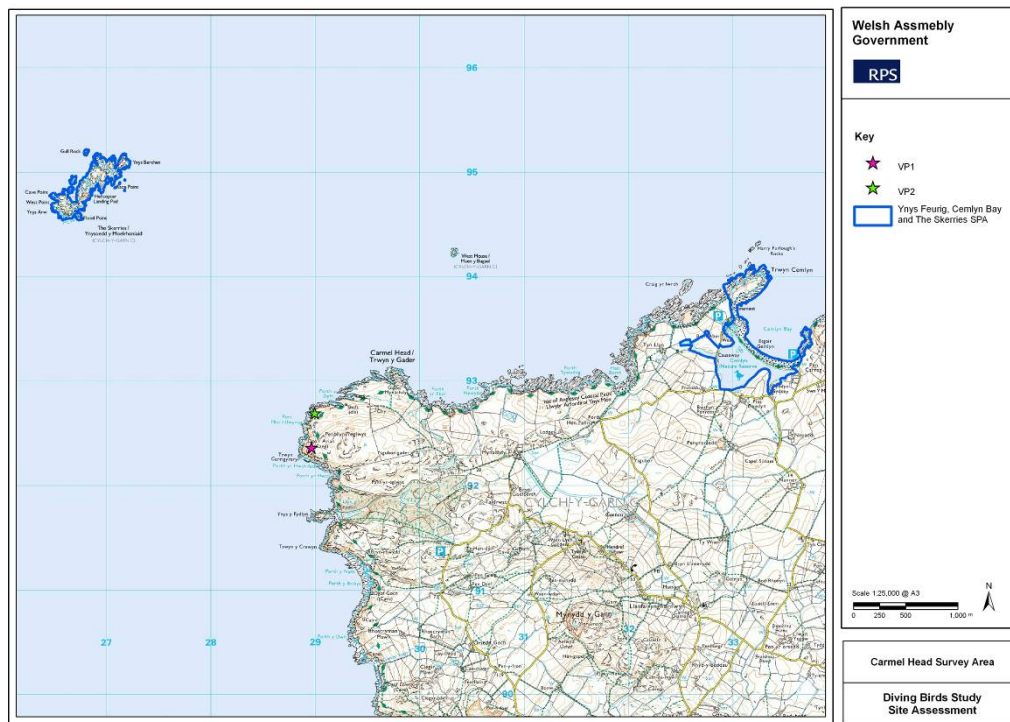


Figure 2-2 Carmel Head, Anglesey



Plate 2-1 The Skerries



Plate 2-2 Surveying for Carmel Head Anglesey

2.3 Ramsey Sound

2.3.1 St David's Head is a headland in Pembrokeshire, south-western Wales (Figure 2-3; Plate 2-3 and 2-4). It is the most southerly extremity of the large Cardigan Bay, and lies within the Pembrokeshire National Park. The Island of Ramsey (2.6 km²) lies approximately 1 km west of St David's Head, with Ramsey Sound being the body of water between the mainland and the island.

2.3.2 The presence of Ramsey Island means that the tidal race through the Ramsey Sound is particularly large with tides being constricted between the island and the headland, thus producing large waves, eddies and currents. The area has been identified by the MRESF as having a tidal stream resource sufficient to attract commercial interest.

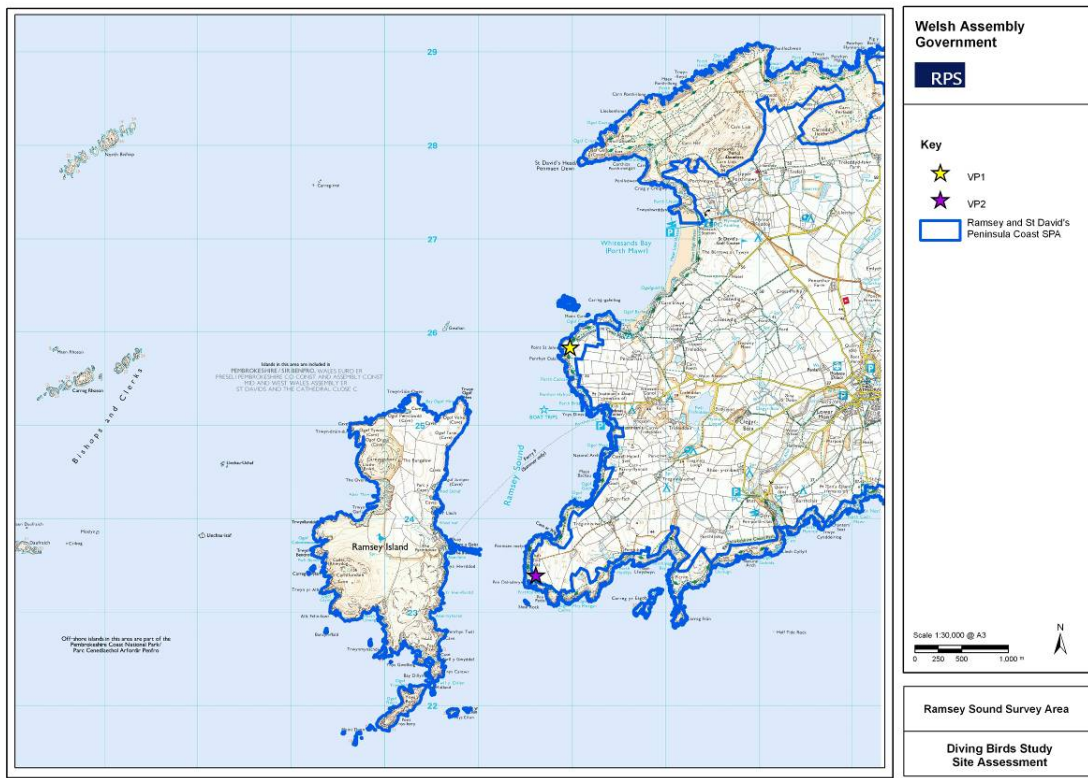


Figure 2-3 St. David's Head and Ramsey Island, Pembrokeshire



Plate 2-3 The Ramsey Sound from Point St. John (VP1)



Plate 2-4 The Ramsey Sound from Pen Dal-aderyn (VP2)

3 Survey Site Selection and Planned Methodology

3.1 Fieldwork Aims

3.1.1 The aim of the fieldwork was to develop methods to study avian diving behaviour at sea, with the benefit of collecting at sea data for two sites in Welsh waters in areas with commercial levels of tidal energy resource. Considering the nature of this fieldwork and the difficulties associated with surveying the two locations and diving bird ecology, it was proposed that the field methodologies would be developed during a trial phase of this project. The following section provides a chronology of the development of survey techniques for this project, including information on why certain methods were discarded and the reasons why other methods were felt to provide useful data.

3.2 Identification of View Points for Land Based Observations

3.2.1 Initial reconnaissance visits to Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire were conducted in August/September 2009 by ornithologists experienced in assessments for offshore wind farms. The aims of these preliminary visits were:

- To ascertain the optimal locations for land-based observations of the sites; and
- To develop initial methodologies for collecting data on the distributions and diving behaviour of seabirds at the sites.

3.2.2 Four vantage point (VP) locations were initially trialled at Carmel Head for undertaking land-based observations (LBVP), with two VPs subsequently identified during a visit to St David's Head, overlooking Ramsey Sound in Pembrokeshire. At the Carmel Head VPs, locations methods suitable for collecting distributional data, snapshots of flight activity, and behavioural data were tested. During a 3-hour period, complete counts of swimming/diving birds were undertaken every 15 minutes. The reconnaissance survey also looked at whether dive duration data could be collected by following individual birds during 20-minute periods, recording the number of dives undertaken and their duration. An assessment of detection rates was also considered, with most species being detectable and identifiable at distances of up to 2 km, with larger species (such as gannet) identifiable up to 3 km.

3.2.3 The data and insights obtained from this preliminary survey of Carmel Head were used to refine the methods employed during the first survey period. The outcome was the identification of two VP locations for future surveys, and the formation of the initial land-based vantage point (LBVP) protocols.

3.3 Testing of Potential Survey Methods during Land Based Survey Trials

3.3.1 Preliminary methods were devised for full trials of LBVP and boat-based surveys, at both Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire. Their evolution was subsequently informed over the trial period based on feedback from surveyors and assessment of data that were and could be obtained. These methods are outlined below.

Land-based Vantage Point Survey Protocol (LBVP)

3.3.2 The aim of the LBVP observations was to assess, within a 2 km viewshed, the variability in seabird distributions through time and in relation to tide state, and to undertake behavioural observations of individual feeding birds.

3.3.3 On Anglesey, two VPs at Carmel Head were initially used during these trials. VP1 (SH 290 924) was located on the western tip of Carmel Head at an elevation of 65 m, and VP2 (SH 290 927) was located north-east of the tip of Carmel Head on a raised coastal plateau at an elevation of 32 m (Figure 2-2).

3.3.4 Two VP locations were also used during this trial period for the Ramsey Sound, Pembrokeshire, at St. David's Head (Figure 2-3). VP1 (SM 720 258) was located at the northern extent of the Ramsey Sound on a peninsula at Point St. John, at an approximate elevation of 25 m. VP2 (SM 716 234) was located at the southern extent of the Ramsey Sound on a peninsula at Pen Dal-aderyn, at an approximate elevation of 30 m.

3.3.5 Each surveyor was provided with the following methodology to be undertaken at VPs at both Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire:

- All VP surveys were carried out for periods of four to six hours per day;
- Time at VPs was broken down into the following survey activities for each two-hour period:

- Four 5-10 minute bird distribution scans to record the positions of all birds on the water (and feeding aerial-diving birds, such as gannet) within 2km of the VP and within a 180° viewing area;
- Four 15-20 minute periods to record behavioural observations of diving birds, particularly frequency of diving activity, dive duration and if possible success of the dive; and
- Once an hour a 5-minute time period was spent recording birds in flight as they passed a fixed bearing (this was considered a secondary aim, not to interfere with the observations of birds on the water or diving birds).
- Two approaches to recording bird locations from the VPs were trialled, as follows:
 - The preferred option was to record each bird/group of birds during the distribution scan and record their position using a sighting compass (Silva SightMaster) and clinometer (Silva ClinoMaster). With these two pieces of information, along with the GPS grid reference and altitude of the VP, a precise estimate of the position of the bird/group of birds could be calculated.
 - Alternatively, a grid system was imposed on the surveyed area, assigning individuals/groups to specific grid cells. The grid was defined by dividing up the viewable area into arcs of 30° (labelled by letter, clockwise), and 500 m wide bands radiating from the VP to a maximum of 3 km (ascending in number with distance, Figure 3-1). Wherever possible landmarks were used to identify boundaries between sectors, to aid the rapid assignment of observations to sectors in the grid.

3.3.6 The accuracy of recording the locations of birds on the water was of paramount importance. These two approaches were therefore tested in order to evaluate the best option for future work. This was undertaken by four land-based surveyors who compared the location estimates for the same bird based on: measurements of compass bearing and angle of declination (using the clinometer); and using the grid system (Figure 3-1).

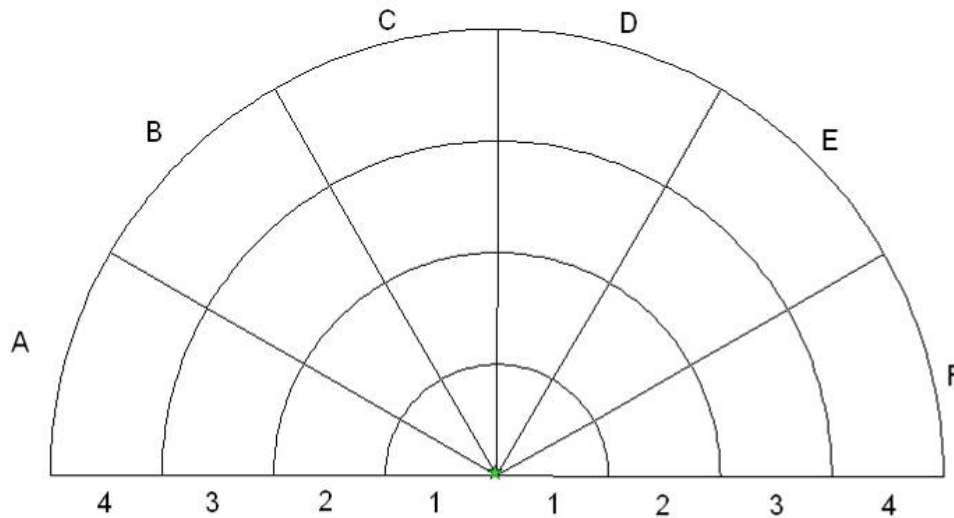


Figure 3-1 Grid system used for recording locations. At each vantage point, the 180° viewing area was divided into six 30° arc sections, labelled ‘A’ to ‘F’ in a clockwise direction. Each 30° arc was also divided into 500 m sections, numbered in ascending order from the observer from ‘1’ to ‘6’ (i.e. up to 3 km from the observer; the figure shows sections ‘1’ to ‘4’ for illustrative purposes).

3.4 Boat-based Survey Trial

3.4.1 Each surveyor was provided with the following methodology to be followed during the boat-based surveys:

- A predetermined ‘circular’ survey route was to be followed. The intention was that the routes would take approximately two hours (including a break) for the Ramsey Sound, and approximately three hours (including a break) for the Skerries. The routes were designed to allow two to four complete circuits to be carried out within a six to eight hour survey session;
- All surveys to be conducted by two surveyors trained in the European Seabird At Sea (ESAS) methodology² ; and

² Tasker, M.L., Jones, P.H., Dixon, T.J. and Blake, B.F. 1984. Counting seabirds at sea from ships: a review of methods employed and a suggestion for a standardised approach. *Auk* 101: 567-577

- The boat-based survey trials were comprised of two separate components, looking at two different ecological aspects (distribution and behaviour). The methods for these two components were as follows:
 - A predefined transect route was to be followed, with seabird observations made based on the ESAS methods (details below). These permitted the collection of bird distribution data; and
 - At predetermined locations the boat was to be held stationary for a fixed period of time while individual behaviour data were recorded. During these period surveyors were to observe individual birds, recording the duration each individual was observed for and the number and duration of any dives occurring. In addition the success of the dive and any behaviour in relation to the presence of the boat was also to be noted. Initially the observation period was set at 10 minutes, although if this was found to be too short, it was to be extended to 15-20 minutes.

3.4.2 The standard ESAS methods³ which were incorporated into the methodology used for these boat surveys were:

- Strip-transects 200 m wide on each side of the vessel surveyed in discrete periods of time, so as to divide the line up into a series of 200 m sections. All birds encountered on the sea were recorded along with details of species, number, precise time of day, and approximate distance from the boat, recorded into one of three distance bands (0-50 m, 50-100 m, and 100-200 m); and
- The two observers recording birds on either side of the vessel.

3.4.3 Additional instructions provided to the two boat-based surveyors were as follows:

- The vessel was to travel at a constant speed of approximately ten knots (depending on currents);
- Only data collected in sea state 4 (significant wave height of 1.25-2.5 m) or less was to be used in the analysis of seabird activity;
- The vessel location was to be recorded at all times using GPS. Using the time codes from the GPS, the details of each bird record were to be linked to the coordinates, thereby providing an accurate location; and

³ <http://www.jncc.gov.uk/page-4514>

- Birds in flight were to be recorded during snapshots approximately every 500 m along the transect, with details of species, number, precise time of day, and flight height, recorded in one of three altitude bands (<2 m, 2-10 m, and >10 m). This information was considered as secondary and only collected if time allowed, ensuring it did not distract from recording diving birds on the water.

4 Testing of Planned Land Based Survey Methodology

4.1 Introduction

- 4.1.1 LBVP surveys were conducted at Carmel Head, Anglesey from the 1st to 8th September 2009, and for the Ramsey Sound from the 6th to 9th September 2009. Boat-based surveys were conducted around the Skerries, Anglesey on the 2nd, 5th and 7th of September 2009. Due to very poor weather conditions (consistently strong winds, creating sea state conditions unsuitable for bird surveys) and a lack of appropriate vessels in south-west Wales during September 2009, no boat-based surveys were conducted in the Ramsey Sound during this trial period.
- 4.1.2 The following sections discuss those methodologies which were most applicable in obtaining the type of data required and those which were not considered useful and the reasons why.

4.2 Land-based Vantage Point Surveys

- 4.2.1 Four surveyors (two per VP) conducted trials of the proposed VP methods at Carmel Head, Anglesey on the 1st September 2009. VPs 1 and 2 were used on this date. For the remaining LBVP surveys at Carmel Head from 2nd to the 8th September and onwards, VP1 only was used as it was concluded that the viewshed from this location provided sufficient coverage of the entire study area.
- 4.2.2 Following the methodology trial period at Carmel Head, two surveyors carried out land based surveys of the Ramsey Sound from St. David's Head from the 6th to the 9th of September 2009 using both VP1 and VP2. Survey times varied from four to six hours per day, each hour consisting of approximately 20 minutes completing a distribution scan, 25-30 minutes obtaining behavioural activity data on diving birds, and a five-minute flight activity assessment.
- 4.2.3 In a constantly changing environment with sea state 4 being met on most days, surveyors had most difficulty in collecting behavioural dive data. The grid system did prove to be far more effective than the 'point location' methodology involving the sight compass and clinometer, but birds were still difficult to spot in sea states greater than 4. However distribution data, flight activity data and some behavioural dive data were obtained at both locations using the specified methodologies.

Estimation of Bird Location

4.2.4 Four surveyors trialled the use of a clinometer and sighting compass for estimating bird locations on the first day of the land based trial at Carmel Head on 1st September 2009. This trial established that this 'point location' method was not a viable option for the following reasons:

- To test the accuracy of the clinometer and sighting compass observations surveyors carried out multiple measurements of the same individual bird / group of birds. These trials considered both repeatability by the same surveyor and between surveyor comparisons. In these tests a high degree of variance (approximately +/- 5°) was evident in the both the clinometer and the sighting compass angles.
- This translated into considerable variation in estimated distances between surveyors. For example, a 5° difference in clinometer readings equated to distances from the observer of between 300 m and 3 km when viewed from a VP height of 30 m.
- The main difficulties encountered were due to the relatively shallow viewing angle from the VP out to sea; for example, from a VP altitude of 30 m, the difference in angle between a bird located 500 m away and 1500 m away is only 2.3°, while at a VP altitude of 65 m the same range of distances are covered by a difference in angle of 4.9°.
- Strong winds exacerbated this problem, due to the observers not being able to hold the equipment steady.
- The degree of variance in location estimates from the sighting compass was smaller, however. For an object at a distance of 1km, a 5° difference in sighting compass readings would result in a range of location estimates within approximately 40 m.
- The process of using both the clinometer and sighting compass was time consuming. During the period dedicated to collecting data on the distribution of diving birds, surveyors found that the use of the equipment, especially in strong winds, distracted from the recording of bird data and made it difficult to keep track of which individuals had already been counted;
- Overall the method was found to be very difficult to put into practice in the field.

4.2.5 The alternative option of recording birds using a grid (Figure 3-1) was also trialled by the four surveyors. This approach proved to be more successful, with agreement between

surveyors in 40 out of 40 trials. The positives and the negatives of this method were identified as follows:

- The surveyors felt the grid system was a more practical methodology to use in the field as it was less time consuming to estimate locations.
- Birds could be rapidly identified and allocated to each grid section.
- All elements of the survey, i.e. distribution survey, behavioural survey and 5-minute flight activity survey, could thus be completed within the allocated time periods.
- The main drawback of this method was the lack of precision in measuring distance and location of birds, however unlike the clinometer /sighting compass method, the grid did not provide a false sense of accuracy.

4.2.6 After the first day of field trials (1st September 2009) surveyors concluded that the grid method was a more practical method of gaining the necessary data. This was mainly due to use of the clinometer being particularly problematic in windy conditions.

4.2.7 At the end of the trials at Carmel Head, Anglesey (1st to 8th September 2009), the surveyors were of the opinion that a single observer at each VP was able to sufficiently cover the viewshed alone and collect quality data. It should be noted that bird abundance during this period was relatively low. Bird numbers at both sites will increase during the spring and summer, when this would need to be re-assessed. However, given that staff time is the most expensive part of the LBVP survey costs, the scope to reduce surveyor requirements over winter is significant (whilst ensuring appropriate lone-working health and safety systems are put in place).

4.3 Recommendations from Land Based Trials

4.3.1 For the purposes of Environmental Impact Assessment, it is recommended that LBVP surveys are undertaken throughout a calendar year in order to cover all the ecologically significant periods of the annual cycle (i.e. the breeding season, the winter season, and the autumn and spring migration). This can be straightforwardly achieved through monthly surveys. This intensity of surveying has not been conducted at the Welsh sites used here, due to logistical constraints. However, surveys were undertaken during key periods (autumn migration, mid-winter, pre-breeding and breeding), thereby covering a wide range of the species and bird densities expected to be present.

Location of LBVPs

- 4.3.2 The sites selected for LBVPs should provide a clear view over the proposed development area. The number of LBVP sites required will depend on the size of the proposed development. It is recommended that sufficient sites are used in order that the combined viewsheds (each of 180°) from the LBVPs cover the proposed development area plus a 1 km buffer.

Effort

- 4.3.3 Since bird activity is likely to change between different tidal states, the LBVP survey programme should be designed so that surveys are spread through the whole tidal cycle (high, intermediate and low) and cover the tidal range between spring and neap tides. It is recommended that at least 6 hours of LBVP observations are undertaken each month, split between low and high tides. Surveys should alternate between neap and spring tides each month. It may become apparent that bird activity differ between tide states are minimal, thereby relaxing this criteria. However, until that can be demonstrated at a particular site it is precautionary to assume such variation.

4.4 Recommended Methodology for Land Based Survey

- 4.4.1 The methodology recommended for the LBVP surveys is as follows:

- The primary aim of the VP observations is to collect data on the distribution of diving seabird species, and to collect representative behavioural observations. The secondary aim of the VPs is to collect data on birds in flight.
- Only data collected in sea state 4 (significant wave height of 1.25-2.5 m) or less will be used for analysis of seabird data.
- Locations of birds will be recorded by the use of a grid system (see Figure 3-1). At each vantage point, the 180° viewing area will be divided into 30° arcs, labelled 'A' up to 'F' in a clockwise direction. Each 30° arc will be identified through reference to land features and compass bearings, with the aid of a sighting compass if needed. Each 30° arc will also be divided into 500 m sections, numbered in ascending order from the observer from '1' to '6' (i.e. up to 3 km from the observer). Each 500 m distance band will be identified through the use of land features, and a rangefinder if needed.
- Each 3-hour survey period will be split into three 1-hour periods. During each of these periods, time will be split between different activities: approximately 30

minutes will be spent recording the positions of all birds on the water; approximately 20 minutes will be spent on behavioural observations; and approximately 10 minutes will be spent recording birds in flight.

- Whilst collecting data on the distribution of diving birds, systematic scans will be made through each of the grid sections. Once a diving bird (including feeding gannets and terns) is located, details of grid location, species, number of birds, tidal state and precise time of day will be recorded.
- Whilst collecting data on the diving behaviour of birds, a focal individual will be identified and followed for 5-10 minutes. Whilst followed, data on dive duration and frequency will be collected. Efforts will be made to remain on the same individual by using differences in plumage, such as age/sex/moult. Additional information recorded will include grid location, species, age, tidal state and precise time of day
- Birds in flight will be recorded during at least two periods of approximately five minutes. This will be done by recording details of birds passing by a set point. The following details will be recorded onto the data sheets: time, tidal state, species, number, distance from observer (using 500 m-wide distance bands), and height (using one of three altitude bands: <2 m, 2-10 m, >10 m).

4.5 Month and tide breakdown of LBVP surveys undertaken

- 4.5.1 Subsequent to the initial trial surveys described in Sections 4.2 and 4.3 and the development of the methodology described in Section 4.4, LBVP surveys were carried out at Carmel Head, Anglesey in November (5 days) and December 2009 (4 days) and January (3 days), April (3 days), May (3 days) and June (3 days) 2010. At Ramsey Sound, St. David's Head, surveys were conducted in October (4 days), November (2 days) and December 2009 (3 days) and January (1 day), February (1 day) and April (6 days) 2010.
- 4.5.2 The total amount of time devoted to each of these three activities (distribution scans, collecting behavioural data, and recording flight activity) at the two sites in 2009/2010 is provided in Table 4-1. The division of this time between different tidal states is provided in Table 4-2. Low and high tides were defined as 30 minutes either side of the low or high tide time respectively.

Table 4-1 Time allocated to each task during the LBVP surveys (September 2009 to June 2010 hours: minute)

Month	Carmel Head Anglesey			Ramsey Sound, Pembrokeshire		
	Distributions	Behaviours	Flights	Distributions	Behaviours	Flights
September	14:00	9:20	4:40	11:30	7:40	3:50
October	0	0	0	12:00	8:00	4:00
November	14:30	9:40	4:50	6:00	4:00	2:00
December	11:40	7:45	3:50	8:45	5:50	2:55
January	9:00	6:00	3:00	2:15	1:30	0:45
February	0	0	0	3:00	2:00	1:00
April	9:00	6:00	3:00	18:00	12:00	6:00
May	9:00	6:00	3:00	0	0	0
June	9:00	6:00	3:00	0	0	0
Total	76:10	50:45	25:20	61:30	14:00	20:30

Table 4-2 Division of time allocated to each task during the LVP surveys, between different tidal states (September 2009 to January 2010, hours: minutes)

Month	Carmel Head Anglesey			Ramsey Sound, Pembrokeshire		
	Distributions	Behaviours	Flights	Distributions	Behaviours	Flights
Low	7:20	4:50	2:30	4:50	3:15	1:40
Flooding	24:40	16:40	8:30	20:00	13:25	6:45
High	8:20	5:30	2:40	5:40	3:50	1:45
Ebbing	35:50	23:45	11:40	31:00	20:30	10:20
Total	76:10	50:54	25:20	61:30	41:00	20:30

5 Methodology for Boat-based Surveys

5.1 Planned Methodology

5.1.1 Boat-based surveys were carried out on the 2nd, 5th and 7th of September 2009 in the waters off Anglesey between Carmel Head and the Skerries. The route used for the boat transect survey is shown in Figure 5-1. Poor weather conditions only allowed for one complete transect circuit survey to be completed on each day. Sea states for the majority of the survey period were sea state 4, making bird observations difficult. Surveyors were able to obtain some distributional bird data from the transect surveys but few behavioural observations were possible. When the boat attempted to stop in pre-determined locations, holding the boat in one place proved difficult with the increasing sea state compounding the already effects of the strong tidal conditions.

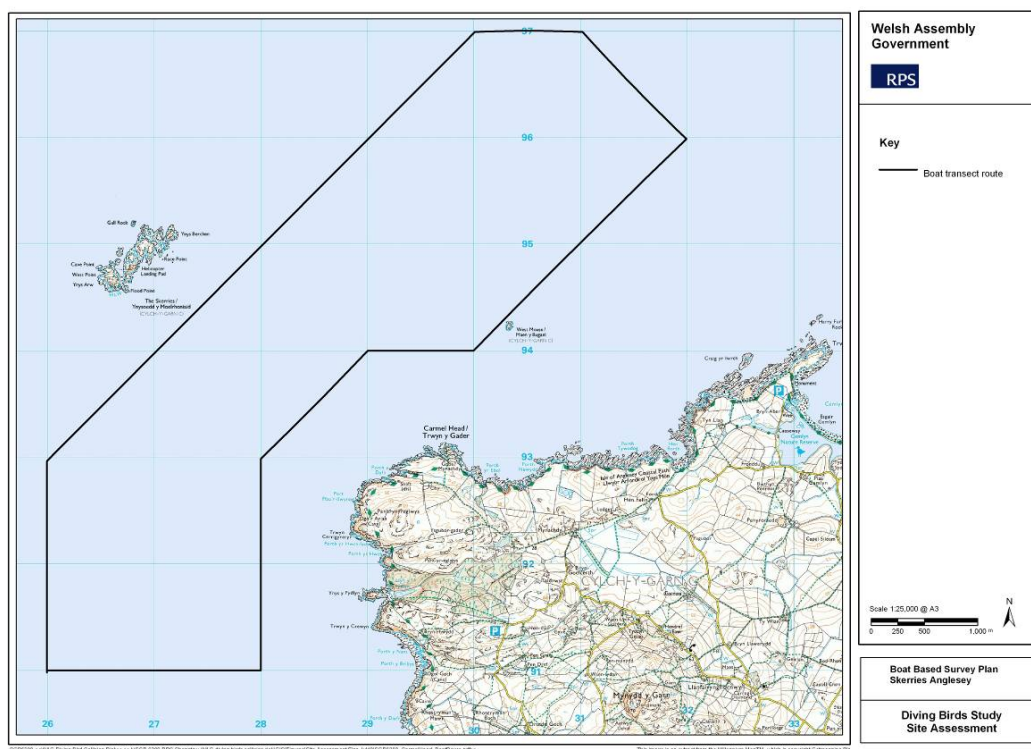


Figure 5-1 Boat transect route between Carmel Head and the Skerries, Anglesey

5.1.2 The boat-based survey methods were updated based on the trials performed at Carmel Head and also surveys carried out at similar sites elsewhere in the UK. Based on these trials, the experience of RPS staff and the ESAS methodology further

detail on the methodologies recommend by RPS for boat-based surveys of wave and tidal development sites are provided below.

- The vessel to be used will not be a commercial or frequently-active fishing vessel (in order to avoid influencing the survey results due to birds associating with the vessel). It will have an observation platform that provides an eye-viewing height of approximately 5 m above sea level.
- The boat transect surveys will be undertaken with the boat travelling against the direction of tidal flow. Since it is anticipated that birds on the water will tend to travel with the current, this will help to reduce the rate of double-counting;
- Transects will be separated by a minimum of 1 km. This distance between transects is the minimum advocated by the ESAS methodology in order to minimise the risk of double-counting individual birds.
- Records of environmental data such as weather conditions and tidal state will be logged throughout the surveys.
- The transect route followed during boat-based surveys should cover the proposed development area plus a 1 km buffer.
- Boat-based surveys should be undertaken throughout a calendar year in order to cover all significant periods of the annual cycle (i.e. the breeding season, the winter season, and autumn and spring migration periods). This can be straightforwardly achieved through monthly surveys.
- Since bird activity is expected to be influenced by changes between different tidal states, the boat survey programme should be designed so that surveys are spread through the whole tidal cycle (high, low and intermediate) and cover the tidal range between spring and neap tides. Over the course of two consecutive months the whole tidal cycle should be covered, with two complete surveys of the site undertaken in each of the four states (high-tide to mid-tide, mid-tide to low-tide, low-tide to mid-tide, and mid-tide to high-tide).
- Surveys should also be scheduled to occur throughout the spring-neap tide cycle, although the speed of flow during spring tides may prevent surveys. In this case it should be ensured that complimentary land-based surveys are made during spring tides. This is based on the expectation that foraging opportunities for seabirds vary with tide state.
- The stationary points will be separated by at least 1 km.
- At each stationary point the boat will maintain its position, through the use of its engine, for approximately 15 minutes.

- During the 15-minute period, observers will select target individuals (diving birds on the sea, or feeding gannet) and record their behaviour for as long as possible (this is unlikely to exceed 5 to 10 minutes). Data will include species, age, dive duration and dive frequency, and whether birds are foraging.

5.1.3 The final methods, and recommended survey recording forms after undergoing refinement, are provided in Appendices 1 and 2.

5.2 Planned and Completed Boat Surveys

5.2.1 Boat surveys off Carmel Head, Anglesey were carried out in January, April, May and June 2010, each consisting of three days of surveying. Three experienced offshore ornithological surveyors undertook each survey, using the Seekat C (Plate 5-1), following the methods set out above. Boat-based surveys were planned for the Ramsey Sound between November 2009 and January 2010, but frequent poor weather conditions in south-west Wales during this period prevented them from taking place. Subsequently, it was not possible to locate a suitable boat in the vicinity of the site (the vessel previously lined up became unavailable), and thus it was not possible to undertake any boat surveys at this location. However, as discussed in the conclusions in Section 8, the site is readily covered by land based observations which therefore provide suitable alternative data.



Plate 5-1 The Seekat C during ornithological surveys off Carmel Head, Anglesey in January 2010.

6 Results

6.1 Introduction

6.1.1 This section provides a summary of the survey results from the field surveys undertaken between September 2009 and June 2010. Summary results from the three different activities (observations of birds on sea, behavioural observations, and counts of birds in flight) are presented in the following sections. Full details of the data collected are also provided in Appendices 4 and 5, along with a legend for these data in Appendix 4.

6.2 Land Based Surveys

Birds on the Sea

6.2.1 Nineteen bird species were recorded on the sea, or diving, from Carmel Head, Anglesey, whilst fourteen species were recorded in the Ramsey Sound, Pembrokeshire from the LBVPs (Table 6-1). The five most frequently recorded species at the two sites were razorbill *Alca torda*, gannet *Morus bassanus*, black-headed gull *Larus ridibundus*, kittiwake *Rissa tridactyla* and Manx shearwater *Puffinus puffinus*. There was, however, variation in the most frequently recorded species at the two sites. At Carmel Head these were razorbill, Manx shearwater, kittiwake, herring gull *Larus argentatus* and guillemot *Uria aalge*, whilst at the Ramsey Sound these were gannet, black-headed gull, razorbill, kittiwake and shag *Phalacrocorax aristotelis*.

6.2.2 The distributions of species judged to be of highest potential sensitivity to tidal stream and wave devices (RPS, 2011), and observed at Carmel Head, Anglesey are provided in (Figure 6-1 to 6-8) and for Ramsey Sound, Pembrokeshire in (Figure 6-9 to 6-16). These species were those observed in higher numbers during the surveys, but with an emphasis on the species at most potential risk from underwater devices (i.e. species capable of diving to depths of more than a few metres), rather than surface feeders such as gulls. The accompanying RPS report provides details of the ecology of seabird species found in Welsh waters and an estimate of the predicted level of risk for each in relation to underwater devices.

Table 6-1 Total counts of birds on sea or diving (September 2009 to June 2010)

Species	Carmel Head, Anglesey	Ramsey Sound, Pembrokeshire
Pintail	1	
Red-breasted merganser	6	
Common Scoter	27	
Red-throated diver	5	3
Great northern diver	1	
Great-crested grebe	1	
Fulmar	6	309
Manx shearwater	340	27
Gannet	108	670
Cormorant	9	6
Shag	142	82
Great skua		2
Kittiwake	327	72
Black-headed gull	0	469
Mediterranean Gull	1	1
Common gull	0	7
Lesser black-backed gull	17	17
Herring gull	319	139
Great black-backed gull	7	67
Unidentified gull		203
Guillemot	334	52
Razorbill	4754	701
Black guillemot	1	0
Auk species	2400	121
Total	8812	2948

6.2.3 To enable comparisons between the sites, the numbers of each species recorded on the sea per hour are provided in (Table 6-2). The hourly rates reveal large differences in the prevalence of different species at the two sites.

Table 6-2 Number of birds observed on the sea per hour of observation (September 2009 to June 2010)

Species	Carmel Head, Anglesey	Ramsey Sound, Pembrokeshire
Pintail	0.02	
Red-breasted merganser	0.12	
Common Scoter	0.52	
Red-throated diver	0.10	0.13
Great northern diver	0.02	
Great-crested grebe	0.02	
Fulmar	0.12	13.23
Manx shearwater	6.56	1.16
Gannet	2.08	28.69
Cormorant	0.17	0.26
Shag	2.74	3.51
Great skua		0.09
Kittiwake	6.31	3.08
Black-headed gull		20.09
Mediterranean Gull	0.02	0.04
Common gull		0.30
Lesser black-backed gull	0.33	0.73
Herring gull	6.16	5.95
Great black-backed gull	0.14	2.87
Unidentified gull		8.69
Guillemot	6.45	2.23
Razorbill	91.75	30.02
Black guillemot	0.02	
Auk species	46.32	5.18

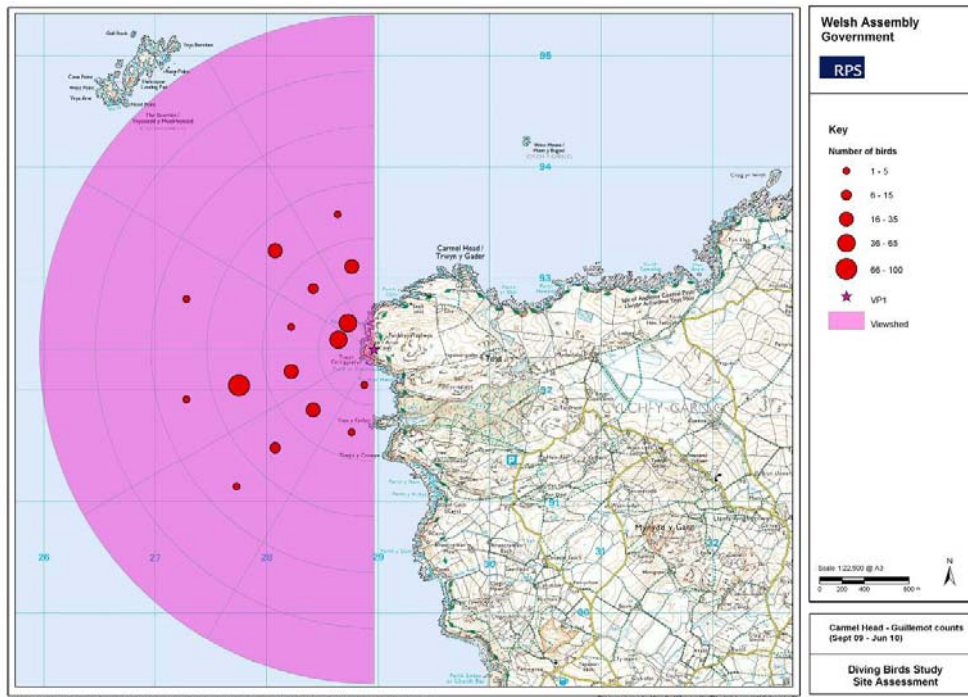


Figure 6-1 Distribution of guillemot recorded on the sea from land based VP at Anglesey, September 2009 to June 2010

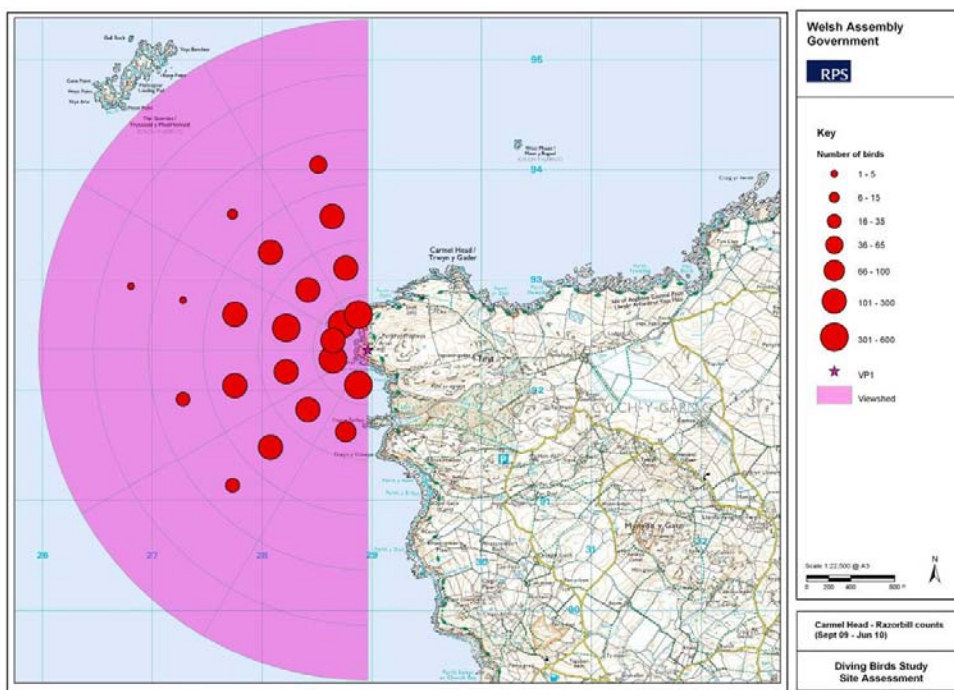


Figure 6-2 Distribution of razorbill recorded on the sea from land based VP at Anglesey, September 2009 to June 2010

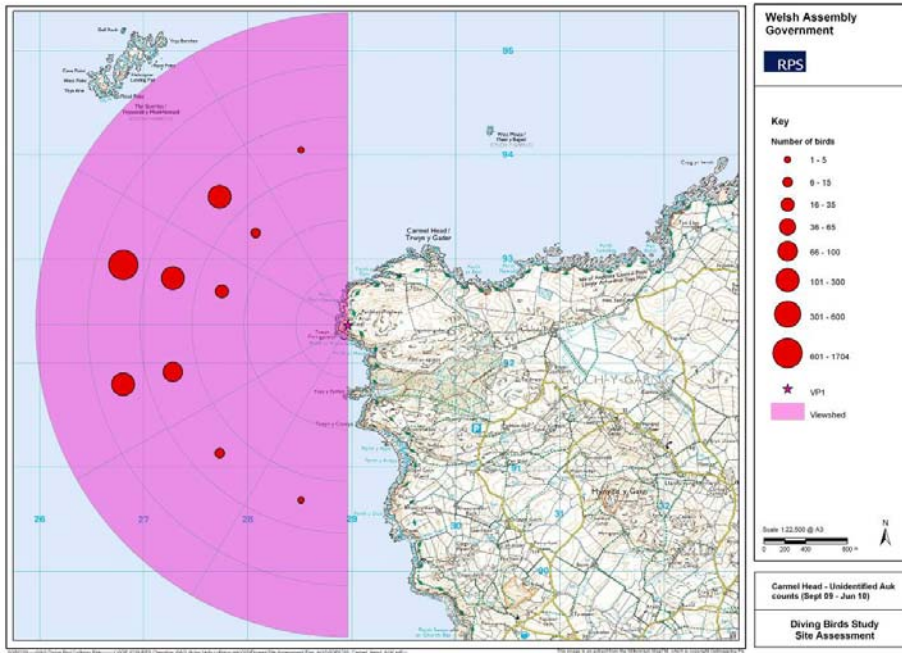


Figure 6-3 Distribution of unidentified auk recorded on the sea from land based VP at Anglesey, September 2009 to June 2010

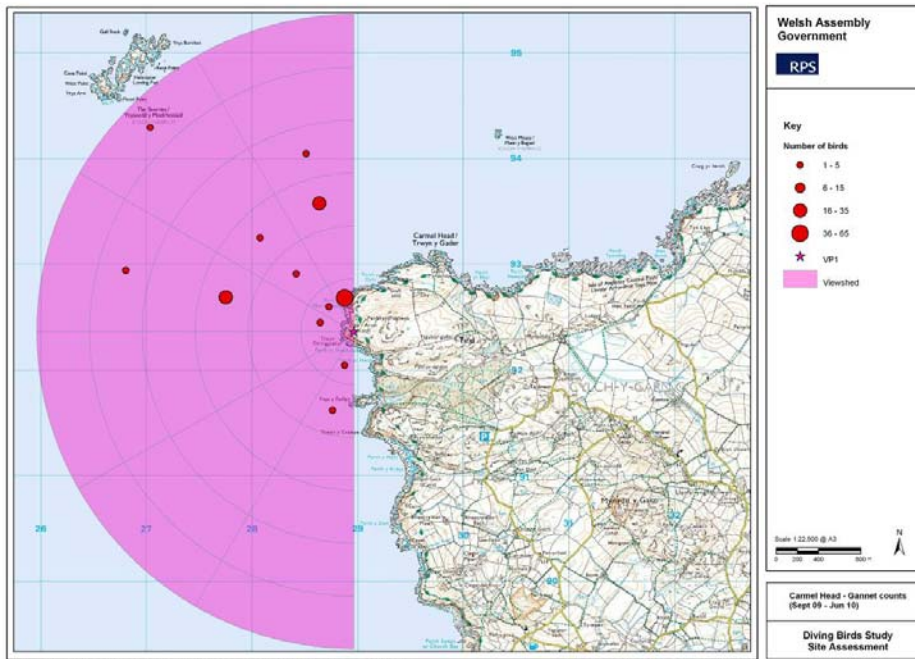


Figure 6-4 Distribution of gannet recorded on the sea from land based VP at Anglesey, September 2009 to June 2010

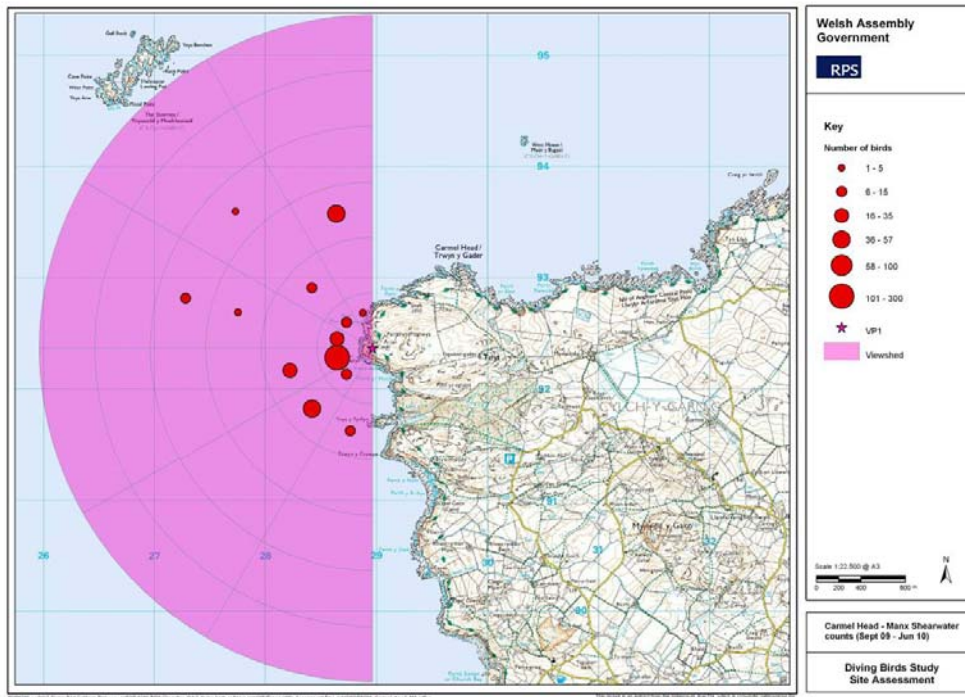


Figure 6-5 Distribution of Manx shearwater recorded on the sea from land based VP at Anglesey, September 2009 to June 2010

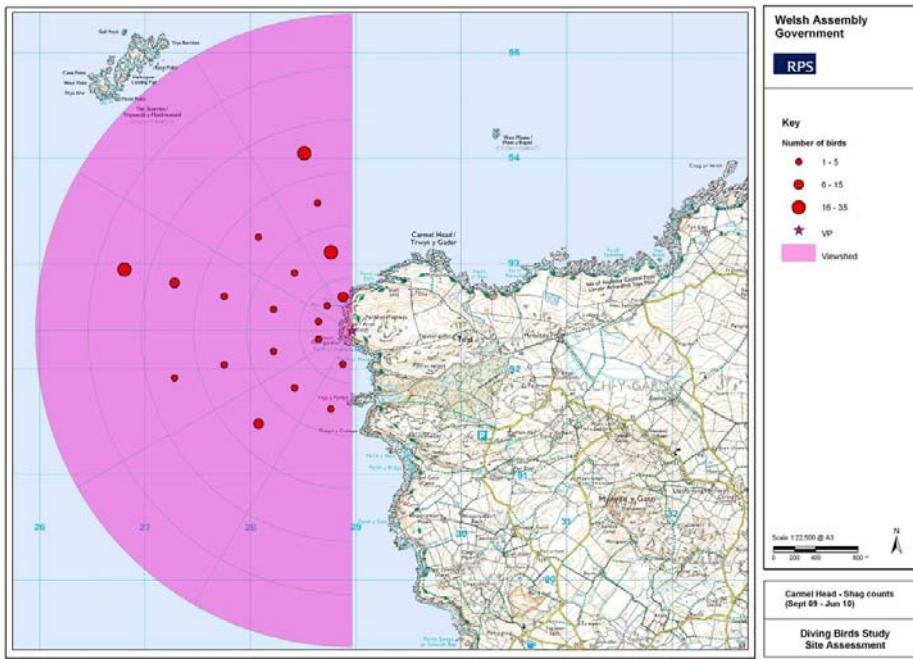


Figure 6-6 Distribution of shag recorded on the sea from land based VP at Anglesey, September 2009 to June 2010

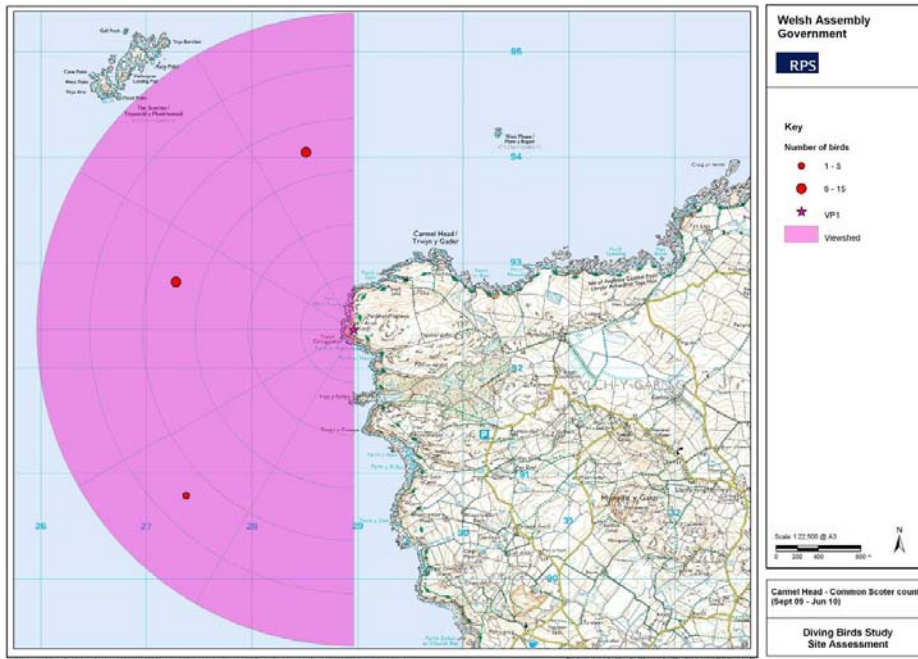


Figure 6-7 Distribution of common scoter recorded on the sea from land based VP at Anglesey, September 2009 to June 2010

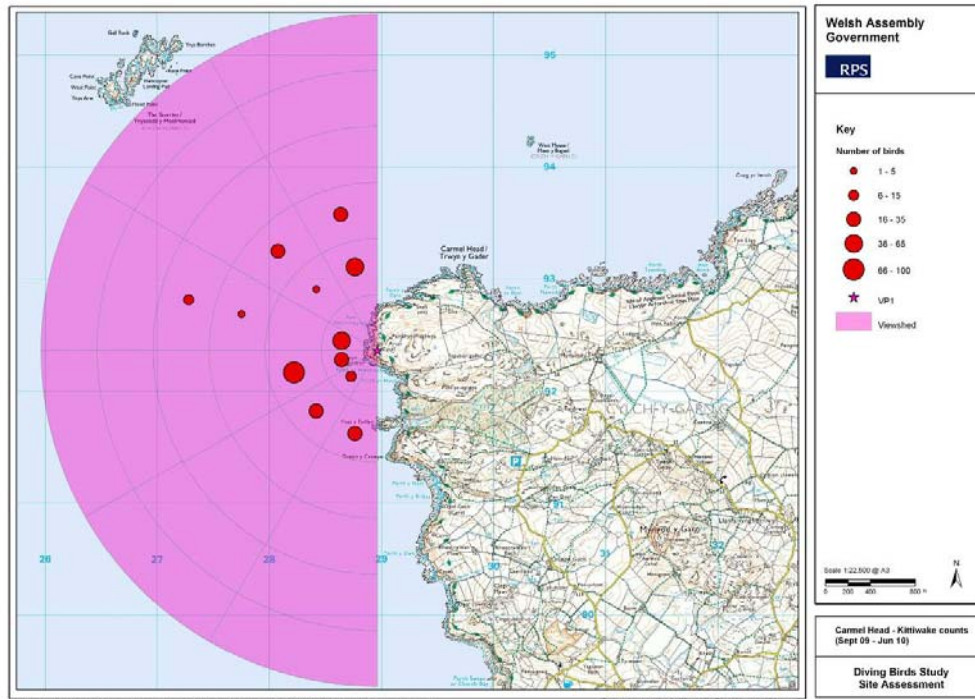


Figure 6-8 Distribution of kittiwake recorded on the sea from land based VP at Anglesey, September 2009 to June 2010

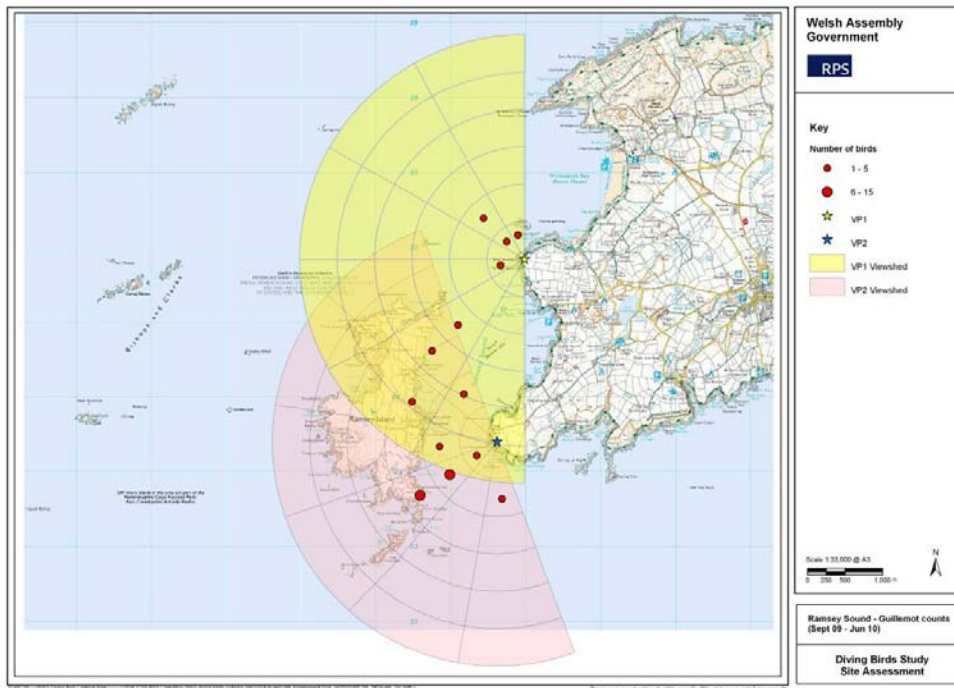


Figure 6-9 Distribution of guillemot recorded on the sea from land based VP at Ramsey Sound, September 2009 to April 2010

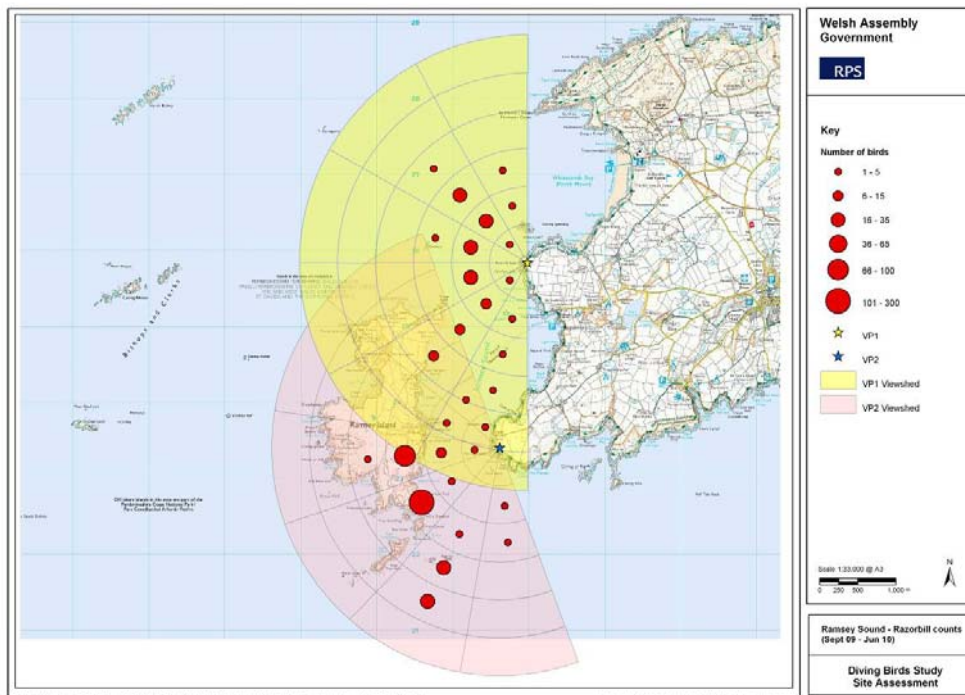


Figure 6-10 Distribution of razorbill recorded on the sea from land based VP at Ramsey Sound, September 2009 to April 2010

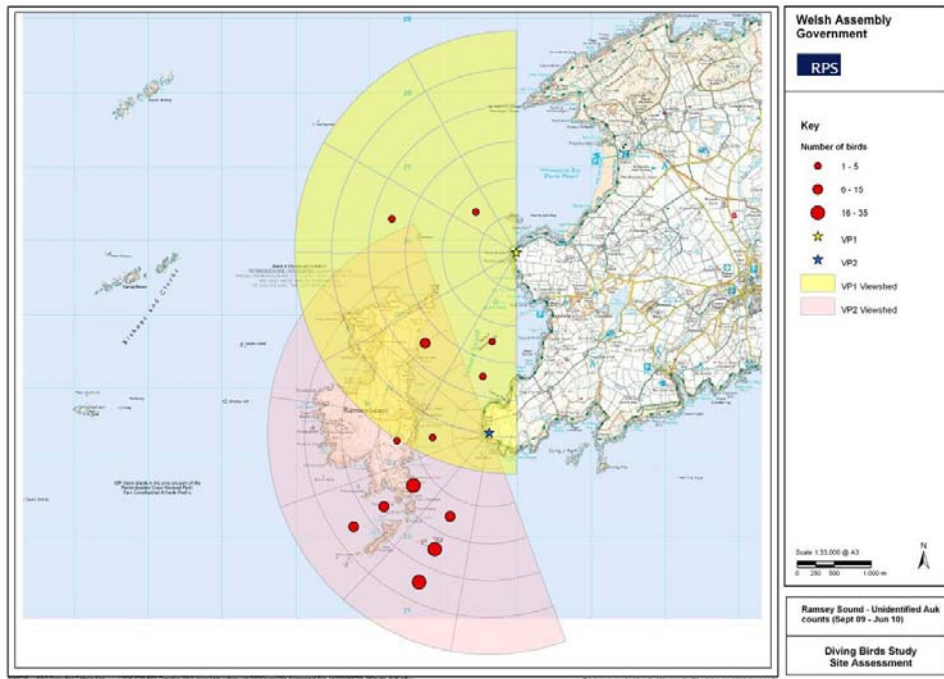


Figure 6-11 Distribution of unidentified auk recorded on the sea from land based VP at Ramsey Sound, September 2009 to April 2010

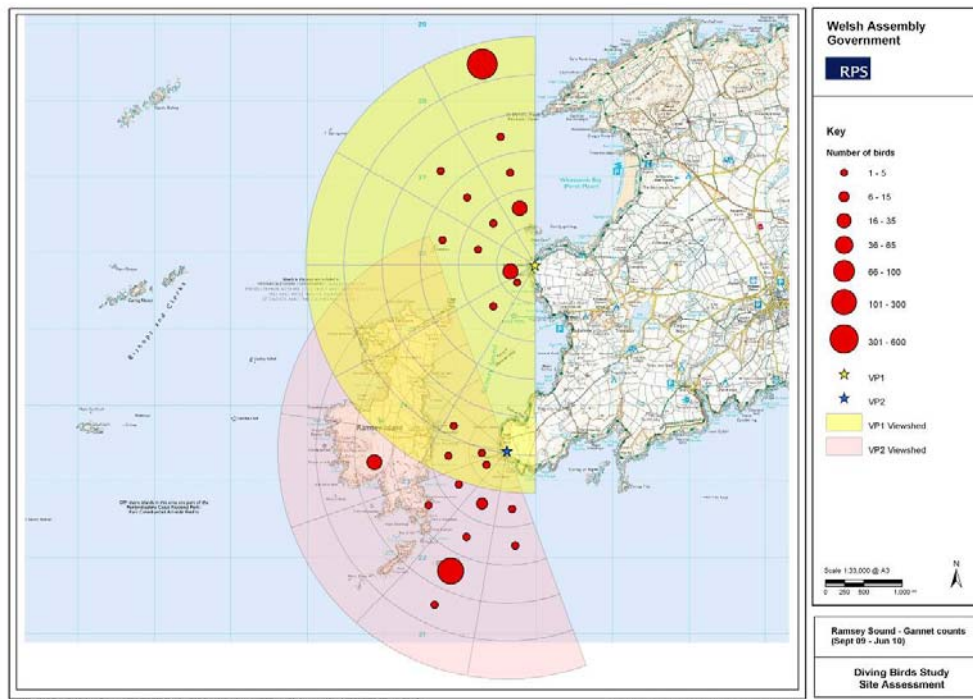


Figure 6-12 Distribution of gannet recorded on the sea from land based VP at Ramsey Sound, September 2009 to April 2010

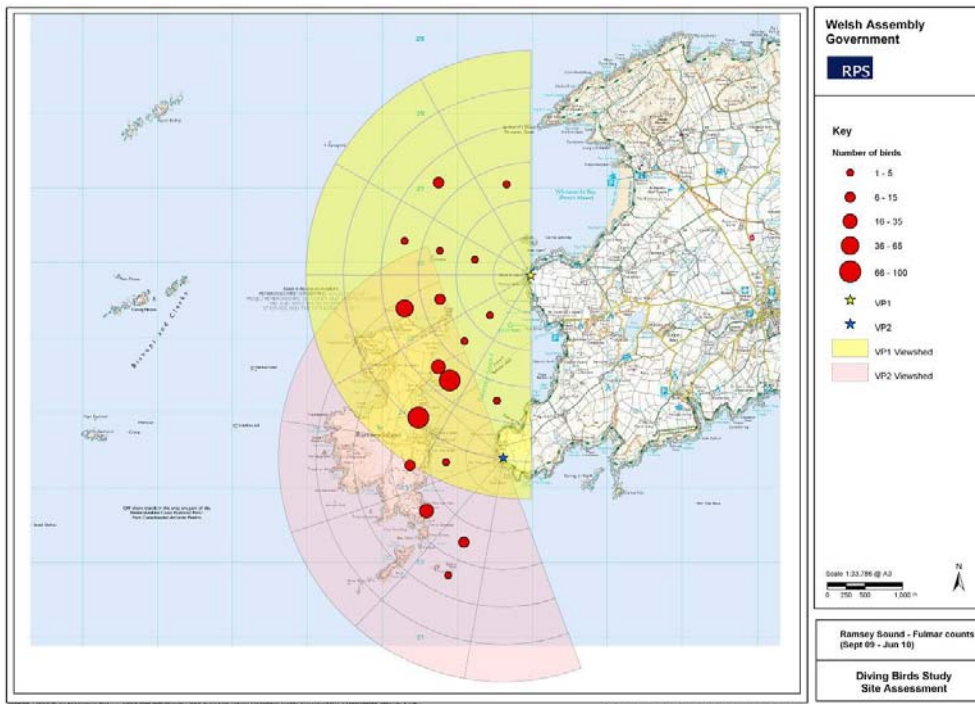


Figure 6-13 Distribution of fulmar recorded on the sea from land based VP at Ramsey Sound, September 2009 to April 2010

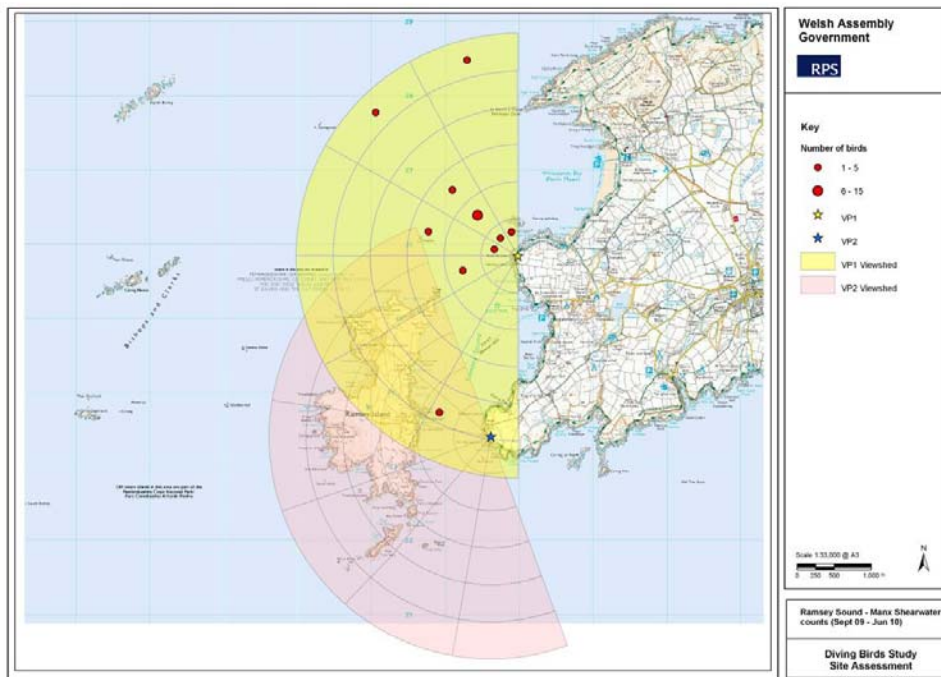


Figure 6-14 Distribution of Manx shearwater recorded on the sea from land based VP at Ramsey Sound, September 2009 to April 2010

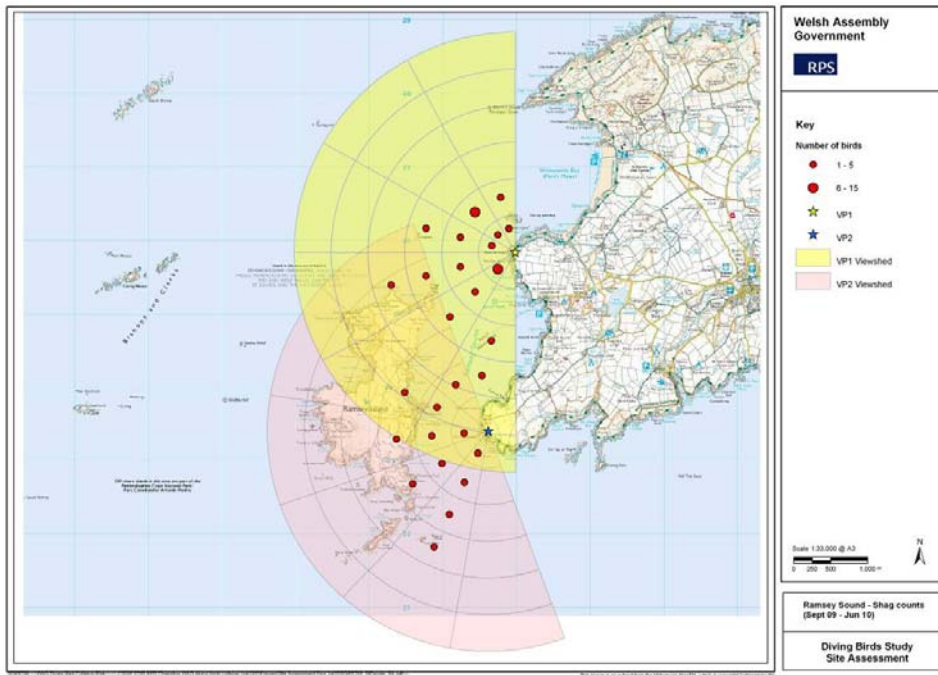


Figure 6-15 Distribution of shag recorded on the sea from land based VP at Ramsey Sound, September 2009 to April 2010

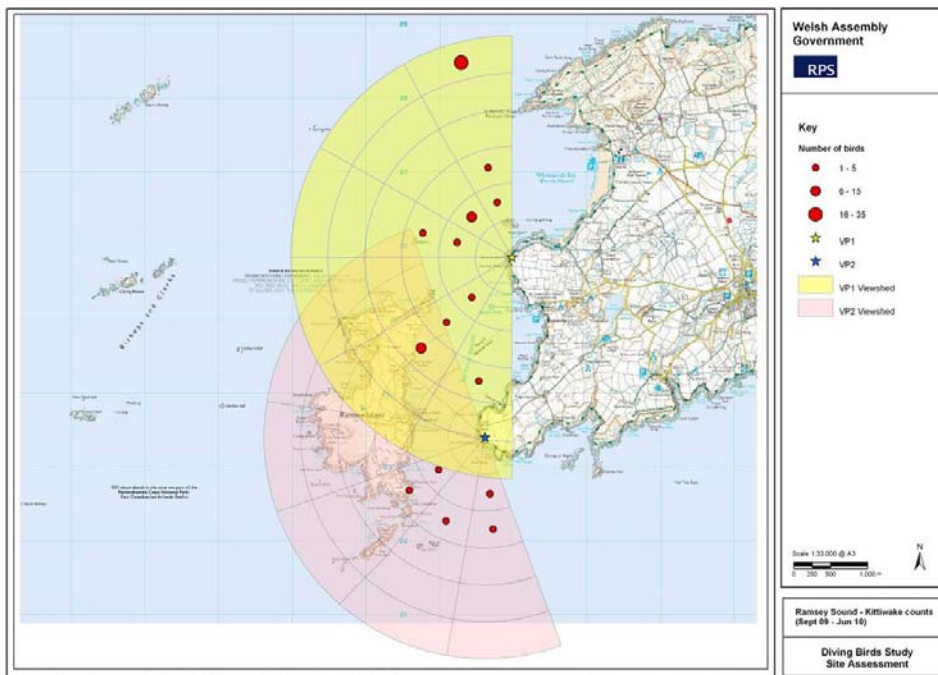


Figure 6-16 Distribution of kittiwake recorded on the sea from land based VP at Ramsey Sound, September 2009 to April 2010

6.2.4 For frequently-recorded species (>100 records at either of the two sites), hourly rates have been calculated for different tidal states (Table 6-3). This was undertaken in order to investigate the relationship between tidal flow and bird activity.

Table 6-3 Hourly rates of birds on sea or diving for different tidal state

Species	Tidal State at Carmel Head, Anglesey				Tidal State at Ramsey Sound, Pembrokeshire			
	High	Ebb	Low	Flood	High	Ebb	Low	Flood
Manx Shearwater	0.01	0.17	0.96				0.02	0.02
Gannet	0.01	0.09	0.07	0.01	0.08	0.13	0.02	0.42
Shag	0.07	0.07	0.06	0.06	0.01	0.02	0.04	0.03
Kittiwake		0.15	0.7	0.08	0.01	0.01	0.01	0.04
Black-headed gull					0.36	0.2		0.06
Unidentified gull		0.09	0.2	0.27	0.01	0.06	0.02	0.04
Guillemot	0.03	0.28	0.12	0.03	0.08	0.01	0.01	0.01
Razorbill	0.13	3.23	7.0	0.37	0.11	0.22	0.04	0.21
Auk Species	1.47	0.77	1.66	1.25		0.03	0.05	0.06

High and low tides were defined as 30 minutes either side of slack water. Ebb and flood tides covered the periods in between

6.2.5 It appears that different species respond to tide state in different ways, and there were also differences between the two sites. Guillemot and razorbill were recorded in highest numbers on ebbing and low tides at Anglesey, while at Ramsey guillemot were most often recorded at high tides and razorbill on ebb and flood tides, albeit at much lower numbers. Shag were recorded at a consistent (albeit low) level across all tide states at Anglesey, while there were slightly more records during low and flood tides at Ramsey.

6.2.6 For species that are able to feed in fast flowing water, an increase in observations would be expected during periods of faster water flow (i.e. ebb and flood tides). This is due to the birds being pushed past the vantage point more quickly, so there being

a more frequent rate of passing birds. This was found to be the case, to some extent, for guillemot. This would also have been expected for razorbill and unidentified auks, but razorbills were recorded in high numbers during both the ebb tide and low water off Anglesey.

6.2.7 Manx shearwaters were most frequently recorded during low tide off Anglesey, but only at low and flood tides in the Ramsey Sound. Gannet were present in higher numbers at Ramsey sound than off Anglesey, and were recorded at their highest rate during flood tides. Off Anglesey more gannets were observed during the ebb and flow but overall numbers were low.

6.2.8 Overall, it is apparent that there is considerable variation between the sites, in terms of species present and use of tidal state, highlighting the need for site-specific ornithological surveys at each site under consideration for wave/tidal development.

6.2.9 Hourly observation rates of birds on the sea at both sites across months are provided in Table 6-4 and 6-5. These illustrate the seasonal patterns in site use by different species through the year. For example at Anglesey razorbill, guillemot, cormorant, gannet, kittiwake and Manx shearwater were seen in highest numbers in September, while common scoter and red-throated diver were only seen in mid-winter. An interesting aspect highlighted by these results is that while razorbill and guillemot were recorded in low numbers in November and December, unidentified auks peaked at this time. This probably reflects the fact that at this time of year auks are typically found further offshore, and this is reflected in lower rates of identification to species level: the median distance bands for razorbill, guillemot and unidentified auks were 2, 2.5 and 5 respectively. This pattern was not repeated in Ramsay Sound, potentially because most of the area surveyed (particularly within the Sound itself) lies within distance bands 1 to 3.

Table 6-4 Hourly rates of frequently recorded species (seen on sea or diving) by month, Anglesey

Species	Jan	Feb	Apr	May	Jun	Sep	Oct	Nov	Dec
Auk Species	18.9	No Survey	13.00	4.67	4.89		No Survey	60.76	98.54
Cormorant			0.22		0.11	0.43		0.07	
Common Scoter								1.59	0.34
Fulmar									0.52

Species	Jan	Feb	Apr	May	Jun	Sep	Oct	Nov	Dec
Guillemot	0.22				3.00	25.30		0.76	0.26
Gannet			0.22		0.22	8.78		0.21	
Herring Gull	35.33					0.09			
Kittiwake						23.22		4.14	
Manx Shearwater	0.11					29.48			
Razorbill	12.22		1.44	60.11	8.78	344.43		1.86	1.98
Red-throated diver								0.14	0.26
Shag	2.56		0.56	2.56	1.44	1.83		1.66	2.84

Table 6-5 Hourly rates of frequently recorded species (seen on sea or diving) by month, Pembrokeshire

Species	Jan	Feb	Apr	May	Jun	Sep	Oct	Nov	Dec		
Auk Species			4.89	No Survey	No Survey	2.35					
Black headed gull	4.89							18.75	18.67	13.83	
Cormorant			0.17					0.08	0.33		
Common Scoter											
Fulmar			16.44					0.93			
Guillemot	1.78		1.17					0.17	0.75	0.83	0.34
Gannet			1.89					45.30			
Herring Gull		0.33	5.33						3.00	1.00	
Kittiwake			1.50					1.99	1.25		0.23
Manx Shearwater								1.92			
Razorbill	0.44		33.28					6.91		0.17	0.34
Red-throated diver		1.00									
Shag		1.00	2.06					2.92			0.11

6.2.10 Table 6-6 provides a further seasonal breakdown for auks (all species combined) in relation to tidal state. At Anglesey in some months there appears to have been a preference for certain tide states (e.g. low tide in June, September and November), although in other months different patterns were recorded. At Ramsay there was little evidence for particular tidal preference in any month, although lower recording rates were obtained around low tide in all months except April.

Table 6-6 Hourly rate of all auks combined on sea or diving for different tidal states across months

	Tide State	Jan	Apr	May	Jun	Sep	Oct	Nov	Dec
Anglesey	High		0.42		0.58	0.33	No Surveys	1.60	4.70
	Ebb	1.67	0.69	2.87	0.55	12.82		0.79	4.24
	Low	0.45	1.45	4.44	2.75	60.59		6.03	1.87
	Flood	0.40	0.04	4.44	0.60	0.03		2.00	5.36
Ramsay	High		0.64	No Surveys		0.29	0.01	0.04	0.33
	Ebb	0.33	0.87			0.20	0.01	0.01	0.01
	Low	0.00	1.61			0.11	0		0.00
	Flood		0.43			0.33	0.01	0.01	0.03
High and low tides were defined as 30 minutes either side of slack water. Ebb and flood tides covered the periods in between									

Behavioural Observations

6.2.11 Diving data were collected for seven species from behavioural observations during LBVP and boat-based surveys (Table 6-7). Razorbill was the species with the greatest number of dive observations recorded across both sites. The other species for which diving data were collected were common scoter, red-throated diver, gannet, cormorant, shag and guillemot.

Table 6-7 Mean (and standard deviation) Dive Duration (Seconds) Recorded During Behavioural Observations (September 2009 to June 2010). The number of dives observed for each species is shown in brackets.

Species	Carmel Head, Anglesey	Ramsey Sound, Pembrokeshire	Both Sites Combined
Common Scoter	53.0 ± 14.4 (4)		53.0 ± 14.5 (4)
Red-throated diver		50.0 ± 0 (6)	50.0 ± 0 (6)
Gannet	3.7 ± 1.5 (3)	3.0 ± 0 (1)	3.5 ± 1.3 (4)
Cormorant	46.5 ± 14.0 (6)	52.3 ± 24.3 (42)	51.5 ± 23.2 (48)
Shag	48.5 ± 15.7 (78)	63.5 ± 25.4 (59)	57.1 ± 22.8 (137)
Guillemot	40.0 ± 11.9 (6)	43.8 ± 22.6 (40)	43.5 ± 21.8 (46)
Razorbill	36.8.3 ± 16.2 (65)	33.9 ± 14.0 (138)	34.8 ± 14.7 (203)

6.2.12 The species with the shortest dive duration was gannet (mean of 3 seconds although based on only 4 observed dives). The other six species had much longer mean dive durations ranging from 35 seconds (razorbill) to 57 seconds (shag).

6.2.13 Using data such as these, in combination with reported swimming speeds and prey preferences (e.g. benthic or pelagic prey species, see RPS, 2011), it will be possible to derive estimates of the duration which each species is likely to spend at the same depths as the moving components of underwater devices. This will then enable the potential risk for each species to be estimated.

Birds in Flight

6.2.14 Thirty six bird species were recorded in flight from Carmel Head, Anglesey, whilst 34 species were recorded in Ramsey Sound (Table 6-8 and Table 6-9). The most frequently recorded species were Manx shearwater, gannet, kittiwake, black-headed gull and fulmar. There was, however, variation in the most frequently recorded species at the two sites. At Carmel Head these were Manx shearwater, gannet, kittiwake, razorbill and herring gull, whilst at the Ramsey Sound these were kittiwake, black-headed gull, gannet, fulmar and common scoter.

Table 6-8 Total number of birds recorded in flight (September 2009 to June 2010)

Species	Carmel Head, Anglesey (VP2 only used during trial, so these data were combined with VP1)	Ramsey Sound, Pembrokeshire	
		VP1	VP2
Arctic skua	5	10	
Arctic tern	66	1	
Auk species	5706	1376	3
Balearic shearwater	3		
Black guillemot	7		
Black-headed gull	1	634	793
Black-throated diver	1		
Brent goose	3		
Common gull	1	8	9
Common scoter	53	252	49
Cormorant	2	22	24
Dunlin	2		
Eider		4	10
Fulmar	219	383	32
Gannet	3008	1287	31
Great Black-backed gull	20	49	49
Great crested grebe		2	
Great northern diver	4		3
Great skua	5		2
Grey plover		1	
Greylag goose	3		
Guillemot	54	51	48
Herring gull	282	166	189
Kittiwake	1203	1363	32
Lapwing		85	20
Lesser Black-backed gull	10	44	24
Little gull	1		
Mallard	4		2
Manx shearwater	5056	285	6
Mediterranean gull		2	9
Merlin		1	

Species	Carmel Head, Anglesey (VP2 only used during trial, so these data were combined with VP1)	Ramsey Sound, Pembrokeshire	
		VP1	VP2
Oystercatcher	2	9	10
Peregrine falcon			1
Raven	2		2
Razorbill	309	68	12
Redshank	1		
Red-throated diver	7	7	8
Ringed plover			1
Sandwich tern	26	12	6
Shag	111	13	11
Shelduck	2		
Teal	31	7	102
Turnstone	7		
Whimbrel			37
White-fronted goose	18		
Total	16235	6142	1525

Table 6-9 Hourly rates of birds recorded in flight (September 2009 to June 2010)

Species	Carmel Head, Anglesey (VP2 only used during trial, so these data were combined with VP1)	Ramsey Sound, Pembrokeshire	
		VP1	VP2
Arctic skua	0.3	1	
Arctic tern	4.1	0.1	
Auk species	357	139	0.4
Balearic shearwater	0.2		
Black guillemot	0.4		
Black-headed gull	0.1	63.9	103
Black-throated diver	0.1		
Brent goose	0.2		
Common gull	0.1	0.8	1.2

Species	Carmel Head, Anglesey (VP2 only used during trial, so these data were combined with VP1)	Ramsey Sound, Pembrokeshire	
		VP1	VP2
Common scoter	3.3	25.4	6.4
Cormorant	0.1	2.2	3.1
Dunlin	0.1		
Eider		0.4	1.3
Fulmar	13.7	38.6	4.2
Gannet	188	130	4
Great Black-backed gull	1.3	4.9	6.4
Great crested grebe		0.2	
Great northern diver	0.3		0.4
Great skua	0.3		0.3
Grey plover		0.1	
Greylag goose	0.2		
Guillemot	3.4	5.1	6.3
Herring gull	17.6	16.7	25
Kittiwake	75.2	137	4.2
Lapwing		8.6	2.6
Lesser Black-backed gull	0.6	4.4	3.1
Little gull	0.1		
Mallard	0.3		0.3
Manx shearwater	316	28.7	0.8
Mediterranean gull		0.2	1.2
Merlin		0.1	
Oystercatcher	0.1	0.9	1.3
Peregrine falcon			0.1
Raven	0.1		0.3
Razorbill	19.3	6.9	1.6
Redshank	0.1		
Red-throated diver	0.4	0.7	1
Ringed plover			0.1

Species	Carmel Head, Anglesey (VP2 only used during trial, so these data were combined with VP1)	Ramsey Sound, Pembrokeshire	
		VP1	VP2
Sandwich tern	1.6	1.2	0.8
Shag	6.9	1.3	1.4
Shelduck	0.1		
Teal	1.9	0.7	13
Turnstone	0.4		
Whimbrel			4.8
White-fronted goose	1.1		

6.3 Boat-based Survey

Birds on the sea

6.3.1 Twenty nine bird species were recorded during the boat-based transect surveys off Anglesey between September 2009 and June 2010 (Table 6-10). The most frequently recorded species were guillemot, razorbill, Manx shearwater, kittiwake, gannet, Arctic tern and herring gull. Seasonal patterns were evident in these data, suggesting the site is important for different species at different times of year. For example, razorbill, gannet, kittiwake and Manx shearwater numbers peaked in September, while herring gull showed a mid-winter peak and guillemot numbers peaked in June.

Table 6-10 Bird Numbers Recorded During Boat-based Transect Surveys off Anglesey (September 2009 and January, April and June 2010).

Species	September		January		April		June	
	In flight	On water	In flight	On water	In flight	On water	In flight	On water
Arctic skua	1							
Arctic tern							477	
Arctic / Common tern							70	
Unidentified Auk			137	8				

Species	September		January		April		June	
	In flight	On water	In flight	On water	In flight	On water	In flight	On water
Black headed-gull			1	2				
Black tern	1							
Cormorant			1				1	1
Common gull			4	6				
Common tern							2	4
Common scoter	2							
Fulmar	3		7		1		3	1
Great black-backed gull	2		3	31	6		2	2
Great crested grebe				2				
Greylag goose					2			
Guillemot	8	48	102	286	38	12	89	624
Gannet	114	7	1		2		8	4
Herring gull	3		55	439	14		21	13
Kittiwake	128	40	4	2	1			
Lesser black-backed gull	1				2			3
Mallard				2				
Manx shearwater	272	550					94	10
Great skua	1							
Puffin					2			
Razorbill	69	861	34	181	24	2	8	9
Red-throated diver			1					
Shag	4	2	1	1	7		2	4
Swallow							1	
Shoveller				4				
Sandwich tern	9				3		8	3
Unidentified gull			75	30				

6.3.2 Most of the species recorded during the boat-based surveys were the same as those recorded during the LBVP surveys, but there were differences in the relative abundance of some species due to their distributions between nearshore and more offshore areas. For example, species found more frequently nearshore (such as shag) were recorded in higher numbers from the LBVPs than during the boat surveys. Likewise, more pelagic species (such as Manx shearwater) were recorded in higher numbers during the boat surveys than from the LBVPs. This illustrates the complimentary nature of the two survey methods (land and boat based) in determining the seabird assemblage at a site. For sites such as Ramsey Sound, comprising a narrow strait between a headland and island, there may be potential to undertake the majority of surveys from vantage points on land. However, preliminary surveys should be undertaken in order to compare boat and land observations to ensure that land based surveys can provide all the necessary data on species presence and behaviour.

6.3.3 The distributions of observations for key species recorded during the boat surveys are provided in (Figure 6-17 to 6-23).

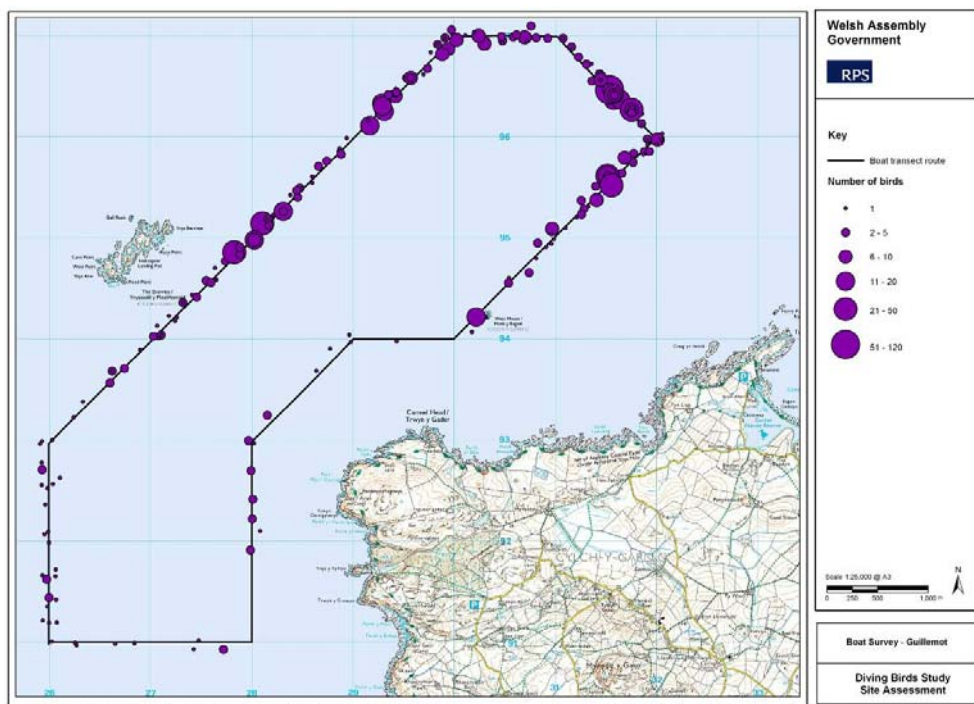


Figure 6-17 *Guillemot observations made during boat based surveys (September 2009 and January, April and June 2010).*

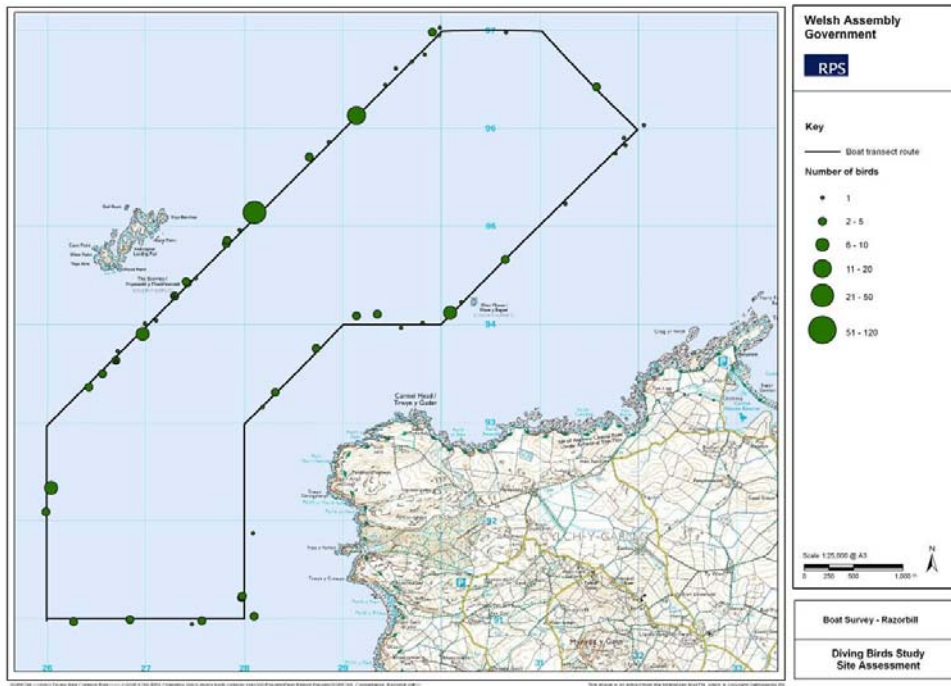


Figure 6-18 Razorbill observations made during boat based surveys (September 2009 and January, April and June 2010).

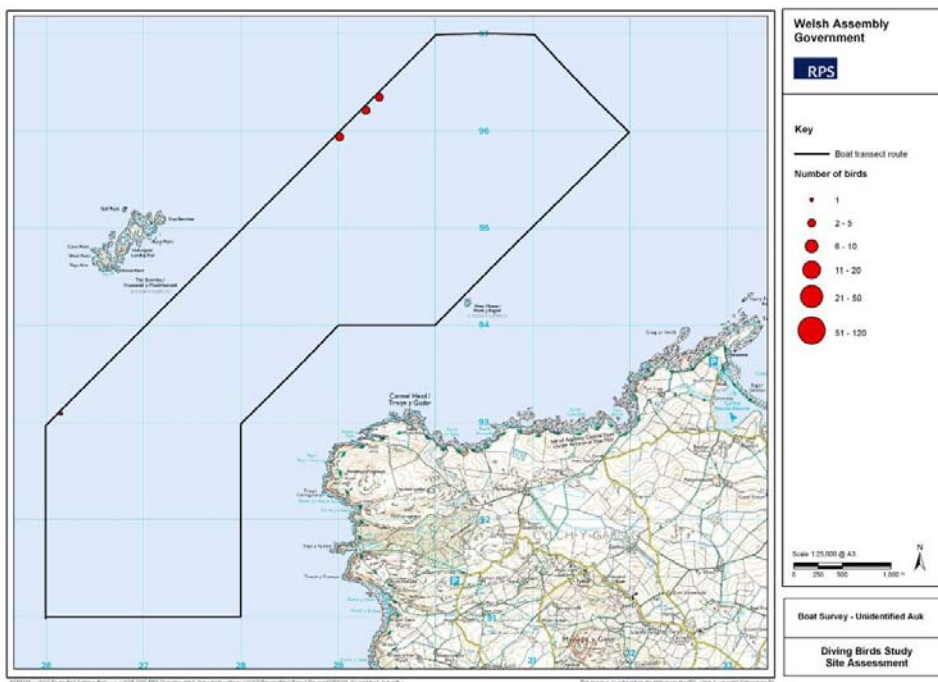


Figure 6-19 Unidentified auk observations made during boat based surveys (September 2009 and January, April and June 2010).

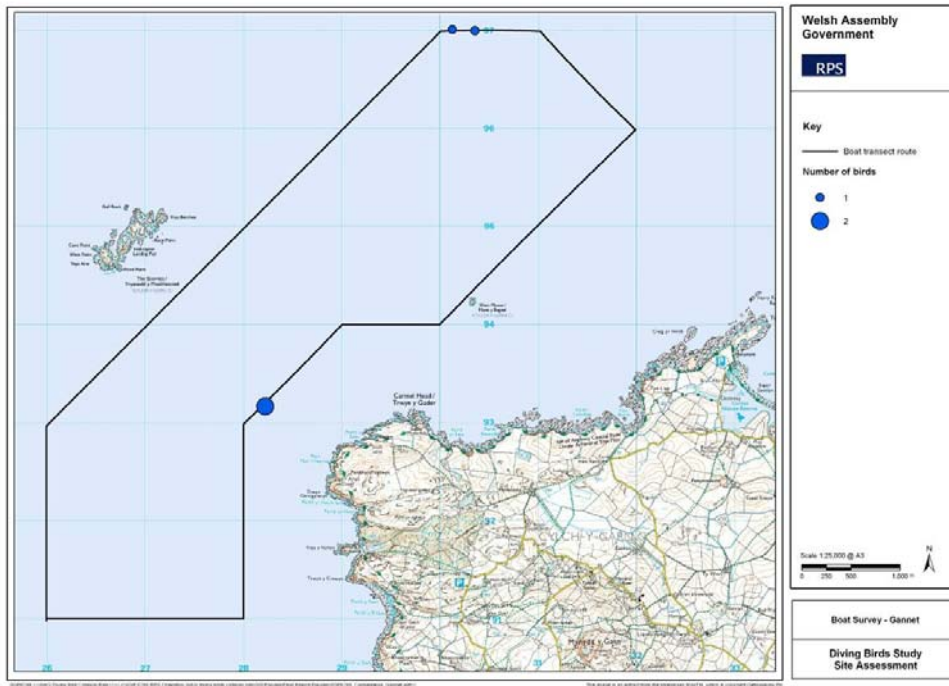


Figure 6-20 Gannet observations made during boat based surveys (September 2009 and January, April and June 2010).

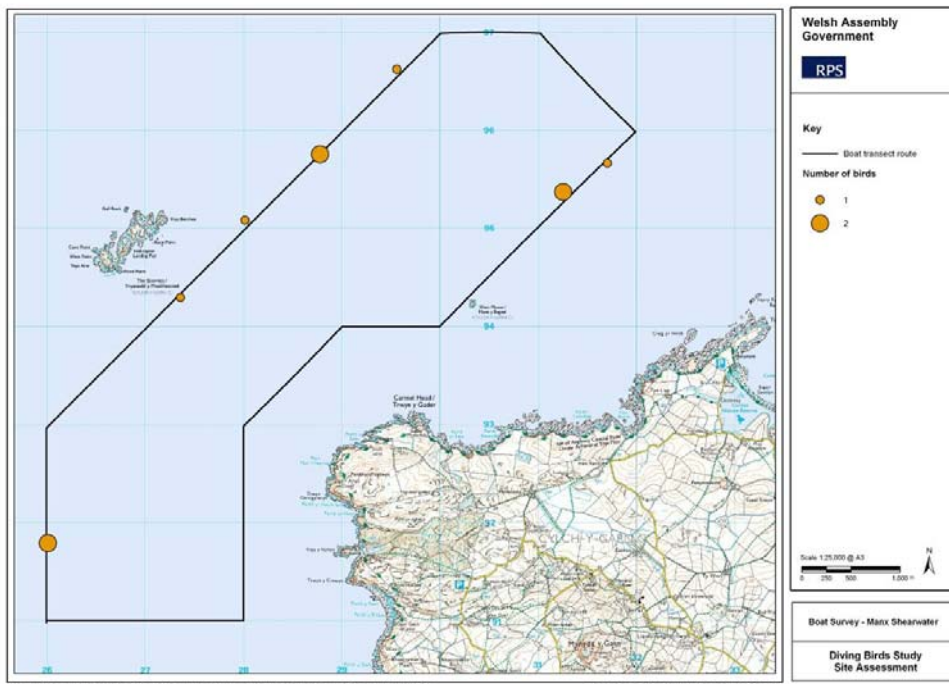


Figure 6-21 Manx shearwater observations made during boat based surveys (September 2009 and January, April and June 2010).

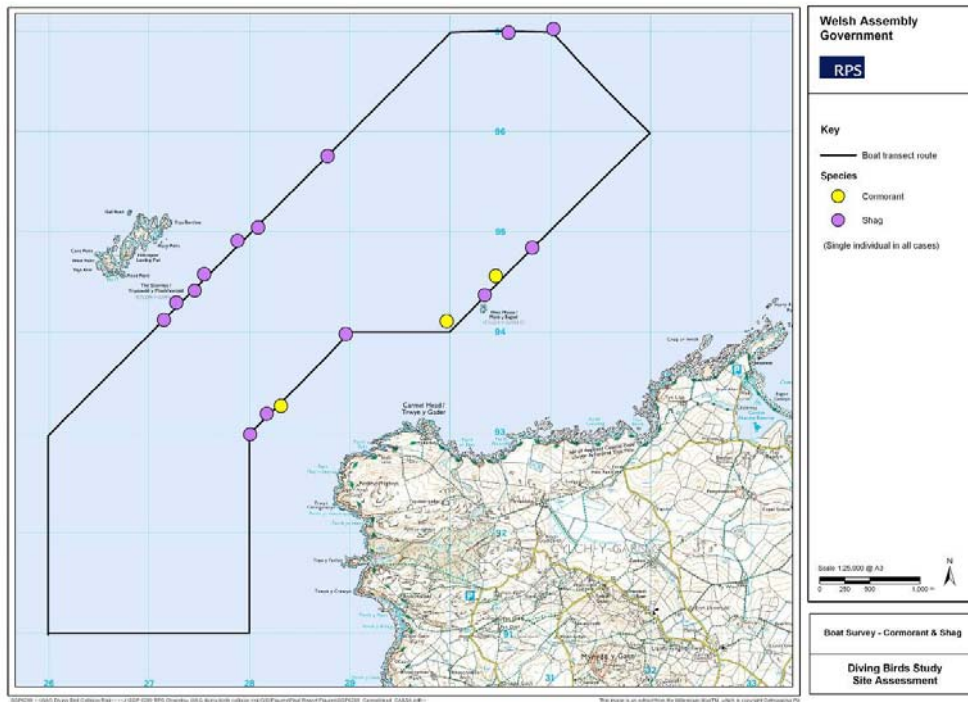


Figure 6-22 Cormorant and shag observations made during boat based surveys (September 2009 and January, April and June 2010).

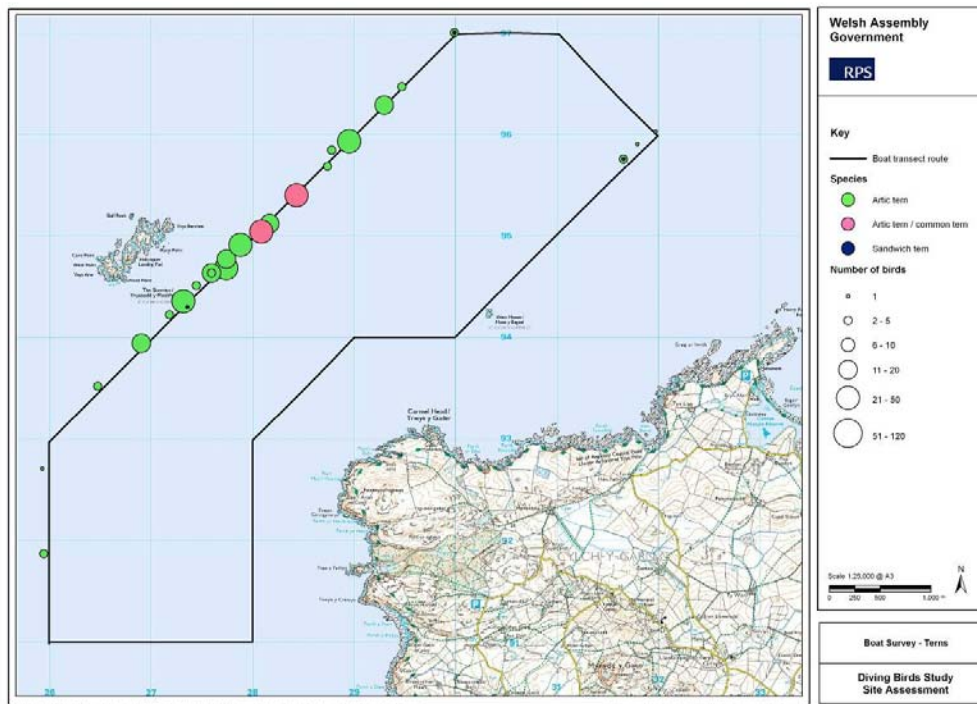


Figure 6-23 Tern observations made during boat based surveys (September 2009 and January, April and June 2010).

7 Potential use of Sonar to Assess Underwater Behaviour

7.1 Sonar Potential

- 7.1.1 Trials of the efficacy of sonar for detecting marine mammals in relation to underwater turbines have been undertaken in Strangford Lough⁴. Further efforts are currently underway to improve the automated identification of mammals using sonar, although this has not yet been achieved (G. Hastie, SMRU Ltd., pers. comm.). While seabirds are considerably smaller targets for sonar than marine mammals, they are likely to be at least as visible as mammals due to the trapped air in their plumage and lungs (air offers a very good return to sonar signals). It is unlikely that sonar will permit identification of bird species. However, it may be possible to link sonar tracks with coincident surface observations, either made by observers or with a video camera.
- 7.1.2 Single sonar sensors emit a narrow cone (e.g. 7°), thus coverage is quite limited. Consequently, single beam sonar would record low frequencies of diving behaviour and would be able to provide only limited information on dive metrics (e.g. dive depth, duration, etc.). Wide angle sonar alternatives include multi-array sonar (e.g. the CodaOctopus 'Echoscope™') which can scan areas of c. 50° in both horizontal and vertical planes and produce detailed 3D images. Dual frequency sonar (e.g. DIDSON) may be capable of recording objects in sufficient detail to permit both dive depth recording and species identification. However, these systems operate with a reduced viewing angle (28°) and effective range (maximum of 15 m).

7.2 Trial of Multi-array Sonar to Track Diving Birds Underwater

- 7.2.1 An assessment of the possible applications and limitations of multi-array sonar for tracking diving birds underwater was carried out using an Echoscope™, supplied by CodaOctopus, in the Firth of Forth near Edinburgh on 22nd January 2010.

⁴theiet.org/magazine/issues/0914/teaching-sonar-0914.cfm

Aims

7.2.2 The aims of this trial were to determine:

- Whether an Echoscope-equipped vessel could approach close enough to birds to potentially monitor their diving behaviour;
- Whether diving birds could be detected by Echoscope™;
- Whether surface observations could be linked to sonar targets;
- What diving behaviour data could be obtained using an Echoscope™; and
- How multi-array sonar might be used to investigate diving behaviour in areas being surveyed for tidal turbine developments.

The CodaOctopus Echoscope

7.2.3 The Echoscope™ is a multi-array sonar device (Plate 7-1) capable of producing real-time three-dimensional images of underwater environments. The vessel used for the trial survey was the Forth Conserver (17 m in length). The Echoscope™ was mounted over the side of the vessel (Plate 7-1). An example of the output provided by the Echoscope™ is also provided in Plate 7-1.



Plate 7-1 the Echoscope™ (top left); the Echoscope™ mounted over the side of the Forth Conserver; and an example of Echoscope™ output (image courtesy of CodaOctopus).

Methods

- 7.2.4 The trial was carried out in the Firth of Forth, between Edinburgh and Aberlady Bay (Figure 7-1), where several diving bird species, specifically shag, eider, divers, grebes and scoter, occur during the winter. The survey team for the trial involved three RPS ornithologists (Simon Zisman, Mark Trinder and Graeme Cook) and two Coda Octopus radar operators (Jose Guilabert and Gareth Simpson). The trial was undertaken between 11:00 and 15:30 on the 22nd January 2010 in ideal weather conditions: dry, gentle (force 1-2) southerly breeze, complete cloud cover, a smooth sea surface (sea state 1), and no problems with glare.

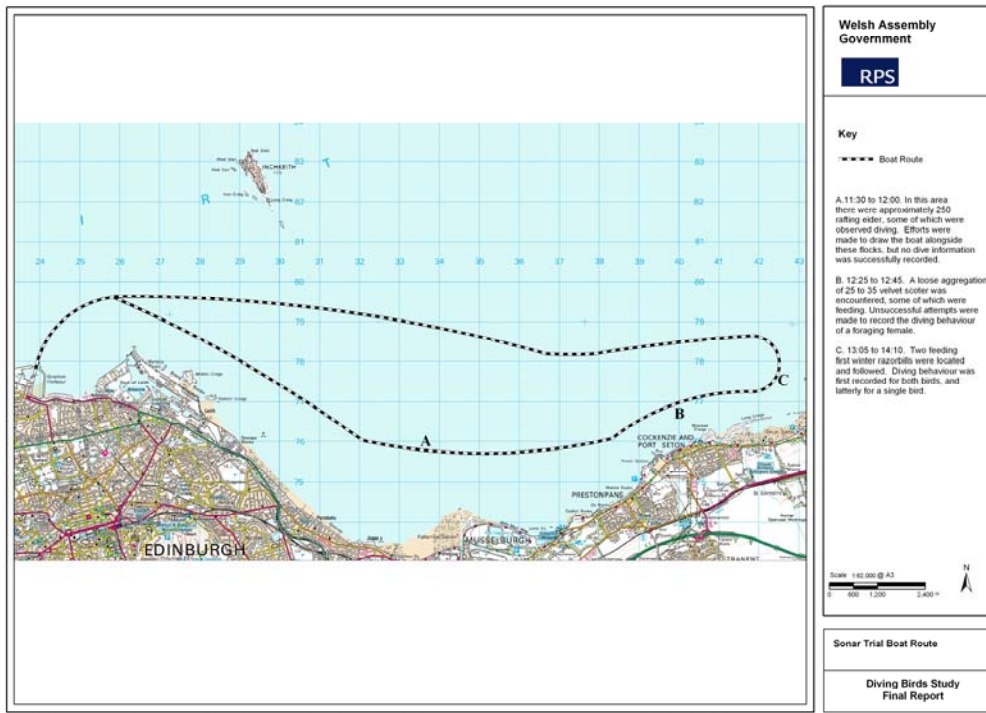


Figure 7-1 Sonar trial route, Firth of Forth January 2010

Results

7.2.5 Twelve species of diving bird were recorded by visual observation during the trial (Table 7-1). The most common of these were eider and velvet scoter.

Table 7-1 Counts of diving bird species recorded during sonar trial

Eider	c900	Common Scoter	c20	Razorbill	2
Velvet Scoter	c350	Shag	c15	Cormorant	1
Long-tailed Duck	c55	Red-breasted Merganser	9	Great Crested Grebe	1
Goldeneye	c35	Red-throated Diver	2		

Disturbance to Diving Birds caused by the Vessel

7.2.6 Duck species (mainly eider, long-tailed duck, velvet scoter and goldeneye) were the most commonly encountered diving birds in the survey area (Table 7-1) these species proved difficult to approach close enough to record their diving behaviour. Most individuals of these species avoided the boat by swimming away when it came within 200-300 m. If the boat approached closer than this birds generally took flight

before coming into sonar range. For example, the mean flush distance for eider was 43 ± 29 m ($n=18$), and for velvet scoter was 150 ± 46 m ($n=6$).

7.2.7 Moreover, proximity to the survey vessel strongly influenced the behaviour of diving ducks, with most individuals moving away rather than continuing to feed. The presence of the boat also influenced the behaviour of the two razorbills encountered and, although several dives were recorded for this species, these appeared to be an evasion response.

Detection of Diving Birds by Echoscope

7.2.8 Birds were detected at distances of up to 50 m from the vessel in calm sea conditions. This is because air trapped in a bird's plumage and released during dives acts as a strong reflective surface for sonar beams. Examples of Echoscope™ outputs of a diving razorbill, showing overhead and partially side-on views, are provided in (Plate 7-2 and 6-3) respectively.

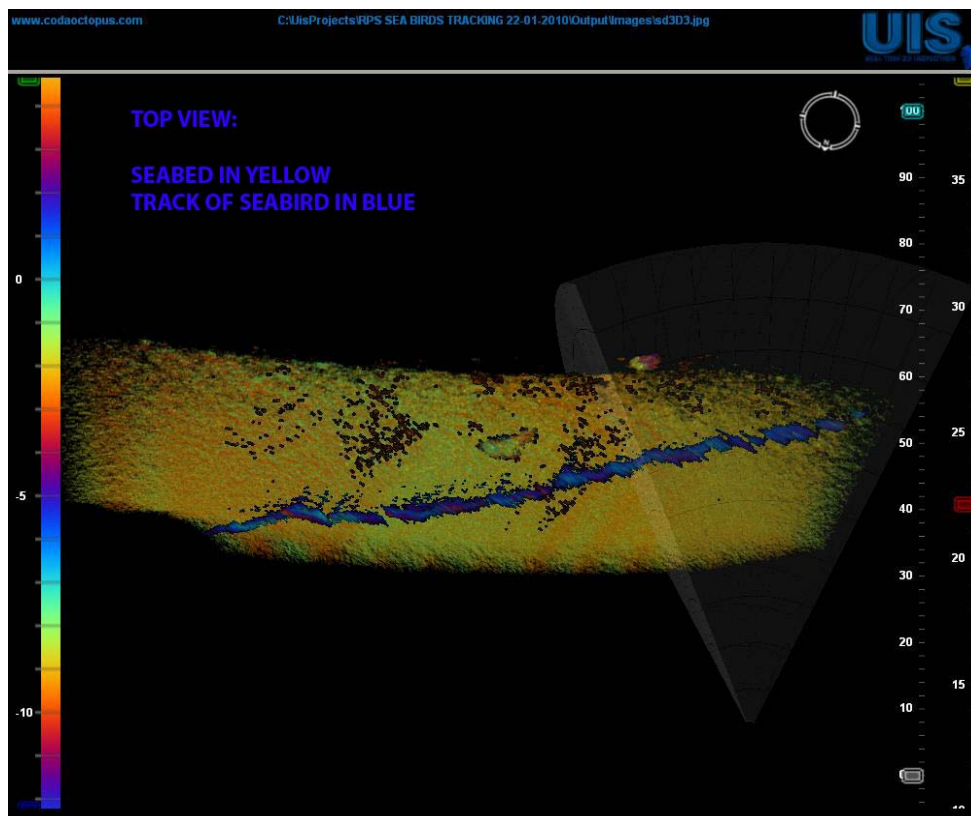


Plate 7-2 Echoscope™ output showing overhead view of a diving razorbill. Image courtesy of CodaOctopus

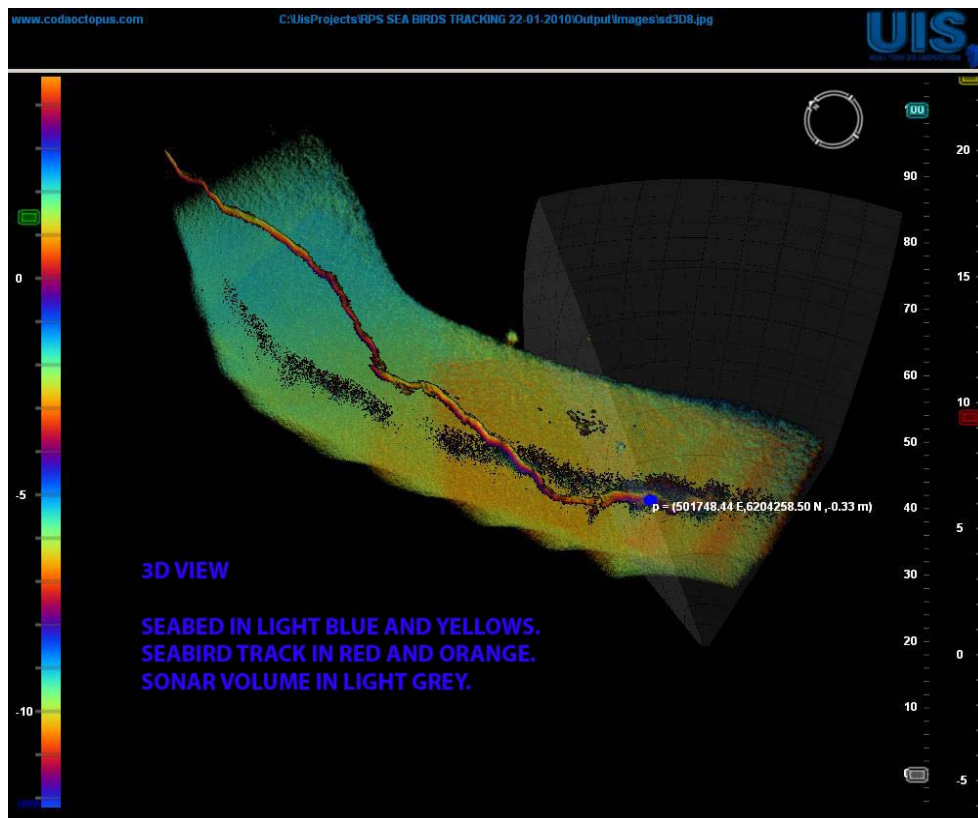


Plate 7-3 Echoscope™ output showing a partially side-on view of diving razorbill track. Image courtesy of CodaOctopus

Can Surveyor Observations be linked to Sonar Targets?

7.2.9 From the outputs alone produced by the Echoscope™ (e.g. Plate 7-2 and 7-3), it would not be possible to determine species, age or sex information. It would therefore be essential to have observers on the survey vessel to provide coincident information on sonar targets.

7.2.10 During the calm sea conditions in which this trial was carried out it was possible for observers to identify individuals on the surface and follow their movements throughout each dive. Information from observers on the boat deck could be linked to sonar targets by recording the exact time (to the nearest second) the bird dived and surfaced. In less calm seas, or if multiple individuals were diving within the sonar area, it would be more difficult to follow the activity of individuals.

What Diving Behaviour Data can be obtained using an Echoscope?

7.2.11 The multi-beam sonar used produced three dimensional dive profiles within the sonar area, containing the following information:

- The number of dives performed by foraging individuals;

- The duration, depth and distance of dives;
- The duration and distance covered in particular depth bands; and
- How diving birds interact with the bottom of the water column.

Use of Boat-mounted or Fixed Multi-beam Sonar to Study Avian Diving Behaviour

7.2.12 The behavioural responses of diving birds towards the vessel used for this trial suggest that most birds (exact proportions will be species-specific) are likely to be disturbed beyond the range of the sonar. Even those that remained within sonar range appeared to be attempting to avoid the survey vessel, rather than behaving in a more natural manner (e.g. foraging). Thus any data collected in this way are unlikely to be representative of normal diving behaviour. It is therefore likely to be more appropriate to deploy the sonar from a fixed structure. This would entail automated running of the system, in tandem with a surface camera, and the attendant practical issues of providing power and downloading data for desk-based review. While deploying the sonar in this manner would be expected to disturb seabirds to a much smaller extent, further trials would be needed to confirm this. It should be noted that this trial was undertaken in relatively calm waters; the effect of more turbulent water on the effectiveness of sonar to detect diving birds would also need to be considered. If such trials were successful, this technology offers a potentially very powerful means for recording species- and site-specific dive behaviour.

8 Collision risk modelling for underwater devices

- 8.1.1 Collision risk modelling (CRM) for birds in relation to wind turbines has received considerable attention over the last few years. Out of these considerations a standardised method for collecting data and estimating collision rates for birds has developed. Collision risk analysis provides a means to quantify the probability that birds flying through the wind farm area at rotor height will be struck by the rotor blades. This is derived from bird flight data collected at the site of the proposed wind farm over a suitable period (usually 1 year). From these observations the annual level of flight activity across the site can be estimated and, in combination with information on the turbine specifications and wind farm layout, estimates of the proportion of flights which would be expected to result in a collision can be generated. The collision risk estimates form a key component of the impact assessment process required prior to planning consent being granted.
- 8.1.2 The challenge with transferring the wind farm CRM approach to bird diving activity in relation to proposed tidal or wave developments is categorising the underwater behaviour of the birds. Numerous studies of bird foraging and diving behaviour have been conducted using data loggers attached to individuals. However, it would be necessary to ensure that such data are transferable to different locations and are not specific to the study sites used. Using activity and/or position recording tags to collect dive data at a specific site would be difficult to achieve, since birds can only be reliably caught and tagged at their nest sites, and there is no guarantee that individuals from a particular breeding colony will visit the site of interest.
- 8.1.3 A further complication arises from the fact that within the breeding season, birds should only be caught for tagging purposes during a relatively brief period of two to three weeks (while the adults are provisioning chicks), since the disturbance involved may cause the birds to abandon their eggs if they are caught prior to this. In addition, while the adults are feeding their chicks, their foraging behaviour is unlikely to be wholly representative of that occurring throughout the rest of the annual cycle.
- 8.1.4 If individuals can be caught whilst actively foraging at a specific location and tagged (or individuals which preferentially forage in a specific area can be identified and targeted for capture), then tags could provide extremely useful diving data. However, at this stage, tagging of seabirds in relation to small scale developments, such as those currently being proposed, is unlikely to provide a cost-effective means for gathering data on diving behaviour.

- 8.1.5 While the sonar systems described above have the potential to record site specific data, the detection range of these systems is quite limited and long term deployments would involve considerable practical issues to be overcome. The use of sonar is therefore unlikely to deliver the detailed, species specific dive data required for a CRM approach.
- 8.1.6 As a consequence of the difficulties involved in determining diving behaviour, RPS is developing an alternative approach to the assessment of risk posed by underwater devices. This is based on the use of two separate simulation models for each species of concern: a population viability model, and a site activity model. For any particular species, the population model will be developed using published demographic data and estimates of the local population size within foraging range of the site. This model will generate estimates of additional mortality which the population could sustain without pushing the population into decline. The site activity model will use data obtained by combinations of boat and land based surveys (the composition of these two elements will depend on the specific site) to estimate the number of individuals using the site and the level of diving activity throughout the year. At its most basic, these data will permit the maximum probable population which could be affected by the development to be estimated. However, further refinement of this value may be possible using diving data like that recorded during the surveys reported on here. For example, dive duration, in combination with estimates of swimming speed can be used to estimate the proportion of dive time spent at 'risk' depths (i.e. tidal turbine rotor depth). Other refinements could include estimates of the number of trips to the site made per individual and residency time at the site per foraging trip. These data can be collected as a combination of breeding colony specific observations and general species specific data.
- 8.1.7 The size of the population which could be affected, as suggested by the site activity model, can then be compared with the outputs from the population model, to generate an assessment of the possible risk posed by the development.
- 8.1.8 While this approach does not include an explicit collision risk model, such as that used for wind turbines, given the current range of uncertainties on seabird underwater behaviour, this approach represents an appropriate alternative, capable of generating defensible results.

9 Preliminary assessment of potential impacts of wave and tidal renewable devices on seabirds at Welsh study sites

9.1 Introduction

- 9.1.1 The desk review of the potential impacts of wave and tidal devices on the seabirds present in Welsh waters (RPS, 2011) provided an overview of species specific risks. The determination of risk level for each species was reached as a combination of the species' ecology and abundance in Welsh waters. The latter took into consideration the overall abundance of each species in Welsh waters, and also the presence of breeding colonies within the typical foraging ranges of areas identified as suitable for wave and tidal development.
- 9.1.2 The outcome of this review was that of 34 seabird species considered, 27 were considered to be at low risk of impact and seven were identified as likely to be at medium risk: Manx shearwater, northern gannet, great cormorant, razorbill, common guillemot, European shag and Atlantic puffin.
- 9.1.3 Using the site specific data collected during the development of the methods reported here, it was possible to produce a preliminary assessment of the potential species specific impacts due to wave and tidal developments, with an emphasis on the seven higher sensitivity species.

9.2 Carmel Head, Anglesey

- 9.2.1 The most numerous species recorded was razorbill. The land based observations suggested a preference for the area near to the headland, however the boat surveys recorded birds throughout the survey region. Since detection rates decrease with distance, the land based observations would be expected to be concentrated nearer to the vantage point. Therefore it is likely that razorbill are present throughout the survey region. The peak month for sightings was September, indicating the presence of post-breeding congregations, however individuals were seen in all months surveyed, with smaller peaks in numbers also seen in January and May. Foraging activity was observed within the strait between the headland and the Skerries. During June this will probably have included breeding adults. These preliminary findings indicate that further surveys would be required to fully characterise site use by this species as part of an impact assessment. This would need to include efforts to

determine the colony of origin for breeding birds. Approaches for determining this could include estimation of flight direction of birds departing from the site and possibly the use of location recording tags.

- 9.2.2 The next most abundant species at Carmel Head was common guillemot. Land based observations yielded a similar distribution to that for razorbill, with most individuals seen immediately to the west of the vantage point. However, the boat surveys found much higher densities in the north of the survey region, just beyond the strait itself. The peak abundance recorded from the boat was during June, indicating probable usage by breeding adults. In contrast, the land based surveys recorded a higher peak in September, suggestive of post-breeding congregation behaviour. Further surveys would be required to fully characterise site use by this species as part of an impact assessment. In particular the origin of breeding birds would need to be determined in order to assess the potential for impacts on protected (e.g. SPA) populations.
- 9.2.3 All other species of auk were recorded either occasionally or in very low numbers. Therefore, no further assessment is presented here.
- 9.2.4 Manx shearwater was the next most abundant of the sensitive species recorded. Almost all of the observations were made in September, both from the land based vantage points and from the boat. This is consistent with post-breeding aggregation behaviour, and there was no indication the site was of importance for breeding adults whilst provisioning their young. Indeed, there were very few feeding observations made, suggesting that the site is not actively used for foraging by this species.
- 9.2.5 Of the remaining higher sensitivity species identified in the ecology review, all were seen in much lower numbers. Gannet was the next most numerous, with almost all individuals seen during September, consistent with post-breeding dispersal. Very few instances of feeding were recorded. European shag and cormorant were both recorded in low numbers throughout the site, in most survey months. These species tend not travel far from their breeding and roost sites, therefore individuals seen during the breeding season almost certainly breed at colonies near to the site. Therefore a detailed assessment would be required, providing detailed estimates of the local breeding population sizes (and any associated statutory protection) and the probable links between these colonies and the birds seen on site. This would enable the relative importance of the site within the wider area to be estimated for these species.

9.3 Ramsey Sound, Pembrokeshire

- 9.3.1 Razorbill were the most numerous species recorded in Ramsey Sound, observed throughout the area surveyed, although higher densities were apparent towards the northern and southern ends of the Sound. The highest numbers were recorded in April, suggesting a pre-breeding build up in numbers. A considerable amount of diving activity was observed. As with the general distribution, this foraging activity was concentrated near the southern end of the Sound adjacent to Ramsey Island and to the north of the Sound. A full assessment of the importance of the site for this species will need to include an estimation of the breeding population within range of the site and of the proportion which appear to use it. This could require the use of location recording tags and observations of flight direction for birds departing the site.
- 9.3.2 Gannet were the next most abundant species recorded, although none were recorded in the middle of the Sound, and the highest densities were seen to the north and south of the Sound. The seasonal pattern clearly indicated that the birds seen were engaged in post-breeding dispersal, with over 95% of observations made during September. Feeding activity was only recorded outside the Sound itself.
- 9.3.3 Guillemot were present in low numbers, with observations spread throughout the Sound in most survey months. There was no evidence for increased use in April, unlike razorbill, suggesting that the site is not of particular importance to breeding birds.
- 9.3.4 Shag were seen at low densities throughout the survey area in spring and autumn. Diving behaviour was concentrated at the northern and southern ends of the Sound. Since this species does not typically range far from breeding colonies, which suggests that the birds observed in spring were pre-breeding adults. Therefore the site is likely to be of importance for breeding birds. A full site assessment for this species would need to detail the number and origin of the birds using the site during the breeding and non-breeding seasons, the importance of the site for feeding and the preferred areas within the Sound.
- 9.3.5 The remaining higher sensitivity species, Manx shearwater and cormorant, were recorded in very low numbers at this site and hence no further consideration was undertaken.
- 9.3.6 Black-headed gull were present in moderate numbers during late autumn and winter. Most records were of birds flying through the Sound but individuals were also recorded feeding within the Sound itself. Herring gull were recorded in moderate

numbers during autumn and winter, although most were recorded flying through the Sound with only 10 individuals noted as feeding. Gulls are expected to be at low risk of impact due to tidal devices. Therefore these species do not appear to be of concern as a result of tidal developments at this site.

- 9.3.7 Large numbers of fulmar were seen both within the Sound and at the northern and southern ends, particularly in April. However, none were seen actively feeding and therefore based on these data this species would not be expected to be at risk of impact due to tidal developments.

9.4 Limitations of current data for site assessment

- 9.4.1 The above species accounts provide a broad overview of the seabird interests at the two study sites. These indicate the key species for which detailed site specific studies would be required as part of a full environmental impact assessment. Since such an assessment would be made in relation to detailed proposals, this would be considerably more focussed than that possible at present.
- 9.4.2 It is important to note that offshore wind farm impact assessments typically require two years of seabird surveys in order that variations in numbers can be observed and accounted for. Therefore it is anticipated that a similar intensity of surveys would be required for wave and tidal developments.

10 Conclusions

- 10.1.1 The most appropriate combination of boat and land-based surveys for any particular site will be dependent on the nature of the site and proposed development. Each method offers beneficial aspects over the other. In many cases it is likely that a combination of the two will provide the best coverage. Land based surveying can be carried out on a regular basis, providing data over a wider spread of dates. However, reliable observations are only possible up to distances of around 2km. Any hotspots of activity beyond this range may either be missed, or could lead surveyors to concentrate their efforts on these distant areas to the detriment of nearer observations. Boat surveying, following a suitable route, can ensure that important areas beyond the range of land-based observers can be surveyed.
- 10.1.2 Of the two sites discussed in this report, the Anglesey site illustrates one for which bird data is best collected using both land and boat observations, for the reasons stated above. However, Ramsey Sound can be readily surveyed from suitable vantage points and boat surveys would probably not add greatly to the data collected. The caveat to this is monitoring bird activity beyond the northern and southern ends of the sound, which lie outside the reliable detection range of the current VP locations. Due to poor weather and difficulties in sourcing a suitable boat in the local area, no boat surveys were carried out at Ramsey Island. However, further site coverage could be achieved through additional VPs, in particular ones at the northern and southern ends of Ramsey Island would provide information on bird distributions and activity levels to the north and south of the sound.
- 10.1.3 Bird activity levels were expected to vary in relation to different states of tide, and some of the data collected here support this, although the patterns of activity appear to be different at the two sites. Off Anglesey, the species for which greatest variation was observed were razorbill and Manx shearwater. However, at Ramsey Sound the level of variation across different tides was much lower for almost all species. Off Anglesey there was a similar difference in activity levels, however here the peak occurred during ebb tides. Again, this illustrates the importance of collecting data at the proposed site in order to fully determine the importance of the site and how it is being used by species which could potentially be impacted by a wave or tidal development.

References

Camphuysen, C.J., Fox, A.D., Leopold, M.F. and Peterson, I.K. 2004. Towards standardised seabirds at sea census techniques in connection with environmental impact assessments for offshore wind farms in the U.K.: A comparison of ship and aerial sampling methods for marine birds, and their applicability to offshore wind farm assessments. Koninklijk Nederlands Instituut voor Onderzoek der Zee Report commissioned by COWRIE.

Maclean, I. M. D., Wright, L. J., Showler, D. A. and Rehfisch, M. M. 2009. *A Review of Assessment Methodologies for Offshore Windfarms*. Report commissioned by COWRIE Ltd., COWRIE-METH-08-08, London.

RPS 2011. Assessment of Risk to Diving Birds from Underwater Devices in Welsh Waters: Phase 1 – Desktop Review of Birds in Welsh waters and Preliminary Risk assessment. Report to the Welsh Assembly Government.

Tasker, M.L., Jones, P.H., Dixon, T.J. and Blake, B.F. 1984. Counting seabirds at sea from ships: a review of methods employed and a suggestion for a standardised approach. *Auk* 101: 567-577

Appendices

Appendix 1

Survey Methods

Proposed method for undertaking boat based surveys in relation to tidal energy developments

This methodology is based on the European Seabirds at Sea (ESAS) method, as used for surveying for proposed offshore wind farm developments. This is detailed in the relevant COWRIE (Collaborative Offshore Wind Research into the Environment) guidance document⁵.

The methodology employed for the boat-based surveys will combine two different approaches. Firstly, surveys will be undertaken along a set transect route (boat transect surveys), based on the ESAS methods to collect distributional data. Secondly, surveys from fixed locations (stationary boat surveys) will collect behavioural data.

The boat-based surveys will involve:

- Twenty-four monthly surveys over a two-year period.
- The vessel to be used will not be a commercial or frequently-active fishing vessel. It will have an observation platform that provides an eye-viewing height of at least 5 m (max: 25 m) above sea level. The ship will be at least 20 m in length (max: 100 m) and it will have a speed range of 5-15 knots. The vessel currently in use is the MV Karrin. This vessel is 24 m long with a viewing height of 5 m about sea level. Its top speed is 10.5 knots, generally running at 8-9 knots.
- Four competent, trained observers will be used per vessel for each survey, positioned on the observation platform of the vessels.
- Only data collected in sea state 4 (significant wave height of 1.25-2.5 m) or less will be used for analysis for seabirds. Only data collected in sea state 3 (significant wave height of 0.5-1.25 m) or less will be used for analysis for marine mammals.
- The location of the vessel will be recorded at all times using a GPS. The time of day and details of each bird record will be linked to the GPS position data, in order to provide an accurate location.

⁵ Camphuysen, C.J., Fox, A.D., Leopold, M.F. & Peterson, I.K. 2004. Towards standardised seabirds at sea census techniques in connection with environmental impact assessments for offshore wind farms in the U.K.: A comparison of ship and aerial sampling methods for marine birds, and their applicability to offshore wind farm assessments. Koninklijk Nederlands Instituut voor Onderzoek der Zee Report commissioned by COWRIE.

- During each month, observations along the transect route and at each of the stationary points will be undertaken on four occasions (four 'runs'). A single 'run' will involve travelling along the transect route followed by stopping at each of the four stationary points. A single 'run' will take approximately 3 hours, including a break of approximately 20 minutes.
- The four survey 'runs' will take place at the four different phases of the tidal cycle: mid-to-high tide; high-to-mid tide; mid-to-low tide; and low-to-mid tide.
- During the summer, the day length will permit these surveys to be undertaken on either a single day or on consecutive days. Carrying out four 'runs' during a single day will not increase the risk of double-counting as each 'run' will be treated separately in the analysis.
- During the winter, the short day length will require these surveys to be undertaken up to 2 weeks apart so that all tidal phases occur during hours of daylight.
- Surveys will alternate monthly between being undertaken at neap or intermediate tides.

The details of the boat transect survey method are as follows:

- Transects will be separated by 1 km. This distance between transects is the minimum advocated by the ESAS methodology in order to minimise the risk of double-counting individual birds. A 1 km distance between transects is recommended by RPS for surveying for proposed tidal developments because of the focus on birds landed on the sea, rather than birds in flight. The possibility of double-recording of marine mammals will be taken into account during the analysis by reference to behaviour and direction of movement.
- The proposed route for the boat transect surveys is 13 km in length, which will be travelled along at a constant speed of approximately 7-8 knots.
- The boat transect surveys will be undertaken with the boat travelling against the direction of tidal flow. Since it is anticipated that birds on the water will tend to travel with the current, this will help to reduce the rate of double-counting.
- Protocols based on ESAS methods⁶ will be employed:

⁶ Tasker, M.L., Jones, P.H., Dixon, T.J. & Blake, B.F. 1984. Counting seabirds at sea from ships: a review of methods employed and a suggestion for a standardized approach. *Auk* 101: 567-577.

- Strip-transect techniques will be used. This specifically will involve surveying a 200m strip width on one side ahead of the vessel (a 200 m x 200 m viewing area) in a series of 200m sections. A signal will be given by the skipper every 200m. All birds encountered on the sea will be recorded along with details of species, number, precise time of day, and approximate distance from the boat, recorded as one of five distance bands (0-50 m / 50-100 m / 100-200 m). The 200 m limit of observations is designed to reduce double-counting.
- Birds in flight within the 200 m x 200 m viewing area will be recorded every 200 m along the transects, with details of species, number, precise time of day, and flight height, recorded in one of three altitude bands (<2 m, 2-10 m, >10 m).
- All marine mammals encountered will be recorded along with details of species, numbers present, the precise time of day, direction of movement, and dive frequency/duration.
- Of the five observers, two will record birds on either side of the vessel, two will record marine mammals on either side of the vessel, and one will act as a scribe. Any marine mammal observations detected by the bird observers will be highlighted to the mammal observer.

The details of the stationary boat survey method are as follows:

- The four stationary points are located at 1 km intervals along a straight line running through the centre of the proposed development area.
- At each stationary point the boat will maintain its position, through mooring or the use of its engine, for approximately 15 minutes.
- During the 15-minute period, three observers will select target individuals (diving birds on the sea, or quartering gannet) and record their behaviour for 5 to 10 minutes. Data will include species, age, dive duration and dive frequency. The fourth observer will continue to look for marine mammals, recording the same data as before (species, numbers present, direction of movement and dive frequency/duration).

Proposed methods for land-based vantage points surveys in relation to tidal energy developments

The methodology recommended for the LBVP surveys is as follows:

- The primary aim of the VP observations is to collect data on the distribution of diving seabird species, and to collect representative behavioural observations. The secondary aim of the VPs is to collect data on birds in flight.
- Only data collected in sea state 4 (significant wave height of 1.25-2.5 m) or less will be used for analysis of seabird data.
- Locations of birds will be recorded by the use of a grid system (see Figure 3-1). At each vantage point, the 180° viewing area will be divided into 30° arcs, labelled 'A' up to 'F' in a clockwise direction. Each 30° arc will be identified through reference to land features and compass bearings, with the aid of a sighting compass if needed. Each 30° arc will also be divided into 500m sections, numbered in ascending order from the observer from '1' to '6' (i.e. up to 3 km from the observer). Each 500 m distance band will be identified through the use of land features, and a rangefinder if needed.
- Each 3-hour survey period will be split into three 1-hour periods. During each of these periods, time will be split between different activities: approximately 30 minutes will be spent recording the positions of all birds on the water; approximately 20 minutes will be spent on behavioural observations; and approximately 10 minutes will be spent recording birds in flight.
- Whilst collecting data on the distribution of diving birds, systematic scans will be made through each of the grid sections. Once a diving bird (including feeding gannets and terns) is located, details of grid location, species, number of birds, tidal state and precise time of day will be recorded.
- Whilst collecting data on the diving behaviour of birds, a focal individual will be identified and followed for 5-10 minutes. Whilst followed, data on dive duration and frequency will be collected. Efforts will be made to remain on the same individual by using differences in plumage, such as age/sex/moult. Additional information recorded will include grid location, species, age, tidal state and precise time of day.
- Birds in flight will be recorded during at least two periods of approximately five minutes. This will be done by recording details of birds passing by a set point. The following details will be recorded onto the data sheets: time, tidal state, species, number, distance from observer (using 500 m-wide distance bands), and height (using one of three altitude bands: <2 m, 2-10 m, >10 m).

Appendix 2

Survey Recording Forms

Land-Based Vantage Point Surveys

Distributions of birds on the water

Site: _____ Date: _____ Start time: _____ Finish time: _____ Surveyor: _____

	Wind Speed	Wind direction	Cloud cover	Rain	Vis.	Glare	Sea state	Notes	Notes for recording weather data:
Hour 1									Wind speed: Beaufort scale, Wind dir.: direction wind coming from Cloud cover: eighths of sky covered by cloud Rain: 0, 1(drizzle), 2 (light rain), 3(moderate rain), 4(heavy rain) Visibility: 0(<1km), 1(1-2km), 2(>2km) Glare: score (1=moderate, 2=bad) + direction in which visibility is impaired Sea state: Beaufort scale
Hour 2									
Hour 3									

Boat-based survey recording form – bird distributions

Date _____ Survey Site _____ Boat _____ Tide _____

Surveyors _____ Run Number _____ Transect: _____ Page _____

Transect or Snap (incl no.)	Time (24 hr, GMT)	Species	Port / S'board	No.	Age	Sex	Plum	Distance A)<50m B)50-100m C)100- 200m D)>200m	Direction	Height	Notes
	Hr:min									0: on sea 1: <2m 2: 2- 10m 3: >3m	

Boat-based survey recording form

Date _____ Survey Site StromaSound Boat MV Karin

Surveyor _____ Run Number _____ Page _____

Point	Time (24 hr clock)	Tide	Tidal Flow direction	Precip	Glare	Cloud	Wind speed	Wind direction	Visibility	Temp.	Sea State	Notes
	Hr:min											
1												
2												
3												
4												
5												
6												
7												
8												

Point	Time (24 hr clock)	Tide	Tidal Flow direction	Precip	Glare	Cloud	Wind speed	Wind direction	Visibility	Temp.	Sea State	Notes
	Hr:min											
8												
7												
6												
5												
4												
3												
2												
1												

Appendix 3

Legend to Data Sheets

Initials	Name
AC	Andy Carroll
GAC	Graeme Cook
GT	Garry Taylor
JM	John McLoughlin
KDS	Ken Shaw
LB	Loyd Berry
PD	Paul Derbyshire
PK	Peter Kemp
SL	Sylvia Laing
PC	Paul Cook
RS	Ross Stephens
ST	Stuart Thomas

Sea / Flight?	Definition
Sea	Birds sitting on the water, or actively diving from flight.
Flight	Birds in flight

Table A3.3 – Key to Tidal States

Tide	Code	Definition
Low	1	A one hour interval centred around the time at which the highest tide occurs.
Flood	2	A one hour interval centred around the time at which the lowest tide occurs.
High	3	The period between the periods of high tide and low tide.
Ebb	4	The period between the periods of low tide and high tide.

Table A3.4 – Key to Species Codes

BTO code	Species	BTO code	Species	BTO code	Species
AC	Arctic skua	GU	Guillemot	PT	Pintail
AE	Arctic tern	GV	Grey plover	RA	Razorbill
AUK*	Unidentified auk	GX	Gannet	RH	Red-throated diver
BG	Brent goose	H.	Grey heron	RK	Redshank
BH	Black-headed gull	HG	Herring gull	RM	Red-breasted merganser
BJ	Black tern	KI	Kittiwake	RN	Raven
BV	Black-throated diver	L.	Lapwing	SA	Shag
CA	Cormorant	LB	Lesser black-backed gull	SU	Shelduck
CM	Common gull	LU	Little gull	SV	Shoveler
CX	Common scoter	MA	Mallard	T.	Teal
DN	Dunlin	ML	Merlin	TE	Sandwich tern
E.	Eider	MU	Mediterranean gull	TT	Turnstone
F.	Fulmar	MX	Manx shearwater	TY	Black guillemot
GB	Great black-backed gull	NX	Great skua	UU	Unidentified gull

GG	Great crested grebe	OC	Oystercatcher	WG	White-fronted goose
BTO code	Species	BTO code	Species	BTO code	Species
GJ	Greylag goose	PE	Peregrine Falcon	YQ	Balearic shearwater

*Auk is not a BTO code, but was used by observers to describe unidentified auks

Table A3.5 – Key to ‘Arc’ and ‘Dist’ Columns

Column	Description
Arc	Direction of observation
Dist	Estimated distance band of observation

Appendix 4

Carmel Head Land-based Data

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
01/09/2009	Carmel Head	AC	11.00	-	Sea	11.00	4	RA	150	E	1		-		-
01/09/2009	Carmel Head	AC	11.00	-	Sea	12.45	4	RA	30	D	2		-		-
01/09/2009	Carmel Head	AC	11.00	-	Sea	13.07	4	RA	50	D	2		-		-
01/09/2009	Carmel Head	AC	11.00	-	Sea	13.07	4	RA	150	D	2		-		-
01/09/2009	Carmel Head	AC	11.00	-	Sea	13.07	4	RA	30	D	2		-		-
01/09/2009	Carmel Head	GAC	14.30	14.50	Sea	14.30	4	RA	4	F	2				Loafing
01/09/2009	Carmel Head	GAC	14.30	14.50	Sea	14.30	4	RA	12	F	3				Loafing
01/09/2009	Carmel Head	GAC	14.30	14.50	Sea	14.30	4	RA	5	F	3				Loafing
01/09/2009	Carmel Head	GAC	14.30	14.50	Sea	14.30	4	RA	2	F	2				Loafing
01/09/2009	Carmel Head	GAC	14.30	14.50	Sea	14.30	4	RA	8	F	2				Loafing
01/09/2009	Carmel Head	GAC	14.30	14.50	Sea	14.30	4	HG	1	F	2				Loafing
01/09/2009	Carmel Head	GAC	14.30	14.50	Sea	14.30	4	CA	1	F	2				Feeding
01/09/2009	Carmel Head	GAC	14.30	14.50	Sea	14.30	4	RA	24	E	3				Loafing
01/09/2009	Carmel Head	GAC	14.30	14.50	Sea	14.30	4	RA	15	E	2				Loafing

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
01/09/2009	Carmel Head	GAC	14.30	14.50	Sea	14.30	4	RA	5	E	2				Loafing
01/09/2009	Carmel Head	GAC	14.30	14.50	Sea	14.30	4	CA	1	E	2				Feeding
01/09/2009	Carmel Head	GAC	14.30	14.50	Sea	14.30	4	KI	3	E	2				Loafing
01/09/2009	Carmel Head	GAC	14.30	14.50	Sea	14.30	4	KI	4	C	2				Loafing
01/09/2009	Carmel Head	GAC	14.30	14.50	Sea	14.30	4	KI	25	B	2				Feeding
01/09/2009	Carmel Head	GAC	14.30	14.50	Sea	14.30	4	MX	10	B	2				Feeding
01/09/2009	Carmel Head	GAC	14.30	14.50	Sea	14.30	4	RA	15	B	2				Feeding
01/09/2009	Carmel Head	AC	14.30	14.50	Sea	14.30	1	RA	40	F	1				Loafing
01/09/2009	Carmel Head	AC	14.30	14.50	Sea	14.30	1	RA	35	F	2				Loafing
01/09/2009	Carmel Head	AC	14.30	14.50	Sea	14.30	1	RA	40	F	2				Loafing
01/09/2009	Carmel Head	AC	14.30	14.50	Sea	14.30	1	CA	1	E	1				Feeding
01/09/2009	Carmel Head	AC	14.30	14.50	Sea	14.30	1	KI	20	F	2				Feeding
01/09/2009	Carmel Head	AC	14.30	14.50	Sea	14.30	1	KI	20	F	2				Feeding
01/09/2009	Carmel Head	AC	14.30	14.50	Sea	14.30	1	KI	30	F	3				Feeding

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
01/09/2009	Carmel Head	AC	14.30	14.50	Sea	14.30	1	MX	2	F	1				Feeding
01/09/2009	Carmel Head	AC	14.30	14.50	Sea	14.30	1	MX	2	F	1				Feeding
01/09/2009	Carmel Head	AC	14.30	14.50	Sea	14.30	1	RA	30	E	2				Feeding
01/09/2009	Carmel Head	GAC	15.00	15.20	Sea	15.00	4	RA	10	F	3				Loafing
01/09/2009	Carmel Head	GAC	15.00	15.20	Sea	15.00	4	RA	20	F	2				Loafing
01/09/2009	Carmel Head	GAC	15.00	15.20	Sea	15.00	4	RA	20	E	2				Loafing
01/09/2009	Carmel Head	GAC	15.00	15.20	Sea	15.00	4	RA	25	E	2				Loafing
01/09/2009	Carmel Head	GAC	15.00	15.20	Sea	15.00	4	CA	1	D	1				Feeding
01/09/2009	Carmel Head	GAC	15.00	15.20	Sea	15.00	4	KI	4	D	1				Feeding
01/09/2009	Carmel Head	GAC	15.00	15.20	Sea	15.00	4	CA	1	D	1				Feeding
01/09/2009	Carmel Head	GAC	15.00	15.20	Sea	15.00	4	RA	2	D	1				Loafing
01/09/2009	Carmel Head	GAC	15.00	15.20	Sea	15.00	4	RA	8	C	1				Feeding
01/09/2009	Carmel Head	GAC	15.00	15.20	Sea	15.00	4	RA	30	C	1				Loafing
01/09/2009	Carmel Head	GAC	15.00	15.20	Sea	15.00	1	RA	40	B	2				Loafing

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
01/09/2009	Carmel Head	GAC	15.00	15.20	Sea	15.00	1	RA	20	B	2				Loafing
01/09/2009	Carmel Head	AC	15.00	15.20	Sea	15.00	1	RA	40	E	2				Feeding
01/09/2009	Carmel Head	AC	15.00	15.20	Sea	15.00	1	RA	50	C	1				Feeding
01/09/2009	Carmel Head	AC	15.00	15.20	Sea	15.00	1	RA	30	C	2				Feeding
01/09/2009	Carmel Head	AC	15.00	15.20	Sea	15.00	1	RA	20	F	1				Loafing
01/09/2009	Carmel Head	AC	15.00	15.20	Sea	15.00	1	RA	15	F	2				Loafing
01/09/2009	Carmel Head	AC	15.00	15.20	Sea	15.00	1	RA	30	F	2				Loafing
01/09/2009	Carmel Head	AC	15.00	15.20	Sea	15.00	1	RA	30	E	1				Loafing
01/09/2009	Carmel Head	AC	15.00	15.20	Sea	15.00	1	RA	40	E	3				Loafing
01/09/2009	Carmel Head	AC	15.00	15.20	Sea	15.00	1	RA	80	D	3				Loafing
01/09/2009	Carmel Head	AC	15.00	15.20	Sea	15.00	1	RA	20	C	1				Loafing
01/09/2009	Carmel Head	AC	15.00	15.20	Sea	15.00	1	KI	30	D	1				Loafing
01/09/2009	Carmel Head	AC	15.00	15.20	Sea	15.00	1	KI	20	C	1				Loafing
01/09/2009	Carmel Head	AC	15.00	15.20	Sea	15.00	1	MX	15	C	1				Loafing

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
02/09/2009	Carmel Head	AC	12.30	12.40	Dives	12:30:00	4	SA	1	0	1			40	Came up with fish
02/09/2009	Carmel Head	AC	12.30	12.40	Dives	12:34:00	4	SA	1	0	1			70	
02/09/2009	Carmel Head	AC	12.30	12.40	Dives	12:37:00	4	SA	1	0	1			62	
02/09/2009	Carmel Head	AC	12.30	12.40	Dives	12:39:00	4	SA	1	0	1			42	
02/09/2009	Carmel Head (alt. vp)	LB	13.20	13.35	Dives	13:22:00	4	SA	1	0	1			52	
02/09/2009	Carmel Head (alt. vp)	LB	13.20	13.35	Dives	13:25:00	4	SA	1	0	1			65	
02/09/2009	Carmel Head (alt. vp)	LB	13.20	13.35	Dives	13:26:00	4	SA	1	0	1			58	
02/09/2009	Carmel Head (alt. vp)	LB	13.20	13.35	Dives	13:33:00	4	SA	1	0	1			41	
02/09/2009	Carmel Head (alt. vp)	LB	13.20	13.35	Dives	13:35:00	4	SA	1	0	1			65	
02/09/2009	Carmel Head (alt. vp)	LB	13.55	14.10	Dives	13:57:00	4	RA	1	0	1			41	
02/09/2009	Carmel Head	LB	13.55	14.10	Dives	13:58:00	4	RA	1	0	1			60	

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	(alt. vp)														
02/09/2009	Carmel Head (alt. vp)	LB	13.55	14.10	Dives	14:00:00	4	GU	1	0	2			28	
02/09/2009	Carmel Head (alt. vp)	LB	13.55	14.10	Dives	14:08:00	4	RA	1	0	2			30	
02/09/2009	Carmel Head (alt. vp)	LB	13.55	14.10	Dives	14:10:00	4	SA	1	0	1			75	
02/09/2009	Carmel Head	AC	15.00	15.25	Dives	15:00:00	1	SA	1	0	2			60	
02/09/2009	Carmel Head	AC	15.00	15.25	Dives	15:03:00	1	SA	1	0	2			62	
02/09/2009	Carmel Head	AC	15.00	15.25	Dives	15:05:00	1	SA	1	0	2			58	Came up with fish
02/09/2009	Carmel Head	AC	15.00	15.25	Dives	15:09:00	1	SA	1	0	2			43	
02/09/2009	Carmel Head	AC	15.00	15.25	Dives	15:11:00	1	SA	1	0	2			49	
02/09/2009	Carmel Head	AC	15.00	15.25	Dives	15:13:00	1	SA	1	0	2			56	
02/09/2009	Carmel Head	AC	15.00	15.25	Dives	15:15:00	1	SA	1	0	2			69	
02/09/2009	Carmel Head	AC	15.00	15.25	Dives	15:18:00	1	SA	1	0	2			51	

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
02/09/2009	Carmel Head	AC	15.00	15.25	Dives	15:22:00	1	SA	1	0	2			71	
02/09/2009	Carmel Head	AC	-	-	Dives	15:43:00	1	RA	1	0	2			35	
02/09/2009	Carmel Head	AC	-	-	Dives	15:44:00	1	RA	1	0	2			29	
02/09/2009	Carmel Head	AC	-	-	Dives	15:46:00	1	RA	1	0	2			39	
02/09/2009	Carmel Head (alt. vp)	LB	16.20	16.50	Dives	16:21:00	1	SA	1	0	2			58	
02/09/2009	Carmel Head (alt. vp)	LB	16.20	16.50	Dives	16:23:00	1	SA	1	0	2			45	
02/09/2009	Carmel Head (alt. vp)	LB	16.20	16.50	Dives	16:24:00	1	SA	1	0	2			71	
02/09/2009	Carmel Head (alt. vp)	LB	16.20	16.50	Dives	16:28:00	1	RA	1	0	2			37	
02/09/2009	Carmel Head (alt. vp)	LB	16.20	16.50	Dives	16:37:00	1	RA	1	0	1			55	
02/09/2009	Carmel Head (alt. vp)	LB	16.20	16.50	Dives	16:48:00	1	SA	1	0	2			60	
02/09/2009	Carmel Head	LB	16.20	16.50	Dives	16:50:00	1	SA	1	0	2			72	

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	(alt. vp)														
02/09/2009	Carmel Head	AC	11.45	12.05	Sea	11.45	4	RA	50	F	1		-		
02/09/2009	Carmel Head	AC	11.45	12.05	Sea	11.45	4	RA	25	F	1		-		
02/09/2009	Carmel Head	AC	11.45	12.05	Sea	11.45	4	RA	20	F	2		-		
02/09/2009	Carmel Head	AC	11.45	12.05	Sea	11.45	4	GX	7	F	3		-		
02/09/2009	Carmel Head	AC	11.45	12.05	Sea	11.45	4	MX	10	F	3		-		
02/09/2009	Carmel Head	AC	11.45	12.05	Sea	11.45	4	RA	10	E	1		-		
02/09/2009	Carmel Head	AC	11.45	12.05	Sea	11.45	4	RA	15	E	2		-		
02/09/2009	Carmel Head	AC	11.45	12.05	Sea	11.45	4	MX	6	E	2		-		
02/09/2009	Carmel Head	AC	11.45	12.05	Sea	11.45	4	KI	17	E	3		-		
02/09/2009	Carmel Head	AC	11.45	12.05	Sea	11.45	4	RA	2	D	1		-		
02/09/2009	Carmel Head	AC	11.45	12.05	Sea	11.45	4	SA	1	D	1		-		
02/09/2009	Carmel Head	AC	11.45	12.05	Sea	11.45	4	RA	40	D	3		-		
02/09/2009	Carmel Head	AC	11.45	12.05	Sea	11.45	4	RA	10	C	1		-		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
02/09/2009	Carmel Head	AC	11.45	12.05	Sea	11.45	4	MX	15	B	1		-		
02/09/2009	Carmel Head	AC	11.45	12.05	Sea	11.45	4	KI	10	B	1		-		
02/09/2009	Carmel Head	AC	12.45	13.05	Sea	12.45	4	RA	70	F	1		-		Loafing
02/09/2009	Carmel Head	AC	12.45	13.05	Sea	12.45	4	GX	40	F	1		-		Loafing
02/09/2009	Carmel Head	AC	12.45	13.05	Sea	12.45	4	RA	25	F	3		-		Loafing
02/09/2009	Carmel Head	AC	12.45	13.05	Sea	12.45	4	RA	15	E	1		-		Loafing
02/09/2009	Carmel Head	AC	12.45	13.05	Sea	12.45	4	RA	20	E	3		-		Loafing
02/09/2009	Carmel Head	AC	12.45	13.05	Sea	12.45	4	RA	50	D	1		-		Loafing
02/09/2009	Carmel Head	AC	12.45	13.05	Sea	12.45	4	RA	30	D	2		-		Loafing
02/09/2009	Carmel Head	AC	12.45	13.05	Sea	12.45	4	RA	25	C	1		-		Loafing
02/09/2009	Carmel Head	AC	12.45	13.05	Sea	12.45	4	RA	20	C	3		-		Loafing
02/09/2009	Carmel Head (alt. vp)	LB	13.00	13.20	Sea	13.00	4	RA	150	F	1		-		Loafing
02/09/2009	Carmel Head (alt. vp)	LB	13.00	13.20	Sea	13.00	4	RA	60	F	2		-		Loafing

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
02/09/2009	Carmel Head (alt. vp)	LB	13.00	13.20	Sea	13.00	4	GU	20	F	2		-		Loafing
02/09/2009	Carmel Head (alt. vp)	LB	13.00	13.20	Sea	13.00	4	RA	85	F	3		-		Loafing
02/09/2009	Carmel Head (alt. vp)	LB	13.00	13.20	Sea	13.00	4	RA	180	E	1		-		Loafing
02/09/2009	Carmel Head (alt. vp)	LB	13.00	13.20	Sea	13.00	4	GU	60	E	1		-		Loafing
02/09/2009	Carmel Head (alt. vp)	LB	13.00	13.20	Sea	13.00	4	GU	10	E	2		-		Feeding
02/09/2009	Carmel Head (alt. vp)	LB	13.00	13.20	Sea	13.00	4	RA	50	E	2		-		Feeding
02/09/2009	Carmel Head (alt. vp)	LB	13.00	13.20	Sea	13.00	4	RA	110	E	3		-		Feeding
02/09/2009	Carmel Head (alt. vp)	LB	13.00	13.20	Sea	13.00	4	GU	25	E	3		-		Feeding
02/09/2009	Carmel Head (alt. vp)	LB	13.00	13.20	Sea	13.00	4	RA	150	D	1		-		Feeding

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
02/09/2009	Carmel Head (alt. vp)	LB	13.00	13.20	Sea	13.00	4	GU	60	D	1		-		Feeding
02/09/2009	Carmel Head (alt. vp)	LB	13.00	13.20	Sea	13.00	4	KI	25	D	1		-		Feeding
02/09/2009	Carmel Head (alt. vp)	LB	13.00	13.20	Sea	13.00	4	MX	30	D	1		-		Feeding
02/09/2009	Carmel Head (alt. vp)	LB	13.00	13.20	Sea	13.00	4	RA	80	D	2		-		Loafing
02/09/2009	Carmel Head (alt. vp)	LB	13.00	13.20	Sea	13.00	4	RA	25	D	3		-		Loafing
02/09/2009	Carmel Head (alt. vp)	LB	13.00	13.20	Sea	13.00	4	RA	70	C	1		-		Loafing
02/09/2009	Carmel Head (alt. vp)	LB	13.00	13.20	Sea	13.00	4	RA	10	C	2		-		Feeding
02/09/2009	Carmel Head (alt. vp)	LB	13.00	13.20	Sea	13.00	4	KI	20	C	2		-		Feeding
02/09/2009	Carmel Head (alt. vp)	LB	13.00	13.20	Sea	13.00	4	RA	110	C	2		-		Feeding

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
02/09/2009	Carmel Head	AC	13.15	13.20	Flight	13.15	4	GX	6	0			South		
02/09/2009	Carmel Head	AC	13.15	13.20	Flight	13.15	4	MX	12	0			North		
02/09/2009	Carmel Head	AC	13.15	13.20	Flight	13.15	4	KI	20	0			South		
02/09/2009	Carmel Head (alt. vp)	LB	13.40	13.45	Flight	13.40	4	MX	37	F			South		-
02/09/2009	Carmel Head (alt. vp)	LB	13.40	13.45	Flight	13.40	4	GX	8	F			South		-
02/09/2009	Carmel Head (alt. vp)	LB	13.40	13.45	Flight	13.40	4	KI	8	F			South		-
02/09/2009	Carmel Head	AC	13.50	13.55	Flight	13.50	4	MX	53	0			South		
02/09/2009	Carmel Head	AC	13.50	13.55	Flight	13.50	4	GX	30	0			South		
02/09/2009	Carmel Head	AC	13.50	13.55	Flight	13.50	4	KI	23	0			South		
02/09/2009	Carmel Head	AC	13.50	13.55	Flight	13.50	4	RA	6	0			South		
02/09/2009	Carmel Head	AC	14.05	14.25	Sea	14.05	4	RA	50	F	3		-		Very heavy rain, poor visibility
02/09/2009	Carmel Head	AC	14.05	14.25	Sea	14.05	4	RA	10	F	3		-		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
02/09/2009	Carmel Head	AC	14.05	14.25	Sea	14.05	4	GX	20	F	3		-		
02/09/2009	Carmel Head	AC	14.05	14.25	Sea	14.05	4	MX	20	F	3		-		
02/09/2009	Carmel Head	AC	14.05	14.25	Sea	14.05	4	RA	10	F	3		-		
02/09/2009	Carmel Head	AC	14.05	14.25	Sea	14.05	4	RA	70	E	1		-		
02/09/2009	Carmel Head	AC	14.05	14.25	Sea	14.05	4	RA	10	E	2		-		
02/09/2009	Carmel Head	AC	14.05	14.25	Sea	14.05	4	RA	15	D	2		-		
02/09/2009	Carmel Head	AC	14.05	14.25	Sea	14.05	4	GX	11	D	3		-		
02/09/2009	Carmel Head	AC	14.05	14.25	Sea	14.05	4	RA	11	D	3		-		
02/09/2009	Carmel Head	AC	14.05	14.25	Sea	14.05	4	MX	13	C	2		-		
02/09/2009	Carmel Head	AC	14.05	14.25	Sea	14.05	4	RA	9	B	2		-		
02/09/2009	Carmel Head (alt. vp)	LB	14.10	14.30	Sea	14.10	4	RA	40	F	1		-		Loafing
02/09/2009	Carmel Head (alt. vp)	LB	14.10	14.30	Sea	14.10	4	GU	2	E	1		-		Loafing
02/09/2009	Carmel Head	LB	14.10	14.30	Sea	14.10	4	RA	10	E	2		-		Loafing

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	(alt. vp)														
02/09/2009	Carmel Head (alt. vp)	LB	14.10	14.30	Sea	14.10	4	RA	15	D	1		-		Loafing
02/09/2009	Carmel Head (alt. vp)	LB	14.10	14.30	Sea	14.10	4	RA	25	C	1		-		Loafing
02/09/2009	Carmel Head (alt. vp)	LB	14.10	14.30	Sea	14.10	4	RA	30	C	2		-		Loafing
02/09/2009	Carmel Head (alt. vp)	LB	14.10	14.30	Sea	14.10	4	GU	65	C	3		-		Loafing
02/09/2009	Carmel Head (alt. vp)	LB	14.10	14.30	Sea	14.10	4	RA	110	C	3		-		Loafing
02/09/2009	Carmel Head (alt. vp)	LB	14.10	14.30	Sea	14.10	4	RA	60	B	2		-		Loafing
02/09/2009	Carmel Head (alt. vp)	LB	14.10	14.30	Sea	14.10	4	MX	25	B	2		-		Loafing
02/09/2009	Carmel Head (alt. vp)	LB	14.10	14.30	Sea	14.10	4	GU	10	B	2		-		Feeding
02/09/2009	Carmel Head	LB	14.10	14.30	Sea	14.10	4	RA	80	A	2		-		Feeding

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	(alt. vp)														
02/09/2009	Carmel Head (alt. vp)	LB	14.10	14.30	Sea	14.10	4	KI	20	A	2		-		Feeding
02/09/2009	Carmel Head (alt. vp)	LB	14.10	14.30	Sea	14.10	4	MX	10	A	2		-		Feeding
02/09/2009	Carmel Head (alt. vp)	LB	14.10	14.30	Sea	14.10	4	GX	4	A	2		-		-
02/09/2009	Carmel Head (alt. vp)	LB	14.10	14.30	Flight	14.10	4	YQ	1	0			South		-
02/09/2009	Carmel Head (alt. vp)	LB	15.05	15.30	Sea	15.05	4	RA	5	F	2		-		-
02/09/2009	Carmel Head (alt. vp)	LB	15.05	15.30	Sea	15.05	4	RA	6	E	1		-		-
02/09/2009	Carmel Head (alt. vp)	LB	15.05	15.30	Sea	15.05	4	RA	20	E	2		-		-
02/09/2009	Carmel Head (alt. vp)	LB	15.05	15.30	Sea	15.05	4	SA	1	D	1		-		-
02/09/2009	Carmel Head	LB	15.05	15.30	Sea	15.05	4	RA	25	D	2		-		-

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	(alt. vp)														
02/09/2009	Carmel Head (alt. vp)	LB	15.05	15.30	Sea	15.05	4	RA	3	D	3		-		-
02/09/2009	Carmel Head (alt. vp)	LB	15.05	15.30	Sea	15.05	4	RA	2	C	1		-		-
02/09/2009	Carmel Head (alt. vp)	LB	15.05	15.30	Sea	15.05	4	GU	6	C	3		-		-
02/09/2009	Carmel Head (alt. vp)	LB	15.05	15.30	Sea	15.05	4	GU	2	C	3		-		-
02/09/2009	Carmel Head (alt. vp)	LB	15.05	15.30	Sea	15.05	4	GU	10	B	2		-		-
02/09/2009	Carmel Head (alt. vp)	LB	15.05	15.30	Sea	15.05	4	RA	11	B	2		-		-
02/09/2009	Carmel Head (alt. vp)	LB	15.50	16.12	Sea	15.50	1	SA	1	E	2		-		Feeding
02/09/2009	Carmel Head (alt. vp)	LB	15.50	16.12	Sea	15.50	1	RA	12	E	3		-		-
02/09/2009	Carmel Head	LB	15.50	16.12	Sea	15.50	1	RA	25	D	2		-		-

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	(alt. vp)														
02/09/2009	Carmel Head (alt. vp)	LB	15.50	16.12	Sea	15.50	1	RA	10	D	1		-		-
02/09/2009	Carmel Head (alt. vp)	LB	15.50	16.12	Sea	15.50	1	RA	60	C	2		-		Feeding
02/09/2009	Carmel Head (alt. vp)	LB	15.50	16.12	Sea	15.50	1	GU	10	C	2		-		Feeding
02/09/2009	Carmel Head (alt. vp)	LB	15.50	16.12	Sea	15.50	1	RA	50	C	1		-		-
02/09/2009	Carmel Head (alt. vp)	LB	15.50	16.12	Sea	15.50	1	MX	120	C	1		-		Loafing/Preening
02/09/2009	Carmel Head (alt. vp)	LB	15.50	16.12	Flight	15.50	1	YQ	1	C	1		South		
02/09/2009	Carmel Head (alt. vp)	LB	15.50	16.12	Sea	15.50	1	GU	10	B	2		-		Loafing/Preening
02/09/2009	Carmel Head (alt. vp)	LB	15.50	16.12	Sea	15.50	1	RA	80	B	2		-		-
02/09/2009	Carmel Head	LB	15.50	16.12	Sea	15.50	1	RA	150	B	3		-		-

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	(alt. vp)														
02/09/2009	Carmel Head (alt. vp)	LB	15.50	16.12	Sea	15.50	1	SA	2	B	3		-		-
02/09/2009	Carmel Head	AC	16.10	16.35	Sea	16.10	1	RA	20	F	2		-		
02/09/2009	Carmel Head	AC	16.10	16.35	Sea	16.10	1	MX	10	F	3		-		
02/09/2009	Carmel Head	AC	16.10	16.35	Sea	16.10	1	RA	9	F	3		-		
02/09/2009	Carmel Head	AC	16.10	16.35	Sea	16.10	1	RA	6	E	1		-		
02/09/2009	Carmel Head	AC	16.10	16.35	Sea	16.10	1	MX	14	E	1		-		
02/09/2009	Carmel Head	AC	16.10	16.35	Sea	16.10	1	RA	5	E	2		-		
02/09/2009	Carmel Head	AC	16.10	16.35	Sea	16.10	1	RA	20	D	2		-		
02/09/2009	Carmel Head	AC	16.10	16.35	Sea	16.10	1	RA	33	D	3		-		
02/09/2009	Carmel Head	AC	16.10	16.35	Sea	16.10	1	GX	10	D	3		-		
02/09/2009	Carmel Head	AC	16.10	16.35	Sea	16.10	1	RA	50	D	3		-		
02/09/2009	Carmel Head	AC	16.10	16.35	Sea	16.10	1	RA	10	C	1		-		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
02/09/2009	Carmel Head	AC	16.10	16.35	Sea	16.10	1	MX	3	C	2		-		
02/09/2009	Carmel Head	AC	16.10	16.35	Sea	16.10	1	RA	2	B	3		-		
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Sea	10.58	3	RA	1	D	1				
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Sea	11.39	4	RA	2	D	3				
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Sea	11.52	4	RA	1	D	2				
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Sea	12.33	4	GX	1	E	3				
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Sea	12.36	4	GB	1	F	4				
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Sea	12.51	4	RA	2	D	2				
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Sea	12.53	4	KI	3	D	3				
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Sea	12.53	4	LB	1	D	3				
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Sea	12.57	4	RA	2	E	3				
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Sea	13.00	4	RA	1	E	2				
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Sea	13.00	4	RA	3	E	3				
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Sea	13.13	4	RA	1	D	2				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Sea	13.27	4	KI	2	F	3				
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Sea	13.29	4	RA	1	D	3				
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Sea	13.31	4	RA	2	C	1				
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Sea	13.48	4	RA	1	E	1				
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Sea	14.15	4	RA	30	F	4				
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Sea	14.17	4	RA	1	E	2				
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Sea	14.25	4	SA	1	D	3				
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Sea	14.39	4	GU	1	F	3				
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Flight	-	4	MX	502	0			-		Count during VP
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Flight	-	4	GX	229	0			-		Count during VP
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Flight	-	4	F.	39	0			-		Count during VP
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Flight	-	4	KI	18	0			-		Count during VP
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Flight	-	4	SA	4	0			-		Count during VP
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Flight	-	4	LB	7	0			-		Count during VP

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Flight	-	4	RA	1	0			-		Count during VP
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Flight	-	4	AC	1	0			-		Count during VP
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Flight	-	4	NX	2	0			-		Count during VP
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Flight	-	4	TE	3	0			-		Count during VP
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.00	Flight	-	4	CX	2	0			-		Count during VP
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.05	Flight		4	MX	375	0			south		Count during VP
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.05	Flight		4	GX	109	0			south		Count during VP
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.05	Flight		4	KI	22	0			south		Count during VP
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.05	Flight		4	KI	4	0			north		Count during VP
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.05	Flight		4	AC	1	0			south		Count during VP
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.05	Flight		4	F.	70	0			south		Count during VP
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.05	Flight		4	NX	2	0			south		Count during VP
03/09/2009	Carmel Head	GAC/LB/KDS/AC	10.50	15.05	Flight		4	HG	5	0			south		Count during VP
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Sea	10.41	3	GX	1	E	1		-		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Sea	10.59	3	GX	1	E	2		-		
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Sea	11.09	3	RA	3	E	3		-		
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Sea	11.14	3	MX	3	E	4		-		
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Sea	11.20	3	RA	5	D	3		-		
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Sea	11.28	3	RA	2	D	2		-		
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Sea	11.32	3	RA	1	C	2		-		
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Sea	11.45	3	RA	2	F	2		-		
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Sea	11.47	3	RA	3	D	2		-		
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Sea	12.01	4	RA	2	C	4		-		
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Sea	12.04	4	RA	1	C	2		-		
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Sea	12.10	4	SA	1	C	1		-		
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Sea	12.40	4	RA	1	D	3		-		
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Sea	12.41	4	RA	1	C	2		-		
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Sea	13.00	4	GB	1	C	4		-		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Sea	13.02	4	RA	1	E	1		-		
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Sea	13.06	4	RA	1	F	2		-		
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Sea	13.10	4	MX	9	D	4		-		
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Sea	13.10	4	KI	8	D	4		-		
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Sea	13.14	4	RA	2	D	3		-		
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Sea	14.00	4	RA	1	C	2		-		
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Sea	14.22	4	MX	22	B	2		-		
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Sea	14.22	4	KI	6	B	2		-		
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Sea	14.29	4	SA	1	C	2		-		
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Sea	14.38	4	SA	1	C-D	1-3		-		
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Sea	14.39	4	SA	1	C-D	2-4		-		
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Sea	14.40	4	RA	2	C	3		-		
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Sea	15.20	4	RA	9	D	2		-		
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Sea	15.42	4	RA	5	D	3		-		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Sea	15.57	4	RA	2	E	3		-		
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Flight	-	4	GX	2360	0			-		Count during VP
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Flight	-	4	MX	3870	0			-		Count during VP
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Flight	-	4	KI	860	0			-		Count during VP
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Flight	-	4	RA	7	0			-		Count during VP
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Flight	-	4	F.	85	0			-		Count during VP
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Flight	-	4	AC	2	0			-		Count during VP
04/09/2009	Carmel Head	AC/KDS	9.55	16.10	Flight	-	4	NX	1	0			-		Count during VP
06/09/2009	Pen Dal-adevyn	JM	10.30	11.30	Sea	10:35:00	2	SA	1	E	2				
06/09/2009	Pen Dal-adevyn	JM	10.30	11.30	Flight	10:41:00	2	F.	1	D	3		South		
06/09/2009	Pen Dal-adevyn	JM	10.30	11.30	Flight	10:41:00	2	GX	2	D	3		South		
06/09/2009	Point St John	JM	13.30	14.30	Flight	14:05:00	2	RH	1	E	3		South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
06/09/2009	Point St John	JM	13.30	14.30	Flight	14:05:00	2	GX	4	E	3		South		
06/09/2009	Point St John	JM	13.30	14.30	Flight	14:21:00	2	AC	1	E	3		South		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	10.14	2	SA	2	0	2		South		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	10.14	2	RA	2	0	2		South		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	10.18	2	SA	1	0	2		South		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	10.21	2	GX	1	0	3		South		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	10.35	2	RA	1	0	3		South		
06/09/2009	Carmel Head	AC/KDS	10.10	15.05	Sea	10.36	2	SA	1	E	3		-		
06/09/2009	Carmel Head	AC/KDS	10.10	15.05	Sea	10.38	2	SA	1	D	1		-		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	10.40	2	MX	1	0	1		South		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	10.41	2	MX	1	0	2		South		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	10.41	2	GX	1	0	3		South		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	10.43	2	RA	1	0	2		South		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	11.02	2	MX	1	0	3		South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	11.08	2	MX	1	0	4		South		
06/09/2009	Carmel Head	AC/KDS	10.10	15.05	Sea	11.10	2	SA	1	D	4		-		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	11.10	2	GX	1	0	3		South		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	11.12	2	SA	1	0	3		South		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	11.12	2	GX	1	0	3		South		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	11.14	2	MX	1	0	4		South		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	11.14	2	RA	2	0	3		South		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	11.14	2	GX	1	0	2		North		
06/09/2009	Carmel Head	AC/KDS	10.10	15.05	Sea	11.15	2	RA	1	E	3		-		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	11.18	2	GX	1	0	2		South		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	11.22	2	MX	1	0	3		South		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	11.24	2	SA	1	0	1		South		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	11.24	2	SA	1	0	2		South		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	11.24	2	MX	1	0	4		North		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	11.24	2	MX	5	0	2		South		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	11.24	2	GX	1	0	1		South		
06/09/2009	Carmel Head	AC/KDS	10.10	15.05	Sea	11.26	2	RA	2	F	2		-		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	11.26	2	MX	2	0	3		South		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	11.27	2	RA	2	0	3		South		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	11.27	2	GX	2	0	3		South		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	11.30	2	MX	2	0	4		South		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	11.30	2	GX	2	0	3		South		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	11.32	2	RA	4	0	3		South		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	11.32	3	GX	1	0	2		South		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	11.34	3	RA	1	0	3		South		
06/09/2009	Carmel Head	AC/KDS	10.10	11.40	Flight	11.35	3	RA	2	0	3		South		
06/09/2009	Carmel Head	AC/KDS	11.40	12.40	Flight	11.40	3	GX	45	0			South		
06/09/2009	Carmel Head	AC/KDS	11.40	12.40	Flight	11.40	3	MX	51	0			South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
06/09/2009	Carmel Head	AC/KDS	11.40	12.40	Flight	11.40	3	KI	6	0			South		
06/09/2009	Carmel Head	AC/KDS	11.40	12.40	Flight	11.40	3	F.	2	0			South		
06/09/2009	Carmel Head	AC/KDS	11.40	12.40	Flight	11.40	3	BG	1	0			South		
06/09/2009	Carmel Head	AC/KDS	11.40	12.40	Flight	11.40	3	YQ	1	0			South		Field sheet recorded as BAL.
06/09/2009	Carmel Head	AC/KDS	10.10	15.05	Sea	11.42	3	SA	3	E	1		-		
06/09/2009	Carmel Head	AC/KDS	10.10	15.05	Sea	11.48	3	SA	1	E	3		-		
06/09/2009	Carmel Head	AC/KDS	10.10	15.05	Sea	12.12	3	RA	3	E	2		-		
06/09/2009	Carmel Head	AC/KDS	10.10	15.05	Sea	12.14	3	RA	3	D	1		-		
06/09/2009	Carmel Head	AC/KDS	12.40	13.40	Flight	12.40	3	GX	80	0			South		
06/09/2009	Carmel Head	AC/KDS	12.40	13.40	Flight	12.40	3	MX	75	0			South		
06/09/2009	Carmel Head	AC/KDS	12.40	13.40	Flight	12.40	4	F.	6	0			South		
06/09/2009	Carmel Head	AC/KDS	12.40	13.40	Flight	12.40	4	KI	4	0			South		
06/09/2009	Carmel Head	AC/KDS	12.40	13.40	Flight	12.40	4	AC	1	0			South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
06/09/2009	Carmel Head	AC/KDS	10.10	15.05	Sea	13.01	4	SA	1	F	3		-		
06/09/2009	Carmel Head	AC/KDS	10.10	15.05	Sea	13.12	4	SA	1	E	2		-		
06/09/2009	Carmel Head	AC/KDS	10.10	15.05	Sea	13.14	4	RA	4	E	4		-		
06/09/2009	Carmel Head	AC/KDS	10.10	15.05	Sea	13.16	4	SA	1	F	3		-		
06/09/2009	Carmel Head	AC/KDS	13.40	14.40	Flight	13.40	4	GX	21	0			South		
06/09/2009	Carmel Head	AC/KDS	13.40	14.40	Flight	13.40	4	MX	8	0			South		
06/09/2009	Carmel Head	AC/KDS	13.40	14.40	Flight	13.40	4	KI	3	0			South		
06/09/2009	Carmel Head	AC/KDS	13.40	14.40	Flight	13.40	4	F.	2	0			South		
06/09/2009	Carmel Head	AC/KDS	10.10	15.05	Sea	13.41	4	GX	1	A	1		-		
06/09/2009	Carmel Head	AC/KDS	10.10	15.05	Sea	13.45	4	RA	2	D	3		-		
06/09/2009	Carmel Head	AC/KDS	10.10	15.05	Sea	14.15	4	RA	3	F	4		-		
06/09/2009	Carmel Head	AC/KDS	10.10	15.05	Sea	14.49	4	SA	1	D	1		-		
06/09/2009	Carmel Head	AC/KDS	10.10	15.05	Sea	14.54	4	GX	3	F	4		-		
07/09/2009	Pen Dal-	JM GT	10.00	17.00	Flight	10:00:00	2	F.	4	D			North		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Flight	10:00:00	2	GX	3	D			North		
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Flight	10:00:00	2	MX	2	D			North		
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Flight	10:00:00	2	MX	1	D			South		
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Flight	10:00:00	2	NX	1	D			North		
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	10:30:00	2	RA	20	B	5				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	10:31:00	2	GX	2	B	5				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	10:35:00	2	MX	1	E	2				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	10:35:00	3	MX		0	2				Surface diving
07/09/2009	Pen Dal-	JM GT	10.00	17.00	Sea	10:38:00	2	RA	6	D	4				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.															
Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	10:49:00	2	RA	1	D	2				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	10:49:00	3	RA		0	2				Not relocated after dive
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	10:50:00	2	F.	2	B	4				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	10:52:00	2	RA	3	C	4				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	10:59:00	2	NX	1	D	5				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Flight	11:00:00	2	GX	3	D			South		
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	11:01:00	2	SA	2	F	2				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	11:08:00	3	SA		0	2			86	1ST dive of 3 in A2
07/09/2009	Pen Dal-	JM GT	10.00	17.00	Dives	11:08:00	3	SA		0	2			61	2ND dive of 3 in A2

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	11:08:00	3	SA		0	2			73	3RD dive of 3 in A2
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	11:10:00	3	SA		0	2			53	1ST dive of 6 in A2
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	11:10:00	3	SA		0	2			27	2ND dive of 6 in A2
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	11:10:00	3	SA		0	2			89	3RD dive of 6 in A2
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	11:10:00	3	SA		0	2			58	4TH dive of 6 in A2
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	11:10:00	3	SA		0	2			65	5TH dive of 6 in A2
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	11:10:00	3	SA		0	2			82	6TH dive of 6 in A2
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	11:15:00	3	GU		0	2				Not relocated after dive
07/09/2009	Pen Dal-	JM GT	10.00	17.00	Dives	11:22:00	3	SA		0	1			62	

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	11:25:00	2	RA	4	F	1				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	11:25:00	2	RA	1	F	1				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	11:30:00	2	SA	2	C	2				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	11:30:00	2	SA	1	D	4				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	11:30:00	2	RA	1	D	3				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	11:30:00	2	RA	25	D	5				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	11:30:00	2	GU	1	C	2				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	11:30:00	2	SA	1	C	3				
07/09/2009	Pen Dal-	JM GT	10.00	17.00	Sea	11:30:00	2	RA	1	C	3				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	11:30:00	2	GU	2	C	2				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	11:30:00	2	AUK	6	B	5				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	11:30:00	2	AUK	15	B	5				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	11:30:00	2	GX	2	B	4				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	11:30:00	2	RA	1	B	4				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	11:30:00	2	SA	1	B	4				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	11:30:00	2	SA	1	E	2				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	11:30:00	2	NX	1	D	4				
07/09/2009	Pen Dal-	JM GT	10.00	17.00	Dives	11:32:00	4	SA		0	1			52	1ST dive of 3 in B1

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	11:32:00	4	SA		0	1			59	2ND dive of 3 in B1
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	11:32:00	4	SA		0	1			85	3RD dive of 3 in B1
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Flight	12:00:00	2	GX	1	D			South		
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Flight	12:00:00	2	GX	2	D			North		
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Flight	12:00:00	2	F.	2	D			North		
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Flight	12:00:00	2	MX	1	D			North		
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Flight	12:00:00	2	NX	1	D			North		
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Flight	12:00:00	2	CX	10	D			North		
07/09/2009	Pen Dal-	JM GT	10.00	17.00	Dives	12:18:00	4	SA		0	2			58	1ST dive of 2 in B2, Moved 50m South in

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.															
Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														the dive
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	12:18:00	4	SA		0	2			115	2ND dive of 2 in B2
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	12:30:00	3	GX	19	D	4				Plunge diving
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	12:30:00	3	GU	2	D	4				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	12:53:00	4	SA		0	1			112	1ST dive of 2 in B2, Moved 50m South in the dive
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	12:53:00	4	SA		0	1			119	2ND dive of 2 in B1
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	14:00:00	4	GX	79	B/C	4				Plunge diving
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Flight	14:00:00	4	MX	1	D			South		
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	14:15:00	4	GX	91	B/C	4				Plunge diving

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	14:15:00	4	SA		B	2				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	14:15:00	4	GU	2	C	3				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	14:15:00	4	KI	3	C	3				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	14:39:00	1	GU		0	3				Not relocated after dive
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Flight	15:00:00	4	MX	1	D			North		
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Flight	15:00:00	4	GX	2	D			North		
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	15:10:00	4	AUK	12	C	5				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	15:10:00	4	GX	5	B	4				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	15:35:00	1	MX		0	3				Surface feeding

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.															
Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	16:00:00	4	GX	1	C	2				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	16:00:00	4	SA	2	C	2				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Sea	16:00:00	4	GU	1	C	2				
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Flight	16:00:00	4	GX	2	D			North		
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Flight	16:00:00	4	F.	2	D			North		
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	16:05:00	1	SA		0	3			47	1ST dive of 2 in B3
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	16:05:00	1	SA		0	3			180	2ND dive of 2 in B3
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	16:18:00	1	SA		0	1			56	1ST dive of 7 in B1, drifted 80m SW during dive
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	16:18:00	1	SA		0	1			62	2ND dive of 7 in B1

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	16:18:00	1	SA		0	1			81	3RD dive of 7 in B1
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	16:18:00	1	SA		0	1			103	4TH dive of 7 in B1
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	16:18:00	1	SA		0	1			104	5TH dive of 7 in B1
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	16:18:00	1	SA		0	1			104	6TH dive of 7 in B1
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	16:18:00	1	SA		0	1			105	7TH dive of 7 in B1
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	16:35:00	1	SA		0	1			45	Same bird as 16:18 flew back up channel and recommenced diving, , 1ST dive of 7 in B1
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	16:35:00	1	SA		0	1			83	2ND dive of 7 in B1
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	16:35:00	1	SA		0	1			80	3RD dive of 7 in B1

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.															
Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	16:35:00	1	SA		0	1			81	4TH dive of 7 in B1
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	16:35:00	1	SA		0	1			79	5TH dive of 7 in B1
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	16:35:00	1	SA		0	1			54	6TH dive of 7 in B1
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Dives	16:35:00	1	SA		0	1			65	7TH dive of 7 in B1
07/09/2009	Pen Dal-adevyn	JM GT	10.00	17.00	Flight	16:40:00	4	RH	1	D			South		
08/09/2009	Point St John	JM GT	6.30	12.30	Sea	07:00:00	1	MX	1	E	3				
08/09/2009	Point St John	JM GT	6.30	12.30	Sea	07:00:00	1	MX	3	E	2				Flutter feeding
08/09/2009	Point St John	JM GT	6.30	12.30	Sea	07:00:00	1	MX	1	E	1				
08/09/2009	Point St John	JM GT	6.30	12.30	Sea	07:00:00	1	RA	2	E	3				
08/09/2009	Point St John	JM GT	6.30	12.30	Flight	07:00:00	1	GX	8	0			South		
08/09/2009	Point St John	JM GT	6.30	12.30	Flight	07:00:00	1	GX	3	0			North		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
08/09/2009	Point St John	JM GT	6.30	12.30	Flight	07:00:00	1	F.	4	0			South		
08/09/2009	Point St John	JM GT	6.30	12.30	Flight	07:00:00	1	CX	17	0			South		
08/09/2009	Point St John	JM GT	6.30	12.30	Flight	07:00:00	1	T.	7	0			South		
08/09/2009	Point St John	JM GT	6.30	12.30	Flight	07:00:00	1	GG	1	0			South		
08/09/2009	Point St John	JM GT	6.30	12.30	Sea	08:00:00	2	RA	2	D	2				
08/09/2009	Point St John	JM GT	6.30	12.30	Sea	08:00:00	2	RA	3	F	2				
08/09/2009	Point St John	JM GT	6.30	12.30	Sea	08:00:00	2	RA	5	E	2				
08/09/2009	Point St John	JM GT	6.30	12.30	Sea	08:00:00	2	MX	1	E	2				
08/09/2009	Point St John	JM GT	6.30	12.30	Sea	08:00:00	2	MX	3	F	1-2				
08/09/2009	Point St John	JM GT	6.30	12.30	Sea	08:00:00	2	GX	1	E	4				
08/09/2009	Point St John	JM GT	6.30	12.30	Flight	08:00:00	2	F.	27	0			South		
08/09/2009	Point St John	JM GT	6.30	12.30	Flight	08:00:00	2	F.	1	0			North		
08/09/2009	Point St John	JM GT	6.30	12.30	Flight	08:00:00	2	MX	6	0			North		
08/09/2009	Point St John	JM GT	6.30	12.30	Flight	08:00:00	2	GX	15	0			South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
08/09/2009	Point St John	JM GT	6.30	12.30	Flight	08:00:00	2	GX	6	0			North		
08/09/2009	Point St John	JM GT	6.30	12.30	Flight	08:00:00	2	CX	3	0			South		
08/09/2009	Point St John	JM GT	6.30	12.30	Flight	08:00:00	2	RA	4	0			South		
08/09/2009	Point St John	JM GT	6.30	12.30	Flight	08:00:00	2	GV	1	0			South		
08/09/2009	Point St John	JM GT	6.30	12.30	Dives	08:08:00	2	SA		0	4			86	1ST dive of 2 in B4
08/09/2009	Point St John	JM GT	6.30	12.30	Dives	08:08:00	2	SA		0	4				2ND dive of 2 in B4, not relocated after dive
08/09/2009	Point St John	JM GT	6.30	12.30	Sea	09:00:00	2	MX	1	D	3				
08/09/2009	Point St John	JM GT	6.30	12.30	Sea	09:00:00	2	SA	1	E	2				
08/09/2009	Point St John	JM GT	6.30	12.30	Sea	09:00:00	2	MX	1	E	2				
08/09/2009	Point St John	JM GT	6.30	12.30	Sea	09:00:00	2	RA	8	E	3				
08/09/2009	Point St John	JM GT	6.30	12.30	Sea	09:00:00	2	RA	2	F	2				
08/09/2009	Point St John	JM GT	6.30	12.30	Flight	09:00:00	2	GG	1	0			South		
08/09/2009	Point St John	JM GT	6.30	12.30	Flight	09:00:00	2	F.	16	0			South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
08/09/2009	Point St John	JM GT	6.30	12.30	Flight	09:00:00	2	MX	5	0			North		
08/09/2009	Point St John	JM GT	6.30	12.30	Flight	09:00:00	2	GX	18	0			South		
08/09/2009	Point St John	JM GT	6.30	12.30	Flight	09:00:00	2	CX	20	0			South		
08/09/2009	Point St John	JM GT	6.30	12.30	Dives	09:06:00	3	SA		0	3				Not relocated after dive
08/09/2009	Point St John	JM GT	6.30	12.30	Sea	10:00:00	2	MX	1	E	1				
08/09/2009	Point St John	JM GT	6.30	12.30	Sea	10:00:00	2	MX	1	E	2				
08/09/2009	Point St John	JM GT	6.30	12.30	Sea	10:00:00	2	MX	1	E	3				
08/09/2009	Point St John	JM GT	6.30	12.30	Sea	10:00:00	2	RA	3	E	3				
08/09/2009	Point St John	JM GT	6.30	12.30	Sea	10:00:00	2	GX	32	F	2				Feeding flock
08/09/2009	Point St John	JM GT	6.30	12.30	Flight	10:00:00	2	F.	6	0			South		
08/09/2009	Point St John	JM GT	6.30	12.30	Flight	10:00:00	2	MX	3	0			North		
08/09/2009	Point St John	JM GT	6.30	12.30	Flight	10:00:00	2	GX	10	0			South		
08/09/2009	Point St John	JM GT	6.30	12.30	Flight	10:00:00	2	CX	16	0			South		
08/09/2009	Point St John	JM GT	6.30	12.30	Flight	10:00:00	2	RA	12	0			South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Dives	10:35:00	2	SA	1	0	1			34	Moved 5m
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Dives	10:37:00	2	SA	1	0	1			41	Moved 10m, lost in swell
08/09/2009	Point St John	JM GT	6.30	12.30	Dives	10:44:00	3	RA		0	2			10	Crash landed near feeding porpoises and started feeding, 1ST dive of 2 in A2
08/09/2009	Point St John	JM GT	6.30	12.30	Dives	10:44:00	3	RA		0	2				2ND dive of 2 in A2, not relocated after second dive
08/09/2009	Point St John	JM GT	6.30	12.30	Sea	11:00:00	2	GX	1	C	1				
08/09/2009	Point St John	JM GT	6.30	12.30	Sea	11:00:00	2	MX	1	D	1				One MX killed by GB in B2
08/09/2009	Point St John	JM GT	6.30	12.30	Sea	11:00:00	2	MX	1	C	2				
08/09/2009	Point St John	JM GT	6.30	12.30	Sea	11:00:00	2	SA	1	F	1				
08/09/2009	Point St John	JM GT	6.30	12.30	Sea	11:00:00	2	SA	1	E	1				
08/09/2009	Point St John	JM GT	6.30	12.30	Sea	11:00:00	2	SA	1	D	2				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
08/09/2009	Point St John	JM GT	6.30	12.30	Sea	11:00:00	2	SA	2	C	2				
08/09/2009	Point St John	JM GT	6.30	12.30	Flight	11:00:00	2	F.	4	0			South		
08/09/2009	Point St John	JM GT	6.30	12.30	Flight	11:00:00	2	F.	2	0			North		
08/09/2009	Point St John	JM GT	6.30	12.30	Flight	11:00:00	2	MX	1	0			South		
08/09/2009	Point St John	JM GT	6.30	12.30	Flight	11:00:00	2	GX	9	0			South		
08/09/2009	Point St John	JM GT	6.30	12.30	Flight	11:00:00	2	CX	12	0			South		
08/09/2009	Point St John	JM GT	6.30	12.30	Flight	11:00:00	2	RA	18	0			South		
08/09/2009	Point St John	JM GT	6.30	12.30	Dives	11:19:00	3	RA		0	2			84	
08/09/2009	Point St John	JM GT	6.30	12.30	Dives	11:36:00	3	RA		0	2			32	
08/09/2009	Point St John	JM GT	6.30	12.30	Dives	11:39:00	3	GU		0	2				Not relocated after dive
08/09/2009	Point St John	JM GT	6.30	12.30	Sea	12:00:00	2	GX	30+	C	1				Feeding in area with porpoise
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Dives	13:21:00	3	GX	1	0	1			2	Dived from 20m, surfaced in same
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Dives	13:24:00	3	GX	1	0	1			4	Dived from 20m,

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
															surfaced in same
08/09/2009	Point St John	JM	18.00	20.00	Sea	18:10:00	4	SA	10	B	1 OR 2				
08/09/2009	Point St John	JM	18.00	20.00	Sea	18:14:00	4	RA	1	B	1 OR 2				
08/09/2009	Point St John	JM GT	18.00	20.00	Dives	18:59:00	2	GU		0	2			56	1ST dive of 3 in A2
08/09/2009	Point St John	JM GT	18.00	20.00	Dives	18:59:00	2	GU		0	2			58	2ND dive of 3 in A2
08/09/2009	Point St John	JM GT	18.00	20.00	Dives	18:59:00	2	GU		0	2				3RD dive of 3 in A2, not relocated after dive
08/09/2009	Point St John	JM	18.00	20.00	Sea	19:15:00	1	RA	1	B	1 OR 2				
08/09/2009	Point St John	JM	18.00	20.00	Sea	19:15:00	1	GX	1	B	1 OR 2				
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	10.15	2	SA	1	0	1		South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	10.16	2	F.	1	0	1		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	10.16	2	GX	1	0	1		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	10.18	2	SA	1	0	1		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	10.30	2	GX	1	0	1		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	10.32	2	GX	1	0	1		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	10.34	2	GX	1	0	1		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	10.34	2	BG	1	0	1		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	10.34	2	F.	1	0	1		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	10.47	2	GX	2	0	1		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	10.52	2	F.	1	0	1		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	10.57	2	GX	1	0	1		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	11.00	2	AE	22	0	1		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	11.00	2	GX	1	0	1		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	11.11	2	GX	1	0	1		South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	11.17	2	F.	1	0	1		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	11.30	2	SA	1	0	1		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	11.30	2	GX	1	0	1		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	11.34	2	GB	1	0	1		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	11.36	2	GX	2	0	1		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	11.45	2	AE	33	0	1		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	11.46	2	MX	1	0	1		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	11.48	2	MX	5	0	1		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Sea	11.50	2	GX	2	D	1		-		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	12.08	2	GX	1	0	1		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	12.15	2	MX	2	0	3		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	12.16	2	MX	3	0	3		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	12.24	2	SA	1	0	2		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	12.33	3	GX	1	0	1		South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	12.37	3	AE	9	0	2		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	12.51	3	GX	1	0	1		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	12.55	3	SA	1	0	2		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	13.10	3	SA	1	0	3		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	13.16	3	GX	3	0	3		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	13.18	3	GX	1	0	1		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	13.22	3	GX	1	0	1		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	13.26	3	GX	1	0	1		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	13.31	3	F.	1	0	1		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	13.36	3	AE	2	0	1		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	13.39	3	GX	1	0	1		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	14.06	4	GX	1	0	1		South		
08/09/2009	Carmel Head	AC/KDS	10.15	14.15	Flight	14.11	4	GX	2	0	1		South		
09/09/2009	Point St John	JM	6.30	12.30	Sea	07:00:00	4	SA	1	B					

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
09/09/2009	Point St John	JM	6.30	12.30	Sea	07:00:00	4	GX	1	B					
09/09/2009	Point St John	JM	6.30	12.30	Flight	07:00:00	4	F.	80	0			South		Counted in hour
09/09/2009	Point St John	JM	6.30	12.30	Flight	07:00:00	4	MX	80	0			South		Counted in hour
09/09/2009	Point St John	JM	6.30	12.30	Flight	07:00:00	4	KI	500	0			South		Counted in hour
09/09/2009	Point St John	JM	6.30	12.30	Flight	07:00:00	4	AUK	60	0			South		Counted in hour
09/09/2009	Point St John	JM	6.30	12.30	Flight	07:00:00	4	GX	200	0			South		Counted in hour
09/09/2009	Point St John	JM	6.30	12.30	Dives	07:12:00	2	SA		0	1			45	
09/09/2009	Point St John	JM	6.30	12.30	Sea	07:30:00	1	RA	1	E	4				
09/09/2009	Point St John	JM	6.30	12.30	Dives	07:54:00	2	GU		0	1				Lost in dive
09/09/2009	Point St John	JM	6.30	12.30	Flight	08:00:00	1	F.	140	0			South		Counted in hour
09/09/2009	Point St John	JM	6.30	12.30	Flight	08:00:00	1	MX	70	0			South		Counted in hour
09/09/2009	Point St John	JM	6.30	12.30	Flight	08:00:00	1	KI	500	0			South		Counted in hour
09/09/2009	Point St John	JM	6.30	12.30	Flight	08:00:00	1	AUK	160	0			South		Counted in hour
09/09/2009	Point St John	JM	6.30	12.30	Flight	08:00:00	1	GX	500	0			South		Counted in hour

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
09/09/2009	Point St John	JM	6.30	12.30	Flight	08:00:00	1	AC	3	0			South		Counted in hour
09/09/2009	Point St John	JM	6.30	12.30	Sea	08:05:00	1	RA	2	D	2				
09/09/2009	Point St John	JM	6.30	12.30	Sea	08:05:00	1	GU	1	E	1				
09/09/2009	Point St John	JM	6.30	12.30	Sea	08:05:00	1	SA	8	E	2				Resting on rock
09/09/2009	Point St John	JM	6.30	12.30	Sea	08:30:00	2	GX	400	F	6				Large feeding flock
09/09/2009	Point St John	JM	6.30	12.30	Dives	08:49:00	2	SA		0	2			84	1ST dive of 11 in E2
09/09/2009	Point St John	JM	6.30	12.30	Dives	08:49:00	2	SA		0	2			72	2ND dive of 11 in E2
09/09/2009	Point St John	JM	6.30	12.30	Dives	08:49:00	2	SA		0	2			24	3RD dive of 11 in E2
09/09/2009	Point St John	JM	6.30	12.30	Dives	08:49:00	2	SA		0	2			78	4TH dive of 11 in E2
09/09/2009	Point St John	JM	6.30	12.30	Dives	08:49:00	2	SA		0	2			47	5TH dive of 11 in E2
09/09/2009	Point St John	JM	6.30	12.30	Dives	08:49:00	2	SA		0	2			72	6TH dive of 11 in E2, moved 100m S in dive
09/09/2009	Point St John	JM	6.30	12.30	Dives	08:49:00	2	SA		0	2			55	7TH dive of 11 in E2
09/09/2009	Point St John	JM	6.30	12.30	Dives	08:49:00	2	SA		0	2			36	8TH dive of 11 in E2, moved 50m N in dive

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
09/09/2009	Point St John	JM	6.30	12.30	Dives	08:49:00	2	SA		0	2			61	9TH dive of 11 in E2
09/09/2009	Point St John	JM	6.30	12.30	Dives	08:49:00	2	SA		0	2			62	10TH dive of 11 in E2, moved 50m N in dive
09/09/2009	Point St John	JM	6.30	12.30	Dives	08:49:00	2	SA		0	2			33	11TH dive of 11 in E2, moved 50m S in dive
09/09/2009	Point St John	JM	6.30	12.30	Flight	09:00:00	2	F.	50	0			South		Counted in hour
09/09/2009	Point St John	JM	6.30	12.30	Flight	09:00:00	2	MX	70	0			South		Counted in hour
09/09/2009	Point St John	JM	6.30	12.30	Flight	09:00:00	2	KI	300	0			South		Counted in hour
09/09/2009	Point St John	JM	6.30	12.30	Flight	09:00:00	2	AUK	320	0			South		Counted in hour
09/09/2009	Point St John	JM	6.30	12.30	Flight	09:00:00	2	GX	500	0			South		Counted in hour
09/09/2009	Point St John	JM	6.30	12.30	Flight	09:00:00	2	AC	1	0			South		Counted in hour
09/09/2009	Point St John	JM	6.30	12.30	Sea	09:10:00	2	RA	2	D	2				
09/09/2009	Point St John	JM	6.30	12.30	Sea	09:10:00	2	F.	10	C	3				
09/09/2009	Point St John	JM	6.30	12.30	Sea	09:10:00	2	SA	5	C	3				
09/09/2009	Point St John	JM	6.30	12.30	Sea	09:10:00	2	MX	5	E	6				Feeding

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
09/09/2009	Point St John	JM	6.30	12.30	Sea	09:10:00	2	KI	25	F	6				
09/09/2009	Point St John	JM	6.30	12.30	Flight	10:00:00	2	F.	20	0			South		Counted in hour
09/09/2009	Point St John	JM	6.30	12.30	Flight	10:00:00	2	MX	30	0			South		Counted in hour
09/09/2009	Point St John	JM	6.30	12.30	Flight	10:00:00	2	AUK	420	0			South		Counted in hour
09/09/2009	Point St John	JM	6.30	12.30	Flight	10:00:00	2	AC	5	0			South		Counted in hour
09/09/2009	Point St John	JM	6.30	12.30	Sea	10:05:00	2	MX	5	F	6				
09/09/2009	Point St John	JM	6.30	12.30	Sea	10:05:00	2	RA	2	E	1				
09/09/2009	Point St John	JM	6.30	12.30	Sea	10:05:00	2	GU	1	E	2				
09/09/2009	Point St John	JM	6.30	12.30	Dives	10:28:00	3	RA		0	1			36	Flew off after 1ST dive, crash landed and into fish shoal
09/09/2009	Point St John	JM	6.30	12.30	Sea	11:00:00	2	GX	1	B					
09/09/2009	Point St John	JM	6.30	12.30	Sea	11:00:00	2	F.	1	B					
09/09/2009	Point St John	JM	6.30	12.30	Flight	11:00:00	2	F.	20	0			South		Counted in hour
09/09/2009	Point St John	JM	6.30	12.30	Flight	11:00:00	2	MX	20	0			South		Counted in hour

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
09/09/2009	Point St John	JM	6.30	12.30	Flight	11:00:00	2	AUK	400	0			South		Counted in hour
28/10/2009	Point St John	LB	8.45	14.45	Flight	8.51	3	HG	1	C	1	2	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	8.56	4	HG	3	D	1	2	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	8.56	4	HG	1	D	1	2	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	8.56	4	HG	1	D	1	2	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	9.01	4	BH	7	C	2	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Sea	9.03	4	BH	50	E	2	1			
28/10/2009	Point St John	LB	8.45	14.45	Sea	9.03	4	KI	10	E	2	1			
28/10/2009	Point St John	LB	8.45	14.45	Sea	9.03	4	KI	2	E	2	1			
28/10/2009	Point St John	LB	8.45	14.45	Sea	9.03	4	HG	30	E	2	1			
28/10/2009	Point St John	LB	8.45	14.45	Sea	9.03	4	GB	1	E	2	1			
28/10/2009	Point St John	LB	8.45	14.45	Flight	9.10	4	GU	2	D	2	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	9.11	4	CA	1	C	1	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	9.12	4	GX	1	D	3	1	South		Went behind Ramsey

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
															Island
28/10/2009	Point St John	LB	8.45	14.45	Flight	9.16	4	GU	1	C	2	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	9.17	4	BH	6	B	1	1	North		
28/10/2009	Point St John	LB	8.45	14.45	Flight	9.22	4	HG	1	C	1	2	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	9.38	4	BH	2	B	2	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	9.45	4	CX	31	C	2	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	9.45	4	CX	1	C	2	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	9.58	4	RH	1	C	1	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	10.10	4	BH	2	D	1	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	10.20	4	CA	1	C	2	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	10.21	4	HG	2	C	1	2			
28/10/2009	Point St John	LB	8.45	14.45	Flight	10.36	4	BH	1	C	1	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	11.02	4	GB	1	B	1	2	North		
28/10/2009	Point St John	LB	8.45	14.45	Flight	11.02	4	HG	2	B	1	2	North		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
28/10/2009	Point St John	LB	8.45	14.45	Sea	11.11	4	GU	1	C	1				
28/10/2009	Point St John	LB	8.45	14.45	Flight	11.19	4	CA	2	D	1	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	11.29	4	KI	3	C	2	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	11.41	4	BH	9	C	1	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	11.41	4	BH	2	C	1	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Sea	11.42	4	HG	1	D	1	1			On sea drifting South
28/10/2009	Point St John	LB	8.45	14.45	Flight	11.50	4	RA	2	C	1	2	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	11.51	4	LB	1	D	2	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	11.56	4	CA	1	E	1	2	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	11.57	4	HG	2	D	1	2	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	12.05	4	HG	1	B	2	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	12.06	4	GU	2	C	1	1	North		
28/10/2009	Point St John	LB	8.45	14.45	Flight	12.07	4	RA	1	C	2	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	12.12	4	CA	1	D	1	2	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
28/10/2009	Point St John	LB	8.45	14.45	Flight	12.17	4	HG	2	C	1	2	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	12.17	4	HG	1	C	1	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	12.22	4	CX	3	D	2	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	12.24	4	SA	1	C	1	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	12.24	4	BH	12	D	1	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	12.24	4	BH	2	D	1	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	12.38	4	KI	5	D	1	1	North		
28/10/2009	Point St John	LB	8.45	14.45	Flight	12.49	1	BH	2	C	1	2	North		
28/10/2009	Point St John	LB	8.45	14.45	Flight	12.49	1	LB	1	B	1	2	North		
28/10/2009	Point St John	LB	8.45	14.45	Flight	12.49	1	HG	2	B	1	2	North		
28/10/2009	Point St John	LB	8.45	14.45	Flight	12.53	1	HG	2	B	1	2	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	12.58	1	GB	1	C	1	2	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	12.58	1	RA	1	C	1	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	13.16	1	SA	1	D	2	1	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
28/10/2009	Point St John	LB	8.45	14.45	Flight	13.22	1	OC	1	C	2	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	13.25	1	BH	30	D	2	1	Nouth		
28/10/2009	Point St John	LB	8.45	14.45	Flight	13.25	1	KI	6	D	2	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	13.28	1	MU	1	C	2	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	13.40	1	HG	2	B	1	2	Nouth		
28/10/2009	Point St John	LB	8.45	14.45	Flight	13.47	2	HG	1	C	1	2	Nouth		
28/10/2009	Point St John	LB	8.45	14.45	Flight	13.47	2	HG	1	C	1	2	Nouth		
28/10/2009	Point St John	LB	8.45	14.45	Flight	13.47	2	GB	1	C	1	2	Nouth		
28/10/2009	Point St John	LB	8.45	14.45	Flight	14.01	2	BH	10	B	2	1	Nouth		
28/10/2009	Point St John	LB	8.45	14.45	Flight	14.02	2	RA	5	C	1	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	14.09	2	BH	2	B	1	1	Nouth		
28/10/2009	Point St John	LB	8.45	14.45	Flight	14.15	2	HG	6	C	1	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	14.15	2	HG	1	C	1	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	14.15	2	LB	1	C	1	1	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
28/10/2009	Point St John	LB	8.45	14.45	Flight	14.28	2	GU	2	C	1	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	14.28	2	GU	1	C	1	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	14.35	2	CX	20	D	2	1	South		
28/10/2009	Point St John	LB	8.45	14.45	Flight	14.35	2	CX	2	D	2	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Dives	10:27:00	1	CA	1	0	1			67	
29/10/2009	Point St John	LB	9.02	15.02	Dives	10:27:00	1	CA	1	0	1			60	
29/10/2009	Point St John	LB	9.02	15.02	Dives	10:27:00	1	CA	1	0	1			71	
29/10/2009	Point St John	LB	9.02	15.02	Dives	10:32:00	1	GU	2	0	1			125	
29/10/2009	Point St John	LB	9.02	15.02	Dives	11:03:00	2	CA	2	0	1			54	
29/10/2009	Point St John	LB	9.02	15.02	Dives	11:03:00	2	CA	2	0	1			72	
29/10/2009	Point St John	LB	9.02	15.02	Dives	11:03:00	2	CA	2	0	1			49	
29/10/2009	Point St John	LB	9.02	15.02	Sea	9.06	3	GU	1	E	2				On sea preening/loafing
29/10/2009	Point St John	LB	9.02	15.02	Sea	9.09	3	KI	3	F	2	1			Flutter feeding

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
29/10/2009	Point St John	LB	9.02	15.02	Sea	9.13	3	BH	52	E	2	1			Feeding
29/10/2009	Point St John	LB	9.02	15.02	Sea	9.13	3	HG	2	E	2	1			Feeding
29/10/2009	Point St John	LB	9.02	15.02	Sea	9.14	3	GB	2	D	1	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	9.26	3	BH	4	C	2	1	North		
29/10/2009	Point St John	LB	9.02	15.02	Flight	9.31	3	ML	1	C	2	2	South		
29/10/2009	Point St John	LB	9.02	15.02	Sea	9.40	4	HG	1	F	1				Loafing
29/10/2009	Point St John	LB	9.02	15.02	Flight	9.46	4	BH	3	B	2	1	North		
29/10/2009	Point St John	LB	9.02	15.02	Flight	9.46	4	HG	1	B	2	1	North		
29/10/2009	Point St John	LB	9.02	15.02	Sea	10.25	4	CA	1	F	1				
29/10/2009	Point St John	LB	9.02	15.02	Sea	10.25	4	GU	1	F	1				
29/10/2009	Point St John	LB	9.02	15.02	Flight	10.39	4	LB	2	C	1	2	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	10.41	4	LB	1	C	1	2	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	10.42	4	HG	3	C	1	2	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	10.42	4	HG	2	C	1	2	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
29/10/2009	Point St John	LB	9.02	15.02	Flight	10.46	4	HG	1	B	2	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	10.49	4	LB	1	D	1	2	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	11.09	4	BH	1	E	1	2	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	11.09	4	HG	1	E	1	2	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	11.11	4	HG	2	B	1	2	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	11.12	4	BH	5	D	1	2	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	11.12	4	BH	1	D	1	2	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	11.13	4	LB	1	D	1	2	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	11.15	4	BH	2	C	1	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	11.15	4	HG	1	C	1	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	11.16	4	HG	1	C	1	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	11.17	4	HG	1	D	1	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	11.29	4	BH	3	E	1	2	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	11.30	4	LB	1	C	2	2	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
29/10/2009	Point St John	LB	9.02	15.02	Flight	11.36	4	CA	2	B	2	1	North		
29/10/2009	Point St John	LB	9.02	15.02	Flight	11.38	4	BH	8	C	1	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	11.38	4	BH	3	C	1	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	11.49	4	CA	1	D	1	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	11.49	4	GL	2	C	1	2	South		
29/10/2009	Point St John	LB	9.02	15.02	Sea	11.52	4	BH	16	D	2	1			Feeding
29/10/2009	Point St John	LB	9.02	15.02	Flight	11.54	4	BH	1	C	1	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	11.54	4	HG	1	C	2	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	11.54	4	HG	1	D	2	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	11.56	4	HG	1	D	1	2	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	11.56	4	HG	1	D	1	2	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	11.56	4	HG	1	D	1	2	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	11.59	4	LB	1	E	2	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	12.04	4	HG	4	D	2	1	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
29/10/2009	Point St John	LB	9.02	15.02	Flight	12.07	4	SA	1	D	2	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	12.07	4	BH	14	E	2	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	12.13	4	HG	2	C	1	2	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	12.16	4	HG	1	D	1	2			
29/10/2009	Point St John	LB	9.02	15.02	Flight	12.23	4	BH	31	E	2	1	North		
29/10/2009	Point St John	LB	9.02	15.02	Flight	12.23	4	HG	2	E	2	1	North		
29/10/2009	Point St John	LB	9.02	15.02	Flight	12.24	4	HG	1	C	1	1	North		
29/10/2009	Point St John	LB	9.02	15.02	Flight	12.30	4	BH	6	E	2	1	North		
29/10/2009	Point St John	LB	9.02	15.02	Flight	12.30	4	GU	1	E	2	1	North		
29/10/2009	Point St John	LB	9.02	15.02	Flight	12.32	4	OC	1	D	2	1	North		
29/10/2009	Point St John	LB	9.02	15.02	Flight	12.40	4	HG	1	C	2	2	North		
29/10/2009	Point St John	LB	9.02	15.02	Flight	12.40	4	HG	2	C	2	2	North		
29/10/2009	Point St John	LB	9.02	15.02	Flight	12.44	4	KI	7	E	2	1	North		
29/10/2009	Point St John	LB	9.02	15.02	Flight	12.44	4	KI	13	E	2	1	North		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
29/10/2009	Point St John	LB	9.02	15.02	Flight	12.49	4	BH	130	D	2	1	North		
29/10/2009	Point St John	LB	9.02	15.02	Flight	12.49	4	HG	3	D	2	1	North		
29/10/2009	Point St John	LB	9.02	15.02	Flight	13.01	4	BH	2	C	2	1	North		
29/10/2009	Point St John	LB	9.02	15.02	Flight	13.07	4	GB	1	C	1	2	North		
29/10/2009	Point St John	LB	9.02	15.02	Flight	13.07	4	HG	2	D	1	2	North		
29/10/2009	Point St John	LB	9.02	15.02	Flight	13.16	4	GU	3	B	2	1	North		
29/10/2009	Point St John	LB	9.02	15.02	Flight	13.24	1	RA	1	C	1	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	13.36	1	CA	1	D	2	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	13.36	1	CX	2	C	2	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	13.42	1	HG	4	C	1	2	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	13.42	1	HG	1	C	1	2	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	13.42	1	HG	1	C	1	2	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	13.44	1	LB	1	D	1	2	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	13.45	1	KI	7	C	2	1	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
29/10/2009	Point St John	LB	9.02	15.02	Flight	13.45	1	KI	2	C	2	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	13.49	1	CA	1	B	1	1	North		
29/10/2009	Point St John	LB	9.02	15.02	Flight	13.53	1	CA	1	C	1	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	13.57	1	BH	2	B	2	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	13.57	1	MU	1	B	2	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	13.58	1	LB	2	C	1	2	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	14.07	1	LB	1	C	1	2	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	14.09	1	GU	2	B	2	1	North		
29/10/2009	Point St John	LB	9.02	15.02	Flight	14.10	1	GB	1	C	1	2	North		
29/10/2009	Point St John	LB	9.02	15.02	Flight	14.22	1	CX	17	D	2	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	14.22	1	CX	3	D	2	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	14.28	1	CA	1	C	1	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	14.28	1	GU	4	C	1	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	14.32	1	GU	2	B	2	1	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
29/10/2009	Point St John	LB	9.02	15.02	Flight	14.37	1	BH	19	C	1	2	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	14.37	1	BH	2	C	1	2	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	14.41	1	CM	1	D	1	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	14.42	1	CA	1	C	2	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	14.51	1	E.	3	C	2	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	14.51	1	E.	1	C	2	1	South		
29/10/2009	Point St John	LB	9.02	15.02	Flight	14.53	1	BH	2	B	2	2	North		
29/10/2009	Point St John	LB	9.02	15.02	Flight	14.55	1	GU	2	C	2	1	South		
30/10/2009	Point St John	LB	8.29	14.30	Dives	09:40:00	1	GU	2	0	1			71	
30/10/2009	Point St John	LB	8.29	14.30	Dives	09:40:00	1	GU	2	0	1			54	
30/10/2009	Point St John	LB	8.29	14.30	Dives	10:02:00	1	CA	1	0	1			41	1ST of 5 dives recorded as bird drifted from E1 to C1
30/10/2009	Point St John	LB	8.29	14.30	Dives	10:02:00	1	CA	1	0	1			46	2ND of 5 dives recorded as bird drifted from E1 to C1

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
30/10/2009	Point St John	LB	8.29	14.30	Dives	10:02:00	1	CA	1	0	1			45	3RD of 5 dives recorded as bird drifted from E1 to C1
30/10/2009	Point St John	LB	8.29	14.30	Dives	10:02:00	1	CA	1	0	1			50	4TH of 5 dives recorded as bird drifted from E1 to C1
30/10/2009	Point St John	LB	8.29	14.30	Dives	10:02:00	1	CA	1	0	1			45	5TH of 5 dives recorded as bird drifted from E1 to C1
30/10/2009	Point St John	LB	8.29	14.30	Dives	12:14:00	2	CA	1	0	2			46	
30/10/2009	Point St John	LB	8.29	14.30	Dives	12:14:00	2	CA	1	0	2			57	
30/10/2009	Point St John	LB	8.29	14.30	Sea	8.30	3	BH	22	E	2	1			Feeding
30/10/2009	Point St John	LB	8.29	14.30	Flight	8.36	3	HG	1	C	1	1	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	8.40	3	LB	1	D	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	8.42	3	HG	2	B	2	2	North		
30/10/2009	Point St John	LB	8.29	14.30	Flight	8.47	3	CA	1	E	2	1	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	9.01	3	BH	2	B	2	1	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
30/10/2009	Point St John	LB	8.29	14.30	Flight	9.13	3	GB	1	C	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	9.22	3	GU	2	E	1	1	South		Landed in C1
30/10/2009	Point St John	LB	8.29	14.30	Flight	9.36	3	LB	1	D	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	9.48	4	CX	6	E	2	1	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	9.57	4	GB	1	D	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	10.08	4	HG	1	E	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	10.08	4	HG	1	E	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	10.09	4	GU	1	D	1	1	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	10.11	4	HG	1	E	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	10.15	4	LB	1	E	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	10.18	4	CX	18	C	2	1	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	10.27	4	GB	1	D	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	10.27	4	GB	1	D	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	10.34	4	GB	3	C	1	2	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
30/10/2009	Point St John	LB	8.29	14.30	Flight	10.34	4	GB	2	C	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	10.36	4	OC	1	D	1	1	North		
30/10/2009	Point St John	LB	8.29	14.30	Flight	10.46	4	GB	2	E	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	10.49	4	BH	1	C	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	11.01	4	TE	1	C	1	2	North		
30/10/2009	Point St John	LB	8.29	14.30	Flight	11.04	4	L.	4	C	2	1	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	11.06	4	HG	1	E	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	11.09	4	BH	1	D	1	1	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	11.11	4	LB	1	E	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	11.19	4	HG	4	D	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	11.19	4	HG	1	D	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	11.25	4	LB	2	C	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	11.26	4	CA	1	D	1	1	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	11.31	4	BH	2	B	2	1	North		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
30/10/2009	Point St John	LB	8.29	14.30	Flight	11.37	4	CA	1	C	2	1	North		
30/10/2009	Point St John	LB	8.29	14.30	Flight	11.37	4	BH	1	B	2	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	11.42	4	GB	1	C	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	11.52	4	HG	1	D	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	11.52	4	LB	2	D	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	11.52	4	GB	1	D	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	11.53	4	LB	2	D	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	12.04	4	CX	22	D	2	1	South		Landed in D2
30/10/2009	Point St John	LB	8.29	14.30	Flight	12.20	4	CX	19	E	2	1	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	12.26	4	LB	1	D	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	12.26	4	LB	1	D	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	12.26	4	GB	1	D	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	12.26	4	HG	1	D	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Sea	12.32	4	BH	38	D	2	1	South		Feeding then flews

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
30/10/2009	Point St John	LB	8.29	14.30	Flight	12.38	4	GU	1	D	2	1	North		
30/10/2009	Point St John	LB	8.29	14.30	Flight	12.42	4	GB	3	C	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	12.42	4	GB	1	C	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	12.44	4	BH	1	C	1	1	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	12.45	4	GB	1	D	2	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	12.50	4	BH	11	C	2	1	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	12.50	4	GU	1	C	2	1	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	12.52	4	GU	1	B	1	1	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	12.53	4	CA	1	C	1	1	North		
30/10/2009	Point St John	LB	8.29	14.30	Flight	12.57	4	GU	1	C	1	1	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	13.01	4	CX	31	C	1	1	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	13.06	4	RH	1	C	2	1	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	13.11	4	HG	2	C	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	13.11	4	HG	1	C	1	2	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
30/10/2009	Point St John	LB	8.29	14.30	Flight	13.11	4	HG	2	C	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	13.16	4	LB	1	D	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	13.16	4	BH	5	C	2	1	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	13.19	4	CX	8	C	2	1	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	13.19	4	CX	1	C	2	1	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	13.31	4	CA	1	B	2	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	13.31	4	GU	2	C	1	1	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	13.33	4	GB	4	D	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	13.34	4	CA	1	C	2	1	North		
30/10/2009	Point St John	LB	8.29	14.30	Flight	13.35	4	GU	5	D	2	1	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	13.39	4	GU	2	B	2	1	North		
30/10/2009	Point St John	LB	8.29	14.30	Flight	13.49	4	HG	1	C	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	13.49	4	HG	2	C	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	13.50	4	BH	2	B	2	1	North		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
30/10/2009	Point St John	LB	8.29	14.30	Flight	13.50	4	KI	5	B	2	1	North		
30/10/2009	Point St John	LB	8.29	14.30	Flight	13.53	4	KI	2	C	2	1	North		
30/10/2009	Point St John	LB	8.29	14.30	Flight	13.56	4	GU	6	C	2	1	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	13.59	4	GU	2	D	1	1	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	14.12	4	BH	3	C	2	1	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	14.12	4	BH	1	C	2	1	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	14.24	1	OC	1	D	1	1	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	14.25	1	GB	2	C	1	2	South		
30/10/2009	Point St John	LB	8.29	14.30	Flight	14.26	1	LB	2	B	1	2	North		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Dives	10:14:00	1	CA	1	0	1			29	1ST of 5 dives recorded as bird drifted from D1 to A1
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Dives	10:14:00	1	CA	1	0	1			46	2ND of 5 dives recorded as bird drifted from D1 to A1
31/10/2009	Pen Dal-	LB	8.00	14.00	Dives	10:14:00	1	CA	1	0	1			46	3RD of 5 dives recorded as bird drifted

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														from D1 to A1
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Dives	10:14:00	1	CA	1	0	1			36	4TH of 5 dives recorded as bird drifted from D1 to A1
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Dives	10:14:00	1	CA	1	0	1			24	5TH of 5 dives recorded as bird drifted from D1 to A1
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Dives	10:22:00	1	GU	1	0	2			34	
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Dives	10:22:00	1	GU	1	0	2				Not relocated after second dive
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Dives	12:56:00	2	SA	1	0	1			52	1ST of 6 dives as bird drifted from B1 to D1
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Dives	12:56:00	2	SA	1	0	1			69	2ND of 6 dives as bird drifted from B1 to D1
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Dives	12:56:00	2	SA	1	0	1			62	3RD of 6 dives as bird drifted from B1 to D1
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Dives	12:56:00	2	SA	1	0	1			36	4TH of 6 dives as bird drifted from B1 to D1

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.															
Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Dives	12:56:00	2	SA	1	0	1			61	5TH of 6 dives as bird drifted from B1 to D1
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Dives	12:56:00	2	SA	1	0	1			60	6TH of 6 dives as bird drifted from B1 to D1
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Dives	13:22:00	2	GU	1	0	1			45	1ST of 3 dives recorded as bird moved from D1 to B1
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Dives	13:22:00	2	GU	1	0	1			83	2ND of 3 dives recorded as bird moved from D1 to B1
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Dives	13:22:00	2	GU	1	0	1				3RD of 3 dives recorded as bird moved from D1 to B1, not relocated after diving
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	8.02	2	BH	6	C	2	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	8.07	2	GB	2	D	1	2	South		
31/10/2009	Pen Dal-	LB	8.00	14.00	Flight	8.08	2	HG	1	B	1	2	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	8.08	2	CA	1	C	2	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	8.16	2	RH	1	D	2	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	8.16	2	GU	4	C	2	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	8.16	2	GU	2	C	2	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Sea	8.17	2	GU	1	C	1				Drifting South
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	8.21	2	LB	1	B	1	2	North		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	8.21	2	BH	2	D	1	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	8.21	2	CX	2	C	2	1	South		
31/10/2009	Pen Dal-	LB	8.00	14.00	Flight	8.21	2	OC	1	E	1	1	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.															
Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	8.22	2	BH	11	D	2	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	8.22	2	BH	1	C	1	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	8.23	2	HG	2	C	1	2	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	8.24	2	GU	3	C	2	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	8.25	2	MU	1	B	1	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	8.26	2	MA	2	C	1	2	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	8.32	2	CA	1	D	2	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	8.39	2	ND	1	B	2	1	South		
31/10/2009	Pen Dal-	LB	8.00	14.00	Flight	8.40	2	KI	3	D	2	1	North		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	8.40	2	BH	7	D	2	1	North		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	8.41	2	GU	1	C	2	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	8.42	2	RA	1	C	1	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	8.43	2	T.	17	E	2	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	8.51	3	CA	2	C	1	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	8.53	3	HG	4	C	1	2	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	9.09	3	HG	2	D	1	2	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	9.14	3	KI	2	B	2	1	North		
31/10/2009	Pen Dal-	LB	8.00	14.00	Flight	9.29	3	T.	46	D	1	1	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	9.35	3	HG	3	E	1	2	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	9.35	3	HG	2	E	1	2	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	9.41	3	RH	1	C	1	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	9.46	3	HG	1	D	1	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	9.50	3	CA	1	B	1	1	North		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	9.51	3	GB	1	B	2	2	North		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	9.52	3	BH	2	C	2	1	North		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	9.53	3	GB	1	B	1	2	North		
31/10/2009	Pen Dal-	LB	8.00	14.00	Flight	9.53	3	HG	1	C	2	1	North		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	10.03	3	BH	4	B	2	1	North		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	10.05	3	CA	1	D	2	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	10.13	3	BH	1	D	1	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	10.20	4	HG	1	D	1	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	10.20	4	LB	1	D	1	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	10.27	4	HG	1	D	1	2	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	10.28	4	HG	1	C	1	2	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Sea	10.31	4	BH	1	E	2				Loafing
31/10/2009	Pen Dal-	LB	8.00	14.00	Sea	10.33	4	BH	21	F	2				Feeding

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Sea	10.33	4	HG	2	F	2				Feeding
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Sea	10.33	4	GU	1	F	2				Feeding
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	10.40	4	HG	1	D	1	2	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	10.50	4	BH	5	D	1	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Sea	10.51	4	GU	3	D	2				Loafing, drifting South
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Sea	10.55	4	BH	15	E	2				Loafing, drifting South
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	10.55	4	BH	3	E	2	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Sea	10.59	4	BH	5	C	1				Loafing, drifting South, some of the same as BH in E2 at 10:55

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.															
Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	11.01	4	CA	1	B	2	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Sea	11.14	4	UU	190	A	2				Mixed gull flock, not possible to ID, feeding
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Sea	11.31	4	GB	1	D	2				
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Sea	11.31	4	GB	2	D	2		South		On sea, then flew South
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	11.40	4	BH	1	E	2	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	11.40	4	GB	1	E	2	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Sea	11.41	4	BH	1	C	1				Drifting South
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	11.43	4	BH	6	D	1	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Sea	11.44	4	BH	1	E	2				Drifting South

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Sea	11.57	4	BH	3	D	1				Drifting South
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	12.01	4	SA	1	C	1	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	12.06	4	CA	1	C	1	1	North		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Sea	12.11	4	MU	1	C	1				Drifting South
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	12.17	4	CX	10	C	1	2	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	12.17	4	CX	1	C	1	2	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	12.42	4	HG	1	C	2	2	North		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	12.49	4	GU	1	D	2	1	North		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	12.53	4	GU	1	E	2	1	North		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	13.09	4	HG	1	D	1	2	North		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	13.13	4	BH	6	C	1	2	North		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	13.13	4	HG	1	C	1	2	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	13.22	4	BH	2	C	2	1	North		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	13.28	4	GB	4	C	1	2	North		Following small fishing boat
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	13.29	4	T.	21	B	1	1	North		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	13.30	4	GB	1	C	1	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	13.31	4	SA	1	D	1	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	13.46	4	KI	6	C	2	1	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.															
Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	13.46	4	KI	2	C	2	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Sea	13.50	4	GU	1	C	1				Drifting South
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	13.57	4	BH	4	B	2	1	South		
31/10/2009	Pen Dal-adevyn	LB	8.00	14.00	Flight	13.57	4	BH	1	B	2	1	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	8.11	2	BH	7	C	2	1	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	8.15	2	GU	1	C	2	1	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	8.15	2	HG	1	C	1	2	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	8.19	2	SA	1	C	1	1	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	8.20	2	LB	1	D	1	1	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	8.26	2	HG	2	D	1	2	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	8.29	2	BH	5	D	1	1	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	8.32	2	RH	1	B	2	1	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	8.39	2	CA	1	D	2	1	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	8.48	2	CX	6	C	2	1	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	8.50	2	GU	1	C	1	1	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	8.51	2	GU	1	C	1	1	North		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	8.59	2	BH	2	B	2	2	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	9.11	2	GB	1	C	1	2	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	9.11	2	GB	1	C	1	2	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	9.46	3	GU	1	D	1	1	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	9.53	3	HG	3	C	1	2	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	9.53	3	HG	1	C	1	2	North		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	10.02	3	MU	1	D	1	1	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	10.27	3	T.	4	C	2	2	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	10.33	3	ND	1	C	2	2	North		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	10.59	4	KI	2	D	2	1	North		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	11.11	4	BH	2	B	1	2	North		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	11.16	4	BH	4	C	1	2	North		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	11.18	4	GB	1	B	2	2	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	11.26	4	CA	1	D	1	1	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	11.26	4	T.	2	B	2	1	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	11.26	4	HG	3	C	1	2	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	11.26	4	HG	1	C	1	2	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	11.26	4	HG	1	C	1	2	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	11.39	4	HG	3	C	1	2	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	11.47	4	GB	2	D	1	2	North		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	11.47	4	GB	1	D	1	2	North		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	11.48	4	BH	24	C	2	1	North		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	11.49	4	KI	3	C	2	1	North		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	11.53	4	KI	1	B	2	1	North		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	12.33	4	CX	3	B	1	1	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	12.43	4	MU	1	C	1	1	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	12.43	4	GU	1	C	1	1	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	12.45	4	CA	1	B	1	1	North		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Sea	12.46	4	CA	1	C	1				Drifting South

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	12.51	4	BH	3	D	1	2	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	12.51	4	HG	1	D	1	2	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	12.52	4	GB	4	C	1	2	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	12.52	4	GB	1	C	1	2	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	12.56	4	T.	5	D	2	1	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	13.09	4	BH	1	B	1	1	North		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	13.10	4	HG	2	C	1	2	North		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	13.10	4	GB	1	C	1	2	North		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	13.16	4	LB	1	D	1	2	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Sea	13.17	4	GU	2	C	2				Drifting South
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	13.34	4	BH	16	B	1	1	North		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	13.34	4	BH	3	B	1	1	North		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	13.37	4	BH	4	D	2	1	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Sea	13.38	4	BH	2	C	1				Drifting South
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	13.46	4	HG	2	D	1	2	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	13.48	4	BH	1	C	1	1	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	13.48	4	CA	2	C	2	1	South		
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	13.50	4	PE	1	C	1	2	Circling then inland		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
01/11/2009	Pen Dal-adevyn	LB	8.10	14.10	Flight	13.51	4	GU	1	B	2	1	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Dives	10:58:00	1	GU	1	0	2			37	1ST of 2 dives recorded as bird moved from F2 to C2
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Dives	10:58:00	1	GU	1	0	2			62	2ND of 2 dives recorded as bird moved from F2 to C2
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Dives	11:43:00	1	RA	1	0	1			27	1ST of 2 dives recorded as bird moved from C1 to B1
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Dives	11:43:00	1	RA	1	0	1			51	2ND of 2 dives recorded as bird moved from C1 to B1
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Dives	11:53:00	1	GU	1	0	1			38	1ST of 5 dives recorded as bird moved from D1 to B1
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Dives	11:53:00	1	GU	1	0	1			58	2ND of 5 dives recorded as bird moved from D1 to B1

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.															
Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Dives	11:53:00	1	GU	1	0	1			67	3RD of 5 dives recorded as bird moved from D1 to B1
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Dives	11:53:00	1	GU	1	0	1			60	4TH of 5 dives recorded as bird moved from D1 to B1
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Dives	11:53:00	1	GU	1	0	1			38	5TH of 5 dives recorded as bird moved from D1 to B1
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Dives	12:07:00	1	CA	1	0	1			46	1ST of 6 dives recorded as bird moved from C1 to B1
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Dives	12:07:00	1	CA	1	0	1			51	2ND of 6 dives recorded as bird moved from C1 to B1
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Dives	12:07:00	1	CA	1	0	1			22	3RD of 6 dives recorded as bird moved from C1 to B1
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Dives	12:07:00	1	CA	1	0	1			47	4TH of 6 dives recorded as bird moved from C1 to B1

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Dives	12:07:00	1	CA	1	0	1			39	5TH of 6 dives recorded as bird moved from C1 to B1
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Dives	12:07:00	1	CA	1	0	1			51	6TH of 6 dives recorded as bird moved from C1 to B1
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Dives	12:49:00	1	SA	1	0	2			39	1ST of 3 dives as bird moved from D2 to C2
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Dives	12:49:00	1	SA	1	0	2			51	2ND of 3 dives as bird moved from D2 to C2
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Dives	12:49:00	1	SA	1	0	2			47	3RD of 3 dives as bird moved from D2 to C2
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	8.04	2	BH	6	C	2	1	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	8.04	2	BH	2	C	2	1	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	8.11	2	GU	1	D	2	1	South		
02/11/2009	Pen Dal-	LB	8.02	14.02	Flight	8.11	2	CA	1	C	1	1	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Sea	8.16	2	BH	12	E	2	1			Feeding
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Sea	8.16	2	HG	6	E	2	1			Feeding
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	8.19	2	CX	2	B	2	1	North		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	8.24	2	RH	1	C	2	1	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	8.24	2	T.	2	D	1	1	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	8.24	2	SA	1	C	2	1	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	8.28	2	HG	3	D	1	2	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	8.28	2	HG	1	D	1	2	South		
02/11/2009	Pen Dal-	LB	8.02	14.02	Flight	8.28	2	BH	1	D	1	2	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	8.29	2	GU	2	C	1	1	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	8.33	2	BH	1	B	1	1	North		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Sea	8.36	2	RA	1	D	1				Drifting South
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	8.37	2	LB	1	C	1	2	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	8.39	2	BH	2	C	2	1	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	8.52	2	ND	1	D	2	1	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	8.53	2	CA	2	C	2	1	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	8.58	2	BH	9	B	1	1	North		
02/11/2009	Pen Dal-	LB	8.02	14.02	Flight	8.58	2	BH	2	B	1	1	North		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	9.16	2	HG	4	D	1	2	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	9.20	2	LB	1	B	1	2	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	9.21	2	GU	2	C	1	1	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	9.39	2	GU	1	D	2	1	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	9.49	3	GU	2	B	1	1	North		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Sea	9.50	3	GU	1	C	1				Drifting South
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	9.55	3	BH	2	C	2	1	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	9.57	3	BH	26	B	1	1	North		
02/11/2009	Pen Dal-	LB	8.02	14.02	Flight	10.03	3	BH	1	B	2	1	North		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	10.05	3	BH	7	C	2	2	North		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	10.09	3	HG	1	D	2	1	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	10.09	3	HG	1	C	1	1	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Sea	10.16	3	CA	1	A	2				
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Sea	10.19	3	GU	1	C	2				Drifting South
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Sea	10.22	3	GB	1	C	2				Drifting South
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Sea	10.22	3	GB	1	C	2				Drifting South
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	10.26	3	CA	1	D	2	1	North		
02/11/2009	Pen Dal-	LB	8.02	14.02	Flight	10.26	3	CA	2	C	1	2	North		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	10.33	3	T.	5	C	1	1	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	10.35	3	CX	2	D	2	1	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Sea	10.56	3	BH	22	F	2	1			Feeding
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Sea	10.56	3	GU	1	F	2				Feeding
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	11.03	3	E.	5	C	1	1	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	11.03	3	E.	1	C	1	1	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	11.14	3	CA	1	C	1	1	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	11.16	4	GU	1	B	1	1	North		
02/11/2009	Pen Dal-	LB	8.02	14.02	Flight	11.17	4	MU	1	C	1	1	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Sea	11.18	4	BH	1	B	1				Drifting South
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	11.22	4	BH	3	C	1	1	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	11.26	4	HG	1	C	1	1	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	11.26	4	MU	2	C	1	1	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Sea	11.39	4	BH	75	E	2				Feeding
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	11.48	4	MU	1	D	1	1	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	12.16	4	GB	2	C	1	2	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	12.19	4	LB	1	D	1	2	South		
02/11/2009	Pen Dal-	LB	8.02	14.02	Flight	12.28	4	GU	2	D	2	1	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	12.28	4	BH	1	B	1	1	North		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	12.39	4	BH	2	B	1	2	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	12.46	4	HG	4	C	1	2	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	12.46	4	HG	1	C	1	2	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	12.58	4	BH	6	B	2	1	North		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	13.11	4	HG	2	C	1	2	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	13.12	4	MU	1	C	1	1	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	13.12	4	BH	3	C	1	1	South		
02/11/2009	Pen Dal-	LB	8.02	14.02	Flight	13.12	4	BH	1	C	1	1	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	13.20	4	HG	1	D	1	2	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	13.21	4	GU	5	C	1	1	North		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	13.21	4	GU	2	C	1	1	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	13.28	4	BH	20	B	2	1	North		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	13.34	4	HG	1	C	1	2	South		
02/11/2009	Pen Dal-adevyn	LB	8.02	14.02	Flight	13.49	4	CX	13	D	2	1	South		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	10.40	2	KI	6	B	2	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Sea	10.42	2	RA	4	C	2	1			Landed in swell in B
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	10.50	3	RA	2	D	1	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	10.56	3	KI	17	C	2	1	West		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	10.57	3	GX	3	C	2	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	10.57	3	GX	2	C	2	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	11.19	3	SA	1	D	1	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	11.22	3	GX	1	C	2	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	11.27	3	TY	1	C	1	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	11.41	3	KI	2	C	1	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	11.41	3	KI	1	C	1	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	11.43	3	SA	3	D	1	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	11.45	3	HG	2	C	1	2	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	11.46	4	BH	1	C	1	2	East		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	11.48	4	GX	4	D	2	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	11.48	4	GX	2	D	2	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	11.50	4	SA	2	B	1	1	East		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	11.51	4	RA	11	C	1	1	West		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
03/11/2009	Carmel Head	LB	10.35	16.30	Sea	11.56	4	SA	1	C	1				
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	12.11	4	GX	1	C	2	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	12.15	4	GU	3	C	1	1	North East		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	12.20	4	HG	1	C	1	2	East		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	12.27	4	KI	2	0	2	1	East		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	12.31	4	RA	10	D	2	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	12.31	4	KI	3	C	2	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	12.36	4	GU	6	C	2	1	East		
03/11/2009	Carmel Head	LB	10.35	16.30	Sea	12.40	4	GU	7	C	2	1			Feeding?
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	12.50	4	GX	2	C	2	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	12.53	4	CX	11	C	1	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	12.53	4	CX	1	C	1	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	13.20	4	KI	40	C	2	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	13.28	4	RA	5	D	2	1	West		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	13.28	4	SA	1	C	1	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	13.39	4	RA	6	C	2	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	13.50	4	RH	1	D	2	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	13.55	4	CX	2	C	1	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	14.02	4	RA	11	B	2	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	14.11	4	SA	1	C	1	1	East		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	14.12	4	HG	2	C	1	2	East		
03/11/2009	Carmel Head	LB	10.35	16.30	Sea	14.12	4	RA	2	C	2	1	West		Landed in B
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	14.30	4	RA	5	B	2	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	14.42	4	SA	2	C	1	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	14.43	4	HG	1	C	1	2	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Sea	14.44	4	TY	1	C	2	1	West		Landed on sea
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	14.59	4	RA	14	C	2	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	15.09	4	GX	2	D	2	2	West		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	15.09	4	GX	1	D	2	2	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	15.09	4	GX	1	D	2	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	15.27	4	RA	4	C	1	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	15.35	4	KI	22	C	1	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	15.35	4	KI	4	C	1	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	15.50	4	RA	2	D	2	1	West		
03/11/2009	Carmel Head	LB	10.35	16.30	Flight	15.54	4	RA	5	C	2	1	West		
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	9.14	2	GX	3	C	2	1	West		
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	9.14	2	GX	1	C	2	1	West		
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	9.17	2	KI	16	C	2	1	West		
04/11/2009	Carmel Head	LB	9.05	15.05	Sea	9.24	2	KI	25	C	2	1			Feeding
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	9.24	2	RA	3	D	2	1	West		
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	9.37	2	RA	19	C	2	1	West		
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	9.50	2	GX	1	D	2	2	West		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	9.58	2	GX	2	C	2	1	West		
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	9.59	2	GX	1	C	2	1	West		
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	10.27	2	TY	2	C	1	1	West		
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	10.57	2	DN	2	D	1	1	West		
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	11.02	2	LU	1	C	2	1	East		
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	11.23	3	BG	1	C	2	1	West		
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	11.31	3	WG	18	D	2	1	West		
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	11.42	3	TY	1	C	1	1	West		
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	11.52	3	MX	1	B	1	1	West		
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	12.03	3	RH	1	C	1	1	West		
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	12.19	3	GX	6	C	2	1	West		
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	12.19	3	GX	2	C	2	1	West		
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	12.34	4	KI	8	C	1	1	West		
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	12.34	4	KI	2	C	1	1	West		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	12.34	4	CM	1	C	1	1	West		
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	12.49	4	GX	1	D	2	1	West		
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	12.51	4	GX	1	C	2	2	West		
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	12.54	4	RA	10	C	2	1	West		
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	12.55	4	HG	1	B	1	2	East		
04/11/2009	Carmel Head	LB	9.05	15.05	Sea	12.57	4	RA	5	D	2	1	West		Landed in C
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	13.12	4	GX	1	C	2	1	West		
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	13.13	4	RA	12	C	2	1	West		
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	13.29	4	SA	1	C	1	1	West		
04/11/2009	Carmel Head	LB	9.05	15.05	Sea	13.40	4	RA	6	D	2	1	West		Landed on sea
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	13.48	4	RA	2	C	2	1	West		
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	14.03	4	KI	11	C	2	1	West		
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	14.03	4	KI	2	C	2	1	West		
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	14.22	4	OC	1	C	1	1	West		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
04/11/2009	Carmel Head	LB	9.05	15.05	Flight	14.36	4	RA	5	D	2	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	9.55	2	KI	26	C	1	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	9.55	2	KI	5	C	1	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	10.20	2	CX	1	C	1	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	10.36	2	CX	2	D	2	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	10.37	2	GX	3	D	2	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	10.39	2	KI	12	D	1	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	10.39	2	KI	2	D	1	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	10.45	2	ND	1	D	2	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	10.48	2	GX	1	C	2	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	10.52	2	KI	4	D	2	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	10.53	2	RA	21	C	2	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	10.54	2	HG	1	C	1	2	East		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	11.09	2	CX	3	D	1	1	West		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	11.09	2	CX	1	D	1	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	11.18	2	SU	1	B	2	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	11.19	2	RA	10	C	2	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	11.22	2	GX	4	C	2	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	11.25	2	RA	2	D	1	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	11.28	2	GX	1	C	2	2	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Sea	11.29	2	KI	30	C	2	1			Surface feeding
05/11/2009	Carmel Head	LB	9.55	14.55	Sea	11.29	2	KI	5	C	2	1			Surface feeding
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	11.43	2	BV	1	C	1	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	11.44	2	KI	15	C	2	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	11.47	3	RA	2	D	2	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	12.10	3	CX	4	C	2	2	East		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	12.28	3	ND	1	B	1	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	12.42	3	T.	31	C	2	1	West		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	12.55	3	KI	6	C	1	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	12.56	3	RA	19	D	2	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	13.11	4	TY	1	C	2	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	13.20	4	GX	2	C	2	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	13.25	4	RA	4	C	2	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	13.28	4	GB	1	C	1	2	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	13.35	4	KI	25	C	1	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	13.35	4	KI	4	C	1	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	13.40	4	SA	1	C	1	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	13.51	4	GU	1	C	1	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	13.53	4	TY	1	C	1	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	14.15	4	ND	1	D	2	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	14.17	4	SA	1	C	1	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	14.25	4	RA	8	C	2	1	West		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	14.32	4	CX	16	D	2	1	West		
05/11/2009	Carmel Head	LB	9.55	14.55	Flight	14.32	4	CX	2	D	2	1	West		
23/11/2009	Carmel Head	PD	13.00	16.00	Dives	15:26:11	2	SA	1	0	4			52	
23/11/2009	Carmel Head	PD	13.00	16.00	Dives	15:31:28	2	SA	1	0	4			37	
23/11/2009	Carmel Head	PD	9.00	12.00	Sea	9.04	1	RM	2	B	2				
23/11/2009	Carmel Head	PD	9.00	12.00	Sea	9.11	1	SA	3	F	4				
23/11/2009	Carmel Head	PD	9.00	12.00	Sea	9.11	1	AUK	60	D	5				
23/11/2009	Carmel Head	PD	9.00	12.00	Flight	9.15	1	AUK	15		5	1			
23/11/2009	Carmel Head	PD	9.00	12.00	Flight	9.18	1	SA	1		5	1			
23/11/2009	Carmel Head	PD	9.00	12.00	Flight	9.40	1	AUK	14		5	1			
23/11/2009	Carmel Head	PD	9.00	12.00	Flight	9.41	1	SA	1		5	1			
23/11/2009	Carmel Head	PD	9.00	12.00	Flight	9.43	1	AUK	8		5	1			
23/11/2009	Carmel Head	PD	9.00	12.00	Flight	9.44	1	GX	2		5	2			
23/11/2009	Carmel Head	PD	9.00	12.00	Sea	9.45	1	AUK	60	C	5				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
23/11/2009	Carmel Head	PD	9.00	12.00	Sea	9.50	2	SA	3	F	4				
23/11/2009	Carmel Head	PD	9.00	12.00	Sea	9.58	2	CA	1	D	1				
23/11/2009	Carmel Head	PD	9.00	12.00	Sea	10.02	2	AUK	40	D	5				
23/11/2009	Carmel Head	PD	9.00	12.00	Sea	10.09	2	SA	2	F	4				
23/11/2009	Carmel Head	PD	9.00	12.00	Sea	10.14	2	AUK	6	0					
23/11/2009	Carmel Head	PD	9.00	12.00	Flight	10.16	2	SA	1		5	1			
23/11/2009	Carmel Head	PD	9.00	12.00	Flight	10.17	2	GX	1		5	3			
23/11/2009	Carmel Head	PD	9.00	12.00	Flight	10.18	2	AUK	11		5	1			
23/11/2009	Carmel Head	PD	9.00	12.00	Flight	10.19	2	AUK	6		5	1			
23/11/2009	Carmel Head	PD	9.00	12.00	Flight	10.20	2	AUK	7		5	1			
23/11/2009	Carmel Head	PD	9.00	12.00	Flight	10.41	2	GX	1		5	3			
23/11/2009	Carmel Head	PD	9.00	12.00	Flight	10.42	2	AUK	10		5	1			
23/11/2009	Carmel Head	PD	9.00	12.00	Sea	10.45	2	AUK	60	D	5				
23/11/2009	Carmel Head	PD	9.00	12.00	Sea	10.46	2	GX	1	E	6				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
23/11/2009	Carmel Head	PD	9.00	12.00	Sea	10.52	2	RM	2	B	1				
23/11/2009	Carmel Head	PD	9.00	12.00	Sea	11.01	2	SA	1	F	4				
23/11/2009	Carmel Head	PD	9.00	12.00	Sea	11.04	2	AUK	50	D	5				
23/11/2009	Carmel Head	PD	9.00	12.00	Sea	11.04	2	GU	1	D	2				
23/11/2009	Carmel Head	PD	9.00	12.00	Sea	11.13	2	AUK	3	C	5				
23/11/2009	Carmel Head	PD	9.00	12.00	Flight	11.15	2	AUK	8		5	1			
23/11/2009	Carmel Head	PD	9.00	12.00	Flight	11.17	2	AUK	13		5	2			
23/11/2009	Carmel Head	PD	9.00	12.00	Flight	11.18	2	SA	1		5	1			
23/11/2009	Carmel Head	PD	9.00	12.00	Flight	11.40	2	GX	2		5	1			
23/11/2009	Carmel Head	PD	9.00	12.00	Flight	11.43	2	AUK	13		5	1			
23/11/2009	Carmel Head	PD	9.00	12.00	Flight	11.43	2	SA	1		5	1			
23/11/2009	Carmel Head	PD	9.00	12.00	Sea	11.45	2	AUK	60	D	5				
23/11/2009	Carmel Head	PD	9.00	12.00	Sea	11.51	2	RH	1	E	3				
23/11/2009	Carmel Head	PD	9.00	12.00	Sea	11.51	2	AUK	6	C	4				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
23/11/2009	Carmel Head	PD	9.00	12.00	Sea	11.55	2	AUK	2	A	4				
23/11/2009	Carmel Head	PD	9.00	12.00	Sea	11.59	2	SA	1	F	4				
23/11/2009	Carmel Head	PD	13.00	16.00	Sea	13.02	2	SA	2	F	4				
23/11/2009	Carmel Head	PD	13.00	16.00	Sea	13.02	2	AUK	4	D	5				
23/11/2009	Carmel Head	PD	13.00	16.00	Sea	13.08	2	GX	1	D	5				
23/11/2009	Carmel Head	PD	13.00	16.00	Sea	13.11	2	RH	1	B	3				
23/11/2009	Carmel Head	PD	13.00	16.00	Sea	13.12	2	RM	2	F	2				
23/11/2009	Carmel Head	PD	13.00	16.00	Flight	13.15	2	AUK	3		5	1	West		
23/11/2009	Carmel Head	PD	13.00	16.00	Flight	13.17	2	AUK	6		5	1	West		
23/11/2009	Carmel Head	PD	13.00	16.00	Flight	13.20	2	AUK	13		5	1	West		
23/11/2009	Carmel Head	PD	13.00	16.00	Flight	13.41	2	AUK	4		5	1	West		
23/11/2009	Carmel Head	PD	13.00	16.00	Flight	13.44	2	AUK	14		5	1	West		
23/11/2009	Carmel Head	PD	13.00	16.00	Sea	13.46	2	AUK	60	D	5				
23/11/2009	Carmel Head	PD	13.00	16.00	Sea	13.47	2	CX	13	D	4				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
23/11/2009	Carmel Head	PD	13.00	16.00	Sea	13.49	2	SA	1	F	4				
23/11/2009	Carmel Head	PD	13.00	16.00	Sea	14.01	2	AUK	50	D	5				
23/11/2009	Carmel Head	PD	13.00	16.00	Sea	14.07	2	SA	1	F	4				
23/11/2009	Carmel Head	PD	13.00	16.00	Flight	14.16	2	AUK	8		5	1	West		
23/11/2009	Carmel Head	PD	13.00	16.00	Flight	14.16	2	GX	1		5	2	South West		
23/11/2009	Carmel Head	PD	13.00	16.00	Flight	14.18	2	AUK	7		5	1	West		
23/11/2009	Carmel Head	PD	13.00	16.00	Flight	14.19	2	GX	2		5	1	West		
23/11/2009	Carmel Head	PD	13.00	16.00	Flight	14.40	3	AUK	2		5	1	South West		
23/11/2009	Carmel Head	PD	13.00	16.00	Flight	14.43	3	GX	1		5	2	South West		
23/11/2009	Carmel Head	PD	13.00	16.00	Sea	14.45	3	AUK	50	D	5				
23/11/2009	Carmel Head	PD	13.00	16.00	Sea	14.48	3	SA	2	F	4				
23/11/2009	Carmel Head	PD	13.00	16.00	Sea	15.02	3	RA	2	B	3				
23/11/2009	Carmel Head	PD	13.00	16.00	Sea	15.02	3	SA	1	F	4				
23/11/2009	Carmel Head	PD	13.00	16.00	Sea	15.07	3	GU	1	F	2				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
23/11/2009	Carmel Head	PD	13.00	16.00	Sea	15.12	3	AUK	40	D	5				
23/11/2009	Carmel Head	PD	13.00	16.00	Flight	15.15	3	AUK	6		5	1	West		
23/11/2009	Carmel Head	PD	13.00	16.00	Flight	15.18	3	AUK	11		5	1	West		
23/11/2009	Carmel Head	PD	13.00	16.00	Flight	15.19	3	SA	1		5	1	South West		
23/11/2009	Carmel Head	PD	13.00	16.00	Flight	15.41	3	SA	1		4	1	West		
23/11/2009	Carmel Head	PD	13.00	16.00	Sea	15.46	3	RA	2	0					
23/11/2009	Carmel Head	PD	13.00	16.00	Sea	15.46	3	GX	1	0					
23/11/2009	Carmel Head	PD	13.00	16.00	Sea	15.47	3	AUK	40	D	5				
23/11/2009	Carmel Head	PD	13.00	16.00	Sea	15.49	3	SA	2	F	4				
23/11/2009	Carmel Head	PD	9.00	12.00	Dives	10.30.10	4	RA	1	0	1			40	
23/11/2009	Carmel Head	PD	9.00	12.00	Dives	10.36.23	4	SA	1	0	1			35	
23/11/2009	Carmel Head	PD	9.00	12.00	Dives	11.25.08	4	SA	1	0	2			45	
23/11/2009	Carmel Head	PD	9.00	12.00	Dives	11.26.42	4	SA	1	0	2			70	
23/11/2009	Carmel Head	PD	9.00	12.00	Dives	9.22.09	4	GU	1	0	1			35	

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
23/11/2009	Carmel Head	PD	9.00	12.00	Dives	9.23.33	4	GU	1	0	1			41	
23/11/2009	Carmel Head	PD	9.00	12.00	Dives	9.36.16	4	SA	1	0	4			48	
23/11/2009	Carmel Head	PD	9.00	12.00	Dives	9.38.50	4	SA	1	0	4			37	
30/11/2009	Carmel Head	PD	9.00	16.00	Dives	11:24:10	4	RA	1	0	3			45	
30/11/2009	Carmel Head	PD	9.00	16.00	Dives	13:26:27	1	GU	1	0	2			56	
30/11/2009	Carmel Head	PD	9.00	16.00	Dives	14:32:35	1	RA	1	0	3			52	
30/11/2009	Carmel Head	PD	9.00	16.00	Dives	14:36:12	1	CX	1	0	4			66	
30/11/2009	Carmel Head	PD	9.00	16.00	Dives	14:38:21	1	CX	1	0	4			40	
30/11/2009	Carmel Head	PD	9.00	16.00	Dives	15:21:45	2	CX	1	0	5			65	
30/11/2009	Carmel Head	PD	9.00	16.00	Dives	15:24:11	2	CX	1	0	5			41	
30/11/2009	Carmel Head	PD	9.00	12.00	Sea	9.05	3	RA	1	B	2				
30/11/2009	Carmel Head	PD	9.00	12.00	Sea	9.10	3	AUK	15	D	5				
30/11/2009	Carmel Head	PD	9.00	12.00	Flight	9.16	3	AUK	12		5	1	North East		
30/11/2009	Carmel Head	PD	9.00	12.00	Flight	9.18	3	AUK	8		5	1	North East		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
30/11/2009	Carmel Head	PD	9.00	12.00	Flight	9.41	3	AUK	5		5	1	North East		
30/11/2009	Carmel Head	PD	9.00	12.00	Flight	9.43	3	AUK	3		5	1	North East		
30/11/2009	Carmel Head	PD	9.00	12.00	Flight	9.44	3	SA	1		5	2	North East		
30/11/2009	Carmel Head	PD	9.00	12.00	Sea	9.55	3	AUK	18	D	5				
30/11/2009	Carmel Head	PD	9.00	12.00	Sea	9.57	3	RA	1	B	2				
30/11/2009	Carmel Head	PD	9.00	12.00	Sea	10.02	4	AUK	25	D	5				
30/11/2009	Carmel Head	PD	9.00	12.00	Sea	10.07	4	SA	1	D	4				
30/11/2009	Carmel Head	PD	9.00	12.00	Flight	10.16	4	AUK	10		5	1	North East		
30/11/2009	Carmel Head	PD	9.00	12.00	Flight	10.18	4	AUK	5		5	1	North East		
30/11/2009	Carmel Head	PD	9.00	12.00	Flight	10.41	4	AUK	12		5	1	North East		
30/11/2009	Carmel Head	PD	9.00	12.00	Sea	10.46	4	RA	1	B	3				
30/11/2009	Carmel Head	PD	9.00	12.00	Sea	10.55	4	AUK	15	D	5				
30/11/2009	Carmel Head	PD	9.00	12.00	Sea	11.01	4	AUK	35	D	5				
30/11/2009	Carmel Head	PD	9.00	12.00	Sea	11.03	4	GU	1	B	3				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
30/11/2009	Carmel Head	PD	9.00	12.00	Sea	11.05	4	RA	1	C	3				
30/11/2009	Carmel Head	PD	9.00	12.00	Sea	11.14	4	SA	1	F	4				
30/11/2009	Carmel Head	PD	9.00	12.00	Flight	11.15	4	AUK	12		5	1	North East		
30/11/2009	Carmel Head	PD	9.00	12.00	Flight	11.18	4	AUK	4		5	1	North East		
30/11/2009	Carmel Head	PD	9.00	12.00	Flight	11.41	4	RH	1		5	3	West		
30/11/2009	Carmel Head	PD	9.00	12.00	Flight	11.41	4	AUK	11		5	1	North East		
30/11/2009	Carmel Head	PD	9.00	12.00	Flight	11.43	4	AUK	2		5	1	North East		
30/11/2009	Carmel Head	PD	9.00	12.00	Sea	11.46	4	AUK	16	D	5				
30/11/2009	Carmel Head	PD	9.00	12.00	Sea	11.48	4	AUK	4	D	3				
30/11/2009	Carmel Head	PD	9.00	12.00	Sea	11.55	4	SA	1	F	4				
30/11/2009	Carmel Head	PD	13.00	16.00	Sea	13.01	4	GU	1	B	4				
30/11/2009	Carmel Head	PD	13.00	16.00	Sea	13.03	4	SA	1	E	3				
30/11/2009	Carmel Head	PD	13.00	16.00	Sea	13.07	4	AUK	1	C	5				
30/11/2009	Carmel Head	PD	13.00	16.00	Sea	13.13	4	RA	1	B	2				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
30/11/2009	Carmel Head	PD	13.00	16.00	Sea	13.14	4	AUK	1	D	5				
30/11/2009	Carmel Head	PD	13.00	16.00	Flight	13.15	4	AUK	17		5	1	North East		
30/11/2009	Carmel Head	PD	13.00	16.00	Flight	13.15	4	SA	2		5	2	North East		
30/11/2009	Carmel Head	PD	13.00	16.00	Sea	13.45	4	RA	1	C	3				
30/11/2009	Carmel Head	PD	13.00	16.00	Flight	13.45	4	AUK	17		5	1	North East		
30/11/2009	Carmel Head	PD	13.00	16.00	Flight	13.48	4	AUK	6		5	1	North East		
30/11/2009	Carmel Head	PD	13.00	16.00	Sea	13.50	4	AUK	6	D	4				
30/11/2009	Carmel Head	PD	13.00	16.00	Sea	14.10	4	AUK	50	D	5				
30/11/2009	Carmel Head	PD	13.00	16.00	Sea	14.10	4	AUK	25	D	4				
30/11/2009	Carmel Head	PD	13.00	16.00	Flight	14.15	4	AUK	9		5	1	North East		
30/11/2009	Carmel Head	PD	13.00	16.00	Flight	14.18	4	AUK	2		4	1	North East		
30/11/2009	Carmel Head	PD	13.00	16.00	Flight	14.18	4	AUK	3		4	1	South West		
30/11/2009	Carmel Head	PD	13.00	16.00	Flight	14.45	4	ND	1		4	3	South West		
30/11/2009	Carmel Head	PD	13.00	16.00	Flight	14.45	4	AUK	4		5	1	North East		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
30/11/2009	Carmel Head	PD	13.00	16.00	Sea	14.46	1	AUK	8	D	5				
30/11/2009	Carmel Head	PD	13.00	16.00	Flight	14.48	1	AUK	3		5	1	North East		
30/11/2009	Carmel Head	PD	13.00	16.00	Sea	14.50	1	AUK	10	D	5				
30/11/2009	Carmel Head	PD	13.00	16.00	Sea	15.01	1	CX	10	F	4				
30/11/2009	Carmel Head	PD	13.00	16.00	Sea	15.09	1	AUK	40	D	5				
30/11/2009	Carmel Head	PD	13.00	16.00	Sea	15.10	1	AUK	11	D	4				
30/11/2009	Carmel Head	PD	13.00	16.00	Flight	15.15	1	AUK	7		5	1	North East		
30/11/2009	Carmel Head	PD	13.00	16.00	Flight	15.18	1	AUK	2		5	1	South West		
30/11/2009	Carmel Head	PD	13.00	16.00	Flight	15.45	1	AUK	6		5	1	North East		
30/11/2009	Carmel Head	PD	13.00	16.00	Flight	15.45	1	AUK	1		5	1	South West		
30/11/2009	Carmel Head	PD	13.00	16.00	Sea	15.47	1	AUK	10	D	5				
30/11/2009	Carmel Head	PD	13.00	16.00	Flight	15.48	1	AUK	3		5	1	South West		
01/12/2009	Carmel Head	PD	9.00	12.00	Sea	9.01	2	AUK	70	D	5				
01/12/2009	Carmel Head	PD	9.00	12.00	Sea	9.03	2	SA	4	D	5				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
01/12/2009	Carmel Head	PD	9.00	12.00	Sea	9.09	2	RH	1	A	2				
01/12/2009	Carmel Head	PD	9.00	12.00	Sea	9.14	2	GU	1	A	1				
01/12/2009	Carmel Head	PD	9.00	12.00	Flight	9.16	2	AUK	310		5	1+2	North East		
01/12/2009	Carmel Head	PD	9.00	12.00	Flight	9.18	2	AUK	270		5	1+2	North East		
01/12/2009	Carmel Head	PD	9.00	12.00	Flight	9.18	2	SA	4		5	2	North East		
01/12/2009	Carmel Head	PD	9.00	12.00	Sea	9.45	3	AUK	85	D	5				
01/12/2009	Carmel Head	PD	9.00	12.00	Flight	9.45	3	AUK	320		5	1+2	North East		
01/12/2009	Carmel Head	PD	9.00	12.00	Flight	9.45	3	AUK	11		5	1+2	South West		
01/12/2009	Carmel Head	PD	9.00	12.00	Flight	9.48	3	AUK	280		5	1+2	North East		
01/12/2009	Carmel Head	PD	9.00	12.00	Flight	9.48	3	AUK	8		5	1+2	South West		
01/12/2009	Carmel Head	PD	9.00	12.00	Flight	9.48	3	SA	2		5	2	North East		
01/12/2009	Carmel Head	PD	9.00	12.00	Sea	9.49	3	SA	3	D	5				
01/12/2009	Carmel Head	PD	9.00	12.00	Sea	9.52	3	SA	1	F	3				
01/12/2009	Carmel Head	PD	9.00	12.00	Sea	9.56	3	RH	1	B	3				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
01/12/2009	Carmel Head	PD	9.00	12.00	Sea	10.01	3	AUK	70	D	5				
01/12/2009	Carmel Head	PD	9.00	12.00	Sea	10.06	3	GU	1	A	2				
01/12/2009	Carmel Head	PD	9.00	12.00	Sea	10.13	3	SA	1	F	4				
01/12/2009	Carmel Head	PD	9.00	12.00	Flight	10.16	3	AUK	195		5	1+2	North East		
01/12/2009	Carmel Head	PD	9.00	12.00	Flight	10.16	3	AUK	3		5	1+2	South West		
01/12/2009	Carmel Head	PD	9.00	12.00	Flight	10.18	3	AUK	215		5	1+2	North East		
01/12/2009	Carmel Head	PD	9.00	12.00	Flight	10.18	3	SA	1		5	3	North East		
01/12/2009	Carmel Head	PD	9.00	12.00	Flight	10.45	3	AUK	250		5	1+2	North East		
01/12/2009	Carmel Head	PD	9.00	12.00	Flight	10.45	3	SA	2		5	1+2	North East		
01/12/2009	Carmel Head	PD	9.00	12.00	Sea	10.47	4	AUK	50	D	5				
01/12/2009	Carmel Head	PD	9.00	12.00	Flight	10.48	4	AUK	290		5	1+2	North East		
01/12/2009	Carmel Head	PD	9.00	12.00	Flight	10.48	4	AUK	6		5	1	South West		
01/12/2009	Carmel Head	PD	9.00	12.00	Sea	11.02	4	CX	4	B	5				
01/12/2009	Carmel Head	PD	9.00	12.00	Sea	11.07	4	SA	1	A	1				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
01/12/2009	Carmel Head	PD	9.00	12.00	Sea	11.09	4	AUK	30	D	5				
01/12/2009	Carmel Head	PD	9.00	12.00	Sea	11.13	4	SA	3	D	5				
01/12/2009	Carmel Head	PD	9.00	12.00	Flight	11.15	4	AUK	260		5	1+2	North East		
01/12/2009	Carmel Head	PD	9.00	12.00	Flight	11.16	4	AUK	360		5	1+2	North East		
01/12/2009	Carmel Head	PD	9.00	12.00	Flight	11.16	4	SA	2		5	1+2	North East		
01/12/2009	Carmel Head	PD	9.00	12.00	Flight	11.16	4	SA	3		5	2	North East		
01/12/2009	Carmel Head	PD	9.00	12.00	Flight	11.18	4	AUK	370		5	1+2	North East		
01/12/2009	Carmel Head	PD	9.00	12.00	Flight	11.18	4	CX	1		5	2	North East		
01/12/2009	Carmel Head	PD	9.00	12.00	Sea	11.45	4	AUK	60	D	5				
01/12/2009	Carmel Head	PD	9.00	12.00	Flight	11.45	4	AUK	215		5	1+2	North East		
01/12/2009	Carmel Head	PD	9.00	12.00	Sea	11.55	4	SA	1	D	5				
01/12/2009	Carmel Head	PD	13.00	15.15	Sea	13.03	4	AUK	50	D	5				
01/12/2009	Carmel Head	PD	13.00	15.15	Sea	13.07	4	SA	1	D	5				
01/12/2009	Carmel Head	PD	13.00	15.15	Flight	13.15	4	AUK	145		5	1+2	North East		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
01/12/2009	Carmel Head	PD	13.00	15.15	Flight	13.15	4	AUK	2		5	1+2	South West		
01/12/2009	Carmel Head	PD	13.00	15.15	Flight	13.15	4	SA	1		5	1+2	North East		
01/12/2009	Carmel Head	PD	13.00	15.15	Flight	13.18	4	AUK	215		5	1+2	North East		
01/12/2009	Carmel Head	PD	13.00	15.15	Flight	13.18	4	SA	3		5	2	North East		
01/12/2009	Carmel Head	PD	13.00	15.15	Sea	13.45	4	AUK	30	D	5				
01/12/2009	Carmel Head	PD	13.00	15.15	Flight	13.45	4	AUK	190		5	1+2	North East		
01/12/2009	Carmel Head	PD	13.00	15.15	Sea	13.55	4	RA	2	C	3				
01/12/2009	Carmel Head	PD	13.00	15.15	Sea	14.02	4	RA	1	A	1				
01/12/2009	Carmel Head	PD	13.00	15.15	Sea	14.05	4	AUK	60	D	5				
01/12/2009	Carmel Head	PD	13.00	15.15	Sea	14.06	4	SA	3	D	5				
01/12/2009	Carmel Head	PD	13.00	15.15	Sea	14.11	4	SA	1	F	4				
01/12/2009	Carmel Head	PD	13.00	15.15	Flight	14.15	4	AUK	65		5	1+2	North East		
01/12/2009	Carmel Head	PD	13.00	15.15	Flight	14.15	4	SA	4		5	1+2	North East		
01/12/2009	Carmel Head	PD	13.00	15.15	Flight	14.15	4	SA	1		3	2	South West		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
01/12/2009	Carmel Head	PD	13.00	15.15	Sea	14.45	4	AUK	25	D	5				
01/12/2009	Carmel Head	PD	13.00	15.15	Sea	14.45	4	GU	1	A	1				
01/12/2009	Carmel Head	PD	13.00	15.15	Flight	14.45	4	AUK	55		5	1+2	North East		
01/12/2009	Carmel Head	PD	13.00	15.15	Flight	14.45	4	SA	1		5	1	North East		
01/12/2009	Carmel Head	PD	13.00	15.15	Flight	14.48	4	AUK	40		5	1+2	North East		
01/12/2009	Carmel Head	PD	13.00	15.15	Flight	14.48	4	SA	2		5	2	North East		
01/12/2009	Carmel Head	PD	13.00	15.15	Flight	14.48	4	AUK	3		5	1+2	South West		
01/12/2009	Carmel Head	PD	13.00	15.15	Sea	14.55	4	ND	1	C	3				
01/12/2009	Carmel Head	PD	9.00	12.00	Dives	11.22.10	4	SA	1	0	1			21	
01/12/2009	Carmel Head	PD	9.00	12.00	Dives	11.24.20	4	SA	1	0	1			48	
01/12/2009	Carmel Head	PD	9.00	12.00	Dives	11.25.40	4	SA	1	0	1			57	
01/12/2009	Carmel Head	PD	9.00	12.00	Dives	11.26.15	4	SA	1	0	1			45	
01/12/2009	Carmel Head	PD	9.00	12.00	Dives	11.28.20	4	SA	1	0	1			36	
01/12/2009	Carmel Head	PD	9.00	12.00	Dives	11.29.25	4	SA	1	0	1			30	

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
08/12/2009	Carmel Head	PD	9.00	12.00	Sea	9.05	1	F.	6	B	2				
08/12/2009	Carmel Head	PD	9.00	12.00	Sea	9.10	1	SA	1	F	4				
08/12/2009	Carmel Head	PD	9.00	12.00	Flight	9.17	1	AUK	7		5	1	South West		
08/12/2009	Carmel Head	PD	9.00	12.00	Flight	9.42	1	F.	6		5	1	South West		
08/12/2009	Carmel Head	PD	9.00	12.00	Sea	9.45	1	AUK	40	C	4				
08/12/2009	Carmel Head	PD	9.00	12.00	Sea	10.05	2	AUK	2	D	4				
08/12/2009	Carmel Head	PD	9.00	12.00	Sea	10.10	2	AUK	35	C	4				
08/12/2009	Carmel Head	PD	9.00	12.00	Flight	10.15	2	AUK	40		4	1	South West		
08/12/2009	Carmel Head	PD	9.00	12.00	Flight	10.18	2	AUK	70		5	1	South West		
08/12/2009	Carmel Head	PD	9.00	12.00	Flight	10.20	2	SA	1		5	1	South West		
08/12/2009	Carmel Head	PD	9.00	12.00	Flight	10.42	2	AUK	210		5	1	South West		
08/12/2009	Carmel Head	PD	9.00	12.00	Flight	10.44	2	CA/SA	3		5	3	South West		
08/12/2009	Carmel Head	PD	9.00	12.00	Sea	10.48	2	AUK	40	C	5				
08/12/2009	Carmel Head	PD	9.00	12.00	Sea	10.50	2	AUK	30	D	5				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
08/12/2009	Carmel Head	PD	9.00	12.00	Sea	10.55	2	SA	1	C	4				
08/12/2009	Carmel Head	PD	9.00	12.00	Sea	10.58	2	AUK	25	E	4				
08/12/2009	Carmel Head	PD	9.00	12.00	Sea	11.05	2	AUK	40	D	5				
08/12/2009	Carmel Head	PD	9.00	12.00	Sea	11.11	2	RA	1	C	3				
08/12/2009	Carmel Head	PD	9.00	12.00	Flight	11.17	2	AUK	176		5	2	South West		
08/12/2009	Carmel Head	PD	9.00	12.00	Flight	11.42	2	AUK	126		5	1	South West		
08/12/2009	Carmel Head	PD	9.00	12.00	Flight	11.45	2	CA/SA	1		5	1	South West		
08/12/2009	Carmel Head	PD	9.00	12.00	Sea	11.45	2	AUK	45	D	5				
08/12/2009	Carmel Head	PD	9.00	12.00	Sea	11.50	2	AUK	2	E	3				
08/12/2009	Carmel Head	PD	9.00	12.00	Sea	11.52	2	AUK	8	D	3				
08/12/2009	Carmel Head	PD	13.00	16.00	Sea	13.05	2	AUK	25	D	5				
08/12/2009	Carmel Head	PD	13.00	16.00	Flight	13.17	2	AUK	80		5	1	South West		
08/12/2009	Carmel Head	PD	13.00	16.00	Flight	13.17	2	CA/SA	1		5	2	South West		
08/12/2009	Carmel Head	PD	13.00	16.00	Sea	13.45	2	AUK	60	D	5				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
08/12/2009	Carmel Head	PD	13.00	16.00	Sea	13.45	2	AUK	6	E	3				
08/12/2009	Carmel Head	PD	13.00	16.00	Sea	13.50	2	RA	1	C	3				
08/12/2009	Carmel Head	PD	13.00	16.00	Sea	14.05	2	AUK	30	D	5				
08/12/2009	Carmel Head	PD	13.00	16.00	Sea	14.10	2	AUK	35	E	4				
08/12/2009	Carmel Head	PD	13.00	16.00	Flight	14.17	2	AUK	115		5	1	South West		
08/12/2009	Carmel Head	PD	13.00	16.00	Sea	14.18	2	SA	2	D	5				
08/12/2009	Carmel Head	PD	13.00	16.00	Sea	14.45	2	AUK	40	D	5				
08/12/2009	Carmel Head	PD	13.00	16.00	Sea	14.46	2	RA	2	C	2				
08/12/2009	Carmel Head	PD	13.00	16.00	Sea	15.05	3	AUK	40	D	5				
08/12/2009	Carmel Head	PD	13.00	16.00	Sea	15.10	3	SA	1	D	4				
08/12/2009	Carmel Head	PD	13.00	16.00	Flight	15.18	3	AUK	16		5	1	South West		
08/12/2009	Carmel Head	PD	13.00	16.00	Sea	15.50	3	AUK	40	D	5				
08/12/2009	Carmel Head	PD	13.00	16.00	Sea	15.55	3	AUK	7	D	3				
08/12/2009	Carmel Head	PD	9.00	16.00	Dives	09.21.36	2	SA	1	F	3			62	

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
08/12/2009	Carmel Head	PD	9.00	16.00	Dives	09.23.15	2	SA	1	F	3			46	
08/12/2009	Carmel Head	PD	9.00	16.00	Dives	09.24.17	2	SA	1	F	3			47	
08/12/2009	Carmel Head	PD	9.00	16.00	Dives	09.26.48	2	SA	1	F	3			70	
08/12/2009	Carmel Head	PD	9.00	16.00	Dives	10.22.11	2	CA	1	B	1			40	
08/12/2009	Carmel Head	PD	9.00	16.00	Dives	10.23.52	2	CA	1	B	1			30	
08/12/2009	Carmel Head	PD	9.00	16.00	Dives	10.25.31	2	CA	1	B	1			42	
08/12/2009	Carmel Head	PD	9.00	16.00	Dives	11.28.36	2	RA	1	B	3			35	
08/12/2009	Carmel Head	PD	9.00	16.00	Dives	15.21.48	4	SA	1	E	4			50	
08/12/2009	Carmel Head	PD	9.00	16.00	Dives	15.22.16	4	SA	1	E	4			62	
08/12/2009	Carmel Head	PD	9.00	16.00	Dives	15.25.29	4	SA	1	E	4			53	
17/12/2009	Point St John	ST	8.30	11.35	Dives	10:37:00	4	GU	1	B	4			90	
17/12/2009	Point St John	ST	8.30	11.35	Dives	10:47:00	4	GU	1	D	3			61	Dive 1 of 2
17/12/2009	Point St John	ST	8.30	11.35	Dives	10:47:00	4	GU	1	D	3			61	Dive 2 of 2
17/12/2009	Point St John	ST	8.30	11.35	Dives	11:07:00	4	GU	1	D	2			20	

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
17/12/2009	Point St John	ST	8.30	11.35	Dives	11:11:00	4	RA	1	E	2			10	
17/12/2009	Point St John	ST	8.30	11.35	Dives	11:19:00	1	RA	3	B	2			43	Dive 1 of 3
17/12/2009	Point St John	ST	8.30	11.35	Dives	11:20:00	1	RA	3	B	2			43	Dive 2 of 3
17/12/2009	Point St John	ST	8.30	11.35	Dives	11:21:00	1	RA	3	B	2			43	Dive 3 of 3
17/12/2009	Point St John	ST	8.30	11.35	Dives	11:30:00	1	GU	2	B	3			17	Dive 1 of 4
17/12/2009	Point St John	ST	8.30	11.35	Dives	11:30:00	1	GU	2	B	3			17	Dive 2 of 4
17/12/2009	Point St John	ST	8.30	11.35	Dives	11:31:00	1	GU	2	B	3			18	Dive 3 of 4
17/12/2009	Point St John	ST	8.30	11.35	Dives	11:31:00	1	GU	2	B	3			18	Dive 4 of 4
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Dives	13:51:00	1	RA	1	C	1			20	
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Dives	14:18:00	2	RA	2	C	2			15	Dive 1 of 3
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Dives	14:18:00	2	RA	2	C	2			15	Dive 2 of 3
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Dives	14:18:00	2	RA	2	C	2			14	Dive 3 of 3

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Dives	15:52:00	2	RA	1	B	2			33	Dive 1 of 2
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Dives	15:52:00	2	RA	1	B	2			34	Dive 2 of 2
17/12/2009	Point St John	ST	8.30	11.35	Flight	9.01	2	BH	70		1	2	No direction		
17/12/2009	Point St John	ST	8.30	11.35	Flight	9.18	2	BH	7		2	1	No direction		
17/12/2009	Point St John	ST	8.30	11.35	Sea	9.25	2	KI	2	D	3				
17/12/2009	Point St John	ST	8.30	11.35	Sea	9.25	2	BH	3	E	1				
17/12/2009	Point St John	ST	8.30	11.35	Sea	9.32	2	BH	15	C	3				
17/12/2009	Point St John	ST	8.30	11.35	Sea	10.01	2	BH	3	E	2				
17/12/2009	Point St John	ST	8.30	11.35	Sea	10.09	2	BH	4	E	1				
17/12/2009	Point St John	ST	8.30	11.35	Sea	10.12	2	BH	24	E	1				
17/12/2009	Point St John	ST	8.30	11.35	Sea	10.12	2	CM	1	E	1				
17/12/2009	Point St John	ST	8.30	11.35	Sea	10.19	2	GU	1	E	2				
17/12/2009	Point St John	ST	8.30	11.35	Flight	10.24	2	L.	73		2	3	North East		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
17/12/2009	Point St John	ST	8.30	11.35	Flight	10.53	2	L.	8		2	?	North East		
17/12/2009	Point St John	ST	8.30	11.35	Sea	11.28	3	BH	2	C	1				
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Flight	13.04	4	BH	80		1	2			
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Flight	13.15	4	BH	56		1	2			
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Flight	13.23	4	L.	8		1	2	North East		
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Flight	13.26	4	L.	11		2	2	North East		
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Flight	13.30	4	BH	30		1	2	North		Feeding
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Flight	13.30	4	CM	1		1	2	North		Feeding
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Flight	13.34	4	BH	13		1	2	North		Feeding
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Flight	13.39	4	RH	1		4	2	North		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Flight	13.45	4	BH	22		1	2	No direction		Feeding
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Flight	13.50	4	MU	1		1	2	No direction		Feeding
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Sea	13.51	4	BH	4	C	1+2				
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Sea	14.02	4	BH	20	F	1				
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Sea	14.19	4	BH	7	C	2				
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Flight	14.30	4	BH	25		2	1	No direction		Feeding
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Flight	14.30	4	BH	6		1	1	No direction		Feeding
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Flight	14.30	4	BH	12		2	1	No direction		Feeding
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Flight	14.30	4	BH	10		2	1	No direction		Feeding

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.															
Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Flight	14.30	4	SA	1		4	2	West		
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Flight	14.30	4	GB	1		3	3	No direction		
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Sea	14.41	4	BH	10	C	2				
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Sea	14.41	4	BH	11	F	2				
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Flight	15.06	4	BH	25		1+2	1+2	No direction		Feeding
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Flight	15.09	4	GU	2		2	1	North		
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Flight	15.13	4	BH	75		4	2	No direction		Feeding
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Flight	15.30	4	BH	70		4	1	North East		
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Flight	15.30	4	RN	2		1	3	North		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Flight	15.30	4	BH	7		3	1	South East		
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Flight	15.35	4	BH	1		1	2	North East		
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Flight	15.42	4	GU	3		3	1	South East		
17/12/2009	Pen Dal-adevyn	ST	13.00	16.00	Sea	15.52	4	CM	1	A	2				
23/12/2009	Carmel Head	PD	9.00	12.00	Sea	9.06	1	RA	5	D	3				
23/12/2009	Carmel Head	PD	9.00	12.00	Flight	9.16	1	AUK	1		5	1	North East		
23/12/2009	Carmel Head	PD	9.00	12.00	Sea	9.40	1	AUK	4	B	4				
23/12/2009	Carmel Head	PD	9.00	12.00	Flight	9.45	1	GJ	1		6	1	North East/North West		
23/12/2009	Carmel Head	PD	9.00	12.00	Sea	9.46	2	AUK	4	B	4				
23/12/2009	Carmel Head	PD	9.00	12.00	Flight	9.50	2	AUK	1		6	1	North East		
23/12/2009	Carmel Head	PD	9.00	12.00	Sea	10.06	2	AUK	4	B	4				
23/12/2009	Carmel Head	PD	9.00	12.00	Flight	10.47	2	SA	1		5	1	West		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
23/12/2009	Carmel Head	PD	9.00	12.00	Flight	10.49	2	RH	1		5	3	South West		
23/12/2009	Carmel Head	PD	9.00	12.00	Flight	11.18	2	AUK	5		5	1	South West		
23/12/2009	Carmel Head	PD	9.00	12.00	Flight	11.42	2	RA	1		3	1	South West		
23/12/2009	Carmel Head	PD	9.00	12.00	Sea	11.47	2	SA	1	A	2				
23/12/2009	Carmel Head	PD	9.00	12.00	Sea	11.49	2	SA	1	C	2				
23/12/2009	Carmel Head	PD	13.00	16.00	Sea	13.16	2	RA	1	D	3				
23/12/2009	Carmel Head	PD	13.00	16.00	Sea	13.18	2	AUK	4	D	4				
23/12/2009	Carmel Head	PD	13.00	16.00	Flight	13.40	2	AUK	6		4	1	South West		
23/12/2009	Carmel Head	PD	13.00	16.00	Flight	13.42	2	GU	1		3	1	North East		
23/12/2009	Carmel Head	PD	13.00	16.00	Sea	13.45	2	RA	2	B	3				
23/12/2009	Carmel Head	PD	13.00	16.00	Sea	13.46	2	SA	1	A	1				
23/12/2009	Carmel Head	PD	13.00	16.00	Sea	13.46	2	AUK	5	E	4				
23/12/2009	Carmel Head	PD	13.00	16.00	Flight	14.15	2	AUK	45		5	1	North East		
23/12/2009	Carmel Head	PD	13.00	16.00	Flight	14.15	2	AUK	8		4	1	North East		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
23/12/2009	Carmel Head	PD	13.00	16.00	Sea	14.15	2	AUK	1	B	4				
23/12/2009	Carmel Head	PD	13.00	16.00	Flight	14.16	2	AUK	7		4	1	North East		
23/12/2009	Carmel Head	PD	13.00	16.00	Flight	14.16	2	SA	1		5	1	South East		
23/12/2009	Carmel Head	PD	13.00	16.00	Flight	14.17	2	AUK	15		5	1	North East		
23/12/2009	Carmel Head	PD	13.00	16.00	Flight	14.19	2	AUK	11		5	1	North East		
23/12/2009	Carmel Head	PD	13.00	16.00	Flight	14.19	2	SA	1		4	2	South West		
23/12/2009	Carmel Head	PD	13.00	16.00	Sea	14.19	2	RA	4	D	5				
23/12/2009	Carmel Head	PD	13.00	16.00	Sea	14.19	2	PT	1	A	2				
23/12/2009	Carmel Head	PD	13.00	16.00	Flight	14.40	3	SA	1		5	1	North East		
23/12/2009	Carmel Head	PD	13.00	16.00	Flight	14.44	3	SA	1		4	1	North East		
23/12/2009	Carmel Head	PD	13.00	16.00	Sea	14.46	3	SA	1	B	3				
23/12/2009	Carmel Head	PD	13.00	16.00	Sea	14.47	3	AUK	1	D	4				
23/12/2009	Carmel Head	PD	13.00	16.00	Sea	14.49	3	AUK	4	F	4				
23/12/2009	Carmel Head	PD	13.00	16.00	Flight	15.16	3	AUK	13		5	1	North East		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
23/12/2009	Carmel Head	PD	13.00	16.00	Sea	15.16	3	SA	1	C	4				
23/12/2009	Carmel Head	PD	13.00	16.00	Flight	15.17	3	SA	1		5	1	North East		
23/12/2009	Carmel Head	PD	13.00	16.00	Flight	15.18	3	AUK	2		5	1	North East		
23/12/2009	Carmel Head	PD	13.00	16.00	Sea	15.19	3	AUK	4	D	5				
23/12/2009	Carmel Head	PD	13.00	16.00	Flight	15.43	3	SA	1		4	1	South West		
23/12/2009	Carmel Head	PD	9.00	16.00	Dives	11.20.42	2	SA	1	B	2			82	
23/12/2009	Carmel Head	PD	9.00	16.00	Dives	13.21.15	3	RA	1	B	3			55	
23/12/2009	Carmel Head	PD	9.00	16.00	Dives	13.22.07	3	RA	1	B	3			52	
23/12/2009	Carmel Head	PD	9.00	16.00	Dives	13.24.56	3	RA	1	B	3			51	
23/12/2009	Carmel Head	PD	9.00	16.00	Dives	13.36.11	3	SA	1	B	1			65	
28/12/2009	Carmel Head	PD	9.00	12.00	Sea	9.04	3	AUK	6	D	5				
28/12/2009	Carmel Head	PD	9.00	12.00	Sea	9.11	3	AUK	3	E	4				
28/12/2009	Carmel Head	PD	9.00	12.00	Flight	9.16	3	AUK	15		5	1	North East		
28/12/2009	Carmel Head	PD	9.00	12.00	Flight	9.18	4	SA	2		5	1	North East		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
28/12/2009	Carmel Head	PD	9.00	12.00	Flight	9.42	4	CX	7		4	2	South East		
28/12/2009	Carmel Head	PD	9.00	12.00	Flight	9.43	4	AUK	4		5	1	North East		
28/12/2009	Carmel Head	PD	9.00	12.00	Sea	9.47	4	AUK	3	E	4				
28/12/2009	Carmel Head	PD	9.00	12.00	Sea	10.01	4	SA	1	F	2				
28/12/2009	Carmel Head	PD	9.00	12.00	Sea	10.07	4	AUK	3	E	4				
28/12/2009	Carmel Head	PD	9.00	12.00	Flight	10.16	4	RH	1		4	3	South West		
28/12/2009	Carmel Head	PD	9.00	12.00	Flight	10.17	4	AUK	17		5	1	North East		
28/12/2009	Carmel Head	PD	9.00	12.00	Flight	10.41	4	SA	1		5	1	South West		
28/12/2009	Carmel Head	PD	9.00	12.00	Flight	10.44	4	AUK	3		5	1	North East		
28/12/2009	Carmel Head	PD	9.00	12.00	Sea	10.46	4	SA	1	F	1				
28/12/2009	Carmel Head	PD	9.00	12.00	Sea	10.49	4	RA	2	B	2				
28/12/2009	Carmel Head	PD	9.00	12.00	Sea	11.02	4	SA	1	F	1				
28/12/2009	Carmel Head	PD	9.00	12.00	Sea	11.04	4	RH	1	C	4				
28/12/2009	Carmel Head	PD	9.00	12.00	Sea	11.08	4	AUK	3	D	5				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
28/12/2009	Carmel Head	PD	9.00	12.00	Sea	11.11	4	RA	2	C	3				
28/12/2009	Carmel Head	PD	9.00	12.00	Sea	11.11	4	AUK	7	E	4				
28/12/2009	Carmel Head	PD	13.00	16.00	Flight	13.40	1	AUK	14		5	1	North East		
28/12/2009	Carmel Head	PD	13.00	16.00	Flight	13.42	1	SA	2		5	1	North East		
28/12/2009	Carmel Head	PD	13.00	16.00	Flight	13.43	1	SA	1		4	1	North West		
28/12/2009	Carmel Head	PD	13.00	16.00	Flight	14.16	1	AUK	35		5	1	North East		
28/12/2009	Carmel Head	PD	13.00	16.00	Flight	14.17	1	AUK	11		5	1	North East		
28/12/2009	Carmel Head	PD	13.00	16.00	Flight	14.19	1	SA	1		5	1	North East		
28/12/2009	Carmel Head	PD	13.00	16.00	Flight	14.41	1	GU	1		3	1	North East		
28/12/2009	Carmel Head	PD	13.00	16.00	Flight	14.43	1	AUK	41		5	1	North East		
28/12/2009	Carmel Head	PD	13.00	16.00	Flight	14.44	1	SA	1		5	1	North East		
28/12/2009	Carmel Head	PD	13.00	16.00	Sea	14.45	1	AUK	10	D	5				
28/12/2009	Carmel Head	PD	13.00	16.00	Sea	14.46	1	SA	1	B	2				
28/12/2009	Carmel Head	PD	13.00	16.00	Sea	14.47	1	GG	1	F	4				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
28/12/2009	Carmel Head	PD	13.00	16.00	Flight	15.22	2	AUK	47		5	1	North East		
28/12/2009	Carmel Head	PD	9.00	16.00	Dives	13.22.16	1	RA	1	C	3			46	
28/12/2009	Carmel Head	PD	9.00	16.00	Dives	13.23.11	1	RA	1	C	3			57	
28/12/2009	Carmel Head	PD	9.00	16.00	Dives	13.25.39	1	RA	1	C	3			63	
28/12/2009	Carmel Head	PD	9.00	16.00	Dives	13.27.42	1	RA	1	C	3			39	
28/12/2009	Carmel Head	PD	9.00	16.00	Dives	14.23.50	2	SA	1	B	2			70	
28/12/2009	Carmel Head	PD	9.00	16.00	Dives	14.27.37	2	SA	1	B	2			45	
28/12/2009	Carmel Head	PD	9.00	16.00	Dives	14.39.32	2	SA	1	B	2			61	
30/12/2009	Pen Dal-adevyn	ST	10.30	13.30	Dives	12:22:00	1	RA	4	C	2			43	Dive 1 of 4
30/12/2009	Pen Dal-adevyn	ST	10.30	13.30	Dives	12:22:00	1	RA	1	C	2			40	Dive 1 of 2
30/12/2009	Pen Dal-adevyn	ST	10.30	13.30	Dives	12:23:00	1	RA	4	C	2			43	Dive 2 of 4
30/12/2009	Pen Dal-adevyn	ST	10.30	13.30	Dives	12:23:00	1	RA	1	C	2			40	Dive 2 of 2

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
30/12/2009	Pen Dal-adevyn	ST	10.30	13.30	Dives	12:24:00	1	RA	4	C	2			43	Dive 3 of 4
30/12/2009	Pen Dal-adevyn	ST	10.30	13.30	Dives	12:25:00	1	RA	4	C	2			43	Dive 4 of 4
30/12/2009	Point St John	ST	14.15	16.45	Dives	15:18:00	2	GU	2	E	3			32	Dive 1 of 2
30/12/2009	Point St John	ST	14.15	16.45	Dives	15:18:00	2	GU	2	E	3			32	Dive 2 of 2
30/12/2009	Point St John	ST	14.15	16.45	Dives	15:27:00	2	RA	1	A	2			23	Dive 1 of 4
30/12/2009	Point St John	ST	14.15	16.45	Dives	15:27:00	2	RA	1	A	2			23	Dive 2 of 4
30/12/2009	Point St John	ST	14.15	16.45	Dives	15:28:00	2	RA	1	A	2			24	Dive 3 of 4
30/12/2009	Point St John	ST	14.15	16.45	Dives	15:28:00	2	RA	1	A	2			24	Dive 4 of 4
30/12/2009	Point St John	ST	14.15	16.45	Dives	16:05:00	3	SA	1	B	2			41	
30/12/2009	Pen Dal-adevyn	ST	10.30	13.30	Flight	10.36	4	RA	2		2	1	North		
30/12/2009	Pen Dal-adevyn	ST	10.30	13.30	Flight	10.41	4	RH	1		2	2	North East		
30/12/2009	Pen Dal-	ST	10.30	13.30	Flight	10.50	4	BH	7		1+2	1+2	No direction		Feeding

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														
30/12/2009	Pen Dal-adevyn	ST	10.30	13.30	Flight	11.01	4	KI	5		4	2	West		
30/12/2009	Pen Dal-adevyn	ST	10.30	13.30	Flight	11.01	4	HG	3		2	2	North		
30/12/2009	Pen Dal-adevyn	ST	10.30	13.30	Flight	11.06	4	GB	2		2	1	North		
30/12/2009	Pen Dal-adevyn	ST	10.30	13.30	Sea	11.11	4	BH	3	C	3				
30/12/2009	Pen Dal-adevyn	ST	10.30	13.30	Sea	11.17	4	SA	1	E	3				
30/12/2009	Pen Dal-adevyn	ST	10.30	13.30	Flight	11.33	4	KI	2		2	2	North East		
30/12/2009	Pen Dal-adevyn	ST	10.30	13.30	Flight	11.42	4	BH	12		2+1	1	No direction		Feeding
30/12/2009	Pen Dal-adevyn	ST	10.30	13.30	Flight	11.50	4	RH	1		4	1	East		
30/12/2009	Pen Dal-	ST	10.30	13.30	Flight	12.10	4	BH	5		1	1	No direction		Feeding

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														
30/12/2009	Pen Dal-adevyn	ST	10.30	13.30	Flight	12.10	4	HG	2		1+2	1	No direction		Feeding
30/12/2009	Pen Dal-adevyn	ST	10.30	13.30	Flight	12.11	4	CM	2		1+2	1	No direction		Feeding
30/12/2009	Pen Dal-adevyn	ST	10.30	13.30	Flight	12.14	4	GU	1		2	1	North		
30/12/2009	Pen Dal-adevyn	ST	10.30	13.30	Flight	12.15	4	HG	10		4	2	South West		
30/12/2009	Pen Dal-adevyn	ST	10.30	13.30	Flight	12.41	4	GX	2		2	3	North		
30/12/2009	Pen Dal-adevyn	ST	10.30	13.30	Flight	12.45	4	BH	17		1	1	No direction		Feeding
30/12/2009	Pen Dal-adevyn	ST	10.30	13.30	Sea	13.01	4	RA	1	F	2				
30/12/2009	Pen Dal-adevyn	ST	10.30	13.30	Sea	13.08	4	GB	2	A	1				
30/12/2009	Pen Dal-	ST	10.30	13.30	Flight	13.09	4	E.	4		2		South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														
30/12/2009	Pen Dal-adevyn	ST	10.30	13.30	Flight	13.13	4	CM	1		2		North		
30/12/2009	Pen Dal-adevyn	ST	10.30	13.30	Flight	13.15	4	GX	1		4	3	South East		
30/12/2009	Pen Dal-adevyn	ST	10.30	13.30	Flight	13.15	4	BH	10		2	1	No direction		
30/12/2009	Pen Dal-adevyn	ST	10.30	13.30	Flight	13.17	4	GB	2		2	2	North		
30/12/2009	Pen Dal-adevyn	ST	10.30	13.30	Flight	13.19	4	GU	4		2	1	South		
30/12/2009	Point St John	ST	14.15	16.45	Flight	14.17	4	BH	7		2	2	North East		
30/12/2009	Point St John	ST	14.15	16.45	Flight	14.17	4	CM	2		2	2	North East		
30/12/2009	Point St John	ST	14.15	16.45	Flight	14.25	4	BH	14		2	2	North East		
30/12/2009	Point St John	ST	14.15	16.45	Flight	14.25	4	RA	2		2	1	North West		
30/12/2009	Point St John	ST	14.15	16.45	Flight	14.30	4	BH	4		1	1	North		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
30/12/2009	Point St John	ST	14.15	16.45	Flight	14.30	4	CM	1		2	2	North East		
30/12/2009	Point St John	ST	14.15	16.45	Flight	14.30	4	GB	2		1	3	North West		
30/12/2009	Point St John	ST	14.15	16.45	Flight	14.34	4	SA	1		3	1	North		
30/12/2009	Point St John	ST	14.15	16.45	Flight	14.36	4	GB	1		2	3	North East		
30/12/2009	Point St John	ST	14.15	16.45	Flight	14.41	4	BH	7		1	2	North East		
30/12/2009	Point St John	ST	14.15	16.45	Flight	14.43	4	RA	1		2	1	North East		
30/12/2009	Point St John	ST	14.15	16.45	Flight	14.45	4	AUK	6		4	1	North		
30/12/2009	Point St John	ST	14.15	16.45	Flight	14.50	4	BH	1		1	2	No direction		
30/12/2009	Point St John	ST	14.15	16.45	Flight	14.50	4	LB	2		2	3	West		
30/12/2009	Point St John	ST	14.15	16.45	Flight	14.59	4	RH	1		3	1	East		
30/12/2009	Point St John	ST	14.15	16.45	Sea	15.10	4	BH	9	F	1				
30/12/2009	Point St John	ST	14.15	16.45	Sea	15.10	4	CM	1	F	1				
30/12/2009	Point St John	ST	14.15	16.45	Flight	15.14	4	KI	1		2	2	North East		
30/12/2009	Point St John	ST	14.15	16.45	Flight	15.22	4	BH	3		1	1	East		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
30/12/2009	Point St John	ST	14.15	16.45	Flight	15.22	4	HG	3		2	2	North East		
30/12/2009	Point St John	ST	14.15	16.45	Flight	15.24	4	HG	6		3	3	North West		
30/12/2009	Point St John	ST	14.15	16.45	Flight	15.28	4	BH	16		2	2	North East		
30/12/2009	Point St John	ST	14.15	16.45	Flight	15.33	1	GB	2		1	2	East		
30/12/2009	Point St John	ST	14.15	16.45	Flight	15.37	1	CM	2		2	3	North		
30/12/2009	Point St John	ST	14.15	16.45	Flight	15.41	1	KI	2		2	2	North East		
30/12/2009	Point St John	ST	14.15	16.45	Flight	15.45	1	BH	8		1	2	North East		
30/12/2009	Point St John	ST	14.15	16.45	Flight	15.49	1	H.	1		2	3	West		
30/12/2009	Point St John	ST	14.15	16.45	Flight	15.50	1	BH	3		1	2	North East		
30/12/2009	Point St John	ST	14.15	16.45	Flight	15.50	1	HG	7		1	2	North East		
30/12/2009	Point St John	ST	14.15	16.45	Flight	15.50	1	BH	5		2	1	No direction		Feeding
30/12/2009	Point St John	ST	14.15	16.45	Flight	15.50	1	HG	3		2	3	West		
30/12/2009	Point St John	ST	14.15	16.45	Flight	15.50	1	RA	3		3	1	South East		
30/12/2009	Point St John	ST	14.15	16.45	Flight	15.59	1	SA	1		2				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
30/12/2009	Point St John	ST	14.15	16.45	Flight	16.04	1	HG	2		1	3	North West		
30/12/2009	Point St John	ST	14.15	16.45	Flight	16.07	1	HG	2		1	3	North West		
30/12/2009	Point St John	ST	14.15	16.45	Flight	16.11	1	BH	32		1+2	1 TO 3	North East		
30/12/2009	Point St John	ST	14.15	16.45	Flight	16.15	1	HG	4		2	2	North East		
30/12/2009	Point St John	ST	14.15	16.45	Flight	16.15	1	CM	1		2	3	South East		
30/12/2009	Point St John	ST	14.15	16.45	Flight	16.20	1	KI	2		1				
30/12/2009	Point St John	ST	14.15	16.45	Flight	16.27	1	BH	10		1	2	North East		
30/12/2009	Point St John	ST	14.15	16.45	Flight	16.28	1	BH	5		2	1+2	South East		
30/12/2009	Point St John	ST	14.15	16.45	Flight	16.40	2	RA	4		2	1	North		
30/12/2009	Point St John	ST	14.15	16.45	Flight	16.41	2	KI	1		2	2	North East		
30/12/2009	Point St John	ST	14.15	16.45	Flight	16.43	2	HG	12		2	2	North East + North		
31/12/2009	Point St John	ST	8.00	11.00	Dives	08:41:00	4	RA	4	E	2			42	Dive 1 of 5
31/12/2009	Point St John	ST	8.00	11.00	Dives	08:42:00	4	RA	4	E	2			42	Dive 2 of 5
31/12/2009	Point St John	ST	8.00	11.00	Dives	08:43:00	4	RA	4	E	2			42	Dive 3 of 5

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
31/12/2009	Point St John	ST	8.00	11.00	Dives	08:44:00	4	RA	4	E	2			42	Dive 4 of 5
31/12/2009	Point St John	ST	8.00	11.00	Dives	08:45:00	4	RA	4	E	2			42	Dive 5 of 5
31/12/2009	Point St John	ST	8.00	11.00	Dives	08:47:00	4	RH	1	D	3			50	Dive 1 of 6
31/12/2009	Point St John	ST	8.00	11.00	Dives	08:48:00	4	RH	1	D	3			50	Dive 2 of 6
31/12/2009	Point St John	ST	8.00	11.00	Dives	08:49:00	4	RH	1	D	3			50	Dive 3 of 6
31/12/2009	Point St John	ST	8.00	11.00	Dives	08:50:00	4	RH	1	D	3			50	Dive 4 of 6
31/12/2009	Point St John	ST	8.00	11.00	Dives	08:51:00	4	RH	1	D	3			50	Dive 5 of 6
31/12/2009	Point St John	ST	8.00	11.00	Dives	08:52:00	4	RH	1	D	3			50	Dive 6 of 6
31/12/2009	Point St John	ST	8.00	11.00	Dives	10:17:00	1	GU	1	E	2			42	Dive 1 of 4
31/12/2009	Point St John	ST	8.00	11.00	Dives	10:18:00	1	GU	1	E	2			42	Dive 2 of 4
31/12/2009	Point St John	ST	8.00	11.00	Dives	10:19:00	1	GU	1	E	2			42	Dive 3 of 4
31/12/2009	Point St John	ST	8.00	11.00	Dives	10:20:00	1	GU	1	E	2			43	Dive 4 of 4
31/12/2009	Pen Dal-adevyn	ST	12.00	15.00	Dives	14:51:00	2	GU	1	E	2			43	Dive 1 of 3

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
31/12/2009	Pen Dal-adevyn	ST	12.00	15.00	Dives	14:51:00	2	GU	1	E	2			43	Dive 2 of 3
31/12/2009	Pen Dal-adevyn	ST	12.00	15.00	Dives	14:52:00	2	GU	1	E	2			44	Dive 3 of 3
31/12/2009	Point St John	ST	8.00	11.00	Flight	8.25	2	BH	10		1	2	North East		
31/12/2009	Point St John	ST	8.00	11.00	Flight	8.25	2	GB	2		2	3	North		
31/12/2009	Point St John	ST	8.00	11.00	Flight	8.25	2	SA	2		1	1	North West		
31/12/2009	Point St John	ST	8.00	11.00	Flight	8.25	2	BH	7		2	1	No direction		Feeding
31/12/2009	Point St John	ST	8.00	11.00	Sea	9.21	2	BH	3	D	2				
31/12/2009	Point St John	ST	8.00	11.00	Flight	9.50	2	RA	2		2				
31/12/2009	Point St John	ST	8.00	11.00	Flight	9.50	2	AUK	10		4		North		
31/12/2009	Point St John	ST	8.00	11.00	Flight	9.50	2	BH	5		2	2	North East		
31/12/2009	Point St John	ST	8.00	11.00	Flight	9.50	2	GB	2		2	3	North East		
31/12/2009	Point St John	ST	8.00	11.00	Sea	10.02	3	GU	2	B	3				
31/12/2009	Point St John	ST	8.00	11.00	Flight	10.09	3	RH	2		4	3	North		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
31/12/2009	Point St John	ST	8.00	11.00	Flight	10.19	3	BH	12		2	1	No direction		Feeding
31/12/2009	Point St John	ST	8.00	11.00	Sea	10.31	3	RA	2	A	2				
31/12/2009	Point St John	ST	8.00	11.00	Flight	10.35	3	GU	3		3	1	North West		
31/12/2009	Point St John	ST	8.00	11.00	Flight	10.55	3	BH	2		1	3	North East		
31/12/2009	Point St John	ST	8.00	11.00	Flight	10.55	3	SA	2		3	1	South East		
31/12/2009	Pen Dal-adevyn	ST	12.00	15.00	Flight	12.45	4	BH	2		2	1	South East		
31/12/2009	Pen Dal-adevyn	ST	12.00	15.00	Flight	12.45	4	GB	4		4	3	North East		
31/12/2009	Pen Dal-adevyn	ST	12.00	15.00	Flight	12.45	4	BH	11		2	2	North		
31/12/2009	Pen Dal-adevyn	ST	12.00	15.00	Flight	13.04	4	BH	20		2	1	No direction		Feeding
31/12/2009	Pen Dal-adevyn	ST	12.00	15.00	Sea	13.15	4	CM	2	D	3				
31/12/2009	Pen Dal-adevyn	ST	12.00	15.00	Sea	13.15	4	BH	3	D	2				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
31/12/2009	Pen Dal-adevyn	ST	12.00	15.00	Flight	13.40	4	CM	1		2	2	North		
31/12/2009	Pen Dal-adevyn	ST	12.00	15.00	Flight	13.40	4	HG	4		2	2	North		With CM
31/12/2009	Pen Dal-adevyn	ST	12.00	15.00	Flight	14.40	4	CM	2		2	2	North East		
31/12/2009	Pen Dal-adevyn	ST	12.00	15.00	Flight	14.40	4	BH	4		2	3	North East		
31/12/2009	Pen Dal-adevyn	ST	12.00	15.00	Flight	14.40	4	BH	3		3	3	North East		
31/12/2009	Pen Dal-adevyn	ST	12.00	15.00	Flight	14.40	4	GB	2		1	3	South East		
13/01/2010	Point St John	ST	10.15	12.30	Dives	10:56:00		GU	1	E	2			25	
13/01/2010	Point St John	ST	10.15	12.30	Dives	10:56:00		GU	1	E	2			25	
13/01/2010	Point St John	ST	10.15	12.30	Dives	10:56:00		GU	1	E	2			25	
13/01/2010	Point St John	ST	10.15	12.30	Dives	10:56:00		GU	1	E	2			25	
13/01/2010	Point St John	ST	10.15	12.30	Dives	10:56:00		GU	1	E	2			25	

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
13/01/2010	Point St John	ST	10.15	12.30	Dives	10:56:00		GU	1	E	2			25	
13/01/2010	Point St John	ST	10.15	12.30	Dives	10:56:00		GU	1	E	2			26	
13/01/2010	Point St John	ST	10.15	12.30	Dives	10:56:00		GU	1	E	2			26	
13/01/2010	Pen Dal-adevyn	ST	14.00	16.15	Dives	14:46:00		SA	1	B	1			29	
13/01/2010	Pen Dal-adevyn	ST	14.00	16.15	Dives	14:46:00		SA	1	B	1			29	
13/01/2010	Pen Dal-adevyn	ST	14.00	16.15	Dives	14:46:00		SA	1	C	1			28	
13/01/2010	Point St John	ST	10.15	12.30	Sea	10.47	4	GB	1	E	2				
13/01/2010	Point St John	ST	10.15	12.30	Sea	10.47	4	BH	1	E	1				
13/01/2010	Point St John	ST	10.15	12.30	Sea	10.56	4	GU	3	E	2				
13/01/2010	Point St John	ST	10.15	12.30	Sea	11.02	4	BH	5	E	1				
13/01/2010	Point St John	ST	10.15	12.30	Flight	11.12	4	BH	20	E	1	3	South		
13/01/2010	Point St John	ST	10.15	12.30	Flight	11.12	4	HG	1	E	1	3	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
13/01/2010	Point St John	ST	10.15	12.30	Flight	11.12	4	CM	1	E	1	3	South		
13/01/2010	Point St John	ST	10.15	12.30	Flight	11.12	4	BH	2	B	3	2	South		
13/01/2010	Point St John	ST	10.15	12.30	Flight	11.12	4	BH	1	E	1	2	South		
13/01/2010	Point St John	ST	10.15	12.30	Sea	11.37	4	GU	1	B	2				
13/01/2010	Point St John	ST	10.15	12.30	Sea	11.54	4	BH	5	C	2				
13/01/2010	Point St John	ST	10.15	12.30	Flight	12.02	4	BH	10	E	1	3	South East		
13/01/2010	Point St John	ST	10.15	12.30	Flight	12.02	4	BH	7	E	1	3	North East		
13/01/2010	Point St John	ST	10.15	12.30	Flight	12.02	4	GU	1	E	1	1	East		
13/01/2010	Point St John	ST	10.15	12.30	Flight	12.02	4	BH	3	D	3	2	North		
13/01/2010	Point St John	ST	10.15	12.30	Flight	12.02	4	GB	1	E	1	3	South East		
13/01/2010	Pen Dal-adevyn	ST	14.00	16.15	Sea	14.57	4	RA	1	E	2				
13/01/2010	Pen Dal-adevyn	ST	14.00	16.15	Flight	15.02	1	SA	1	B	2	2	South East		
13/01/2010	Pen Dal-	ST	14.00	16.15	Flight	15.02	1	HG	3	B	2	3	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														
13/01/2010	Pen Dal-adevyn	ST	14.00	16.15	Flight	15.02	1	BH	6	C	2	2	South		
13/01/2010	Pen Dal-adevyn	ST	14.00	16.15	Flight	15.02	1	L.	1	C	1	2	South East		
13/01/2010	Pen Dal-adevyn	ST	14.00	16.15	Flight	16.02	1	HG	1	C	1	2	South West		
13/01/2010	Pen Dal-adevyn	ST	14.00	16.15	Flight	16.02	1	BH	3	D	2	1	South		
25/01/2010	Carmel Head	SL	10.15	13.15	Dives	11:28:00	1	RA	4	A	2			25	Dive 1 of 2
25/01/2010	Carmel Head	SL	10.15	13.15	Dives	11:30:00	1	RA	4	B	2			23	Dive 2 of 2
25/01/2010	Carmel Head	PK	10.15	13.15	Dives	12:18:00	1	RA	1	E	2			49	
25/01/2010	Carmel Head	PK	10.15	13.15	Dives	12:55:00	2	RA	1	E	1			41	Dive 1 of 3
25/01/2010	Carmel Head	PK	10.15	13.15	Dives	12:56:00	2	RA	1	E	1			33	Dive 2 of 3
25/01/2010	Carmel Head	PK	10.15	13.15	Dives	12:57:00	2	RA	1	E	1			32	Dive 3 of 3
25/01/2010	Carmel Head	SL	13.15	16.15	Dives	13:41:00	2	RA	1	C	1			22	Dive 1 of 2

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
25/01/2010	Carmel Head	SL	13.15	16.15	Dives	13:42:00	2	RA	1	C	1			32	Dive 2 of 2
25/01/2010	Carmel Head	SL	10.15	13.15	Sea	10.22	4	HG	1	C	4				
25/01/2010	Carmel Head	SL	10.15	13.15	Flight	10.32	4	HG	11		1	2	South		
25/01/2010	Carmel Head	PK	10.15	13.15	Flight	10.32	4	HG	11		1	2	South		
25/01/2010	Carmel Head	SL	10.15	13.15	Flight	10.57	1	HG	3		2	2	South		
25/01/2010	Carmel Head	SL	10.15	13.15	Flight	10.57	1	GB	1		3	2	North		
25/01/2010	Carmel Head	PK	10.15	13.15	Flight	10.57	1	HG	3		2	2	South		
25/01/2010	Carmel Head	SL	10.15	13.15	Sea	11.07	1	GB	1	B	2				
25/01/2010	Carmel Head	SL	10.15	13.15	Sea	11.07	1	HG	2	C	3				
25/01/2010	Carmel Head	SL	10.15	13.15	Sea	11.07	1	HG	1	B	3				
25/01/2010	Carmel Head	PK	10.15	13.15	Sea	11.07	1	HG	1	D	3				
25/01/2010	Carmel Head	PK	10.15	13.15	Flight	11.40	1	GU	21		4	1	South		
25/01/2010	Carmel Head	SL	10.15	13.15	Flight	11.41	1	GU	21		4	1	South		
25/01/2010	Carmel Head	SL	10.15	13.15	Sea	11.45	1	SA	1	A	2				Dived

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
25/01/2010	Carmel Head	SL	10.15	13.15	Sea	11.48	1	SA	1	B	2				
25/01/2010	Carmel Head	SL	10.15	13.15	Sea	11.54	2	HG	2	C	1				
25/01/2010	Carmel Head	PK	10.15	13.15	Sea	11.57	2	RA	2	D	2				
25/01/2010	Carmel Head	SL	10.15	13.15	Flight	12.00	2	HG	1		1	2	South		
25/01/2010	Carmel Head	SL	10.15	13.15	Sea	12.27	2	RA	1	C	1				Dived (19S)
25/01/2010	Carmel Head	PK	10.15	13.15	Flight	12.29	2	HG	5		2	2	East		
25/01/2010	Carmel Head	PK	10.15	13.15	Flight	12.46	2	RA	1		2	1	North		
25/01/2010	Carmel Head	SL	10.15	13.15	Flight	12.47	2	RA	1		3	1	South		
25/01/2010	Carmel Head	PK	10.15	13.15	Flight	12.49	2	SA	1		1	1	South		
25/01/2010	Carmel Head	PK	13.15	16.15	Flight	13.31	2	HG	3		4	2	South		
25/01/2010	Carmel Head	SL	13.15	16.15	Flight	13.34	2	HG	1		1	2	South		
25/01/2010	Carmel Head	SL	13.15	16.15	Flight	13.34	2	HG	1		1	2	South		
25/01/2010	Carmel Head	PK	13.15	16.15	Flight	13.46	2	HG	1		1	2	South		
25/01/2010	Carmel Head	PK	13.15	16.15	Flight	13.59	2	SA	1		1	1	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
25/01/2010	Carmel Head	SL	13.15	16.15	Sea	14.02	2	RA	1	C	1				Bathing
25/01/2010	Carmel Head	PK	13.15	16.15	Sea	14.04	2	RA	1	D	1				Dived (18S)
25/01/2010	Carmel Head	PK	13.15	16.15	Sea	14.07	2	RA	1	F	2				
25/01/2010	Carmel Head	PK	13.15	16.15	Sea	14.15	2	RA	1	E	2				
25/01/2010	Carmel Head	SL	13.15	16.15	Flight	14.15	2	RA	4		4	1	North		
25/01/2010	Carmel Head	SL	13.15	16.15	Flight	14.17	2	MA	2		2	2	North		
25/01/2010	Carmel Head	PK	13.15	16.15	Flight	14.18	2	MA	2		2	2	North		
25/01/2010	Carmel Head	PK	13.15	16.15	Flight	14.20	2	SA	1		4	1	North		
25/01/2010	Carmel Head	SL	13.15	16.15	Flight	14.44	2	HG	20		1	2	North		
25/01/2010	Carmel Head	PK	13.15	16.15	Flight	14.44	2	HG	20		1	2	North		
25/01/2010	Carmel Head	SL	13.15	16.15	Sea	14.47	2	RA	4	A	1				
25/01/2010	Carmel Head	SL	13.15	16.15	Sea	14.49	2	SA	1	B	2				
25/01/2010	Carmel Head	PK	13.15	16.15	Sea	14.58	2	RA	1	D	3				
25/01/2010	Carmel Head	SL	13.15	16.15	Flight	15.04	2	SA	1		1	1	North		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
25/01/2010	Carmel Head	PK	13.15	16.15	Flight	15.04	2	SA	1		1	1	North		
25/01/2010	Carmel Head	PK	13.15	16.15	Flight	15.27	2	HG	3		1	2	North		
25/01/2010	Carmel Head	SL	13.15	16.15	Sea	15.36	2	SA	1	C	2				
25/01/2010	Carmel Head	SL	13.15	16.15	Flight	15.48	2	HG	26		2	2	North		
25/01/2010	Carmel Head	SL	13.15	16.15	Flight	15.48	2	HG	5		3	2	North		
25/01/2010	Carmel Head	PK	13.15	16.15	Flight	15.48	2	HG	23		1	2	North		
26/01/2010	Carmel Head	SL	9.30	12.30	Dives	09:54:00	1	RA	1	D	4			53	
26/01/2010	Carmel Head	SL	9.30	12.30	Dives	11:25:00	1	RA	5	D	1			42	Dive 1 of 2
26/01/2010	Carmel Head	SL	9.30	12.30	Dives	11:26:00	1	RA	1	D	1			62	Dive 2 of 2
26/01/2010	Carmel Head	SL	9.30	12.30	Dives	12:06:00	1	RA	2	D	1			33	
26/01/2010	Carmel Head	SL	9.30	12.30	Dives	12:10:00	1	RA	4	D	3			33	
26/01/2010	Carmel Head	PK	9.30	12.30	Dives	12:19:00	1	RA	7	B	3				No dive duration
26/01/2010	Carmel Head	SL	12.30	15.30	Dives	12:57:00	1	RA	1	C	2			51	
26/01/2010	Carmel Head	SL	12.30	15.30	Dives	12:59:00	1	RA	1	C	2			23	

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
26/01/2010	Carmel Head	PK	12.30	15.30	Dives	13:05:00	1	RA	6	C	1			24	
26/01/2010	Carmel Head	SL	12.30	15.30	Dives	13:39:00	1	RA	5	C	3			29	
26/01/2010	Carmel Head	SL	12.30	15.30	Dives	13:41:00	1	GU	16	D	4				Dive 1 of 2
26/01/2010	Carmel Head	SL	12.30	15.30	Dives	13:41:00	1	GU	16	D	4				Dive 2 of 2
26/01/2010	Carmel Head	SL	12.30	15.30	Dives	13:42:00	1	RA	1	D	3				
26/01/2010	Carmel Head	SL	12.30	15.30	Dives	13:43:00	1	RA	1	D	3			34	
26/01/2010	Carmel Head	PK	12.30	15.30	Dives	15:07:00	2	RA	2	B	3				No dive duration
26/01/2010	Carmel Head	PK	12.30	15.30	Dives	15:10:00	2	RA	1	B	4				No dive duration
26/01/2010	Carmel Head	SL	12.30	15.30	Dives	15:12:00	2	RA	1	E	2				
26/01/2010	Carmel Head	PK	9.30	12.30	Sea	9.30	4	HG	3	A	2				
26/01/2010	Carmel Head	SL	9.30	12.30	Sea	9.36	4	HG	3	D	1				
26/01/2010	Carmel Head	SL	9.30	12.30	Sea	9.36	4	HG	1	F	1				
26/01/2010	Carmel Head	PK	9.30	12.30	Sea	9.42	4	HG	4	C	3				
26/01/2010	Carmel Head	SL	9.30	12.30	Sea	9.42	4	RA	2	E	3				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
26/01/2010	Carmel Head	PK	9.30	12.30	Sea	10.19	4	HG	1	B	2				
26/01/2010	Carmel Head	SL	9.30	12.30	Sea	10.21	4	RA	1	E	2				
26/01/2010	Carmel Head	SL	9.30	12.30	Sea	10.21	4	RA	4	E	3				
26/01/2010	Carmel Head	SL	9.30	12.30	Sea	10.23	4	SA	14	F	2				
26/01/2010	Carmel Head	SL	9.30	12.30	Sea	10.23	4	GB	1	F	2				
26/01/2010	Carmel Head	PK	9.30	12.30	Sea	10.26	4	RA	1	C	3				
26/01/2010	Carmel Head	PK	9.30	12.30	Flight	10.30	4	HG	4	A	2	2	South		
26/01/2010	Carmel Head	SL	9.30	12.30	Flight	10.31	4	HG	1	D	3	1	North		
26/01/2010	Carmel Head	PK	9.30	12.30	Flight	10.34	4	HG	2	B	3	2	South		
26/01/2010	Carmel Head	SL	9.30	12.30	Flight	10.56	4	RA	2	D	4	1	North		
26/01/2010	Carmel Head	SL	9.30	12.30	Flight	10.56	4	RA	7	D	3	1	North		
26/01/2010	Carmel Head	SL	9.30	12.30	Sea	11.01	4	GU	1	D	4				
26/01/2010	Carmel Head	SL	9.30	12.30	Sea	11.01	4	HG	3	D	4				
26/01/2010	Carmel Head	PK	9.30	12.30	Sea	11.06	4	RA	1	B	3				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
26/01/2010	Carmel Head	SL	9.30	12.30	Sea	11.07	4	RA	4	E	3				
26/01/2010	Carmel Head	SL	9.30	12.30	Sea	11.12	4	RA	5	E	1				
26/01/2010	Carmel Head	PK	9.30	12.30	Sea	11.13	4	RA	2	C	4				
26/01/2010	Carmel Head	PK	9.30	12.30	Sea	11.14	4	GB	1	B	3				
26/01/2010	Carmel Head	SL	9.30	12.30	Flight	11.16	4	HG	1	D	3	1	East		
26/01/2010	Carmel Head	SL	9.30	12.30	Flight	11.17	4	RK	1	D	1	1	South		
26/01/2010	Carmel Head	PK	9.30	12.30	Flight	11.18	4	HG	1	B	2	2	South		
26/01/2010	Carmel Head	PK	9.30	12.30	Flight	11.18	4	SA	1	B	2	1	North		
26/01/2010	Carmel Head	PK	9.30	12.30	Flight	11.19	4	GB	1	B	3	2	South		
26/01/2010	Carmel Head	SL	9.30	12.30	Flight	11.20	4	RA	6	D	2	1	North		
26/01/2010	Carmel Head	PK	9.30	12.30	Flight	11.20	4	SA	1	B	4	1	South		
26/01/2010	Carmel Head	PK	9.30	12.30	Flight	11.20	4	HG	1	B	2	1	South		
26/01/2010	Carmel Head	SL	9.30	12.30	Flight	11.36	4	SU	1	E	3	2	North		
26/01/2010	Carmel Head	PK	9.30	12.30	Flight	11.40	4	HG	1	A	3	2	West		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
26/01/2010	Carmel Head	SL	9.30	12.30	Flight	11.41	4	SA	1	E	1	1	North		
26/01/2010	Carmel Head	PK	9.30	12.30	Flight	11.41	4	HG	1	A	3	2	North		
26/01/2010	Carmel Head	PK	9.30	12.30	Flight	11.42	4	HG	1	A	4	2	North		
26/01/2010	Carmel Head	SL	9.30	12.30	Sea	11.43	4	RA	1	E	2				
26/01/2010	Carmel Head	SL	9.30	12.30	Flight	11.44	4	HG	1	F	1	2	North		
26/01/2010	Carmel Head	PK	9.30	12.30	Flight	11.44	4	HG	1	A	1	2	North		
26/01/2010	Carmel Head	PK	9.30	12.30	Sea	11.47	4	HG	9	A	3				
26/01/2010	Carmel Head	PK	9.30	12.30	Sea	11.47	4	LB	11	A	4				
26/01/2010	Carmel Head	PK	9.30	12.30	Sea	11.48	4	HG	47	B	3				
26/01/2010	Carmel Head	SL	9.30	12.30	Sea	11.53	4	AUK	111	D	4				
26/01/2010	Carmel Head	SL	9.30	12.30	Sea	11.53	4	HG	4	D	4				
26/01/2010	Carmel Head	SL	9.30	12.30	Sea	11.56	4	AUK	59	E	4				
26/01/2010	Carmel Head	SL	9.30	12.30	Sea	11.59	4	RA	1	F	1				
26/01/2010	Carmel Head	SL	9.30	12.30	Sea	11.59	4	RA	3	F	4				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
26/01/2010	Carmel Head	SL	9.30	12.30	Flight	12.02	4	HG	2	D	1	2	South		
26/01/2010	Carmel Head	PK	9.30	12.30	Flight	12.04	4	HG	1	B	2	2	North		
26/01/2010	Carmel Head	PK	9.30	12.30	Flight	12.04	4	RN	1	B	1	3	0		
26/01/2010	Carmel Head	PK	9.30	12.30	Flight	12.27	1	HG	1	C	2	2	West		
26/01/2010	Carmel Head	SL	12.30	15.30	Sea	12.33	1	RA	2	D	2				
26/01/2010	Carmel Head	PK	12.30	15.30	Sea	12.37	1	RA	4	B	4				
26/01/2010	Carmel Head	PK	12.30	15.30	Sea	12.43	1	HG	8	B	3				
26/01/2010	Carmel Head	PK	12.30	15.30	Sea	12.43	1	LB	5	B	3				
26/01/2010	Carmel Head	PK	12.30	15.30	Sea	12.43	1	MU	1	B	3				
26/01/2010	Carmel Head	PK	12.30	15.30	Sea	12.43	1	RA	9	B	3				
26/01/2010	Carmel Head	PK	12.30	15.30	Sea	12.44	1	HG	16	C	4				
26/01/2010	Carmel Head	PK	12.30	15.30	Sea	12.44	1	RA	4	C	4				
26/01/2010	Carmel Head	SL	12.30	15.30	Sea	12.44	1	RA	2	D	4				
26/01/2010	Carmel Head	PK	12.30	15.30	Sea	12.45	1	HG	2	B	2				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
26/01/2010	Carmel Head	PK	12.30	15.30	Sea	12.45	1	HG	1	C	2				
26/01/2010	Carmel Head	PK	12.30	15.30	Flight	12.47	1	HG	2	C	1	1	South		
26/01/2010	Carmel Head	PK	12.30	15.30	Flight	13.14	2	HG	2	A	4	2	West		
26/01/2010	Carmel Head	PK	12.30	15.30	Flight	13.14	2	HG	1	A	1	2	South		
26/01/2010	Carmel Head	PK	12.30	15.30	Sea	13.16	2	RA	19	C	4				
26/01/2010	Carmel Head	SL	12.30	15.30	Sea	13.17	2	HG	2	F	3				
26/01/2010	Carmel Head	SL	12.30	15.30	Flight	13.17	2	HG	2	E	1	2	South		
26/01/2010	Carmel Head	SL	12.30	15.30	Flight	13.17	2	HG	1	E	4	2	North		
26/01/2010	Carmel Head	PK	12.30	15.30	Sea	13.19	2	HG	1	C	1				
26/01/2010	Carmel Head	SL	12.30	15.30	Sea	13.20	2	RA	1	D	2				
26/01/2010	Carmel Head	SL	12.30	15.30	Sea	13.20	2	RA	5	F	3				
26/01/2010	Carmel Head	SL	12.30	15.30	Sea	13.22	2	RA	2	E	4				
26/01/2010	Carmel Head	SL	12.30	15.30	Sea	13.24	2	HG	2	F	1				
26/01/2010	Carmel Head	PK	12.30	15.30	Sea	13.28	2	RA	5	B	4				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
26/01/2010	Carmel Head	SL	12.30	15.30	Sea	13.28	2	HG	76	D	4				
26/01/2010	Carmel Head	PK	12.30	15.30	Flight	13.31	2	HG	1	C	1	2	South		
26/01/2010	Carmel Head	PK	12.30	15.30	Flight	13.55	2	HG	2	B	4	2	North		
26/01/2010	Carmel Head	PK	12.30	15.30	Flight	13.55	2	LB	1	B	3	2	North		
26/01/2010	Carmel Head	SL	12.30	15.30	Flight	13.55	2	SA	2	F	3	1	East		
26/01/2010	Carmel Head	PK	12.30	15.30	Flight	13.56	2	HG	1	B	3	2	North		
26/01/2010	Carmel Head	SL	12.30	15.30	Flight	13.56	2	HG	1	F	1	2	North		
26/01/2010	Carmel Head	PK	12.30	15.30	Flight	13.57	2	HG	1	B	2	2	North West		
26/01/2010	Carmel Head	SL	12.30	15.30	Sea	14.02	2	HG	14	D	2				
26/01/2010	Carmel Head	PK	12.30	15.30	Sea	14.04	2	HG	2	A	2				
26/01/2010	Carmel Head	PK	12.30	15.30	Sea	14.04	2	HG	5	B	2				
26/01/2010	Carmel Head	PK	12.30	15.30	Sea	14.04	2	HG	14	C	1				
26/01/2010	Carmel Head	PK	12.30	15.30	Sea	14.04	2	HG	5	C	2				
26/01/2010	Carmel Head	SL	12.30	15.30	Sea	14.05	2	HG	57	E	2				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
26/01/2010	Carmel Head	SL	12.30	15.30	Sea	14.05	2	RA	1	E	2				
26/01/2010	Carmel Head	SL	12.30	15.30	Sea	14.06	2	HG	13	D	1				
26/01/2010	Carmel Head	PK	12.30	15.30	Sea	14.11	2	RA	4	C	4				
26/01/2010	Carmel Head	PK	12.30	15.30	Flight	14.16	2	HG	1	A	1	2	South		
26/01/2010	Carmel Head	SL	12.30	15.30	Flight	14.17	2	HG	1	D	3	1	South		
26/01/2010	Carmel Head	SL	12.30	15.30	Flight	14.17	2	HG	2	D	3	1	North		
26/01/2010	Carmel Head	PK	12.30	15.30	Flight	14.20	2	RN	1			2	South		Beyond study area
26/01/2010	Carmel Head	SL	12.30	15.30	Flight	14.42	2	SA	1	F	2	1	South		
26/01/2010	Carmel Head	PK	12.30	15.30	Flight	14.44	2	HG	1	B	1	2	South		
26/01/2010	Carmel Head	PK	12.30	15.30	Flight	14.44	2	GB	2	B	3	4	North West		
26/01/2010	Carmel Head	SL	12.30	15.30	Flight	14.44	2	RA	3	E	4	2	East		
26/01/2010	Carmel Head	PK	12.30	15.30	Sea	14.48	2	RA	1	C	4				
26/01/2010	Carmel Head	PK	12.30	15.30	Sea	14.48	2	GU	1	C	4				
26/01/2010	Carmel Head	PK	12.30	15.30	Sea	14.48	2	SA	1	C	4				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
26/01/2010	Carmel Head	PK	12.30	15.30	Sea	14.49	2	GB	1	B	4				
26/01/2010	Carmel Head	SL	12.30	15.30	Sea	14.49	2	HG	1	E	3				
26/01/2010	Carmel Head	SL	12.30	15.30	Sea	14.49	2	GB	1	E	3				
26/01/2010	Carmel Head	SL	12.30	15.30	Sea	14.52	2	RA	3	E	3				
26/01/2010	Carmel Head	PK	12.30	15.30	Sea	14.53	2	RA	2	B	2				
26/01/2010	Carmel Head	PK	12.30	15.30	Sea	14.53	2	HG	1	B	1				
26/01/2010	Carmel Head	SL	12.30	15.30	Sea	14.53	2	SA	1	F	2				
26/01/2010	Carmel Head	PK	12.30	15.30	Sea	14.54	2	SA	2	C	3				
26/01/2010	Carmel Head	PK	12.30	15.30	Flight	15.00	2	OC	1	C	1	1	South		
26/01/2010	Carmel Head	PK	12.30	15.30	Flight	15.00	2	HG	1	C	2	2	North		
26/01/2010	Carmel Head	PK	12.30	15.30	Flight	15.01	2	SA	1	C	3	1	South		
26/01/2010	Carmel Head	PK	12.30	15.30	Flight	15.04	2	TT	7	C	1	1	South		
26/01/2010	Carmel Head	SL	12.30	15.30	Flight	15.27	2	HG	1				West		
27/01/2010	Carmel Head	SL	9.45	12.45	Dives	10:19:00	4	RA	1	D	1			69	Dive 1 of 3

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
27/01/2010	Carmel Head	SL	9.45	12.45	Dives	10:21:00	4	RA	1	D	1			78	Dive 2 of 3
27/01/2010	Carmel Head	SL	9.45	12.45	Dives	10:22:00	4	RA	1	D	1			64	Dive 3 of 3
27/01/2010	Carmel Head	SL	12.45	15.45	Dives	15:26:00	2	RA	1	D	1				No dive duration
27/01/2010	Carmel Head	SL	9.45	12.45	Sea	9.53	4	RA	1	E	2				
27/01/2010	Carmel Head	PK	9.45	12.45	Flight	10.04	4	F.	1	A	1	1	North		
27/01/2010	Carmel Head	SL	9.45	12.45	Flight	10.05	4	HG	5	D	1	2	South		
27/01/2010	Carmel Head	SL	9.45	12.45	Flight	10.05	4	HG	11	D	1	2	North		
27/01/2010	Carmel Head	PK	9.45	12.45	Flight	10.26	4	LB	1	B	2	2	North		
27/01/2010	Carmel Head	SL	9.45	12.45	Flight	10.26	4	HG	1	E	1	2	South		
27/01/2010	Carmel Head	SL	9.45	12.45	Flight	10.27	4	HG	1	E	2	2	North		
27/01/2010	Carmel Head	SL	9.45	12.45	Flight	10.27	4	HG	5	E	2	2	North		
27/01/2010	Carmel Head	SL	9.45	12.45	Flight	10.27	4	HG	2	E	1	1	South		
27/01/2010	Carmel Head	PK	9.45	12.45	Flight	10.28	4	HG	2	B	1	3	South		
27/01/2010	Carmel Head	SL	9.45	12.45	Sea	10.30	4	HG	6	D	2				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
27/01/2010	Carmel Head	SL	9.45	12.45	Sea	10.30	4	HG	2	D	1				
27/01/2010	Carmel Head	SL	9.45	12.45	Flight	10.49	4	RA	33	F	1	1	North		
27/01/2010	Carmel Head	PK	9.45	12.45	Flight	11.12	4	HG	3	A	1	2	South		
27/01/2010	Carmel Head	SL	9.45	12.45	Flight	11.12	4	HG	1	D	1	3	South		
27/01/2010	Carmel Head	PK	9.45	12.45	Flight	11.13	4	HG	1	A	1	2	North		
27/01/2010	Carmel Head	PK	9.45	12.45	Flight	11.13	4	HG	1	A	1	3	West		
27/01/2010	Carmel Head	PK	9.45	12.45	Flight	11.15	4	HG	17	A	4	1	West		
27/01/2010	Carmel Head	SL	9.45	12.45	Flight	11.15	4	RA	26	D	3	1	North		
27/01/2010	Carmel Head	PK	9.45	12.45	Flight	11.20	4	RH	2	C	3	3	North		
27/01/2010	Carmel Head	SL	9.45	12.45	Sea	11.23	4	RA	1	D	2				
27/01/2010	Carmel Head	SL	9.45	12.45	Flight	11.30	4	HG	2	E	1	1	South		
27/01/2010	Carmel Head	SL	9.45	12.45	Flight	11.30	4	HG	1	E	1	1	North		
27/01/2010	Carmel Head	PK	9.45	12.45	Flight	11.31	4	GB	1	B	2	2	South		
27/01/2010	Carmel Head	PK	9.45	12.45	Flight	11.31	4	HG	1	B	1	2	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
27/01/2010	Carmel Head	PK	9.45	12.45	Flight	11.31	4	LB	1	B	1	2	South		
27/01/2010	Carmel Head	PK	9.45	12.45	Flight	11.32	4	HG	1	B	2	2	South		
27/01/2010	Carmel Head	SL	9.45	12.45	Flight	11.33	4	HG	1	E	3	2	South		
27/01/2010	Carmel Head	SL	9.45	12.45	Sea	12.01	4	RA	1	D	1				
27/01/2010	Carmel Head	SL	9.45	12.45	Flight	12.16	4	AUK	34	E	1	1	North		
27/01/2010	Carmel Head	SL	9.45	12.45	Flight	12.17	4	F.	1	D	1	1	North		
27/01/2010	Carmel Head	PK	12.45	15.45	Sea	12.48	4	HG	5	A	1				
27/01/2010	Carmel Head	PK	12.45	15.45	Sea	12.52	4	RA	1	C	1				
27/01/2010	Carmel Head	PK	12.45	15.45	Flight	13.01	4	HG	2	B	2	1	West		
27/01/2010	Carmel Head	PK	12.45	15.45	Flight	13.03	4	GB	1	B	3	2	North West		
27/01/2010	Carmel Head	SL	12.45	15.45	Flight	13.27	1	HG	5	D	1	2	East		
27/01/2010	Carmel Head	PK	12.45	15.45	Flight	13.28	1	GB	2	A	3	2	West		
27/01/2010	Carmel Head	SL	12.45	15.45	Sea	13.36	1	RA	1	D	1				
27/01/2010	Carmel Head	SL	12.45	15.45	Sea	13.42	1	HG	3	D	1				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
27/01/2010	Carmel Head	PK	12.45	15.45	Flight	14.11	1	HG	4	A	1	2	South		
27/01/2010	Carmel Head	SL	12.45	15.45	Flight	14.12	1	GB	5	D			East		
27/01/2010	Carmel Head	SL	12.45	15.45	Flight	14.12	1	GB	1	D		2	East		
27/01/2010	Carmel Head	PK	12.45	15.45	Flight	14.14	1	HG	3	B	3	1	West		
27/01/2010	Carmel Head	SL	12.45	15.45	Flight	14.14	1	SA	1	D	1	1	South		
27/01/2010	Carmel Head	PK	12.45	15.45	Sea	14.30	2	RA	4	C	3				
27/01/2010	Carmel Head	PK	12.45	15.45	Flight	14.35	2	SA	1	B	1	1	North		
27/01/2010	Carmel Head	PK	12.45	15.45	Flight	14.56	2	F.	1	C	3	1	North		
27/01/2010	Carmel Head	SL	12.45	15.45	Flight	14.56	2	F.	1	F		1	0		
27/01/2010	Carmel Head	SL	12.45	15.45	Sea	15.01	2	SA	1	E	2				
27/01/2010	Carmel Head	PK	12.45	15.45	Flight	15.16	2	SA	2	C	2	1	West		
27/01/2010	Carmel Head	PK	12.45	15.45	Flight	15.18	2	HG	6	B	3	1	North		
27/01/2010	Carmel Head	PK	12.45	15.45	Flight	15.19	2	GB	3	A	2	2	South		
27/01/2010	Carmel Head	PK	12.45	15.45	Flight	15.41	2	HG	2	A	1	2	North		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
27/01/2010	Carmel Head	SL	12.45	15.45	Flight	15.42	2	HG	11	D	2	2	South		
27/01/2010	Carmel Head	SL	12.45	15.45	Flight	15.42	2	HG	3	D	2	1	South		
27/01/2010	Carmel Head	SL	12.45	15.45	Flight	15.43	2	SA	1	D	1	1	North		
27/01/2010	Carmel Head	PK	12.45	15.45	Flight	15.44	2	GB	1	A	3	2	North		
05/02/2010	Point St John	ST	14.15	17.15	Dives	16:19:00		RA	4	F	2			35	
05/02/2010	Point St John	ST	14.15	17.15	Dives	16:19:00		RA	4	F	2			35	
05/02/2010	Point St John	ST	14.15	17.15	Dives	16:19:00		RA	4	F	2			35	
05/02/2010	Point St John	ST	14.15	17.15	Dives	16:19:00		RA	4	F	2			35	
05/02/2010	Point St John	ST	14.15	17.15	Dives	16:19:00		RA	4	F	2			34	
05/02/2010	Pen Dal-adevyn	ST	10.15	13.15	Sea	10.46	2	SA	1	D	1				
05/02/2010	Pen Dal-adevyn	ST	10.15	13.15	Flight	11.02	2	BH	4	C	2	1	South		
05/02/2010	Pen Dal-adevyn	ST	10.15	13.15	Flight	11.02	2	HG	4	C	3	3	0		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
05/02/2010	Pen Dal-adevyn	ST	10.15	13.15	Flight	11.02	2	GB	2	C	1	2	South East		
05/02/2010	Pen Dal-adevyn	ST	10.15	13.15	Flight	11.02	2	HG	2	C	1	2	South East		
05/02/2010	Pen Dal-adevyn	ST	10.15	13.15	Flight	11.02	2	KI	1	C	2	2	North		
05/02/2010	Pen Dal-adevyn	ST	10.15	13.15	Flight	11.02	2	HG	2	D	1	1	South East		
05/02/2010	Pen Dal-adevyn	ST	10.15	13.15	Flight	11.02	2	HG	4	E	1	2	South East		
05/02/2010	Pen Dal-adevyn	ST	10.15	13.15	Flight	11.02	2	F.	2	E	3	1	0		
05/02/2010	Pen Dal-adevyn	ST	10.15	13.15	Flight	11.08	2	AUK	1	C	2	1	South		
05/02/2010	Pen Dal-adevyn	ST	10.15	13.15	Sea	11.23	2	HG	1	C	1				
05/02/2010	Pen Dal-adevyn	ST	10.15	13.15	Flight	12.02	2	BH	6	D	1	1	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
05/02/2010	Pen Dal-adevyn	ST	10.15	13.15	Flight	12.02	2	HG	1	D	2	1	South East		
05/02/2010	Pen Dal-adevyn	ST	10.15	13.15	Flight	12.02	2	SA	1	C	3	1	South		
05/02/2010	Pen Dal-adevyn	ST	10.15	13.15	Flight	12.02	2	HG	2	B	1	2	South East		
05/02/2010	Pen Dal-adevyn	ST	10.15	13.15	Flight	12.02	2	CM	1	C	2	1	South		
05/02/2010	Pen Dal-adevyn	ST	10.15	13.15	Flight	12.02	2	BH	9	D	2	3	South		
05/02/2010	Pen Dal-adevyn	ST	10.15	13.15	Flight	12.16	2	UU	15	E	3	1	0		
05/02/2010	Pen Dal-adevyn	ST	10.15	13.15	Sea	12.54	2	SA	2	E	2				
05/02/2010	Pen Dal-adevyn	ST	10.15	13.15	Flight	13.02	2	BH	2	B	2	1			
05/02/2010	Pen Dal-adevyn	ST	10.15	13.15	Flight	13.02	2	BH	9	E	2	2			

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
05/02/2010	Pen Dal-adevyn	ST	10.15	13.15	Flight	13.02	2	BH	2	B	2	1			
05/02/2010	Pen Dal-adevyn	ST	10.15	13.15	Flight	13.02	2	UU	10	E	3	1			
05/02/2010	Point St John	ST	14.15	17.15	Flight	15.02	3	F.	1	D	4	2			
05/02/2010	Point St John	ST	14.15	17.15	Flight	15.02	3	HG	1	E	2	3			
05/02/2010	Point St John	ST	14.15	17.15	Sea	15.07	3	RH	1	E	2				
05/02/2010	Point St John	ST	14.15	17.15	Sea	15.32	4	RH	2	E	2				
05/02/2010	Point St John	ST	14.15	17.15	Flight	16.07	4	F.	2	D	4	3			
05/02/2010	Point St John	ST	14.15	17.15	Flight	16.07	4	HG	2	D	2	2			
05/02/2010	Point St John	ST	14.15	17.15	Flight	16.07	4	OC	2	B	3	2			
05/02/2010	Point St John	ST	14.15	17.15	Sea	16.41	4	CM	2	D	2				
05/02/2010	Point St John	ST	14.15	17.15	Flight	17.02	4	BH	7	C	1	2			
05/02/2010	Point St John	ST	14.15	17.15	Flight	17.02	4	HG	4	C	2	3			
05/02/2010	Point St John	ST	14.15	17.15	Flight	17.02	4	GB	1	D	2	3			

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
05/02/2010	Point St John	ST	14:15	17:15	Flight	17:02	4	HG	6	D	2	1			
05/02/2010	Point St John	ST	14:15	17:15	Flight	17:11	4	RH	1	B	3	1			
17/04/2010	Carmel Head	PD	13:00	16:00	Sea	13:07	3	SA	1	C	1				
17/04/2010	Carmel Head	PD	13:00	20:00	Flight	13:40	4	AUK	11	D	5	1	North East		
17/04/2010	Carmel Head	PD	13:00	20:00	Flight	13:40	4	SA	1	D	5	1	North East		
17/04/2010	Carmel Head	PD	13:00	20:00	Flight	13:40	4	GX	2	D	5	3	South West		
17/04/2010	Carmel Head	PD	13:00	20:00	Flight	14:15	4	GX	1	D	5	3	South West		
17/04/2010	Carmel Head	PD	13:00	20:00	Dives	14:27		RA	1	E	3			10	
17/04/2010	Carmel Head	PD	13:00	20:00	Flight	14:40	4	TE	2	D	4	2	North East		
17/04/2010	Carmel Head	PD	13:00	20:00	Flight	14:40	4	GX	1	D	5	3	North East		
17/04/2010	Carmel Head	PD	13:00	20:00	Flight	15:15	4	CA	1	D	5	2	North East		
17/04/2010	Carmel Head	PD	13:00	20:00	Flight	15:40	4	AUK	4	D	5	1	North East		
17/04/2010	Carmel Head	PD	13:00	16:00	Sea	15:56	4	GX	1	B	5				
17/04/2010	Carmel Head	PD	17:00	20:00	Sea	17:14	4	AUK	5	D	6				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
17/04/2010	Carmel Head	PD	13:00	20:00	Flight	17:15	4	GX	1	D	4	3	West		
17/04/2010	Carmel Head	PD	13:00	20:00	Flight	17:15	4	GX	5	D	5	2	Ssouth West		
17/04/2010	Carmel Head	PD	13:00	20:00	Dives	17:35		SA	1	F	2			53	
17/04/2010	Carmel Head	PD	13:00	20:00	Dives	17:35		SA	1	F	2			47	
17/04/2010	Carmel Head	PD	13:00	20:00	Flight	18:15	4	CA	1	D	3	1	South West		
17/04/2010	Carmel Head	PD	13:00	20:00	Flight	18:15	4	TE	2	D	3	2	South East		
17/04/2010	Carmel Head	PD	13:00	20:00	Flight	18:15	4	MX	1	D	5	2	North East		
17/04/2010	Carmel Head	PD	13:00	20:00	Flight	18:40	1	SA	1	D	5	2	North East		
17/04/2010	Carmel Head	PD	17:00	20:00	Sea	19:05	1	RA	2	B	4				
17/04/2010	Carmel Head	PD	17:00	20:00	Sea	19:11	1	RA	1	F	5				
17/04/2010	Carmel Head	PD	17:00	20:00	Sea	19:14	1	AUK	4	C	6				
17/04/2010	Carmel Head	PD	13:00	20:00	Flight	19:40	2	AUK	3	D	5	1	South West		
17/04/2010	Carmel Head	PD	13:00	20:00	Flight	19:40	2	MX	1	D	3	2	South West		
17/04/2010	Carmel Head	PD	17:00	20:00	Sea	19:46	2	AUK	1	C	4				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Sea	11:16	2	GU	1	C	3				Feeding
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Sea	11:20	2	F.	8	E	3				Feeding
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Sea	11:22	2	HG	1	F	3				Swimming
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Flight	11:30	2	GB	1	C	3	2	South		
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Flight	11:30	2	HG	1	C	3	3	South		
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Flight	11:31	2	OC	2	D	2	3	South		
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Flight	11:32	2	GX	1	D	2	1	North		
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Flight	11:32	2	HG	1	C	3	2	CIRC		
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Flight	11:34	2	RP	1	D	1	3	North		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Flight	11:58	2	HG	2	D	3	3	North		
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Flight	11:59	2	HG	1	C	1	3	North		
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Flight	11:59	2	HG	1	D	3	3	South		
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Sea	12:03	2	AUK	14	C	3				
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Sea	12:03	2	F.	1	D	3				Swimming
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Sea	12:08	2	LB	4	D	2				Swimming
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Sea	12:08	2	HG	1	D	2				Swimming
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Sea	12:12	2	GB	1	E	3				
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Sea	12:12	2	F.	3	E	3				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Sea	12:14	2	F.	1	F	3				
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Sea	12:18	2	RA	8	B	4				Drifting
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Sea	12:21	2	GU	2	C	3				Preening
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Sea	12:21	2	F.	5	C	3				
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Sea	12:24	2	F.	4	D	3				
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Sea	12:26	2	LB	1	E	3				
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Sea	12:28	2	F.	2	E	3				
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Sea	13:02	2	AUK	3	B	3				Preening
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Sea	13:06	2	AUK	1	B	3				Preening

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Sea	13:06	2	F.	5	B	3				
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Sea	13:09	2	LB	1	D	3				
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Sea	13:12	2	F.	6	E	3				
19/04/2010	Carmel Head	PD	13:00	20:00	Flight	13:16	2	AUK	4	D	6	1	North East		
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Sea	13:17	2	F.	2	E	3				
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Sea	13:17	2	F.	2	F	3				
19/04/2010	Carmel Head	PD	13:00	20:00	Flight	13:19	2	SA	1	D	6	1	North East		
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Sea	13:22	2	AUK	2	B	3				Swimming
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Sea	13:26	2	GX	1	C	2				Drifting
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Sea	13:29	2	GX	1	E	2				Feeding

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Flight	13:31	2	HG	5	C	3	3	CIRC		
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Flight	13:32	2	HG	3	C	3	2	South/North		
19/04/2010	Carmel Head	PD	13:00	20:00	Flight	13:41	2	GX	1	D	5	3	South West		
19/04/2010	Carmel Head	PD	13:00	20:00	Flight	13:44	2	AUK	2	D	6	1	North East		
19/04/2010	Carmel Head	PD	13:00	20:00	Flight	13:45	2	AUK	4	D	6	1	North East		
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Flight	13:55	3	WM	1	C	2	2	North		
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Flight	13:55	3	GX	1	C	1	3	South		
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Flight	13:57	3	HG	2	C	3	3	North		
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Flight	13:59	3	GB	1	C	3	2	South		
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Sea	14:01	3	GX	1	A	3				Drifting

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Sea	14:04	3	LARGE GULL	1	B	3				
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Sea	14:04	3	GX	2	C	3				PE flew North East at 14:09
19/04/2010	Pen Dal-adevyn	AS	11:15	14:15	Sea	14:10	3	F.	2	E	3				
19/04/2010	Carmel Head	PD	13:00	20:00	Flight	14:17	3	AUK	3	D	6	1	North East		
19/04/2010	Carmel Head	PD	13:00	20:00	Flight	14:19	3	AUK	3	D	6	1	North East		
19/04/2010	Carmel Head	PD	13:00	20:00	Flight	14:20	3	AUK	15	D	6	1	North East		
19/04/2010	Carmel Head	PD	13:00	20:00	Flight	14:40	3	AUK	5	D	6	1	North East		
19/04/2010	Carmel Head	PD	13:00	16:00	Sea	14:49	4	RA	5	E	4				
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Sea	14:51	4	GB	1	E	3				
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Sea	14:51	4	HG	2	E	3				
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Flight	15:02	4	GB	1	C	1	2	North		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Flight	15:03	4	OC	2	C	1	2	South		
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Flight	15:04	4	HG	1	C	1	1	North		
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Flight	15:04	4	HG	1	C	3	3	CIRC		
19/04/2010	Carmel Head	PD	13:00	20:00	Flight	15:15	4	AUK	4	D	6	1	North East		
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Flight	15:26	4	LB	1	C	2	1	North		
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Flight	15:26	4	HG	1	C	2	1	North		
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Flight	15:29	4	HG	1	C	3	3	South		
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Flight	15:29	4	GB	1	C	2	2	North		
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Flight	15:29	4	F.	1	C	3	2	South		
19/04/2010	Pen Dal-	AS	14:45	17:45	Sea	15:40	4	HG	1	F	3				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														
19/04/2010	Carmel Head	PD	13:00	20:00	Flight	15:43	4	AUK	2	D	6	1	North East		
19/04/2010	Carmel Head	PD	13:00	20:00	Flight	15:44	4	GJ	2	D	4	2	South East		
19/04/2010	Carmel Head	PD	13:00	20:00	Flight	15:45	4	MX	1	D	5	2	South West		
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Sea	15:47	4	LARGE GULL	2	E	3				
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Sea	15:55	4	F.	3	F	3				
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Sea	15:56	4	SA	1	D	3				
19/04/2010	Carmel Head	PD	13:00	16:00	Sea	15:57	4	AUK	2	D	6				
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Flight	16:01	4	HG	5	C	1	3	North		
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Flight	16:04	4	GB	1	C	3	2	North		
19/04/2010	StDavidsVP2	AS	14:45	17:45	Dives	16:13:00		SA	1	B	2				Dive not seen but had fish

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
19/04/2010	StDavidsVP2	AS	14:45	17:45	Dives	16:14:00		SA	1	B	2			15	Not successful
19/04/2010	StDavidsVP2	AS	14:45	17:45	Dives	16:24:00		SA	1	B	1			53	
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Flight	16:26	4	HG	1	C	3	3	North		
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Flight	16:29	4	HG	1	C	3	3	CIRC		
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Flight	16:29	4	HG	3	C	3	3	North		
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Sea	16:31	4	F.	4	E	3				
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Sea	16:35	4	GX	1	B	3				
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Sea	16:39	4	CA	1	A	1				
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Sea	16:41	4	GX	2	B	2				
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Sea	16:48	4	GX	2	B	2				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Sea	16:50	4	F.	2	D	3				
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Sea	16:52	4	F.	2	F	3				
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Sea	16:55	4	F.	1	E	3				
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Sea	16:57	4	SA	1	B	1				
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Flight	17:00	4	HG	3	D	3	3	North		
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Flight	17:00	4	F.	1	D	3	3	North		
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Flight	17:03	4	HG	1	D	3	3	South		
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Flight	17:05	4	HG	1	D	3	2	North		
19/04/2010	Carmel Head	PD	13:00	20:00	Flight	17:20	4	AUK	3	D	6	1	North East		
19/04/2010	Carmel Head	PD	13:00	20:00	Dives	17:25		CA	1	C	5			72	

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Flight	17:26	4	GX	1	D	3	3	North		
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Flight	17:27	4	GX	1	D	3	3	North		
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Flight	17:27	4	F.	1	D	3	3	South		
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Flight	17:28	4	HG	1	D	3	2	North		
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Flight	17:28	4	F.	1	D	3	3	CIRC		
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Flight	17:29	4	LARGE GULL	1	D	3	3	North		
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Sea	17:31	4	F.	2	F	3				
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Sea	17:33	4	F.	2	E	3				
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Sea	17:35	4	HG	1	C	3				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Sea	17:37	4	HG	2	B	3				
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Sea	17:37	4	GX	2	B	2				
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Sea	17:37	4	GX	1	B	2				
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Sea	17:42	4	SA	2	D	2				
19/04/2010	Pen Dal-adevyn	AS	14:45	17:45	Sea	17:42	4	AUK	1	D	2				
19/04/2010	Carmel Head	PD	17:00	20:00	Sea	18:08	4	AUK	2	C	4				
19/04/2010	Carmel Head	PD	17:00	20:00	Sea	18:14	4	AUK	1	D	5				
19/04/2010	Carmel Head	PD	13:00	20:00	Flight	18:16	4	MX	1	D	5	2	North East		
19/04/2010	Carmel Head	PD	17:00	20:00	Sea	19:10	4	SA	1	C	5				
19/04/2010	Carmel Head	PD	13:00	20:00	Flight	19:18	4	AUK	1	D	5	1	South West		
19/04/2010	Carmel Head	PD	13:00	20:00	Dives	19:20		RA	1	C	3			15	

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
19/04/2010	Carmel Head	PD	13:00	20:00	Dives	19:20		SA	1	C	5			45	
19/04/2010	Carmel Head	PD	13:00	20:00	Dives	19:21		RA	1	C	3			24	
19/04/2010	Carmel Head	PD	13:00	20:00	Dives	19:21		RA	1	C	3			15	
19/04/2010	Carmel Head	PD	13:00	20:00	Dives	19:24		RA	1	C	3			26	
19/04/2010	Carmel Head	PD	13:00	20:00	Dives	19:29		RA	1	C	3			9	
19/04/2010	Carmel Head	PD	13:00	20:00	Dives	19:31		RA	1	C	3			18	
19/04/2010	Carmel Head	PD	13:00	20:00	Dives	19:32		RA	1	C	3			8	
19/04/2010	Carmel Head	PD	17:00	20:00	Sea	19:53	4	AUK	7	D	5				
20/04/2010	StDavidsVP2	AS	6.30	9.30	Dives	06:52:00		RA	1	C	2			27	Dive 1 of 11, no catch
20/04/2010	StDavidsVP2	AS	6.30	9.30	Dives	06:52:00		RA	1	C	2			60	Dive 2 of 11, no catch then bird lost to view, tidal time 0652-0653, 90s
20/04/2010	StDavidsVP2	AS	6.30	9.30	Dives	07:03:00		SA	1	D	3			45	Dive 3 of 11, cought fish
20/04/2010	StDavidsVP2	AS	6.30	9.30	Dives	07:05:00		SA	1	D	3			30	Dive 4 of 11, no

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
															success
20/04/2010	StDavidsVP2	AS	6.30	9.30	Dives	07:06:00		SA	1	D	3			45	Dive 5 of 11, no success
20/04/2010	StDavidsVP2	AS	6.30	9.30	Dives	07:07:50		SA	1	D	3			30	Dive 6 of 11, no success
20/04/2010	StDavidsVP2	AS	6.30	9.30	Dives	07:09:06		SA	1	C	3			54	Dive 7 of 11, caught flat fish, total 0703-0710
20/04/2010	StDavidsVP2	AS	6.30	9.30	Dives	07:57:10		RA	1	C	3			10	Dive 8 of 11, no catch, several rafts of RA but little diving, lots of display and head and dipping
20/04/2010	StDavidsVP2	AS	6.30	9.30	Dives	08:51:10		RA	1	D	3			50	Dive 9 of 11, no catch, 0851-0854 total observation time then flew north
20/04/2010	StDavidsVP2	AS	6.30	9.30	Dives	09:03:50		RA	1	D	3			15	Dive 10 of 11, success undetermined, total time watched 3min

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
20/04/2010	StDavidsVP2	AS	6.30	9.30	Dives	09:03:50		SA	1	D	3				Dive 11 of 11, did not see surface
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	10:32	2	RA	2	B	3				
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	10:32	2	GB	1	B	3				
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	10:34	2	RA	4	C	3				Swimming then flew North
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	10:35	2	RA	2	D	3				Swimming then flew North
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	10:37	2	F.	6	E	3				
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	10:39	2	F.	9	F	3				
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	10:39	2	HG	1	F	2				Drifting North
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Flight	10:46	2	LB	2	C	1	3			

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Flight	10:47	2	F.	1	C	3	3			
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Flight	10:48	2	HG	4	C	3	3			
20/04/2010	StDavidsVP2	AS	10:30	13:30	Dives	10:52:57		RA	1	C	3			33	
20/04/2010	StDavidsVP2	AS	10:30	13:30	Dives	10:56:37		CA	1	B	4			60	
20/04/2010	StDavidsVP2	AS	10:30	13:30	Dives	11:00:00		CA	1	B	4			60	
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Flight	11:11	2	K.	1	C	3	3			
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Flight	11:11	2	HG	3	C	3	3			
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Flight	11:13	2	F.	1	C	1	3			
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Flight	11:14	2	RA	2	C	2	2			
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Flight	11:14	2	HG	2	C	3	3			

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	11:18	2	F.	2	F	3				
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	11:19	2	F.	6	E	3				
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	11:20	2	HG	2	C	3				
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	11:22	2	RA	14	C	3				
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	11:22	2	HG	2	C	2				
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	11:24	2	HG	2	B	4				
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	11:32	2	SA	1	B	4				Feeding
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	11:34	2	RA	2	C	3				
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	11:34	2	HG	2	C	3				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	11:36	2	GB	1	B	3				Drifting then flew North East
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Flight	11:46	2	AUK	1	C	3	2			
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Flight	11:47	2	HG	1	C	1	1			
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Flight	11:48	2	F.	1	C	3	3			
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Flight	11:49	2	HG	1	C	3	3			
20/04/2010	StDavidsVP2	AS	10:30	13:30	Dives	11:51:43		SA	1	D	3			70	
20/04/2010	StDavidsVP2	AS	10:30	13:30	Dives	11:53:54		SA	1	D	3			30	
20/04/2010	StDavidsVP2	AS	10:30	13:30	Dives	11:57:55		SA	1	D	3			80	
20/04/2010	StDavidsVP2	AS	10:30	13:30	Dives	12:01:00		SA	1	D	3			80	
20/04/2010	StDavidsVP2	AS	10:30	13:30	Dives	12:09:00		SA	1	B	4			30	
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Flight	12:12	2	HG	1	C	3	3			

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Flight	12:14	2	F.	1	C	3	3			
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Flight	12:14	2	HG	1	C	3	3			
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	12:18	2	F.	1	B	3				
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	12:20	2	F.	3	C	3				
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	12:21	2	RA	5	C	3				Drifting
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	12:21	2	F.	1	C	3				
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	12:23	2	F.	3	C	3				
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	12:25	2	F.	5	E	3				
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	12:25	2	F.	4	F	3				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	12:31	2	F.	2	F	3				
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	12:32	2	F.	5	E	3				
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	12:34	2	HG	11	C	3				
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	12:34	2	CA	1	C	4				
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	12:35	2	HG	1	B	4				
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	12:35	2	GB	1	B	4				
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Flight	12:45	2	LB	2	C	1	3			
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Flight	12:46	2	HG	1	C	3	3			
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Flight	12:47	2	CA	1	C	1	3			

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Flight	12:48	2	CF	2	C	3	3			
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Flight	12:49	2	HG	1	C	3	3			
20/04/2010	StDavidsVP2	AS	10:30	13:30	Dives	12:56:24		CA	1	C	3			30	
20/04/2010	StDavidsVP2	AS	10:30	13:30	Dives	12:56:58		CA	1	D	3			32	
20/04/2010	StDavidsVP2	AS	10:30	13:30	Dives	12:57:42		CA	1	D	3			80	
20/04/2010	StDavidsVP2	AS	10:30	13:30	Dives	12:59:00		CA	1	D	3			30	
20/04/2010	StDavidsVP2	AS	10:30	13:30	Dives	12:59:50		CA	1	D	3			80	
20/04/2010	StDavidsVP2	AS	10:30	13:30	Dives	13:00:30		CA	1	D	3			60	
20/04/2010	StDavidsVP2	AS	10:30	13:30	Dives	13:02:00		CA	1	D	3				Not relocated until 13:07 whilst bathing
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Flight	13:11	2	LB	1	C	1	3			
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Flight	13:12	2	CA	1	C	2	1			

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Flight	13:13	2	HG	3	C	3	3			
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Flight	13:13	2	HG	1	C	1	1			
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Flight	13:14	2	SA	1	C	1	1			
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Flight	13:14	2	HG	1	C	3	1			
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	13:17	2	F.	4	E	3				
20/04/2010	Pen Dal-adevyn	AS	10:30	13:30	Sea	13:18	2	HG	2	D	3				
20/04/2010	StDavidsVP2	AS	14:45	17:45	Dives	16:15:00		SA	1	B	2			45	Not successful
20/04/2010	StDavidsVP2	AS	14:45	17:45	Dives	16:21:00		GX	1	B	3			3	Not successful
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	6.33	4	AUK	1	B	3				Swimming
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	6.33	4	RA	1	B	3				Feeding

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	6.34	4	RA	6	C	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	6.34	4	F.	2	C	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	6.37	4	GU	1	C	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	6.37	4	F.	1	C	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	6.38	4	RA	10	C	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	6.38	4	GU	2	C	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	6.41	4	RA	11	D	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	6.44	4	SA	1	D	3				Feeding
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	6.44	4	F.	5	E	3				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	6.44	4	F.	5	F	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Flight	6.45	4	GB	1	C	3	3	South		Snapshot at 250 degrees
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Flight	6.47	4	HG	4	C	3	3	South		
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Flight	6.49	4	F.	1						
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Flight	7.11	4	HG	1	C	2	3	South		
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Flight	7.11	4	HG	1	C	1	2	South		
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Flight	7.12	4	TE	3	C	2	3	North		
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Flight	7.14	4	GB	1	C	3	3	South		
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Flight	7.14	4	HG	1	C	2	1	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	7.15	4	GX	1	B	2				Drifting
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	7.17	4	HG	2	B	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	7.19	4	RA	5	B	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	7.19	4	RA	2	B	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	7.21	4	RA	24	C	3				Feeding, swimming
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	7.22	4	SA	1	C	3				Feeding and drifting South
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	7.22	4	RA	18	C	3				Feeding
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	7.22	4	GB	1	C	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	7.25	4	F.	2	F	3				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	7.3	4	KI	1	A	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	7.31	4	HG	1	B	4				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	7.32	4	GX	1	B	2				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	7.34	4	AUK	1	B	4				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	7.34	4	GB	1	B	2				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	7.34	4	F.	4	E	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	7.35	4	GULL	5	B	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	7.35	4	RA	5	B	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	7.35	4	GX	1	C	1				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	7.37	4	F.	1	C	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	7.37	4	RA	4	C	3				Swimming North
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	7.39	4	RA	3	C	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Flight	7.46	4	HG	1	C	3	3	South		
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Flight	7.47	4	SA	1	C	3	2	CIRC		
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Flight	7.48	4	GX	1	C	2	3	South		
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Flight	7.48	4	HG	1	C	2	3	South		
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Flight	7.48	4	GB	1	C	2	3	South		
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Flight	7.49	4	CM	1	C	1	2	North		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Flight	8.12	4	WM	8	C	2	2	North		
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Flight	8.14	4	F.	1	C	3	3	North		
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	8.15	4	GX	1	A	2				Not feeding
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	8.18	4	RA	8	B	4				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	8.18	4	HG	1	B	4				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	8.19	4	GX	1	D	1				Drifting North
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	8.2	4	RA	13	B	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	8.2	4	GB	1	B	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	8.2	4	HG	3	B	3				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	8.21	4	RA	40	B	3				Swimming near cliffs
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	8.21	4	GB	1	B	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	8.22	4	RA	27	C	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	8.24	4	RA	9	D	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	8.24	4	LB	1	E	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	8.29	1	F.	2	F	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	8.31	1	F.	2	F	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	8.33	1	RA	3	D	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	8.35	1	RA	2	C	3				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	8.35	1	LB	1	C	2				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	8.35	1	KI	1	C	2				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	8.38	1	RA	49	C	3				Swimming in several rafts near nest cliffs
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	8.39	1	RA	4	C	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	8.39	1	AUK	15	B	4				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	8.42	1	GX	1	B	2				Not feeding
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Flight	8.47	1	F.	1	C	3	3	South		
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Flight	8.48	1	F.	1	C	3	3	South		
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Flight	8.48	1	F.	1	C	3	3	CIRC		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Flight	9.1	1	F.	1	C	1	3	South		
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Flight	9.12	1	SA	1	C	3	2	North		
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Flight	9.13	1	GB	1	C	1	3	North		
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	9.15	1	GX	1	A	2				Not feeding sat on water
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	9.18	1	GB	2	B	4				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	9.19	1	HG	1	B	4				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	9.21	1	RA	31	C	3				Swimming
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	9.22	1	RA	16	D	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	9.23	1	SA	1	C	2				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	9.25	1	F.	3	E	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	9.25	1	F.	3	E	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	9.25	1	HG	1	F	3				
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	9.27	1	HG	1	B	1				Drifting North
20/04/2010	Pen Dal-adevyn	AS	6.30	9.30	Sea	9.28	1	F.	5	F	3				
21/04/2010	Point St John	AS	10:30	13:30	Sea	10:31	2	RA	2	A	4		Loafing/preening		
21/04/2010	Point St John	AS	10:30	13:30	Sea	10:31	2	F.	1	A	4		Loafing/preening		
21/04/2010	Point St John	AS	10:30	13:30	Sea	10:33	2	GU	1	B	4		Loafing/preening		
21/04/2010	Point St John	AS	10:30	13:30	Sea	10:33	2	GB	1	B	4		Loafing/preening		
21/04/2010	Point St John	AS	10:30	13:30	Sea	10:33	2	HG	1	B	4		Loafing/preening		
21/04/2010	Point St John	AS	10:30	13:30	Sea	10:36	2	F.	3	C	4		Loafing/preening		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
21/04/2010	Point St John	AS	10:30	13:30	Sea	10:40	2	RA	4	D	2		Loafing/preening		
21/04/2010	Point St John	AS	10:30	13:30	Flight	10:45	2	GX	1	C	1				
21/04/2010	Point St John	AS	10:30	13:30	Flight	10:48	2	TE	3	C	2				
21/04/2010	Point St John	AS	10:30	13:30	Flight	10:48	2	F.	1	C	4				
21/04/2010	Point St John	AS	10:30	13:30	Flight	11:10	2	GX	1	C	2				
21/04/2010	Point St John	AS	10:30	13:30	Flight	11:10	2	LB	2	D	1				
21/04/2010	Point St John	AS	10:30	13:30	Flight	11:13	2	KI	1	D	2				
21/04/2010	Point St John	AS	10:30	13:30	Flight	11:13	2	LB	1	C	1				
21/04/2010	Point St John	AS	10:30	13:30	Sea	11:19	2	F.	9	C	4		Loafing		
21/04/2010	Point St John	AS	10:30	13:30	Sea	11:23	2	F.	7	B	4				
21/04/2010	Point St John	AS	10:30	13:30	Sea	11:27	2	AUK	4	B	4		Swimming/drift North		
21/04/2010	Point St John	AS	10:30	13:30	Sea	11:27	2	KI	5	B	4		Feeding		
21/04/2010	Point St John	AS	10:30	13:30	Sea	11:34	2	F.	6	B	4		Loafing		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
21/04/2010	Point St John	AS	10:30	13:30	Sea	11:36	2	F.	4	C	4				
21/04/2010	Point St John	AS	10:30	13:30	Flight	11:46	2	GX	1	C	1				
21/04/2010	StDavidsVP1	AS	10:30	13:30	Dives	11:53:30		RA	1	B	3			8	
21/04/2010	StDavidsVP1	AS	10:30	13:30	Dives	11:53:40		RA	1	B	3			10	
21/04/2010	StDavidsVP1	AS	10:30	13:30	Dives	12:02:00		RA	2	C	2			30	
21/04/2010	StDavidsVP1	AS	10:30	13:30	Dives	12:05:00		RA	1	C	2			30	
21/04/2010	Point St John	AS	10:30	13:30	Flight	12:10	2	F.	1	D	4				
21/04/2010	Point St John	AS	10:30	13:30	Flight	12:12	2	AE	1	C	2				
21/04/2010	Point St John	AS	10:30	13:30	Flight	12:13	2	TE	3	C	2				
21/04/2010	Point St John	AS	10:30	13:30	Sea	12:15	2	SA	1	D	1		Feeding		
21/04/2010	Point St John	AS	10:30	13:30	Sea	12:21	2	KI	3	D	2		Drifting n		
21/04/2010	Point St John	AS	10:30	13:30	Sea	12:21	2	RA	2	D	2		Preening		
21/04/2010	Point St John	AS	10:30	13:30	Sea	12:24	2	RA	2	B	3		Preening		
21/04/2010	Point St John	AS	10:30	13:30	Sea	12:32	2	KI	2	A	4		Loafing		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
21/04/2010	Point St John	AS	10:30	13:30	Sea	12:32	2	AUK	2	A	4		Feeding		
21/04/2010	Point St John	AS	10:30	13:30	Sea	12:32	2	RA	1	A	4		Feeding		
21/04/2010	Point St John	AS	10:30	13:30	Sea	12:37	2	F.	4	C	4				
21/04/2010	Point St John	AS	10:30	13:30	Sea	12:40	2	RA	1	C	2		Drifting n		
21/04/2010	Point St John	AS	10:30	13:30	Sea	12:40	2	RA	3	C	2		Preening		
21/04/2010	Point St John	AS	10:30	13:30	Flight	12:46	2	RA	2	C	2				
21/04/2010	Point St John	AS	10:30	13:30	Flight	12:49	2	GX	1	D	1				
21/04/2010	StDavidsVP1	AS	10:30	13:30	Dives	12:55:37		SA	1	C	2			83	
21/04/2010	StDavidsVP1	AS	10:30	13:30	Dives	12:58:30		SA	1	C	2			60	
21/04/2010	StDavidsVP1	AS	10:30	13:30	Dives	13:00:40		SA	1	D	2			70	
21/04/2010	StDavidsVP1	AS	10:30	13:30	Dives	13:08:30		SA	1	D	1			80	
21/04/2010	Point St John	AS	10:30	13:30	Flight	13:13	2	SA	1	C	3				
21/04/2010	Point St John	AS	10:30	13:30	Sea	13:18	2	AUK	2	A	4		Drifting North		
21/04/2010	Point St John	AS	10:30	13:30	Sea	13:18	2	RA	2	B	4		Swimming		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
21/04/2010	Point St John	AS	10:30	13:30	Sea	13:21	2	SA	1	C	3		Feeding		
21/04/2010	Point St John	AS	10:30	13:30	Sea	13:25	2	GB	1	E	1		Sat on water		
21/04/2010	Point St John	AS	14:00	17:00	Sea	14:02	2	GB	1	F	2				
21/04/2010	Point St John	AS	14:00	17:00	Sea	14:05	2	AUK	8	B	4				Loafing
21/04/2010	Point St John	AS	14:00	17:00	Sea	14:05	2	KI	1	B	4				Loafing
21/04/2010	Point St John	AS	14:00	17:00	Sea	14:12	2	RA	2	D	2				Loafing, preening
21/04/2010	StDavidsVP1	AS	14:00	17:00	Dives	14:20:00		RA	2	C	2			30	
21/04/2010	Point St John	AS	14:00	17:00	Flight	14:42	2	F.	1	C	3	2	CIRC		
21/04/2010	Point St John	AS	14:00	17:00	Flight	14:43	2	RA	2	C	2	2	South		
21/04/2010	Point St John	AS	14:00	17:00	Flight	14:43	2	F.	1	C	3	3	North		
21/04/2010	Point St John	AS	14:00	17:00	Sea	14:47	2	RA	2	B	3				Feeding
21/04/2010	Point St John	AS	14:00	17:00	Sea	14:49	2	SA	1	D	2				With fish
21/04/2010	Point St John	AS	14:00	17:00	Sea	14:54	2	SA	1	C	4				
21/04/2010	Point St John	AS	14:00	17:00	Sea	15:02	2	SA	1	C	4				Swimming North

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
21/04/2010	Point St John	AS	14:00	17:00	Sea	15:06	2	SA	1	B	3				Landed
21/04/2010	Point St John	AS	14:00	17:00	Flight	15:17	2	OC	2	D	3	1	North		Landing on island
21/04/2010	Point St John	AS	14:00	17:00	Flight	15:17	2	HG	3	C	1				
21/04/2010	StDavidsVP1	AS	14:00	17:00	Dives	15:25:50		SA	1	E	1			60	
21/04/2010	StDavidsVP1	AS	14:00	17:00	Dives	15:26:40		SA	1	E	1			50	
21/04/2010	StDavidsVP1	AS	14:00	17:00	Dives	15:28:37		SA	1	E	1			60	
21/04/2010	StDavidsVP1	AS	14:00	17:00	Dives	15:30:00		SA	1	E	1			70	
21/04/2010	StDavidsVP1	AS	14:00	17:00	Dives	15:31:20		SA	1	E	1			65	
21/04/2010	StDavidsVP1	AS	14:00	17:00	Dives	15:32:57		SA	1	E	1			60	
21/04/2010	StDavidsVP1	AS	14:00	17:00	Dives	15:34:30		SA	1	E	1			60	
21/04/2010	StDavidsVP1	AS	14:00	17:00	Dives	15:35:40		SA	1	E	1			70	
21/04/2010	StDavidsVP1	AS	14:00	17:00	Dives	15:37:11		SA	1	E	1			80	
21/04/2010	StDavidsVP1	AS	14:00	17:00	Dives	15:38:47		SA	1	E	1			65	
21/04/2010	Point St John	AS	14:00	17:00	Flight	15:42	2	LB	1	C	3	2	North East		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
21/04/2010	Point St John	AS	14:00	17:00	Sea	15:52	3	SA	1	E	1				Feeding
21/04/2010	Point St John	AS	14:00	17:00	Sea	15:56	3	SA	1	A	4				
21/04/2010	Point St John	AS	14:00	17:00	Sea	15:56	3	F.	1	B	4				Taking off North
21/04/2010	Point St John	AS	14:00	17:00	Flight	16:17	3	HG	1	C	1	2	North		
21/04/2010	Point St John	AS	14:00	17:00	Flight	16:19	3	F.	1	C	3	1	North		
21/04/2010	StDavidsVP1	AS	14:00	17:00	Dives	16:30:50		CA	1	D	3			75	
21/04/2010	StDavidsVP1	AS	14:00	17:00	Dives	16:31:00		CA	1	D	3			120	
21/04/2010	StDavidsVP1	AS	14:00	17:00	Dives	16:34:20		CA	1	D	3				
21/04/2010	Point St John	AS	14:00	17:00	Flight	16:42	3	GX	1	C	1	3	North		
21/04/2010	Point St John	AS	14:00	17:00	Sea	16:55	4	SA	1	A	3				Landed
22/04/2010	Point St John	AS	06:30	09:30	Sea	06:33	4	SA	1	D	3				Feeding
22/04/2010	Point St John	AS	06:30	09:30	Sea	06:36	4	SA	1	A	3				Feeding
22/04/2010	Point St John	AS	06:30	09:30	Sea	06:42	4	LB	1	A	3				Loafing
22/04/2010	Point St John	AS	06:30	09:30	Flight	06:46	4	GU	1	D	3	1	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
22/04/2010	Point St John	AS	06:30	09:30	Flight	06:46	4	GB	1	C	1	3	North		
22/04/2010	Point St John	AS	06:30	09:30	Flight	06:48	4	F.	1	C	1	3	North		
22/04/2010	Point St John	AS	06:30	09:30	Flight	06:48	4	LARGE GULL	1	C	2	2	South		
22/04/2010	StDavidsVP1	AS	06:30	09:30	Dives	06:56:13		SA	1	B	1			100	No catch
22/04/2010	StDavidsVP1	AS	06:30	09:30	Dives	06:58:22		SA	1	B	2			90	Caught fish, observed for 5mins
22/04/2010	Point St John	AS	06:30	09:30	Flight	07:11	4	HG	1	C	1	3	South		
22/04/2010	Point St John	AS	06:30	09:30	Sea	07:18	4	SA	1	A	4				Loafing
22/04/2010	Point St John	AS	06:30	09:30	Sea	07:18	4	F.	1	B	4				Loafing
22/04/2010	Point St John	AS	06:30	09:30	Sea	07:25	4	SA	1	A	4				Loafing
22/04/2010	Point St John	AS	06:30	09:30	Sea	07:31	4	SA	1	A	4		2		With fish
22/04/2010	Point St John	AS	06:30	09:30	Sea	07:39	4	GB	1	C	3				
22/04/2010	Point St John	AS	06:30	09:30	Flight	07:46	4	GB	1	C	1	3	South		
22/04/2010	Point St John	AS	06:30	09:30	Flight	07:47	4	TE	1	D	1	3	North		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
22/04/2010	Point St John	AS	06:30	09:30	Flight	07:47	4	GB	1	D	1	3	North		
22/04/2010	Point St John	AS	06:30	09:30	Flight	07:49	4	LB	1	C	2	1	South		
22/04/2010	Point St John	AS	06:30	09:30	Flight	07:49	4	GB	1	C	2	3	South		
22/04/2010	Point St John	AS	06:30	09:30	Flight	08:10	4	SA	1	D	3	1	North		
22/04/2010	Point St John	AS	06:30	09:30	Flight	08:12	4	HG	1	C	2	3	Ssouth		
22/04/2010	Point St John	AS	06:30	09:30	Flight	08:13	4	GX	1	D	4	2	North		
22/04/2010	Point St John	AS	06:30	09:30	Sea	08:15	4	GX	1	F	3				Loafing
22/04/2010	Point St John	AS	06:30	09:30	Sea	08:20	4	GX	1	F	2				Loafing
22/04/2010	Point St John	AS	06:30	09:30	Sea	08:37	4	F.	1	B	4				
22/04/2010	Point St John	AS	06:30	09:30	Sea	08:40	4	GB	2	D	3				
22/04/2010	Point St John	AS	06:30	09:30	Flight	08:45	4	LB	1	C	2	3	South		
22/04/2010	Point St John	AS	06:30	09:30	Flight	08:46	4	GB	1	C	2	3	North		
22/04/2010	Point St John	AS	06:30	09:30	Flight	08:47	4	F.	1	D	3	1	North		
22/04/2010	Point St John	AS	06:30	09:30	Flight	08:48	4	GB	1	C	2	3	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
22/04/2010	StDavidsVP1	AS	06:30	09:30	Dives	08:55:00		SA	1	D	2			60	
22/04/2010	StDavidsVP1	AS	06:30	09:30	Dives	08:58:15		SA	1	E	2			75	No catch
22/04/2010	StDavidsVP1	AS	06:30	09:30	Dives	09:00:15		SA	1	E	2			90	
22/04/2010	StDavidsVP1	AS	06:30	09:30	Dives	09:02:30		SA	1	E	2			70	
22/04/2010	StDavidsVP1	AS	06:30	09:30	Dives	09:04:45		SA	1	E	2			60	
22/04/2010	StDavidsVP1	AS	06:30	09:30	Dives	09:06:40		SA	1	E	2			65	Caught and ate fish
22/04/2010	StDavidsVP1	AS	06:30	09:30	Dives	09:08:50		SA	1	E	2			60	No catch, observed for 15mins
22/04/2010	Point St John	AS	06:30	09:30	Flight	09:10	4	LB	1	C	2	3	South		
22/04/2010	Point St John	AS	06:30	09:30	Flight	09:11	4	TE	1	C	1	3	South		
22/04/2010	Point St John	AS	06:30	09:30	Flight	09:12	4	LB	2	C	1	3	North		
22/04/2010	Point St John	AS	06:30	09:30	Flight	09:13	4	LB	1	C	2	3	Ssouth		
22/04/2010	Point St John	AS	06:30	09:30	Flight	09:13	4	GX	1	D	3	2	North		
22/04/2010	Point St John	AS	06:30	09:30	Sea	09:15	4	SA	1	E	2				Feeding

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.															
Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
22/04/2010	Point St John	AS	06:30	09:30	Sea	09:17	4	HG	4	D	2				
22/04/2010	Point St John	AS	06:30	09:30	Sea	09:20	4	GB	9	D	4				Attracted to fishing boat
22/04/2010	Point St John	AS	06:30	09:30	Sea	09:20	4	HG	3	D	4				
22/04/2010	Point St John	AS	06:30	09:30	Sea	09:24	4	F.	3	B	4				
22/04/2010	Point St John	AS	06:30	09:30	Sea	09:24	4	SA	1	A	4				
22/04/2010	Point St John	AS	06:30	09:30	Sea	09:28	4	GB	1	D	2				
22/04/2010	Point St John	AS	10:00	13:00	Sea	10:03	4	GB	2	D	4				Loafing
22/04/2010	Point St John	AS	10:00	13:00	Sea	10:07	4	F.	1	B	3				
22/04/2010	Point St John	AS	10:00	13:00	Flight	10:16	4	HG	1	D	4	1	North		
22/04/2010	Point St John	AS	10:00	13:00	Flight	10:17	4	GX	1	D	4	1	North		
22/04/2010	Point St John	AS	10:00	13:00	Flight	10:19	4	TE	1	D	1	3	South		
22/04/2010	StDavidsVP1	AS	10:00	13:00	Dives	10:23:00		SA	1	C	4			85	Caught fish
22/04/2010	StDavidsVP1	AS	10:00	13:00	Dives	10:24:50		SA	1	C	4			70	No catch

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
22/04/2010	StDavidsVP1	AS	10:00	13:00	Dives	10:25:00		RA	2	D	3			30	No catch
22/04/2010	StDavidsVP1	AS	10:00	13:00	Dives	10:25:00		RA	2	D	3			30	No catch
22/04/2010	StDavidsVP1	AS	10:00	13:00	Dives	10:26:20		SA	1	C	4				Failed to relocate
22/04/2010	StDavidsVP1	AS	10:00	13:00	Dives	10:33:40		CA	1	F	2			120	Caught fish
22/04/2010	StDavidsVP1	AS	10:00	13:00	Dives	10:36:30		CA	1	F	2			70	No catch
22/04/2010	StDavidsVP1	AS	10:00	13:00	Dives	10:38:20		CA	1	F	2			90	No catch
22/04/2010	Point St John	AS	10:00	13:00	Flight	10:41	4	TE	1	D	2	3	North		
22/04/2010	Point St John	AS	10:00	13:00	Flight	10:42	4	TE	1	D	2	3	North		
22/04/2010	Point St John	AS	10:00	13:00	Flight	10:42	4	GB	1	C	1	3	North		
22/04/2010	Point St John	AS	10:00	13:00	Sea	10:45	4	GB	12	D	4				
22/04/2010	Point St John	AS	10:00	13:00	Sea	10:45	4	HG	1	D	4				
22/04/2010	Point St John	AS	10:00	13:00	Sea	10:45	4	CA	1	D	3				
22/04/2010	Point St John	AS	10:00	13:00	Sea	10:50	4	GX	1	D	3				Preening
22/04/2010	Point St John	AS	10:00	13:00	Sea	10:54	1	HG	1	B	4				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
22/04/2010	Point St John	AS	10:00	13:00	Sea	10:54	1	F.	3						
22/04/2010	Point St John	AS	10:00	13:00	Sea	11:04	1	GB	10	D	4				Flocking fishing boat
22/04/2010	Point St John	AS	10:00	13:00	Sea	11:08	1	RA	2	B	3				Drifting n then flying North
22/04/2010	Point St John	AS	10:00	13:00	Sea	11:11	1	HG	1	B	3				
22/04/2010	Point St John	AS	10:00	13:00	Sea	11:11	1	F.	5	B	4				
22/04/2010	Point St John	AS	10:00	13:00	Flight	11:15	1	LB	1	C	2	3	South		
22/04/2010	Point St John	AS	10:00	13:00	Flight	11:16	1	GX	1	C	2	3	South		
22/04/2010	Point St John	AS	10:00	13:00	Flight	11:42	1	F.	1	C	3	1	South		
22/04/2010	Point St John	AS	10:00	13:00	Sea	11:45	1	RA	1	F	3				
22/04/2010	Point St John	AS	10:00	13:00	Sea	11:58	2	RA	2	D	3				
22/04/2010	Point St John	AS	10:00	13:00	Sea	11:58	2	RA	2	C	2				
22/04/2010	Point St John	AS	10:00	13:00	Sea	12:05	2	RA	2	D	2				Feeding, drifting North
22/04/2010	Point St John	AS	10:00	13:00	Sea	12:08	2	RA	3	B	2				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
22/04/2010	Point St John	AS	10:00	13:00	Sea	12:08	2	HG	1						
22/04/2010	Point St John	AS	10:00	13:00	Sea	12:12	2	LARGE GULL	1	A	4				
22/04/2010	Point St John	AS	10:00	13:00	Sea	12:12	2	HG	1	B	2				
22/04/2010	Point St John	AS	10:00	13:00	Flight	12:15	2	RA	2	C	2	1	South		
22/04/2010	Point St John	AS	10:00	13:00	Flight	12:18	2	GX	1	D	1	3	South		
22/04/2010	Point St John	AS	10:00	13:00	Flight	12:18	2	GX	1	D	2	3	South		
22/04/2010	Point St John	AS	10:00	13:00	Flight	12:19	2	GB	1	C	1	3	North		
22/04/2010	StDavidsVP1	AS	10:00	13:00	Dives	12:20:40		RA	2	D	2			20	No catch then loafing/preening
22/04/2010	StDavidsVP1	AS	10:00	13:00	Dives	12:31:00		RA	2	D	2			30	No catch then loafing/preening
22/04/2010	StDavidsVP1	AS	10:00	13:00	Dives	12:31:55		RA	2	D	2			45	No catch then loafing/preening
22/04/2010	StDavidsVP1	AS	10:00	13:00	Dives	12:32:49		RA	2	D	2			35	No catch then loafing/preening

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
22/04/2010	StDavidsVP1	AS	10:00	13:00	Dives	12:33:33		RA	2	D	2			21	No catch then loafing/preening
22/04/2010	StDavidsVP1	AS	10:00	13:00	Dives	12:34:09		RA	2	D	2			31	No catch then loafing/preening
22/04/2010	StDavidsVP1	AS	10:00	13:00	Dives	12:34:50		RA	2	D	2			40	No catch then loafing/preening
22/04/2010	StDavidsVP1	AS	10:00	13:00	Dives	12:35:40		RA	2	D	2			30	One with fish
22/04/2010	Point St John	AS	10:00	13:00	Flight	12:44	2	RA	2	D	3	1	North		
22/04/2010	Point St John	AS	10:00	13:00	Sea	12:49	2	RA	2	E	3				Preening
22/04/2010	Point St John	AS	10:00	13:00	Sea	12:49	2	AUK	1	E	2				Feeding
22/04/2010	Point St John	AS	10:00	13:00	Sea	12:52	2	F.	1	B	4				
22/04/2010	Point St John	AS	10:00	13:00	Sea	12:55	2	RA	1	B	2				Feeding
23/04/2010	Point St John	AS	12:45	15:45	Sea	12:45	1	GX	1	E	3				Drifting North
23/04/2010	Point St John	AS	12:45	15:45	Sea	12:46	1	GX	1	F	4				Preening
23/04/2010	Point St John	AS	12:45	15:45	Sea	12:47	1	GX	1	F	4				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
23/04/2010	Point St John	AS	12:45	15:45	Sea	12:47	1	SA	1	F	2				
23/04/2010	Point St John	AS	12:45	15:45	Sea	12:50	1	F.	1	D	2				Bathing
23/04/2010	Point St John	AS	12:45	15:45	Sea	12:51	1	F.	10	C	4				Loafing
23/04/2010	Point St John	AS	12:45	15:45	Sea	12:52	1	RA	1	D	2				Preening and drifting North
23/04/2010	Point St John	AS	12:45	15:45	Sea	12:54	1	RA	1	E	2				Preening
23/04/2010	Point St John	AS	12:45	15:45	Sea	12:54	1	RA	1	E	2				Feeding
23/04/2010	Point St John	AS	12:45	15:45	Sea	12:54	1	SA	1	D	2				Feeding
23/04/2010	Point St John	AS	12:45	15:45	Sea	12:56	1	RA	2	B	2				Feeding
23/04/2010	Point St John	AS	12:45	15:45	Sea	12:56	1	KI	1	B	2				Feeding
23/04/2010	Point St John	AS	12:45	15:45	Sea	12:57	1	SA	1	A	3				Feeding
23/04/2010	Point St John	AS	12:45	15:45	Flight	13:02	1	RA	1	C	2	S	1		
23/04/2010	Point St John	AS	12:45	15:45	Flight	13:02	1	KI	1	C	2	N	1		
23/04/2010	Point St John	AS	12:45	15:45	Flight	13:03	1	KI	1	C	2	N	2		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
23/04/2010	StDavidsVP1	AS	12:45	15:45	Dives	13:05:50		RA	2	E	3			30	
23/04/2010	StDavidsVP1	AS	12:45	15:45	Dives	13:06:33		RA	2	E	3			40	
23/04/2010	StDavidsVP1	AS	12:45	15:45	Dives	13:15:40		RA	2	E	3			40	
23/04/2010	StDavidsVP1	AS	12:45	15:45	Dives	13:17:45		RA	1	E	3			30	
23/04/2010	StDavidsVP1	AS	12:45	15:45	Dives	13:18:05		RA	2	B	3			65	
23/04/2010	Point St John	AS	12:45	15:45	Flight	13:26	2	KI	1	D	4	N	2		
23/04/2010	Point St John	AS	12:45	15:45	Flight	13:27	2	HG	1	D	4	S	3		
23/04/2010	Point St John	AS	12:45	15:45	Flight	13:29	2	HG	1	D	2	S	3		
23/04/2010	Point St John	AS	12:45	15:45	Sea	13:33	2	F.	2	D	3				
23/04/2010	Point St John	AS	12:45	15:45	Sea	13:33	2	F.	5	D	4				
23/04/2010	Point St John	AS	12:45	15:45	Sea	13:33	2	AUK	1	D	4				
23/04/2010	Point St John	AS	12:45	15:45	Sea	13:36	2	F.	2	C	4				
23/04/2010	Point St John	AS	12:45	15:45	Sea	13:39	2	RA	2	C	2				Loafing
23/04/2010	Point St John	AS	12:45	15:45	Sea	13:39	2	RA	1	B	2				Feeding

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
23/04/2010	Point St John	AS	12:45	15:45	Sea	13:39	2	SA	1	B	2				Feeding
23/04/2010	Point St John	AS	12:45	15:45	Sea	13:47	2	HG	1	C	3				Swimming
23/04/2010	Point St John	AS	12:45	15:45	Sea	13:47	2	AUK	2	A	3				Feeding
23/04/2010	Point St John	AS	12:45	15:45	Sea	13:50	2	F.	1	D	3				Bathing
23/04/2010	Point St John	AS	12:45	15:45	Sea	13:52	2	F.	3	F	3				
23/04/2010	Point St John	AS	12:45	15:45	Sea	13:52	2	RA	2	F	3				
23/04/2010	Point St John	AS	12:45	15:45	Sea	13:54	2	KI	1	F	3				Drifting North
23/04/2010	Point St John	AS	12:45	15:45	Sea	13:54	2	GX	1	F	4				Loafing
23/04/2010	Point St John	AS	12:45	15:45	Sea	13:56	2	GX	1	F	2				Loafing
23/04/2010	Point St John	AS	12:45	15:45	Sea	13:56	2	RA	1	D	2				Preening
23/04/2010	Point St John	AS	12:45	15:45	Flight	14:00	2	CA	1	D	3	N	1		
23/04/2010	Point St John	AS	12:45	15:45	Flight	14:04	2	KI	1	D	4	S	3		
23/04/2010	Point St John	AS	12:45	15:45	Flight	14:04	2	F.	1	C	4	N	3		
23/04/2010	StDavidsVP1	AS	12:45	15:45	Dives	14:12:30		RA	2	B	3			30	

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
23/04/2010	StDavidsVP1	AS	12:45	15:45	Dives	14:13:50		RA	2	B	3			45	
23/04/2010	StDavidsVP1	AS	12:45	15:45	Dives	14:15:00		RA	2	B	3			40	
23/04/2010	StDavidsVP1	AS	12:45	15:45	Dives	14:15:50		RA	2	B	3			33	
23/04/2010	StDavidsVP1	AS	12:45	15:45	Dives	14:16:30		RA	2	B	3			60	
23/04/2010	StDavidsVP1	AS	12:45	15:45	Dives	14:18:00		RA	2	B	3			45	
23/04/2010	StDavidsVP1	AS	12:45	15:45	Dives	14:18:57		RA	2	B	3			40	
23/04/2010	StDavidsVP1	AS	12:45	15:45	Dives	14:19:56		RA	2	B	3			44	
23/04/2010	StDavidsVP1	AS	12:45	15:45	Dives	14:20:45		RA	2	B	3			80	
23/04/2010	StDavidsVP1	AS	12:45	15:45	Dives	14:23:20		RA	2	B	3			45	
23/04/2010	StDavidsVP1	AS	12:45	15:45	Dives	14:24:10		RA	2	C	2			35	
23/04/2010	Point St John	AS	12:45	15:45	Flight	14:27	2	F.	1	C	4	S	2		
23/04/2010	Point St John	AS	12:45	15:45	Flight	14:28	2	SA	1	C	4	S	1		
23/04/2010	Point St John	AS	12:45	15:45	Flight	14:29	2	KI	1	C	2	S	3		
23/04/2010	Point St John	AS	12:45	15:45	Flight	14:29	2	RA	1	C	1	S	1		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
23/04/2010	Point St John	AS	12:45	15:45	Sea	14:31	2	SA	1	C	4				
23/04/2010	Point St John	AS	12:45	15:45	Sea	14:31	2	RA	2	D	2				Feeding
23/04/2010	Point St John	AS	12:45	15:45	Sea	14:34	2	F.	7	E	4				
23/04/2010	Point St John	AS	12:45	15:45	Sea	14:34	2	RA	2	E	2				Preening
23/04/2010	Point St John	AS	12:45	15:45	Sea	14:37	2	RA	2	C	2				Preening
23/04/2010	Point St John	AS	12:45	15:45	Sea	14:40	2	RA	3	B	3				Feeding
23/04/2010	Point St John	AS	12:45	15:45	Sea	14:40	2	SA	1	B	3				Feeding
23/04/2010	Point St John	AS	12:45	15:45	Sea	14:40	2	RA	2	A	2				
23/04/2010	Point St John	AS	12:45	15:45	Sea	14:47	2	RA	2	C	2				Feeding
23/04/2010	Point St John	AS	12:45	15:45	Sea	14:47	2	F.	4	E	4				
23/04/2010	Point St John	AS	12:45	15:45	Sea	14:55	2	RA	3	E	3				Feeding
23/04/2010	Point St John	AS	12:45	15:45	Sea	14:57	2	RA	1	B	2				Drifting North
23/04/2010	Point St John	AS	12:45	15:45	Sea	14:57	2	KI	2	B	2				
23/04/2010	Point St John	AS	12:45	15:45	Flight	15:00	2	RA	2	D	3	S	1		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
23/04/2010	Point St John	AS	12:45	15:45	Flight	15:04	2	CA	1	D	4	S	1		
23/04/2010	Point St John	AS	12:45	15:45	Flight	15:26	2	KI	1	D	3	N	3		
23/04/2010	Point St John	AS	12:45	15:45	Flight	15:28	2	SA	1	D	4	S	2		
23/04/2010	Point St John	AS	12:45	15:45	Sea	15:31	2	RA	1	E	3				Feeding
23/04/2010	Point St John	AS	12:45	15:45	Sea	15:34	2	SA	1	C	2				Feeding
23/04/2010	Point St John	AS	12:45	15:45	Sea	15:37	2	LARGE GULL	2	B	2				
23/04/2010	Point St John	AS	12:45	15:45	Sea	15:37	2	SA	1	B	2				Feeding
23/04/2010	Point St John	AS	12:45	15:45	Sea	15:38	2	KI	1	B	3				
23/04/2010	Point St John	AS	12:45	15:45	Sea	15:38	2	RA	1	B	3				Drifting North
23/04/2010	Point St John	AS	12:45	15:45	Sea	15:42	2	RA	5	C	2				Loafing
23/04/2010	StDavidsVP1	AS	16:15	19:15	Dives	16:39:40		RA	2	A	4			30	
23/04/2010	StDavidsVP1	AS	16:15	19:15	Dives	16:40:40		RA	2	A	4				
23/04/2010	StDavidsVP1	AS	16:15	19:15	Dives	16:43:58		RA	1	A	4			30	

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
23/04/2010	StDavidsVP1	AS	16:15	19:15	Dives	16:44:58		RA	2	A	4			60	
23/04/2010	StDavidsVP1	AS	16:15	19:15	Dives	16:46:57		RA	3	A	4			35	
23/04/2010	StDavidsVP1	AS	16:15	19:15	Dives	16:47:33		RA	3	A	4			37	
23/04/2010	StDavidsVP1	AS	16:15	19:15	Dives	16:48:00		RA	3	A	4			30	
23/04/2010	StDavidsVP1	AS	16:15	19:15	Dives	16:50:00		RA	3	A	4			50	
23/04/2010	StDavidsVP1	AS	16:15	19:15	Dives	16:51:00		RA	4	A	4			50	
23/04/2010	StDavidsVP1	AS	16:15	19:15	Dives	16:52:15		RA	4	A	4				
23/04/2010	StDavidsVP1	AS	16:15	19:15	Dives	17:38:30		RA	2	B	3			30	
23/04/2010	StDavidsVP1	AS	16:15	19:15	Dives	17:39:05		RA	2	B	3			30	
23/04/2010	StDavidsVP1	AS	16:15	19:15	Dives	17:39:38		RA	2	B	3			20	
23/04/2010	StDavidsVP1	AS	16:15	19:15	Dives	17:40:00		RA	2	B	3			45	
23/04/2010	StDavidsVP1	AS	16:15	19:15	Dives	17:41:05		RA	2	B	3			30	
23/04/2010	StDavidsVP1	AS	16:15	19:15	Dives	17:41:40		RA	2	B	3			40	
23/04/2010	StDavidsVP1	AS	16:15	19:15	Dives	17:42:19		RA	2	B	3			28	

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
23/04/2010	StDavidsVP1	AS	16:15	19:15	Dives	17:42:50		RA	2	B	3			30	
23/04/2010	StDavidsVP1	AS	16:15	19:15	Dives	17:44:00		RA	2	B	3			60	
23/04/2010	StDavidsVP1	AS	16:15	19:15	Dives	17:45:20		RA	2	B	3			50	
23/04/2010	StDavidsVP1	AS	16:15	19:15	Dives	17:46:17		RA	2	B	3			30	
23/04/2010	StDavidsVP1	AS	16:15	19:15	Dives	17:46:47		RA	2	B	3			30	
23/04/2010	StDavidsVP1	AS	16:15	19:15	Dives	17:47:20		RA	2	B	3			40	
23/04/2010	StDavidsVP1	AS	16:15	19:15	Dives	17:48:36		RA	2	B	3				Not relocated
23/04/2010	StDavidsVP1	AS	16:15	19:15	Dives	17:52:50		RA	2	A	2			20	
23/04/2010	StDavidsVP1	AS	16:15	19:15	Dives	17:53:15		RA	2	A	2			20	
23/04/2010	StDavidsVP1	AS	16:15	19:15	Dives	17:54:02		RA	2	A	2			15	
23/04/2010	StDavidsVP1	AS	16:15	19:15	Dives	18:43:10		CA	1	C	3			20	
23/04/2010	StDavidsVP1	AS	16:15	19:15	Dives	18:44:08		CA	1	C	3			15	
23/04/2010	StDavidsVP1	AS	16:15	19:15	Dives	18:45:29		CA	1	C	3			10	
23/04/2010	Point St John	AS	16:15	19:15	Sea	04:48	2	RA	3	B	3				Feeding, 3 boats area b, 1620 disturbed RA

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
															which flew South
23/04/2010	Point St John	AS	16.15	19.15	Sea	05:31	2	HG	2	B	3				
23/04/2010	Point St John	AS	16.15	19.15	Sea	05:31	2	KI	1	B	3				
23/04/2010	Point St John	AS	16.15	19.15	Sea	06:14	2	AUK	1	A	4				Drifting north, possibly feeding
23/04/2010	Point St John	AS	16.15	19.15	Flight	07:40	2	HG	1	D	3	3	South		
23/04/2010	Point St John	AS	16.15	19.15	Flight	13:55	2	HG	1	C	1	3	South		
23/04/2010	Point St John	AS	16.15	19.15	Flight	13:55	2	GX	1	C	1	3	North		
23/04/2010	Point St John	AS	16.15	19.15	Sea	17.01	2	RA	2	A	4				Light extremely poor, 2 RA feeding
23/04/2010	Point St John	AS	16.15	19.15	Sea	17.01	2	HG	1	A	4				
23/04/2010	Point St John	AS	16.15	19.15	Sea	17.01	2	KI	1	A	4				
23/04/2010	Point St John	AS	16.15	19.15	Sea	17.03	2	RA	3	B	4				
23/04/2010	Point St John	AS	16.15	19.15	Sea	17.03	2	LARGE GULL	1	B	4				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
23/04/2010	Point St John	AS	16.15	19.15	Sea	17.03	2	RA	1	B	3				Feeding
23/04/2010	Point St John	AS	16.15	19.15	Sea	17.05	2	RA	2	B	2				Feeding
23/04/2010	Point St John	AS	16.15	19.15	Sea	17.08	2	RA	2	D	2				Loafing
23/04/2010	Point St John	AS	16.15	19.15	Sea	17.11	2	SA	1	D	3				Feeding
23/04/2010	Point St John	AS	16.15	19.15	Sea	17.17	2	RA	1	D	2				Not feeding
23/04/2010	Point St John	AS	16.15	19.15	Sea	17.18	2	GX	1	E	2				Loafing
23/04/2010	Point St John	AS	16.15	19.15	Sea	17.21	2	F.	3	B	4				
23/04/2010	Point St John	AS	16.15	19.15	Sea	17.21	2	RA	1	B	4				Feeding
23/04/2010	Point St John	AS	16.15	19.15	Sea	17.22	2	RA	1	A	3				Feeding
23/04/2010	Point St John	AS	16.15	19.15	Sea	17.24	2	F.	3	B	4				Loafing
23/04/2010	Point St John	AS	16.15	19.15	Sea	17.27	2	GB	1	F	1				
23/04/2010	Point St John	AS	16.15	19.15	Flight	17.33	2	LB	1	C	2	3	South		
23/04/2010	Point St John	AS	16.15	19.15	Flight	17.33	2	HG	1	C	1	3	South		
23/04/2010	Point St John	AS	16.15	19.15	Flight	17.34	2	OC	1	C	1	2	North		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
23/04/2010	Point St John	AS	16.15	19.15	Flight	17.57	2	GX	1	C	2	3	North		
23/04/2010	Point St John	AS	16.15	19.15	Sea	18.02	2	RA	6	E	2				Loafing, boat areas f, e, d, c+b. 1800-1815
23/04/2010	Point St John	AS	16.15	19.15	Sea	18.04	2	GX	1	E	2				Loafing, boat areas f, e, d, c+b. 1800-1815
23/04/2010	Point St John	AS	16.15	19.15	Sea	18.05	2	GX	1	D	2				Loafing, boat areas f, e, d, c+b. 1800-1815
23/04/2010	Point St John	AS	16.15	19.15	Sea	18.08	2	GB	1	B	3				Loafing, boat areas f, e, d, c+b. 1800-1815
23/04/2010	Point St John	AS	16.15	19.15	Sea	18.09	2	GB	2	A	2				Loafing, boat areas f, e, d, c+b. 1800-1815
23/04/2010	Point St John	AS	16.15	19.15	Sea	18.16	2	GB	1	B	2				
23/04/2010	Point St John	AS	16.15	19.15	Sea	18.19	2	F.	11	C	4				
23/04/2010	Point St John	AS	16.15	19.15	Sea	18.2	2	LB	1	F	3				
23/04/2010	Point St John	AS	16.15	19.15	Sea	18.24	2	RA	6	E	2				Loafing
23/04/2010	Point St John	AS	16.15	19.15	Flight	18.3	2	HG	1	B	3	3	North		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
23/04/2010	Point St John	AS	16.15	19.15	Flight	18.32	2	HG	1	B	3	3	North		
23/04/2010	Point St John	AS	16.15	19.15	Flight	18.33	2	HG	1	B	3	3	North		
23/04/2010	Point St John	AS	16.15	19.15	Flight	18.58	3	HG	1	C	3	3	North		
23/04/2010	Point St John	AS	16.15	19.15	Flight	18.59	3	HG	1	C	2	1	South		
23/04/2010	Point St John	AS	16.15	19.15	Flight	18.59	3	LB	1	C	1	3	South		
23/04/2010	Point St John	AS	16.15	19.15	Sea	19	3	RA	1	B	2				Drifting South
23/04/2010	Point St John	AS	16.15	19.15	Sea	19.04	3	LB	1	B	4				
23/04/2010	Point St John	AS	16.15	19.15	Sea	19.05	3	LB	1	A	3				
23/04/2010	Point St John	AS	16.15	19.15	Sea	19.09	3	F.	1	B	4				
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	06:33	2	LARGE GULL	1	B	4				
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	06:33	2	LB	1	B	3				
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	06:35	2	AUK	1	C	3				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	06:35	2	AUK	2	D	3				
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	06:39	2	LB	1	E	3				
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	06:39	2	HG	1	E	3				
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	06:45	2	OC	2	C	3	3	North		
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	06:46	2	TE	1	C	2	3	North		
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	06:46	2	LB	1	C	1	3	South		
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	06:46	2	KI	1	C	2	1	South		
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	06:47	2	GB	2	C	2	3	South		
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	06:48	2	HG	1	C	1	1	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	06:49	2	HG	1	C	1	1	South		
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	06:49	2	LB	1	C	1	2	South		
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	07:11	3	LB	1	C	2	3	South		
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	07:11	3	GX	1	C	3	3	South		
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	07:11	3	HG	1	C	1	2	South		
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	07:13	3	GU	2	C	2	1	South		Landed
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	07:13	3	HG	1	C	1	2	South		
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	07:16	3	GU	6	C	2				Loafing
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	07:16	3	RA	2	C	2				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	07:19	3	F.	2	D	2				
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	07:21	3	RA	2	C	3				Loafing, swimming
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	07:23	3	RA	15	C	3				
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	07:23	3	GU	6	C	3				
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	07:24	3	HG	1	C	3				
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	07:26	3	RA	5	D	3				
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	07:26	3	F.	3	D	3				
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	07:32	3	GU	2	A	2				Loafing, swimming
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	07:34	3	RA	2	C	3				Loafing, swimming

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	07:35	3	SA	1	D	3				Bathing
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	07:37	3	RA	2	D	3				
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	07:40	3	F.	1	E	3				
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	07:43	3	HG	1	B	3				
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	07:47	3	HG	2	C	3	3	South		
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	07:48	3	F.	1	C	2	1	North		
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	07:48	3	HG	1	C	1	1	South		
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	07:49	3	F.	1	C	1	2	South		
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	08:10	4	TE	1	C	2	3	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	08:10	4	OC	2	C	1	2	South		
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	08:10	4	KI	1	C	2	2	South		
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	08:10	4	KI	1	C	2	2	South		
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	08:10	4	F.	1	C	2	1	South		
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	08:12	4	F.	1	C	3	3	South		
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	08:12	4	LB	1	C	1	1	South		
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	08:13	4	GX	1	C	2	2	North		
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	08:14	4	RA	3	C	3	3	North		
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	08:18	4	AUK	17	C	3				Loafing

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	08:20	4	RA	19	C	3				Loafing
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	08:20	4	F.	1	C	3				Loafing
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	08:23	4	RA	1	D	3				Landed
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	08:25	4	F.	1	F	3				
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	08:27	4	F.	3	F	3				
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	08:33	4	RA	1	B	3				Loafing
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	08:35	4	RA	5	D	3				Loafing
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	08:38	4	RA	3	D	3				Loafing
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	08:39	4	KI	1	C	3				Loafing

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	08:41	4	F.	6	F	3				
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	08:41	4	F.	1	F	4				
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	08:43	4	RA	11	C	3				Swimming
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	08:43	4	HG	1	C	3				
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	08:46	4	HG	1	C	1	2	South		
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	08:46	4	GX	1	C	2	2	South		
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	08:49	4	WM	28	C	2	1	South		
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	08:49	4	HG	1	C	2	3	North		
24/04/2010	StDavidsVP2	AS	06:30	09:30	Dives	08:54:50		RA	1	D	3			50	No catch
24/04/2010	StDavidsVP2	AS	06:30	09:30	Dives	08:55:53		RA	1	D	3			40	No catch

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
24/04/2010	StDavidsVP2	AS	06:30	09:30	Dives	08:56:52		RA	1	D	3			30	No catch
24/04/2010	StDavidsVP2	AS	06:30	09:30	Dives	08:57:30		RA	1	D	3			40	No catch
24/04/2010	StDavidsVP2	AS	06:30	09:30	Dives	08:58:00		RA	1	D	3			35	No catch
24/04/2010	StDavidsVP2	AS	06:30	09:30	Dives	09:09:00		RA	2	D	3			30	No catch
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	09:12	4	HG	1	C	2	2	North		
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Flight	09:14	4	RA	2	C	3	2	North		
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	09:15	4	HG	1	C	3				
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	09:15	4	RA	1	C	3				
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	09:15	4	KI	5	A	2				
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	09:19	4	RA	7	C	3				Loafing
24/04/2010	Pen Dal-	AS	06:30	09:30	Sea	09:19	4	RA	2	C	3				Loafing

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	09:21	4	RA	4	D	3				
24/04/2010	Pen Dal-adevyn	AS	06:30	09:30	Sea	09:21	4	F.	2	E/F	3/4				
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	10:02	4	HG	1	B	4				
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	10:02	4	LB	2	C	3				
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	10:02	4	HG	5	C	3				
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	10:04	4	HG	6	C	3				
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	10:06	4	HG	3	C	3				
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	10:06	4	RA	1	D	3				Feeding
24/04/2010	Pen Dal-	AS	10:00	13:00	Sea	10:08	4	RA	17	D	3				Loafing

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	10:11	4	F.	1	F	3				
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Flight	10:15	4	HG	1	C	1	1	South		
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Flight	10:16	4	OC	1	C	1	1	North		
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Flight	10:16	4	GX	1	C	2	1	South		
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Flight	10:18	4	LB	1	C	1	3	South		
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Flight	10:19	4	HG	2	C	1	2	South		
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Flight	10:19	4	CA	1	C	1	2	North		
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	10:22:00		RA	3	D	3			10	
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	10:23:25		RA	2	D	3			20	

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	10:23:52		RA	2	D	3			21	
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	10:24:55		RA	2	D	3			22	
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	10:26:36		RA	2	D	3			20	
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	10:27:58		RA	1	D	3			70	
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	10:28:30		RA	1	D	3			30	
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	10:29:00		RA	1	D	3			30	
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Flight	10:40	4	TE	1	C	1	3	South		
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Flight	10:41	4	GB	1	C	1	1	South		
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Flight	10:42	4	LB	2	C	1	2	South		
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Flight	10:42	4	CA	1	C	1	3	North		
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Flight	10:43	4	KI	2	C	2	2	North		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Flight	10:44	4	AUK	1	C	3	2	North		
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Flight	10:44	4	F.	1	C	3	3	South		
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	10:46	4	RA	2	A	2				Loafing
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	10:48	4	HG	1	C	3				
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	10:51	4	RA	3	D	3				Feeding
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	10:53	4	RA	5	D	3				Swimming
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	10:53	4	HG	3	D	3				
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	10:55	4	F.	4	E	3				
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	10:55	4	F.	3	F	3				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	10:58	4	RA	3	B	3				Swimming
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	11:01	4	F.	8	F	3				
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	11:02	4	RA	4	D	3				Swimming/loafing
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	11:03	4	RA	3	D	3				
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	11:05	4	RA	21	C	3				
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	11:05	4	HG	3	C	3				
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	11:10	4	SA	1	B	3				Flew South East
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Flight	11:16	4	SA	1	C	1	1	South		
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Flight	11:19	4	HG	3	C	2	1	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Flight	11:19	4	GX	1	C	2	1	South		
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Flight	11:19	4	HG	1	C	1	1	South		
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Flight	11:19	4	F.	1	C	2	1	South		
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	11:23:00		RA	1	D	3			20	
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	11:23:40		RA	1	D	3			30	
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	11:24:15		RA	1	D	3			40	
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	11:24:50		RA	1	D	3				
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	11:26:00		RA	3	D	3			30	
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	11:26:30		RA	3	D	3			20	
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	11:27:00		RA	3	D	3			15	
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	11:27:27		RA	3	D	3			10	
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	11:28:00		RA	4	D	3			25	

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	11:28:30		RA	4	D	3			30	
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	11:29:10		RA	4	D	3			20	
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	11:29:35		RA	4	D	3			30	
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	11:32:50		RA	2	D	3			28	
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	11:33:21		RA	2	D	3			60	
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	11:34:30		RA	2	D	3			30	
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	11:35:03		RA	2	D	3			20	
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	11:35:36		RA	2	D	3			20	
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	11:36:07		RA	2	D	3			35	
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	11:36:40		RA	2	D	3			20	
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	11:37:10		RA	2	D	3			30	
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	11:37:57		RA	2	D	3			33	
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	11:38:30		RA	2	D	3			20	
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	11:39:00		RA	2	D	3			40	

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Flight	11:41	4	HG	2	C	1	3	South		
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Flight	11:43	4	HG	1	C	3	3	South		
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Flight	11:44	4	HG	1	C	1	3	South		
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	11:49	4	RA	4	D	2				
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	11:49	4	RA	2	D	1				Loafing
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	11:50	4	HG	2	D	3				
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	11:52	4	AUK	7	C	4				Loafing
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	11:52	4	RA	2	B	3				Loafing
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	11:52	4	KI	1	B	3				Feeding

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	11:56	4	SA	1	B	1	1			Feeding
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	11:57	4	RA	3	D	3	3			Swimming/feeding
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	12:02	4	RA	3	B	4	4			
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	12:02	4	SA	1	B	1	1			
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	12:04	4	RA	2	D	3	3			Feeding
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	12:05	4	RA	4	D	4	4			Swimming
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	12:07	4	RA	2	D	2	2			Swimming
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	12:08	4	GX	2	B	2	2			Loafing
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	12:10	4	HG	1	E	3	3			

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	12:10	4	F.	7	E	3	3			
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	12:11	4	F.	2	F	3	3			
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Flight	12:16	4	GX	1	C	2	2	South		
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Flight	12:16	4	RA	2	C	2	2	South		
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Flight	12:16	4	LB	1	C	2	2	South		
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Flight	12:17	4	GX	1	C	2	2	North		
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Flight	12:18	4	F.	1	C	3	3	North		
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Flight	12:18	4	LB	2	C	1	2	South		
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Flight	12:19	4	LB	1	C	2	2	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Flight	12:19	4	GX	1	C	2	2	North		
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	12:25:24		SA	1	D	3			20	No catch
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	12:26:14		SA	1	D	3			30	No catch
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	12:26:57		SA	1	D	3			30	No catch
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	12:27:30		SA	1	D	3			28	No catch
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	12:28:10		SA	1	D	3				Not relocated
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	12:35:30		RA	2	D	2			20	
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	12:35:58		RA	2	D	2			30	
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	12:36:40		RA	2	D	2			60	
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	12:37:40		RA	2	D	2			60	
24/04/2010	StDavidsVP2	AS	10:00	13:00	Dives	12:39:00		RA	2	D	2			60	
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Flight	12:42	4	HG	1	C	2	3	South		
24/04/2010	Pen Dal-	AS	10:00	13:00	Flight	12:43	4	HG	1	C	1	3	South		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.															
Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	12:48	4	AUK	1	B	4	4			
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	12:49	4	AUK	1	B	4	4			
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	12:49	4	LB	1	B	4	4			
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	12:51	4	RA	2	B	3	3			
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	12:51	4	HG	8	C	3	3			
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	12:53	4	RA	2	A	3	3			Swimming, probably feeding
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	12:53	4	RA	2	C	3	3			Swimming, probably feeding
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	12:57	4	RA	2	E	2	2			Drifting North
24/04/2010	Pen Dal-	AS	10:00	13:00	Sea	12:57	4	F.	5	E	3	3			

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
	adevyn														
24/04/2010	Pen Dal-adevyn	AS	10:00	13:00	Sea	12:58	4	GX	1	D	2	2			Preening
25/04/2010	Carmel Head	PD	08:00	15:00	Sea	08:15	3	AUK	4	D	6	1	North East		Fixed point at D6 + D3
25/04/2010	Carmel Head	PD	08:00	15:00	Sea	08:15	3	SA	1	D	5	1	South West		
25/04/2010	Carmel Head	PD	08:00	15:00	Sea	08:40	3	AUK	7	D	6	1	North East		
25/04/2010	Carmel Head	PD	08:00	15:00	Sea	09:15	4	AUK	7	D	6	1	North East		
25/04/2010	Carmel Head	PD	08:00	15:00	Sea	09:40	4	CA	1	D	4	2	South West		
25/04/2010	Carmel Head	PD	08:00	15:00	Sea	09:40	4	AUK	2	D	6	1	North East		
25/04/2010	Carmel Head	PD	08:00	11:00	Sea	09:45	4	RA	5	F	5				
25/04/2010	Carmel Head	PD	08:00	11:00	Sea	10:05	4	AUK	2	D	5				
25/04/2010	Carmel Head	PD	08:00	15:00	Sea	10:15	4	AUK	11	D	6	1	North East		
25/04/2010	Carmel Head	PD	08:00	15:00	Dives	10:25		AUK	1	D	5			14	
25/04/2010	Carmel Head	PD	08:00	15:00	Dives	10:26		AUK	1	D	5			27	

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
25/04/2010	Carmel Head	PD	08:00	15:00	Sea	12:15	4	AUK	2	D	6	1	North East		
25/04/2010	Carmel Head	PD	08:00	15:00	Sea	12:40	4	SA	1	D	4	2	North East		
25/04/2010	Carmel Head	PD	08:00	15:00	Sea	12:40	4	AUK	6	D	6	1	North East		
25/04/2010	Carmel Head	PD	12:00	15:00	Sea	12:48	4	CA	1	D	5				
25/04/2010	Carmel Head	PD	12:00	15:00	Sea	12:49	4	AUK	3	D	4				
25/04/2010	Carmel Head	PD	12:00	15:00	Sea	13:01	4	AUK	4	D	4				
25/04/2010	Carmel Head	PD	08:00	15:00	Sea	13:15	4	AUK	11	D	6	1	North East		
25/04/2010	Carmel Head	PD	08:00	15:00	Sea	13:15	4	MX	1	D	3	2	South West		
25/04/2010	Carmel Head	PD	08:00	15:00	Sea	13:40	4	AUK	5	D	5	1	North East		
25/04/2010	Carmel Head	PD	12:00	15:00	Sea	13:47	4	AUK	3	D	4				
25/04/2010	Carmel Head	PD	12:00	15:00	Sea	14:08	4	SA	1	B	1				
25/04/2010	Carmel Head	PD	12:00	15:00	Sea	14:10	4	AUK	6	D	4				
25/04/2010	Carmel Head	PD	08:00	15:00	Sea	14:15	1	GX	1	D	5	3	North East		
25/04/2010	Carmel Head	PD	08:00	15:00	Sea	14:15	1	AUK	8	D	6	1	North East		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
25/04/2010	Carmel Head	PD	08:00	15:00	Dives	14:32		SA	1	B	1			50	
25/04/2010	Carmel Head	PD	08:00	15:00	Dives	14:34		SA	1	B	1			19	
25/04/2010	Carmel Head	PD	08:00	15:00	Dives	14:36		SA	1	B	1			62	
25/04/2010	Carmel Head	PD	08:00	15:00	Dives	14:39		SA	1	B	1			47	
25/04/2010	Carmel Head	PD	08:00	15:00	Sea	14:40	1	AUK	3	D	5	1	North East		
25/04/2010	Carmel Head	PD	12:00	15:00	Sea	14:52	1	AUK	11	D	4				
21/05/2010	Carmel Head	PD	08:30	11:30	Sea	08:32	4	RA	11	A	1				
21/05/2010	Carmel Head	PD	08:30	11:30	Sea	08:33	4	SA	2	E	3				
21/05/2010	Carmel Head	PD	08:30	11:30	Sea	08:41	4	RA	4	B	3				
21/05/2010	Carmel Head	PD	08:30	11:30	Sea	09:16	4	RA	11	A	1				
21/05/2010	Carmel Head	PD	08:30	11:30	Sea	09:18	4	SA	1	A	2				
21/05/2010	Carmel Head	PD	08:30	11:30	Sea	09:18	4	RA	16	A	1				
21/05/2010	Carmel Head	PD	08:30	11:30	Sea	09:20	4	RA	16	A	1				
21/05/2010	Carmel Head	PD	08:30	11:30	Sea	09:21	4	SA	1	F	1				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
21/05/2010	Carmel Head	PD	08:30	11:30	Sea	09:27	4	SA	1	C	1				
21/05/2010	Carmel Head	PD	08:30	11:30	Sea	09:28	4	SA	1	F	1				
21/05/2010	Carmel Head	PD	08:30	11:30	Sea	09:29	4	RA	2	D	3				
21/05/2010	Carmel Head	PD	08:30	11:30	Sea	09:36	4	RA	14	A	1				
21/05/2010	Carmel Head	PD	08:30	15:30	Dives	09:57		UT	25	C/D	5				Plunge diving
21/05/2010	Carmel Head	PD	08:30	15:30	Dives	10:05		SA	1	A	1			57	
21/05/2010	Carmel Head	PD	08:30	15:30	Dives	10:07		SA	1	A	1			42	
21/05/2010	Carmel Head	PD	08:30	15:30	Dives	10:08		SA	1	A	1			19	
21/05/2010	Carmel Head	PD	08:30	11:30	Sea	10:41	1	RA	19	A	1				
21/05/2010	Carmel Head	PD	08:30	15:30	Dives	10:51		UT	60	C/D	5				Plunge diving
21/05/2010	Carmel Head	PD	08:30	15:30	Dives	11:01		RA	1	A	2			37	
21/05/2010	Carmel Head	PD	08:30	15:30	Dives	11:01		RA	1	A	2			9	
21/05/2010	Carmel Head	PD	08:30	15:30	Dives	11:01		RA	1	A	2			40	
21/05/2010	Carmel Head	PD	08:30	15:30	Dives	11:01		RA	1	A	2			18	

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
21/05/2010	Carmel Head	PD	12:30	15:30	Sea	12:31	2	RA	23	A	1				
21/05/2010	Carmel Head	PD	12:30	15:30	Sea	12:41	2	SA	1	A	1				
21/05/2010	Carmel Head	PD	08:30	15:30	Dives	12:52		UT	90	C/D	5				Plunge diving
21/05/2010	Carmel Head	PD	12:30	15:30	Sea	13:18	2	RA	19	A	1				
21/05/2010	Carmel Head	PD	12:30	15:30	Sea	13:42	2	AUK	7	E	5				
21/05/2010	Carmel Head	PD	12:30	15:30	Sea	13:44	2	RA	21	A	1				
21/05/2010	Carmel Head	PD	08:30	15:30	Dives	13:55		AUK	1	D	4			41	
21/05/2010	Carmel Head	PD	08:30	15:30	Dives	13:55		AUK	1	D	4			19	
21/05/2010	Carmel Head	PD	08:30	15:30	Dives	13:59		UT	30	C/D	5				Plunge diving
21/05/2010	Carmel Head	PD	12:30	15:30	Sea	14:20	2	RA	22	A	1				
21/05/2010	Carmel Head	PD	12:30	15:30	Sea	14:30	2	RA	18	A	1				
21/05/2010	Carmel Head	PD	12:30	15:30	Sea	14:41	2	AUK	2	D	4				
21/05/2010	Carmel Head	PD	12:30	15:30	Sea	15:20	2	RA	21	A	1				
27/05/2010	Carmel Head	PD	11:00	14:00	Sea	11:01	4	RA	17	A	1				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
27/05/2010	Carmel Head	PD	11:00	14:00	Sea	11:05	4	SA	1	F	1				
27/05/2010	Carmel Head	PD	11:00	14:00	Sea	11:12	4	RA	17	B	2				
27/05/2010	Carmel Head	PD	11:00	18:00	Dives	11:25		UT	70	D	5				Plunge diving
27/05/2010	Carmel Head	PD	11:00	14:00	Sea	11:46	4	RA	21	A	1				
27/05/2010	Carmel Head	PD	11:00	14:00	Sea	11:50	4	SA	1	B	3				
27/05/2010	Carmel Head	PD	11:00	14:00	Sea	12:10	4	RA	20	A	1				
27/05/2010	Carmel Head	PD	11:00	14:00	Sea	12:12	4	SA	1	C	2				
27/05/2010	Carmel Head	PD	11:00	18:00	Flight	12:17	4	AUK	3	D	5	1	North East		
27/05/2010	Carmel Head	PD	11:00	18:00	Dives	12:21		UT	150	D	5/6				Plunge diving
27/05/2010	Carmel Head	PD	11:00	18:00	Flight	12:42	4	GX	1	D	4	2	North East		
27/05/2010	Carmel Head	PD	11:00	18:00	Flight	12:43	4	UT	200	C/D	5	2	Various		
27/05/2010	Carmel Head	PD	11:00	14:00	Sea	12:47	4	RA	1	B	3				
27/05/2010	Carmel Head	PD	11:00	14:00	Sea	13:08	4	RA	19	A	1				
27/05/2010	Carmel Head	PD	11:00	14:00	Sea	13:10	4	SA	1	B	3				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
27/05/2010	Carmel Head	PD	11:00	18:00	Flight	13:18	4	SA	1	D	2	1	South West		
27/05/2010	Carmel Head	PD	11:00	18:00	Dives	13:25		RA	1	A	1			37	
27/05/2010	Carmel Head	PD	11:00	18:00	Dives	13:25		RA	1	A	1			10	
27/05/2010	Carmel Head	PD	11:00	18:00	Dives	13:28		UT	600	C/D	5				Plunge diving
27/05/2010	Carmel Head	PD	11:00	18:00	Dives	13:31		SA	1	A	1			45	
27/05/2010	Carmel Head	PD	11:00	18:00	Dives	13:31		SA	1	A	1			27	
27/05/2010	Carmel Head	PD	11:00	18:00	Dives	13:31		SA	1	A	1			11	
27/05/2010	Carmel Head	PD	11:00	18:00	Dives	13:31		SA	1	A	1			25	
27/05/2010	Carmel Head	PD	11:00	18:00	Flight	13:41	4	TY	1	D	2	1	North East		
27/05/2010	Carmel Head	PD	11:00	18:00	Flight	13:44	4	GX	1	D	3	2	South West		
27/05/2010	Carmel Head	PD	11:00	14:00	Sea	13:48	4	SA	1	F	1				
27/05/2010	Carmel Head	PD	11:00	14:00	Sea	13:52	4	SA	1	F	3				
27/05/2010	Carmel Head	PD	11:00	14:00	Sea	13:54	4	SA	1	C	3				
27/05/2010	Carmel Head	PD	11:00	14:00	Sea	13:58	4	RA	1	A	1				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
27/05/2010	Carmel Head	PD	15:00	18:00	Sea	15:02	4	RA	19	A	1				
27/05/2010	Carmel Head	PD	15:00	18:00	Sea	15:10	4	SA	2	B	3				
27/05/2010	Carmel Head	PD	11:00	18:00	Flight	15:18	4	SA	1	D	2	1	North East		
27/05/2010	Carmel Head	PD	11:00	18:00	Dives	15:22		SA	1	C	3			81	
27/05/2010	Carmel Head	PD	11:00	18:00	Dives	15:22		SA	1	C	3			32	
27/05/2010	Carmel Head	PD	11:00	18:00	Dives	15:35		UT	30	C/D	5				Plunge diving
27/05/2010	Carmel Head	PD	11:00	18:00	Flight	15:42	4	SA	1	D	1	1	South West		
27/05/2010	Carmel Head	PD	11:00	18:00	Flight	15:43	4	TE	8	D	4	2	South West		
27/05/2010	Carmel Head	PD	11:00	18:00	Flight	15:44	4	RA	2	D	2	1	South West		
27/05/2010	Carmel Head	PD	11:00	18:00	Flight	15:45	4	MX	1	D	3	1	South West		
27/05/2010	Carmel Head	PD	15:00	18:00	Sea	15:46	4	RA	23	F	1				
27/05/2010	Carmel Head	PD	15:00	18:00	Sea	15:48	4	RA	3	F	3				
27/05/2010	Carmel Head	PD	15:00	18:00	Sea	15:51	4	SA	1	C	3				
27/05/2010	Carmel Head	PD	15:00	18:00	Sea	15:54	4	AUK	22	A	1				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
27/05/2010	Carmel Head	PD	15:00	18:00	Sea	16:14	4	RA	22	A	1				
27/05/2010	Carmel Head	PD	11:00	18:00	Flight	16:15	1	MX	3	D	4	2	South West		
27/05/2010	Carmel Head	PD	11:00	18:00	Flight	16:19	1	AUK	6	D	6	1	North East		
27/05/2010	Carmel Head	PD	11:00	18:00	Dives	16:22		UT	150	B/C	6				Plunge diving
27/05/2010	Carmel Head	PD	11:00	18:00	Dives	16:30		SA	1	F	2			25	
27/05/2010	Carmel Head	PD	11:00	18:00	Dives	16:30		SA	1	F	2			38	
27/05/2010	Carmel Head	PD	15:00	18:00	Sea	16:49	1	RA	26	A	1				
27/05/2010	Carmel Head	PD	15:00	18:00	Sea	16:50	1	RA	2	B	3				
27/05/2010	Carmel Head	PD	15:00	18:00	Sea	16:59	1	AUK	7	E	6				
27/05/2010	Carmel Head	PD	15:00	18:00	Sea	17:02	1	RA	17	A	1				
27/05/2010	Carmel Head	PD	15:00	18:00	Sea	17:11	1	SA	1	B	1				
27/05/2010	Carmel Head	PD	11:00	18:00	Flight	17:16	2	GX	1	E	5	2	South West		
27/05/2010	Carmel Head	PD	11:00	18:00	Dives	17:28		SA	1	F	1			49	
27/05/2010	Carmel Head	PD	11:00	18:00	Flight	17:42	2	MX	1	E	5	1	South West		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
27/05/2010	Carmel Head	PD	15:00	18:00	Sea	17:48	2	RA	18	A	1				
27/05/2010	Carmel Head	PD	15:00	18:00	Sea	17:52	2	RA	4	B	3				
29/05/2010	Carmel Head	PD	07:30	14:30	Dives	07:51		UT	35	D	4				Plunge diving
29/05/2010	Carmel Head	PD	07:30	14:30	Dives	08:58		SA	1	F	1			38	
29/05/2010	Carmel Head	PD	07:30	14:30	Dives	08:58		SA	1	F	1			47	
29/05/2010	Carmel Head	PD	07:30	14:30	Dives	09:05		UT	40	D	4/5				Plunge diving
29/05/2010	Carmel Head	PD	07:30	14:30	Dives	12:57		GX	1	B	4			5	Diving
29/05/2010	Carmel Head	PD	07:30	14:30	Dives	13:52		RA	1	A	1			37	
29/05/2010	Carmel Head	PD	14:00	17:00	Sea	14:04	4	RA	17	A	1				
29/05/2010	Carmel Head	PD	14:00	21:00	Flight	14:06	4	UT	30	D	5	2	Various		Part of breeding colony
29/05/2010	Carmel Head	PD	14:00	21:00	Dives	14:25		UT	70	C	5				Plunge diving
29/05/2010	Carmel Head	PD	14:00	17:00	Sea	14:46	4	RA	3	B	4				
29/05/2010	Carmel Head	PD	14:00	17:00	Sea	14:51	4	RA	12	A	1				
29/05/2010	Carmel Head	PD	14:00	17:00	Sea	15:01	4	RA	18	A	1				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
29/05/2010	Carmel Head	PD	14:00	21:00	Dives	15:20		UT	120	D	5				Plunge diving
29/05/2010	Carmel Head	PD	14:00	21:00	Dives	15:21		SA	1	C	3			39	
29/05/2010	Carmel Head	PD	14:00	21:00	Dives	15:21		SA	1	C	3			47	
29/05/2010	Carmel Head	PD	14:00	21:00	Dives	15:21		SA	1	C	3			19	
29/05/2010	Carmel Head	PD	14:00	21:00	Dives	15:35		UT	25	D	4				Plunge diving
29/05/2010	Carmel Head	PD	14:00	17:00	Sea	15:45	4	RA	3	B	4				
29/05/2010	Carmel Head	PD	14:00	17:00	Sea	16:06	4	RA	14	A	1				
29/05/2010	Carmel Head	PD	14:00	17:00	Sea	16:08	4	SA	1	B	2				
29/05/2010	Carmel Head	PD	14:00	17:00	Sea	16:14	4	SA	1	C	4				
29/05/2010	Carmel Head	PD	14:00	21:00	Flight	16:16	4	TE	3	D	5	2	North West		
29/05/2010	Carmel Head	PD	14:00	21:00	Flight	16:20	4	UT	60	D	5	2	South West		
29/05/2010	Carmel Head	PD	14:00	21:00	Dives	16:25		RA	1	B	3			40	
29/05/2010	Carmel Head	PD	14:00	21:00	Dives	16:26		RA	1	B	3			40	
29/05/2010	Carmel Head	PD	14:00	21:00	Flight	16:45	4	UT	20	D	5	2	Various		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
29/05/2010	Carmel Head	PD	14:00	17:00	Sea	16:52	4	SA	2	F	2				
29/05/2010	Carmel Head	PD	14:00	17:00	Sea	16:57	4	RA	3	B	3				
29/05/2010	Carmel Head	PD	14:00	17:00	Sea	16:59	4	RA	11	A	1				
29/05/2010	Carmel Head	PD	14:00	21:00	Dives	18:25		UT	30	D	3				Plunge diving
29/05/2010	Carmel Head	PD	18:00	21:00	Sea	19:05	2	RA	13	A	1				Local breeders
29/05/2010	Carmel Head	PD	18:00	21:00	Sea	19:10	2	SA	1	F	1				
29/05/2010	Carmel Head	PD	14:00	21:00	Flight	19:15	2	MX	1	D	5	2	South West		
29/05/2010	Carmel Head	PD	14:00	21:00	Dives	19:30		UT	130	D	5			17	Plunge diving
29/05/2010	Carmel Head	PD	14:00	21:00	Flight	19:42	2	SA	1	D	5	1	South East		
29/05/2010	Carmel Head	PD	14:00	21:00	Flight	19:44	2	GX	1	D	4	2	South West		
29/05/2010	Carmel Head	PD	18:00	21:00	Sea	19:51	2	AUK	4	D	4				
29/05/2010	Carmel Head	PD	14:00	21:00	Dives	20:25		RA	1	B	2			21	
29/05/2010	Carmel Head	PD	14:00	21:00	Dives	20:25		RA	1	B	2			47	
16/06/2010	Carmel Head	PD	07:30	11:30	Sea	07:32	1	GX	1	D	4				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
16/06/2010	Carmel Head	PD	07:30	11:30	Sea	07:41	1	RA	11	A	1				
16/06/2010	Carmel Head	PD	07:30	11:30	Sea	08:30	2	SA	1	F	1				
16/06/2010	Carmel Head	PD	07:30	11:30	Sea	08:38	2	AUK	8	D	5				
16/06/2010	Carmel Head	PD	07:30	11:30	Flight	08:47	2	UT	30	D	5	2	Various		
16/06/2010	Carmel Head	PD	07:30	11:30	Flight	08:49	2	TE	2	D	2	2	North West		
16/06/2010	Carmel Head	PD	07:30	11:30	Flight	09:14	2	MX	2	D	4	1	South West		
16/06/2010	Carmel Head	PD	07:30	11:30	Sea	09:32	2	GU	1	C	3				
16/06/2010	Carmel Head	PD	07:30	11:30	Sea	09:43	2	AUK	6	D	5				
16/06/2010	Carmel Head	PD	07:30	11:30	Flight	09:45	2	SA	1	D	5	2	North East		
16/06/2010	Carmel Head	PD	07:30	11:30	Flight	09:48	2	UT	10	D	5	2	Various		
16/06/2010	Carmel Head	PD	07:30	11:30	Flight	11:45	2	UT	15	D	5	2	Various		
16/06/2010	Carmel Head	PD	07:30	11:30	Flight	12:10	2	UT	25	D	5	2	Various		
16/06/2010	Carmel Head	PD	11:30	14:30	Sea	12:32	2	AUK	7	E	5				
16/06/2010	Carmel Head	PD	07:30	11:30	Flight	12:48	2	MX	8	D	5	1	South West		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
16/06/2010	Carmel Head	PD	07:30	11:30	Flight	12:50	2	UT	10	D	5	2	Various		
16/06/2010	Carmel Head	PD	11:30	14:30	Sea	13:41	3	CA	1	A	2				
16/06/2010	Carmel Head	PD	11:30	14:30	Sea	13:42	3	SA	1	F	1				
16/06/2010	Carmel Head	PD	11:30	14:30	Sea	13:45	3	AUK	4	D	5				
16/06/2010	Carmel Head	PD	07:30	11:30	Flight	13:46	3	GX	1	D	3	2	West		
16/06/2010	Carmel Head	PD	07:30	11:30	Flight	14:10	3	TE	4	D	3	2	South East		
16/06/2010	Carmel Head	PD	07:30	11:30	Flight	14:14	3	AUK	3	D	5	1	North East		
21/06/2010	Carmel Head	PD	14:00	17:00	Sea	14:02	2	GU	4	C	3				
21/06/2010	Carmel Head	PD	14:00	17:00	Sea	14:05	2	RA	2	B	3				
21/06/2010	Carmel Head	PD	14:00	17:00	Sea	14:09	2	AUK	5	D	5				
21/06/2010	Carmel Head	PD	14:00	17:00	Sea	14:14	2	GU	3	B	2				
21/06/2010	Carmel Head	PD	14:00	21:00	Flight	14:15	2	UT	15	D	5	2	South West		
21/06/2010	Carmel Head	PD	14:00	21:00	Flight	14:18	2	GX	3	D	6	3	South West		
21/06/2010	Carmel Head	PD	14:00	21:00	Flight	14:20	2	AUK	3	D	4	1	South West		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
21/06/2010	Carmel Head	PD	14:00	21:00	Flight	14:41	2	UT	30	D	5	2	South West		
21/06/2010	Carmel Head	PD	14:00	21:00	Flight	14:44	2	AUK	7	D	5	1	South West		
21/06/2010	Carmel Head	PD	14:00	17:00	Sea	14:45	2	SA	1	E	1				
21/06/2010	Carmel Head	PD	14:00	17:00	Sea	14:48	2	AUK	3	D	3				
21/06/2010	Carmel Head	PD	18:00	21:00	Sea	14:58	2	GX	1	A	2				
21/06/2010	Carmel Head	PD	14:00	17:00	Sea	15:02	2	SA	1	C	3				
21/06/2010	Carmel Head	PD	14:00	21:00	Flight	15:18	2	AUK	3	D	5	1	South West		
21/06/2010	Carmel Head	PD	14:00	21:00	Flight	15:21	2	UT	60	D	5	2	South West		
21/06/2010	Carmel Head	PD	14:00	21:00	Flight	15:40	2	MX	1	D	5	2	South West		
21/06/2010	Carmel Head	PD	14:00	17:00	Sea	16:04	2	SA	1	F	1				
21/06/2010	Carmel Head	PD	14:00	17:00	Sea	16:05	2	GU	3	D	3				
21/06/2010	Carmel Head	PD	14:00	17:00	Sea	16:08	2	RA	9	A	1				
21/06/2010	Carmel Head	PD	14:00	21:00	Flight	16:18	2	MX	4	D	5	2	South West		
21/06/2010	Carmel Head	PD	14:00	21:00	Flight	16:20	2	AUK	6	D	5	1	South West		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
21/06/2010	Carmel Head	PD	14:00	21:00	Flight	16:20	2	UT	25	D	5	2	Various		
21/06/2010	Carmel Head	PD	14:00	21:00	Flight	16:41	2	UT	4	D	5				
21/06/2010	Carmel Head	PD	14:00	21:00	Flight	16:42	2	GX	2	D	5				
21/06/2010	Carmel Head	PD	14:00	21:00	Flight	16:44	2	AUK	2	D	5				
21/06/2010	Carmel Head	PD	14:00	21:00	Flight	16:45	2	MX	3	D	5				
21/06/2010	Carmel Head	PD	14:00	17:00	Sea	16:46	2	SA	1	C	5				
21/06/2010	Carmel Head	PD	14:00	17:00	Sea	16:55	2	UT	6	B	4				
21/06/2010	Carmel Head	PD	14:00	21:00	Flight	18:15	2	MX	2	D	5	2	South West		
21/06/2010	Carmel Head	PD	14:00	21:00	Flight	18:18	2	AUK	1	D	5	1	North East		
21/06/2010	Carmel Head	PD	14:00	21:00	Flight	18:42	3	AUK	3	D	5	1	South West		
21/06/2010	Carmel Head	PD	14:00	21:00	Flight	18:44	3	GX	1	D	5	1	North West		
21/06/2010	Carmel Head	PD	18:00	21:00	Sea	18:48	3	SA	1	A	2				
21/06/2010	Carmel Head	PD	14:00	21:00	Flight	19:16	3	MX	6	D	5	2	South West		
21/06/2010	Carmel Head	PD	18:00	21:00	Sea	20:04	4	SA	1	F	1				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
21/06/2010	Carmel Head	PD	14:00	21:00	Flight	20:41	4	MX	7	D	5	1	South West		
21/06/2010	Carmel Head	PD	14:00	21:00	Flight	20:45	4	SA	1	D	5	1	South West		
21/06/2010	Carmel Head	PD	18:00	21:00	Sea	20:48	4	RA	14	A	1				
21/06/2010	Carmel Head	PD	18:00	21:00	Sea	20:52	4	AUK	1	B	4				
30/06/2010	Carmel Head	PD	11:00	14:00	Sea	11:01	2	GU	5	C	3				
30/06/2010	Carmel Head	PD	11:00	14:00	Sea	11:08	2	RA	2	D	2				
30/06/2010	Carmel Head	PD	11:00	14:00	Sea	11:13	2	SA	1	F	2				
30/06/2010	Carmel Head	PD	11:00	18:00	Flight	11:16	2	UT	90	D	5	2	Various		
30/06/2010	Carmel Head	PD	11:00	18:00	Dives	11:22		UT	70	D	4				Plunge diving
30/06/2010	Carmel Head	PD	11:00	18:00	Dives	11:31		CA	1	B	2			47	
30/06/2010	Carmel Head	PD	11:00	18:00	Dives	11:31		CA	1	B	2			48	
30/06/2010	Carmel Head	PD	11:00	18:00	Flight	11:41	2	SA	1	D	4	2	South West		
30/06/2010	Carmel Head	PD	11:00	18:00	Flight	11:44	2	AUK	2	D	5	1	North East		
30/06/2010	Carmel Head	PD	11:00	14:00	Sea	11:46	2	RA	3	A	2				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
30/06/2010	Carmel Head	PD	11:00	14:00	Sea	11:52	2	GU	3	C	3				
30/06/2010	Carmel Head	PD	11:00	14:00	Sea	12:10	2	SA	1	F	2				
30/06/2010	Carmel Head	PD	11:00	14:00	Sea	12:12	2	RA	17	A	1				
30/06/2010	Carmel Head	PD	11:00	14:00	Sea	12:14	2	AUK	1	D	4				
30/06/2010	Carmel Head	PD	11:00	18:00	Flight	12:18	2	SA	1	D	5	1	South West		
30/06/2010	Carmel Head	PD	11:00	18:00	Flight	12:19	2	GX	1	D	4	2	North East		
30/06/2010	Carmel Head	PD	11:00	18:00	Flight	12:19	2	UT	80	D	5	2	Various		
30/06/2010	Carmel Head	PD	11:00	18:00	Dives	12:24		SA	1	F	2			51	
30/06/2010	Carmel Head	PD	11:00	18:00	Dives	12:24		SA	1	F	2			32	
30/06/2010	Carmel Head	PD	11:00	18:00	Dives	12:24		SA	1	F	2			19	
30/06/2010	Carmel Head	PD	11:00	18:00	Dives	12:38		UT	40	D	5				Plunge diving
30/06/2010	Carmel Head	PD	11:00	14:00	Sea	12:45	2	SA	1	F	2				
30/06/2010	Carmel Head	PD	11:00	14:00	Sea	12:52	2	AUK	3	D	5				
30/06/2010	Carmel Head	PD	11:00	14:00	Sea	13:10	3	GU	8	B	3				

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
30/06/2010	Carmel Head	PD	11:00	14:00	Sea	13:13	3	RA	11	A	1				
30/06/2010	Carmel Head	PD	11:00	18:00	Flight	13:15	3	UT	100	D	5/6	2	Various		
30/06/2010	Carmel Head	PD	11:00	18:00	Flight	13:18	3	AUK	2	D	5	1	South West		
30/06/2010	Carmel Head	PD	11:00	18:00	Flight	13:41	3	GX	1	D	5	2	West		
30/06/2010	Carmel Head	PD	11:00	18:00	Flight	13:42	3	AUK	1	D	5	1	South West		
30/06/2010	Carmel Head	PD	15:00	18:00	Sea	15:02	4	SA	1	B	1				
30/06/2010	Carmel Head	PD	15:00	18:00	Sea	15:08	4	RA	10	A	1				
30/06/2010	Carmel Head	PD	11:00	18:00	Flight	15:15	4	UT	70	D	5/6	2	Various		
30/06/2010	Carmel Head	PD	11:00	18:00	Flight	15:18	4	TE	2	D	3	2	South East		
30/06/2010	Carmel Head	PD	11:00	18:00	Flight	15:40	4	UT	60	D	5	2	Various		
30/06/2010	Carmel Head	PD	11:00	18:00	Flight	15:43	4	SA	1	D	4	1	South West		
30/06/2010	Carmel Head	PD	15:00	18:00	Sea	16:05	4	AUK	6	E	5				
30/06/2010	Carmel Head	PD	15:00	18:00	Sea	16:11	4	SA	1	F	1				
30/06/2010	Carmel Head	PD	11:00	18:00	Flight	16:15	4	SA	1	D	6	1	South West		

Table A4.1 – Raw data collected from land-based vantage points at Carmel Head, Anglesey and Ramsey Sound, Pembrokeshire.

Date	Survey Site	Surveyors	Start	End	Survey	Time	Tide Value	Sp.	No.	ARC	Dist.	Height	Dir. Of flight	Dive dur.	Notes
30/06/2010	Carmel Head	PD	11:00	18:00	Flight	16:16	4	MX	1	D	6	2	South West		
30/06/2010	Carmel Head	PD	11:00	18:00	Flight	16:19	4	UT	30	D	5	2	Various		
30/06/2010	Carmel Head	PD	11:00	18:00	Dives	16:25		UT	25	D	5				Plunge diving
30/06/2010	Carmel Head	PD	11:00	18:00	Flight	16:41	4	RA	2	D	3	1	North East		
30/06/2010	Carmel Head	PD	11:00	18:00	Flight	17:16	4	AUK	3	D	5	1	North East		
30/06/2010	Carmel Head	PD	11:00	18:00	Dives	17:27		UT	20	D	5				Plunge diving
30/06/2010	Carmel Head	PD	11:00	18:00	Flight	17:43	4	MX	1	D	5	2	South West		
30/06/2010	Carmel Head	PD	11:00	18:00	Flight	17:44	4	AUK	1	D	5	1	North East		

Appendix 5 – Carmel Head Boat Data

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	13.16	RA	P	4							Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	13.57	RA	P	25	A			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	13.57	RA	S	40	B			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	13.57	MX	S	15							Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	13.57	GX	S	3							Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	13.58	RA	S	12	A			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	13.58	RA	P	1	A			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	13.58	RA	P	22	A			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	13.58	RA	S	60	A			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	13.59	RA	S	35	A			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.00	KI	P	1	A	E	3				Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.00	RA	S	40	C			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.01	GX	P	1	B	E	3				Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.03	RA	S	3	C			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.04	GU	S	1	A	0	3				Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.04	RA	S	40	A	0					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.04	KI	P	1	A	W					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.04	RA	S	30	C						Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.04	MX	S	19							Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.04	GX	S	4							Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.05	MX	P	1	A	E	3				Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.06	RA	P	9	A	W	2				Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.06	GU	P	1	A	W	3				Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.06	MX	P	1	A			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.07	MX	P	1	A	W	3				Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.07	MX	P	1	A	W	3				Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.08	GX	P	1	A	E	3				Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.09	MX	P	4	A	W	3				Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.09	GX	P	1	B	W	3				Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.12	MX	P	2	A	W	3				Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.14	MX	P	2	A	W	3				Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.18	KI	P	15	B			Feeding			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.21	RA	S	15	B			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.21	MX	S	4							Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.21	KI	S	1							Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.21	F.	S	1							Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.22	MX	P	4	A	W	1				Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.22	RA	P	1	A	W	3				Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.23	RA	S	2	A			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.26	MX	P	4	A	N					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.26	RA	S	3	B		3	Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.27	RA	P	9	A			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.28	KI	P	1	A	E					Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.28	MX	P	1	A	S					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.28	RA	P	15	B			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.28	RA	P	1				Dived	64		Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.29	RA	P	8				Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.30	RA	S	20	A						Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.30	RA	S	15	A						Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.30	MX	S	18							Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.30	HG	S	1							Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.30	KI	S	4							Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.31	GX	S	1	A			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.32	RA	S	1	A			Feeding	63		Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.32	KI	S	1	A			Feeding			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.34	RA	P	6	A						Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.34	RA	S	50	A			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.36	RA	P	14	A			Loafing			Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.38	MX	P	1	C	E					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.39	RA	P	2	A			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.40	MX	P	1	C	N					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.40	MX	P	2	C	S					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.40	MX	P	1				Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.42	GX	P	9	C	0					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.42	MX	S	19		E					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.42	MX	S	2		E					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.42	MX	S	1		E					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.42	HG	S	1		NW					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.42	KI	S	9		S					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.42	KI	S	2		W					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.42	GX	S	2		W					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.43	RA	S	10	A			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.46	RA	S	1	A			Feeding			Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.47	RA	S	3	A			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.48	RA	P	6	A	N					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.48	GU	P	3	A	S					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.48	GU	P	2	A			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.48	MX	P	1	B			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.48	GX	S	2				Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.48	RA	P	14							Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.48	RA	P	12							Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.49	GX	S	1		E					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.50	MX	S	1		S					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.51	KI	S	2		W					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.52	KI	S	1		E					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	14.53	HG	S	1		E					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.05	RA	S	30	A			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.05	MX	S	8							Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.06	RA	S	15	A			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.07	RA	P	8	A			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.08	MX	P	7	C	S					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.10	MX	P	15	B	W					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.15	RA	S	1	A	E					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.15	GU	P	2	A			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.15	MX	P	15	B			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.21	RA	S	1	A			Feeding			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.21	MX	S	5							Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.21	RA	P	8				Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.23	GU	S	3	A			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.23	MX	S	6							Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.23	KI	S	2							Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.23	GX	S	3							Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.24	KI	P	3	A	E					Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.24	MX	P	8	B	E					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.37	GU	S	1	A	W					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.37	RA	P	2	B			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.37	MX	S	12							Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.37	KI	S	4							Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.39	RA	S	3	A			Loafing			SEA
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.39	GU	P	1	A			Loafing			SEA
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.41	KI	P	3	A	E					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.43	MX	S	6							Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.43	KI	S	5							Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.47	RA	P	10	A			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.48	MX	P	9	C	N					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.50	MX	P	14	C	N					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.53	MX	P	17	C	W					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.58	GU	S	1	A	S					Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.58	RA	S	3	A	S					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.58	MX	S	65				Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.58	KI	S	5				Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.59	RA	S	2	A			Feeding			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	15.59	GU	S	2	A			Feeding			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	16.00	RA	S	30	B			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	16.04	RA	S	2	A			Feeding			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	16.04	GU	S	2	A			Feeding			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	16.07	SA	P	2	A	W					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	16.07	MX	P	200	C			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	16.08	TE	S	5		N					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	16.08	KI	S	45		N					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	16.08	SA	S	1		S					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	16.08	GX	S	2		S					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	16.08	RA	S	2		W					Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	16.12	SA	P	1	B	S					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	16.12	MX	P	160	C						Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	16.13	KI	P	17	C	S					Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	16.17	LB	P	1	A						Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	16.20	RA	P	6	B			Feeding			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	16.20	RA	P	40	B			Feeding			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	16.20	GU	P	8	B			Feeding			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	16.20	KI	P	8	B			Feeding			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	16.20	MX	P	70	B			Feeding			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	16.24	RA	S	3	A			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	16.24	MX	S	12							Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	16.24	GX	S	2							Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	16.24	KI	S	3							Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	16.24	MX	S	5							Flight
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	16.25	RA	S	60	A			Feeding			Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	16.25	GU	S	10	A			Feeding			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	16.28	RA	S	20	A			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	16.31	RA	S	12	A			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	16.34	RA	S	2	A			Loafing			Sea
02/09/2009	ANGELSEY	BOY BRANDON	KDS,GAC	16.37	RA	P	2				Dived	60		Sea
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.18	RA	P	1	B			Loafing			Sea
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.20	RA	P	7	A			Loafing			Sea
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.24	KI	S	1	A	S	2				Flight
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.24	RA	P	1				Dived	44		Sea
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.26	RA	P	1	B			Loafing			Sea
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.32	GX	P	1	A	S	3				Flight
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.32	RA	S	1	A						Sea
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.32	RA	P	1				Dived	51		Sea
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.33	RA	P	1	A			Loafing			Sea
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.34	MX	S	2	B	S					Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.35	RA	P	1	A			Feeding			Sea
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.37	GX	P	2	C	N	3				Flight
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.37	MX	S	5	A	S					Flight
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.38	GX	S	1	B	N					Flight
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.39	KI	S	1	A	S					Flight
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.40	RA	P	1							Sea
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.40	RA	P	1							Sea
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.41	RA	P	2							Sea
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.42	GX	S	1	A	N					Flight
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.42	MX	P	1	C	S	3				Flight
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.42	RA	P	4							Sea
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.43	MX	S	4	B	S					Flight
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.43	GU	P	1	A						Sea
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.44	RA	P	1	A			Loafing			Sea
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.46	RA	P	1	A	S	1				Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.47	MX	P	1	C	S	2				Flight
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.47	GB	S	1	A	S					Flight
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.48	MX	S	2	A	S					Flight
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.49	GU	P	1	A			Loafing			Sea
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.49	RA	P	4	A			Loafing			Sea
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.52	MX	P	1	C	S	2				Flight
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.55	GX	P	1	C	S	2				Flight
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.56	RA	S	1	A	S					Flight
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.56	RA	P	1				Dived	61		Sea
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.57	RA	S	2	A						Sea
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.59	GU	P	1	A			Loafing			Sea
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.00	GU	S	1	A						Sea
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.00	RA	P	1				Dived	45		Sea
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.01	GX	P	1	B		2				Flight
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.01	MX	P	1	C		2				Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.01	RA	S	3	A						Sea
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.01	RA	P	1				Dived	68		Sea
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.02	RA	P	1				Dived	18		Sea
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.07	KI	S	1	A						Sea
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.10	GX	S	1	A	S	2				Flight
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.12	MX	S	1	A	N	2				Flight
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.15	MX	S	2	A	S	3				Flight
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.15	KI	S	1	A	S	3				Flight
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.17	GX	S	2	C	S	3				Flight
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.20	KI	S	1	A	S	3				Flight
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.23	RA	S	1	A	NE	3				Flight
05/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.30	GB	S	1	A	S	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	10.55	MX	S	1	A	S	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	10.55	KI	P	1	A	S					Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	10.55	GX	P	3	C	S					Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	10.56	GU	S	2	A						Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	10.56	RA	S	1	A						Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	10.57	GX	P	4	C	S					Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	10.57	GX	P	3	C	S					Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	10.57	RA	S	1				Dived	39	20	Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	10.57	RA	P	4	B						Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	10.57	RA	P	2							Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	10.57	RA	P	3							Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	10.58	GX	S	3	B	S	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	10.58	GU	S	1				Dived	19	10	Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	10.59	RA	P	1				Dived	54		Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	10.59	RA	P	2				Dived	84		Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.00	MX	S	2	C	S	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.03	RA	S	20	C						Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.09	MX	S	2	C	S	2				Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.12	GX	S	1	A	S	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.12	GX	P	6	A	S					Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.12	NX	P	1	A	S					Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.12	GX	P	1	C	S					Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.12	TE	P	4		S					Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.12	BJ	P	1		S					Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.12	RA	S	15	A						Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.12	KI	P	1	A						Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.12	RA	P	4	A						Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.12	RA	P	2	A						Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.12	GU	P	1	A						Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.12	RA	P	3							Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.12	MX	P	14							Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.12	KI	P	9							Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.13	RA	S	5	A						Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.13	GU	S	2				Dived	52	20	Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.14	RA	S	2							Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.15	GX	S	1	A	S	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.24	RA	S	1	A						Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.24	GU	P	1				Dived	73		Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.25	MX	S	4	A	S	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.26	RA	P	1				Dived	61		Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.27	RA	P	1	A	N	1				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.27	RA	P	1	A	S	1				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.27	GU	P	1	A	S	1				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.27	KI	P	5	A	S	1				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.27	KI	P	2	A	S	1				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.27	GX	P	10	C	S	2	Feeding			Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.27	GX	P	8	C	S	2	Feeding			Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.27	AC	P	1	A	S	3	Chasing KI			Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.27	GX	S	3	A	S	3				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.27	RA	P	2	A	W	1				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.27	RA	S	2				Dived	42+62	50	Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.27	RA	P	2	A						Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.27	GU	P	1	A						Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.27	GU	P	1				Dived	34		Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.28	GX	S	2	A	S	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.28	MX	S	1	A	S	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.28	RA	P	1				Dived	44		Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.29	KI	S	4	C	S	3				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.30	GX	S	2	A	S	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.30	RA	S	2	A		-				Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.31	KI	S	3	C	S	3				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.31	RA	S	1	A		-				Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.33	GX	S	1	C	S	3				Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.34	KI	S	1	A	S	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.35	MX	S	3	A	S	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.35	RA	P	1				Dived	60		Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.36	GX	S	1	A	S	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.36	MX	S	1	C	S	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.36	GU	P	1				Dived	44		Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.37	F.	S	1	A	S	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.39	GU	S	2	A						SEA
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.40	GX	S	1	A	S	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.42	MX	P	1	A	S					Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.42	RA	S	1	A						Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.42	GU	P	1	A			Loafing			Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.42	RA	P	14	A			Feeding			Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.43	GX	S	1	A	S	3				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.46	GX	S	1	A	S	3				Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.50	GX	S	1	B	S	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.55	KI	S	1	A	S	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	11.56	GX	S	1	C	S	3				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.00	GX	P	4	B	S	1				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.00	GX	P	1	B	S	1				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.00	MX	P	7	B	S	1				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.00	RA	P	1	A			Loafing			Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.01	RA	P	1				Dived	54		Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.04	MX	S	2	A	S	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.16	GX	P	3	C	S	1				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.16	MX	S	-	A	S	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.16	GX	S	-	C	S	3				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.16	GU	P	1	A			Loafing			Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.16	RA	P	2	A			Loafing			Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.17	GX	S	-	B	S	2				Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.18	CX	S	2	A	S	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.18	KI	S	2	B	S	3				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.19	RA	S	1	A						Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.20	GX	S	1	A	S	3				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.22	KI	S	1	C	S	3				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.24	MX	S	2	A	S	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.27	MX	S	3	A	S	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.31	F.	S	1	A	N	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.31	GX	P	2	B	S	1				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.31	GX	S	3	A	S	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.32	RA	S	-				Dived	43	25	Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.33	GX	S	1	C	S	3				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.35	GX	S	1	A	S	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.38	GX	S	1	A	S	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.39	MX	S	4	A	S	2				Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.41	MX	P	3	A	N	1				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.41	MX	S	4	A						Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.43	GX	S	4	A	S	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.45	GX	S	1	A	S	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.51	MX	S	3	A	S	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.56	GX	P	1	C	S	1				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.56	MX	P	3	A	S	1				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.57	SA	S	1	A						Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	12.58	SA	S	1	A						Sea
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	13.00	GX	S	1	C	S	3				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	13.01	MX	S	2	A	S	2				Flight
07/09/2009	ANGELSEY	BOY BRANDON	KDS,AC	13.03	GX	S	1	A	S	3				Flight
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:19	GU		1	B						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:19										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:20										Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:21	GU	P	1	B	N	1				Flight
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:22										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:23	GU	P	4	A						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:23	GU	S	1	B						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:24	GU	P	2	B						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:25	GU	S	3	A	SW	1				Flight
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:25	HG	S	1	A	SW	1				Flight
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:26	GU	S	1	B	E					Flight
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:27	HG	P	4	C	0	3				Flight
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:27	GU	P	1	A						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:28										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:29	GU	S	1	A		1				Flight
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:30										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:31										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:32										Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:33										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:34										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:35										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:36										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:37										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:38										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:39										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:40										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:41	HG	P	1	D	SE	3				Flight
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:42	CA	S	1	C	S	2				Flight
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:43										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:44	HG	S	1	D	S	2				Flight
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:45										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:46										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:46										Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:47										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:48										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:49	BH	P	2	C						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:49	HG	P	3	C						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:49	RA	S	3	D						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:50										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:50	RA	P	2	D						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:50	HG	P	3	D						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:50										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:51	HG	P	1	B	SW	1				Flight
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:52	HG	P	1	A			F.			Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:52	HG	S	2	D	S					Flight
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:52	GU	S	1	A						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:53										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:54										Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:55										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:56										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:56	GU	P	2	C						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:57										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:57										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:59										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:59	GU	P	3	B						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:00										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:01										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:02	RA	S	4	C						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:03										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:04										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:05										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:06										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:07	F.	S	4	B	NE	2				Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:08										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:09										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:10										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:11										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:12										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:13										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:13										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:13	HG	S	1	D						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:14										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:15	RA	S	1	C	E	1				Flight
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:15	GU	P	2	A						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:16										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:17										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:18										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:18	GU	S	1	B						Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:19	RA	P	5	C						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:20										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:20	GU	S	1	A						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:21										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:22										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:23										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:23	GU	S	1	A						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:23										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:24										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:25										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:26										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:27										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:28										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:29										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:30										Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:31										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:31	GU	P	1	A						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:32										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:32	GU	P	3	B						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:33										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:34										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:34	HG	S	1	B						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:34	RA	P	5	B			F. (South West)			Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:35										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:35	RA	P	3	B						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:36	HG	P	1	C	E	3				Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:37	HG	P	1	A	E	2				Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:37	HG	S	1	A						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:37	HG	P	1	A						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:38	HG	S	3	C						Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:38										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:38	RA	S	3	C						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:38	GU	P	1	B						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:39	RA	P	1	B						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:39	HG	P	1	D						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:40	HG	P	1	C	E	1				Flight
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT											Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:41										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:41	GU	S	1	C						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:42										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:42	GU	P	1	A						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:42	GU	P	2	B						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:43										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:44	GU	P	2	B						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:44										Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:46										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:46										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:47										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:48	GU	S	3	A						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:49										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:50										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:51										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:52										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:53										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:54	GU	S	1	C						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:55										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:56	HG	S	2	A						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:56										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:57										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:31										Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:32										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:33										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:34	GU	S	5	C			2 F.			Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:35	HG	S	2	B						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:36										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:37	HG	P	1	C	N	3				Flight
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:38	GU	S	1	D						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:38	GU	S	1	A	N	1				Flight
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:38	GU	P	2	B	S	1				Flight
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:38	GU	S	2	B			F.			Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:38	GU	S	1	B						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:39										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:40	GU	P	1	A			F.			Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:40	GU	S	2	D						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:40	GU	P	1	A						Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:40										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:41	GU	P	1	A						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:41	GU	S	3	D						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:41										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:42	GU	P	3	A						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:43	GU	S	3	A						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:43										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:44	GU	P	2	A						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:44	RA	S	1	B						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:45	GU	S	4	A						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:45	HG	P	1	D	N	3				Flight
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:46	GU	S	1	C						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:46	GU	S	2	A						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:46	HG	P	1	B	N	3				Flight
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:46	GU	P	2	A						Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:47	GU	S	1	B						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:47	HG	P	6	C						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:47	HG	S	1	A			F.			Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:47	HG	S	1	C						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:48	GU	P	1	A						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:48	HG	P	5	C	0					Flight
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:48	GU	S	1	C			F.			Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:48	HG	P	2	A						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:49	GU	S	1	A						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:49	GU	P	1	A			F.			Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:50	HG	S	3	C						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:50	GU	P	1	A	E	1				Flight
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:50	GU	S	1	C						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:50	GU	S	1	B						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:51										Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:51	GU	S	1	A						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:52										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:53										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:54										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:54	RA	S	2	A						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:55	GU	S	2	A						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:56										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:57	HG	S	1	A						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:58	RA	S	1	D						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:59	RA	S	6	A						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:59										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:00										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:01	RA	S	1	B						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:03										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:03	RA	P	2	B						Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:03	RA	S	1	B						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:04										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:05										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:06										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:07										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:08	GU	S	1	A	W	1				Flight
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:09										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:10										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:11										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:12										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:14	HG	S	2	B						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:14	RA	S	5	B						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:14	HG	P	6	B						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:15										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:16	HG	P	3	B						Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:17										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:18										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:19										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:20										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:21										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:22	RH	P	1	D	NW	2				Flight
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:23										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:24										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:25										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:26										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:27										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:28										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:29										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:29	HG	S	1	A	SE	3				Flight
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:30	GB	S	1	A	S	3				Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:31	GU	S	1	A						Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:31										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:32										Sea
25/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:33										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:35										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:36										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:36	RA	S		B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:37										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:38	GU	P	2	D	E	1				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:39										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:40										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:41										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:42	RA	P	1	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:42	RA	P	2	C	NW	1				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:43										Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:44	RA	P	1	B			F.			Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:45										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:47										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:48										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:49	KI	P	1	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:49	RA	P	1	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:49	RA	P	1	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:50	GU	P	1	A			F.(East)			Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:51	GU	S	1	A	S	1				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:52	RA	P	6	C	E	1				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:52	HG	P	2	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:53										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:53	RA	S	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:53	GU	S	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:54	GU	S	1	A						Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:54	HG	P	14	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:54	RA	P	12	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:54	GU	P	3	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:54										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:55	HG	S	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:56										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:56	GU	P	8	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:57	HG	P	1	B	E	3				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:57	GU	S	1	D						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:58										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:59	HG	S	2	C	S	3				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	09:59	GU	S	1	A			F.(South)			Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:00										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:00	GU	S	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:00	GU	S	1	A	S	1				Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:01	GU	S	1	A	N	1				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:01	HG	P	1	C	N	3				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:02	GU	S	1	C						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:03										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:03	GU	S	1	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:04										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:05	GU	P	2	C	E	1				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:05	HG	P	1	D						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:05	GU	S	1	B	NE	2				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:05	GU	S	2	D						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:06	GU	P	2	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:07	GU	S	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:07	HG	P	3	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:08	HG	S	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:08	HG	S	1	B						Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:08	HG	S	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:09	RA	S	1	A	N	2				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:09	GU	S	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:09	HG	P	2	C						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:10	GU	S	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:10	GU	P	3	C						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:10	GU	S	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:11	HG	S	1	C	0					Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:11	HG	S	1	A	0					Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:11	RA	P	2	B	E	1				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:11	GG	S	2	C						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:12	HG	P	2	A	0					Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:12	HG	S	1	D						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:12	GU	P	2	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:13	GX	P	1	B	N	3				Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:13	GU	P	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:13	GU	S	3	C	E	1				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:16	GU	S	10	A			Feeding			Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:18	GU	P	9	B			Feeding			Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:18	HG	S	120	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:18	GB	S	30	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:19										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:19	GU	S	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:19	GU	P	3	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:19	GU	S	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:20	RA	P	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:20	GU	S	1	B	W	1				Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:21	HG	P	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:21										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:22										Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:23	GU	S	1	B	E	1				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:23	GU	S	2	B			F.			Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:24										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:25										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:26										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:27	GU	P	1	C						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:28	HG	P	1	B	E	3				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:30	GU	P	1	B	E	1				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:30	GU	S	1	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:31										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:32										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:33										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:34										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:34										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:35	GU	P	2	A						Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:35										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:36										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:37										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:38	GU	S	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:38										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:39										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:40	RA	S	1	C	E	1				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:41										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:42										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:43										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:43										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:44										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:45										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:46	CM	S	2	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:46	HG	S	2	A						Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:46	HG	P	2	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:47	CM	P	1	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:47	CM	S	2	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:48										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:48	F.	P	1	C	S	3				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:50	HG	S	1	C	N	3				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:51	HG	P	3	B	N	3				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:53										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:53										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:54										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:06										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:07										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:08										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:09	HG	S	4	D						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:09										Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:10										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:11										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:12	HG	P	1	D						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:12	HG	P	1	D						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:13	HG	P	2	D						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:13	HG	S	1	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:13	HG	P	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:14										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:15	HG	S	1	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:16	HG	P	47	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:16	CM	P	1	A	N	3				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:17										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:18										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:18	GU	S	1	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:19	RA	S	2	B						Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:19										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:19	GU	P	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:20										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:21	GU	S	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:21	RA	P	2	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:21										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:22	GU	S	1	C						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:23										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:24	GU	P	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:24										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:24	GU	S	1	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:26										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:27	F.	S	1	A	S	2				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:27	RA	S	6	C						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:28	GU	S	1	B						Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:28										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:29										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:30										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:31										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:32										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:33	GU	P	17	D	SE	1				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:35										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:36	RA	P	1	C						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:36										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:37	RA		1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:37										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:38	F.	S	1	A	NW	2				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:39										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:40	SA	P	1	C	S	1				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:41										Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:41	RA	S	1	C						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:42										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:42	HG	P	1	A			F.			Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:43	GU	S	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:43	GU	S	2	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:43	GU	S	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:43	RA	S	4							Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:44										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:44	HG	P	1	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:44	SA	P	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:44	RA	P	3	A	S	1				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:45	RA	S	3	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:45	RA	P	5	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:45										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:45	HG	P+S	50	A-C	0		F.			Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:46	GU	S	26							Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:46	RA	S	2							Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:46	GU	P+S	40	A-C			F.(All Directions)			Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:47	RA	P+S	50	A-C			F.(All Directions)			Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:47	KI	S	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:47	GU	P	1	D						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:49	GU	P	1	B	N	1				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:49	RA	S	5	C						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:49	GU	S	2	C						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:50										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:51	GU	S	1	C						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:52										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:53										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:53	GU	S	1	C						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:54										Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:55										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:56										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:57										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:58										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:58	HG	S	1	C						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:58	GU	P	3	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:59										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:59	GU	S	4	C						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:00										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:00	HG	S	1	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:01	GU	S	1	C						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:01	HG	S	2	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:01	GU	P	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:02										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:02	RA	P	2	C						Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:02	GU	P	2	B			F.			Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:02	GU	S	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:49										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:49										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:50										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:51										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:52	RA	S	5	C	NE	1				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:53										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:54	GU	S	5	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:55	GU	S	11	B			F.			Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:55										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:56										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:56										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:57	GU	S	7	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:58	GB	P	1	C	E	1				Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:58	GU	S	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:58	RA	S	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:59	GU	P	2	A	NW	1				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:59										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:00										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:01										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:02										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:02										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:03										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:04										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:05										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:05										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:06										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:06	GU	P	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:06	GU	S	2	B						Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:06	GU	S	2	D						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:07										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:08										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:09										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:09	GU	S	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:09	HG	P	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:10										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:10	GU	S	1	C						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:11										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:11										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:12										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:13										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:14										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:15	HG	P	2	A	O					Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:15	HG	S	17	B-D						Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:15	HG	P	1	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:16	HG	P	2	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:17	RA	S	1	D	W	1				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:18										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:18	HG	S	1	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:18	HG	P	1	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:19	HG	P	7	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:20										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:21										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:22	HG	S	1	B	N	3				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:22	MA	P	2	B			F.(North)			Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:22	SV	P	4	B			F.(North)			Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:23										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:24										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:24	HG	P	18	B						Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:25	HG	S	25	A-D						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:26										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:26	HG	P	50	A-C						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:26										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:27										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:28										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:29										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:29	RA	S	2	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:29	HG	P	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:30										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:30	CM	P	1	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:31										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:31	HG	P	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:31	HG	S	1	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:31	HG	S	1	B						Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:32	GB	S	1	C						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:32										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:32	GU	P	1	B						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:32										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:33										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:34										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:34										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:35										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:36										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:37										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:37										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:39										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:39	GU	P	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:40										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:41										Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:41	GU	S	1	D						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:42										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:42										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:43	GU	P	1	B	E	1				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:43										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:45										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:45										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:46										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:47										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:47	HG	S	1	A	N	3				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:48										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:48	CM	P	1	A	N	3				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:49	GU	S	1	A						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:49	RA	S	1	A	W	1				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:50										Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:50	RA	P	1	A			Dived			Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:51										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:51										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:51	HG	S	1	A	N	3				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:52										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:52										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:53										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:53	RA	S	1	B	W	2				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:54										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:54	GU	S	1	D						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:54										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:55										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:55										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:56										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:57	RA	P	1	A	N	1				Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:57										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:57	RA	P	1	A	W	1				Flight
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:58										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:59										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	14:59										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	15:00										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	15:00	RA	S	1	C						Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	15:00										Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:16	GU			B				131	20	Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:32	GU			A			Dive 1 of 2	70	35	Sea
26/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	13:33	GU			B			Dive 2 of 2	74	30	Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:33	CM	P	1	D	0	2				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:34	HG	S	1	C	N	3				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:35	RA	S	1	A						Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:35										Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:36										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:36	GU	S	1	B						Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:37										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:39										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:40	HG	S	2	B	N	1				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:40	RA	S	3	A			F.			Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:40										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:41	GU	S	10	C	E	2				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:42										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:44	GU	S	4	A	E	1				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:44	RA	P	2	A	E	1				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:45										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:46										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:47										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:47	GU	S	1	A						Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:47	GB	P	1	A	N	1				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:48										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:48	RA	P	1	A						Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:49	HG	P	2	A	0	1				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:49	HG	P	1	A	0	1				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:49	KI	P	1	A	0					Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:49	CM	P	1	A	0					Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:50										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:51	RA	S	1	A	NE	1				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:51	BH	S	1	B	NE	1				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:53										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:54	AUK	S	15	B	E	1				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:55										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:56	AUK	P	20	A	E	1				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:57	GU	P	1	B	N	2				Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:58	AUK	P	23	D	E	2				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:58										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	10:59	GU	P	16	A	E	2				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:00										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:01	AUK	P	19	D	E	2				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:02	HG	S	1	A	N	3				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:03										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:04										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:05	AUK	P	4	B	E	2				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:06	GU	P	1	B	E	2				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:07										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:08	HG	S	2	A	0	2				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:09										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:10										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:12										Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:14										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:14	AUK	P	1	A			F.			Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:15	HG	P	1	A	0		Landed			Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:16										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:16	RA	P	3	B			F.			Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:17	RA	P	5	A						Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:18	RA	P	4	A			F.			Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:18	RA	P	1	A						Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:18										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:19	KI	P	1	A	W	1				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:20	RA	P	2	A			F.			Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:20	RA	P	6	A						Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:21	GU	P	3	A						Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:21	RA	P	1	A						Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:21										Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:21	GU	P	1	B						Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:22	HG	P	1	B						Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:22	GU	P	1	A						Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:22	AUK	P	6	B	E	2				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:24										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:24	UU	P	30	D			F.			Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:25	GU	P	1	A						Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:25										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:27										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:27										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:29										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:30										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:31										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:32										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:33	HG	P	1	A	E	2				Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:33										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:34										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:35										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:35	AUK	P	3	C						Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:36										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:37										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:37	AUK	P	2	A			F.			Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:38	AUK	S	2	A			F.			Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:38	HG	S	1	A	E	2				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:39										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:40										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:40	GU	P	1	A						Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:41										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:41	RA	S	1	B						Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:41	HG	P	1	A	0	2				Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:42										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:44										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:45										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:46	AUK	S	25	C	0	2				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:46										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:47	AUK	P	22	A	E	2				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:47	UU	S	75	C	0	2				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:49	KI	P	1	B	E	2				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:49	GU	P	6	B	E	2				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:50										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:50	GU	P	4	A			F.			Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:51	AUK	P	1	C	E	1				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:52										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:52	GU	P	1	B						Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:52	HG	P	1	B						Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:53	GU	P	1	B	W	1				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:53	RA	P	1	A			F.			Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:53	GU	P	1	A			F.			Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:54										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:54										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:55	RA	P	5	A	E	2				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:55	GU	P	1	A	W	1				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:56	AUK	P	2	C	E	2				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:57										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:57										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:58	KI	P	1	A	S	3				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:59	GU	P	16	A	E	2				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	11:59										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:00										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:00										Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:01										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:02										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:03										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:03										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:04										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:05	HG	P	1	A	0					Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:05	HG	S	1	B	W	2				Flight
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:06										Sea
27/01/2010	ANGELSEY	SEEKAT 'C'	LB,PC,GT	12:06										Sea
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:13							Dived			Sea
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:16										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:19										Sea
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:19										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:20										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:20	RA	S	3	A			Dived			Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:21										Sea
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:24										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:26										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:27	GU	S	1	A						Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:28										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:30										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:32										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:34										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:36										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:38										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:39										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:40	GU	S	1	C						Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:40										Sea
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:41										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:44										Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:45										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:46										Sea
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:49										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:51										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:53										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:54										Sea
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:56										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:58										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:00										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:02										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:03										Sea
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:04										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:06										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:08										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:09										Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:11										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:13										Sea
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:14										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:16										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:18										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:19										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:21										Sea
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:23										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:25										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:26										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:28										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:31										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:32	HG	S	6	C	N	3				Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:34										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:35										Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:37	RA	P	1	A						Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:37										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:39										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:40										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:41										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:43										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:44										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:44										S
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:46										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:48										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:49										Sea
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:51										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:52										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:54										Sea
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:57										Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:59										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:00	RA	S	1	B						Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:00	GX	S	1	C	E	1				Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:02										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:04										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:05										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:07	GU	S	1	B						Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:07										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:09										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:11										Sea
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:12	TE	S	3	B	E	3				Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:13										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:14										Sea
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:15										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:17	GB	P	1	B						Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:17										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:18										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:20										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:22										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:22										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:24										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:27										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:28										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:30										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:30	GU	S	1	A			Flushed at 40M			Sea
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:31										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:33										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:35										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:38										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:40										Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:41										Sea
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:43										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:45	GU	S	1	B						Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:45										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:47										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:48										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:49										Sea
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:50										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:54										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:55	GU	S	1	A						Sea
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:56	GB	S	1	B	N	1				Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:58										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:59	GU	P	1	A						Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:59	RA	S	2	C						Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	15:01										Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	15:04										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	15:04										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	15:05										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	15:07										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	15:09										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	15:11										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	15:13										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	15:16										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	16:47										Sea
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	16:51										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	16:53										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	16:55										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	16:57										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	16:57	RA	S	1	A	E	1	Flushed at 75M			Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	16:58										Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	16:59										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:00	GU	P	1	A						Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:02										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:04	GU	P	7	D						Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:04	HG	S	4	B	N	1				Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:05										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:07										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:09										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:11										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:12										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:14										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:15										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:17										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:19										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:20										Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:22										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:23										Sea
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:25										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:26										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:27										Sea
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:29										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:31										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:31	RA	P	1	B						Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:32										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:32										Sea
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:34										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:35										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:36										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:37										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:39										Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:40										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:40	GU	S	1	A			Flushed at 20M			Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:41										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:43										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:45										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:45										Sea
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:46										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:48										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:49										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:49										Sea
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:51										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:53										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:55										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:56										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:56										Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:57										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	17:59										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	18:01										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	18:02										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	18:03	GU	S	1	C						Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	18:04										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	18:04										Sea
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	18:04	RA	S	2	C						Sea
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	18:05										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	18:07										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	18:08										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	18:10										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	18:11										Flight
21/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	18:12										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	08:33										Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	08:34										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	08:36	GU	S	1	A			DIVED			Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	08:36										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	08:38										Sea
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	08:40	GU	S	1	A	NE	1				Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	08:42										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	08:44										Sea
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	08:44	GU	S	2	D						Sea
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	08:45	GU	P	3	B						Sea
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	08:46										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	08:47										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	08:49	GU	S	1	A			Dived			Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	08:49										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	08:51										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	08:52	SA	P	1	D	S	2				Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	08:54										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	08:55	GU	S	1	B						Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	08:56										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	08:57										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	08:58	RA	2	P	A						Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	08:58										Sea
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:00										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:01										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:02										Sea
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:03	TE	2	P	A	E	3				Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:04										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:05										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:06	SA	S	1	A						Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:07										Sea
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:07	GU	S	3	C						Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:09										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:10										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:11										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:13										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:15										Sea
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:17										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:18										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:19										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:21	RA	S	5	A			Dived			Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:21										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:22										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:23										Sea
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:25										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:27										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:29										Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:31										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:32	RA	P	1	C						Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:33										Sea
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:35	RA	S	2	B						Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:36	GU	S	1	A						Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:37										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:39										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:41	GU	P	2	B						Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:41										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:43										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:45										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:47										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:49										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:49	GU	S	2	C						Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:50										Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:52	HG	S	1	A	S	3				Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:52	GU	S	1	A			Escape flight at 10m			Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:54										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:55	GU	P	1	A			Escape flight at 40m			Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:55										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:57	KI	P	1	D	NW	3				Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	09:59										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:00										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:00										Sea
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:02										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:04										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:05										Sea
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:07										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:07	GU	P	1	B						Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:09										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:10										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:11	GU	P	1	A			Dived			Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:11										Sea
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:12	GU	P	1	B						Sea
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:12	GU	S	1	D	N	1				Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:13	RA	P	3	B						Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:14										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:15										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:17										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:18										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:19										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:21										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:22										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:23										Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:25										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:26										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:27										Sea
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:29										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:29	GU	P	1	A						Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:30										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:32										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:32	SA	S	1	C						Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:32										Sea
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:34										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:35										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:37										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:39										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:40										Sea
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:41										Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:42										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:43										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:44	GU	P	1	A			Dived			Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:45										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:47										Sea
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:49	GU	S	1	B						Sea
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:49										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:51										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:53										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:53	RA	S	1	B	S	1				Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:54	GU	S	1	B						Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:56										Sea
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:58										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	10:59										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	11:01	GU	P	1	A						Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	11:02	GU	P	1	B						Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	11:03										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	11:03	SA	S	1	A						Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	11:04										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	11:05	GU	S	2	B						Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	11:06	LB	S	1	C	NW	3				Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	11:08										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	11:10										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	11:12										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	11:13										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	11:15										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	11:16										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	11:17	GU	P	1	A						Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	11:18										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	11:19										Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	11:20										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:48										Sea
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:51										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:53										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:55										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:57										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	12:58										Sea
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:00	HG	S	1	B	NW	3				Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:02	GB	P	1	A	N	3				Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:03										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:05										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:07	GB	P	2	B	W	3				Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:09										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:11										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:13	RA	S	1	C	N	1				Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:15										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:16										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:18										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:19	RA	P	2	B	SE	1				Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:20										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:21	PU	P	2	B			Flushed North at 80m			Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:21										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:21										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:22	F.	S	1	C	SW	1				Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:23										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:24										Sea
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:26										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:28										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:30										Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:31	GX	S	1	C	N	3	Dived once, flew North			Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:33										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:35										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:38										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:40										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:42	HG	S	1	C	S	3				Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:44	SA	S	1	D	NW	1				Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:46										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:47										Sea
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:48	GJ	5	2	C	SE	3				Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:50										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:52										Sea
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:53										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:55										Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:57	GB	S	1	C	NW	1				Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:57	SA	S	2	C			Dived 30secs, flew North			Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:57										Sea
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	13:59	LB	P	1	B	NE	3				Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:00	HG	P	1	B	NE	3				Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:02										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:04										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:06										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:08										Sea
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:08										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:10	GU	P	1	B	NW	1				Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:12										Flight
22/04/2010	ANGLESEY	SEEKAT 'C'	PC, PD, GT	14:15										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.12	GU	P	2	A						Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.12	GX	S	1	A	W	1				Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.13	GU	P	7	A						Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.14	AE	P	1	B	SE	2				Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.14	GX	S	1	C	NW	1				Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.15	GU	P	2	A			Dived			Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.16	GU	5	3	A						Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.16	SA	S	1	B	W	1	Landed			Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.17	GU	P	6	A						Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.17	GU	P	10	B						Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.18	GU	P	5	A						Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.18	AE	P	1	C	SE	1				Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.19	GU	P	2	A						Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.20	GU	S	2	A						Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.22	GU	S	1	A						Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.24										Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.25										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.25	GU	S	1	A						Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.26	GU	P	1	A						Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.26	GU	P	2	B						Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.27										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.29										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.31										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.34										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.35										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.36										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.38										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.40										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.42										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.43										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.45										Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.46										Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.48	GU	P	3	C	N	1				Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.48	GU	S	1	C	NE	1				Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.50										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.52										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.52										Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.54	GU	S	2	A	S	1				Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.56										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.59										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.00										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.02										Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.03										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.05										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.06	F.	P	1	B	N	1				Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.08										Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.08	GU	P	1	A						Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.10										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.11										Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.14										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.15	GU	P	1	D						Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.16										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.17										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.20										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.20	GU	P	1	A						Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.22										Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.23										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.24	GU	P	1	A						Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.26	AE	P	4	B	S	1				Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.29	GU	S	1	B						Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.29	GU	S	1	A						Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.31	HG	P	4	B	W	3				Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.31	AE	P	1	A	SE	2				Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.31	MX	S	1	C	N	1				Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.31	TE	S	1	B	NW	2				Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.32	MX	P	3	D	NW	1				Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.32	CN	S	1	B	NW	1				Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.34										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.34	HG	P	1	A						Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.36	HG	P	1	C	E	3				Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.38										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.40	GX	P	1	D	NW	2				Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.40	GU	P	1	A			Dived			Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.41										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.43										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.45	GU	P	11	D						Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.45	MX	S	60	D	E	1	Flock			Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.46	GU	S	1	C						Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.47	GU	S	2	A						Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.47	MX	P	1	D	E	1				Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.48										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.49	GU	P	5	B						Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.49	GU	S	1	C						Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.50	GU	P	2	C			End of run 11.50			Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.45										Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.46	GU	S	1	A						Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.47	GU	S	1	D						Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.48	HG	S	1	B						Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.49										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.49	HG	S	1	B						Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.50										Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.51	HG	P	1	A	NE	2				Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.52	GU	P	1	C						Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.52	LB	S	1	A			Flushed			Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.53										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.55										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.57	AE	S	1	B	NE	1-3	Feeding unsuccessfully			Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.58	RA	S	1	A			Flushed			Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.59	RA	S	1	B	E	1				Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.02	AE	P	1	A	E	1				Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.03										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.05										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.07										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.08										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.10										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.12										Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.13										Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.15										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.17										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.18										Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.19										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.21	GB	S	1	B						Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.24										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.25	HG	S	1	D	S	3				Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.26										Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.28										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.29										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.31										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.33										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.34										Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.37										Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.38										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.40										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.41										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.43										Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.45										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.48	AE	S	45	D	O	1-3	Feeding flock			Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.50										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.51										Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.53										Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.55	RA	S	1	D						Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	16.00	HG	P	1	D	SW	2				Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	16.00	AE	S	27	D	O	1-3	Part of earlier feeding flock			Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	16.01	SA	P	1	B	SW	1				Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	16.01	AE/CN	S	30	B	O	1-3	Feeding flock			Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	16.03	AE	P	6	B	O	1-3	Feeding			Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	16.03	AE	P	6	C	O	1-3	Feeding			Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	16.03	AE	S	6	C	O	1-3	Feeding			Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	16.05	MX	P	2	C	W	1				Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	16.05	AE/CN	S	40	C	O	1-3	Feeding, mostly AE			Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	16.05	SA	S	1	D	W	1				Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	16.05	MX	S	2	C	W	1				Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	16.07	AE	P	15	B	O	1-3	Feeding			Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	16.07	AE	S	30	C	O	1-3	Feeding			Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	16.08	AE	P	3	A	O	1-3	Feeding			Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	16.08	AE	S	15	C	O	1-3	Feeding			Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	16.10	AE	P	2	A	O	1-3	Feeding			Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	16.11	AE	P	1	B	SW	2				Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	16.11	AE	S	5	B	O	1-3	Feeding			Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	16.13	AE	S	5	A	O	1-3	Feeding			Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	16.14	AE	P	1	D	SW	2				Flight
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	16.14	TE	S	1	A	NW	2				Sea
07/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	16.14	AE	S	4	A	NW	2	End of transect 16.16			Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.50										Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.51										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.53										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.55	GU	S	1	A			Dived			Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.57	GU	P	1	A						Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.02	GU	P	2	A						Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.02	GU	S	6	A						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.02	GU	S	2	B						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.02	GU	P	60	A						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.02	HG	P	1	A						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.02	GU	S	9	A						Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.03	MX	S	1	A	NE	1				Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.03	GU	P	17	C						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.04	GU	S	27	A						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.04	GU	P	9	A						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.04	GU	P	7	B						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.04	GU	P	3	C						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.05	GU	S	3	B						Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.06										Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.08	TE	S	1	A	SE	2				Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.08	GU	P	8	C						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.09	GU	S	6	A						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.09	MX	P	1	C	NE	1				Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.10	GU	P	3	D						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.11	MX	S	10	C	E	1				Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.11	GB	S	1	C						Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.11	MX	S	2	D						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.11	GU	S	4	D						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.12	GX	S	1	D	SW	2				Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.13	GU	P	6	D						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.14	MX	S	3	C	NE	1				Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.14	GU	P	3	C						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.16										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.17										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.19										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.20	CA	P	1	A			With large fish			Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.22	AE	P	1	A	E	1	With small fish			Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.24										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.25										Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.26										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.28										Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.30										Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.32										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.34										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.35	GU	S	2	C						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.35										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.37										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.39										Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.42	MX	P	2	D	SW	1				Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.44	MX	P	3	D	SW	1				Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.46										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.47										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.49										Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.50	GU	P	1	A						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.51										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.53	AE	P	2	C	O	1-2	Feeding			Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.53	MX	S	2	B	N	1				Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.55										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.57										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.59	GU	P	1	B						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.01										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.03	RA	S	1	A						Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.03	GU	S	1	A						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.03	GU	P	3	C						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.04	GU	P	4	C						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.05	GU	S	2	B						Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.07										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.08	RA	P	1	B						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.09	GU	P	1	A			Dived			Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.09	HG	S	1	B	NE	3				Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.09	SA	S	1	A	NW	1				Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.09	GU	S	4	A						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.10	AE	S	1	A	NW	1				Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.10	GU	S	3	C						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.12	GU	S	3	C						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.12	AE	P	3	A	O	1-2	Feeding			Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.12	AE	S	4	B	E	1				Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.12	HG	S	1	B	SW					Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.12	LB	S	1	C	SW	2				Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.13	GU	S	15	B						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.13	GU	S	7	B						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.13	GU	S	9	C						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.14	GU	P	3	A						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.14	AE	P	5	A	O	1-3	Feeding			Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.14	AE	S	15	A,B,C	O	1-3	Feeding			Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.15	GU	S	19	C						Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.15	GU	S	5	A						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.16	GU	P	2	B						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.16	GU	S	5	A						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.16	AE	P	4	A	O	1-2	Feeding			Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.16	AE	P	9	C	O	1-2	Feeding			Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.17	GU	P	1	A						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.17	GU	P	1	B						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.18	MX	P	1	B	SW	1				Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.18	AE	S	5	A	O	1-2	Feeding			Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.18	CN	S	1	A	O	1-2	Feeding			Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.19	GU	S	2	B						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.20	GU	P	1	B	SW	1				Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.21	GU	P	1	A						Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.21	GU	S	13	C						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.22	GU	S	19	C						Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.22	GU	S	17	C						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.23	MX	P	1	C						Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.25	GU	P	5	A						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.25	GU	S	4	B						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.25	GU	P	7	B						Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.26	GU	S	6	A						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.27	GU	P	7	A						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	11.27	GU	S	5	A			End of transect 11.30			Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.19										Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.20										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.22										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.22	GU	S	2	A						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.24										Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.25										Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.27	GU	P	15	A						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.27	RA	P	2	A						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.27	AE	S	1	A	NW	2				Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.27	HG	S	1	B	S	2				Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.28	GU	P	1	B						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.28	GU	P	2	A			On water			Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.29										Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.30	AE	P	1	A						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.31	GX	S	2	C	W	1				Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.31	AE	S	2	A	O	1-2	Feeding			Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.31	AE	P	3	A	W	2				Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.31	TE	S	1	A	NW	3				Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.32	GU	P	10	A						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.32	GU	S	26	A						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.32	GU	P	11	B						Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.32	GU	S	3	A						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.32	GU	P	1	C	E	1				Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.34										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.35	MX	S	1	A	N	1				Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.36	GU	P	1	C						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.37										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.39										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.39	GU	P	1	A						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.40	HG	S	1	A	SE	2				Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.43										Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.45	GX	S	1	C	W	3				Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.46										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.48										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.48										Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.52										Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.53	HG	P	1	D	S	3				Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.53	GX	S	2	A	NW	3				Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.54										Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.56										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.57										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	14.59										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.00										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.02										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.04										Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.04	GU	P	3	B						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.05										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.05	RA	S	1	A						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.06	GU	S	2	B						Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.06	HG	P	1	A	N	3				Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.08										Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.09										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.11										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.12										Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.14										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.15	GU	S	7	A						Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.15	AE	P	2	D	SW	2				Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.16										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.18	HG	S	1	A	W	3				Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.18	AE	S	1	B	SW	1				Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.18	GU	P	3	A						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.19										Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.21										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.22										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.24										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.25										Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.25	GU	P	1	A						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.26	GU	P	1	C						Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.27	GU	P	2	B						Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.27	AE	P	3	A	NE	2				Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.28	GU	P	1	B						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.29	GU	P	1	C	NW	2				Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.30	AE	P	1	A	SE	1				Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.30	MX	P	1	C	NW	1				Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.32	CN	P	2	A	NW	3				Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.34	AE	P	1	B	NE	2				Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.34	AE	S	3	A	W,E	1-2				Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.35	MX	P	2	D	NW	1				Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.35	F.	S	1	C	E	1				Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.35	HG	S	1	B	W,E	1				Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.36										Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.37	GU	S	2	A						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.37	GU	S	4	B						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.38	AE	S	1	B	W	1				Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.38	RA	S	1	A						Sea
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.39										Flight
08/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	15.40							End of transect 15.42			Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.10										Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.13										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.15										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.16										Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.19										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.21										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.23										Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.23	GU	S	1	A						Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.25										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.27										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.28	GU	P	9	D	SE	1				Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.28	GU	S	1	A	NW	1				Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.30										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.32										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.34	RA	P	2	C	E	1				Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.35										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.36	TE	S	6	B	NE	2				Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.37										Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.39	GU	S	4	D	N	1				Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.40										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.42										Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.43	GU	S	2	A	NW	1				Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.45	GX	P	3	D	SE	3				Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.45	HG	P	2	D	SE	3				Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.45										Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.47	HG	P	2	D	NW	2				Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.49										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.51										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.52										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.53										Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.55	HG	P	1	D	S	3				Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.56	GU	S	1	A						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.57										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	9.59										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.01	GU	S	1	D	E	1				Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.01	GU	S	1	C						Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.03										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.04										Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.06	GU	P	1	C	W	1				Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.07										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.09										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.11										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.11	GU	P	1	A			Dived			Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.13										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.14										Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.15	MX	P	1	C	N	1				Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.18										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.19	HG	P	1	D	NW	2				Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.19	CN	S	2	C	N	1				Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.21	RA	P	3	A						Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.21	AE	S	14	B	O	1-3	Feeding			Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.23	HG	P	1	C	NW	2				Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.23	AE	S	2	C	O	1-3	Feeding			Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.26	GB	P	1	A	S	1				Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.26	AE	S	19	B	O	1-3	Feeding			Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.26	AE	P	4	B	O	1-2	Feeding			Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.28	AE	P	3	A	O	1	Feeding			Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.30										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.32										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.34	GU	S	3	A	NW	1				Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.36										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.37										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.39										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.40	GU	S	3	A						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.41										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	10.43							End of Transect 10.45			Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.10										Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.12										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.13	GU	P	2	A						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.13										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.15	GU	S	1	A						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.15	AE	P	5	B	O	1-2	Feeding			Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.17										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.19										Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.19	GU	P	1	A						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.21	F.	P	1	A	E	1				Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.22	GU	P	1	D						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.23	HG	S	1	B	E	2				Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.23	AE	P	3	B	O	1-2	Feeding			Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.25	HG	S	1	D	NE	2				Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.27										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.29	RA	P	1	B						Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.29	AE	S	2	A	O	1-2	Feeding			Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.29	AE	S	19	B	O	1-2	Feeding			Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.29	AE	P	47	B	O	1-2	Feeding			Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.32	AE	S	3	A	O	1-2	Feeding			Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.32	AE	P	20	B	O	1-2	Feeding			Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.33	GU	S	2	A						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.33	SA	P	1	C						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.33	AE	S	2	A	O	1-2	Feeding			Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.33	AE	S	7	B	O	1-3	Feeding			Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.33	AE	S	7	C	O	1-4	Feeding			Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.33	AE	S	19	D	O	1-5	Feeding			Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.33	AE	P	37	B	O	1-6	Feeding			Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.35	GU	S	5	A						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.35	GU	S	1	C						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.35	MX	S	3	B	SW	1				Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.37	GU	S	2	B						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.37										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.39										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.40	GU	S	1	B						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.40										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.42	GU	P	1	A						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.42										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.43	GU	P	3	A						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.43	GU	P	13	B						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.44	RA	P	1	A						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.44	GU	S	2	B						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.44	GU	P	2	A						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.44	GU	P	2	B	E	1				Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.44	GU	P	5	A						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.45	GU	P	8	B						Sea

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.45	GU	S	3	D						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.46	GU	S	4	A						Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.48										Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.49	GU	P	1	A						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.54										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.56										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.57	SA	S	1	D						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.58	GU	P	1	A						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	12.59	GU	S	2	C						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.00	GU	S	7	A						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.00	GU	S	7	B						Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.00	GU	S	1	C						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.01	GU	S	9	B						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.01	GU	P	2	A			Flushed			Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.02										Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.03	GU	P	1	A						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.03	GU	P	1							Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.04										Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.05	HG	S	1	A						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.06	AE	P	16	C	O	1-2	Feeding			Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.06	MX	S	1	C	NE	1				Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.06	GB	S	1	A	SE	2				Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.07	GU	P	24	C						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.07										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.08	GU	P	6	C						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.09	GU	P	1	A						Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.09	GU	P	3	D	S	1				Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.09	RA	S	1	A						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.09	GU	S	3	A						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.10										Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.11	GU	S	1	A			Dived			Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.12										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.12	GU	P	1	A						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.12	GU	S	1	A						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.13										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.15										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.16	GU	S	13	C						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.16										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.17										Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.17										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.19	HG	S	1	B	N	2				Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.20	GU	P	2	B						Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.22	GU	P	1	A						Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.23	TE	P	1	B	E	2				Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.25	CA	S	1	A						Flight

Table A5.1 – Raw data collected from boat-based surveys off Anglesey

Date	Survey Site	Boat	Surveyors	Time	Sp	P/S	No.	Dist.	Dir.	Height	Notes	Dive Dur.	Dive Dist.	Sea / Flight?
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.26										Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.29	SL	P	1	A						Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.29	LB	S	1	B	S	2				Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.30	F.	P	1	D	O	1	Variable direction			Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.32	HG	S	1	A	NW	2				Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.32	HG	S	1	C	NE	3				Sea
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.34	HG	S	1	A						Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.35										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.38										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.40										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.42										Flight
09/06/2010	ANGLESEY	SEEKAT 'C'	PC, PD, RS	13.44							End of transect 13.45			Flight