Densities and population estimates of Red Grouse *Lagopus lagopus scotica* in Ireland based on the 2006-2008 national survey

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Records of Red Grouse *Lagopus lagopus* occupancy derived from tape-playback transect methods, counts using dogs and a casual sightings database of incidental records, were used to determine the species range in the Republic of Ireland between 2006 and 2008. The primary focus of the national survey was counts of territorial males in winter and early spring in a selection of random 1 km squares. Sites were stratified according to region and predominant habitat type. Any randomly selected sites with more than 60% habitat suitability for Red Grouse were surveyed. Spring densities of Red Grouse were low (average 1.1 per km\(^2\)) with much variation across regions and habitats. The Irish population of Red Grouse was estimated at just over 4,200 birds (95% confidence limits (nearest 100) 3,800-4,700), using the best available data from sites surveyed and suitability of areas not surveyed. Regional population estimates are presented along with estimates of population sizes across five broad-scale habitat classes: mountain blanket bog, upland blanket bog, lowland blanket bog, raised bog and moors and heath. The national survey supports the inclusion of Red Grouse on the Irish Red List of Birds of Conservation Concern with losses of more than 50% of their former breeding range in the Republic of Ireland. Although declines have been less dramatic in Britain, on both islands, changes in suitable habitat availability and habitat quality are considered the primary causes. Regional population estimates generated by this survey are critical to guiding future conservation efforts by highlighting areas that have experienced the steepest declines. Since this survey was completed, a Red Grouse Species Action Plan for Ireland has been produced, which was led by stakeholders and aims to set out a framework to deliver positive measures for Red Grouse in Ireland over a 10-year period (2013-2023).

**Introduction**

In Ireland and Britain, the Red Grouse *Lagopus lagopus scotica* (a sub-species of the Willow Grouse *Lagopus lagopus*) is endemic, and it is closely associated with peatland habitats with a minimum of 20% heather cover and with a range of age classes from young to older stands (Lance 1972, Watson & O’Hare 1979). Red Grouse have been affected by many land use changes, particularly in the last 100 years (Allen et al. 2005, 1972, Watson & O’Hare 1979).
Davies 2005), which have resulted in the fragmentation of habitats and isolation of populations that were once extensive over much of Ireland’s bogs and heaths (Sharrock 1976). In Ireland, peatlands once covered an estimated 1.17 million hectares, but activities such as peat extraction, afforestation, drainage, inappropriate burning practices, and overgrazing (particularly by sheep) have led to declines in suitable habitat extent and quality (Douglas et al. 2008), and more recently the expansion of renewable energy and associated infrastructures on peatland, particularly in the uplands, is a concern (Perrin et al. 2014). The fragmented nature of the remaining peatlands suitable for Red Grouse is unlikely to benefit population growth or expansion of range in Ireland where territories tend to be much larger than elsewhere, therefore, suitable areas are likely to support fewer birds (Watson & Moss 2008).

On the island of Ireland, the former breeding range of Red Grouse has declined by 60% in the past 40 years (Sharrock 1976, Balmer et al. 2013) and thus it is a Red-Listed species (Newton et al. 1999, Lynam et al. 2007, Colhoun & Cummins 2013). Bag records of numbers of birds shot can be used to estimate trends in gamebird populations. While British bag records have shown long-term declines in most regions (Hudson et al. 1992, Redpath & Thirgood 1997), Irish bag records have shown even greater declines (Watson et al. 1993). The Irish population was previously estimated by Gibbons et al. (1993) from a bird atlas study as being between 1,000 to 5,000 breeding pairs. A Red Grouse survey in Northern Ireland in 2004 highlighted the extent of the decline there, with a population estimate of just 202 breeding pairs (Allen et al. 2005).

Extensive research has been conducted on the Red Grouse in Britain where it is considered an economically viable gamebird (Game and Wildlife Conservation Trust Review 2008, Grant et al. 2012). Few studies have been undertaken in Ireland, most limited to a single site at Glenamoy Research Station in north County Mayo (Watson & O’Hare 1973, 1979a, b, c, Lance 1976, 1978a, b). It is widely accepted that Red Grouse populations in Ireland are sparsely distributed, and largely confined to wet, nutrient-poor blanket bog (Watson & O’Hare 1973). Densities in Britain can reach over 100 birds per km² (Game and Wildlife Conservation Trust Review 2008, Hudson et al. 1992), whereas Irish populations have low densities of one to six individuals per km² (Watson & O’Hare 1979b, Murray & O’Halloran 2003, Allen et al. 2005, Finney et al. 2007, Murray et al. 2013).

Ireland’s peatland habitat has been recognised both nationally and internationally by the inclusion of blanket bog, raised bog, wet heath and dry heath on Annex I of the EU Habitats Directive, which affords these habitats a special conservation status. However, peatland habitats suitable for conservation have been dramatically reduced in size with less than a quarter remaining in relatively intact condition (Foss et al. 2001). The results of a national survey of Red Grouse (2006-2008) are presented here, including estimates of the current population size and range both nationally and across five regions and the five habitat types in which the species can be found. As the first dedicated survey of Red Grouse in the Republic of Ireland, these results should form an effective methodological base from which future monitoring can be conducted.

Survey area and methods

The largest recorded extent of the population in Ireland was given in the first breeding bird atlas in 1968-72 (Sharrock 1976). The historic range was defined as all 10 km squares in which the species had been recorded during 1968-72 and is hereafter referred to as the ‘defined historical breeding range’. The subsequent breeding bird atlas of 1988-91 showed the species range had contracted substantially (Gibbons et al. 1993). However, the distribution maps presented in this atlas were not considered entirely representative of the Red Grouse breeding range by conservationists and game enthusiasts. Therefore, for the national survey the sampling area included the entire defined historical breeding range indicated by the first breeding bird atlas (Sharrock 1976), as it was considered a more accurate representation of potential range for the species.

As previous studies of Red Grouse in Ireland indicated the population existed at low density and was dispersed over a wide geographical area (Watson & O’Hare 1973), a stratified random sampling protocol was used to ensure adequate regional and habitat coverage (Gregory et al. 2004) with all potentially suitable sites pooled into two strata, regions and habitats. Using CORINE Land Cover data (EEA 2000) as an indicator of habitat suitability, 1 km squares were identified within each 10 km square occupied by Red Grouse in 1968-72, which contained potentially suitable habitat. In total, 5,963 1 km square potential sites were identified across the country (Table 1) and assigned to one of five regions (Figure 1). ArcView GIS 3.2 (ERSI, California, USA) was used to calculate the proportion of the survey area made up of the five habitat class types:

1) Upland blanket bog (150-300 m above sea level (a.s.l.))
2) Mountain blanket bog (> 300 m a.s.l.)
3) Lowland blanket bog (< 150 m a.s.l.)
4) Moors and heath
5) Raised bog

Any 1 km square with more than 60% of suitable habitat for Red Grouse was included in the potential sampling area. Each survey site was assigned to one of the five habitat classes described above. These classes were selected as being the most relevant predictors of grouse presence or absence at the
broader landscape level, with final assessment of suitability for survey based on an evaluation of aerial photos and ground-truthing. As information on the historic distribution of grouse in relation to habitat use and availability in Ireland was lacking, sampling was conducted in proportion to the area of the different habitats within each region as categorised by CORINE Land Cover data (EEA 2000).

The survey unit chosen was a 1 km square and the primary count unit a territorial male (occupying a territory in late winter to early spring, December to March). At the outset, the survey design and methods took into account the sensitive nature of these ground dwelling birds, and the survey period coincided with the peak of male territoriality and avoided the most sensitive nesting period (late April and May) given that Red Grouse are ground nesters and largely single-brooded (Watson & Jenkins 1964, Watson & O’Hare 1979a).

### Data collection

Given the extent of bog and heath habitats in Ireland, a number of methods were used in order to ensure adequate coverage of sites. The three methods for collection of data are given below and each contributed to the final species range in the Republic of Ireland. Counts with tape-playback was the most extensive method employed and was used to assess the distribution of Red Grouse at a landscape level by examining occupancy of 1 km squares surveyed. Using linear transect counts with tape-playback, a total of 491 1 km squares were visited over two field survey periods (1 December 2006 to 31 March 2007 and 1 December 2007 to 7 April 2008).

As Red Grouse are largely sedentary with males in particular not dispersing widely from their natal territories (Jenkins et al. 1967), the distribution of birds recorded during these survey periods was considered to reflect the distribution of males holding territories prior to breeding later in the spring. Songs or calls of grouse have been used to maximise counts of males at lower densities as such birds are known to be less vocal (Watson & Moss 2008). This relies on detection of territorial males in the area being surveyed by responding to the male grouse call being played. Given the low densities

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**Table 1.** Numbers of randomly selected 1 km squares in each of the five regions and five habitat classes used in the survey stratification, and numbers of those that were surveyed for Red Grouse within each region or habitat class, 2006-2008.

<table>
<thead>
<tr>
<th>Region/ Habitat Class</th>
<th>Squares selected</th>
<th>Squares surveyed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
</tr>
<tr>
<td>East &amp; South</td>
<td>926</td>
<td>15.5</td>
</tr>
<tr>
<td>Midland</td>
<td>711</td>
<td>11.9</td>
</tr>
<tr>
<td>Northwest</td>
<td>1514</td>
<td>25.4</td>
</tr>
<tr>
<td>Southwest</td>
<td>1032</td>
<td>17.3</td>
</tr>
<tr>
<td>West Connacht</td>
<td>1780</td>
<td>29.9</td>
</tr>
<tr>
<td>Lowland blanket bog</td>
<td>1800</td>
<td>30.2</td>
</tr>
<tr>
<td>Moors &amp; heath</td>
<td>332</td>
<td>5.6</td>
</tr>
<tr>
<td>Mountain blanket bog</td>
<td>1366</td>
<td>22.9</td>
</tr>
<tr>
<td>Raised bog</td>
<td>818</td>
<td>13.7</td>
</tr>
<tr>
<td>Upland blanket bog</td>
<td>1647</td>
<td>27.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5963</strong></td>
<td></td>
</tr>
</tbody>
</table>
of grouse in Ireland, this method allows for improved detection, not just of males, but of any incidental sightings of females or of fresh signs of grouse presence at a site.

All activities regarding the use of tape-playback were carried out under licence issued by National Parks and Wildlife Service. If the aim is to determine whether a species is present or absent then tape-playback may simply increase the chance of finding it (Evans et al. 2007). To generate a reliable method, the probability of birds responding to the tape was held as constant as possible. This was aided by standardising the manner in which the tape was played and ensuring the tape was not played to any one individual too frequently, causing it to habituate and respond less. Line transect methodologies, which are widely used in bird surveys (Bibby et al. 2000), were adapted to incorporate the use of tape-playback with a short call of a male Red Grouse played at six pre-defined points within the square along alternate transects. A pair of observers, 250 m apart, walked four transects across a 1 km square at a slow and steady pace. Where terrain allowed, transects were walked at 125 m, 375 m, 625 m and 875 m across the square in an east-west or north-south direction. At 250 m, 500 m and 750 m along alternate transects the call of a male Red Grouse was played for no more than 30 seconds to see whether any birds in the area would respond.

All registrations of birds seen or heard and any fresh droppings were recorded on field maps (1: 10,560 Ordnance Survey Maps). Any birds seen were classified as male or female based on visual characteristics, i.e. presence or absence of a red comb above the eye. Any birds heard responding to the tape, but not seen, were assumed to be territorial males responding to intruder male calls. Birds observed flying off (flushing) before being identified as male or female were recorded as unsexed individuals. The presence or absence of droppings (fresh or old) or feathers was considered important as they may indicate Red Grouse presence (recent or past evidence) where no birds were actually seen. These methods are suitable for surveying areas with lower densities of grouse, as the tape-playback entices territorial males to respond to the intruder male calls, therefore giving a more accurate estimate of density than transect methods without the use of tape-playback.

Potential sources of bias were the proximity of sites surveyed to one another and the probability of missing birds or double counting of individuals whose territories may have ranged over a number of 1 km squares. The time spent in a survey square depended on the terrain, the area to be covered and the observer. Where possible, it was recommended that observers traversed a site at a constant walking pace, although obviously steeper terrain affected the length of time spent in a survey square. Deriving abundance predictions of grouse based on length of survey in 1 km squares was not feasible as it was likely to vary with terrain and fitness of survey teams and volunteers. Responses were not unfavourably affected by weather, although where possible sites were not surveyed in poor weather conditions.

To ascertain how effective the tape-playback method was at detecting grouse, repeat surveys using both dogs and tape-playback methods were carried out in five pre-selected areas (average area covered was 1.2 km²) in Counties Wicklow, Cork, Galway, Tipperary, Sligo and Donegal. Counts of each selected survey area were usually conducted within three days of each other. Areas counted using dogs were demarcated using observers with hand-held GPS units which subsequently allowed for these areas to be resurveyed using the tape-playback method. The size of the areas surveyed was largely dependent on the areas covered by the handlers and their dogs. The number of handlers ranged between two and seven, with usually a mix of dog breeds used on any given count day, including red setters, English setters, pointers and springers. These areas were then revisited by field staff and counted using standard tape-playback methods. This was done to assess the error in detection using tape-playback (directed at territorial males) versus counts using dogs (directed at both sexes). The average time period between counts was 2.9 +/- 4.3 days. One of the most important assumptions in interpreting these data is that the probability of detection was considered to be constant.

The two main count methods used in this survey differed in their powers of detection with tape-playback designed to target territorial males, whereas counts using dogs targeted both sexes and was expected to yield greater numbers. Total numbers of Red Grouse from areas surveyed using both methods confirmed this assumption with approximately 30% more birds detected using dogs than tape-playback. Therefore, a simple correction factor was applied to regional and national population estimates to account for the lower detection of grouse by the tape-playback method (Appendix 1).

Given the difficulties of surveying grouse in low density populations supplementary records received from other sources (birdwatchers, hill walkers, game enthusiasts, and other surveys) were included to enable establishment of a more complete species range.

From a total of 5,963 1 km squares containing potentially suitable habitat for Red Grouse (Table 1), 491 squares (8.2%) were actually surveyed, while 1,133 squares (19%) were dropped as unsuitable after assessment using aerial photographs and ground-truthing. Percentage suitability figures for all remaining 1 km squares in each stratum were calculated. However, it is important to note that these population estimates are likely to be biased as CORINE Land Cover data (EEA 2000) does not give an indication of habitat quality; it merely represents habitat type at a coarse resolution.
Calculation of population estimates

Mean densities of Red Grouse across each stratum (i.e. region or habitat class) were calculated separately, based on field counts. By using the number of discarded ‘unsuitable’ sites in each stratum (Table 1), the percentage suitability of remaining sites not surveyed in each stratum for Red Grouse was calculated. Population estimates for total males were produced by adding the counts derived from known survey squares to the extrapolated estimates from squares not surveyed, but deemed potentially suitable. To derive the overall population estimate (males and females), a similar calculation was applied, however, the resulting ‘total grouse’ figure was then adjusted upwards (taking into account the likely under recording of female grouse by tape-playback methods; see Appendix 1) by applying a correction factor of 1.31 to this population estimate. This correction factor was derived from the results of the validation survey. Note that the same process just described, was used to calculate the estimated total numbers of grouse in each region and each habitat class.

These derived population estimates highlight variability in suitability of sites for Red Grouse between regions. In addition, the sum of the regional estimates differs slightly from the national population estimate which was extrapolated using the overall mean national density and suitability figures. Similarly, the sum of the habitat estimates differs for the same reasons. The count data were not normally distributed, therefore confidence limits for all population estimates were calculated using the bootstrap procedure (Crawley 2005).

Validation of count methods

Paired t-tests were used to test for differences in densities of grouse (number of birds per unit area) recorded at sites that were surveyed using both methods (i.e. once using tape-playback and once using dogs). Density figures were cosine transformed to achieve a normal distribution using the Kolmogorov-Smirnov test prior to the Paired t-test.

Between year effects

To test for changes in grouse numbers recorded at sites between survey years, a Paired t-test was carried out on results from a random sub-sample of 64 1 km sites which were surveyed in both winters. A log10 (x+1) transformation of the original count data was carried out prior to running the parametric t-test. Subsequently, the occupancy data for these 64 sites (based on the presence of grouse in one or both survey seasons) were used along with the occupancy data of those 1 km squares surveyed just once (n = 427) in the final population models below.

Regional and habitat effects

A Generalized Logistic Model with binomial error link incorporated grouse presence or absence as the response variable, with region and habitat types as the categorical variables. It was used to test whether there were any significant regional or habitat effects (landscape level) driving grouse presence or absence. The models were not overdispersed, although as the response variable was binomial, overdispersion was not a real concern (Crawley 2005). In addition, the relationship between presence or absence of Red Grouse and elevation of sites where they were recorded was also examined. Maximum elevation figures for each 1 km square were calculated using map data in ArcView GIS 3.2. A similar model testing whether the abundance of grouse (Poisson distribution) was positively or negatively related to some regions and/or habitat types was ran but results are not included here due to poor model fit. Unless otherwise stated, figures quoted in the main body of the text are the mean (+/- 1 SD). All analyses were performed either in R (freeware Version 2.7.1) or S-Plus 8.
Results

Survey coverage

A total of 491 1 km squares distributed across 188 10 km squares was surveyed between 2006 and 2008. The distribution of Red Grouse in the Republic of Ireland based on occupancy of 10 km squares surveyed using the tape-playback methods is summarised in Figure 2. In total, 107 10 km squares were occupied out of a total of 188 surveyed. Overall, 229 (47%) of the 491 1 km squares surveyed using tape-playback were deemed occupied (i.e. birds or fresh signs seen).

Changes in population range

Incidental records of Red Grouse, from a number of sources, contributed data to derive the overall distribution in Ireland for the period 2006-2008 (Figure 3). These supplementary records facilitated the addition of 65 10 km squares to the 107 10 km squares identified as occupied by the tape-playback survey. This gave a total of 172 10 km squares occupied in the Republic of Ireland. Five of these additional 65 10 km squares overlapped with sites already surveyed using tape-playback, but which were deemed unoccupied, and only one of these records was of a grouse seen on site, the remainder were records of fresh caecal droppings or pellets. The national survey identified a total of 25 new 10 km squares, additional to those given in the 1968-72 breeding atlas. Taking these supplementary data into account, the decline in the species range from 1968-72 to 2008 is estimated at 50% (using all records collected from 2006-2008) of their former historical range, based on changes in occupancy of 10 km squares between 1968 and 2008 (Table 2). The magnitude of this decline varies across regions with losses being less in the Southwest (47%), Northwest (33%) and West Connacht (22%) regions with greatest declines in the Midland (75%) and the East and South regions (58%).

Validation of count methods

Counts using dogs at a total of 18 sites were used to test how effective counts with tape-playback were. The total number of birds detected using dogs was almost 33% greater than the total number detected using tape-playback. Red Grouse were
Table 2. Changes in distribution of Red Grouse from 1968-72 to 2006-2008 based on occupancy of 10 km squares.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Southwest</td>
<td>43</td>
<td>13</td>
<td>11</td>
<td>23</td>
</tr>
<tr>
<td>% decline</td>
<td>70%</td>
<td>74%</td>
<td>74</td>
<td>47</td>
</tr>
<tr>
<td>East and South</td>
<td>121</td>
<td>39</td>
<td>24</td>
<td>50</td>
</tr>
<tr>
<td>% decline</td>
<td>68%</td>
<td>80%</td>
<td>80</td>
<td>58</td>
</tr>
<tr>
<td>West Connacht</td>
<td>49</td>
<td>15</td>
<td>27</td>
<td>38</td>
</tr>
<tr>
<td>% decline</td>
<td>69%</td>
<td>45%</td>
<td>45</td>
<td>22</td>
</tr>
<tr>
<td>Midlands</td>
<td>65</td>
<td>15</td>
<td>11</td>
<td>16</td>
</tr>
<tr>
<td>% decline</td>
<td>77%</td>
<td>83%</td>
<td>83</td>
<td>75</td>
</tr>
<tr>
<td>Northwest</td>
<td>67</td>
<td>25</td>
<td>35</td>
<td>45</td>
</tr>
<tr>
<td>% decline</td>
<td>63%</td>
<td>48%</td>
<td>48</td>
<td>33</td>
</tr>
<tr>
<td>Total</td>
<td>345</td>
<td>107</td>
<td>107</td>
<td>172</td>
</tr>
<tr>
<td>% decline</td>
<td>-46</td>
<td>-69</td>
<td>-69</td>
<td>-50</td>
</tr>
</tbody>
</table>

* = (Sharrock 1976); † = (Gibbons et al. 1993).

present at 13 out of 15 sites (with both methods detecting no birds at two sites and zero detection using dogs at another site). In addition, in a site where no birds were seen using either method, fresh droppings were recorded on the visit using dogs. There was no significant difference in the densities of grouse recorded per unit area in sites surveyed using dogs and repeated using tape-playback methods. However, differences in the detection of Red Grouse using these two methods enabled an adjustment of the population estimates generated using data collected by the tape-playback method only, by applying a correction factor (Appendix 1) to generate overall population estimates. On the assumption that all birds in a given area are detected using dogs, this correction factor was derived from the difference in the total numbers detected using both methods, thereby correcting the probable under-recording of some individuals (i.e. non-territory holding males and females) by the tape-playback method.

Between year effects
For those 64 1 km squares that were surveyed in both 2006-07 and 2007-08, there was no significant difference between winters in the number of sites that held Red Grouse (Wilcoxon z = 0.5, d.f. = 63, P = 0.62). In addition, there was no significant difference in the mean densities of Red Grouse recorded in these 64 1 km squares (Paired t-test, t = 1.4, d.f. = 63, P = 0.15) indicating no significant temporal variation in numbers recorded at these sites between survey periods.

Population estimates
The highest counts recorded in those 64 1 km squares surveyed in both seasons were used, along with the single counts for the remaining 427 1 km squares surveyed on one occasion only, to derive the overall population estimate figures. The population of Red Grouse was estimated at approximately 4,220 birds (95% confidence limits 3,795-4,702) for the Republic of Ireland, including 2,310 males (95% confidence limits 2,036-2,589). This gives a sex ratio of 1.2:1 (males to females). Table 3 shows regional differences in population estimates with greatest numbers in the Northwest and West Connacht regions and fewer birds in the Midland and Southwest regions.

Plate 96. Red Grouse (Michael O’Clery).
Table 3. Mean number of male Red Grouse derived from tape-playback surveys across regions and estimated number of males and totals overall for each region, 2006-2008.

<table>
<thead>
<tr>
<th>Region</th>
<th>Males Mean +/- CL’s</th>
<th>Estimate of Total Males +/- CL’s</th>
<th>National Estimate (correction factor*)</th>
<th>% of total population</th>
</tr>
</thead>
<tbody>
<tr>
<td>East and South</td>
<td>1.22, 0.9-1.5</td>
<td>323, 255-395</td>
<td>685, 542-804</td>
<td>16.3</td>
</tr>
<tr>
<td>Midland</td>
<td>0.5, 0.3-0.9</td>
<td>34, 19-60</td>
<td>59, 37-96</td>
<td>1.4</td>
</tr>
<tr>
<td>Northwest</td>
<td>1.21, 1-1.4</td>
<td>1286, 1060-1526</td>
<td>2038, 1702-2431</td>
<td>48.3</td>
</tr>
<tr>
<td>Southwest</td>
<td>0.23, 0.12-0.3</td>
<td>73, 38-102</td>
<td>132, 76-209</td>
<td>3.1</td>
</tr>
<tr>
<td>West Connacht</td>
<td>0.64, 0.5-0.8</td>
<td>773, 628-932</td>
<td>1376, 1120-1652</td>
<td>32.6</td>
</tr>
<tr>
<td>Overall</td>
<td>0.79, 0.7-0.89</td>
<td>2310, 2036-2589</td>
<td>4218, 3795-4702</td>
<td></td>
</tr>
</tbody>
</table>

* The correction factor (1.31) was applied to account for under-detection of birds recorded using the tape-playback method. It was derived using repeat counts of defined areas using dogs and tape-playback. See Appendix 1 for more information.

Regional and habitat effects

Regional differences in the number of 10 km squares occupied by grouse were detected. Given the distribution results highlighted in Table 2, such regional variation was not unexpected. Similarly, regional differences in densities of Red Grouse (Table 3) reinforce the assumption that populations are more densely distributed in some regions (East and South; and Northwest) than others (Southwest and Midland).

There were a number of differences in population estimates across habitat classes (as identified using CORINE Land Cover data) with mountain blanket bog the most important habitat, followed by upland blanket bog, which together held 75% of the total estimated national population (Table 4). Numbers of grouse on raised bogs were extremely low, at less than 2% of the national figure. An examination of the presence and absence data across habitat classes revealed that occupancy on heath (at almost 70%) was the highest, followed by mountain blanket bog (60%) and upland blanket bog (47%), with lower rates of occupancy on lowland blanket bog (37%) and raised bogs (28%).

There were differences in Red Grouse presence and absence across both habitat and region classes, with these differences significant across regions (Table 5). Regionally, sites in the East and South had significantly higher rates of occupancy (68%) compared to the Southwest (18%), which had the lowest rate, followed by the Midland (28%), West Connacht (45%) and Northwest (66%) regions. There was also a significant positive northerly effect (Z-value = 3.57, P < 0.001) in terms of geographic location, with sites more likely to be occupied the further north they were in the country. Red Grouse were found at sites with wide-ranging differences in elevation (30 to 810 m) in the Republic of Ireland, reflecting the habitats where they still occur (Table 6). The average maximum elevation of sites where they occurred was calculated at 302 m (+/- SD 192 m). A significant positive effect for elevation showed that sites in upland areas were more likely to be occupied than those on lowland or raised bogs. There is evidence to suggest that Red Grouse are now associated more with mountain blanket bog than any other habitat class.

Plate 97. Red Grouse (Mike Brown).
Table 4. Mean number of male Red Grouse derived from tape-playback surveys across CORINE Land Cover classes and estimated number of males and totals overall for each Land Cover class, 2006-2008.

<table>
<thead>
<tr>
<th>Region</th>
<th>Mean No. Males +/- CL’s</th>
<th>Estimate of Total Males +/- CL’s</th>
<th>National Estimate (correction factor*) Total Grouse +/- CL’s</th>
<th>% of total population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowland blanket bog</td>
<td>0.52</td>
<td>327</td>
<td>578</td>
<td>13.7</td>
</tr>
<tr>
<td></td>
<td>0.38-0.66</td>
<td>239-412</td>
<td>447-760</td>
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</tr>
<tr>
<td>Moors &amp; heath</td>
<td>1.35</td>
<td>257</td>
<td>407</td>
<td>9.6</td>
</tr>
<tr>
<td></td>
<td>0.83-1.9</td>
<td>158-365</td>
<td>283-584</td>
<td></td>
</tr>
<tr>
<td>Mountain blanket bog</td>
<td>1.0</td>
<td>1102</td>
<td>2116</td>
<td>50.2</td>
</tr>
<tr>
<td></td>
<td>0.83-1.2</td>
<td>906-1269</td>
<td>1749-2501</td>
<td></td>
</tr>
<tr>
<td>Upland blanket bog</td>
<td>0.88</td>
<td>640</td>
<td>1061</td>
<td>25.5</td>
</tr>
<tr>
<td></td>
<td>0.72-1.1</td>
<td>524-794</td>
<td>863-1302</td>
<td></td>
</tr>
<tr>
<td>Raised bog</td>
<td>0.47</td>
<td>37</td>
<td>71</td>
<td>1.7</td>
</tr>
<tr>
<td></td>
<td>0.28-0.81</td>
<td>22-64</td>
<td>48-111</td>
<td></td>
</tr>
</tbody>
</table>

* The correction factor was applied to account for under-detection of birds using the tape-playback method. It was derived using repeat counts of defined areas using dogs and tape-playback, see Appendix 1.

Table 5. Analysis of the main variables affecting Red Grouse distribution, 2006-2008. Presence/absence data for those 491 1 km² survey sites were analysed using a minimum adequate binomial regression model. Parameter estimates are presented below.

<table>
<thead>
<tr>
<th>Category</th>
<th>Estimate (logit scale)</th>
<th>S.E.</th>
<th>Z-value</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept*</td>
<td>-3.19</td>
<td>0.8</td>
<td>-3.97</td>
<td>0.0001</td>
</tr>
<tr>
<td>Lowland blanket bog</td>
<td>-0.27</td>
<td>0.58</td>
<td>-0.46</td>
<td>0.64</td>
</tr>
<tr>
<td>Mountain blanket bog</td>
<td>0.51</td>
<td>0.56</td>
<td>0.91</td>
<td>0.37</td>
</tr>
<tr>
<td>Raised bog</td>
<td>-1.13</td>
<td>0.96</td>
<td>-1.18</td>
<td>0.24</td>
</tr>
<tr>
<td>Upland blanket bog</td>
<td>-0.28</td>
<td>0.54</td>
<td>-0.51</td>
<td>0.61</td>
</tr>
<tr>
<td>northwest</td>
<td>-1.14</td>
<td>1.1</td>
<td>-1.1</td>
<td>0.3</td>
</tr>
<tr>
<td>west Connacht</td>
<td>-0.75</td>
<td>0.8</td>
<td>-0.98</td>
<td>0.33</td>
</tr>
<tr>
<td>East and South</td>
<td>1.27</td>
<td>0.5</td>
<td>2.54</td>
<td>0.01</td>
</tr>
<tr>
<td>Midlands</td>
<td>0.11</td>
<td>1.1</td>
<td>0.1</td>
<td>0.91</td>
</tr>
<tr>
<td>Max Elevation (m)</td>
<td>0.002</td>
<td>0.0008</td>
<td>2.08</td>
<td>0.038</td>
</tr>
<tr>
<td>Northing</td>
<td>0.00001</td>
<td>0.00003</td>
<td>3.57</td>
<td>0.0004</td>
</tr>
</tbody>
</table>

* Category estimates for ‘Moors & Heath’ and the ‘Southwest’ were set to 0 and all other estimates given are relative to the intercept.

Note: Habitat was retained as a categorical variable in the model, as dropping it resulted in a significant change in the deviance (model fit). All non-significant terms were dropped.

Table 6. The mean elevation (+/- 1 SD) of 1 km squares where Red Grouse were recorded and those 1 km squares where they were not recorded across habitats (using CORINE Land Cover Classes), 2006-2008.

<table>
<thead>
<tr>
<th>Habitat</th>
<th>Red Grouse Present</th>
<th>Red Grouse Absent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moors &amp; heath</td>
<td>392.7m ± 130</td>
<td>445.7m ± 234.9</td>
</tr>
<tr>
<td>Lowland blanket bog</td>
<td>132.8m ± 52.2</td>
<td>141.4m ± 64.7</td>
</tr>
<tr>
<td>Mountain blanket bog</td>
<td>419.7m ± 224.5</td>
<td>326.1m ± 238.5</td>
</tr>
<tr>
<td>Raised bog</td>
<td>138.6m ± 133.9</td>
<td>71.2m ± 21.9</td>
</tr>
<tr>
<td>Upland blanket bog</td>
<td>283.5m ± 55.9</td>
<td>309.4m ± 80.6</td>
</tr>
</tbody>
</table>
Discussion

This survey has confirmed that the breeding range of Red Grouse has declined by 50% since the first recorded species range maps were produced in 1968-72 (Sharrock 1976). The greater magnitude of declines detected at an all-Ireland level (Balmer et al. 2013) is likely due to even greater losses in Northern Ireland (Allen et al. 2005). The overall population estimate of 4,200 adult birds in spring for the Republic of Ireland lies within those estimates given in the early 1990s (Gibbons et al. 1993), which though largely based on best expert opinion at the time, are supported by a recent genetic study in Ireland (McMahon et al. 2012) which estimated the population at 4,560 adult birds (inside the 95% confidence limits range from this study). Philopatry is evident in Red Grouse populations, with young males breeding near where they hatch while females move further from natal areas to avoid inbreeding (Watson & Moss 2008, Hörnll-Willebrand et al. 2014). Their sedentary nature can make populations more vulnerable to rapid habitat changes (Martinez-Padilla et al. 2014). Although there is no recent data on productivity of Irish populations, it is known that most males pair with a single female, and pairs are generally single-brooded (Lance 1976) with an average brood size (chicks hatched) of 2.9 (Watson & O’Hare 1979a). Breeding female numbers are largely determined by the numbers of territorial males (Moss et al. 1996, Mougeot et al. 2003a, b). An excess of males (55%), based on our results from this survey, is typical of low density populations and could be an indicator of a population in decline (Watson & Moss 2008).

Measures of the variation in grouse abundance and range across regions and habitat types will be critical to guiding future conservation efforts. The East and South region showed a loss of 68% in species range, however, it remains an important area for Red Grouse holding the highest densities nationally and supporting an estimated 16% of the national population and 29% of the current range. The greatest losses were in the Midland region (75%) which now holds just 1.4% of the national population and 1% of the current range, which differs markedly from its position in 1968-72 when it held almost 19% of the historic range. Red Grouse densities are lowest in the Southwest region where the range has contracted by 47%. Overall, these results indicate a reduction in species range, particularly in some regions, to strongholds (e.g. densities of 1.2 males per km² in the East and South; and Northwest regions).

There are a number of factors which limit grouse populations in terms of species range and their potential for expansion. Current and past pressures on peatlands include overstocking of livestock, large-scale peat extraction, drainage, extensive burning of heather, expansion of forestry plantations (which act as refuges for predators such as Foxes Vulpes vulpes and Hooded Crows Corvus cornix) and expansion of infrastructural developments (including access and service roads to windfarms) (Douglas et al. 2008). These are likely to impact grouse populations either through direct loss of once suitable habitat or by leading to inferior habitat quality. The vulnerability of remaining Red Grouse populations, which are now more isolated because of the changes to our landscape, to additional environmental and biological factors such as more limited gene flow (McMahon et al. 2012) between local populations could have serious implications for their future on the island of Ireland.

Contributory factors affecting Red Grouse differ across the five regions. Altogether, traditional turf cutting, mechanical turf cutting and industrial peat extraction have accounted for a loss of 47% of the original area of peatlands in Ireland (Malone & O’Connell 2009). Red Grouse declines in the Midland region can be largely attributed to large-scale mechanical peat extraction which has resulted in the conversion of huge areas of once suitable raised bog, to cutaway bogs with just 8% of raised bogs remaining intact (Foss et al. 2001). Peat has been harvested for fuel, electricity production and the manufacture of horticultural products. From a total extent of 310,000 hectares, it is estimated that only 18,000 hectares of raised bog of conservation value remains (Derwin & MacGowan 2000). If all of this area of raised bog was suitable for Red Grouse, then the potential population of conservation value would be 85 birds (95% confidence limits, 50-146) which is only marginally greater than the 71 birds estimated for the national survey (95% confidence limits, 48-111). Recognition that ‘after-use’ cutaway bogs can support biodiversity (Bord na Móna 2010) including Red Grouse, if rehabilitated and/or managed properly offers scope to provide additional habitat and potentially link existing populations on suitable but largely isolated raised bogs.

Large-scale forest planting schemes have had the greatest impact on blanket bog in the Republic of Ireland, with planting on 27% of their area (Foss et al. 2001). Regional differences in the elevation at which conifers have been planted (National Forestry Inventory 2007) might partly explain the pattern of occurrence or absence of Red Grouse in some regions with the average elevations highest in the East and South and Southwest compared to the Northwest, West Connacht and Midlands. These differences in planting probably reflect regional differences in elevation and may also indicate the effect on local grouse populations of forestry planted on upland and mountain blanket bog areas, particularly the Southwest and East and South which have suffered serious losses in historic breeding range. Given most forestry planting in these regions occurs on upland blanket bog (150-300 m a.s.l.), Red Grouse populations are nowadays more restricted to mountain blanket bog areas (> 300 m a.s.l.), particularly...
given the other pressures from agriculture and development on more lowland areas. The elevation of sites surveyed may explain some of the variation in site occupancy between the five regions as it had a significant effect on grouse presence or absence. Mountain blanket bog and upland blanket bog habitats were more likely to be occupied by Red Grouse than lowland blanket bog and raised bogs, reflecting the increased pressures on lowland peatland habitats in particular. For all regions, except West Connacht, the average elevation of sites that held Red Grouse was higher. West Connacht accounts for almost 35% of the total area of lowland blanket bog (< 150 m a.s.l.), and this is likely to have accounted for the difference in the elevation of occupied sites here compared to the other four regions. An examination across habitats revealed that the average elevation of occupied sites was lower on areas of lowland blanket bog, upland blanket bog and moors and heath. In contrast, the elevations of occupied sites on mountain blanket bog and raised bog were greater. These differences across habitats are probably a reflection of landscape and the changes that occur at different elevations. On raised bogs, the higher average elevation of occupied sites may be due to the avoidance of hollows and areas of lower ground which tend to be much wetter (poorer heather growth) than on the higher domes on raised bogs.

Anecdotal evidence from some regions (e.g. Wicklow Mountains National Park) indicates that inappropriate burning of heather and scrub, particularly outside the current legal burning period of 1 September to 28 February (Wildlife (Amendment) Act 2000; 38/2000), is a concern. In Scotland, the burning of heather, or ‘muirburn’, is used to generate a patchwork of young and old heather which can be beneficial to grouse in providing older stands for cover and young shoots for food (Watson & Moss 2008). In Ireland, a number of successful grouse management projects have been initiated since 2007 (Scallan 2013, 2015, Glenfarne Gun Club & O’Toole 2014) which have used managed burns, along with cutting or flailing, to create a mosaic of heather types preferred by Red Grouse. However, most incidences of burning in Ireland, or rather over-burning, are not managed in the manner of ‘muirburn’ and are generally not intended to benefit grouse but rather to create suitable grazing for sheep. Burning every three to four years causes a shift away from heather towards grasses, sedges or rushes and can damage underlying peat irreparably, leading to erosion (Watson & Moss 2008, Brown et al. 2014). Direct impacts of such practices can lead to increased grazing by sheep and deer with more cover of grasses and increases in tick populations, which can carry the deadly Louping ill virus which is largely fatal to Red Grouse (Reid 1975, McGuire et al. 1998, Irvine et al. 2013). The encroachment of Bracken Pteridium aquilinum on many of the lower slopes of former grouse hills is a problem in many areas; it would formerly have been controlled by cattle grazing.

Plate 98. Female Red Grouse (Michael O’Clery).
before increases in sheep numbers throughout the 1980s and 1990s (Watson & Moss 2008). Bracken can produce chemicals to deter other plants; in particular it has a detrimental effect on heather species (Pakeman et al. 1992). In Britain, the Black Grouse Tetrao tetrix has suffered serious declines as a result of overgrazing by sheep (Baines 1996) leading to more cover of grasses, sedges and rushes (because the growing point of these plants is at the very bottom of the stem and stays undamaged if an animal eats the shoot tip) (Watson & Moss 2008).

Habitats used by Red Grouse are becoming increasingly patchy and enriched by agriculture, planting and fertilising of trees, leading to more grassy vegetation thereby increasing numbers of prey, such as rodents and rabbits Oryctolagus cuniculus, for local predator populations (Watson & O’Hare 1979a, Madders 2003). Unlike Britain, where the effects of predators on grouse populations have been studied (Redpath & Thirgood 1997, Thirgood et al. 2000a, b, Redpath et al. 2001), the dynamics of predator populations in Ireland and their effect on the national population has not been quantified. Legal predator control has been used effectively by grouse management projects (e.g. Boleybrack Grouse Management Project, County Leitrim), along with habitat management, to help local populations recover.

The range decline of Red Grouse in Britain (22%) is less than the all-Ireland decline (66%) as indicated in the most recent breeding bird atlas (Balmer et al. 2013) and the 50% decline in the Republic of Ireland detected by this survey. Such differences can be partly explained by the economic benefits of Red Grouse in Britain, where many populations are intensively managed for shooting. Also, the distribution of Red Grouse across habitats in Ireland differs to Britain, with a significant portion (almost 20%) of their former range in Ireland on raised bogs which have been systematically exploited. In Britain, the number of Red Grouse shot fell by 50% over the course of the 20th century with declines largely blamed on habitat losses, although avian predators did limit grouse numbers in areas recovering from population crashes (Thirgood et al. 2000c). Shooting of Red Grouse in Ireland is smaller in scale and confined largely to suitable areas where private landowners have granted permission with indications that few birds are now taken (Red Grouse Species Action Plan 2013). The additional pressures that weather and climate patterns may have on grouse, a cold adapted species, are likely to result in shifts in range, potentially northwards (Hulme & Jenkins 1998, Watson & Moss 2008, Smith et al. 2013).

The fragmented range of Red Grouse in Ireland has probably led to the isolation of certain populations and the ability of these populations to survive and expand is uncertain given the lack of current information on fundamental life history traits. Given the extent and quality of habitats utilised by Red Grouse in Ireland, very little of which is exclusively managed for them, populations will always exist at lower levels than on shooting estates where active measures are taken to boost populations (Allen et al. 2005). Almost 98% of the national population is now distributed across blanket bog and heath, with only 2% remaining on raised bogs. Further research is needed to understand the demographic processes that might be influencing their population size, distribution and long-term survival.

The key findings of the Red Grouse survey together with the Northern Ireland Red Grouse survey (Allen et al. 2005) were instrumental in motivating stakeholders to work together, through a steering committee, to develop an all-Ireland approach to Red Grouse conservation culminating in a Red Grouse Species Action Plan published in 2013. The plan outlines a framework of measures to further grouse conservation on the island of Ireland, including the provision of information and guidance to those interested in grouse management. Recognition of the threatened status of Red Grouse in Ireland (Colhoun & Cummins 2013) has led a number of interest groups to deliver positive measures at a local level through site management for the species at more than 50 locations across the country. Supporting measures to raise wider awareness of Red Grouse and the integral relationship they have with peatlands is vital. The role of past agricultural, forest and energy policies as drivers of landscape-scale changes (overgrazing, afforestation, turf cutting) has been highlighted by this survey. Adequate supports for farmers through locally-led agri-environment schemes could help ensure the species has a firm foothold in the uplands in the future. Furthermore, a strategic approach is needed to assess whether the species can recover some of its former range on cutaway raised bogs, before final decisions are made regarding the likely future use of these peatlands (Bord Na Móna 2011).

Acknowledgements

This project was funded by National Parks and Wildlife Service (NPWS). BirdWatch Ireland (BWI) managed the survey project, which was undertaken by professional field staff (including BWI and NPWS staff), with voluntary input from members of BWI, the Irish Kennel Club (IKC) and the National Association of Regional Game Councils (NARGC). In addition, anecdotal records were received from a wide range of sources. We would like to express our sincere appreciation and gratitude to all for their contribution to the national Red Grouse Survey 2006–2008. We would also like to thank reviewers of Irish Birds, especially Barry McMahon, for comments received on an earlier version of the manuscript.
References


Correction factor = \[\frac{1}{\text{(total number of grouse recorded from tape-playback surveys)} - \text{(total number of grouse recorded from counts using dogs)}}\].

Calculated value of 1.31 based on formula given.

Results of standardised repeat counts using tape-playback and dogs methodologies. The average area surveyed was 1.2 km$^2$ ± 0.6 (N = 15).

<table>
<thead>
<tr>
<th>Method</th>
<th>Total number</th>
<th>Densities/km$^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tape-playback</td>
<td>62</td>
<td>2.99 ± 2.62</td>
</tr>
<tr>
<td>Dogs</td>
<td>90</td>
<td>4.84 ± 4.74</td>
</tr>
<tr>
<td>Paired t-test</td>
<td></td>
<td>t value = 0.16</td>
</tr>
<tr>
<td>Comparison test of paired samples (cosine transformed densities)</td>
<td>d.f. = 28</td>
<td>P = 0.9</td>
</tr>
</tbody>
</table>

**Appendix 1**

Results from surveys using tape-playback and dogs highlighted that fewer Red Grouse (68.8%) were detected by the tape-playback method (see table at right). To adjust for the under-detection of grouse by the tape-playback method, a correction factor derived using this simple calculation was used to modify upwards regional and national estimates for total numbers of grouse (Table 3). Note that count data from the surveys using dogs were assumed to detect all grouse present in a given survey area.
A preliminary review of the population and protection of breeding Little Egret *Egretta garzetta* in Ireland

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Keywords: Breeding status, conservation, *Egretta garzetta*, legal protection, Little Egret, threats

There has been no census of the Little Egret *Egretta garzetta* in the Republic of Ireland (RoI), or Northern Ireland (NI). No census is currently planned in either jurisdiction. The RoI population was recently estimated at 250-500 pairs. On-going monitoring is carried out at approximately 14 colonies in Counties Cork, Waterford, Galway and Dublin. Two colonies in Down have been surveyed since 2012 under the NI Heronry Survey. The European Court of Justice has ruled that member states have similar responsibilities for sites eligible for designation as Special Protection Areas (SPAs) which are not yet designated, as for designated SPAs. Candidate SPAs (cSPAs), alternately termed proposed SPAs in NI, are subject to the same protection as SPAs in both jurisdictions. However, no candidate sites for breeding Little Egret have been designated in either jurisdiction. Based on the current population estimate and one of the SPA designation criteria, many colonies hold at least 1% of the all-Ireland breeding population and could therefore qualify for SPA designation. However this criterion cannot be rigorously applied until an accurate population estimate is obtained. The final SPA selection by regulatory authorities will consider other criteria such as occupancy history, and role as severe weather refuges. Limited published and anecdotal information on known threats to Irish colonies is presented. The species is vulnerable to extreme cold, but appears to be relatively tolerant of human disturbance. Shooting has been recorded at two sites, and tree felling could threaten any sites in commercial forest plantations.

Introduction

This preliminary review focuses on known information for breeding populations of Little Egrets *Egretta garzetta* in Ireland. The Little Egret is listed under Annex 1 of the European Birds Directive 2009/147/EC (The Birds Directive). Under Article 4.1 of the Birds Directive member states, including the Republic of Ireland (RoI) and Northern Ireland (NI), must adopt special measures to ensure the survival and reproduction of Annex 1 species, including the classification of the most suitable territories as Special Protection Areas (SPAs) for the conservation of these species. Most Annex 1 species breeding in Ireland have been surveyed by general and/or species-specific surveys designed by the National Parks and Wildlife Service (NPWS) and/or BirdWatch Ireland, albeit that many surveys have been once-off and/or limited to particular areas. A small number of breeding surveys are

Plate 99. Little Egret (Michael O’Clery).
coordinated on an all-Ireland basis, such as the ‘Seabird 2000’ breeding seabird surveys (e.g. Mitchell et al. 2004) and the Bird Atlas (Balmer et al. 2013). Most Annex 1 raptor breeding populations have been surveyed to some degree in Ireland, with surveys conducted independently in NI and RoI (reviewed by Mee 2012). In RoI, breeding waders have been surveyed under the Upland Bird Survey. Species-specific surveys for some sites have included Kingfisher *Alcedo atthis*, Comcrake *Crex crex*, Chough *Pyrrhocorax pyrrhocorax*, and Red-throated Diver *Gavia stellata*. Excluding rare breeding species such as Nightjar *Caprimulgus europaeus* or Short-eared Owl *Asio flammeus*, breeding Little Egret is perhaps unique amongst Annex 1 populations in Ireland, in that breeding sites are not commonly surveyed either through bespoke surveys or in the course of surveys for other species. A further unique aspect of Little Egret populations is that they are rapidly expanding on an annual basis, which makes a census difficult, but worthwhile.

The aims of this preliminary review are to: i) synthesise current population data on breeding Little Egrets in RoI and NI from published and unpublished sources; ii) review the current legal protection of breeding sites in both jurisdictions; iii) assess which sites could qualify as Special Protection Areas (SPAs); and iv) review known threats to breeding colonies.

**Methods**

A literature review was conducted of peer-reviewed sources, conference proceedings, and ‘grey literature’ such as government publications. Expert opinion was consulted through personal communications with published authors on Little Egret, government nature conservation bodies, and non-governmental nature conservation bodies. A small number of unpublished Little Egret colony records were available online, (e.g. reported in birdwatching trip reports), but the reliability of these records could not be verified, and they were excluded. As part of this study unpublished survey data for one Little Egret breeding colony from north County Dublin has been included. This site, also occupied by Grey Heron *Ardea cinerea*, was surveyed from ground level in March, May and July 2015.

**Results and discussion**

There have been no complete censuses for breeding Little Egret in RoI. None were planned as of November 2015 according to the National Parks and Wildlife Service (David Tierney, pers. comm.) and the Ornithology Officer of the Northern Ireland Environment Agency (NIEA) (Neil McCulloch, pers. comm.). Hillis (2004), quoting Smiddy (2002), gave a breeding population of 55 pairs for Cork and Waterford. The recently published *Bird Atlas 2007-2011* (Balmer et al. 2013) did not estimate the breeding population. The atlas confirmed breeding in 41 10 km squares, with probable breeding recorded in an additional 15 squares. This indicates a conservative minimum of 41 breeding colonies across the whole island.

The only recent ‘published’ population estimate of the breeding population was of 250-500 pairs for the RoI for the period 2008-2012. This estimate was published online on the European Topic Centre on Biodiversity website by the National Parks and Wildlife Service in response to the Irish state’s reporting requirements to the European Commission on the implementation of the Birds Directive (Article 12 reporting) (European Topic Centre on Biodiversity 2014). The online resource notes the limitations of the estimate, in that it is based on expert opinion. There are currently no published estimates of the population in NI; the NI population was not distinguished in the estimate of 660-740 pairs for the period 2008-2012 for the United Kingdom as a whole under Article 12 reporting (European Topic Centre on Biodiversity 2014). The NI Heronry Survey has recorded two colonies in eastern County Down. Colonies are not currently known elsewhere in NI.

Breeding populations in the RoI have been increasing annually since breeding was first proven (Smiddy & Duffy 1997). Colhoun and Cummins (2013) reported the species as breeding in most counties in RoI. However, the *Bird Atlas 2007-2011* (Balmer et al. 2013) and data from the NI Heronry Survey up to and including 2015 indicate breeding remains to be confirmed in many midland and western counties, and in all Ulster counties excluding Down. Published accounts of confirmed Little Egret breeding sites were limited to reports of ten colonies in County Cork, two in County Waterford (Smiddy 2002, O’Donoghue & Smiddy 2008), and a single colony in County Galway (Benson & Lusby 2013), where long-term studies are on-going. Productivity data was published for Cork and Waterford sites studied from 1997 to 2001 (Smiddy 2002), and the Galway colony studied from 2009 to 2013 (Benson & Lusby 2013). Reliable estimates of mean colony size cannot be calculated in this preliminary review paper given this small sample size. The sites in Down have been surveyed annually since 2012 during the NI Heronry Survey.

The authors recorded a single Little Egret colony of six pairs in north Dublin following a survey in 2015. The authors did not record Little Egrets at five other occupied Dublin Grey Heron colonies surveyed from 2013 to 2015. The known colony data is summarised in Table 1. Colony size (number of nests) varied significantly between years at four of the eight colonies for which multi-year data was available. This inter-annual variation and the potential for rapid increase in colony size over successive years, underlines the importance of multi-year surveys for accurate census data. Colonies larger than 40 nests have been reported elsewhere (e.g. French colonies reported by Hafner et al. (1994) and Australian colonies...
of Ireland) can potentially qualify as an SPA in either jurisdiction. In the view of the authors, this criterion cannot be rigorously used to select SPAs until the all-Ireland population has been accurately censused. All-Ireland surveys of Little Egret have been recommended by Colhoun & Cummins (2013). These surveys could also provide accurate data on the status of Cattle Egret *Bubulcus ibis* at Irish heronries (which has not yet been recorded here as a breeding species), and other woodland-nesting species.

The 1% population criterion does not alone determine the list of sites to be designated, and the criteria in both jurisdictions include allowance for other parameters. These are clearly prescribed in the JNCC criteria, which list seven ‘Stage 2’ criteria including history of occupancy, naturalness, and role as a severe weather refuge. The final determination of SPA sites will require careful assessment of the full suite of criteria. This will require the relative importance of different colonies to be identified with reference to JNCC’s Stage 2 criteria. It is noteworthy that the 250-500 breeding pair population estimate for RoI, which would be little altered by the addition of sites in Northern Ireland, means colonies with five or less nesting pairs could constitute 1% of the all-Ireland population. However, accurate population estimates are needed to properly determine the colony size that meets the 1% threshold.

**Table 1. Summary of known colony data for Little Egrets in Ireland from 1997 to 2015. Data from published and unpublished sources (see text).**

<table>
<thead>
<tr>
<th>Colony</th>
<th>County</th>
<th>Survey period</th>
<th>Peak nests</th>
<th>Range in No. of nests</th>
<th>Productivity measured</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Cork</td>
<td>1997 to 2001</td>
<td>2</td>
<td>0 to 2</td>
<td>Yes</td>
<td>Smiddy 2002</td>
</tr>
<tr>
<td>B</td>
<td>Cork</td>
<td>1997 to 2001</td>
<td>8</td>
<td>1 to 8</td>
<td>Yes</td>
<td>Smiddy 2002</td>
</tr>
<tr>
<td>C</td>
<td>Galway</td>
<td>2009 to 2013</td>
<td>19</td>
<td>2 to 19</td>
<td>Yes</td>
<td>Benson and Lusby 2013</td>
</tr>
<tr>
<td>D</td>
<td>Down</td>
<td>2012 to 2015</td>
<td>5</td>
<td>2 to 5</td>
<td>No</td>
<td>NI Heronry Survey (John Lyons, pers.comm.)</td>
</tr>
<tr>
<td>E</td>
<td>Down</td>
<td>2012 to 2014</td>
<td>4</td>
<td>1 to 4</td>
<td>No</td>
<td>NI Heronry Survey (John Lyons, pers.comm.)</td>
</tr>
<tr>
<td>F</td>
<td>Dublin</td>
<td>2015</td>
<td>6</td>
<td>N/A</td>
<td>No</td>
<td>Author’s unpublished records</td>
</tr>
<tr>
<td>G</td>
<td>Waterford</td>
<td>1997 to 2001</td>
<td>7</td>
<td>3 to 7</td>
<td>Yes</td>
<td>Smiddy 2002</td>
</tr>
<tr>
<td>H</td>
<td>Waterford</td>
<td>1997 to 2001</td>
<td>40</td>
<td>12 to 40</td>
<td>Yes</td>
<td>Smiddy 2002</td>
</tr>
</tbody>
</table>

**Legal protection of breeding egret sites**

The Little Egret is one of approximately 20 regularly breeding species in Ireland subject to special protection under Annex 1 of the Birds Directive. Little Egret is also one of only two regularly breeding Annex 1 species which has ‘naturally’ colonised Ireland in recent history following climatic events (Voisin 1991) (the other being Mediterranean Gull *Larus melanocephalus*). Based on the online databases of the NPWS and the Joint Nature Conservation Committee, no breeding Little Egret populations were designated as special conservation interests of any SPAs in Ireland. The Birds Unit of the NPWS has confirmed there are no immediate plans for designating SPAs for this species in RoI (David Tierney, pers. comm.). In relation to NI, NIEA’s Ornithology Officer informed the authors that one proposed SPA (pSPA) existed in NI for marine birds, but that no pSPAs or SPAs were designated for breeding Little Egret in the jurisdiction (Neil McCulloch, pers. comm.). The European Court of Justice ruled in 2000 that the obligation placed on member states by the Birds Directive to implement special conservation measures for Annex 1 species equally applies to areas that have not been classified as SPAs but which should have been.

**Which sites could quality as SPAs?**

The Birds Directive requires member states to classify the “most suitable territories in number and size as Special Protection Areas”. The term “most suitable” is not defined in the Directive. Subsequently, to assist in the definition of “most suitable”, the JNCC (2010), and later the NPWS (2012) published site selection criteria for the United Kingdom and RoI respectively. The NPWS and JNCC criteria for SPA designation are similar. For Annex 1 species like Little Egret, sites holding ≥1% of the ‘all-Ireland’ population (i.e. the island of Ireland) can potentially qualify as an SPA in either jurisdiction. In the view of the authors, this criterion cannot be rigorously used to select SPAs until the all-Ireland population has been accurately censused. All-Ireland surveys of Little Egret have been recommended by Colhoun & Cummins (2013). These surveys could also provide accurate data on the status of Cattle Egret *Bubulcus ibis* at Irish heronries (which has not yet been recorded here as a breeding species), and other woodland-nesting species.

The 1% population criterion does not alone determine the list of sites to be designated, and the criteria in both jurisdictions include allowance for other parameters. These are clearly prescribed in the JNCC criteria, which list seven ‘Stage 2’ criteria including history of occupancy, naturalness, and role as a severe weather refuge. The final determination of SPA sites will require careful assessment of the full suite of criteria. This will require the relative importance of different colonies to be identified with reference to JNCC’s Stage 2 criteria. It is noteworthy that the 250-500 breeding pair population estimate for RoI, which would be little altered by the addition of sites in Northern Ireland, means colonies with five or less nesting pairs could constitute 1% of the all-Ireland population. However, accurate population estimates are needed to properly determine the colony size that meets the 1% threshold.

**Threats**

There are no published accounts of observed threats at breeding Little Egret colonies in Ireland. Weather patterns undoubtedly affect Little Egret population trends. A succession of mild winters in the 1970’s contributed to the expansion of the species’ range in Europe (Voisin 1991). Harsh winters in 1984-85 and 1986-87 increased winter mortality in several Mediterranean population strongholds (Birdguides 2006). Anecdotal evidence indicates that some Munster egret colonies have declined or become extinct following recent harsh winters in Ireland (Patrick Smiddy,
Acknowledgements

Undertaking a review of a species for which few studies have been published, such as Little Egret, must rely significantly on expert opinion. Accordingly, we are very grateful to Pat Smiddy, John Lusby, and John Lyons for sharing unpublished observations and data. We are also grateful to David Tierney and Neil McCulloch for providing useful insights to protection for the species in Irish legislation, and for Phil Shepherd’s comments. John Lusby and the editor also provided useful comments on earlier drafts of the text.

References


Census of Gannet *Morus bassanus* colonies in Ireland in 2013-2014

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**Keywords**: Census, Gannet, *Morus bassanus*, population estimate

Based on counts of nesting Gannets *Morus bassanus* from aerial photographs, the Irish population has increased from 36,000 to nearly 48,000 Apparently Occupied Sites (AOS). Little Skellig (Kerry) continues to be the largest colony, supporting 74% of the national population, though growth rates at Bull Rock (Cork) and Great Saltee (Wexford) were higher. A new colony has been established at Lambay (Dublin) on the east coast and the tiny west coast colony at Clare Island (Mayo) has increased dramatically in the last few years.

**Introduction**

Northern Gannets *Morus bassanus* (hereafter Gannet) have been censused at ten-year intervals in Britain and Ireland and, when feasible, across the North Atlantic. The last full census of British and Irish gannetries was in 2004, just after the completion of the Seabird 2000 Survey (Wanless *et al.* 2005). At that time there were five known gannetries in Ireland, supporting 36,111 Apparently Occupied Sites (AOS). Four were well established and increasing: Little Skellig (Kerry), Bull Rock (Cork), Great Saltee (Wexford) and Ireland’s Eye (Dublin). A fifth colony is present on Clare Island (Mayo) and supported a handful (<5) of pairs over a 27-year period (1978-2004). However, over the last few years, the Clare Island colony has increased substantially, holding at least 65 pairs in 2011 (Eoin McGreal, pers. comm.) and a 2012 photograph has been used in the present analysis. The 2004 census revealed that the smaller colonies were expanding rapidly at between 7% and 20% per annum (over 10 years) and the largest, Little Skellig, was growing at a modest 1.2% per annum. Additionally, in 2006, a group of Gannets appeared on the north cliffs of Lambay Island (Dublin) and closer observation in 2007 revealed they had commenced nesting, thus becoming the sixth Irish colony.

Scottish partners of the UK-Irish Seabird Monitoring Programme commenced the next decadal census of British gannetries in 2013 and had completed the task in summer 2015 (Murray *et al.* 2014, 2015). Here we present the results of a census of Irish gannetries based on aerial photographs taken in the summers of 2013 and 2014.

Plate 100. The Little Skellig Gannetry viewed from the east in summer 2014, showing recent rockfall in the foreground (Alyn Walsh).
Methods

The present survey is primarily based on an examination of aerial photographs taken by Alyn Walsh (of the National Parks and Wildlife Service) at east coast colonies in summer 2013 (Great Saltee, Ireland’s Eye and Lambay) and at the southwest colonies (Little Skellig and Bull Rock) in summer 2014. The material available is summarised in Table 1.

Photographs were viewed in the standard desktop AppleMac Photolibrary system to orientate them and allocate them with respect to count sections from previous surveys. They were subsequently opened in Paint Shop Pro 8 on a PC to select the best images for counting. This subset of photographs was then copied prior to any manipulation and marking in which Microsoft Paint was used to draw section boundaries, and ‘dot’ AOS. An AOS was inferred from the presence of an adult bird at a location in which a nest, egg or chick could be supported. Some birds perched on the top of pinnacles or other pointed rocks at the periphery of a colony or section were not included in the AOS tally. On the photographs used here, an AOS usually comprised (i) a single adult regularly spaced from neighbours, (ii) a pair of adults side by side or closer than would be expected for neighbouring nesting birds, or (iii) an adult standing beside a greyer and smaller bird (the chick). The photographer had indicated that most non-breeding, loafing or ‘club’ birds had usually flown off in the first reconnaissance flight round the island and that very few would be present in the photographs supplied for counting. For example, apparently 1,000 loafers were present on a club site on the south side of Bull Rock, below the main helideck and buildings, on the initial approach but nearly all flew off before photography commenced. The images supplied did show that this area held two AOS and indicate that a new sub-colony is about to form. Also, a few of the lowest ‘shelves’ on Little Skellig, particularly on the south face, are known to be occupied by non-breeders and these were not tallied as AOS. Two principal methods of counting AOS were used:

- In Microsoft Paint, an image was opened and section and subsection boundaries were drawn using the ‘pencil tool’. Actual AOS were identified and ‘dotted’ using the ‘brush tool’ with the dot colour changed after approximately 100 sites for ease of subsequent counting. Colour bands or sections were re-counted until a consistent total was reached.
- The image (or series of images for larger sites) was imported into ArcGIS ArcMap 10. The ‘Editor tool’ was used to ‘dot’ AOS and these were tallied in an ‘attributes table’. In general, for large sites, an image was used for each count section and there was no need to draw boundaries on the image. The count sections for Little Skellig used in previous years (total 17) were adopted.
- In some cases, including parts of Bull Rock and the eastern end of Little Skellig, AOS were identified and marked in Microsoft Paint but the actual counts were made using the editor tool in the GIS.

For the three largest colonies (Little Skellig, Bull Rock and Great Saltee) all photographs were counted independently by the three authors (SN, MH and SM) and the accepted count for each section and colony is the mean of these three counts. In the case of Clare Island, only the 2012 image was of sufficient quality to count using these methods. Eoin McGreal provided detailed counts for 2014, but unit definitions were somewhat different. EMcG identified ‘discernible nests’ and

| Table 1. Dates of photographic surveys of Irish Gannet colonies, 2012-2014. |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Colony          | No. photographs | No. selected    | Date            | Time            | Notes           |-----------------|-----------------|-----------------|
| Little Skellig  | 76              | 15              | 15 July 2014    | 10:50           | -               |                 |                 |                 |
| Bull Rock       | 97              | 5               | 15 July 2014    | 11:10           | -               |                 |                 |                 |
| Great Saltee    | 21              | 3               | 6 August 2013   | 12:30           | -               |                 |                 |                 |
| Ireland’s Eye   | 21              | 4               | 6 August 2013   | 16:50           | -               |                 |                 |                 |
| Lambay          | 37              | 3               | 6 August 2013   | 16:30           | -               |                 |                 |                 |
| Clare Island    | 1               | 1               | c. 10 July 2012 | ?               | -               |                 |                 |                 |
| Clare Island    | 2               | (-)             | 20 June 2014    | ?               | Poor quality    |                 |                 |                 |
a total count of adults. Both methods were available for 2012 so that an adjustment to AOS for 2014 can be made (see colony account).

**Results**

**Clare Island**

The good quality photograph taken in July 2012 was used to count AOS in a manner consistent with other sites photographed in 2013 and 2014. This yielded 213 AOS, though a few other heads could be discerned around the north and northwestern side of the stack, perhaps belonging to out of sight AOS, indicating that this count is likely an underestimate. The site is well covered by ground counts (Table 2) by Eoin McGreal but it would be useful to acquire some aerial photographs to estimate the extent of the colony facing west. There seems to have been a significant increase in the growth of the colony between 2013 and 2014 and an estimate of AOS in 2014 would be in the range 250-300.

**Little Skellig**

In general, aerial coverage of the island’s gannetry was good, especially for the long ‘faces’ on the north and south sides of the island where the majority of birds nest. Coverage of the extreme east end was satisfactory, though some photographs were taken from a vertical ‘bird’s-eye view’ perspective and this area has suffered from rock and cliff-falls in recent winters. Coverage was poorest for the far southwest end where a series of stacks probably make it difficult for the aircraft to circumnavigate. One section on the north side, number 12, was poorly represented in the array of photographs and numbers had to be ‘best estimated’ from a distant shot. The sections run clockwise from the eastern point, along the south side of the island (1-6), southwest end and stacks (7-10) and eastwards along the north side (11-17). The main peak north face is section 14 and on the south is section 6. The present total indicates that the colony has increased to at least 35,294 AOS, an increase of approximately 19% over 10 years or 1.8% per annum (Table 3).

### Table 2. Recent counts (2004-2014) of the Gannet colony at Clare Island (Mayo).

<table>
<thead>
<tr>
<th>Year</th>
<th>Total adults</th>
<th>Pairs</th>
<th>Discernible nests</th>
<th>Near-/fledged young</th>
<th>AOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>2011</td>
<td>-</td>
<td>65</td>
<td>40</td>
<td>20</td>
<td>-</td>
</tr>
<tr>
<td>2012</td>
<td>-</td>
<td>157</td>
<td>98</td>
<td>&lt;30</td>
<td>213*</td>
</tr>
<tr>
<td>2013</td>
<td>289</td>
<td>-</td>
<td>52</td>
<td>39</td>
<td>-</td>
</tr>
<tr>
<td>2014</td>
<td>510</td>
<td>-</td>
<td>197</td>
<td>142</td>
<td>(estimate 267)</td>
</tr>
</tbody>
</table>

* From photograph.

### Table 3. Recent counts (AOS) (1995-2014) of the Gannet colony at Little Skellig (Kerry).

<table>
<thead>
<tr>
<th>Section</th>
<th>Photo No.</th>
<th>SN*</th>
<th>MH*</th>
<th>SM*</th>
<th>2014 (mean)</th>
<th>2004</th>
<th>1995 (mean)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6954</td>
<td>443</td>
<td>460</td>
<td>451</td>
<td>452</td>
<td>297</td>
<td>297</td>
</tr>
<tr>
<td>2</td>
<td>6922</td>
<td>269</td>
<td>276</td>
<td>273</td>
<td>273</td>
<td>264</td>
<td>264</td>
</tr>
<tr>
<td>3</td>
<td>6965</td>
<td>2,759</td>
<td>2,881</td>
<td>2,703</td>
<td>2,820</td>
<td>2,347</td>
<td>2,512</td>
</tr>
<tr>
<td>4</td>
<td>6965</td>
<td>1,666</td>
<td>1,701</td>
<td>1,564</td>
<td>1,684</td>
<td>1,233</td>
<td>1,402</td>
</tr>
<tr>
<td>5</td>
<td>6927</td>
<td>782</td>
<td>660</td>
<td>584</td>
<td>721</td>
<td>538</td>
<td>481</td>
</tr>
<tr>
<td>6</td>
<td>6968, 6969</td>
<td>7,841</td>
<td>7,577</td>
<td>7,159</td>
<td>7,709</td>
<td>5,025</td>
<td>4,937</td>
</tr>
<tr>
<td>7</td>
<td>6937</td>
<td>1,687</td>
<td>1,991</td>
<td>2,012</td>
<td>1,897</td>
<td>1,180</td>
<td>1,062</td>
</tr>
<tr>
<td>8</td>
<td>6935, 6975</td>
<td>1,636</td>
<td>1,760</td>
<td>1,900</td>
<td>1,698</td>
<td>1,391</td>
<td>1,461</td>
</tr>
<tr>
<td>9</td>
<td>6971</td>
<td>668</td>
<td>587</td>
<td>635</td>
<td>628</td>
<td>467</td>
<td>467</td>
</tr>
<tr>
<td>10</td>
<td>6940</td>
<td>20</td>
<td>(20)</td>
<td>(20)</td>
<td>20</td>
<td>NC</td>
<td>NC</td>
</tr>
<tr>
<td>11</td>
<td>6907, 6942</td>
<td>1,457</td>
<td>1,528</td>
<td>1,397</td>
<td>1,493</td>
<td>1,300</td>
<td>1,134</td>
</tr>
<tr>
<td>12</td>
<td>6981</td>
<td>1,129</td>
<td>1,492</td>
<td>1,164</td>
<td>1,311</td>
<td>522</td>
<td>538</td>
</tr>
<tr>
<td>13</td>
<td>6912</td>
<td>3,710</td>
<td>3,615</td>
<td>3,438</td>
<td>3,663</td>
<td>3,115</td>
<td>3,107</td>
</tr>
<tr>
<td>14</td>
<td>6913, 6915</td>
<td>7,301</td>
<td>7,307</td>
<td>6,793</td>
<td>7,134</td>
<td>8,160</td>
<td>8,066</td>
</tr>
<tr>
<td>15</td>
<td>6917</td>
<td>1,490</td>
<td>1,626</td>
<td>1,407</td>
<td>1,558</td>
<td>1,527</td>
<td>1,400</td>
</tr>
<tr>
<td>16</td>
<td>6917</td>
<td>1,217</td>
<td>1,437</td>
<td>1,623</td>
<td>1,327</td>
<td>1,478</td>
<td>1,356</td>
</tr>
<tr>
<td>17</td>
<td>6917, 6954</td>
<td>766</td>
<td>1,009</td>
<td>944</td>
<td>906</td>
<td>839</td>
<td>757</td>
</tr>
</tbody>
</table>

Total: 34,821, 35,927, 34,067, 35,294, 29,683, 27,241

* SN = Stephen F. Newton, MH = Mike P. Harris, SM = Stuart Murray.
NC = no count available.

Irish Birds 10 (2015)
Great Saltee

Great Saltee can be easily split into three subdivisions: the original colony on the southwestern cliffs, the more easterly extension along the south cliffs and the well separated Makestone, an isolated sea stack off the southeastern cliffs. The three counters involved in assessing the 2013 photographs were reasonably consistent in the total number of AOS with 4,722 the overall mean (Table 6). Counting Gannets on the rather over-exposed image of the Makestone was problematic and no images of the northern aspect were available. Hence the 239 AOS counted from the southeast is likely to be an underestimate, given there were 240 there in total in the 2004 census. The overall size of the Great Saltee colony (4,722 AOS), assessed from the 2013 oblique aerial photographs, is much higher than the ground count from the same year (2,673 AOS; A. Walsh, T. Murray and D. Tierney, in litt.). This implies that around 43% of the colony is not adequately viewable from the ground count vantage points, though we acknowledge that the definition of AOS from an aerial photograph is slightly different to that used on a ground count where an AOS usually includes a definite nest.

Bull Rock

On the basis of this census, there has been a dramatic increase in the number of Gannets nesting on Bull Rock, with 6,388 AOS counted (Table 4). The increase presumably is attributable to, amongst other factors, the lack of disturbance by helicopters and from lighthouse keepers and attendants on a relatively small island. This colony has not been consistently subdivided into census sections for previous assessments. Two primary subdivisions, west side and north side were used in 1985, though the former was split into three parts (with a diagram). In 1995, the data sheet gives three subdivisions, SW side (arch), W side and N side, although it is not clear how the former two relate to the three subdivisions of 1985 (Table 5).

Clearly, the main growth has been on the north side and continued upwards spread towards man-made structures on both the west and north sides (new sections 8, 10, 12, 13, 14). For future monitoring, boundaries of the 2014 count units are held on file at BirdWatch Ireland headquarters and at National Parks and Wildlife Service (7 Ely Place, Dublin 2).

**Table 4.** Counts (AOS) (2014) of the Gannet colony at Bull Rock (Cork).

<table>
<thead>
<tr>
<th>Section</th>
<th>Photo No.</th>
<th>SN*</th>
<th>MH*</th>
<th>SM*</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. left, above arch</td>
<td>6990</td>
<td>371</td>
<td>401</td>
<td>382</td>
<td>392</td>
</tr>
<tr>
<td>2. middle, below lighthouse</td>
<td>6990, 6987</td>
<td>203</td>
<td>206</td>
<td>191</td>
<td>199</td>
</tr>
<tr>
<td>3. right, upper</td>
<td>6990, 6987</td>
<td>77</td>
<td>69</td>
<td>67</td>
<td>71</td>
</tr>
<tr>
<td>4. right, lower</td>
<td>6990, 6987</td>
<td>26</td>
<td>10</td>
<td>11</td>
<td>16</td>
</tr>
<tr>
<td>5. top</td>
<td>6990</td>
<td>96</td>
<td>95</td>
<td>93</td>
<td>95</td>
</tr>
<tr>
<td>6. mid</td>
<td>6990</td>
<td>148</td>
<td>152</td>
<td>151</td>
<td>150</td>
</tr>
<tr>
<td>7. main</td>
<td>6990</td>
<td>508</td>
<td>525</td>
<td>565</td>
<td>533</td>
</tr>
<tr>
<td>8. upper, behind helideck</td>
<td>6996</td>
<td>355</td>
<td>500</td>
<td>471</td>
<td>442</td>
</tr>
<tr>
<td>9. lower, main</td>
<td>6996</td>
<td>1,253</td>
<td>1,457</td>
<td>1,388</td>
<td>1,366</td>
</tr>
<tr>
<td>10. below inland cliff</td>
<td>7002</td>
<td>687</td>
<td>794</td>
<td>668</td>
<td>716</td>
</tr>
<tr>
<td>11. lower, main</td>
<td>7002</td>
<td>399</td>
<td>616</td>
<td>504</td>
<td>506</td>
</tr>
<tr>
<td>12. lower, right, main</td>
<td>7009</td>
<td>1,173</td>
<td>1,345</td>
<td>1,283</td>
<td>1,267</td>
</tr>
<tr>
<td>13. middle</td>
<td>7009</td>
<td>432</td>
<td>529</td>
<td>521</td>
<td>494</td>
</tr>
<tr>
<td>14. left</td>
<td>7009</td>
<td>109</td>
<td>151</td>
<td>156</td>
<td>139</td>
</tr>
<tr>
<td>15. elsewhere</td>
<td>6987</td>
<td>2</td>
<td>(2)</td>
<td>(2)</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>-</td>
<td>5,839</td>
<td>6,850</td>
<td>6,451</td>
<td>6,388</td>
</tr>
</tbody>
</table>

* SN = Stephen F. Newton, MH = Mike P. Harris, SM = Stuart Murray.

**Table 5.** Change in numbers (AOS) (1985-2014) at a sample of count sections of the Gannet colony at Bull Rock (Cork).

<table>
<thead>
<tr>
<th>Subdivisions 1985</th>
<th>1985</th>
<th>Equivalent to (see Table 4)</th>
<th>2014</th>
<th>Subdivisions 1995</th>
<th>1995</th>
</tr>
</thead>
<tbody>
<tr>
<td>W side right</td>
<td>183</td>
<td>2,3,4</td>
<td>286</td>
<td>SW side (arch)</td>
<td>730</td>
</tr>
<tr>
<td>W side over arch</td>
<td>237</td>
<td>1</td>
<td>392</td>
<td>W side</td>
<td>340</td>
</tr>
<tr>
<td>W side left</td>
<td>660</td>
<td>5,6,7</td>
<td>778</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>N side</td>
<td>431</td>
<td>9</td>
<td>1,366</td>
<td>N side</td>
<td>745</td>
</tr>
</tbody>
</table>
Ireland’s Eye

The colony originated on the isolated stack off the northeastern cliffs of the island. This appears to have reached carrying capacity and in 2013 held 486 AOS. The most recent ground level count (from a boat) was in 2011, with 504 AOS including some on the adjacent main island cliffs. A new satellite sub-colony appears to be developing on the central part of the north cliffs of the main island, hinting that there is room for growth at this site, and the overall total for 2013 is 547 AOS (Table 7).

Lambay

Gannets first appeared on the north cliffs of Lambay in 2006. These pioneering birds commenced nesting in 2007 when 68 AOS were recorded including the first eggs (SN, pers. obs.). The colony has spread east and west of the original site on the distinctive ‘saddle’ and three subcolonies can be identified, though in time these may join up. The 2013 total of 728 AOS almost certainly include a significant proportion that are ‘site holders’ only, with no nests, eggs or chicks, as is typical with newly founded colonies (Table 8). The (2013) colony was recounted from the ground in June 2015 with 922 AOS identified, together with a new satellite subcolony (four AOS) on the Nose of Lambay, approximately 1 km to the east (SN, pers.obs.). The colony is thus continuing its expansion.

Discussion

Overall, the Irish Gannet population has increased by 32.8% (11,835 AOS) over a 10-year period (Table 9). This includes the establishment of a new (the sixth) colony on Lambay and significant increases at all sites, although Ireland’s Eye apparently reached capacity between 2004 and 2014. The Lambay colony is approximately 10 km north of Ireland’s Eye and is presumed to be a satellite extension to the ‘founder’ colony. Three colonies, Bull Rock, Great Saltee and Ireland’s...
European fisheries policy on discarding may in due course reduce food supply and availability for Gannets and this could curtail further population expansion. Eye, have approximately doubled in size over the last ten years. We have already indicated (above) that ground counts such as that conducted in the 2004 census on Great Saltee probably underestimate the size of the colony and that it was likely to have been larger in that year.

Factors underlying the sustained growth of the Irish Gannet population are not known, but food supply cannot be a limiting factor up to the present time. Recent changes in

**Table 9.** Counts (AOS) of Gannets at Irish colonies (1968/70-2013/14).

<table>
<thead>
<tr>
<th>Site</th>
<th>2013/14</th>
<th>2004</th>
<th>1995</th>
<th>1984/85</th>
<th>1968/70</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clare Island</td>
<td>267</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Little Skellig</td>
<td>35,294</td>
<td>29,683</td>
<td>26,436</td>
<td>22,500</td>
<td>22,000</td>
</tr>
<tr>
<td>Bull Rock</td>
<td>6,388</td>
<td>3,694</td>
<td>1,815</td>
<td>1,511</td>
<td>1,500</td>
</tr>
<tr>
<td>Great Saltee</td>
<td>4,722</td>
<td>2,446</td>
<td>1,250</td>
<td>710</td>
<td>155</td>
</tr>
<tr>
<td>Ireland’s Eye</td>
<td>547</td>
<td>285</td>
<td>45</td>
<td>17</td>
<td>0</td>
</tr>
<tr>
<td>Lambay</td>
<td>728</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>National total</td>
<td>47,946</td>
<td>36,111</td>
<td>29,549</td>
<td>24,740</td>
<td>21,655</td>
</tr>
</tbody>
</table>

**Acknowledgements**

We are very grateful to Alyn Walsh for supplying an excellent set of images from which we selected a subset for counting. Olivia Crowe and Lesley Lewis helped with the GIS-based counting system and Anne Newton kindly counted and validated some marked up images of Bull Rock. We thank David Tierney for facilitating support from the National Parks and Wildlife Service, and for opening channels of communication with Eoin McGreal who has been monitoring developments at the Clare Island colony in recent years.

**References**


Barn Owl *Tyto alba* diet at a West Cork site

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**Keywords:** Barn Owl, diet, prey selection, prey sex ratio, *Tyto alba*

A total of 6,084 vertebrate prey remains were recovered and identified from a Barn Owl *Tyto alba* site in West Cork. The owls ate Bank Vole *Myodes glareolus* (2,680; 44%), Field Mouse *Apodemus sylvaticus* (2,250; 37%), Brown Rat *Rattus norvegicus* (602; 9.9%) and Pygmy Shrew *Sorex minutus* (278; 4.6%), as well as smaller numbers of birds (149), Common Frog *Rana temporaria* (96), House Mouse *Mus domesticus* (20), seven bats and two fishes. Bank Vole, Field Mouse and Brown Rat were also the most important prey species in terms of biomass. Significantly more female than male of Bank Vole and Field Mouse were taken, although there was no significant difference in the number of female and male Pygmy Shrew taken. The majority of the 149 beetles recovered were *Nicrophorus* species, which specialise on carrion-feeding. It is likely that the presence of these beetles is related to the fact that Barn Owl’s bred at the site, and that several dead owls were discovered among the pellet debris.

**Introduction**

The Barn Owl *Tyto alba* was formerly common in Ireland and Britain, but is now a species of conservation concern (Bunn et al. 1982, Whilde 1993, Balmer et al. 2013, Colhoun & Cummins 2013). There has been a considerable decline since the 1950s, and the Irish population is now estimated at 400 to 500 pairs, most of which are found in the south-west (Lusby & O’Clery 2014). Diet plays a central role in owl ecology, and can be studied using pellets. In addition, pellets have also been used to detect the presence and reflect the distribution and other aspects of the ecology of their mammal prey. For example, Barn Owl pellets have been used to detect and track the distribution of invasive small mammal species in Ireland, such as Bank Vole *Myodes glareolus* and Greater White-toothed Shrew *Crocidura russula* (Foley & Sleeman 2008, Lusby et al. 2008a, b, Tosh et al. 2008). The apparent recent decline of the Brown Rat *Rattus norvegicus* has also been reflected in Barn Owl diet (O’Connell et al. 2006). Similarly,

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Plate 103. Barn Owl (Michael O’Clery).
while bats are generally rare as prey in Barn Owl diet (Roulin & Christe 2013), examples of predation on Daubenton’s Bat Myotis daubentonii has come to light recently in Ireland (Sleeman & Kelleher 2008, Ronayne et al. 2011).

Barn Owl diet is usually determined by examining pellets, which are mostly collected from nest and roost sites. Indigestible parts of prey (e.g. fur, feathers, bones, teeth and insect exoskeletons) are compacted and ejected as a pellet. This method has some limitations with potential for bias where larger prey species are taken. Small species are usually swallowed whole, while larger prey may be dismembered, which may lead to some body parts not being consumed. The question of whether the contents of Barn Owl pellets accurately represent the proportion of prey species in the field has also been raised (Yom-Tov & Wool 1997). Barn Owl diet in Ireland is restricted, compared to other countries, because fewer small mammal species are available to them. For example, the Field Vole Microtus agrestis is a favoured prey in Britain (Glue 1967, Love et al. 2000), but is absent from Ireland. The complete absence of any vole species in Ireland until the discovery of the Bank Vole has meant that there are significant differences in the diet of Irish owls, compared to owls elsewhere (see recent reviews of the British literature on Barn Owl diet there by Martin (2008) and Toms (2014)). There have been some thirty investigations of prey taken by Irish Barn Owls (Smiddy & Sleeman 2011), of which those by Smal (1987), Feehan (1995), Cooke et al. (1996) and Kelleher et al. (2010) are among the most extensive. Previous Irish studies have generally included many roosts with small samples of pellets from each. This study presents data from a single site.

Methods

In August 1994 a barrel was attached to a Beech Fagus sylvatica tree near Leap in West Cork (W2140). It was erected as a possible alternative roost or nest site for Barn Owls after a nearby chimney was renovated. Subsequently, in 2013 the barrel was blown down during a gale and was found to contain a large amount of pellets (about 12.5 kg). Although the site was not visited between 1994 and 2013 it is possible to conclude that it was used at some stage by a pair of breeding owls; body parts (including hooked bills) of two adult and three young owls were found among the debris. However, the period over which the site was in use remains unknown. The pellet material was divided into two parts: (i) more recent and relatively intact pellets, hereafter called ‘recent’ pellets, and (ii) an older undifferentiated mass of bones, hereafter called ‘clumped’ pellets. We used volunteers to assist with the large quantity of material involved, including school children (for educational purposes). Although the bulk of the bones were recovered and cleaned by many people, identification of prey was carried out only by those with appropriate expertise. Standard keys and guides (Lawrence & Brown 1974, Yalden 1985, 2003, Corbet 1989, Brown et al. 1992, Luff 2007), as well as reference collections, were used to assist in identification of prey remains.

The sex of small mammal prey was determined by examination of pelvic bones, using both drawings and photographs (Brown & Twigg 1969, Lawrence & Brown 1974, Walsh 1985, Yalden 2003, Kelleher et al. 2010, Ronayne & Sleeman 2013). This involved microscopic examination of the shape and size of parts of the pelvic bones, in particular the ischium, pubis and pelvic margin (Kelleher et al. 2010). While total counts of each prey species was made based on skulls and lower jaw bones, fewer were sexed as fewer paired pelvic bones were recovered; 744 (28%) Bank Voles, 221 (10%) Field Mice Apodemus sylvaticus, 75 (27%) Pygmy Shrews Sorex minutus, and three Brown Rats (0.5%). Clearly some species were better represented than others. The low proportion of Pygmy Shrew and Brown Rat pelvic bones may possibly be explained by the difficulty of finding the former, given their small size, and in the latter perhaps due to selective feeding on body parts of the larger prey. However, why there should be so few pelvic bones of Bank Voles and Field Mice remains unexplained. Therefore, care ought to be taken in interpretation of the sex ratio data. The pelvic bones, along with all other prey remains recovered, have been deposited in the National Museum of Ireland (Natural History Division) (NMINH: 2015/163).

The results are presented in terms of the number of prey items identified to species level, and the sex ratio of small mammals. Studies of Irish Field Mice, Bank Voles, Pygmy Shrews and Brown Rats have reported sex ratios of roughly 50: 50 (Grainger 1977, Grainger & Fairley 1978, Gallagher & Fairley 1979, Butler 1990, Butler & Whelan 1994, Rooney 1999). The data were analysed assuming equal 50: 50 sex ratios, using a probability binomial model (Sokal & Rohlf 2009).

Results

A total of 6,084 vertebrate prey remains were recovered and identified (Table 1). Among the vertebrates, the most abundant prey species was Bank Vole (44%), followed by Field Mouse (37%), Brown Rat (9.9%) and Pygmy Shrew (4.6%). Bank Vole, Field Mouse and Brown Rat (in that order) were also the most important prey species in terms of biomass. There were also 149 birds, 96 Common Frog Rana temporaria, 20 House Mouse Mus domesticus, seven bats and the bones of two fishes among the prey (Table 1). Among the birds, ten were identified to species; four Blackbird Turdus merula, two House Sparrow Passer domesticus, two Skylark Alauda arvensis and two Woodcock Scolopax rusticola. Of the seven bats, five were identified from skull remains; three
Studies in the latter part of the last century of Bank Vole range expansion in County Cork showed that they are most readily caught in dense cover (Smiddy & Sleeman 1994) and radio-tracking failed to show a change in habitat use from elsewhere in their range (Rooney 1999). Perhaps the high rate of Bank Vole as prey, and the reported detection of genetic adaptations in Irish voles (White et al. 2013), means that at sites where voles are long established, they have expanded their niche. Therefore, a re-examination of Bank Vole density, home range and habitat use in areas where they are long established in Ireland would be useful.

Voles in general are a preferred prey for Barn Owls (Bunn et al. 1982, Taylor 1994, 2009, Toms 2014), and as soon as Bank Voles arrive in new areas in Ireland they are detected and taken by owls (e.g. Foley & Sleeman 2008). Bank Voles, on present knowledge, prefer dense cover. Therefore, the question arises as to how they are accessible as prey to Barn Owls that usually fly in the open. In the present study area, most Bank Voles inhabit hedges and scrub, and the long legs of the Barn Owl are ideal for penetrating deep into such vegetation (Taylor 1989). Comparatively few of the rodent pest species, Brown Rat and House Mouse, were identified in the pellets. They formed only 9.9% and 0.3% respectively of the vertebrate prey identified in the pellets.

The results of the analysis of sex ratios of prey taken are unexpected as males usually predominate in comparable studies (Halle 1988, Taylor 1994). However, caution is advised as a minority, perhaps a biased minority, of prey pelvic bones was available for study (see Methods). Previous research efforts on sex ratios of small mammal prey from Irish Barn Owls found no significant difference between the number of male and female prey (Kelleher et al. 2010, Ronayne & Sleeman 2013).

The international literature on the sex ratios of small mammal prey taken is confusing. For example, it has been reported that female Bank Voles and Field Mice are more common in the pellets of Barn Owls (Taylor 1989, 1994) and Toms (2014). Studies in the latter part of the last century of Bank Vole range expansion in County Cork showed that they are most readily caught in dense cover (Smiddy & Sleeman 1994) and radio-tracking failed to show a change in habitat use from elsewhere in their range (Rooney 1999). Perhaps the high rate of Bank Vole as prey, and the reported detection of genetic adaptations in Irish voles (White et al. 2013), means that at sites where voles are long established, they have expanded their niche. Therefore, a re-examination of Bank Vole density, home range and habitat use in areas where they are long established in Ireland would be useful.

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The remains of 149 beetles were also recovered from among the ‘clumped’ pellet debris; none was present among the ‘recent’ pellets. The majority were burying or sexton beetles *Nicrophorus* species, which specialise on carrion-feeding. Of those identified to species level, 37 were *Nicrophorus humator* and 14 were *Nicrophorus vespoiloides*. Two other beetle species occurred: a single Vine Weevil *Otiorhynchus sulcatus* and a single *Chrysolina* species (see Discussion for a possible explanation for the presence of these beetles).

### Discussion

Barn Owls at this West Cork site were feeding mainly on Bank Vole, Field Mouse and Brown Rat. The prey range is similar to that found in other recent studies in Ireland within the range of the Bank Vole (Cooke et al. 1996, O’Connell et al. 2006). In the latter part of the last century Bank Voles constituted 15% to 22% of Barn Owl prey in Ireland (Smal 1987). In this century in North Cork, where Bank Voles are established since the 1960s (Fairley 1969, Fairley & O’Donnell 1970), they now form the majority of Barn Owl prey (Farnsworth et al. 2002, Kelleher et al. 2010, Ronayne & Sleeman 2013), as they do here in the present study from West Cork.

Bank Voles are typically found in dense cover, where it would be expected they would be comparatively safe from hunting Barn Owls. Does the high number of Bank Vole prey taken mean that, in Ireland, these voles have moved into open areas and occupied the Field Vole niche, as suggested by Taylor (1989, 1994) and Toms (2014)? Studies in the latter part of the last century of Bank Vole range expansion in County Cork showed that they are most readily caught in dense cover (Smiddy & Sleeman 1994) and radio-tracking failed to show a change in habitat use from elsewhere in their range (Rooney 1999). Perhaps the high rate of Bank Vole as prey, and the reported detection of genetic adaptations in Irish voles (White et al. 2013), means that at sites where voles are long established, they have expanded their niche. Therefore, a re-examination of Bank Vole density, home range and habitat use in areas where they are long established in Ireland would be useful.

**Table 1. Total number of prey items recovered from Barn Owl pellets from West Cork (‘recent’ and ‘clumped’ pellets given separately) (conversion factors from Fairley and Smal (1988)). In addition, the remains of 149 beetles (Coleoptera) were recovered; for details see Discussion.**

<table>
<thead>
<tr>
<th>Species</th>
<th>Recent pellets</th>
<th>Clumped pellets</th>
<th>Total (%)</th>
<th>Conversion factor (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank Vole</td>
<td>72</td>
<td>2,608</td>
<td>2,680 (44.0)</td>
<td>2,439</td>
</tr>
<tr>
<td>Field Mouse</td>
<td>23</td>
<td>2,227</td>
<td>2,250 (37.0)</td>
<td>2,138</td>
</tr>
<tr>
<td>House Mouse</td>
<td>2</td>
<td>18</td>
<td>20 (0.3)</td>
<td>17</td>
</tr>
<tr>
<td>Brown Rat</td>
<td>4</td>
<td>598</td>
<td>602 (9.9)</td>
<td>1,517</td>
</tr>
<tr>
<td>Pygmy Shrew</td>
<td>5</td>
<td>273</td>
<td>278 (4.6)</td>
<td>53</td>
</tr>
<tr>
<td>Bird</td>
<td>3</td>
<td>146</td>
<td>149 (2.4)</td>
<td>-</td>
</tr>
<tr>
<td>Common Frog</td>
<td>3</td>
<td>93</td>
<td>96 (1.6)</td>
<td>139</td>
</tr>
<tr>
<td>Bat</td>
<td>0</td>
<td>7</td>
<td>7 (0.1)</td>
<td>7</td>
</tr>
<tr>
<td>Fish</td>
<td>0</td>
<td>2</td>
<td>2 (0.03)</td>
<td>-</td>
</tr>
</tbody>
</table>

Leisler’s *Nyctalus leisleri* and two Natterer’s *Myotis natterei*. There were more females than males among the pelvic bones available from Bank Voles and Field Mice. Both of these differences were statistically significantly (binomial probability test, \( P = <0.001 \)). Although there were also more female than male pelvic bones among the Pygmy Shrew material, this difference was not statistically significantly (\( P = 0.105 \)).

The remains of 149 beetles were also recovered from among the ‘clumped’ pellet debris; none was present among the ‘recent’ pellets. The majority were burying or sexton beetles *Nicrophorus* species, which specialise on carrion-feeding. Of those identified to species level, 37 were *Nicrophorus humator* and 14 were *Nicrophorus vespoiloides*. Two other beetle species occurred: a single Vine Weevil *Otiorhynchus sulcatus* and a single *Chrysolina* species (see Discussion for a possible explanation for the presence of these beetles).
suggested in Finland that it would be expected that birds of prey would take male rodents, whereas small terrestrial mammal carnivores are reported to take more females (Korpimäki 1981, 1985, Koivunen et al. 1996, Norrdahl & Korpimäki 1998). However, the broader international literature on the topic of selective predation on a certain sex is large and often contradictory, with one or other sex being selected (Kaufman 1974, Derting & Cranford 1989, Jones 1990, Sinclair et al. 1990, Dickman et al. 1991, Ille 1991, Belluco & Kravetz 1994, Trejo & Guthmann 2003, Askew et al. 2007, Boukal et al. 2008, Taylor 2009).

There are perhaps four hypotheses which might explain intraspecific sexual differences in vulnerability of small mammal prey to avian predation. These are: ‘differential activity of prey’, ‘differential habitat use of prey’, ‘shared parasites and disease’, and ‘predator hearing ability’.

In ‘differential activity of prey’ (Kaufman 1974, Trejo & Guthmann 2003) the most active part of the population (e.g. males) may be more easily caught. In ‘differential habitat use of prey’ (Errington 1967, Dickman et al. 1991, Trejo & Guthmann 2003) the most vulnerable individuals may be forced to leave suitable microhabitats for habitats where they are at greater risk of predation. In ‘shared parasites and disease’, such parasites and/or disease may affect female prey in particular, perhaps due to food requirements, which may then make them more vulnerable to predation by owls. Female Field Mice in an Irish study have been found to be more heavily infected by flukes (Langley & Fairley 1982), and there are widely reported differences between sexes in terms of immune responses (Robinson & Klein 2012). This aspect of prey selection by owls is neglected and would be difficult, but not impossible to test.

The final hypothesis, which we consider most probable, concerns ‘predator hearing ability’, in this case of the Barn Owl. Barn Owls hunt by detecting sounds made by their prey in a particular band, and are reported to have reduced or poorer hearing ability above 9 kHz (Konishi 1973). This has been used to explain why Scops Owls Otus scops take more female than male large bush cricket prey (Heller & Arlettaz 1994). Distinct Barn Owl ‘personalities’ associated with large black feather spots on their plumage have been described (Peleg et al. 2014). It would be interesting to know whether these West Cork owls’ personalities enabled them to better hear female than male prey. This might be tested by playing male and female prey vocalisations to owls in the field.

Given the unusual nature of the site the results may be exceptional, and as Toms (2014) wrote: ‘how you study owl diet will determine what you can say about it’. If the pellets had been collected systematically and dated, this collection and the research efforts would have been more worthwhile. However, it is worth pointing out that there are other ways, apart from looking at pelvic bones, of sexing bone material (e.g. Ruscillo 2002), and these might yield better data in the future.

While beetles have been found in Barn Owl diet in other studies (e.g. Glue 1974, O’Connell et al. 2006), they tend to be generally avoided (Bunn et al. 1982) and burying beetles (Nicrophorus species) have not previously been reported. However, it is unlikely these beetles were eaten by owls since none was found within ‘recent’ pellets. It can be deduced that the site was also used for breeding, as evidenced by the presence of the remains of dead owls of varying sizes. Therefore, it is perhaps not surprising that these beetles, which specialise on carrion-feeding, would be found among the ‘clumped’ pellet debris. It seems most likely that the beetles colonised the site to feed on the dead prey brought in to the owlets, and later to feed on the dead owls themselves.

Acknowledgements

We are very grateful to Mike O’Sullivan and Michael Fox who provided us with the pellet material. We also thank the many volunteers who gave up their time to assist with analysing these pellets. We wish to thank Ben Hogan and Usna Keating for much help, and two anonymous referees for their comments, Tom Kelly for help with the beetles, and Neil Buckley and Katherine Kelleher for suggestions on earlier drafts. We would also like to thank Jens Carlsson for statistical analysis, and Angela Ross of the Ulster Museum (Northern Ireland) for the identification of bat species.

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Introduction

Since the publication of the last Irish Rare Breeding Birds Report (for 2013) (Perry & Newton 2014) the Panel has recruited a new co-ordinator, Gerry Murphy. He will largely be responsible for gathering records and working to improve our coverage starting in January 2016. In this report, we have collated records from breeding seasons, 2014 and 2015. Some readers will have noticed that in addition to genuinely rare, scarce or declining breeding species we have added some records of non-native species. Ireland, rather surprisingly, has relatively few introduced species, which are mostly gamebirds and waterfowl. Various exotic parakeets, commonly encountered in European cities and southeast England have, to date, been rarely reported in Ireland. We encourage readers to come forward with observations of both rare native and all non-native breeding species, although we consider the Pheasant *Phasianus colchicus* to be naturalised, and records are not required.

Plate 104. Red-necked Phalarope (David Dillon).
The low density of Ireland’s rarer breeding species coupled with a similarly low density of observers presents a considerable challenge in recording status and distribution. Consequently, the information reported here relies heavily upon a small number of committed fieldworkers who track down these rarer breeding species and faithfully submit their observations to the Irish Rare Breeding Bird Panel (IRBBP) each year. Nevertheless, as will become clear from reading this report, the record is far from complete. Many skilful birders still forget to submit their sightings by the end of each breeding season thus hindering our ability to report back as soon as possible to the conservation bodies and wider birdwatching community. That said, late submissions and updates to published records are still most welcome. All rare breeding bird information, both recent and historic, is regarded by the panel as strictly confidential. It is stored in a secure environment and is used solely for the benefit of conservation. To help us continue to maintain the definitive archive of rare breeding bird records in Ireland please send any you think may be valuable to: secretary.irbbp@gmail.com.

Membership of IRBBP comprises: Stephen Newton (BirdWatch Ireland, Chairman), Gerry Murphy (Co-ordinator), David Tierney (National Parks and Wildlife Service), Neil McCulloch (Northern Ireland Environment Agency), Chris Murphy (Northern Ireland Birdwatchers’ Association), Paul Hillis (retired Honorary Secretary IRBBP), Kendrew Colhoun (Royal Society for the Protection of Birds) and Mark Holling (non-voting Secretary United Kingdom Rare Breeding Birds Panel).

This report covers observations of both confirmed rare breeding birds, and those species recorded present during the 2014 and 2015 breeding seasons, but not known to have bred. We also report on several species which have never bred in Ireland but have the potential to do so in the future. These include Osprey (scientific names in Species accounts) and Hobby for which there are regular breeding season observations. For the purposes of this report we limit consideration of observations to the period May to July (inclusive) to exclude non-breeding migrants except where earlier or later records might prove breeding. The report also includes some species, which can be numerous, but are confined to a small number of breeding locations/colonies, particularly terns, and waders. The criteria for the selection of species for which the IRBBP collect data will be fully described and justified in next year’s report and on a new website that we are developing.

Observations for 2016, and for other years, especially 2014 and 2015, should be forwarded to Gerry Murphy at: secretary.irbbp@gmail.com.

Highlights of 2014 and 2015 breeding seasons

Amongst non-passerines two waders are worthy of mention: the appearance of, and a breeding attempt by Little Ringed Plovers in west Wicklow and the return of breeding Red-necked Phalaropes, particularly in Mayo. Eagles show contrasting fortunes, with White-tailed Eagle recovery well advanced but Golden Eagles still struggling to get a foothold in Donegal. Notable passerine records include proof that Ring Ouzels occur in County Sligo and Pied Flycatchers occasionally breed successfully in Ireland. The Reed Warbler population has really consolidated – increasing numbers are singing, and hopefully breeding, in the eastern counties and the first birds have reached Tipperary.

Species accounts

**Whooper Swan Cygnus cygnus**


**Common Wigeon Anas penelope**

Fermanagh 2014 One pair in suitable habitat, Lower Lough Erne RSPB Reserve, 2 May. Wexford 2014 Up to two males and four females, Tacumshin, 18 May to 13 June, but no direct evidence of breeding. Wexford 2015 Up to four males, Tacumshin, 4-21 May.

**Gadwall Anas strepera**

Antrim 2014 One pair throughout season, Portmore Lough, likely to have bred. Fermanagh 2014 Five pairs possibly breeding, Lower Lough Erne Islands. Lough Neagh/Armagh 2014 Three females with eight, four and one young, 25 June; three females with three, three and three young, 1 July; female with four young, 2 July. Lough Neagh/Derry 2014 One female with about three young, 2 July. Wexford 2014 Seven pairs, Lady’s Island Lake, somewhat less than usual for this site. Antrim 2015 Five pairs present and likely to have bred, Portmore Lough. Down 2015 One pair, Belfast Harbour Reserve, no young recorded.
Fermanagh 2015 Five pairs in suitable breeding habitat, Lower Lough Erne Islands Reserve; three pairs suitable breeding habitat, April to June, Upper Lough Erne.

Lough Neagh/Antrim 2015 One female with four young, 19 July.

Lough Neagh/Armagh 2015 Three females with ten, six and three young, 26 June; one female with eight young, 2 July; four females with seven, five, three and one young, 10 July; four females with seven, seven, five and three young, 19 July (some multiple counting may be involved).

Wexford 2015 Between 13 and 15 pairs nesting, Lady’s Island Lake, but no observations of young submitted.

Wicklow 2015 One pair reported, Poulaphouca, but no confirmed breeding.

**Pintail Anas acuta**

Wexford 2015 One pair, Tacumshin, 4 May.

**Garganey Anas querquedula**

Antrim 2014 One pair probably breeding, Portmore Lough RSPB Reserve.

Wexford 2014 Up to six birds, Tacumshin, mid April to mid June, including four males and two females displaying on 25 May.

Antrim 2015 One pair probably breeding, Portmore Lough RSPB Reserve.

Fermanagh 2015 One male in suitable habitat, Upper Lough Erne.

Wexford 2015 Only one male, Tacumshin, 4 May.

Wicklow 2015 At least two males ‘calling’ and on a later date a female seen with ducklings, Poulaphouca.

**Northern Shoveler Anas clypeata**

Antrim 2014 Seven pairs, Portmore Lough RSPB Reserve, seen with young.

Down 2014 Two males, RSPB Belfast Lough, 18 April.

Fermanagh 2014 One pair, Lower Lough Erne Islands RSPB Reserve, April; not seen subsequently.

Lough Neagh/Armagh 2014 One pair (male entering eclipse) 1 July.

Roscommon 2014 One male and two females, Lough Funshinagh, 21 May, possible breeding at this midlands site.

Wexford 2014 Up to two males seen regularly, Tacumshin, May, most promising sighting was of two males and a female, 25 May. Three pairs probably bred, Lady’s Island Lake.

Wicklow 2014 One pair, Kilcoole, 3 June, possible breeding.

Antrim 2015 Six pairs, Portmore Lough RSPB Reserve, seen with young.

Fermanagh 2015 Four pairs at different sites, Upper Lough Erne, breeding not proven.

Galway 2015 Two birds reported, southeastern edge of Lough Corrib, 21 May, breeding status not determined.

Lough Neagh/Armagh 2015 One pair, 26 June to 10 July; another pair with three ducklings, all same area, 19 July.

Roscommon 2015 Four males, Lough Croan, 1 May.

Wexford 2015 One pair, Tacumshin, 31 May; none noted, Lady’s Island Lake.

Wicklow 2015 One female with five fledged juveniles, Kilcoole, indicative of successful breeding.

**Common Pochard Aythya ferina**

Antrim 2014 Up to 11 individuals throughout breeding season, Portmore Lough, but breeding not proven.

Lough Neagh/Antrim 2014 One female with two young, 25 June.

Lough Neagh/Armagh 2014 Three females with six, one and one young, 25 June; two females with broods with minimum numbers of two and three, 27 June; 12 or 13 females with 20 young (all same size, even if not of same brood); and ten, five, four (2), three (4) and two (2) young (ten broods), as well as female with five young (three and two of differing sizes), 1 July.

Lough Neagh/Tyrone 2014 Two females agitated, but young not clearly seen, 26 June.

Wexford 2014 Up to nine birds, Tacumshin, throughout May, with five males and four females seen on two occasions but no proof of breeding. Last observation of a male on 2 June.

Antrim 2015 Up to 23 individuals present throughout breeding season, Portmore Lough, but breeding not proven.

Fermanagh 2015 Single males at two sites, Upper Lough Erne Islands Reserve; three pairs suitable breeding habitat, April to June.

Antrim 2015 One female with four young, 19 July.

Lough Neagh/Armagh 2015 Six females with six, four, three, three, two and one young, 26 June; ten females with six (2), four, three (2), and two (5) young, 2 July; 15 females with seven, six, five, four (2), three, two (4) and one (5) young and one with a juvenile, 10 July; nine females with four (2), three (5) and two (2) young, 19 July (some multiple counting may be involved).

Lough Neagh/Down 2015 One female with one young, 26 June.

Wexford 2015 Two pairs, Tacumshin, 4 May.

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Plate 105. Gadwall (Graham Catley).
Common Scoter *Melanitta nigra*

**Galway 2015** Four seen, northwestern Lough Corrib, 28 May.

Goosander *Mergus merganser*

**Wicklow 2014** Two breeding pairs occupying nestboxes (out of 17), Avonmore River; one failed, the other produced ten young.

**Wicklow 2015** One occupied nestbox produced eight young. The small population, mostly reliant on nestboxes, is increasingly vulnerable to depredation from Pine Martens *Martes martes*. One female and five young, Lough Dan, 3 June; one female and possibly five young, Trooperstown Bridge, 13 August. These two sightings are possibly of the family from the successful nestbox, but they could also represent birds nesting in natural tree holes.

Ruddy Duck *Oxyura jamaicensis*

**Antrim 2014** One pair seen occasionally throughout the breeding season, Portmore Lough.

Quail *Coturnix coturnix*

**Lough Neagh/Beg 2014** One calling male, Lough Beg Reserve.

**Lough Neagh/Beg 2015** One calling male, Lough Beg Reserve.

**Wexford 2015** A late season singing male, Lady’s Island Lake, 26 July. No reports received from the regular site at Athy, County Kildare.

Grey Partridge *Perdix perdix*

**Dublin 2014** 24 pairs recorded at a new reintroduction site.

**Offaly 2014** The population at Boora comprised 187 breeding pairs.

**Dublin 2015** A slight decrease to 19 pairs at the 2014 site.

**Offaly 2015** The population at Boora decreased slightly to 157 breeding pairs.

Red-throated Diver *Gavia stellata*

**Donegal 2014** Five occupied sites with two pairs nesting at one giving six breeding pairs overall; one failed but four reared a total of six young.

**Donegal 2015** Five occupied sites with nesting attempts; three were successful rearing six young, one failed due to flooding and the outcome of the fifth nest is not available, though adults were sitting at the end of July.

Two good years for this ‘edge of the range’ population.

Cattle Egret *Bubulcus ibis*

**Wexford 2014** Two birds seen regularly between 27 April and 8 June indicate the possibility of a breeding attempt.

Little Egret *Egretta garzetta*

**Wexford 2014** Two pairs bred, Lady’s Island Lake.

**Wexford 2015** Two pairs bred, Lady’s Island Lake; five fledged juveniles seen on a lake island, 13 July, could have been locally reared.

Red Kite *Milvus milvus*

**Down 2014** 16 territorial pairs, eight bred successfully, and fledged 16 young.

**Dublin-Meath 2014** Four territorial pairs, but none bred successfully.

Wexford 2014 Two probable territorial pairs.

Wicklow 2014 At least 25 nesting attempts (eggs laid) from which ten pairs successfully fledged 22 young.

**Down 2015** 12 territorial pairs, seven bred successfully, and fledged 13 young.

**Dublin-Meath 2015** Four territorial pairs, two of which bred, with one pair rearing a single young.

**Wexford 2015** Two territorial pairs.

**Wicklow 2015** 47 territorial pairs from which 20 pairs reared 41 young.

White-tailed Eagle *Haliaeetus albicilla*

**Clare** The established pair at Lough Derg bred successfully in both 2014 and 2015.

The overall population in 2014 comprised 14 pairs of which 12 built nests with eggs laid in seven of these, but only the Lough Derg pair reared a single young. In 2015 there were 13 territorial pairs/trios, nine of which built nests and all except one laid eggs. Five nests hatched young and four single young fledged successfully.

Marsh Harrier *Circus aeruginosus*

**Wexford 2014** One female, Tacumshin, throughout June and July.

**Wicklow 2014** Up to three birds, two females and a first-summer male, Kilcoole-Newcastle area, mid May to early July.

**Roscommon 2015** Third calendar-year male reported hunting, Lough Funshinagh, 1 May.

**Wexford 2015** One female, Tacumshin, 17 May.

Hen Harrier *Circus cyaneus*

The fourth five-yearly national census took place in the Republic of Ireland in 2015 (Ruddock et al. 2016); 108 confirmed and probable pairs were monitored and a further 49 possible pairs were located giving a national (Republic of Ireland) total of 157 pairs. Note: the term ‘possible pairs’ is a stronger (better proof of breeding) category than ‘possible’ used in the *Bird Atlas 2007-2011* terminology (Balmer et al. 2013).

Montagu’s Harrier *Circus pygargus*

**Wexford 2014** A single observation of a ringtail, 5 August.

Golden Eagle *Aquila chrysaetos*

**Donegal 2014** Five territorial pairs, three of which bred and laid eggs; only a single chick was fledged.

**Donegal 2015** Four pairs bred, three of which laid eggs, two hatched but no young fledged.

Osprey *Pandion haliaetus*

**Wicklow 2014** One first-year colour-ringed male, presumed migrant, Poulaphouca.

**Wicklow 2015** One two-year old female (from the Scottish Borders), Poulaphouca; the regular presence of birds here in late spring-early summer indicates it may be a likely breeding locality in the near future.
Hobby *Falco subbuteo*

**Wexford 2014** One, Oldtown, Tomhaggard, 24 May; first-summer, Tacumshin, 25 May.

**Corncrake *Crex crex***

**Antrim 2014** One calling male, Rathlin Island, for 11 days; one reported at Kinramer, 30 June.

**Kerry 2014** Calling males reported at Ballyduff (3 May) and Rathmore (5 May) probably represent birds heading north; one, Kells, 20 June seems late for a migrant.

**Donegal 2015** 128 calling males reported.

**Shannon Callows 2015** No birds reported.

**West Connacht 2015** 55 calling males reported.

The monitored core breeding area of Donegal and West Connacht supports a national total of 183 calling males. This is a modest decrease from 230 recorded in 2014.

**Northern Lapwing *Vanellus vanellus***

**Donegal 2014** Systematic surveys by the Curlew Project (HELP) Team located 105 pairs at ten sites/islands, including 30 at Tory Island and 17 at Sheshkinmore.

**Galway 2014** One adult, Kilbanna Lake, 21 May.

**Mayo 2014** Total of 31 apparently occupied territories (probable nesting pairs), Inishkea Islands, fledged 64 young (Suddaby 2014); 14 pairs, Annagh Marsh, fledged 36 young.

**Offaly 2014** 91 breeding pairs, Boora (see comment below).

**Roscommon 2014** One adult, Lough Croan, 21 May.

**Wicklow 2014** 13 breeding pairs, Kilcoole-Newcastle, and a further probable pair East Coast Nature Reserve, second half of April.

**Galway 2015** Four adults, northwestern Lough Corrib, 28 May.

**Mayo 2015** Total of 25 apparently occupied territories (probable nesting pairs), Inishkea Islands, but no young were fledged (Suddaby 2015); 18 pairs, Annagh Marsh, fledged seven young.

**Offaly 2015** 85 breeding pairs, Boora (see comment below).

**Roscommon 2015** Three pairs, Lough Croan, 1 May, a possible breeding record.

**Wicklow 2015** Three pairs, Kilcoole-Newcastle, 14 April, but only a single downy chick seen by 17 May – high chick mortality and a very poor year for the species overall.

At Boora, County Offaly, 122 Lapwing broods were recorded across the two years; these were the subject of a radio-tracking study investigating chick movements and survival and this work will be published elsewhere in due course.

**European Golden Plover *Pluvialis apricaria***

**Antrim 2014** One adult alarm calling and agitated, indicating probable breeding, Glenwherry, 27 May.

**Cavan 2014** One displaying male over suitable breeding habitat, Cuilcagh Mountain, 16 May.

**Donegal 2014** A single observation of a potential pair, Inishbofin, although not a site with obvious plover habitat.

**Cavan 2015** One pair with nest, four eggs, same site as 2014 record, Cuilcagh Mountain, 13 May; same pair alarming in vicinity of nest, 10 June, indicating chicks were present.

**Galway 2015** Three pairs, probably breeding, recorded during Curlew surveys in Connemara.

**Little Ringed Plover *Charadrius dubius***

**Wexford 2014** One juvenile, Tacumshin, 26 July to 1 August was considered a migrant but whether it originated from an Irish breeding site is unknown; presumably same juvenile, Lady’s Island Lake, 16 August.

**Wicklow 2015** Four birds, Poulaphouca, spring, female and three males. A pair nested and eggs recorded but the nest was flooded following heavy rain.

**Common Curlew *Numenius arquata***

**Antrim 2014** 39 confirmed breeding pairs, Glenwherry, and a further four probable pairs same site.

**Fermanagh 2014** 47 confirmed breeding pairs, Lower Lough Erne Islands, of which 32 pairs hatched young; 22 pairs at 19 sites, Upper Lough Erne.

**Antrim 2015** 46 confirmed breeding pairs, Glenwherry.

**Fermanagh 2015** 44 confirmed breeding pairs, Lower Lough Erne Islands, of which 24 pairs hatched young; 19 pairs at 19 sites, Upper Lough Erne.

**Republic of Ireland 2015** Extensive surveys located 67 pairs in seven counties (confirmed breeding in parentheses; (Kelly & Donaghy 2015)); Clare 1 (1); Donegal 13 (3); Galway 17 (9); Kerry 16 (2); Kildare 8 (0); Laois 8 (1); Tipperary 4 (3).

**Dunlin *Calidris alpina***

**Donegal 2014** One territory, Falcarragh; two territories, Tory Island.

**Lough Neagh/Beg 2014** One pair, possibly breeding, Lough Beg.

**Mayo 2014** 16 breeding territories, Inishkea Islands, six young fledged (Suddaby 2014); four breeding pairs, Roonagh Lough.

**Lough Neagh/Beg 2015** One pair, probably breeding, Lough Beg.

**Mayo 2015** Ten breeding territories, Inishkea Islands, only one young fledged (Suddaby 2015).

Although productivity at this important site (Inishkea) is low it has improved with more conservation actions in place.

**Common Redshank *Tringa totanus***

**Donegal 2014** Systematic surveys by the Curlew Project (HELP) Team located 25 pairs at four sites, including 20 at Tory Island.

**Fermanagh 2014** 76 pairs, Lower Lough Erne Reserve, and one pair elsewhere outside reserve. Three pairs, Upper Lough Erne.

**Galway 2014** One adult, Kilbulla Lake, 21 May.

**Lough Neagh/Beg 2014** 29 pairs present.

**Mayo 2014** 11 breeding territories, Inishkea Islands, these fledged 17 young (Suddaby 2014).

**Wexford 2014** Two pairs bred, Lady’s Island Lake.

**Antrim 2015** One pair, Portmore Lough, no young observed.

**Donegal 2015** One, Dunfanaghy, 10 June, but breeding status not determined.

**Down 2015** One pair, Belfast Harbour Reserve.

**Fermanagh 2015** 75 pairs, Lower Lough Erne Reserve, and two pairs elsewhere outside reserve; breeding success thought to be good. None recorded at Upper Lough Erne despite intensive search.

**Galway 2015** Eight adults, northwestern Lough Corrib, 28 May. Two agitated pairs reported from an island in central Lough Corrib, indicating young were present and other reports of adults at the southeastern end of the Lough.

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Lough Neagh/Beg 2015 54 pairs present.
Mayo 2015 Significant decline to only five territorial pairs, Inishkea Islands, and no young fledged (Suddaby 2015).
Roscommon 2015 An adult calling, Lough Funshinagh, 1 May.
Wexford 2015 Four pairs bred, Lady’s Island Lake.

Red-necked Phalarope Phalaropus lobatus
Mayo 2014 Incubating male at undisclosed coastal site A, 14 June to 1 July; no evidence of chicks hatching. Fourteen apparently breeding males at site B, six probably hatched young, but no young fledged.
Midlands 2014 One probable breeding attempt at an undisclosed site C, copulation seen on two days in mid June.
Mayo 2015 Nine apparently breeding males at site B, only one probably hatched young, but no young fledged for the second successive year. At a new site D, a pair seen on 17 June with the male probably incubating successfully and hatching young, but no fledged young seen later.

Great Skua Stercorarius skua
Antrim 2014 One pair reared two young, Rathlin Island.
Mayo 2014 At least one breeding pair, Inishtrurk, 11 June; two pairs, Kid Island, 10 July, of which at least one bred successfully; one pair bred successfully, Erris Head, and another at Illaunmaistir. One apparently occupied territory (no nesting seen), Inishkea South, with possibly the same pair prospecting at Duvillaun; total of at least six pairs in County Mayo.
Antrim 2015 One pair reared one young, Rathlin Island.
Mayo 2015 Successful pairs at Erris Head and Kid Island, with the same territorial pair on Inishkeas South-Duvillaun as in 2014.

Little Tern Sterna albifrons
Louth 2014 Total of 111 pairs bred, Baltray, rearing 91 young (Egerton & Newton 2014).
Mayo 2014 Total of 66 apparently incubating adults, Inishkea Islands, fledged 80 young (Suddaby 2014); a good season.
Wexford 2014 Approximately 180 pairs bred, Wexford Harbour. Four adults seen in suitable breeding habitat, Tacumshin, 21 April; no nesting subsequently noted.
Wicklow 2014 At least 120 pairs bred, Kilcoole, 219 chicks presumed to have fledged (O’Connell et al. 2014).
Louth 2015 Total of 25 pairs reared 20 young, Baltray. The ‘missing’ pairs probably relocated to Kilcoole (Wicklow) (Boué & Newton 2015).
Mayo 2015 Total of 65 apparently incubating adults, Inishkea Islands, but only five young fledged (Suddaby 2015).
Wexford 2015 140 breeding pairs estimated at the main colony, Wexford Harbour, though productivity was probably poor; 30+ adults nested at a second site and young were present in mid July.
Wicklow 2015 The Kilcoole colony reached a record level of 155 breeding pairs, with 289 chicks presumed to have fledged (Doyle et al. 2015).

Roseate Tern Sterna dougallii
Antrim 2014 Probably two pairs, Blue Circle Island; one pair, Swan Island, Larned Lough; breeding confirmed and three young probably reared.

Down 2014 Two displaying birds, Carlingford Lough Islands RSPB Reserve; no further breeding evidence.
Dublin 2014 Total of 1,243 pairs bred, Rockabill Island (Burke et al. 2014); one pair attempted breeding, Dalkey Island, but the two eggs were deserted.
Wexford 2014 Total of 174 breeding pairs, Inish, Lady’s Island Lake, rearing 1.23 young per pair (Daly et al. 2014).
Antrim 2015 One pair reared one young, Blue Circle Island, Larned Lough.
Dublin 2015 Total of 1,388 pairs bred, Rockabill Island (Burke et al. 2015); no birds were seen at Dalkey Island.
Wexford 2015 Total of 215 breeding pairs, Inish, Lady’s Island Lake, mid-May; these reared 1.15 young per pair (Daly et al. 2015).

Mediterranean Gull Larus melanocephalus
Antrim 2014 Up to 12 adults and several fledged young noted, Blue Circle Island, Larned Lough.
Down 2014 One pair bred, Strangford Lough.
Fermanagh 2014 Male copulated and paired with Common Gull Larus canus. Lower Lough Erne Islands Reserve; no nest identified.
Wexford 2014 20 nests with eggs at Inish, Lady’s Island Lake, 28 May (mean clutch size 2.4); three further nests found later.
Antrim 2015 Up to five pairs, Blue Circle Island, Larned Lough; breeding not proven.
Fermanagh 2015 The same male and female Common Gull as in 2014 present at Lower Lough Erne Islands Reserve; no eggs noted, 14 April to 9 July.
Wexford 2015 Total of 28 nests located, Inish, Lady’s Island Lake, 7 May; despite considerable chick mortality due to rain, 19 young were ringed and presumed to have fledged.
Breeding numbers continue to increase.

Ring-billed Gull Larus delawarensis
Mayo 2014 One adult in a Common Gull colony, Lough Mask, 14 May, indicates there may be a mixed pair hybridising here.

Yellow-legged Gull Larus michahellis
Kerry 2014 One adult, Blennerville, 5 to 10 June.

Turtle Dove Streptopelia turtur
Kerry 2014 One reported, Blennerville, 1 June, a presumed migrant.

Barn Owl Tyto alba
Northern Ireland 2014 Two confirmed pairs reared four+ and one or two young; two other possible pairs.
Northern Ireland 2015 Two confirmed pairs reared two and two young; two other possible pairs.

Snowy Owl Bubo scandiacus
Fermanagh 2015 One bird, probably female, Aghatirourke RSPB Reserve, Cuiicagh Mountain, 7 May; not seen subsequently.

Short-eared Owl Asio flammeus
Louth 2014 One, Baltray, 10 May, no evidence of breeding so presumed migrant or summering bird.
**Great Spotted Woodpecker**  
*Dendrocopos major*  
**Fermanagh 2014** Drumming heard in three territories in different estates.  
**Monaghan 2014** One pair bred successfully, though nest site not found.  
**Wexford 2014** Two nests located.  
**Wicklow 2014** 28 nests, mainly in the eastern half of county, plus ten other territories where proof of breeding obtained, bringing the total number of pairs known to have bred in Wicklow to 38.  
**Antrim 2015** Male, Craighagh Wood, Glendun, 17 May.  
**Carlow 2015** One territory with fledged young, late in season.  
**Fermanagh 2015** Drumming heard in three 2014 territories, plus another drumming in a fourth estate.  
**Monaghan 2015** One pair nested in a Scots Pine but failed due to probable depredation by Pine Marten.  
**Wexford 2015** One occupied site with proof of successful breeding.  
**Wicklow 2015** 34 nests, with proof of breeding at eight other sites, making a county total of 42 pairs.  
In 2014 a total of 41 pairs bred in ROI, primarily in Wicklow, and in 2015 a total of 45 sites were recorded in ROI including confirmed breeding in Carlow (see paper by Coombes & Wilson on pages 183-196 in this issue).

**Bearded Tit** *Panurus biarmicus*  
**Wexford 2014** Four possible breeding females, Tacumshin, with two of them carrying nesting material, 25 May; male and fledged juvenile, 2 June.  
**Wexford 2015** Singles seen 6 April and 4 May; five adults, 2 June, including a pair carrying food, all at Tacumshin.

**Wood Warbler** *Phylloscopus sibilatrix*  
**Wicklow 2014** Singing males, Croomburn, 24 and 25 May; Vale of Clara, 30 May; Glendalough, 13 June.  
**Wicklow 2015** Two singing males, Oldbridge, near Roundwood, 24 May.

Plate 106. Bearded Tit (Michael O’Clery).

**Lesser Whitethroat** *Sylvia curruca*  
**Antrim 2014** Singing male, Rathlin Island, 11 May.

**Garden Warbler** *Sylvia borin*  
**Kerry 2014** Singing males, Killarney National Park, 4 May; Derrynane, 25 May.

**Common Reed Warbler** *Acrocephalus scirpaceus*  
**Antrim 2014** 21 singing males, Portmore Lough.  
**Wexford 2014** Up to three singing males, Tacumshin, 21 April to 2 June; four singing males, South Slob, 24 May; one singing male, North Slob, 1 June. Probable migrant, Great Saltee, 31 May.  
**Wicklow 2014** Total of nine singing males, Ballygannon (Kilcoole)-Newcastle-East Coast Nature Reserve area.  
**Antrim 2015** 13 singing males (probable underestimate), Portmore Lough.  
**Dublin 2015** One male singing, Kilbogget Park, 15 May, a presumed migrant as not relocated.  
**Tipperary 2015** One male singing on four days between 12 and 23 May, Cabragh Wetlands; first possible breeding record for county.  
**Wexford 2015** Five singing males, Tacumshin area, 26 April to 2 June; single male singing, Lady’s Island Lake, 24 April.  
**Wicklow 2015** Total of six singing males, Newcastle-East Coast Nature Reserve area, 29 June.  
The population consolidates in Wicklow with migrants arriving back at their breeding sites from 22 April.

**Ring Ouzel** *Turdus torquatus*  
**Sligo 2015** One pair on territory and probably nesting, seen over three to four weeks from 24 April.  
The first record from outside Donegal and Kerry for many years, with breeding deemed probable.
Common Redstart *Phoenicurus phoenicurus*
Wicklow 2014 Singing male, Glendalough, 17 and 30 May; indicates a territorial bird, but no evidence of breeding.

Whinchat *Saxicola rubetra*
Wicklow 2014 Three adults, Coronation Plantation, 30 May, indicating likely breeding.
Donegal 2015 Pair with four fledged young, near Fintown, 2 July.

Pied Flycatcher *Ficedula hypoleuca*
Wicklow 2014 One pair at nest, Glenmalure, 7 June, fledged young seen one week later.
Wicklow 2015 One singing male, Glenmalure, 29 and 30 May, apparently unmated.

Yellow Wagtail *Motacilla flava*
Wexford 2014 One Blue-headed *M. f. flava*, Tacumshin, 20 June, with a pair carrying food next day proving successful nesting at this site.
Wicklow 2014 Only single sighting of probable migrant, Webb’s field, Kilcoole, 4 May.

Twite *Carduelis flavirostris*
Antrim 2014 Three singing males, Rathlin Island, 5 April.
Antrim 2015 One singing male at a regular songpost, Rathlin Island, 18 April; elsewhere on island, two pairs with fledged young, 8 August. No specific reports were received from Mayo observers for the 2014 and 2015 breeding seasons, but definitely breeding on the north coast of the Mullet peninsula, in both years (Dave Suddaby, pers. comm.).

Common Crossbill *Loxia curvirostra*
Wicklow 2014 Total of 48 birds between 17 April and 3 June at four sites: Coronation Plantation, Stump of the Castle, Clara More and Three Castles (Blessington).

Hawfinch *Coccothraustes coccothraustes*
Kerry 2014 One reported, Lyrecrompane, 12 July.

Snow Bunting *Plectrophenax nivalis*
Kerry 2014 Intriguing observation (photographed) of a male, Mount Brandon, 26 May.

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References

Introduction

The year under review was the classic year of two halves. The first half was one of the most exciting starts to a year in recent times, whereas the latter half was far more pedestrian. In line with that, both additions to the Irish list in 2014 were during the first six months, with an American Purple Gallinule Porphyrio martinicus found dead in Mayo and, less than a week later, a Slaty-backed Gull Larus schistisagus in Galway, both of these in February. Undoubtedly, though, the most significant record of the year was a Bermuda Petrel Pterodroma cahow, which is categorised as an ‘At sea’ record as it was observed some 170 nautical miles west of Ireland, a location that lies outside the boundary of the Irish List. Bermuda Petrel is considered endangered by BirdLife International and this is the first sight record for the Western Palearctic away from the Azores. Ireland’s second Pacific Diver Gavia pacifica (Galway) and third Sardinian Warbler Sylvia melanocephala (Cork) were recorded in April and the fourth records of Red-flanked Bluetail Tarsiger cyanurus (Mayo) and American Coot Fulica americana (Kerry) were recorded in October and November respectively. Also, this report contains details of the second Little Swift Apus affinis from Wexford in May 2002 and the fourth Thrush Nightingale Luscinia luscinia from Cork in October 2013. Significant records of sub-species in the report are of the first Eastern Subalpine Warbler Sylvia cantillans albistriata from Mayo in 2007 and the first Yellow

Wagtail Motacilla flava of the plexa/ tschutschensis complex from Donegal in 2013.

The year started with a phenomenal influx of gulls. Among a record number of Kumlien’s Gulls Larus glaucoides kumlienii was a small scattering of Arctic gulls; four Ross’s Gulls Rhodostethia rosea and a record-equalling two Ivory Gulls Pagophila eburnea across the southern half of the country. Included in these were long staying individuals of both species, allowing many the opportunity to get close range views of these iconic rarities. Other gulls of note during the early months of the year were an Atlantic Gull Larus marinus from Donegal in 2013.

Gulls

Among a record number of Kumlien’s Gulls Larus glaucoides kumlienii was a small scattering of Arctic gulls; four Ross’s Gulls Rhodostethia rosea and a record-equalling two Ivory Gulls Pagophila eburnea across the southern half of the country. Included in these were long staying individuals of both species, allowing many the opportunity to get close range views of these iconic rarities. Other gulls of note during the early months of the year were an Atlantic Gull Larus marinus from Donegal in 2013.

Not to be outdone, other species also occurred in very good numbers early in the year. The Glossy Ibis Plegadis falcinellus invasion that started in late 2013 continued strongly into 2014 with 21 new birds found by the end of March. A new Forster’s Tern Sterna forsteri was found in Mayo in January. The end of that month also saw the beginning of the (by now) annual Scandinavian Rock Pipit Anthus petrosus littoralis appearances, with a further 13 found between then and the end of April comprising the second highest annual total of all time. The recent sequence of Snowy Owl Bubo scandiacus records was added to with the first for Monaghan at the end of February.

A returning Pied-billed Grebe Podilimnus podiceps and American Black Duck Anas rubripes were seen in Mayo in early April, but the first new rarity of the spring was a Red-rumped Swallow Cecropis daurica in Cork. Later in the month on the same day, but at opposite ends of the country, two handsome rarities were found — a White-billed Diver Gavia adamsii in Donegal and a Bee-eater Merops apiaster on Dursey Island in Cork. Just 24 hours later Dursey Island produced another great bird with the Sardinian Warbler previously mentioned. May witnessed the arrival of Hobbys Falco subbuteo and Little Ringed Plovers Charadrius dubius, both recorded annually in recent years. These were followed by the first Whiskered Tern Chlidonias hybridus since 2008 in Cork and two White-winged Black Terns Chlidonias leucopterus in Donegal. Two different forms of Yellow Wagtail Motacilla flava made appearances in late spring — four of the blue-headed form ‘flava’ were not unexpected but the occurrence of Ireland’s seventh record of the grey-headed form ‘iuvenalis’ in Kerry was notable. Another notable event was the relocation of a Black-winged Stilt Himantopus himantopus from Offaly to Cork a few days later.

The summer got off to an auspicious start with the occurrence of a Snowy Owl in Clare, a Marsh Warbler Acrocephalus palustris in Cork and an Arctic Redpoll Acanthis hornemanni on Dursey Island, Cork, all before 9th June. Unfortunately, the rest of the summer was quieter than usual, although a Temminck’s Stint Calidris temminckii in Dublin in early July did its best to alleviate the tedium. Seawatching was a mild distraction from the generally poor fare elsewhere with the second best year ever for the Fea’s/Zino’s Petrel Pterodroma feae/madeira complex, although only small numbers of Wilson’s Storm-petrels Oceanites oceanicus were seen.

This was the poorest year for Nearctic wader numbers in a decade. Only one Baird’s Sandpiper Calidris bairdii and one Long-billed Dowitcher Limnodromus scolopaceus were found, representing the lowest figures since 2002 and 2000 respectively. Numbers of White-rumped Sandpipers Calidris fuscicollis were the lowest since 1998, with only two found and, while ten American Golden Plovers Pluvialis dominica occurred, it was their poorest year since 2005. That said, the presence of a Stilt Sandpiper Calidris himantopus in Wexford and Dublin (September) as well as a Solitary Sandpiper Tringa solitaria in Wexford (October) added quality to compensate for low numbers.

Despite conditions that were clearly not conducive to transatlantic vagrancy, three Red-eyed Vireos Vireo olivaceus (Clare, Cork and Mayo) and a Swainson’s Thrush Catharus ustulatus (Clare) still managed to arrive on these shores during late September and early October. Red-eyed Vireo in particular seems to be able to turn up under almost any conditions and there are now over 250 records of this Nearctic passerine in the Western Palearctic since the first was found on Vestmannaejar, Iceland in September 1951 (Pétursson & Bráinsson 1999). The months of September and October were not as productive as normal. The highlights were the Red-flanked Bluetail in Mayo, a Swainson’s Thrush in Clare and two Nightingales Luscinia megarhynchos, one in Cork during October and another ‘At sea’ record west of Loop Head, Clare in September. Most of the regular vagrants occurred in low numbers, although Barred Warbler Sylvia nisoria had its third best year and both Wrynecks Jynx torquilla and Ortolan Buntings Emberiza hortulana turned up in relatively high numbers. In contrast, there was only one Icterine Warbler Hippolais icterina (albeit the first since 2010), one Greenish Warbler Phylloscopus trochiloides, two Red-backed Shrikes Lanius collurio (but no Woodchat Shrike Lanius senator for the first time since 2002), while the sole Short-toed Lark Calandrella brachydactyla was notable in being the first for Galway.

November produced two great birds, beginning with an American Coot in Kerry that remained into December. In contrast, a Roller Coracias garrulus near Manch, Cork remained just long enough to have its picture taken. Otherwise the end of the year drifted away in the inevitable mix of Water Pipits Anthus spinola and waterfowl although a further small influx of Glossy Ibis during the autumn took the total to a record 35. Nonetheless, there was one final
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2014 Systematic List

The sequence and scientific nomenclature largely follows British Ornithologists’ Union (2013), but also incorporates recommendations of the Taxonomic Advisory Committee of the AERC (Crochet et al. 2010, 2011, 2012) and the Taxonomic Sub-committee of the British Ornithologists’ Union (Sangster et al. 2013, 2015). Further details of taxonomic changes adopted by the IRBC can be viewed via the Announcements page on our website www.irbc.ie/announcements/announcements.php.

The three numbers in parentheses after each species refer respectively to (a) the total number of birds up to 31st December 1949; (b) the total number of birds from 1st January 1950, up to, but excluding, the current year – where this total is enclosed in square brackets, totals are from 1st January 2010 only; (c) the total number of new individuals for the current year. Some totals are minimum figures due to lack of precise numbers in historical texts – where this is the case, the total is succeeded by a ‘+’. In addition to the species totals, the total number of individuals being added to the species total is included immediately following the county name.

Whistling Swan
Cygnus columbianus columbianus (0; 5; 0)

1992 Wexford Zero: Adult, North Slob, 25th January and 1st February (K.Fahy), presumed to relate to the individual that had been present on 28th December 1991 (Irish Birds 4: 578).

1991 Wexford Zero: Adult, North Slob, 3rd March (Irish Birds 4: 578), was also present on 2nd March (K.Fahy) and is presumed to relate to the individual present on 29th December 1990 (Irish Birds 4: 430).

1983 Cork Zero: Adult, Ballycotton, 3rd to 18th February, also visited Ballymacoda, 18th February (P.Smiddy) (Irish Birds 2: 550). The same individual was also at Ballycotton in January and February 1985 (Irish Birds 3: 296).

The records of an adult reported here for Wexford in 1991 and 1992, and that already published for 1990 (Irish Birds 4: 430) refer to the same individual.

Tundra Bean Goose
Anser fabalis rossicus (0; 31; 0)

2013 Cork One: One, The Gearagh, 27th to 29th April, photographed (A.Duggan et al.).

Russian White-fronted Goose
Anser albifrons albifrons (51; 109; 3)

Wexford Two: Two adults, North Slob NNR, 4th to 17th December, photographed (K.Mullarney, A.Walsh et al.).

Wicklow One: One, Kilcoole, 8th January, and, presumed same, Newcastle and Kilcoole, 28th February to 23rd March, photographed (N.T.Keogh et al.).

The Wicklow bird represents the first record for the county since five were present in December 1997 and January 1998.
In fact, away from Wexford, Russian White-fronted Goose is a very rare bird indeed. The occurrence of this taxon in Ireland may be subject to change as the wintering population continues to decline in Britain where the lowest ever numbers were recorded during winter 2013/2014 (www.bto.org/sites/default/files/u18/downloads/publications/wituk-2013-14-web.pdf).

Snow Goose *Anser caerulescens* (70; 49; 0)

**Kerry**
Zero: White morph adult, Carrahane Strand and Barrow Harbour, from 16th September 2013 (*Irish Birds* 10: 73) remained to 7th February.

See Appendix 5 for details of corrections to the statistics.

Cackling Goose *Branta hutchinsii* (0; 27; 0)

**Clare**
Zero: Two, Healey’s Marsh and Mutton Island, 12th to 24th March, photographed (D.Cosgrove, C.Cronin *et al*.), presumed the same individual at Killard in December 2013 (see below).

2013 **Clare**
Two: Two, Killard, Doonbeg, 7th December, photographed (F.MacGabhann, J.N.Murphy *et al*.).

2012 **Donegal**
Zero: One, Trawbreaga Bay, 3rd March, photographed (C.Cassidy), presumed one of the three previously seen in Sligo until mid-February 2012 (*Irish Birds* 9: 579).

Canada Goose *Branta canadensis* (0; 34; 2)

**Clare**
Zero: One, Healey’s Marsh and Mutton Island, 12th to 24th March, photographed (D.Cosgrove, C.Cronin *et al*.), presumed the same individual at Killard in December 2013 (see below).

**Louth**
One: One, Lurgangreen, 29th March to 7th April (P.Kelly *et al*.), photograph *Birdwatch* 263: 15.

**Wexford**
One: One, North Slob NNR, 29th October to 30th December, photographed (A.Walsh *et al*.).

2013 **Clare**
One: One, Killard, Doonbeg, 7th December, photographed (F.MacGabhann, J.N.Murphy *et al*.).

2013 **Mayo**
Zero: One, Termoncarragh, Cross Lough and Leam Lough, Mullet Peninsula, 6th October to 23rd March 2014, photographed (D.Suddaby *et al*.), presumed returning.

Black Brant *Branta bernicla nigricans* (0; 39; 0)

**Kerry**
Zero: One, Castlegregory and Scraggane, from 17th November 2013 (*Irish Birds* 10: 74) remained to 12th March and was also seen at Ventry, One, Barrow Harbour, 6th November to 3rd December, photographed (D.A.O’Connor *et al*.); One, Spa, 6th November (M.O’Clery); Adult, Castlegregory, 21st December, photographed (S.Enright), all presumed to relate to two returning and wandering individuals.

American Wigeon *Anas americana* (0; 135; 2)

**Cork**
One: Male, Harper’s Island, 14th to 31st December, photographed (T.Gittings *et al*.).

**Donegal**
One: Male, Drowes River, Tullaghan, from 31st October 2013 (*Irish Birds* 10: 75) remained to 1st March, also seen in Leitrim; First-winter male, Lagg, Malin Head, from 23rd November 2013 (*Irish Birds* 10: 75) remained to 21st February, also seen at the Culdaff Estuary; Male, Inch Lake, 30th September to 4th October (T.Campbell); Male, Culdaff Estuary and Malin, 13th October to 31st December, photographed (M.McLaughlin *et al*.), presumed returning; Male, Tullaghan, 17th October to 7th December (F.Cross), presumed returning, also seen in Leitrim.

**Leitrim**
Zero: Male, Drowes River, Tullaghan, from 31st October 2013 (*Irish Birds* 10: 75) remained to 1st March, also seen in Donegal; Male, Tullaghan, 17th October to 7th December (F.Cross), presumed returning, also seen in Donegal.

American Black Duck *Anas rubripes* (0; 20; 1)

**Mayo**
One: Male, Termoncarragh, Mullet Peninsula, 19th January to 20th February, photographed (S.Feeney, G.Mitchell *et al*.); Male, Shruhil Lough, Dooniver, Achill Island, 17th to 20th April, photographed (M.O’Brain), presumed returning.

2013 **Kerry**
One: Female, Killelton Polder, Ballylongford, 3rd July to 9th August, photographed (D.Farrar *et al*.).

Blue-winged Teal *Anas discors* (3; 109; 1)

**Cork**
One: Male, Beamish’s Pool, Clonakilty, 27th May, photographed (P.Moore *et al*.).

Lesser Scaup *Aythya affinis* (0; 31; 1)

**Galway**
One: First-winter female, Rahasane Turlough, 12th October, photographed (D.Breen, C.Forkan).

**Kerry**
Zero: Male, Lough Gill, 22nd October to 6th December, photographed (D.Farrar *et al*.), presumed returning.

2013 **Kerry**
One: Male, Lough Gill, 15th November to 17th December, photographed (D.Farrar *et al*.), presumed returning; First-winter female, Ross Castle, Killarney, 28th November, photographed (D.Farrar).
2012 Clare One: First-winter male, Lough Gash, 4th November to 16th March 2013, photographed (J.N.Murphy et al.).
2011 Kerry One: Male, Lough Gill, 31st December to 17th February 2012, photographed (A.Duggan et al.).
2010 Kerry One: Female, Lough Gill, 31st December to 22nd January 2011, photographed (A.Duggan et al.).

Northern Eider *Somateria mollissima borealis* (0; 15; 0)
2013 Donegal Two: Male and female, Tory Island, 9th April, photographed (P.Phillips).

King Eider *Somateria spectabilis* (4; 19; 2)
Cork One: Female, Cahermore, 19th January to 9th March, photographed (F.Moore et al.).
Donegal One: Female, Narin Strand and Portnoo, 17th March to 24th April, photographed (P.McDaid et al.).

Surf Scoter *Melanitta perspicillata* (6; 207; 5)
Clare Zero: Male, Black Head and Ballyvaughan, 8th to 10th March (J.N.Murphy *et al.*), presumed to be the same individual seen at Ballyvaughan in winter 2012/2013 (*Irish Birds* 9: 582).
Cork Zero: First-winter male, Courtmacsherry, from 3rd November 2013 (*Irish Birds* 10: 75) remained to 6th April; Female, Coolbaun, Seven Heads, from 10th November 2013 (*Irish Birds* 10: 75) remained to 22nd January; Adult male, Garrettstown, 27th September, photographed (F.Moore *et al.*), presumed returning.

Kerry Two: Female, Ballinskelligs, 22nd September (M.O’Clery); Female, Reenroe, 16th November (M.O’Clery).
Louth Two: Adult male, The Hermitage, 12th October to 22nd November, photographed (G.O’Neill et al.); Female, The Hermitage, 22nd November (M.Tierney).
Sligo One: Male, Mullaghmore, 28th February to 1st March, photographed (N.Rafer, P.Keogh, B.Robson *et al.*).

Ruddy Duck *Oxyura jamaicensis* (0; [4]; 2)
Dublin One: Female, Swords, Knock Lake and Balrothery, 29th December to 12th January 2015, photographed (P.Kelly *et al.*).
Wexford One: Female, Tacumshin Lake, 24th December to 11th January 2015, photographed (P.Kelly *et al.*).
After a rapid increase following the first in 1973 (Culbert & Furphy 1978), this species was removed from the rarity list from 1st January 1989 but was reinstated from 1st January 2010 (see www.irbc.ie/announcements/announce47.php) and statistics are only given from the latter date.

Pacific Diver *Gavia pacifica* (0; 1; 1)
Galway One: Adult winter, Tawin, 5th April, photographed (P.Troake). The only other record was one in the same area in 2009 and 2010 (*Irish Birds* 9: 288, 454). A claim from early in 2011 was presumably the same individual, although no documentation has been received by the IRBC to support this. Notwithstanding that this record is also from Galway Bay, it is treated as a new individual given that there have been neither accepted records nor undocumented claims over two consecutive winters (2011/2012 and 2012/2013) in a relatively well-watched area.

White-billed Diver *Gavia adamsii* (0; 16; 1)
Donegal One: Adult, Malin, 19th April, photographed (R.McLaughlin).

Fea’s/Zino’s Petrel *Pterodroma feae/madeira* (0; 91; 10)
At sea One: Porcupine Seabight, 1st September, photographed (L.Kavanagh).
Clare One: One, Bridges of Ross, 16th August (E.O’Flynn *et al.*).
Cork Four: One, About eight nautical miles off Galley Head, 30th July (P.Connaughton *et al.*); Two, off Baltimore, 24th August, photographed (P.Connaughton, R.Vaughan *et al.*); One, 11 nautical miles south-southeast of Galley Head, 10th October, photographed (C.Cronin).
Donegal One: One, Malin Head, 3rd August (R.McLaughlin).
Mayo Four: One, Kilcummin Head, 10th August (R.Bobson); One, Annagh Head, 10th August (D.Suddaby); One, Kilcummin Head, 13th August (D.Charles, M.Ullman); One, Kilcummin Head, 17th August (J.Donaldson *et al.*).

Bermuda Petrel *Pterodroma cahow* (0; 0; 0)
At sea Zero: One, approximately 170 nautical miles west-northwest of Sea Head, Co. Kerry, 19th May (N.T.Keogh *et al.*), (Keogh 2014), photographed *Wings* 74: 29.
An extraordinary occurrence of an endangered species; recorded during a dedicated survey for seabirds and marine mammals along the western edge of the Porcupine Bank shelf on the R.V. *Celtic Voyager*. The bird was on view for no more than one minute but passed by the ship close enough to allow for several atmospheric images to be obtained. Observed outside the boundary of the Irish List but within the scope of this report meaning it is not added to the main Irish List but does highlight the tantalising possibility of a land based or inshore occurrence. Due to data logging studies conducted on the breeding grounds much more is now known about the distribution of Bermuda Petrel at sea. For adults at least, the optimum time to search for them in Irish waters appears to be between March and June but particularly April and May, which may encourage some off-peak seawatching. Their great rarity in global terms means that any future observers of a Bermuda Petrel in Irish waters will have to be almost indescribably lucky. The continuing intensive conservation efforts on the breeding grounds offers some hope and has witnessed the breeding population rise to its highest levels in several hundred years with 112 pairs in 2015, up from 108 pairs in 2014 ([www.nonsuchisland.com/blog/](http://www.nonsuchisland.com/blog/)). It is purely idle speculation as to how common this species was in Irish waters 500 years ago when the population was thought to number over one million birds!

While Bermuda Petrel is not especially difficult to identify, other hoped for species of endangered *Pterodroma* petrels such as Black-capped Petrel *Pterodroma hasitata* and even Zino’s Petrel *Pterodroma madeira* (which can show extensive white on the underwing, similar to Bermuda Petrel) will need to be taken into consideration. For those keen to take on the challenge, Flood and Fisher (2013) is the essential reference.

### Bulwer’s Petrel *Bulweria bulwerii* (0; 0; 0)

- **2003** *Kerry* Zero: One, Brandon Point, 11th September ([Irish Birds](http://www.nonsuchisland.com/blog/)) still considered not proven after review.
- **1975** *Cork* Minus one: One, Cape Clear Island, 22nd July ([Irish Birds](http://www.nonsuchisland.com/blog/)) still considered not proven after review; One, Cape Clear Island, 3rd August ([Irish Birds](http://www.nonsuchisland.com/blog/)) now considered not proven after review.
- **1965** *Cork* Zero: One, Cape Clear Island, 26th August ([IBR](http://www.nonsuchisland.com/blog/)) 1: 415 & 3: 649), still considered not proven after review.

The result of this review (see [Irish Birds](http://www.nonsuchisland.com/blog/)) 10: 264-265 is that Bulwer’s Petrel is removed from the Irish List.

### Macaronesian Shearwater *Puffinus baroli* (1; 22; 0)

- **2013** *Clare* One: One, Loop Head, 31st August (Sh.Farrell, O.Foley, R.Vaughan).

### Wilson’s Storm-petrel *Oceanites oceanicus* (2; 252; 13)

#### At sea
- **Zero**: One, approximately 32 nautical miles northwest of Erris Head, Mayo at 54° 39.6’N, 010° 42.6’W, 19th July, photographed (A.G.Kelly et al.); One, Porcupine Bank, about 170 nautical miles west of Slynne Head, Galway, 18th September, photographed (N.T.Keogh); One, Porcupine Seabight, 19th September (N.T.Keogh); One, Porcupine Seabight, 20th September (R.Pinfield); One, Porcupine Seabight, 22nd September (N.T.Keogh).
- **Clare**: Three: One, Bridges of Ross, 8th August (A.vanLubeck); One, Bridges of Ross, 12th August (E.O’Flynn); One, Bridges of Ross, 30th August (L.Gregory et al.).
- **Cork**: Ten: Four, around 10 nautical miles off Galley Head, 22nd July, photographed (P.Connaughton); Five, between 10 and 20 nautical miles off Galley Head, 24th July (P.Connaughton); One, 15 nautical miles south-southeast of Galley Head, 10th October (N.T.Keogh).

Numbers recorded from land-based seawatching sites were low and were confined to Bridges of Ross. However, a good showing from pelagic trips off west Cork in late July and...
another one in October show that birds are there to be found at either end of the typical seawatching season. The 19th September ‘at sea’ record over the Porcupine Seabight was notable in that the bird was recorded in the presence of a flock of seabirds associating with a group of seven Killer Whales *Orcinus orca*!

**Continental Cormorant**
*Phalacrocorax carbo sinensis* (0; 33; 6)
- **Dublin** One: Adult, Scotsman’s Bay, 1st February, photographed (S.Lawlor).
- **Limerick** One: Adult, Corbally, 28th December, photographed (T.Tarpey).
- **Louth** Two: First-winter and second-winter, Port Oriel, 2nd to 3rd February, photographed (P.Kelly *et al*.).
- **Westmeath** One: Immature, Lough Ennel, 20th December, photographed (P.Kelly).
- **Wexford** Zero: Adult, Rosslare Harbour, from 27th December 2013 (*Irish Birds* 10: 77) remained to 4th July.
- **Wicklow** One: Adult, Newcastle, 22nd April, photographed (N.T.Keogh).

2012 **Kerry** One: One, Cromane, 25th April, photographed (S.Enright).

**Bittern** *Botaurus stellaris* (161+; 43; 1)
- **Cork** One: One, Kilcolman NNR, 31st March (M.Hirst).

**Night Heron** *Nycticorax nycticorax* (27; 51; 1)
- **Cork** One: Juvenile, Crosshaven, 29th November, photographed (B.Cudmore).

2011 **Kerry** One: Adult, Abbeyfeale, 25th November (E.Carty).

**Cattle Egret** *Bubulcus ibis* (0; 250; 5)
- **Laois** One: One, Cullahill, 22nd June (E.Salholm).
- **Waterford** One: Up to two, Bunnahon, from 21st December 2013 (*Irish Birds* 10: 78) remained to 29th January; One, Saleen, Tramore Back Strand, 27th April (J.D.Power).
- **Wexford** Two: Two, Tacumshin Lake, 27th April to 15th June (T.Kilbane *et al*.), photograph *Wings* 74: 30.
- **Wicklow** One: One, East Coast Nature Reserve, Blackditch, 11th March, photographed (C.Clarke).

There were just ten records between the first in 1976 and 2006. Thereafter a remarkable influx of over 200 birds took place between late autumn and winter of 2007 and the end of 2009, with a few stragglers remaining to March 2010. These were spread across Cos. Clare, Cork, Donegal, Galway, Kerry, Kilkenny, Limerick, Waterford, Wexford and Wicklow. Included here is the first record for Laois, which missed out during the influx.

**Great White Egret** *Ardea alba* (0; 60; 5)
- **Galway** Two: One, Angliham, Lough Corrib, 6th September (A.O’Donall *et al*.), and, presumed same, Muckrush, 30th November to 31st December, photographed (N.Ellis *et al*.); One, Kinvarra, 30th October (P.Troake), and, presumed same, Aughinish, 23rd November (C.Peppiatt).
- **Mayo** One: One, Sruwadda Bay, 2nd October (G.Fennessy).
- **Wexford** One: One, Churchtown, 25th October, photographed (M.Noonan), and, presumed same, Tacumshin Lake, 2nd November (P.Kelly), and, presumed same, Cahore Marsh, 12th to 23rd November (C.Foley, D.Foley, M.Stewart *et al*.).
- **Wicklow** One: One, Vartry Reservoir, 28th July, photographed (P.King *et al*.).

2009 **Monaghan** One: One, Ballybay Wetlands, 19th December, photographed (D.Nesbitt *et al*.). These include the first record for Monaghan.
Purple Heron *Ardea purpurea* (1; 23; 0)

2013 Dublin One: One, Knock Lake, 28th April (B.Gormley).

As might be expected, the first for Dublin and, of the neighbouring counties, only Wicklow has recorded one – at Kilcoole and Killoughter in April 1996 (*Irish Birds* 6: 67).

White Stork *Ciconia ciconia* (6; 28; 0)

2002 Waterford Zero: One, Tallow, 28th April (N.Hennessy *per* P.Smiddy), presumed to be the same individual seen in Cloyne (Cork) a few days previously (*Irish Birds* 7: 393).

Glossy Ibis *Plegadis falcinellus* (103; 170; 35)

Clare One: One, Lough Atedaun, 12th January (D.McNamara).

Cork Nine: First-winter, Carrigrohane, Cork City, from 26th December 2013 (*Irish Birds* 10: 78) remained to 12th January; Two, Owenahincha Cross, from 27th December 2013 (*Irish Birds* 10: 79) remained to 12th January; Two, Ballycotton, 8th January to 2nd August, photographed (D.O’Sullivan *et al*); One, Timoleague, 5th to 15th March (D.Hollingsworth); Two, Oysterhaven, 29th March (U.Keating); Two, Cuskinny Marsh, Great Island, 30th May, photographed (M.Carmody); Two, Ballywilliam, 1st July (D.O’Sullivan).

Dublin One: One, Rotherstown Estuary, 6th to 7th September (C.Crowley *et al*).

Kerry One: One, Callinafery, 6th to 15th March, photographed (D.O’Loughlin *et al*).

Limerick Two: One, Coonagh, 7th March to 5th April, photographed (T.Tarpey); One, Coonagh, 7th to 14th June (T.Tarpey).

Louth Two: One, Grangebelew, 3rd May to 7th August (G.O’Neill *et al*.), photographed Wings 74: 28; One, Ardee, 18th October (P.Phillips).


Offaly One: One, Shannonbridge, 17th January to 1st March, photographed (*per* S.Heery *et al*.).

Roscommon One: One, Lough Funshinagh, 14th June to 2nd July (A.G.Kelly, P.Brennan).

Sligo Two: Two, Ballincar, 26th February to 3rd April, photographed (P.Reogh *et al*.).

Tipperary One: One, Cabragh Wetlands, 1st March (P.Brennan).

Waterford One: One, Tramore Back Strand, 20th September to 15th December, photographed (A.Allen *et al*.).

Wexford Thirteen: One, South Slobo, from 31st December 2013 (*Irish Birds* 10: 79) remained to 9th February; One, The Cull, 4th January, photographed (P.Kelly); Three, Ballyhealy Marsh, 8th to 11th January, photographed (T.Murray); One, Riverchapel, 9th January (J.Adamson); One, Wexford Harbour, 9th February, photographed (P.Kelly); Two, Cahore Marsh, 28th January to 31st May, photographed (P.Lea *et al*); One, Enniscorthy, 23rd March (A.Savizsky); One, The Cull, 1st September (M.Wink); One, Ring Marsh, 4th September (B.Haslam); One, Tacumshin Lake, 6th September (P.Kelly); One, Tacumshin Lake, 16th October (P.Kelly).

For the third year in a row, a new record is set, with one more than in 2013, including firsts for Roscommon, Limerick, Louth and Sligo. With growing numbers it is becoming increasingly difficult to keep an accurate account of numbers involved and duplication cannot be ruled out.


Spoonbill *Platalea leucorodia* (92; 145; 7)

Kerry Zero: Adult, Cromane Harbour, from 1st October 2013 (*Irish Birds* 10: 79) remained to 9th March; Adult, Cromane Harbour, 20th September to 31st December, photographed (M.O’Clery *et al*.), presumed returning.

Louth One: Juvenile, The Hermitage, 19th October to 27th November, photographed (G.O’Neill *et al*.).

Waterford One: Adult, Dungarvan, from 28th October 2013 (*Irish Birds* 10: 79) remained to 15th February; Adult and juvenile, Dungarvan, 26th November to 29th December, photographed (F.O’Connell *et al*.), adult presumed returning.

Wexford Four: One, Rossclare, 3rd March (F.Tennant *et al*.); Adult, North Slob NNR, 19th May, photographed (A.Butler, J.Kiernan, A.Walsh); Adult, Tacumshin Lake, 23rd July to 1st August, photographed (K.Mullarney); Adult, Tacumshin Lake, 14th September (E.Dempsey).

Wicklow One: One, Kilcoole, 16th May (C.Cardiff, T.Cardiff).

2001 Waterford One: Older than first-winter, Kinsalebeg, 18th December to 9th January 2002 (P.Smiddy).

Pied-billed Grebe *Podilymbus podiceps* (0; 12; 0)

Mayo Zero: Adult in summer plumage, Sruhillbeg Lough, Achill Island, 16th April, photographed (M.O’Briain), presumed returning.

Black Kite *Milvus migrans* (0; 20; 0)

2013 Mayo One: One, Tarmon Hill, Mullet Peninsula, 1st June (D.Suddaby).

2012 Galway One: One, Derryneen, Recess, 20th April, videoed (T.McDermott).

2010 Cork One: One, Toe Head, 9th October (A.Brewer, C.Cronin, T.Kelly).
Montagu’s Harrier *Circus pygargus*  
(23; 63; 1)  
**Wexford** One: Female, Tacumshin Lake, 5th to 6th August (K.Grace et al.).

Spotted Crake *Porzana porzana*  
(Unknown; 50; 2)  
**Cork** One: Male, calling at night in breeding habitat, west Cork, 4th to 6th May (Observer names withheld).  
**Wexford** One: One, Tacumshin Lake, 13th August (T.Murray).  
**1996 Wicklow** One: One, heard, 26th to 27th April (P.Farrelly, A.McMillan).

American Purple Gallinule  
*Porphyrio martinicus* (0; 0; 1)  

This represents the first record of this New World species for Ireland. The typical wintering range of the species migratory populations extends from southern Florida south to Argentina, however during the autumn and late winter of 2013/2014 there were an unusual number of observations and specimens collected across North America and Bermuda well outside its expected range. In addition, there were at least two claims (yet to be accepted by the relevant rarity committees) of this species in the Western Palearctic; at the Parque Florestal Monsanto, Lisbon, Portugal from the 7th to 11th November 2013 and on the River Krossá, Fljótsdalsheiði in southern Iceland on 30th January 2014. While it was mooted that the polar vortex of January 2014 might have influenced the displacement of some birds, it was not particularly cold in Florida. In fact, temperatures in Florida that winter were slightly above average. The current thinking is that severe drought conditions over southeastern Mexico, Central America, the Caribbean and northern South America, including the Greater Antilles, coupled with the movement of air parcels across that region, could quite easily have influenced a northward passage towards Canada and, for some it appears, across the Atlantic. A very interesting analysis on these movements was presented in The Cornell Laboratory of Ornithology Birdcast article published on 12th February 2014 (http://birdcast.info/forecast/purple-gallinule).
**American Coot** *Fulica americana* (0; 3; 1)

**Kerry** One: One, Lough Gill, 5th November to 7th December, photographed (D.Farrar et al.).

The fourth record and the fourth different county to host one, following records from Cork (1981), Mayo (2011) and Galway (2013).

**Crane** *Grus grus* (29; 160; 4)

**Cork** One: One, between Ballydehob and Skibbereen, 15th December (P.Wolstenholme).

**Dublin** Two: Up to two, Baldongan, North Bull Island, Lusk, Donabate and Rogerstown, 12th to 20th December, photographed (J.English et al.).

**Westmeath** One: One, between Athlone and Moate, 11th February (N.T.Keogh).


**Stone Curlew** *Burhinus oedicnemus* (15; 12; 0)

2011 **Galway** One: One, Loughmaunbeg, Inveran, 18th August (A.O’Donaill).

**Black-winged Stilt** *Himantopus himantopus* (13; 42; 2)

**Clare** One: One, Doonbeg, 23rd August (G.Fennessy).

**Cork** Zero: Male, Clogheen Marsh and White’s Marsh, 30th to 31st May, photographed (R.Cronin et al.), previously seen in Offaly.

**Offaly** One: Male, Finnamore Lake, Lough Boora Parklands, 28th May (J.M.Murphy et al.), photograph Wings 74: 30, subsequently seen in Cork.

**Avocet** *Recurvirostra avosetta* (36; 119; 1)

**Wexford** One: Second calendar-year, Lady’s Island Lake, 27th June, photographed (T.Murray et al.).

See Appendix 5 for corrections and clarifications of the statistics.

**American Golden Plover**

*Pluvialis dominica* (1; 264; 10)

**Cork** One: Juvenile, Ring Strand, Ballymacoda, 4th October (D.O’Sullivan).

**Donegal** One: One, Tory Island, 27th September (J.Adamson, C.Ingram, R.Sheppard).

**Galway** One: Juvenile, Aillebrack, Sline Head, 21st October to 3rd November, photographed (D.Breen et al.).

**Kerry** Two: One, Carrarane Strand, 12th September (G.Walker); One, Fenit’s Cove, 14th to 19th September (I.Jones et al.).

**Mayo** Three: Adult summer, Inishkea, 24th June (D.Suddaby); Adult, Tarmon, Mullent Peninsula, 1st July, photographed (D.Suddaby); Juvenile, Corragaun Lough, 3rd October (J.Donaldson).

**Wexford** Two: One, Tacumshin Lake, 1st June (P.Kelly); One, Tacumshin Lake, 28th September, photographed (P.Kelly).


1971 **Cork** One: Adult, Ballycotton, 10th to 18th September (*IBR* 19: 35), previously considered indeterminate Lesser Golden Plover.


1966 **Roscommon** One: Juvenile, Keenagh Turlough, near Mount Talbot, 15th to 16th October (*IBR* 14: 29), previously considered indeterminate Lesser Golden Plover.

1963 **Kerry** One: Adult, Akeragh Lough, 15th to 22nd September (*IBR* 11: 17), previously considered indeterminate Lesser Golden Plover.

The lowest number recorded since 2005. For the results of a review by the IRBC of 20th century records of Lesser Golden Plover *Pluvialis dominica* *fulva* see *Irish Birds* 10: 266-267.

**American/Pacific Golden Plover**

*Pluvialis dominica/fulva* (0; 23; 0)

The following records, previously considered indeterminate American/Pacific Golden Plover are now considered acceptable as American Golden Plover *Pluvialis dominica* after review:

1978 **Mayo** Minus one: Adult, Termoncarragh Lake, 24th September (*Irish Birds* 1: 426).

1971 **Cork** Minus one: Adult, Ballycotton, 10th to 18th September (*IBR* 19: 35).


1966 **Roscommon** Minus one: Juvenile, Keenagh Turlough, near Mount Talbot, 15th to 16th October (*IBR* 14: 29).

1963 **Kerry** Minus one: Adult, Akeragh Lough, 15th to 22nd September (*IBR* 11: 17).

The following records are still considered indeterminate after review:


1983 **Galway** Zero: One, Rahasane Turlough, 23rd August (*Irish Birds* 3: 111) and one, Rahasane Turlough, 15th to 29th September (*Irish Birds* 2: 557) should be treated as follows – Adult, Rahasane Turlough, 23rd August to 7th September (P.Buckley) and, presumed same, Rahasane Turlough, 15th to 29th September (M.Donohue et al.); Juvenile, Rahasane Turlough, 7th September (P.Buckley).


1971 **Dublin** Zero: Adult, North Bull Island, 10th October (*IBR* 19: 35).


1969 **Kerry** Zero: Adult, Ballinnanran Marsh, near Ballyferriter, 25th June (*IBR* 17: 34); One, Coolraw, near Akeragh Lough and Carrahane Strand, 13th to 27th September (*IBR* 17: 34).

1966 **Cork** Zero: Adult, Lissagriffin, 7th to 21st September (*IBR* 14: 29); One, Shanagarry, 18th September (*IBR* 14: 29); Adult, Douglas Estuary, 30th September to 8th October (*IBR* 14: 29).
Pacific Golden Plover *Pluvialis fulva*  
(0; 13; 0)  

Little Ringed Plover *Charadrius dubius*  
(0; 130; 8)  
Cork One: Adult, Ring Strand, Ballymacoda, 15th May (D.O’Sullivan).  
Waterford One: Adult, Annestown, 23rd May, photographed (D.Clarke).  
Wexford Six: Juvenile, Tacumshin Lake, 24th July to 1st August, photographed (M.McLoughlin *et al.*); Juvenile, Tacumshin Lake, 26th July to 7th August, photographed (P.Kelly *et al.*); Juvenile, Lady’s Island Lake, 15th to 17th August, photographed (P.Kelly); Juvenile, Tacumshin Lake, 31st August to 13th September, photographed (P.Kelly, M.McLoughlin, K.Mullarney *et al.*); Juvenile, North Slob NNR, 2nd September (A.Walsh); Juvenile, Ring Marsh, 12th September, photographed (P.Kelly).  
1999 Waterford One: Adult female, The Cunnigar, Dungarvan, 1st May (C.Flynn *et al.*).

Dotterel *Charadrius morinellus* (146; 157; 4)  
Clare One: Juvenile, Loop Head, 4th October, photographed (T.Mee, T.Tarpey *et al.*).  
Wexford One: Juvenile, Tacumshin Lake, 19th to 21st October, photographed (A.A.Kelly, P.Kelly *et al.*).  
Wicklow Two: Juvenile, Mullaghcleevaun Mountain, 22nd September (F.Ryan); Juvenile, Maulin Mountain, 2nd to 8th October, photographed (P.Hogan *et al.*).  
See Appendix 5 for corrections and clarifications of the statistics.

Hudsonian Whimbrel *Numenius hudsonicus*  
(0; 3; 0)  
This individual was first noticed early on the morning of 24th August 1960 on board the S.S. *Birmingham City* while it was east-bound in the Atlantic. It remained on board or close by the ship until 15:10, when it was observed to fly against the side of the ship and fall back in to the water, not to be seen again. By this time the *Birmingham City* was 105 nautical miles west-southwest of Fastnet Rock. At sea records are not included in the species totals.

Stilt Sandpiper *Calidris himantopus* (0; 15; 1)  
Dublin Zero: Adult, Swords Estuary, 4th to 7th September (N.Griffin, P.Kelly *et al.*), photograph Wings 75: 29. Same individual as seen before and after these dates in Wexford, see next record.  
Wexford One: Adult, Tacumshin Lake, 2nd September, Ring Marsh, 3rd September, Lady’s Island Lake, 10th September, and Rosslare Back Strand, 12th to 13th September, photographed (K.Mullarney *et al.*). Same individual reported in Dublin also, see previous record.

This bird covered a lot of ground while in Ireland. Initially identified in flight as it departed Tacumshin Lake in the company of a party of Ruff *Calidris pugnax*, it was relocated the following evening at Ring Marsh, loosely associating with a small number of Redshank *Tringa totanus*. It could not be found in Wexford the following day, but amazingly, the same bird (recognisable individually on plumage detail) was discovered that afternoon at Swords Estuary, Co. Dublin, where it attracted a lot of interest during its four-day stay. Wexford birders had another chance to catch up with this bird when it was relocated at Lady’s Island Lake on 10th September and, after another short absence, reappeared at Rosslare Back Strand from 12th to 13th September. The same bird was subsequently claimed in France, at Joué-sur-Erde, Loire Atlantique, from 25th September to 4th October (yet to be accepted by the French Rarity Committee). There is precedence for a Stilt Sandpiper observed in Wexford relocating outside the country. An adult summer bird at The Cull on 23rd and 24rd June 2009 (*Irish Birds* 9: 469) was later observed at Loch of Strathbeg, Aberdeenshire in Scotland (*Hudson et al.* 2010) the following month, just over 400 miles distant.

There are five previous records of the species in Wexford (1983, 1988, 1989, 2000 & 2009) but this is the first to be recorded in Dublin. Wicklow birders were understandably a little peeved by the near certainty that this bird must have passed through that county twice, undetected!

**Temminck’s Stint** *Calidris temminckii* (1; 41; 1)

Dublin One: Adult, Sandymount, 5th July, photographed (H.Delaney *et al.*).

**Baird’s Sandpiper** *Calidris bairdii* (0; 148; 1)

Mayo One: Juvenile, Cross Lough, Mullet Peninsula, 26th to 27th September, photographed (P.Troake *et al.*).

The lowest number recorded since 2002.

**White-rumped Sandpiper** *Calidris fuscicollis* (0; 325; 2)


Wexford One: Adult, Tacumshin Lake, 9th to 10th July, photographed (C.Cardiff, T.Cardiff *et al.*).

2000 Cork One: Juvenile, Pilmount Strand, 11th October (P.Smiddy).

The lowest number recorded since 1998.

**Red-necked Phalarope** *Phalaropus lobatus* (3; 44; 2)

Kerry One: Adult, Great Skellig, 20th June, photographed (K.Collins).

Mayo One: Juvenile, found dead, Achill Island, 2nd October, photographed (J.Donaldson).

Since 2013, the IRBC only considers records of this species outside the breeding season (see *Irish Birds* 10: 84). According to Cramp and Simmons (1983) the breeding season begins in late May and lasts to the end of July, with adult females departing from the end of June and males by the end of July. Consequently, records between May and July inclusive are regarded as potentially breeding and the totals above exclude birds observed in breeding habitat in these months. An analysis of historical records shows almost all records from late May to the end of July were of birds in potential breeding habitat. The only exceptions, apart from the Kerry record above, are of one flying south past Bridges of Ross in June 2008 (*Irish Birds* 9: 92) and one 10 km off Annagh Head in July 2012 (*Irish Birds* 9: 592) – these are treated as migrant birds and are included in the totals.

**Terek Sandpiper** *Xenus cinereus* (0; 7; 0)

2009 Kerry One: One, Barrow Harbour, 10th to 14th September (J.Adamson *et al.*).

**Spotted Sandpiper** *Actitis macularius* (1; 44; 0)

2012 Kerry One: One, Ross Castle, Killarney, 23rd to 25th October (W.Wagstaff *et al.*).

**Solitary Sandpiper** *Tringa solitaria* (0; 5; 1)

Wexford One: Juvenile, Duncormick, Rathangan and The Cull, 6th to 14th October (J.Lambert, M.Maddock *et al.*), photograph *Wings* 76: 27. Over twenty years ago, Matti Maddock constructed a pond in his garden with the express wish of attracting a Solitary Sandpiper some day. On the afternoon of 6th October 2014 he noticed a sandpiper in the corner of the pool but viewed directly against the glare of the sun it was impossible to discern detail. The bird’s shape (and the fact that it hadn’t flown off as he approached) made him suspicious that this was the bird he had been waiting for! However, as he cautiously manoeuvred into a better position the bird...
disappeared silently without him noticing, thereby depriving him an opportunity to check the all-important rump and tail. He was confident it would return, but before it did he received a phone call from his friend and neighbour to tell him there was a surprisingly confiding sandpiper on his newly-constructed pool, and he had managed to obtain some photographs of it... the rest, as they say, is history, but the story demonstrates two things; good things come to those who wait, but in the right circumstances some people do not have to wait as long as others! This long-anticipated first for Wexford delighted many visitors but proved to be far from easy to connect with for some as it utilised a series of little-known pools, creeks and marshes in the vicinity of the original sightings.

**Lesser Yellowlegs (Tringa flavipes)**

**Clare** One: Juvenile, Moyasta, 27th to 31st October, photographed (V.Caschera, J.F.Dowdall, D.O'Mahony et al.).

**Cork** One: Juvenile, The Gearagh, 2nd to 5th October (A.Duggan et al.).

**Donegal** One: Juvenile, Blanket Nook, 6th to 19th September (D.Brennan, B.Robson et al.).

**Dublin** One: Juvenile, Rogetstown Estuary, 1st October to 30th December (R.Vaughan et al.), photograph *Birdwatch* 271: 20.

**Offaly** Two: Two juveniles, Derrinlough, 9th September, photographed (P.Brennan).

The one bright spot for Nearctic waders in 2014, although six is no higher than the average for the previous decade. This is the second time Offaly has recorded Lesser Yellowlegs, following one at Shannon Harbour in December 1996 (*Irish Birds* 6: 297), and two together at an inland location is notable.

**Long-billed Dowitcher (Limnodromus scolopaceus)**

**Offaly** One: Adult summer, Boora Lake, Lough Boora Parklands, 18th to 25th August, photographed (P.Brennan et al.).

Both 2013 and 2014 have recorded just a single bird each, the joint lowest number since 2000.

**Whiskered Tern (Chlidonias hybrida)**

**Cork** One: Adult, Lough Aderry, Ballybutler Lake and Ballyhonock Lake, 4th to 13th May, photographed (D.O'Sullivan et al.).

This is the first record since one at Kilcolman NNR, Cork in 2008.

**White-winged Black Tern (Chlidonias leucopterus)**

**Donegal** Two: Two, Tory Island, 15th May, photographed (A.Meenan).

**Limerick** One: Juvenile, Coonagh, 31st August to 2nd September (T.Tarpey), photograph *Birdwatch* 268: 16.

**1994 Waterford** One: Adult, Ballinclamper, Clonea, 9th September (C.Flynn et al.).
Forster’s Tern *Sterna forsteri* (0; 38; 1)

**Dublin** Zero: Adult winter, Rogerstown Estuary, 15th to 30th October (Sh.Farrell *et al*.), photographed *Birdwatch* 271: 15, presumed returning.

**Galway** Zero: Adult winter, Nimmo’s Pier, 16th February to 11th April, photographed (J.F.Dowdall, A.G.Kelly *et al*.), presumed returning; Adult winter, Galway Bay, 23rd November to 20th December, photographed (C.Peppiatt *et al*.), presumed returning.

**Louth** Zero: Adult winter, Dundalk, 14th to 28th September, photographed (D.Hodgers, G.O’Neill *et al*.), presumed returning.

**Mayo** One: First-winter, Elly Strand, Mullet Peninsula, 16th January to 23rd February, photographed (D.Suddaby *et al*.).

**2007 Kerry** One: Adult winter, Blennerville, 24th September (E.Carty).

Ivory Gull *Pagophila eburnea* (7; 10; 2)

**Kerry** One: Juvenile, Cromane, 30th to 31st January, photographed (S.Enright *et al*.).

**Wexford** One: Juvenile, Tacumshin Lake, 8th to 24th January (T.Murray *et al*.), photographs *Birdwatch* 261: 15, *Wings* 73: 28.

Winter storms washed the corpse of a Harbour Porpoise *Phocoena phocoena* into Tacumshin Lake, which no doubt enticed the Ivory Gull to that site. It remained faithful to the area for some time allowing many to catch up with stunning views of this highly sought after species; an unusual, but welcome, addition to the Tacumshin Lake site list.

Bonaparte’s Gull
*Chroicocephalus philadelphia* (1; 71; 4)

**Kerry** One: Adult, Dingle, 23rd April (D.Farrar).

**Waterford** One: Adult winter, Tramore, 2nd November, photographed (M.Cowming *et al*.).

**Wexford** Two: Adult, Tacumshin Lake, 8th to 13th May, photographed (K.Mullarney *et al*.); Different adult, Tacumshin Lake, 11th May, photographed (T.Kilbane *et al*.).

**2004 Waterford** One: Adult, Shandon, Dungarvan, 24th April, photographed (C.Flynn *et al*.).

Ross’s Gull *Rhodostethia rosea* (0; 18; 4)

**Cork** One: Adult winter, Kinsale, 9th February to 9th March (B.Power *et al*.), photograph *Birdwatch* 262: 10.

**Dublin** One: Adult winter, North Bull Island and Poolbeg, 15th January to 27th February (N.T.Keogh, R.Whelan *et al*.), photograph *Wings* 73: 28.
Galway One: Adult winter, Salthill, 4th January, photographed (A.O’Dónaill et al.).

Wexford One: Adult winter, Lady’s Island Lake, 20th February, photographed (T.Murray et al.).

These are the first since 2005, and represent the best year on record exceeding by one the totals in both 1981 and 1983.

Laughing Gull *Larus atricilla* (0; 42; 1)


This is the first record since one on the Mullet Peninsula, Mayo in 2008.

Franklin’s Gull *Larus pipixcan* (0; 17; 0)

2006 Down Zero: First-winter, Dundrum Inner Bay South, 28th to 29th January (Irish Birds 8: 403) – finders should read (D.Charles, W.Farrelly).


Plate 120. Ivory Gull *Pagophila eburnea*, Tacumshin Lake, Co. Wexford, January 2014 (Tom Shevlin).


Atlantic Gull *Larus michahellis atlantis* (0; 12; 2)

Birds showing characters of the Atlantic island form, in particular, the somewhat more distinctive Azorean population.

**Kerry** One: 4th calendar-year, 21st to 25th October, Dingle, photographed (R.Moores et al.).

**Wexford** One: Adult, Wexford Harbour, 17th to 27th January (C.Foley, D.Foley et al.), photograph *Birdwatch* 261: 15.

2013 **Cork** One: Third-winter, Rossbarberry, 29th October, photographed (B.Richards).

American Herring Gull *Larus smithsonianus* (0; 92; 4)

**Cork** One: Second calendar-year, Baltimore, 17th February (J.Wyllie).

**Donegal** One: First-winter, Killybegs, 20th December (O.Foley, R.Vaughan).

**Kerry** One: Second-winter, Portmagee, 9th to 25th March (P.Connaughton et al.), photograph *Birdwatch* 263: 15.

**Mayo** One: First-winter, Carrowmore Lake, 17th February to 23rd March, photographed (C.Foley, D.Foley et al.).

2010 **Kerry** Zero: Second calendar-year, Ballycotton, 11th July to 1st October (*Irish Birds* 9: 301) was present until 2nd October (E.Carty).

Slaty-backed Gull *Larus schistisagus* (0; 0; 1)

**Galway** One: Fourth-winter, Waterside, Galway City, 8th February (T.Cuffe) (Cuffe 2014), photograph *Wings* 75: 27.

This is a first for Ireland and only the fourth Western Palearctic record, following birds in Lithuania in 2008 (and presumed same individual the following year in neighbouring Latvia), Finland in 2012 and Belarus in 2012. In addition, there are pending records from Britain (2011) and Iceland (2012). This large and stocky dark-backed gull is largely sedentary in parts of extreme northeastern Asia with some post-breeding dispersal west to the Bering Sea and south to the Sea of Japan and occasionally further south along the Chinese coast and to Taiwan. As a vagrant, it has reached North America on both west and east coasts and was added to the Western Palearctic list after a near-adult bird was observed at Klaipeda Rubbish Tip, Lithuania in November 2008.

Kumlien’s Gull *Larus glaucocephalus kumlieni* (0; 213; 84)

**Clare** Five: First-winter, Lahinch, 9th to 19th January, photographed (J.Copner et al.); First-winter, Quilty, 28th January, photographed (D.Farrar); Third-winter, Carrigaholt, 13th March, photographed (C.Cronin); First-winter and adult, Kilke, 14th March (C.Cronin).

**Cork** Twelve: Adult, Ballycotton, 24th January, photographed (D.A.O’Connor); First-winter, Kinsale, 25th January to 22nd February, photographed (J.Diggin et al.); First-winter, Ballycotton, 1st February to 13th March, photographed (O.Foley et al.); First-winter, Long Strand and Kilkerran Lake, 7th February to 16th March (C.Barton); Two first-winters, Courtmacsherry, 8th February (J.Diggin); First-winter, Old Head of Kinsale, 11th February (R.O’Driscoll); First-winter, Castletownbere, 16th February, photographed (H.Hussey, D.O’Sullivan, M.Shorten); One, Timoleague, 18th March (P.Wolstenholme); Two first-winters, Ballycotton, 22nd March (R.McLaughlin); First-winter, Ring, Clonakilty, 23rd March to 15th April (M.O’Keeffe).

**Donegal** Seventeen: Fourteen at Killybegs as follows: Adult, 3rd to 29th January (D.Charles); Another adult, 29th January (J.N.Murphy); Three first-winters, one second-winter and one adult, 8th to 22nd February, photographed (D.Charles et al.); One first-winter, two second-winters and an adult, in addition to those seen on 8th February, 9th to 22nd February, photographed (B.Robson et al.); Third-winter, 9th to 15th February (B.Robson et al.); Returning adult, 15th to 22nd February, photographed (D.Charles et al.); First-winter and second-winter, 22nd February, photographed (D.Charles et al.); Three at locations other than Killybegs, as follows: First-winter, St.John’s Point, 9th February (M.Callaghan, D.Charles); First-winter, Malin Head, 21st February (R.McLaughlin); Second-winter, Greencastle, 31st December (R.McLaughlin).

**Dublin** One: Adult, Poolbeg, 2nd to 9th February, photographed (A.G.Kelly et al.).

**Galway** Six: Second-winter, Nimmo’s Pier and Rossaveal, from 22nd October 2013 (*Irish Birds* 10: 87) remained to 8th March; Adult, Rossaveal, 21st February, photographed (D.Breen); Second-winter, Nimmo’s Pier, 26th February (T.Cuffe); Up to two first-winters, Ross Beach, 23rd to 25th February, photographed (D.Breen); Two first-winters, Ballynahown, 8th March (D.Breen).

**Kerry** Twenty-four: First-winter, Reenroe and Annascaul, 4th to 13th January, photographed (M.O’Clery); Adult, Inch Strand, 11th to 14th January, photographed (M.O’Clery et al.); Adult, Rossbeigh, 15th January (M.O’Clery et al.); First-winter, Rossbeigh, 15th January to 16th February, photographed (S.Enright et al.); First-winter, Dingle, 17th January to 12th March, photographed (M.O’Keeffe et al.); First-winter, Inch Strand, 19th to 22nd January, photographed (M.O’Clery); First-winter, Inch Strand and Rossbeigh, 20th to 30th January, photographed (B.Richards).

Little Swift *Apus affinis* (0; 2; 0)

2002 Wexford One: One, Great Saltee Island, 16th May (M.Smyth).

Only the second record for Ireland, almost 35 years after the first in 1967 (*IBR* 15: 36). The untimely passing of the sole observer, Martyn Smith, precluded a proper submission, but his field notes were made available to the IBRC recently. Understandably, these were sparser in detail than a full submission but the committee was happy that the identification was established on the evidence provided. It is worth noting that a Little Swift was photographed the following day on the Isles of Scilly (*Birding World* 15: 184) and while it is tempting to speculate that this was the Saltee bird moving south there is obviously no way of proving this. The most that can be said is that at least conditions were conducive to the arrival of the species.

Bee-eater *Merops apiaster* (21; 39; 2)

Cork One: One, Dereney Island, 19th April (D.Cooke *et al*).
Kerry One: One, Tralee, 23rd May (E.Carty).

Roller *Coracias garrulus* (12; 7; 1)

Cork One: Juvenile, Manch, Dunmanway, 16th November (J.Quinn), photograph *Wings* 76: 26.

A real surprise for one lucky birder who noticed this bird perched on a wire at the side of the R586 Dunmanway to Bandon road. Yet another short-staying single observer record for this species. Only one record in Ireland remained more than a day – one in Castlederg, Tyrone from 11th to 24th July 1976 (*Birds* 1: 88).

Wryneck *Jynx torquilla* (9; 291; 18)

At sea Zero: One, Porcupine Seabight, 4th September, photographed (L.Kavanagh).
Clare One: One, Loop Head, 14th September, photographed (N.Keogh *et al*).

Alpine Swift *Apus melba* (7; 71; 0)

1829 Cork Zero: One obtained, about 15 km off Cape Clear Island about midsummer 1829 (Ussher & Warren 1900).

The date of occurrence of the first Alpine Swift recorded in Cork (and in Ireland) requires explanation. Harvey (1845) gave the year as 1838. However, Thompson (1849), although referring to it, omitted mention of the year of the Cork record, possibly because it occurred offshore, rather than on land. Ussher and Warren (1900) gave more details of this record than previous authors, and gave the date and year as about midsummer 1829. No author has given an explanation of why the dates differ. However, since Thompson (1849) and subsequent authors, notably Ussher and Warren (1900), refer to the Cork record as the first for Ireland, then it must have been before 1833, the year the second one was obtained in Dublin. This account is based on research provided to the committee by Pat Smiddy.

Snowy Owl *Bubo scandiacus* (55; 24; 2)

Clare One: Male, Black Head, 5th June, photographed (M.Lewis).
Monaghan One: One, Slabbi Beagh, Knockatallon, 28th February to 25th March, photographed (J.Moyna *et al*).

Alpine Swift *Apus melba* (7; 71; 0)
Galley Head, 13th September (C.Barton); One, Mizen Head, 19th September (C.Foley); One, Galley Head, 20th September (C.Cronin et al.).

Donegal One: One, Tory Island, 19th September (J.F.Dowdall).

Kerry One: One, Great Blasket Island, 21st September (J.McDonnell).

Mayo One: One, Tarmon, Mullet Peninsula, 21st September (D.Suddaby).

Waterford Two: One, Brownstown Head, 11th September, photographed (M.Cowming); One, Clonea, found dead, 12th or 15th September, photographed (M.Kennedy).

Wexford Five: One, Great Saltee Island, 6th September (L.Benson, K.Grace, T.Shevlin); Two, Great Saltee Island, 13th to 14th September, photographed (K.Grace, A.A.K.Lancaster, A.Walsh et al.); One, Carne Beach, 18th to 28th September, photographed (T.Moore et al.); One, Great Saltee Island, 20th September (J.Fitzharris, K.Grace, T.Shevlin et al.).

The ‘at sea’ record on the Porcupine Seabight landed on board a survey vessel.

**Hobby** *Falco subbuteo* (14; 320; 9)

Cork One: One, Glengarriff, 1st July (P.Farrelly).

Dublin One: One, Balbriggan, 9th May (C.McNanee).

Monaghan One: One, Rossmore Forest Park, 1st July (J.McGuirk).

Waterford One: One, Tramore Back Strand, 28th July (A.Jacques).

Wexford Four: One, Oldtown, Tomhaggard, 24th May (K.Grace); First-summer, Tacumshin Lake, 25th to 30th May (N.Keogh, B.Porter et al.), presumed same as the individual at Tomhaggard the previous day; One, Tacumshin Lake, 28th May (P.Connaughton), in addition to the bird already present; First-summer, Cahore Marsh, 12th June (J.Adamson, Sh.Farrell); One, Tacumshin Lake, 3rd to 9th August (R.Busby et al.).

Wicklow One: One, Five Mile Point, 5th July (M.Boyle).

2012 Cork One: One, Inishannon, 25th January and 20th February (C.Cronin et al.).

These nine records are in contrast to the high numbers of recent years; 31 in 2013, 34 (including the Inishannon record above) in 2012, 27 in 2011 and the all-time-record of 45 in 2010.

**Red-eyed Vireo** *Vireo olivaceus* (0; 58; 3)

Clare One: One, Loop Head, 27th September, photographed (J.N.Murphy et al.).

Cork One: One, Firkeel, 28th to 29th September, photographed (A.A.K.Lancaster et al.).

Mayo One: One, Achill Island, 3rd October (M.O’Brian), photograph Wings 75: 29.

In a very poor year for Nearctic species, it is amazing that three Red-eyed Vireos made it across the Atlantic. They seem to be able to make it here under any conditions!

**Red-backed Shrike** *Lanius collurio* (7; 173; 3)

Donegal One: One, Juvenile, Tory Island, 13th September (D.Charles).

Mayo One: One, Juvenile, Tarmon, Mullet Peninsula, 28th September to 1st October, photographed (D.Suddaby et al.).

Wexford One: Female, Great Saltee Island, 31st May, photographed (L.Benson, T.Shevlin, A.Walsh et al.).

**Great Grey Shrike** *Lanius excubitor* (32; 16; 0)

1834 Cork Zero: One obtained, near Cork city, undated (Harvey 1845).

There is disagreement in the literature over the year of the first record for Cork. Thompson (1849) gave the year as 1824, but he noted that Harvey (1845) had published a different one (1834). It is known that Harvey was a correspondent of Thompson, therefore, presumably the latter (Thompson) based his year on a communication from the former (Harvey). Communications would most likely be by hand-written notes, so it is easy to understand how Harvey might have written ‘1824’ for ‘1834’ when communicating with Thompson. There is no evidence that Harvey was making a correction (if he was, then Thompson would surely have been aware of it). Later authors have followed Thompson and have given the year as 1824, and there has been no further comment or speculation on the different date published by Thompson. However, the record should be accepted as 1834 on the basis of priority, and in the absence of a specific mention of a correction being made. This account is based on research provided to the committee by Pat Smiddy.

**Lesser/Great Grey Shrike** *Lanius minor/excubitor* (0; 1; 0)

1966 Cork One: One, Cloyne, 12th December (C.Longfield).

**Bearded Tit** *Panurus biarmicus* (0; 120; 3)

Wexford Three: The group of up to 30 at Tacumshin Lake, from 3rd July 2011 (*Irish Birds* 9: 478, 598, 10: 93) remained to at least 17th October (K.Grace et al.); The group of up to 22 at Ring Marsh, from...
19th February 2012 (Irish Birds 9: 598; 10: 93) remained to 12th April;
Twelve, including males and females, South Slob, 15th November,
photographed (P. Kelly), presumed to include the group of ten that
had been present in November 2013 (Irish Birds 10: 93); Up to six,
including males and females, Cahore Marsh, 16th November to 6th
December, photographed (T. Kilbane et al.), five of these presumed
present since April 2013 (Irish Birds 10: 93).

2013 Wexford
Three: The group of up to 27 at Tacumshin Lake, from
3rd July 2011 (Irish Birds 9: 478, 598; 10: 93) remained throughout the
year, with a peak count of 30 on 19th October (P. Kelly et al.).

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**Short-toed Lark**
*Calandrella brachydactyla* (1; 76; 1)

**Galway**
One: One, Truska, 23rd September, photographed (D. Breen et al.).

**2009 Kerry**
One: One, Carrahane Strand, 14th May (D. A. O’Connor).

This is the first record for Kerry.

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**Red-rumped Swallow**
*Cecropis daurica* (0; 49; 1)

**Cork**
One: One, Owenahincha, 10th April (C. Cronin).

**2013 Dublin**
One: Adult, Dun Laoghaire, 30th April (R. Busby).

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**Greenish Warbler**
*Phylloscopus trochiloides* (0; 39; 1)

**Cork**
One: One, Cape Clear Island, 10th September (R. H. Coombes).

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**Arctic Warbler**
*Phylloscopus borealis* (0; 10; 0)

**2013 Cork**
One: One, Durrus Island, 13th September, photographed (D. A. Scott et al.).

This is a very rare bird for Ireland in contrast to Britain where it averages about eight per year and a grand total of 350 overall (Hudson et al. 2014). The IRBC undertook a review of Arctic Warbler records up to 1986 and found that two of the eight records were no longer acceptable (Mullarney 1988). Since then there have been four; on Bloody Foreland, Donegal in late September 2003, on Cape Clear Island, Cork in October 2009, on the Beara Peninsula, Cork in early September 2010 and the above.

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**Siberian Chiffchaff**
*Phylloscopus collybita tristis* (2; 38; 1)

**Wexford**
One: One, Rosslare, 10th to 11th January, photographed (H. Delaney, P. Kelly et al.).

2013 **Cork**
One: One, Midleton, 4th to 9th February, photographed (P. Moore et al.).

**2013 Wexford**
One: One, Kilmore Quay, 13th December to 11th January 2014, photographed (K. Mullarney et al.).

**2012 Galway**
One: Inishbofin, 20th December to 3rd January 2013, photographed (D. Breen et al.).

**2010 Cork**
One: One, Firkeel, 15th to 23rd October (K. Grace et al.).

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**Barred Warbler**
*Sylvia nisoria* (6; 184; 13)

**Cork**
Three: One, Cape Clear Island, 9th October (E. O’Donnell); One, Garinish, 29th October (A. A. K. Lancaster); One, Durrus Island, 30th October (A. A. K. Lancaster).

**Donegal**
Two: One, Tory Island, 14th to 22nd September (D. Charles); One, Tory Island, 20th September (J. F. Dowdall).

**Galway**
One: Inishbofin, 7th October (E. A. MacLochlainn, F. O’Connell, J. A. Power et al.).

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**Subalpine Warbler**
*Sylvia cantillans* (2; 50; 1)

**2013 Wexford**
First-winter female, Churchtown, 11th November, photographed (K. Mullarney).

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**Eastern Subalpine Warbler**
*Sylvia cantillans albistriata* (0; 1; 0)

**2007 Mayo**
One: Male, in song, Tarmon, Mullet Peninsula, 3rd May, photographed (R. H. Coombes et al.).

This is the first Irish record of the southeastern European form of Subalpine Warbler. The finder had completed an early morning square as part of the Countryside Bird Survey and

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**Plate 125. Short-toed Lark Calandrella brachydactyla, Truska, Co. Galway, September 2014 (Dermot Breen).**
was preparing breakfast when he heard an unfamiliar song outside. Grabbing his bins he went to investigate thinking it might be a *Hippolais* warbler but soon discovered a Subalpine Warbler. A phone call alerted a nearby birder and both were able to get very good views and some photographs were taken. They discussed the possibility that it was one of the eastern races and subsequent investigation showed this to be the case.

**Sardinian Warbler** *Sylvia melanocephala* (0; 2; 1)

*Cork* One: Male, Dursey Island, 20th April to 14th May (P.Rowe *et al*.), photographs *Birdwatch* 264: 14, *Wings* 74: 29.

This, the third Irish record, was the highlight of the spring for many, especially considering the 21 year wait since the previous two in 1993. All three records have been males in Co. Cork during April and, while the extended stay of this bird, a little under a month, was comfortably the longest stay of this species in Ireland, there is a precedent for Sardinian Warblers staying for extended periods in Britain (Slack 2009, p. 280).

**Icterine Warbler** *Hippolais icterina* (2; 218; 1)

*Cork* One: One, Mizen Head, 18th September (C.Foley, D.Foley).

This is the first record since 2010. See Appendix 5 for details of corrections to the statistics.

**Melodious Warbler** *Hippolais polyglotta* (2; 200; 3)

*Cork* Three: One, Mizen Head, 4th September (P.Wolstenholme); One, Dursey Island, 8th September (D.A.Scott *et al*.); One, Cape Clear Island, 20th to 23rd September, photographed (P.Connaughton *et al*.).

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**Blyth's Reed Warbler** *Acrocephalus dumetorum* (0; 10; 0)

2012 *Cork* One: One, Ballinacarraige, West Beara, 8th October (K.Grace, A.A.K.Lancaster).

2012 *Waterford* One: One, Helvick Head, 15th to 18th October (C.Flynn *et al*.).

2010 *Cork* Zero: One, Dursey Island, 26th to 27th October (*Irish Birds* 9: 482) should read 26th to 27th September.

**Marsh Warbler** *Acrocephalus palustris* (0; 5; 1)

*Cork* One: Male in song, Old Head of Kinsale, 9th June, photographed (P.Connaughton, C.O’Sullivan *et al*.).

**Rose-coloured Starling** *Pastor roseus* (41; 102; 4)

*Cork* Three: Juvenile, Mizen Head, 3rd September (C.Foley); Juvenile, Galley Head, 19th September, photographed (P.Connaughton, C.O’Sullivan); Juvenile, Firkeel and Dursey Island, 29th September to 11th October, photographed (A.A.K.Lancaster, D.Weir).

*Galway* One: Adult, Inishbofin, 15th to 20th June, photographed (A.McGeehan, T.Murtagh *et al*.).

**Swainson’s Thrush** *Catharus ustulatus* (0; 5; 1)

*Clare* One: One, Loop Head, 4th October, photographed (J.Copner *et al*.).
Grey-cheeked Thrush *Catharus minimus* (0; 8; 0)

**2013 Cork** One: First-winter, Dursey Island, 3rd October, photographed (D.A.Scott *et al*).

This was a very tired looking individual that was observed on a track in Tilickafinna for about one hour. It is the second Grey-cheeked Thrush for the island following another in 2011 (*Irish Birds* 9: 483). See Yellow-rumped Warbler comments for a full list of Nearctic passerines recorded on Dursey Island.

Thrush Nightingale *Luscinia luscinia* (0; 4; 0)

**2013 Cork** One: One, Dursey Island, 22nd October (K.Grace, A.A.K.Lancaster).

All four Irish records have been on Cork islands. The previous three were on Cape Clear Island (1989, 1990 and 1999).

Nightingale *Luscinia megarhynchos* (0; 33; 1)

**At sea** Zero: One, 40 nautical miles west of Loop Head, Co. Clare, 22nd September, photographed (N.T.Keogh *et al*).

**Cork** One: One, Cape Clear Island, 11th October (S.Enright, M.Hanafin, M.O’Keeffe).


Bluethroat *Luscinia svecica* (0; 42; 0)

**1995 Cork** Zero: Male of the red-spotted race *svecica*, in song, Kilcolman NNR, 6th to 13th April (*Irish Birds* 5: 469) still considered acceptable to subspecies level following review.

Red-flanked Bluetail *Tarsiger cyanurus* (0; 3; 1)

**Mayo** One: First-winter, Tarmon, Mullet Peninsula, 28th to 30th October (D.Suddaby *et al*.), photograph *Wings* 76: 26.

This is the fourth record and the first one away from Cork.

Siberian Stonechat *Saxicola maurus* (0; 9; 0)

**2012 Cork** One: Immature, Firkeel, West Beara, 1st October (K.Grace).

Siberian Stonechat was split as a full polytypic species by the IRBC in 2012 (see www.irbc.ie/announcements/announce6.php). Prior to that, Asian races of Stonechat were recorded in these reports as Eastern Stonechat.

**Black-eared/Pied Wheatear**

*Oenanthe hispanica/pleschanka* (0; 1; 0)


**Blue-headed Wagtail** *Motacilla flava flava* (0; 63; 6)

Cork Two: Adult, Old Head of Kinsale, 15th October (K.Preston); Male, Ballycotton, 21st to 25th May, photographed (D.O'Sullivan et al.).

Donegal One: Male, Tory Island, 26th May, photographed (D.Brennan).

Wexford Three: Male and female, Tacumshin Lake, 20th to 21st June (K.Grace); Male, Tacumshin Lake, 16th August (P.Kelly).

**Grey-headed Wagtail**

*Motacilla flava thunbergi* (0; 6; 1)

Kerry One: Male, Ballinskelligs, 30th May, photographed (P.McDaid).

**‘North-eastern’ Yellow Wagtail**

*Motacilla flava plexa/tschutschensis* (0; 1; 0)

2013 Donegal One: First-winter, Tory Island, 12th to 28th October, photographed and DNA sequenced (V.Caschera, J.F.Dowdall, J.E.Fitzharris et al.)

Thanks to DNA analysis, this occurrence can be attributed to one or other of these taxa. The exact taxonomic status of these two taxa is far from certain however, with some, such as the IOC (Gill & Donsker 2015), treating the Eastern and Western forms of Yellow Wagtail as distinct full polytypic species, placing *plexa* in Western Yellow Wagtail *Motacilla flava* and *tschutschensis* with Eastern Yellow Wagtail *M. tschutschensis*. To date the IRBC have not adopted this split.

**Citrine Wagtail** *Motacilla citreola* (0; 30; 0)

2013 Kerry One: First-winter, Black Rock Strand, 22nd to 24th August, photographed (D.A.O'Connor et al.).

2013 Wexford Two: Two first-winters, Tacumshin Lake, 22nd to 20th August, photographed (P.Archer, P.King et al.).

**Richard’s Pipit** *Anthus richardi* (2; 105; 1)

Cork One: First-winter, Galley Head, 27th December, photographed (C.Gronin et al.).

December records are not without precedent as there have been three previously. One was at Kilcolman NNR, Cork from 1st to 3rd December 1994, another was at Tacumshin Lake, Wexford from 3rd to 10th December 1995 and a long-staying bird was also at Tacumshin Lake from 12th November to 31st December 2007.

**Scandinavian Rock Pipit**  
*Anthus petrosus littoralis* (0; 70; 14)  
**Cork** One: One, Baltimore, 6th to 11th April (J.Wylie).  
**Donegal** One: One, Malin Head, 18th April (R.McLaughlin).  
**Kerry** Two: One, Black Rock Strand, 24th February to 28th April, photographed (D.A.O’Connor); One, Black Rock Strand, 21st March to 16th April, photographed (D.A.O’Connor).  
**Wexford** Ten: One, Kilmore Quay, 27th January to 1st March, photographed (P.Kelly et al.); Three, Great Saltee Island, 22nd to 30th March, photographed (K.Grace, N.Keogh, K.Mullarney et al.); Three, Nenestown, Kilmore Quay, 1st April, photographed (K.Mullarney); One, Carne Beach, 3rd April, photographed (K.Mullarney); One, Carnsore Point, 3rd April, photographed (K.Mullarney); One, Great Saltee Island, 19th to 21st April (J.F.Dowdall, B.Porter, T.Shelvin et al.).

**Water Pipit**  
*Anthus spinoletta* (1; 143; 6)  
**Kerry** Two: One, Carrahane Strand, 2nd December, photographed (D.A.O’Connor); One, Black Rock Strand, 3rd to 23rd December, photographed (D.Farrar et al.).  
**Sligo** One: One, Ballyconnell Beach, 28th to 30th November, photographed (S.Feeney et al.).  
**Wexford** Three: One, Cahore Marsh, 2nd April (R.Vaughan); One, Tacumshin Lake, 5th April (P.Kelly); One, Tacumshin Lake, 29th November to 28th December (P.Kelly et al.).  
1943 Dublin Minus one: One, North Bull Island, 18th March (Kennedy 1947), now considered not proven following review.

**Buff-bellied Pipit**  
*Anthus rubescens* (0; 21; 0)  
2012 Cork One: One, Cape Clear Island, 21st to 24th September (E.O’Donnell et al.).  
2011 Wexford One: One, near Carne Harbour, 5th November (K.Grace).  
This is the first blank year since 2006. The IRBC undertook a review of both 20th century records (Great Saltee Island in 1951 and Newcastle, Wicklow in 1967) of this species and the Saltee bird was the only one found to be acceptable (Hussey 2014). There were just 15 Western Palearctic records to the end of 1999 (including three 19th century records). Thereafter

Plate 130. Water Pipit *Anthus spinoletta*, Ballyconnell Beach, Co. Sligo, November 2014 (Declan Skehan).
numbers increased considerably with almost 100 more to the end of 2013 in places as far apart as Iceland, Norway, Sweden, Svalbard, Faroe Islands, Spain, Azores as well as Ireland, Britain and Jersey in the Channel Islands. Buff-bellied Pipit is polytypic and all Irish records to date concern the North American nominate race rubescens. A summary of the main differences between rubescens and the eastern race japonicus is outlined in the 2013 Irish Rare Bird Report (Irish Birds 10: 97).

**Hawfinch** *Coccothraustes coccothraustes* (Unknown; 210; 5)

**Donegal** One: One, Portnoo, 12th to 15th June, photographed (B.Naughton).

**Galway** Three: Male, Inishbofin, 26th April, photographed (P.J.King); Female, Inishmore, 2nd to 4th May, photographed (S.Flaherty); A second female, Inishmore, 3rd May, photographed (S.Flaherty).

**Limerick** One: One, Curragh Chase Forest Park, 30th December (J.Hayes).

**Common Rosefinch** *Erythrina erythrina* (0; 220; 8)

**Cork** Three: First-summer male, Cape Clear Island, 30th May to 3rd June (S.Wing); One, Firkeel, 19th September (A.A.K.Lancaster); Juvenile, Cobh, 23rd to 27th November, photographed (R.McLaughlin et al.).

**Donegal** One: One, Tory Island, 14th September (D.Brennan).

**Galway** Three: Male, Inishbofin, 17th June (A.McGeehan); Up to two juveniles, Inishbofin, 5th to 6th October (J.A.Power, B.Sheridan, B.A.Wheeler et al.).

**Wexford** One: First-summer male, Great Saltee Island, 31st May, photographed (L.Benson, M.McLoughlin, A.Walsh et al.).

**Mealy Redpoll** *Acanthis flammea flammea* (21; 101; 0)


**2007 Cork** One: One, Cape Clear Island, 28th October, photographed (P.Kelly et al.).

**2005 Cork** One: One, Dursey Island, 22nd October (K.Grace).

**2000 Cork** One: One, Dursey Island, 13th October (K.Grace).

The 2007 record on Cape Clear Island is said to have involved a total of three individuals. However, no evidence has been received by the committee to support the occurrence of any other individuals.

**Greenland Redpoll** *Acanthis flammea rostrata* (13; 38; 1)

**Donegal** One: One, Tory Island, 22nd October, photographed (V.Caschera, J.F.Dowdall, T.Shevlin).

**2007 Donegal** One: One, Tory Island, 27th October, photographed (J.Adamson).

**Arctic Redpoll** *Acanthis hornemanni* (0; 10; 1)

**Cork** One: Dursey Island, 5th to 10th June (D.Cooke, D.A.Scott, J.E.Scott).

**2007 Clare** One: One, near Kilcredaun Lighthouse, 29th to 30th October, photographed (J.N.Murphy et al.).

The 2007 record from Clare is said to have involved a total of four individuals. However, no evidence has been received by the committee to support the occurrence of any other individuals.

**Plate 131.** Greenland Redpoll *Acanthis flammea rostrata*, Tory Island, Co. Donegal, October 2014 (Tom Shevlin).

**Plate 132.** Ortolan Bunting *Emberiza hortulana*, Ballyconneely, Co. Galway, September 2014 (Dermot Breen).
Appendix 1: Category D records

Category D1 records
Species that would otherwise appear in Categories A or B, except that there is a reasonable doubt that they have ever occurred in a natural state.

Belted Kingfisher *Megaceryle alcyon* (0; 4; 0)
1845 Wicklow Zero: One, near Luggala, shot, November, still considered attributable to Category D1 after review.
Thompson (1849: 373-374) reports that it was on the river between Luggala and Lough Dan, which suggests that it may have been the River Cloghoge.

American Goldfinch *Carduelis tristis* (0; 0; 0)
1894 Mayo Zero: Adult male, Achill Island, 6th September (J.R.Sheridan), still considered attributable to Category D1 after review. (Sheridan 1894).

Appendix 2: Contributors
Appendix 3: List of records not proven

This list includes all records of taxa set out in Irish Birds 7: 416-418 (and subsequent updates online at www.irbc.ie/records/desclist.php and www.irbc.ie/records/desclist1.php) which, after circulation to the Irish Rare Birds Committee or the Northern Ireland Birdwatchers’ Association Rarities Committee, as appropriate, were considered to be not proven. Records of birds not attributed to any definite species by the observers are not included, nor are birds considered to have been escapes from captivity.

2014 records not proven

Caspian Gull *Larus cachinnans*
Third-winter, Tallaght, Dublin, 16th November to 28th December.

Mealy Redpoll *Acanthis flammaea flammea*
Male, Ardcath, Meath, 1st to 2nd April.

Supplemental 2013 records not proven

Continental Cormorant *Phalacrocorax carbo sinensis*
One, Rosslare Harbour, Wexford, 16th to 17th March.

Macaronesian Shearwater *Puffinus baroli*
One, Porcupine Bight, 9th August.

Baird’s Sandpiper *Calidris bairdii*
One, Blanket Nook, Donegal, 25th August.

White-rumped Sandpiper *Calidris fuscicollis*
Two juveniles, Blanket Nook, Donegal, 29th August to 1st September.

Caspian Gull *Larus cachinnans*
Second-winter, Tallaght, Dublin, 8th December to 18th April 2014.

Siberian Chiffchaff *Phylloscopus collybita tristis*
Two, Lough Gash, Clare, 5th to 11th February.

Supplemental 2012 records not proven

Black Kite *Milvus migrans*
One, Mizen Head, Cork, 26th October.

Wilson’s Phalarope *Phalaropus tricolor*
One, Trawbreaga Bay, Donegal, 24th November.

Gull-billed Tern *Gelochelidon nilotica*
Adult, Bloody Foreland, Donegal, 4th August.

Citrine Wagtail *Motacilla citreola*
First-year, Carrahane Strand, Kerry, 8th September.

Supplemental 2011 record not proven

Citreine Wagtail *Motacilla citreola*
First-year, Carrahane Strand, Kerry, 8th September.

Supplemental 2010 records not proven

Lesser Scaup *Aythya affinis*
Female or immature, Lough Gill, Kerry, 24th January.

Short-tailed Shearwater *Puffinus tenuirostris*
One, Bridges of Ross, Clare, 18th August.

Black Kite *Milvus migrans*
Adult, Tory Island, Donegal, 9th October.

Chimney Swift *Chaetura pelagica*
One, Farrranore, Kerry, 5th October.

Blyth’s Reed Warbler *Acrocephalus dumetorum*
One, Dunquin, Kerry, 11th October.
Blue-headed Wagtail *Motacilla flava flava*
Juvenile, Cape Clear Island, Cork, 9th October.

**Siberian Chiffchaff** *Phylloscopus collybita tristis*
One, Allihies, Cork, 24th October.

**Supplemental 2009 records**
**not proven**

Snow Goose *Anser caerulescens*
Adult, Dingle, Kerry, 1st January.

American Herring Gull *Larus smithsonianus*
First-winter, Tralee, Kerry, 20th November.

Hobby *Falco subbuteo*
Juvenile, Carrahane Strand, Kerry, 9th October.

**Supplemental 2007 record**
**not proven**

Spotted Crake *Porzana porzana*
One, Sherkin Island, Cork, 8th November.

**Supplemental 2005 record**
**not proven**

Caspian Gull *Larus cachinnans*
One, Salterstown, Louth, 15th January.

**Supplemental 2003 review record**
**not proven**

Bulwer’s Petrel *Bulweria bulwerii*
One, Brandon Point, Kerry, 11th September.

**Supplemental 2002 record**
**not proven**

‘African’ Chaffinch *Fringilla coelebs africana*
Male, Coolaney, Sligo, 23rd December to 22nd February 2003.

**Supplemental 2000 record**
**not proven**

Continental Song Thrush
*Turdus philomelos philomelos/bebriden*

**Supplemental 1999 records**
**not proven**

White-billed Diver *Gavia adamsii*
Juvenile, Fintragh Bay, Donegal, 7th to 9th October.

Western/Eastern Bonelli’s Warbler
*Phylloscopus bonelli/orientalis*
One, Galley Head, Cork, 25th August.

**Surberian Chiffchaff** *Phylloscopus collybita tristis*
One, Allihies, Cork, 24th October.

**Supplemental 1998 records not proven**

Albatross Sp. *Thalassarche sp.*
One, Cape Clear Island, Cork, 10th September.

Northern Giant-Petrel *Macronectes halli*
One, Cape Clear Island, Cork, 10th September.

Swinhoe’s Storm-petrel *Oceanodroma monorhis*
One, Cape Clear Island, Cork, 10th September.

Tawny Owl *Strix aluco*
One, Letterkenny area, Donegal, March and April.

Hawfinch *Coccothraustes coccothraustes*
One, Corofin, Clare, 4th to 30th March.

**Supplemental 1997 record**
**not proven**

Sharp-tailed Sandpiper *Calidris acuminata*
Adult, Tacumshin Lake, Wexford, 15th September, in addition to one already accepted from this site at this time (*Irish Birds* 6: 297).

**Supplemental 1994 record**
**not proven**

Kumlien’s Gull *Larus glaucoides kumlieni*
Adult, Crusetown Strand, Louth, 11th September to 27th January 1995.

**Supplemental 1991 records**
**not proven**

Baltic Lesser Black-backed Gull *Larus fuscus fuscus*
Adult, Clogher Head, Louth, 2nd July.

Scandinavian Lesser Black-backed Gull
*Larus fuscus intermedius*
Three adults and one second-year, Stabannon, Louth, 18th March.

**Supplemental 1975 review records**
**not proven**

Bulwer’s Petrel *Bulweria bulwerii*
One, Cape Clear Island, Cork, 22nd July.

One, Cape Clear Island, Cork, 3rd August.

**Supplemental 1969 review record**
**not proven**

Blyth’s Reed Warbler *Acrocephalus dumetorum*
One, Cape Clear Island, Cork, 13th to 19th October.
Supplemental 1968 record not proven

Pallas’s Grasshopper Warbler *Locustella certhiola*
One, Cape Clear Island, Cork, 29 August.

Supplemental 1965 review record not proven

Bulwer’s Petrel *Bulweria bulwerii*
One, Cape Clear Island, Cork, 26th August.

Supplemental 1947 review record not proven

Serin *Serinus serinus*
One, Fermoy, Cork, 3rd to 9th May.

Supplemental 1943 review record not proven

Water Pipit *Anthus spinoletta*
One, North Bull Island, Dublin, 18th March.

Appendix 4: List of anonymous records not accepted

The following reports concern Appendix 2 rarities that were entered in the Provisional List of Rare Bird Sightings during 2014 but where the observers have to date remained unknown. Some or all of these reports may yet qualify for publication in a future IRBR, should the observers become known to the IRBC and be prepared to validate the claim.

Glossy Ibis *Plegadis falcinellus*
One, Drogheda, Louth, 14th April.

Whiskered Tern *Chlidonias hybridus*
One, Aghills Lake, Skibbereen, Cork, 1st to 2nd May.

Appendix 5: Corrigenda to previous reports

Snow Goose *Anser caerulescens* – Totals for this species in recent reports and *Checklist of the Birds of Ireland* (IRBC 1998) have excluded the record of 12 at Mutton Island, Galway on 5th December 1917 (*IN* 1918: 112). However, the record was included by Humphreys (1937), Kennedy *et al.* (1954) and implicitly in Kennedy (1961) and Rutledge (1966). Moreover, it was not specifically excluded by any subsequent works (Rutledge 1975, Hutchinson 1989) and totals have thus been incremented to include this record. For clarity, the record of two in Kerry on 23rd May 1954 (*IBR* 2: 10) are excluded from the total due to the extremely late date of the occurrence.

Avocet *Recurvirostra avosetta* – Reported statistics for this species in recent reports and *Checklist of the Birds of Ireland* (IRBC 1998) have consistently understated the national total prior to 1950 by two. Examining the literature, Thompson (1849–1851) published seven records involving nine birds. A further thirteen were published in Ussher and Warren (1900), and another eight records involving fourteen birds prior to 1950 in Kennedy *et al.* (1954). These comprise a total of 36 prior to 1950, and the totals have been adjusted to reflect this correction. For clarity, the series of records in Cork Harbour from February 1956 to winter 1964/1965 and a similar series at the North Bull Island in Dublin from January 1968 to winter 1973/1974 are treated as involving twelve and four birds respectively.

Dotterel *Charadrius morinellus* – Reported statistics for this species in *Checklist of the Birds of Ireland* (IRBC 1998) understated the national total since 1950 by one. This under-reporting has been perpetuated since that publication and has been corrected in the statistics in this report. For clarity, the breeding record in Mayo in 1975 (*IBR* 23: 13) is treated as two individuals notwithstanding that the introduction to the same report indicates that only one adult was seen with chicks (*IBR* 23: 3).

Icterine Warbler *Hippolais icterina* – Totals for this species have been increased by one to accurately reflect the occurrences on Cape Clear Island in 1961. Reports of the occurrence at Cape Clear Island state ‘at Cape Clear four, probably five, perhaps six between Aug. 28th and Sept. 25th’ (*IBR* 9: 22). Historically, this has been counted as four individuals. However, perusal of the Cape Clear Bird Observatory report for 1961 indicates that five is the most accurate count, with three on 31st August 1961 presumed to include one that had been present from 28th August. One in Central Bog on 2nd September is treated as different, with the fifth individual occurring at Cummer from 25th September to 1st October.
References


Abbreviations used

AERC: Association of European Rarities Committees.
BOURC: British Ornithologists’ Union Records Committee.
IN: Irish Naturalist – monthly journal between 1892 and 1924.
IOC: International Ornithological Congress
NIBARC: Northern Ireland Birdwatchers’ Association Rarities Committee.
Bulwer’s Petrel *Bulweria bulwerii*: review of Irish record and claimed records

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**Keywords:** *Bulweria bulwerii*, Bulwer’s Petrel, records review

**Introduction**

Bulwer’s Petrel *Bulweria bulwerii* is currently on the Irish List based on a single record off Cape Clear Island (Cork) on 3rd August 1975 (Preston 1979). In addition, there have been several claimed records over the years, but only one of these has ever been accepted (off Cape Clear Island on 26th August 1965). However, this record was reviewed in 1988 and was deemed unacceptable (Mullarney 1988).

Prior to the late 1980s any dark-rumped petrel in northern European waters was considered, almost by default, to be a Bulwer’s Petrel. This is hardly surprising considering that Swinhoe’s Storm-petrel *Oceanodroma monorhis* was unknown in the North Atlantic until the 1980s, and was not confirmed until 1992 when DNA samples taken from birds trapped in north-east England proved its occurrence in European waters (Cubitt 1995). The first Irish record of Swinhoe’s Storm-petrel was in 1985, but this bird was not accepted by the Irish Rare Birds Committee (IRBC) until many years later, in 2002 (Milne 2004).

Many Bulwer’s Petrel records in northern European waters in recent years have been either rejected by the relevant rarities committees or have had their identification questioned by expert opinion, thus changing the understanding of its status in the area. With this knowledge, and a greater awareness of the separation of these similarly plumaged species, the IRBC felt it was time to review the Irish Bulwer’s Petrel record, and claimed records. As there have been few submissions of Bulwer’s Petrel records to the IRBC, it was decided to review all of them, including those previously not accepted, to establish if any could now be accepted as Bulwer’s Petrel or Swinhoe’s Storm-petrel.

**Results of review**

Four claims of Bulwer’s Petrel have been submitted to the IRBC, or its predecessor, and these were reviewed as well as soliciting the opinions of seabird experts abroad. A brief summary of each record assessment is presented below.

**Cape Clear Island (Cork), 26th August 1965**

This record was accepted for a number of years but was deleted from the Irish List following the 1988 review (Mullarney 1988). It was seen at close range off Cape Clear Island for a short time. However, there were few details describing flight-style or structure and its estimated size was not consistent with Bulwer’s Petrel. Overall, there was insufficient detail to ascribe this bird to any species.

**Cape Clear Island (Cork), 22nd July 1975**

The descriptions provided for this bird, e.g. a square-ended tail and a patch of white on the under-tail do not indicate a Bulwer’s Petrel or allow it to be ascribed to any species.

**Cape Clear Island (Cork), 3rd August 1975**

Up to now this record has been accepted as a Bulwer’s Petrel, and is the best documented of all claims. The descriptions submitted agree on a number of features. However, some of these no longer support identification as Bulwer’s Petrel. In particular:
- The size is described as ‘very noticeably smaller than a Manx Shearwater’ *Puffinus puffinus*. This does not tally with Bulwer’s Petrel, and perhaps suggests a bird of Leach’s Storm-petrel *Oceanodroma leucorhoa* (or Swinhoe’s Storm-petrel) size.
- The tail is described as square-ended. This is wrong for Bulwer’s Petrel, which always shows either a tapering, or wedge-shaped tail when splayed.
- The elongated front end projection gives Bulwer’s Petrel a unique appearance with a ‘stretched’ neck, but this feature is not reflected in the descriptions, which describe the bird as being ‘virtually identical in shape to a Storm-petrel’ *Hydrobates pelagicus* and ‘all wings and tail’.

**Cape Clear Island (Cork), 20 September 1975**

This record was accepted in 1976 and was seen close inshore. However, no details were given of flight-style or structure and its size was not considered to be Bulwer’s Petrel. Overall, there was insufficient detail to ascribe this bird to any species.
Some other features, depending on how interpreted, could point towards Bulwer’s Petrel but it was unanimously felt that acceptance of this bird as a Bulwer’s Petrel was no longer justified, particularly with Swinhoe’s Storm-petrel now known to occur in the North Atlantic. Indeed there are suggestions that this bird could have been a Swinhoe’s Storm-petrel, e.g. the size and tail shape, but unfortunately it was felt that there was not enough detail to accept it as such.

Brandon Point (Kerry), 11th September 2003
The description provided did not allow a definite identification to be made. In particular, the quoted size suggests a smaller bird than Bulwer’s Petrel.

Summary
As a result of this review, Bulwer’s Petrel has been removed from the Irish List (a pdf copy of the Irish List is available through the IRBC website at www.irbc.ie/topbar/categories.php). Any of these records could refer to a Swinhoe’s Storm-petrel, which was an unknown identification pitfall, particularly for the earlier claims. Any Bulwer’s Petrel claim should ideally include details of precise flight-style and structure as well as a careful appraisal of size. This can be one of the most difficult aspects to judge correctly and ideally should be in direct comparison with another species.

Acknowledgements
The IRBC wishes to thank Bob Flood, Brian Patteson and Steve Howell for their invaluable expert advice and comments during this review.

References
Following the occurrence of the first ‘Lesser’ Golden Plover *Pluvialis dominica* in Mayo in 1894 (Ussher & Warren 1900) it became clear that, in addition to European Golden Plover *Pluvialis apricaria* and Grey Plover *Pluvialis squatarola*, there was an additional vagrant species of *Pluvialis* to contend with in Ireland. Once it was established that a candidate was smaller, slimmer, with greyish underwings and longer legs, the acceptance as ‘Lesser’ Golden Plover was straightforward. Only three individuals occurred prior to 1966 (Mayo, 1894; Meath, 1952; Kerry, 1963), but from that year onwards the species was recorded more or less annually, in small numbers, and its occurrence soon became an expected part of the birding year. Prior to 1986, the species was considered to comprise two subspecies, nominate *dominica* in North America and *fulva* mainly in east Asia. In general, no real attempt was made to identify birds seen here or in most European countries to subspecific level, although a few older specimen records, both in Ireland and in Britain, were assigned to subspecies.

However, in 1986 this was to change when the British Ornithologists’ Union Records Committee (BOURC) adopted a proposal (Connors 1983) to raise both races of ‘Lesser’ Golden Plover to full species status, i.e. American Golden Plover *Pluvialis dominica* and Pacific Golden Plover *Pluvialis fulva* (Ibis 128: 601-603). Two papers were published (Pym 1982, 1984) in advance of the split alerting birdwatchers to the field characters of both, and identification criteria were also dealt with (Hayman et al. 1986). Armed with new knowledge and improved optics, birdwatchers soon began to confidently identify ‘Lesser golden plovers’ seen well to species level. In the case of adult birds, it became accepted that birds with long primary projections, dark flanks and dark undertail-coverts were American Golden Plover, whereas Pacific Golden Plover differed in having, among other features, a shorter primary projection, a whitish line along the flanks, paler undertail-coverts and perhaps yellower-spangled upperparts with feet that projected beyond the tail in flight. Juvenile American Golden Plovers were grey-buff birds with long primary projections, and juvenile Pacific Golden Plovers had shorter primary projections and were more similar in colouration to European Golden Plovers of the same age.

Hot on the heels of the split, Ireland’s first Pacific Golden Plover, an adult, was found at Tacumshin Lake (Wexford) on 17th August 1986 (*Irish Birds* 3: 622). Just 13 individuals have occurred to date (the most recent in 2012; *Irish Birds* 9: 589-590), making it a far greater rarity than American Golden Plover. Since the split, American Golden Plover has occurred annually, with 275 individuals recorded in total to 2014 (*Irish Birds* 10: 244). In some rare cases, the evidence available to the Irish Rare Birds Committee (IRBC) has been insufficient to allow for a confident specific identification, and these birds have been published as ‘indeterminate’ and could be either American or Pacific Golden Plovers. However, records published as ‘Lesser’ Golden Plover prior to the split were never formally reassessed to determine if they could be identified to one or other taxon, which prompted the IRBC to undertake a review of these historic records.

Results of review

Unfortunately, written documentation for only 16 records was available and these were circulated among the committee for review. The challenge of separating American and Pacific Golden Plovers is more complex than had been previously understood and some recent records have generated considerable debate. For instance, a bird at Kinsale Marsh (Cork) in 1991 generated lively discussion, before being accepted as a Pacific Golden Plover (*Irish Birds* 5: 88). More recently, a bird...
at Tacumshin, Wexford in 2002 was, for a time, believed to be a Pacific Golden Plover before being correctly identified as an American Golden Plover (Irish Birds 7: 394). These tricky individuals have shown there is overlap in some features formerly believed diagnostic. These include projection of the feet beyond the tail, formerly considered diagnostic of Pacific Golden Plover. However, it is now realised that some Pacific Golden Plovers can look long-winged and that some adult Pacific Golden Plovers can show black undertail-coverts. In addition, much of the documentation available was compiled at a time when the importance of accurately recording a bird’s primary projection was not fully appreciated. With these difficulties it is hardly surprising that most (11 of the 16 records reviewed) individuals were considered unsafe to assign to either species with confidence, and remain as indeterminate American or Pacific Golden Plovers. The remaining five individuals were considered acceptable as American Golden Plover.

It should be noted that a bird seen at Ballycotton on 22nd and 23rd July 1983 (Irish Birds 2: 557), showed some characters suggestive of Pacific Golden Plover, but regretfully, did not meet the necessary criteria for acceptance as one by the committee. Had it been, it would have represented the first Irish record.

The following records are now considered acceptable as American Golden Plover:

Adult, Ballyheigue Strand and Akeragh Lough (Kerry), 15th to 22nd September 1963 (Irish Bird Report 11: 17).
Juvenile, Keenaagh Turlough, near Mount Talbot (Roscommon), 15th to 16th October 1966 (Irish Bird Report 14: 29).
Adult, Ballycotton (Cork), 10th to 18th September 1971 (Irish Bird Report 19: 54-55).
Adult, Termoncarragh Lake, Mullet Peninsula (Mayo), 24th September 1978 (Irish Birds 1: 426).

The following remain as indeterminate American/Pacific Golden Plover:

Adult, Lissagriffin (Cork), 7th to 21st September 1966 (Irish Bird Report 14: 29).
One, Shanagarry (Cork), 18th September 1966 (Irish Bird Report 14: 29).
Adult, Douglas Estuary (Cork), 30th September to 8th October 1966 (Irish Bird Report 14: 29).
Adult, Ballinrannig Marsh, near Ballyferriter (Kerry), 25th June 1969 (Irish Bird Report 17: 34).
Adult, Tacumshin (Wexford), 25th to 27th September 1978 (Irish Birds 1: 426).
Adult, Ballycotton (Cork), 22nd to 23rd July 1983 (Irish Birds 2: 557).
Adult, Rahasane Turlough (Galway), 23rd August to 7th September 1983 (Irish Birds 3: 111), and presumed same, 15th to 29th September 1983 (Irish Birds 2: 557) (see Irish Birds 10: 244).
Juvenile, Rahasane Turlough (Galway), 7th September 1983 (see Irish Birds 10: 244).

No documentation was available for the following records and they will continue to be treated as indeterminate American/Pacific Golden Plover:

One, Ballycotton (Cork), 20th October to 6th November 1979 (Irish Birds 1: 564).
One, Ballycotton (Cork), 29th October to 4th November 1979 (Irish Birds 1: 564).
One, Lissagriffin (Cork), 14th to 21st September 1980 (Irish Birds 2: 99).
One, Ballycotton (Cork), 16th September 1980 (Irish Birds 2: 99).
Adult, Ballycotton (Cork), 27th September to 5th October 1982 (Irish Birds 2: 386).
One, Rahasane Turlough (Galway), 15th to 17th October 1984 (Irish Birds 3: 111).

Summary

These results do not drastically change the status of these two species. Only five records were acceptable as American Golden Plover, and, of the 11 indeterminate records, most suggest American Golden Plover but just fall short of being sufficiently well documented to allow a confident identification. As previously noted, the bird at Ballycotton (Cork) on 22nd and 23rd July 1983, was more suggestive of Pacific Golden Plover in many respects.

It should be noted that the only two individuals of ‘Lesser’ Golden Plover relating to the period before this review (i.e. 1963) are of specimens of the American Golden Plover obtained in Mayo (1894) (Ussher & Warren 1900) and in Meath (1952) (Kennedy et al. 1954), and both reside in the National Museum (Natural History Division), Dublin.

References

The Common Chiffchaff *Phylloscopus collybita* (hereafter Chiffchaff) overwinters in Ireland in significant numbers (Balmer et al. 2013), but in the absence of recoveries of birds ringed as nestlings, it is not possible to accurately determine their origins. However, field identification of the Siberian race *P. c. tristis* occurs annually in small numbers while the Fennoscandinavian/eastern race *P. c. abietinus* remains unsubstantiated or, at best, is presumptive and reported as *abietinus/tristis*.

During a period of cold weather in the winter of 2012/2013 DF observed a number of individuals of the Siberian race of Chiffchaffs *P. c. tristis* foraging in mixed deciduous woodland near Ross Castle on the shores of Lough Leane, Killarney, County Kerry (grid reference V9589). The initial estimate was of seven individuals but, as the birds were never all seen together and were distributed along the watercourse flowing from the Killarney wastewater treatment works, an accurate count was impossible. In an effort to get a better estimate of numbers, it was decided to trap and ring a proportion of these birds to determine a minimum number and enable other unringed bird to be counted. Unfortunately, the weather improved and birds dispersed before a ringing visit could be made. During the following winter there was no significant concentration of Chiffchaffs to merit a visit. This pattern of Chiffchaff distribution at this site has previously been documented (Carruthers 1996).

However, in January 2015, again during a protracted cold spell, there was an estimated minimum of 25 Chiffchaffs at the site including five individuals identified as the Siberian race *P. c. tristis*. In the following weeks trapping with mist nets was carried out on three dates with individuals of the Siberian race *P. c. tristis* ringed on each day (Table 1). Trapping was limited to approximately 300 m of the watercourse and sessions were short (less than three hours). Only a small proportion of the birds in the area were trapped and many were seen to avoid the nets or remained in stands of vegetation away from the nets. After 29 January DF continued to visit the site daily and estimated that 20% of the Chiffchaffs present were carrying rings and his observations included of a number of unringed *P. c. tristis*. Although not statistically reliable, this puts a crude estimate of up to 100 individuals in the area.
Table 1. Daily ringing totals of Common Chiffchaffs at Killarney.

<table>
<thead>
<tr>
<th>Date</th>
<th>Total Chiffchaffs</th>
<th>P. c. tristis</th>
</tr>
</thead>
<tbody>
<tr>
<td>23/01/2015</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>29/01/2015</td>
<td>17</td>
<td>3</td>
</tr>
<tr>
<td>17/02/2015</td>
<td>6</td>
<td>2</td>
</tr>
</tbody>
</table>

During extraction and handling, any feathers dropped by trapped birds were retained for DNA analysis to confirm identification. While our intention was primarily to identify P. c. tristis we also collected feathers that fell from birds identified as the nominate race P. c. collybita. Feathers were retrieved from eight individuals and analysed (cytochrome B mitochondrial DNA sequencing) at the Institute of Medical Sciences (University of Aberdeen). Results are tabulated and summarised in Figure 1 and Table 2. Of the eight samples analysed, three were of the nominate race P. c. collybita, four were of the Siberian race P. c. tristis and one was of the Fennoscandinavian/eastern race P. c. abietinus. A previous occurrence of P. c. tristis, confirmed by DNA analysis, has been documented at Brownstown Head, County Waterford during 2012 (Collinson et al. 2013, Fahy 2013).

The discovery of P. c. abietinus was unexpected and is the first occurrence of the race for Ireland confirmed by DNA analysis.
analysis. Prior to this, only two British examples of *abietinus* have been analysed by the Institute of Medical Sciences (University of Aberdeen), in contrast to over 30 *tristis*. In addition, previous efforts to determine the distribution and occurrence of this race (*abietinus*) in Britain and the Netherlands (de Knijff *et al.* 2012) were unsuccessful, although this may have been due to the sample selection methods or the time of year.

### References


### Table 2. Details of DNA sequence data of Common Chiffchaffs at Killarney.

<table>
<thead>
<tr>
<th>Ring No.</th>
<th>Race</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>BKK285</td>
<td><em>P. c.abietinus</em></td>
<td>Identical to bird previously sequenced from Finland</td>
</tr>
<tr>
<td>BKK286</td>
<td><em>P. c.tristis</em></td>
<td>1 bp different from previously published Landguard (Suffolk) bird</td>
</tr>
<tr>
<td>BKK287</td>
<td><em>P. c.collybita</em></td>
<td>Novel but 2 bp different from nominate German</td>
</tr>
<tr>
<td>BKK296</td>
<td><em>P. c.tristis</em></td>
<td>Novel but 5 bp different from multiple <em>tristis</em>, 15+ bp different from other taxa</td>
</tr>
<tr>
<td>BKK297</td>
<td><em>P. c.tristis</em></td>
<td>1 bp different from core Yenesei (Siberia) bird</td>
</tr>
<tr>
<td>BKK309</td>
<td><em>P. c.collybita</em></td>
<td>1 bp different from nominate German bird</td>
</tr>
<tr>
<td>BKK311</td>
<td><em>P. c.collybita</em></td>
<td>1 bp different from nominate German bird</td>
</tr>
<tr>
<td>BKK318</td>
<td><em>P. c.tristis</em></td>
<td>Identical to previously published Landguard bird (Collinson <em>et al.</em> 2013)</td>
</tr>
</tbody>
</table>
Irish Ringing Report for 2014

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Keywords: Bird ringing, longevity, ring recoveries

This report summarises the number of birds ringed in Ireland in 2014 in the context of previous years. The data are presented separately for the Republic of Ireland and Northern Ireland, and further broken down according to whether the birds were ringed as pulli (nestlings) or as fledged birds (adults or juveniles). The grand total of all birds ringed in Ireland since 1975, when this annual reporting began, is presented, again, broken down by the numbers ringed as pulli and as fledged birds. A selection of recoveries, re-sightings or retraps, which are noteworthy on the basis of distance or direction travelled or the longevity of the birds, is presented. These recoveries include both those ringed abroad and recovered or re-sighted in Ireland and those ringed in Ireland and recovered or re-sighted abroad.

The total number of birds ringed in Ireland in 2014 was 29,924, of which 20,547 were ringed as fledged birds and 9,377 as pulli (Table 2). This accounts for a 6% increase on 2013 and...
Table 1. The ten most frequently ringed species in 2014 and their ranking over the years 2010-2014.

<table>
<thead>
<tr>
<th>Species</th>
<th>Number ringed 2014</th>
<th>Number ringed 2013</th>
<th>Rank 2012</th>
<th>Rank 2011</th>
<th>Rank 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>European Storm Petrel</td>
<td>3,007</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Barn Swallow</td>
<td>2,416</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Common Tern</td>
<td>1,691</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Roseate Tern</td>
<td>1,552</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Great Tit</td>
<td>1,441</td>
<td>5</td>
<td>8</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>Blue Tit</td>
<td>1,382</td>
<td>6</td>
<td>6</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Sandwich Tern</td>
<td>1,138</td>
<td>7</td>
<td>9</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>Chaffinch</td>
<td>1,002</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Red Knot</td>
<td>915</td>
<td>9</td>
<td>83</td>
<td>76</td>
<td>84</td>
</tr>
<tr>
<td>Goldfinch</td>
<td>876</td>
<td>10</td>
<td>3</td>
<td>8</td>
<td>11</td>
</tr>
</tbody>
</table>

a 13% increase on the average number of birds ringed per year for the preceding five-year period (2009–13). Of the 125 species ringed, the top three were European Storm Petrel Hydrobates pelagicus, Barn Swallow Hirundo rustica and Common Tern Sterna hirundo (Table 1). European Storm Petrels accounted for 10% of all birds ringed in Ireland in 2014, with the top three most frequently ringed species accounting for 25%, and the top ten accounting for 52%.

The recent reduction in the number of wildfowl being ringed has continued (Tierney 2013, 2014), with numbers down 43% on the five-year mean. The number of birds of prey ringed has declined by 35%, and auks are down 22% on the five-year mean. Gannet Morus bassanus (none ringed in 2014), Cormorant Phalacrocorax carbo and Shag Phalacrocorax aristotelis all had fewer ringed in 2014 compared to the five-year mean. The numbers ringed for several species groups, namely terns and passerines and near-passerines have remained relatively stable, showing changes of less than 10% compared to the five-year mean. The number of gulls ringed increased by 16%, and tubenoses by 21%. The number of waders ringed increased by 339% in 2014. These changes are most likely a result of ringing effort: certain species being targeted for projects (i.e. waders), or the completion of such projects, rather than changes at a population level.

While there were more Mute Swans Cygnus olor and Teal Anas crecca ringed in 2014 compared to the previous year, the numbers ringed remain well below the five-year means for both species. The number of Brent Geese Branta bernicla ringed represents a 31% increase on the five-year mean. For the first year since 2008, there were no Little Egrets Egretta garzetta ringed. There were fewer Red Kites Milvus milvus and Hen Harriers Circus cyaneus ringed, with numbers for both species well below their five-year means. There were also fewer Barn Owls Tyto alba ringed compared to the previous five years, and the number ringed represents a decrease of 51% compared to the five-year mean. There were no Long-eared Owls Asio otus ringed in 2014, for the first time in at least seven years. Sparrowhawks Accipiter nisus and Peregrines Falco peregrinus were ringed in their highest numbers in the last seven years, and showed increases of 62% and 114% compared to the five-year mean.

Woodcock Scolopax rusticola were ringed in lower numbers compared to the previous six years. Several wader species; Oystercatcher Haematopus ostralegus, Red Knot Calidris canutus, Dunlin Calidris alpina, Bar-tailed Godwit Limosa lapponica and Curlew Numenius arquata were ringed in considerably higher numbers than in previous years. This was mostly, but not exclusively, a result of cannon-netting effort in Dublin Bay. There were more Mediterranean Gulls Larus melanocephalus ringed in 2014 than ever before and Lesser Black-backed Gull Larus fuscus were ringed in greater numbers than at least for the previous seven years.

There were fewer Arctic Terns Sterna paradisaea ringed than in any of the preceding seven years and the 2014 total represents a considerable decrease (94%) compared to the five year mean. The number of Little Terns Sterna albifrons ringed in 2014 was higher than in any of the preceding seven, and the year’s total represents a 212% increase on the five-year mean. The decrease in the number of auks ringed, compared to the five-year mean, is mostly as a result of fewer Black Guillemots Cepphus grille having been ringed in 2014. There were 8% more passerines and near-passerines ringed in 2014 compared to the five-year mean. Coal Tits Periparus ater, Treecreepers Certhia familiaris, Fieldfares Turdus pilaris, Tree Sparrows Passer montanus, Bramblings Fringilla montifringilla, Greenfinches Chloris chloris, Goldfinches Carduelis carduelis and Lesser Redpolls Carduelis cabaret were all ringed in lower numbers compared to any of the previous five years. The number of Kingfishers Alcedo atthis, Jackdaws Corvus monedula and Skylarks Alauda arvensis ringed were considerably higher than the five-year mean, each showing increases in excess of 200%. Ravens Corvus corax, Great Tits Parus major, Barn Swallows, Blackcaps Sylvia...
Key to abbreviations used:
Pull. = Pullus (unfledged chick)
1yr. = First year
2yr. = Second year
Fg. = Fully grown of any age
Ad. = Adult
M = Male
F = Female
Wint. = Winter

Whooper Swan *Cygnus cygnus*

ASV Ad. 26-11-1994 Caerlaverock, Dumfriesshire, Scotland
54°58'N 3°28'W
Controlled 07-02-1995 Caerlaverock, Dumfriesshire, Scotland
54°58'N 3°28'W
Field record 12/03/2003 Stafholt, Stafholtstungur, Iceland
65°41'N 18°06'W
Field record 14/01/2004 Garrow, Westport, Mayo
53°46'N 9°30'W
1,408 km SSE
Field record 20/03/2014 Kinlooey Lough, Aghagower, Westport
53°46'N 9°27'W

ASV was re-sighted 15 times since it was ringed in November 1994 and appears to winter annually at a number of small lakes at Aghagower, near Westport in County Mayo. ASV is now a long-lived bird as it was colour-ringed as an adult in 1994 and therefore was at least 20 years, 3 month and 22 days old when re-sighted in Westport on 20 March 2014 (E. McGreal, pers. comm.). The BTO longevity record, set in 2009, stands at 28 years, 2 months and 10 days.

Greater White-fronted Goose *Anser albifrons*

1313371 1yr. F 19-01-1996 North Slob, Wexford
52°21'N 6°25'W
Field record 08-10-2014 Skuflaekur, Amessýsla, Iceland
63°51'N 20°46'W 1,526 km
T4N Wint. 2009/10 Ballylawn, Lough Swilly, Donegal
55°05'N, 7°19'W
Field record Wint. 2012/13 Tiree, Inner Hebrides, Scotland
56°30'N 6°53'W
Field record Wint. 2013/14 Tiree, Inner Hebrides, Scotland
56°30'N 6°53'W 157 km NNE

Recoveries of ringed birds

A total of 519 recoveries were retrieved from the BTO’s Online Ringing Report (Robinson & Clark 2015) for this report, and an additional 47 records from 14 species were included after a data request to the coordinators of colour-ringing projects in Ireland. The recoveries are birds ringed in Ireland or Britain and recovered in Ireland, Irish-ringed birds recovered elsewhere, or birds ringed outside Britain and Ireland and recovered or re-sighted in Ireland.

There are 73 recoveries or re-sightings listed in this report: 12 of wildfowl, 20 of waders, 10 of seabirds, nine of terns, eight of gulls, seven of passerines, four of birds of prey and one each of Water Rail *Rallus aquaticus*, Barn Owl and Grey Heron *Ardea cinerea*.

Selected recoveries

For each recovery listed below, the ringing details are given in the first two lines (ring number (or colour-ring inscription/permutation), age (and sex, if known), date and place of ringing and coordinates of the ringing location) followed by details of the re-sightings or recovery (circumstances, date and place of re-sighting/recovery, coordinates of the re-sighting/recovery location, straight-line distance from ringing site and direction of movement). In cases where a bird has been re-sighted numerous times, only selected re-sightings are listed. The term “controlled” indicates the bird was caught, processed and released by another ringer. The term “field record” indicates that the ring (or collar or wing tag) was read in the field without capturing the bird.
N. Tierney

**Light-bellied Brent Goose** *Branta bernicla hrota*

*3XXY* Ad. F 21-05-2006 Pálsjó, Álftanes, Iceland
Field record 15-06-2014 Cornwallis Island, Canada
Field record 29-09-2014 Sandsøya, Norway
Field record 24-02-2014 Courance, Dumfries and Galloway, Scotland

Only selected re-sightings are shown. *3XXY* was re-sighted a total of 232 times in Iceland, Ireland, Jersey, Canada and Norway in this period. It wintered in Jersey each winter from 2006/07 to 2013/14, was re-sighted in Cornwallis Island in

**Greylag Goose** *Anser anser*

*5191308* Iyr. M 06-02-2013 Burt, Donegal
Field record 25-04-2013 Hvanneyri, Borgarfjardar, Iceland

Only selected re-sightings are shown. *3XXY* was re-sighted a total of 232 times in Iceland, Ireland, Jersey, Canada and Norway in this period. It wintered in Jersey each winter from 2006/07 to 2013/14, was re-sighted in Cornwallis Island in
Canada in June 2014, photographed in Norway in September 2014 and not recorded again. This suggests movement from the East Canadian High Arctic flyway population to the East Atlantic flyway (G. McElwaine, pers. comm.). 2IRR was re-sighted a total of 29 times in Iceland, Ireland and France in this period. This re-sighting from the Ile de Ré is one of the furthest south re-sightings that the project has had to date (G. McElwaine, pers. comm.).

**Goldeneye** *Bucephala clangula*

<table>
<thead>
<tr>
<th>ID</th>
<th>Sex</th>
<th>Date</th>
<th>Location</th>
<th>Coordinates</th>
</tr>
</thead>
<tbody>
<tr>
<td>4254569</td>
<td>F</td>
<td>15-05-2014</td>
<td>Henum, As, Akershus, Norway</td>
<td>59°39'N 10°46'E</td>
</tr>
<tr>
<td></td>
<td></td>
<td>01-12-2014</td>
<td>Ballyronan, Lough Neagh, Derry</td>
<td>c. 54°42'N 6°31'W</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,178 km ESW</td>
</tr>
</tbody>
</table>

**Fulmar** *Fulmarus glacialis*

<table>
<thead>
<tr>
<th>ID</th>
<th>Date</th>
<th>Location</th>
<th>Coordinates</th>
</tr>
</thead>
<tbody>
<tr>
<td>FB01381</td>
<td>07-08-2009</td>
<td>Ailsa Craig, South Ayrshire, Scotland</td>
<td>55°15'N 5°7'W</td>
</tr>
<tr>
<td></td>
<td>22-09-2014</td>
<td>Carnfunnock Country Park, Larne, Antrim</td>
<td>54°52'N 5°51'W</td>
</tr>
<tr>
<td></td>
<td>02-07-1980</td>
<td>Great Saltee, Wexford</td>
<td>52°6'N 6°37'W</td>
</tr>
<tr>
<td></td>
<td>30-03-2014</td>
<td>Harlech, Gwynedd, Wales</td>
<td>52°51'N 4°7'W</td>
</tr>
<tr>
<td>FV77973</td>
<td>Ad.</td>
<td>Great Saltee, Wexford</td>
<td>52°6'N 6°37'W</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dead (storm)</td>
<td>62 km SW</td>
</tr>
<tr>
<td></td>
<td>02-07-1980</td>
<td>Great Saltee, Wexford</td>
<td>52°6'N 6°37'W</td>
</tr>
<tr>
<td></td>
<td>20-05-2014</td>
<td>Isle of Colonsay, Argyll and Bute, Scotland</td>
<td>56°1'N 6°15'W</td>
</tr>
<tr>
<td></td>
<td>18-08-2014</td>
<td>Loughmuck Road, Omagh, Tyrone</td>
<td>54°31'N 7°21'W</td>
</tr>
<tr>
<td></td>
<td>15-12-2013</td>
<td>Celbridge, Kildare</td>
<td>53°19'N 6°33'W</td>
</tr>
</tbody>
</table>

The BTO longevity record for this species, which was set in 1992, stands at 40 years, 10 months and 16 days, so at 33 years, 8 months and 28 days, FV77973 is a relatively old bird.

**Manx Shearwater** *Puffinus puffinus*

<table>
<thead>
<tr>
<th>ID</th>
<th>Date</th>
<th>Location</th>
<th>Coordinates</th>
</tr>
</thead>
<tbody>
<tr>
<td>EW88565</td>
<td>17-04-2010</td>
<td>Copeland Bird Observatory, Down</td>
<td>54°40'N 5°31'W</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Freshly dead</td>
<td>40°52'N 72°28'W</td>
</tr>
<tr>
<td></td>
<td>05-07-2014</td>
<td>Freshly dead (storm)</td>
<td>5,188 km WSW</td>
</tr>
</tbody>
</table>

**European Storm Petrel** *Hydrobates pelagicus*

<table>
<thead>
<tr>
<th>ID</th>
<th>Date</th>
<th>Location</th>
<th>Coordinates</th>
</tr>
</thead>
<tbody>
<tr>
<td>N05319</td>
<td>19-06-2012</td>
<td>Ponta de Almadena, Faro, Portugal</td>
<td>37°4'N 8°46'W</td>
</tr>
<tr>
<td></td>
<td>28-07-2014</td>
<td>Sheepland Harbour, Ardglass, Down</td>
<td>54°16'N 5°34'W</td>
</tr>
<tr>
<td></td>
<td>19-07-2014</td>
<td>Annagh Head, Mayo</td>
<td>54°13'N 10°7'W</td>
</tr>
<tr>
<td></td>
<td>2689692</td>
<td>Mykines, Vágar, Faroe Islands</td>
<td>62°6'N 7°39'W</td>
</tr>
</tbody>
</table>

Ten European Storm Petrels were controlled greater than 400 km from their original ringing sites in 2014, demonstrating links between Ireland and Scotland (Highland, Orkney and Shetland), and the Isle of Man.

**Gannet** *Morus bassanus*

<table>
<thead>
<tr>
<th>ID</th>
<th>Date</th>
<th>Location</th>
<th>Coordinates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1160377</td>
<td>Pull.</td>
<td>Great Saltee Island, Wexford</td>
<td>52°7'N 6°37'W</td>
</tr>
<tr>
<td></td>
<td>Controlled</td>
<td>Hadsel, Nordland, Norway</td>
<td>68°31'N 14°31'E</td>
</tr>
<tr>
<td>1350862</td>
<td>Pull.</td>
<td>Great Saltee Island, Wexford</td>
<td>52°7'N 6°37'W</td>
</tr>
<tr>
<td></td>
<td>Field record</td>
<td>Helgoland, Germany</td>
<td>54°10'N 7°55'E</td>
</tr>
</tbody>
</table>

Only selected re-sightings are shown. 1330862 was re-sighted in Helgoland, Germany on eight occasions (once each in 1999, 2000, 2001, 2002, 2006, 2007, 2008 and 2014) between 1 September 1999 and 11 April 2014.

**Grey Heron** *Ardea cinerea*

<table>
<thead>
<tr>
<th>ID</th>
<th>Date</th>
<th>Location</th>
<th>Coordinates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1285755</td>
<td>Pull.</td>
<td>Isle of Colonsay, Argyll and Bute, Scotland</td>
<td>56°1'N 6°15'W</td>
</tr>
<tr>
<td></td>
<td>Freshly dead</td>
<td>Loughmuck Road, Omagh, Tyrone</td>
<td>54°31'N 7°21'W</td>
</tr>
</tbody>
</table>

**Red Kite** *Milvus milvus*

<table>
<thead>
<tr>
<th>ID</th>
<th>Date</th>
<th>Location</th>
<th>Coordinates</th>
</tr>
</thead>
<tbody>
<tr>
<td>GR41587</td>
<td>Pull.</td>
<td>Rathdrum, Wicklow</td>
<td>c. 52°55'N 6°13'W</td>
</tr>
<tr>
<td></td>
<td>Freshly dead</td>
<td>Celbridge, Kildare</td>
<td>53°19'N 6°33'W</td>
</tr>
</tbody>
</table>

**White-tailed Eagle** *Haliaeetus albicilla*

<table>
<thead>
<tr>
<th>ID</th>
<th>Date</th>
<th>Location</th>
<th>Coordinates</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZY3422</td>
<td>Pull. F</td>
<td>Mountshannon, Clare</td>
<td>c. 52°55'N 8°25'W</td>
</tr>
<tr>
<td></td>
<td>Field record</td>
<td>Portumna, Galway</td>
<td>c. 53°4'N 8°13'W</td>
</tr>
<tr>
<td></td>
<td>Field record</td>
<td>Luska Bay, Tipperary</td>
<td>c. 52°58'N 8°16'W</td>
</tr>
</tbody>
</table>

**Marsh Harrier** *Circus aeruginosus*

<table>
<thead>
<tr>
<th>ID</th>
<th>Date</th>
<th>Location</th>
<th>Coordinates</th>
</tr>
</thead>
<tbody>
<tr>
<td>FB44707</td>
<td>Pull. M</td>
<td>Site Confidential, East Norfolk, England</td>
<td>c. 52°41'N 1°28'E</td>
</tr>
<tr>
<td></td>
<td>Field record</td>
<td>Ardvrcavan, Wexford</td>
<td>52°21'N 6°25'W</td>
</tr>
</tbody>
</table>

Irish Birds 10 (2015)
Only selected re-sightings are shown. FB44707 was re-sighted twice in Yorkshire, England in August and September 2014.

**Osprey Pandion haliaetus**

<table>
<thead>
<tr>
<th>1123603</th>
<th>Pull.</th>
<th>14-07-2014</th>
<th>Site Confidential, Highlands, Scotland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field record</td>
<td>23-09-2014</td>
<td>Clogheen Marsh, Clonakilty, Cork</td>
<td></td>
</tr>
<tr>
<td>c. 51°36'N 8°52'W</td>
<td>701 km SSW</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Water Rail Rallus aquaticus**

<table>
<thead>
<tr>
<th>LA46718</th>
<th>Pull.</th>
<th>04-08-2013</th>
<th>Uckermark, Zachodnio-Pomorskie, Poland 55°9’N 14°22’E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshly dead (disease)</td>
<td>10-02-2014</td>
<td>Ballincrokiog, Cork</td>
<td></td>
</tr>
<tr>
<td>51°55’N 8°28’W</td>
<td>1,550 km W</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Oystercatcher Haematopus ostralegus**

<table>
<thead>
<tr>
<th>FH74745</th>
<th>Ad.</th>
<th>26-02-2013</th>
<th>Merrion Gates, Dublin 55°18’N 6°12’W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field record</td>
<td>02-04-2013</td>
<td>Karmøy, Rogeland Norway 59°11’N 5°12’E</td>
<td></td>
</tr>
<tr>
<td>995 km NE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field record</td>
<td>22-12-2014</td>
<td>South Dublin Bay, Dublin 53°19’N 6°12’W</td>
<td></td>
</tr>
<tr>
<td>FH74749</td>
<td>Ad.</td>
<td>26-02-2013</td>
<td>Merrion Gates, Dublin 55°18’N 6°12’W</td>
</tr>
</tbody>
</table>

Field record 21-04-2014 Fair Isle, Shetland, Scotland 59°31’N 1°37’W 746 km NNE

Field record 19-08-2014 Merrion Gates, Dublin 53°18’N 6°12’W

FH74725 Ad. 26-02-2013 Merrion Gates, Dublin 53°18’N 6°12’W

Field record 25-03-2014 Stokkseyri, Southern Iceland 63°50’N 21°03’W 1,445 km NW

Field record 16-09-2014 Merrion Gates, Dublin 53°18’N 6°12’W

Only selected re-sightings are shown: FH74745 was re-sighted 11 times since being ringed, and was re-sighted in Norway three times during the 2013 and 2014 breeding seasons, and wintered in Dublin in between. FH74749 has been re-sighted 11 times since it was ringed. FH74725 was re-sighted seven times since being ringed. A further four Dublin-ringed Oystercatchers were re-sighted in Scotland (Moray, Orkney (2) and Aberdeenshire) in 2014. A further two Dublin-ringed Oystercatchers were re-sighted in Iceland (Stokkseyri and Sandgerdi) in 2014.

**Ringed Plover Charadrius hiaticula**

<table>
<thead>
<tr>
<th>3574285</th>
<th>Pull.</th>
<th>14-05-2010</th>
<th>Vellinge Angar, Skåne, Sweden 55°28’N 12°58’E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field record</td>
<td>31-08-2013</td>
<td>Ballincamper, Dungarvan, Waterford</td>
<td></td>
</tr>
<tr>
<td>52°4’N 7°33’W</td>
<td>1,398 km WSW</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Plate 139. Oystercatchers (Oskar Bjørnstad).
**Common Snipe** *Gallinago gallinago*

H00901 1yr. 01-08-2013 Turov, Zhitkovichi, Gomel Oblast, Belarus

52°4'N 27°43'E

Freshly dead (shot) 26-10-2014 Tullyleer, Monaghan

54°13'N 6°58'W

2,324 km W

PS17805 Ad. M 22-06-2014 Primorskiy District, Sankt-Petersburg, Russia

60°1'N 30°10'E

Freshly dead (shot) 06-12-2014 Salthill, Galway

53°16'N 9°4'W

2,505 km WSW

**Curlew** *Numenius arquata*

FC8063 Ad. 21-07-1997 Seal Sands, Teesmouth, Hartlepool, England

54°37'N 1°10'W

Field record 19-09-2002 Seal Sands, Teesmouth, Hartlepool, England

54°37'N 1°10'W

Freshly dead (shot) 15-11-2014 Island Hill, Strangford Lough, Down

54°35'N 5°42'W

291 km W

Ym/NB Pull. 06-06-2014 Corgarff, Aberdeenshire, Scotland

57°09'N 3°12'W

Field record 22-12-2014 Booterstown, Dublin

53°19' N 6°13' W

467 km SW

**Bar-tailed Godwit** *Limosa lapponica*

DD73031 Ad. 12-08-2010 Friskney New Marsh, Lincolnshire, England

53°4'N 0°13'E

Controlled 30-01-2014 Booterstown, Dublin

53°18'N 6°13'W

431 km W

DB87978 Ad. 30-01-2014 Booterstown, Dublin

53°18'N 6°13'W

Field record 22-12-2014 Booterstown, Dublin

53°19' N 6°13' W

467 km SW

**Sanderling** *Calidris alba*

R6RRGY Ad. 09-10-2010 Asenko Village, Western Region, Ghana

04°55'N 0\219'W

Field record 22-08-2013 Carne Harbour, Wexford

52°11'N 6°21'W

Field record 31-07-2014 Carne Harbour, Wexford

52°11'N 6°21'W

5,057 km N

BT35697 Ad. 14-05-2010 Ardvachar, South Uist, Scotland

57°22'N 7°25'W

Controlled 20-10-2014 Booterstown, Dublin

53°18'N 6°13'W

459 km S

**Curlew Sandpiper** *Calidris ferruginea*

8N59347 1yr. 03-09-2014 Revtangen, Klepp, Norway

58°45'N 5°28'E

Field record 06-09-2014 Cunnigar, Dungarvan,Waterford

52°4'N 7°36'W

1,109 km SW

8N59202 1yr 02-09-2014 Revtangen, Klepp, Norway

58°45'N 5°28'E

Field record 25-09-2014 Cromane, Kerry

52°7'N 9°55'W

1,217 km SW

8N59204 1yr. 02-09-2014 Revtangen, Klepp, Norway

58°45'N 5°28'E

Field record 27-09-2014 Clonakilty, Cork

51°37'N 8°54'W

1,207 km SW

**Kittiwake** *Rissa tridactyla*

MA21705 Pull. 20-07-1990 Hornoya, Finnmark, Norway

70°22'N 31°9'E

Field record 27-01-2014 Cruit Island, Donegal

55°1'N 8°25'W

2,601 km SW

Irish Birds 10 (2015)
At 23 years, 6 months and 7 days old, this is a relatively old bird. The BTO longevity record, which was set in 1993, is 28 years, 6 months and 5 days.

**Black-headed Gull**  
*Chroicocephalus ridibundus*

<table>
<thead>
<tr>
<th>Date</th>
<th>Location (Latitude, Longitude)</th>
<th>Distance</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>22-10-2014</td>
<td>Duncannon Beach, Wexford</td>
<td>1,176 km</td>
<td>SW</td>
</tr>
</tbody>
</table>

**Lesser Black-backed Gull**  
*Larus fuscus*

<table>
<thead>
<tr>
<th>Date</th>
<th>Location (Latitude, Longitude)</th>
<th>Distance</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>04-06-2014</td>
<td>c. 54°3'N 4°49'W</td>
<td>1,921 km</td>
<td>S</td>
</tr>
</tbody>
</table>

Only selected recoveries are shown. GR64662 was also re-sighted in Faro, Portugal in May and October, 2013.

**Little Tern**  
*Sternula albifrons*

<table>
<thead>
<tr>
<th>Date</th>
<th>Location (Latitude, Longitude)</th>
<th>Distance</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>22-10-2014</td>
<td>Kilcoole, Wicklow</td>
<td>53°05'N 6°02'W</td>
<td>Freshly dead (hit wires)</td>
</tr>
</tbody>
</table>

252D has been re-sighted in Dublin ten times and was present during every winter from February 2010 to October 2014. All re-sightings were from the Phoenix Park, with the exception of one re-sighting on Sandymount Strand. A possible reason for the high re-sighting rate for this bird is that it is an almost completely leucistic bird (E. McGreal, pers. comm.).

**Mediterranean Gull**  
*Larus Melanocephalus*

<table>
<thead>
<tr>
<th>Date</th>
<th>Location (Latitude, Longitude)</th>
<th>Distance</th>
<th>Notes</th>
</tr>
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<tbody>
<tr>
<td>30-07-2013</td>
<td>Antrim Marina, Antrim</td>
<td>1,653 km</td>
<td>WNW</td>
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**Common Gull**  
*Larus canus*

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<th>Date</th>
<th>Location (Latitude, Longitude)</th>
<th>Distance</th>
<th>Notes</th>
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<tbody>
<tr>
<td>02-07-2014</td>
<td>Tveitevannet, Bergen, Hordaland, Norway</td>
<td>1,176 km</td>
<td>SW</td>
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</table>

Field record 22-10-2014 Duncannon Beach, Wexford  
52°13'N 6°55'W  
1,176 km SW  

Field record 12-12-2012 Sagres, Faro, Portugal  
37°0'N 8°55'W  
1,921 km S  

Freshly dead (hit wires) 04-06-2014 Downpatrick, Down  
54°19'N 5°43'W  
67 km WNW  

Only selected re-sightings are shown. IEV was also reported in Dawlish Warren, Devon on the 27 and 29 August.
The BTO longevity record is 41 years, 11 months and 23 days, so at 34 years, 7 months and 14 days, this is a relatively old bird. A further four recoveries of old Razorbills were recorded in 2014, all of which were greater than 30 years old.

**Puffin** *Fratercula arctica*

**Field record**

- **EW66437** Ad. 24-07-2011 Great Skellig, Kerry
- **51°46'N 10°31'W**
- Long dead 22-02-2014 la Palmyre, Charente-Maritime, France
- **45°40'N 1°13'W**
- 960 km SE

**Barn Owl** *Tyto alba*

**Field record**

- **GC81433** Pull. F 04-08-2010 near Brosna, Offaly
- **52°58'N 7°54'W**
- Freshly dead (shot) 19-11-2014 Abbeyfeale, Limerick
- **52°22'N 9°18'W**
- 116 km SW

**Raven** *Corvus corax*

**Field record**

- **MA01706** Pull. 11-04-2014 Cleggan, Galway
- **53°34'N 10°7'W**
- Dead 02-11-2014 Bundoran, Donegal
- **54°28'N 8°18'W**
- 157 km NE

**Blackcap** *Sylvia atricapilla*

**Field record**

- **EE67799** Ad. M. 05-11-2014 Lista Fyr, Farsund, Vest-Agder, Norway
- **58°6'N 6°34'E**
- Freshly dead (cat) 25-11-2013 Gurteen, Galway
- **52°49'N 6°55'W**
- 910 km NNW

**Reed Warbler** *Acrocephalus scirpaceus*

**Field record**

- **Y880889** 1yr. 29-07-2014 Blackditch, Wicklow
- **53°46'N 6°37'W**
- Freshly dead (storm) 20-01-2014 Plage de Cassard, Loire-Atlantique, France
- **47°19'N 2°30'W**
- 608 km SSE

The BTO longevity record is 35 years, 11 months and 29 days, so at 31 years, 6 months and 21 days, this is a relatively old bird. There were four other recoveries of old Common Guillemots in 2014, all of which were greater than 27 years old.

**Common Guillemot** *Uria aalge*

**Field record**

- **GJ65195** Pull. 30-06-1982 Great Saltee Island, Wexford
- **52°7'N 6°37'W**
- Freshly dead (storm) 20-01-2014 Plage de Cassard, Loire-Atlantique, France
- **47°19'N 2°30'W**
- 608 km SSE

**Razorbill** *Alca torda*

**Field record**

- **M38778** Pull. 15-07-1979 Great Saltee Island, Wexford
- **52°7'N 6°37'W**
- Freshly dead 01-03-2014 Plage de Sion, Vendee, France
- **46°42'N 1°58'W**
- 690 km SSE

**Goldfinch** *Carduelis carduelis*

**Field record**

- **6934485** 1yr. 01-03-2013 Marestay, Charente-Maritime, France
- **45°52'N 0°19'W**
- Freshly dead (domestic animal) 15-04-2014 Quinagh, Carlow
- **52°49'N 6°55'W**
- 910 km NNW
Plate 140. Roseate Tern (Brian Burke).
Siskin *Carduelis spinus*
D204885 1yr. M 21-03-2013 Alton Hall Lane, Stutton, Suffolk
51°58’N 1°7’E

Controlled 12-04-2014 Cashel, Blaney, Fermanagh
54°25’N 7°48’W

653 km WNW

Lesser Redpoll *Carduelis cabaret*
L292856 Ad. M 02-10-2012 Copeland Bird Observatory,
Down
54°40’N 5°31’W

Controlled 29-03-2014 Wunseradiel, Friesland,
The Netherlands
53°4’N 5°22’E

737 km ESE

Table 2. Ringing totals for 2014 with the previous five-year mean for comparison.

<table>
<thead>
<tr>
<th>Species</th>
<th>Juv/adult</th>
<th></th>
<th></th>
<th>Pullus</th>
<th></th>
<th></th>
<th>Total</th>
<th>Five-year mean</th>
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<td>Rep. of Ireland</td>
<td>Sub-total</td>
<td>Northern</td>
<td>Rep. of Ireland</td>
<td>Sub-total</td>
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Table 2 (continued). Ringing totals for 2014 with the previous five-year mean for comparison.

<table>
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<th>Species</th>
<th>Juv/adult</th>
<th>Pullus</th>
<th>Total</th>
<th>Five-year mean</th>
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<td>Rep. of</td>
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<td>2014</td>
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Irish Birds 10 (2015)
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**Table 2 (continued).** Ringing totals for 2014 with the previous five-year mean for comparison.

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2014 Total | 5,507 | 15,040 | 20,547 | 1,753 | 7,624 | 9,377 | 29,924 |

5-year mean (2009–13) | 5,887 | 12,196 | 18,084 | 1,748 | 6,611 | 8,360 | 26,444.2 |

Number of species | 125 | 127 |
Acknowledgements

Thanks to all trainers, ringers and helpers who were active in 2014 for their dedication and hard work, and especially to those ringers who contributed recoveries and re-sightings of their ringed birds to this report. The provision of additional details on the significance of the re-sightings is especially useful and I am grateful to those ringers who put the movements of their colour-ringed birds in context. I would also like to thank the BTO Ringing Office staff who helped in providing the data for this report. The owners of the lands on which much of the ringing is carried out are also thanked for allowing access to their land.

Ringers registered in 2014

Northern Ireland 50 ringers (25 A permit holders, 15 C permit holders and 10 trainees).

Table 3. Annual totals of birds ringed in Ireland and annual recovery totals.1

<table>
<thead>
<tr>
<th>Year</th>
<th>Ringed Juvenile/Adult</th>
<th>Ringed Pullus</th>
<th>Ringed Total</th>
<th>Recovered Total</th>
</tr>
</thead>
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<tr>
<td>1975</td>
<td>21,316</td>
<td>8,146</td>
<td>29,462</td>
<td>not known</td>
</tr>
<tr>
<td>1976</td>
<td>23,097</td>
<td>6,039</td>
<td>29,136</td>
<td>not known</td>
</tr>
<tr>
<td>1977</td>
<td>17,812</td>
<td>6,708</td>
<td>24,520</td>
<td>not known</td>
</tr>
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<td>1978</td>
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<td>10,014</td>
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<td>11,052</td>
<td>26,547</td>
<td>455</td>
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<td>12,114</td>
<td>31,497</td>
<td>322</td>
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<td>641</td>
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<td>502</td>
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<td>501</td>
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<td>2012</td>
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<td>20,301</td>
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<td>28,265</td>
<td>572</td>
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<tr>
<td>2014</td>
<td>20,547</td>
<td>9,377</td>
<td>29,924</td>
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</tbody>
</table>

Grand totals ringed and recovered 1975-2014: 1,219,770

Average number ringed per year (1975-2014): 30,494

Plate 141. Ringed Common Gull (Michael O’Clery).

Acknowledgements

Thanks to all trainers, ringers and helpers who were active in 2014 for their dedication and hard work, and especially to those ringers who contributed recoveries and re-sightings of their ringed birds to this report. The provision of additional details on the significance of the re-sightings is especially useful and I am grateful to those ringers who put the movements of their colour-ringed birds in context. I would also like to thank the BTO Ringing Office staff who helped in providing the data for this report. The owners of the lands on which much of the ringing is carried out are also thanked for allowing access to their land.

Ringers registered in 2014

Northern Ireland 50 ringers (25 A permit holders, 15 C permit holders and 10 trainees).


Two ringing groups were registered in Northern Ireland in 2014: Belfast and Down Ringing Group and Copeland Bird Observatory.

**Republic of Ireland** 77 ringers (27 A permit holders, 31 C permit holders and 19 trainees).


Six ringing groups were registered in the Republic of Ireland in 2014: Cape Clear Bird Observatory, Great Saltee Ringing Station, Irish Midlands Ringing Group, Munster Ringing Group, National Parks and Wildlife Service Ringing Group and Wicklow Murrough Ringing Group.

**Erratum**

**Irish Ringing Report for 2013**

The field record of a Caspian Gull *Larus cachinnans* in Belfast, Antrim was reported in error. It appears that the colour-ring was misread in the field (Irish Birds 10: 111).

**References**


In the autumn of 2010 several Tufted Ducks *Aythya fuligula* were recorded at a 2 ha pond in private property on the north coast of Dublin city. As this was the first record for the site, permission was obtained from the land owner to monitor events. Birds were recorded occasionally during 2011 and 2012, but nesting was never suspected. Five males and four females were present regularly in spring and early summer 2013, and copulation was observed in mid-June. It soon became evident from the behaviour of the birds that nest prospecting or egg-laying was taking place at a dense patch of aquatic vegetation at one side of the pond. At the time it did not seem out of place that more than one female loitered in this particular area. More frequent observations were made in July, and on 17 July a female, with 18 newly hatched ducklings, was seen at the suspected nest site. Over the following days and weeks all ducklings remained close to this one female, even when other females occasionally visited the pond.

Eighteen ducklings from one nest is an exceptionally high number as Tufted Ducks normally lay 8 to 11 eggs (Robinson 2015). It is entirely possible, though not likely, that this female laid all 18 eggs. In itself this would be a noteworthy event. However, the presence of more than one female close to the nest site at the time when egg-laying was likely to have taken place suggests a different explanation. Ducks are weak defenders of the area in the immediate vicinity of their nests during the laying period, and it would appear this provides an ideal opportunity for parasitic females to lay their eggs (Ehrlich *et al.* 1994). This behaviour, known as intraspecific brood parasitism, is not uncommon in wildfowl species, particularly diving ducks (Blums *et al.* 2002). It also appears to occur disproportionately in species with precocial young (Dugger & Blums 2001). There are no benefits for the host females, and it is likely that an increased clutch and brood size could potentially attract more predators, thereby reducing breeding success. Only five of the 18 ducklings observed in July survived to fledging. Intraspecific brood parasitism is strongly suspected to have taken place at this site in 2013.

**References**


Lion’s Mane Jellyfish *Cyanea capillata* provide additional feeding opportunities for terns (Sternidae)

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**Keywords:** *Cyanea capillata*, feeding association, Lion’s Mane Jellyfish, Sternidae, terns

The Lion’s Mane Jellyfish *Cyanea capillata* is one of the world’s largest species of jellyfish and is common in the Irish Sea and along the Dublin coast (Heard 2005, NBDC 2015). They are venomous and capture prey such as zooplankton, small fish and other jellyfish using their stinging tentacles (Purcell 2003). Some fish appear to be resistant to the venomous nematocysts and seek shelter amongst the tentacles. These fish gain protection from the host’s tentacles and in some cases may feed on the jellyfish itself (Duffy 1988). Some predators have taken advantage of this association and feed on the commensal fish. Brünnich’s Guillemots *Uria lomvia* have been observed in Alaska feeding on the commensal fish associated with the Northern Sea Nettle Jellyfish *Chrysaora melanaster* (Sato et al. 2015). The authors of this study concluded that jellyfish may enhance diving seabird foraging success by concentrating prey. It has been noted that Common Terns *Sterna hirundo* feed on American Butterfish *Peprilus triacanthus* associating with Lion’s Mane Jellyfish in North America (Duffy 1988). However, there are few other records of this behaviour, particularly in Europe.

Rockabill Island, a small island 8 km off the north coast of County Dublin, is home to approximately 2,000 pairs of Common Terns, 100 pairs of Arctic Terns *Sterna paradisaea* and 1,400 pairs of Roseate Terns *Sterna dougallii* during the breeding season (Burke et al. 2015). Terns feed by plunge diving for fish, and large feeding flocks of terns and other seabirds typically follow schools of fish when away from the breeding colony. However, it is not uncommon to see terns fishing close to the island. The Rockabill Island tern wardens observed, on multiple occasions, Arctic Terns foraging for fish living commensally with Lion’s Mane Jellyfish close to the island during 2015. Lion’s Mane Jellyfish are commonly observed around Rockabill, particularly from June onwards. Terns were noted hovering directly above the jellyfish, sometimes for several minutes, before diving into the water after a fish. The terns typically dived from a lower height (less than 5 metres) almost striking the jellyfish as they entered the water. The species of fish was not determined despite the terns having been successful in many of their hunting attempts. The same behaviour involving Common Terns and Lion’s Mane Jellyfish was observed by the tern wardens during 2014. This behaviour has not been observed with Roseate Terns at Rockabill Island, although it has not been directly investigated.

The impact of jellyfish on marine ecosystems is complex and not fully understood. Jellyfish are predators of small fish and fish eggs and may decrease the food available to seabirds. However, jellyfish may be beneficial to seabirds by concentrating prey. Further research is needed to determine how important and common this behaviour is. The large numbers of jellyfish around Rockabill Island provide what may be important additional feeding opportunities for Arctic and Common Terns. This may be especially evident during jellyfish blooms which are expected to become more frequent as jellyfish populations increase globally (Brotz et al. 2012). Given the large numbers of terns at Rockabill Island, every food source that minimises foraging time may be important to their continued success.

**References**


Seabird counts at Helvick Head, Co. Waterford, 1999-2014

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10 The Estuary, King’s Channel, Waterford

Corresponding author: ddmcg10@gmail.com

Keywords: Census data, seabirds

Helmick Head is situated on the southern side of Dungarvan Harbour in County Waterford and is a Special Area of Conservation (SAC) for the presence of Vegetated Sea Cliffs (Natura 2000 Code: 1230) and Dry Heath (4030), habitats that are listed on Annex I of the E.U. Habitats Directive. The SAC extends from the Head south-westwards to Muggort’s Bay and comprises sheer sea cliffs, cliff top vegetation and an area of marine waters off the Head. Helvick Head also forms part of the Helvick Head to Ballyquin Special Protection Area (SPA: Site Code 004192) and has all of the species (Cormorant Phalacrocorax aristotelis, Herring Gull Larus argentatus, Kittiwake Rissa tridactyla and Chough Pyrrhocorax pyrrhocorax) which are listed as of Special Conservation Interest for this SPA. Helvick Head is the most important seabird colony in County Waterford and has been censused periodically since ‘Operation Seafarer’ in 1969/70; the last published seabird census was undertaken in 1999 (NPWS Site Synopsis) as part of Seabird 2000 (Mitchell et al. 2004).

The purpose of this short communication is to present details of censuses carried out in 1999, 2005, 2008 and 2014 (Table 1). Nine seabird species breed at Helvick Head and sub-colony counts of all species are shown for 2014 and for Kittiwakes for the three census years of 2005, 2008 and 2014 (Figure 1). The census units used (Walsh et al. 1995) are: apparently occupied nest (AON) for Cormorant, Shag Phalacrocorax aristotelis, Herring Gull, Great Black-backed Gull Larus marinus and Kittiwake; apparently occupied site (AOS) for Fulmar Fulmarus glacialis; and individual adults on land for Guillemot Uria aalge and Razorbill Alca torda. Black Guillemot Cepphus grylle is best censused in the early morning (about 05.00-07.00 GMT) during the first three weeks of April by searching for all adults on the sea within 300 m of the shore; hence the date and timing of the seabird surveys at Helvick Head are inappropriate for this species, but their presence was noted. Puffins Fratercula arctica regularly pass close inshore at Helvick Head in summer (one carrying several fish was seen at Helvick Head on 15 July 2011), and they have been seen sitting on the water close inshore or, in summer 2010, on the cliffs (source: waterfordbirds.com, accessed 16 July 2015). These birds could be visitors from the nearest known colony, on Great Saltee (County Wexford), but they might also be prospecting for potential breeding sites. The cliffs and slopes at Helvick Head were checked on 31 May 2013, again during the seabird count in 2014, and in late July 2015, but no Puffins were seen.

Table 1. Seabird breeding numbers at Helvick Head, County Waterford, 1999-2014 (times in GMT).

<table>
<thead>
<tr>
<th>Species</th>
<th>1999 Date and time</th>
<th>2005 Date and time</th>
<th>2008 Date and time</th>
<th>2014 Date and time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fulmar</td>
<td>10 June 09.00-13.00</td>
<td>10 June 09.45-14.35</td>
<td>10 June 09.45-15.00</td>
<td></td>
</tr>
<tr>
<td>Cormorant</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Shag</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
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<td>808</td>
<td>1,371</td>
</tr>
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<td>Razorbill</td>
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<td>26</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td>Black Guillemot</td>
<td>-</td>
<td>6</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Kittiwake</td>
<td>934</td>
<td>828</td>
<td>472</td>
<td>525-530</td>
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<tr>
<td>Herring Gull</td>
<td>44</td>
<td>20-25</td>
<td>29-37</td>
<td>49-55</td>
</tr>
<tr>
<td>Great Black-backed Gull</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>3</td>
</tr>
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</table>
Figure 1. Seabird breeding numbers and distribution at Helvick Head, County Waterford, 2014. Census figures for Kittiwakes are shown for 2005, 2008 and 2014.

References


Adaptive responses to inundation by high tides in Little Terns *Sternula albifrons*

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**Keywords:** Little Tern, nest movement, Sternula albifrons, tidal inundation

The Little Tern *Sternula albifrons* is one of Ireland’s rarest breeding seabirds, arriving on Irish shores in April and nesting on coasts and offshore islands until their departure in August. Little Terns typically nest colonially, using a shallow scrape on shingle or sandy beaches, just above the intertidal zone (Gochfeld & Burger 1996). This choice of nesting habitat leaves the colony extremely vulnerable to damage from high tides. Such high tides may be the result of low pressure weather conditions and sea storms, and also spring tides, making tidal inundation a constant risk.

Since 1985, BirdWatch Ireland and the National Parks and Wildlife Service have carried out a colony protection and management scheme for the Little Tern colony that traditionally nests at the Breaches in Kilcoole, Co. Wicklow (grid reference O314063) (Patten 1899, O’Briain & Farrelly 1990). This scheme involves the continuous monitoring of the colony by wardens 24 hours a day throughout the breeding season. Since its inception, the scheme has seen tidal inundation regularly impact on the colony, particularly in 2012, when breeding success was reduced to zero as a result of storms washing over the shingle, and subsequent egg depredation (Keogh et al. 2012). Two years later, during the 2014 breeding season, high tides once again inundated the colony. On 19 June, a high tide washed into a gully where several Little Tern nests were located. On inspecting the gully after the tide had receded, the wardens found that the nests of 12 pairs of Little Terns had been swept away. The wardens also found that another 13 pairs whose nests had been washed out had collected their eggs into new nests roughly 0.5-1.0 m further inland from their original position. This behaviour was unexpected, as it had not previously been recorded in Sternaidae (O’Connell et al. 2014a, b).

Egg movement in response to high tide inundation was recorded once again during the 2015 breeding season. In the early hours of 2 June, a tidal surge, likely caused by a storm at sea, inundated the colony (Doyle et al. 2015). A total of 11 nests were swept away and a further six were inundated with seawater, but not significantly damaged. The wardens observed that one Little Tern pair collected their eggs into a new scrape following inundation. This pair was first observed nesting on 30 May and had a clutch of three eggs on 1 June. The nest was inundated on 2 June; one day after the full clutch was completed. The rising tide swept the eggs from the nest, but the pair gathered two of the three eggs into a new scrape approximately 0.75 m further inland; the third egg having being swept away. The location of the old nest is shown in the white circle (Plate 144), while the new nest location is in the black circle. The pair went on to lay another egg two days later. These three eggs failed to hatch after 21 days of incubation (the average for Little Tern according to Gochfeld and Burger (1996)). Incubation after the last egg was laid continued for 38 days until the eggs were finally abandoned by the parents.

Spring tides coincided with low pressure on the weekend of 4-6 July and led to a second major tidal inundation event in 2015 (Doyle et al. 2015). A total of 12 more nests were swept away over this period. Three nests, with a clutch of three each, were also inundated at this time. In each of these nests, two of the eggs had hatched earlier on the day of inundation, and the third egg was expected to hatch within hours. The wardens observed that the parents led the newly hatched chicks inland and abandoned the remaining egg as the tide approached the nest. The chicks were moved throughout the day, staying approximately 1.0-2.0 m ahead of the encroaching tide. Each time the wardens checked one of these nests, the chicks were observed being brooded by the parents just above the tideline, while the tide continued to rise. It is estimated they moved roughly 3.0 m further inland over the course of the tide. Five of the six chicks from these three nests were re-sighted (by their ring inscriptions) over one week later, on 11 and 15 July. All are assumed to have fledged.

Little Tern chicks are very mobile and may leave the nest as early as one day after the final egg hatches (Taylor 2014). In cases where the final egg does not hatch, the parents continue to incubate the egg and brood the chicks at the nest for several days (pers. obs.). Sandwich Terns *Sterna sandvicensis* are known to lure their chicks from the nest in response to kleptoparasitism from other seabirds, such as Black-headed Gull *Chroicocephalus ridibundus* (Stienen & Breninkmeijer 1999). Similarly, Roseate Terns *Sterna dougallii* have been observed moving their chicks from areas of high tern density to low density, possibly also in response to kleptoparasitism from other terns (Baillie et al. 2014). However, there is no previous evidence of observations of chick moving behaviour by Little Terns in response to a rising tide.

Likewise, there have been no reports of egg moving behaviour in response to rising tides in Sternaidae outside the observations at Kilcoole in 2014, and again in 2015. For a species such as the Little Tern, whose nesting habits leave eggs and chicks so vulnerable to loss from tidal inundation, strategies that maximize potential productivity in the event of a high tide are of great importance. Continued monitoring of...
nesting behaviours in future breeding seasons at Kilcoole will hopefully shed more light on this remarkable strategy and develop our understanding of the more complex behaviours of shore nesting birds.

Acknowledgements

A special thanks to Paddy Manley, Cole Macey and Jerry Wray, our co-workers on the 2015 Kilcoole Little Tern project, and to all the volunteers who help make the Kilcoole project a success. Funding for this work is provided by the National Parks and Wildlife Service of the Department of Arts, Heritage and the Gaeltacht.

References


A melanistic Common Guillemot
*Uria aalge* off Dursey Island, Co. Cork

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**Keywords:** Common Guillemot, melanism, *Uria aalge*

During a seawatch from the north tip of Dursey Island, Co. Cork on 19 October 2013 a steady trickle of auks was recorded flying west. At around 13.00 hours (BST), KG picked up a group of three Common Guillemots *Uria aalge* flying west close inshore. A fourth, all dark-brown bird, was with them. He immediately drew the attention of AAKL to the bird and both watched it as it passed below them.

The bird was clearly a Common Guillemot in terms of size, shape and flight action. However, its plumage was very different to the other three birds. This bird was a uniform dark-brown colour overall, similar in tone to that of a female Common Scoter *Melanitta nigra*. The wings, body, face and head area all displayed this uniform colour with no obvious pale or darker areas. Its strong flying action and ability to keep pace with the other Common Guillemots would appear to indicate that the bird was healthy and that the colouration was probably not caused by oiling.

Details of a wide range of colour aberrations found in birds have been given by van Grouw (2006, 2013), who discussed the characteristics of each, ascribing a category name to each type. Included amongst these categories of aberrations are those termed ‘melanistic’, an abnormal deposit of melanin in the skin and or feathers. In line with the characteristics outlined in the papers quoted, it is clear that the bird seen by the authors was ‘melanistic’ given it was uniformly dark-brown coloured (with no white underparts).

Colour aberrations in Common Guillemot are not unknown. It was noted by van Grouw *et al.* (2011) that ‘brown’ (a qualitative reduction in eumelanin) is the most common colour aberration seen in guillemots *Uria* spp. Apart from the ‘brown’ individuals recorded in that paper, they also noted that at least six ‘brown’ Common Guillemot specimens were known to exist in European museum collections. Due to the nature of the mutation ‘brown’ the eumelanin pigment will not become fully oxidized during its production process and remains dark brown instead of black. In species, like the Common Guillemot, in which the natural colour is due to dark brown eumelanin, the mutation ‘brown’ will result in a pale brown colour. A secondary effect of plumage with qualitative melanin reduction is that colours further bleach unusually quickly in light and feathers can become almost white.

Details and a photograph of a female ‘melanistic’ Common Guillemot obtained at Buckton, East Yorkshire on 24 June 1896 are also given by van Grouw *et al.* (2011), the specimen of which is held at the British Natural History Museum. The only record of colour aberration in a Common Guillemot in Ireland appears to be one off Great Saltee Island, Co. Wexford in June 1976 (Kelly 1980). Although the term ‘leucism’ is used in this paper, the aberration described here is in fact ‘brown’ with the bird further bleached by the sunlight (van Grouw *in litt.*).

Knowledge about the distribution and frequency of colour aberrations in wild birds is still relatively poor and given the apparent very rare occurrences of all-dark Common Guillemots, it is considered that this sighting of a melanistic bird is worthy of formal recording.

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**References**


A census of roof-nesting gulls at Dunmore East, Co. Waterford, 2008 and 2015

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Keywords: Great Black-backed Gull, Herring Gull, Larus argentatus, Larus marinus, roof-nesting

Dunmore East is an attractive coastal village and an important fishing harbour on the west side of Waterford Harbour in the southeast of County Waterford. There are factory buildings within the harbour area, with gently sloping roofs, and many of the older houses with substantial chimneys are built on cliffs (20-50 m high) overlooking the harbour. More recent housing developments have been concentrated to the west of the harbour at Coxtown and to the north in the ‘lower’ village. The human population in 2011 was 1,559, which increases in summer during the tourist season.

Herring Gulls *Larus argentatus* (HG) have nested on buildings at Dunmore East since at least 1945 and did so intermittently from then to 1962 (O’Meara 1975). In the period 1962-73, two to seven HG ‘pairs’ were counted, usually on the chimneys of occupied one-storied houses overlooking the harbour (O’Meara 1975). Between 1976 and 1983, from seven to 14 HG pairs, apparently of occupied nests with young, were recorded (Walsh & McGrath 1988).

The recommended census unit for gulls is the apparently occupied nest (AON), which is a well constructed nest, attended by an adult and capable of holding eggs or young, ideally counted in late May or early June (Walsh *et al.* 1995), when the maximum number of adults can be expected to be incubating eggs or have small young (in years when nesting is earlier). The apparently occupied territory (AOT) may also be used, where there is evidence of a breeding pair holding a territory but where the nest may not be visible as, for example, on a roof hidden from view from any vantage point. Estimates of breeding numbers using AONs usually approximate to breeding pairs or AOTs, but counts of nests with young may underestimate the breeding population as some nests may have failed at an earlier stage. There were 19 HG AONs on roofs at Dunmore East in 1985 (Walsh & McGrath 1988), 24 in 1993-1995 and 29 in 1999-2002 (Mitchell *et al.* 2004).

Roof-nesting gulls (Herring Gull and Great Black-backed Gull *Larus marinus* (GB)) were censused at Dunmore East in 2008 and again in 2015, using the AON as the census unit, or the AOT where a nest could not be seen. In 2008, an initial count was made on 14 May (10.00-12.00 GMT) and repeated on 8 June (07.30-09.45 GMT), which resulted in ten additional AONs (nine HG and one GB) and four additional AOTs (all HG). In 2015, just one survey was conducted on 9 June (13.40-16.10 GMT). The census method involved walking the roads and paths of the village and scanning rooftops from nearby vantage points to locate active nests (AONs), or in a small number of situations, to infer from the behaviour of the adult birds the presence of hidden territories (AOTs); however, a suspected nest not readily visible from one vantage point could usually be confirmed from a different vantage point later. Eight figure grid references (using a Garmin Etrex 10 GPS) were assigned to each vantage point from where AONs were recorded, the circumstance of each nest was noted and their percentage occurrence calculated (Figure 1). Forty seven gull nests were located on roofs at Dunmore East in 2008, which had increased to 69 nests in 2015 (Table 1), the majority of which were HGs. It is not known when GBs first began nesting at the village.
nests on roofs in Dunmore East but there are no confirmed records prior to 2008. The GB is a voracious predator of other birds and their eggs and young (including HGs); it may assist in controlling roof-nesting HGs if it continues to nest among them. Only one of the three roof-nesting GBs did so on an occupied dwelling (between chimney pots).

The Irish fish factory on the south side of the harbour had the largest number of nests (nine HGs in 2008; 12 HGs and one GB in 2015). Occupied dwellings usually had only one nest, though the convent building overlooking the harbour and its associated apartment blocks had four nests in 2008 and ten nests in 2015, and one single-story occupied house had one nest in 2008 but five nests in 2015 (four on one side and one on the other side of a gently-sloping tiled roof). The proportion of nests on residential and commercial properties (houses, apartments, hotels, restaurants) increased from 53% in 2008 to 65% in 2015. Just one HG nested on a thatched house (in 2008, on the chimney). Other properties used included fish factories and Waterford Harbour Sailing Club (WHSC) premises, all of which are in the harbour area and easily counted from higher ground at Shanooan, and a small abandoned signal station at Shanooan. Three HGs nested in the lower village (northwest of the Strand Hotel) in 2015, where none nested in 2008. Similarly in the Coxtown area, while none were counted in 2008, four nests were present in 2015.

Several chimneys had deterrents (metal spikes and bars) and a sloping factory roof (now in use by WHSC) had a large plastic owl, but these were generally ignored by the birds, as were elaborate wire chimney enclosures on one large house (the birds nested on top of one of them). The gulls are generally habituated to humans (for example, one pair of HGs nested in a fish box in 2015 on a floating walkway in the inner harbour area, in constant use by the fishermen accessing boats) and they rarely cause problems when incubating eggs, though difficulties may arise when the young hatch (through noise, fouling and aggressiveness). With increasing numbers of gulls nesting on roofs at Dunmore East and elsewhere (in Waterford City, for example, at least one HG pair nested successfully in the Ballybricken area in 2013, and at least three HG pairs attempted to breed in the City in 2015), conflict between people and the gulls are likely to increase.

### References


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**Table 1. Number of roof-nesting gulls at Dunmore East, 2008 and 2015 (HG = Herring Gull; GB = Great Black-backed Gull).**

<table>
<thead>
<tr>
<th>Species</th>
<th>2008</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>HG (AON)</td>
<td>42</td>
<td>64</td>
</tr>
<tr>
<td>HG (AOT)</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>GB (AON)</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

**Plate 146.** Herring Gull nest in a fish box on a floating walkway in the inner harbour area, Dunmore East, 2015 (Declan McGrath).
Reviews

Ten Thousand Birds: ornithology since Darwin

This important book has been reviewed in several publications (e.g. Cheke 2015). The point has already been made by Cheke (2015) that it is unclear how the final selection for inclusion in the list of 500 ornithologists worldwide was made (Appendix 2). As a consequence, almost every reader will pose the question; why is 'so-and-so' not included? Four ornithologists are listed as Irish; James Parsons Burkitt (1870-1959), Richard Treacy Henry (1845-1929), Charles Bethune Moffat (1859-1935) and Edward Max Nicholson (1904-2003). Of this quartet, only Moffat is mentioned by Praeger (1949). Irish ornithologists of the present day will be familiar with the names of Burkitt and Moffat, and although well known, the name of Nicholson may not be associated by many with Ireland. Richard Henry appears to have been completely overlooked in Ireland as being of Irish origin. Here we briefly discuss some aspects of the four ornithologists mentioned above, and suggest one other whom we believe worthy of inclusion.

Richard Treacy Henry was born at Glenbane House, near Athy, County Kildare, and his family moved to Australia in 1851, where he grew up. He moved to New Zealand about 1874 and settled in the southwest at Lake Te Anau in 1883, where he worked at a variety of different jobs, while studying the birdlife. Henry was the first to describe the lek breeding system of the Kakapo (Strigops habroptilus), a flightless, nocturnal parrot endemic to New Zealand. Early settlers had introduced numerous predatory mammals (e.g. dogs, cats, rats and mustelids) which preyed on the Kakapo and reduced their numbers from one of the commonest to one of the rarest birds in New Zealand. Henry led a government initiative to settle a population of Kakapo on the (then) predator-free Resolution Island. The initiative failed as the island was only 1 km from the mainland, and predators eventually got across the channel. This attempt by the pioneering conservationist was a world first at saving a species from almost certain extinction. No further conservation efforts on the Kakapo took place until the 1950s, but the population now appears to be responding to management and stood at 131 individuals in 2011. Henry wrote articles and papers on natural history for the popular press and scientific journals, and a book, The Habits of the Flightless Birds of New Zealand; with notes on other New Zealand birds (1903).

Charles Moffat was born in the Isle of Man, but his parents moved permanently to Ireland when he was only one and a half years old. He lived at Ballyhyland, County Wexford until 1919 (when he moved to Dublin), where many of his detailed observations on natural history were made. He studied law at Trinity College, Dublin, but soon left that profession to work in journalism. Praeger (1949) considered him ‘the most accomplished naturalist that Ireland has produced’, and he wrote detailed papers on many aspects of natural history, especially birds and bats.

Moffat wrote an important paper in 1903 (Irish Naturalist 12: 152-166) which according to Hunt (2015) appears to be the first attempt ‘to explain a mechanism for population equilibrium’. The significance of Moffat’s views bearing on bird population dynamics appears to have been overlooked, or ignored, by many over the years, especially so by David Lack. Moffat’s work has been misinterpreted by others, and Hunt cites page 373 of Birkhead et al. (2014) (the subject of this overview) where this has happened again. Hunt concludes that Moffat ‘should be remembered for perceiving very early in the development of avian demographic theory that bird populations can stabilize on the basis of habitat limits to cohort size’. This conclusion elevates Moffat to a level of importance in the development of avian population dynamics theory greater than any considered heretofore, a fitting tribute to an apparently extremely modest, shy and self-effacing man.

James Burkitt was born at Kilbeggans, County Donegal, and worked for much of his life as County Surveyor of Fermanagh, following his education at University College, Galway. Although completely overlooked by Praeger (1949), despite his published works, David Lack acknowledged Burkitt’s pioneering work on the Robin in his Life of the Robin (1943). Burkitt used combinations of metal rings to study aspects of territorial behaviour, display and song and to
estimate average age (Nelson 2010). He published five papers on his Robin work during 1924-1926 in the journal *British Birds*, and Hutchinson (1997) described him as the ‘most original of all the ornithologists of the first half of the twentieth century’.

Max Nicholson was born of English parents at Kiltman, near Dublin, where his father was a photographer, the family having its origin in Lincolnshire farming stock. The family moved back to England in 1910, settling in Staines. Max was educated at Sedbergh School (Cumbria) and Hertford College (Oxford), where he read history. Throughout his life Nicholson worked in Britain, and none of his work was done here, or relates to Ireland. However, this does not mean his work did not have an influence here. Irish ornithologists will know his name as one of the editors of the nine volume *Birds of the Western Palearctic* (1977-1994) and as author of several books.

Nicholson was a senior civil servant from 1940 onwards and was involved in a range of activities during World War Two; organizing shipping convoys across the North Atlantic, planning the invasion of Europe (Operation Overlord), later followed by planning for post-war reconstruction. However, it was as an advocate for nature conservation and the environment as a civil servant and in a private capacity that he is best known in ornithological circles; he is generally regarded as a mover and shaker of considerable significance in British ornithology, as well as further afield. Nicholson played a significant role, with others, in establishing many of the nature conservation and research bodies that we know so well today (British Trust for Ornithology, 1932; Wildfowl and Wetlands Trust, 1946; International Union for Conservation of Nature, 1948; World Wide Fund for Nature, 1961). The Edward Grey Institute at Oxford was his and Bernard Tucker’s brainchild. As a civil servant he oversaw the establishment of the (then) Nature Conservancy (1949) which allowed for the legal protection of National Nature Reserves and Sites of Special Scientific Interest, and he was head of the conservancy from 1952 to 1966.

Richard Manliffe Barrington (1849-1915): We conclude this overview by considering an Irish naturalist whom we believe worthy of inclusion, for his era, in any list of innovative international ornithologists, but not mentioned by Birkhead *et al.* (2014). Moreover, it is perhaps surprising that Barrington’s work has not been cited either in two recent major works dedicated solely to the study of bird migration (Newton 2008, 2010). Barrington was born at Fassaroe, County Wicklow, went to Trinity College, Dublin, and was active in natural history throughout his life. His most enduring work relates to bird migration, especially his organizing of the scheme where lighthouse and lightship keepers recovered and returned a wing and a leg of any birds killed at the lights. In the latter part of the 19th century the state of knowledge of bird migration was fragmentary. John Cordeaux and John Harvie-Brown, from England and Scotland respectively, began a study in 1879 using light-keepers in Britain as the source of their material. The results encouraged them to continue and expand the project and the British Association for the Advancement of Science set up a Committee on Migration in 1880, and Barrington (and A.G. More) became a member. Record schedules were first sent to Irish light-keepers in autumn 1881, and the British Association committee published annual reports from 1881 to 1887. The committee then discontinued the reports in order to analyze the results, and William Eagle Clarke was given the task.

However, Barrington was of the opinion that the work should go on for a longer period of time so that uncorroborated reports could be confirmed by further occurrences, so he financed the project himself until 1897, before analyzing the results with the help of Moffat. This statement appears to have irked the British Association, and Barrington gummed in a ‘note added in press’ to the preface page of his magnum opus, *The Migration of Birds* (1900) stating that nothing in his publication was intended to reflect upon the work of the association or that of Clarke. Barrington was simply doing what any good researcher should; he was sceptical of reports until adequate proof was produced. It is perhaps ironic in the circumstances that Barrington published his analysis in 1900, twelve years before Clarke published his in *Studies in Bird Migration* (1912) (Hutchinson 1997).

References


*Pat Smiddy & Tom Kelly*
Nature’s Conscience: the life and legacy of Derek Ratcliffe


Derek Almey Ratcliffe was one of Britain’s greatest field naturalists who made a significant contribution to the science and practice of nature conservation in Britain. His efforts, in particular, in identifying the role of agricultural chemicals in the population decline of the Peregrine Falcon in the 1950s and 1960s was crucial in the eventual banning of those chemicals and the subsequent recovery in the numbers of this species and other birds of prey. Despite receiving national and international awards for his seminal contributions on British flora and fauna and their habitats, he was never honoured by the British State. However, his many friends and former colleagues have recently published a fine book detailing his many achievements, his extraordinary life and his outstanding legacies. There are 30 chapters and 30 contributors, divided into five themes celebrating the many facets of his life. Each chapter ends with a comprehensive list of references and each theme ends with an article written by Derek himself; these are reproductions of his writings as they originally appeared.

The first theme in the book (Derek Ratcliffe, The Young Naturalist) is the shortest at 35 pages. John and Hillary Birks and Des Thompson write an absorbing account of his early days as a budding naturalist and those who influenced him most (principally Ernest Blezard and Roy Clapham), which is followed by John Mitchell’s account of his National Service and excursions of the Catterick Field Club formed during that Service.

The second theme in the book (Derek Ratcliffe, The Botanist), encompassing chapters 4 to 10 (151 pages), is a comprehensive account of bogs, mires and mountain plants and their ecology. While there may not be much here to interest the birdwatcher (Chapter 6, for example, on Bryology in Scotland is a challenging read), there is a wealth of information on bryophytes. Ratcliffe visited Ireland in 1961 and 1963 to study Irish mountain vegetation and to search for Killarney Fern *Trichomanes speciosum* (he had a life-long fascination with the filmy ferns; Wilson’s Filmy-fern *Hymenophyllum wilsonii*, Tunbridge Filmy-fern *Hymenophyllum tunbrigense*, and especially Killarney Fern). During those visits he found *Plagiobizala carringtonii* in Mayo, a liverwort new to Ireland. He also visited Ireland in 1967 (when he found *Geocalyx graveolens*, a moss new to Ireland, near Waterville and several new colonies of Killarney Fern), again in 1983 (in search of Killarney Fern colonies) and finally in 1999 (when he was struck by the marked changes in recent land use resulting in serious habitat loss, as had already occurred in Britain). A map on page 127 shows that Ratcliffe contributed new bryophyte county records for 11 counties in Ireland during these visits. Superb photographs of mosses and liverworts accompany several chapters.

The theme section on Derek Ratcliffe, The Ornithologist, has eight chapters (138 pages), all of which are relevant for those interested in birds. They outline his attraction for mountains and moorlands and especially the birds that live in those wild and beautiful places. While there are obvious difficulties in reaching the nests of cliff-nesting birds, ground-nesting birds present a different challenge because of the elusive nature of the adults and the cryptic colouring of the eggs, which makes them particularly difficult to find on large expanses of moorland. But Ratcliffe was equally adept at scaling cliffs and trees in search of eyries of Peregrine Falcon, Golden Eagle, Raven and Merlin as he was at finding ground nests of Greenshank, Dotterel and European Golden Plover. Usually long, exhausting days in the field were followed by meticulous recording of the days’ events, and letter writing to friends, colleagues and correspondents. Chapter 14, by Jeremy Greenwood and Humphrey Crick, outlines Ratcliffe’s involvements in Peregrine surveys, prompted initially in 1960 by the concerns of pigeon fanciers at the perceived depredations by Peregrines on homing pigeons, which led to a series of censuses of the British Peregrine populations, organised by Ratcliffe himself. On page 258 we are told that it was intended to census Ireland in 1962 “to find out whether the decline had set in there”. However, he recommended against this because it would detract from coverage in Britain, but the hope was that data from a few sample areas might be obtained. It subsequently proved impossible to gather enough useful information from Ireland, even on a sample basis. Ian Newton, in Chapter 15, details Ratcliffe’s crucial role in linking organochlorine pesticides with the decline in raptorial birds, and especially Peregrines. The national surveys in Britain showed that there was a serious decline in the Peregrine population there and the focus shifted to establish why the decline was so serious and so rapid. Ratcliffe first noticed broken eggs in Peregrine eyries in 1958 and wondered if their shells had become thinner. Having examined a large sample of Peregrine eggs in historical egg collections, as suggested by Desmond Nethersole-Thompson (a good friend), he made the critically important discovery that eggshell thickness had in fact...
decreased by around 20%, so the eggs were weak and broke easily. It also turned out that pesticides used as seed dressing were extremely toxic to birds, and they died in large numbers. The raptorial birds that preyed on them declined because of direct mortality and the sub-lethal effects of the organochlorine pesticides. Restrictions on the use of these agricultural chemicals in the 1960s and subsequently were followed by a recovery in breeding numbers of birds of prey.

The 145-page section on Derek Ratcliffe, The Conservationist, describes his work in that capacity and his time as Chief Scientist of the Nature Conservancy Council, responsible for advising the British Government on nature conservation. He had joined the Toxic Chemicals and Wildlife Division of the Nature Conservancy at Monks Wood in Cambridge in 1963 and he was responsible for the Nature Conservation Review in 1965, which was to re-appraise candidate sites for an expansion of the National Nature Reserve network. This required an ambitious programme of survey work and analysis of data, culminating in the publication in 1977 of the two-volume *Nature Conservation Review*, a definitive account of sites of nature conservation interest in Britain. In the 1980s he became increasingly concerned about the impacts of the massive programme of upland afforestation, begun after the Second World War in Britain to fulfill a strategic need for a national timber resource. He was especially concerned about the extent and nature of afforestation in the Southern Scottish Uplands, not only because of the loss of moorland habitat and the consequent impact on upland birds, but also because of the potential effects of forestry on freshwaters. The account in Chapter 23 of efforts to limit the impacts of large-scale afforestation of monoculture plantations in the Flow Country of Caithness and Sutherland in Scotland is particularly riveting and chronicles the difficulties encountered in facing down politicians and landed interests and in limiting industrial-scale afforestation on sensitive sites. While there were successes, there were also repercussions, and the Nature Conservancy Council (as the Nature Conservancy had become) was dismembered in July 1989 into three independent country agencies.

The final theme in the book on Derek Ratcliffe, The Communicator, outlines his skill at communicating, through his constant letter writing to friends, colleagues and correspondents, and especially through his many publications, aimed at a wider audience. Peter Marren, for example, on page 477, states that he once received a handwritten, five-page letter from him after he had walked all day on the fell, probably one of several letters that he wrote that night. His ease of writing and the fluency of his style are very obvious in the books he wrote. His Poyser monographs on *The Peregrine Falcon* (1980 & 1993) and *The Raven* (1997) are absolute classics, are clear, concise and well written and are copiously illustrated with many of his own superb photographs. All his other books, for example, *Birdlife of Mountain and Upland* (Cambridge University Press 1990) and his New Naturalist volumes, *Lakeland* (2002) and *Galloway and the Borders* (2007), are equally informative, even for those unfamiliar with the landscapes he so lovingly writes about. He was also on the editorial board of the New Naturalist series and was editor of several of those books, including *Ireland* (1999) by David Cabot. One chapter in his autobiography, *In Search of Nature* (published in 2000 by Peregrine Books) gives useful information on his travels in Ireland. In his later years he forsake ‘battered Britain’ annually from 1991 to 2004 (apart from 2000) for the unspoiled wilderness of Lapland in Norway, which led to another Poyser book, *Lapland, A Natural History*, published in May 2005, soon after his death. His last book, *Galloway and the Borders* (2007), was finished just four days before he suffered a fatal heart attack in his sleep while on his way to Lapland (in May 2005). A full bibliography of Derek Ratcliffe is included as the last chapter in the book.

*Nature’s Conscience, the life and legacy of Derek Ratcliffe* is a fantastic testament to the man and is great value at £30/£23 (hardback/softback).

There is a much-used saying saying in Irish, ‘ní bheidh a leithéad ann arís’ (‘we shall not see his like again’); this is very definitely true in respect of Derek Ratcliffe. He was an extraordinary man, hence the title: he was indeed nature’s conscience.

*Declan McGrath*
The nature of Ireland as an Island, gives rise to communities of animals and plants that are subtly different from those of Britain. Sometimes these differences inspire us to study our unique wildlife communities more closely and sometimes they frustrate us, usually through some level of despair at having fewer species to look at. As naturalists in Ireland, many of us recognise these differences and postulate on why the differences exist and how they may have come about. This book is an output from a series of multidisciplinary meetings held in Cork in 2012 and 2013 and it sets about documenting a range of studies, theories and collections of evidence which explore these topics of our island bio-geography and its effect upon the wildlife around us. An earlier Mind the Gap volume (Irish Naturalists’ Journal, 2008) delved into the starting point of these topics, but this collection of accounts brings up to date information to the fore, utilising more recent research and presenting new thinking.

With eleven papers and an introductory section it is a modest sized volume but the information contained is very wide ranging. The editors have largely stuck to the task of keeping the material highly relevant to island bio-geography, species range and colonisation. Only the paper on Cranes deviates from the primary subject, though this is no less welcome as it brings a contrasting angle and approach to documenting species occurrence.

The papers include two relating to mammals, three on birds, two on communities and genetics, two on climate and environment, one with a botanical focus and one examining communities of fish. The approaches taken to look at these subjects include as diverse methods as the use of archaeological material, the fossil pollen record and paleo-botany, the use of bird surveys and atlases and the use of cultural material, place names and early manuscripts through to the review of genetic analyses in shedding light on species origins and diversity. This may sound to the lay reader to have the potential to be heavy going but in reality, the accounts are both accessible and illuminating, albeit with an academic tone which one might expect. The texts are not filled with, or punctuated by, statistical analyses. Graphs, tables and charts are generally used sparingly while maps, as might be expected, are frequently used and generally well presented and informative.

For the reader with an ornithological bent there is plenty of food for thought. The origins of our avifauna are well covered in a short but incisive paper and may help us all become more informed as to the reasons we lack certain species and not others. The use of the most recent Bird Atlas shows its value in the paper on the fate of bird colonists and is able to inform discussion on the fortunes of those species in more recent decades. Without it, this paper may not have been possible to write. The Crane account, while arguably not being core to the subject of biogeography, is still a fascinating read and clearly the result of dedication to the task of building a strong evidence base.

This simply presented book stems from the work of many in researching and presenting their findings, and I can heartily recommend it to anyone with an interest in the origins of Ireland’s wildlife, and in particular to those of us who look to either confirm or put right our long held beliefs on why things are where they are. It would be surprising if anyone could sift through the book and not find something to spark their interest, and to most it should illuminate their view of Ireland’s wildlife communities.

*Alan Lauder*