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# IRISH WETLAND BIRD SURVEY: WATERBIRD STATUS AND DISTRIBUTION 2009/10 – 2015/16

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An Roinn Cultúir, Oidhreachta agus Gaeltachta
Department of Culture, Heritage and the Gaeltacht

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Front cover, small photographs from top row:

**Coastal heath**, Howth Head, Co. Dublin, Maurice Eakin; **Red Squirrel** *Sciurus vulgaris*, Eddie Dunne, NPWS Image Library; **Marsh Fritillary** *Euphydryas aurinia*, Brian Nelson; **Puffin** *Fratercula arctica*, Mike Brown, NPWS Image Library; **Long Range and Upper Lake**, Killarney National Park, NPWS Image Library; **Limestone pavement**, Bricklieve Mountains, Co. Sligo, Andy Bleasdale; **Meadow Saffron** *Colchicum autumnale*, Lorcan Scott; **Barn Owl** *Tyto alba*, Mike Brown, NPWS Image Library; **A deep water fly trap anemone** *Phelliactis* sp., Yvonne Leahy; **Violet Crystalwort** *Riccia huebeneriana*, Robert Thompson

Main photograph: **Light-bellied Brent Goose** *Branta bernicla hrota,* Brian Burke.

# Irish Wetland Bird Survey: Waterbird Status and Distribution 2009/10 – 2015/16

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Keywords: Wintering waterbirds, Population estimates, Population trends, 1% thresholds, Site assessment, Distribution.

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# Contents

## Executive Summary

Annual monitoring of the distribution and abundance wintering waterbirds is carried out in the Republic of Ireland by the Irish Wetland Bird Survey (I-WeBS). This monitoring programme, which commenced during the 1994/95 season, is funded by the National Parks and Wildlife Service and coordinated by the I-WeBS Office based at BirdWatch Ireland. I-WeBS monitors coastal wetland sites together with inland lakes, turloughs, rivers and callows. As I-WeBS is unsuitable for monitoring some waterbird habitats (e.g. non-estuarine coastline), data from the Non-estuarine Coastal Waterbird Survey (NEWS) and a number of species-specific surveys were integrated with I-WeBS data to estimate national population size and trends for a range of waterbird species. I-WeBS, together with these other surveys, therefore provides the principal tool used in the monitoring and conservation of wintering waterbird populations in Ireland and the wetlands upon which they rely. Importantly these data underpin reporting under Article 12 of the EU Birds Directive and thus for monitoring and assessing the efficacy of the Directive for the conservation of birdlife on a national and European scale.

This report provides a single comprehensive account on the current population status of wintering waterbirds and their key sites in the Republic of Ireland for the period 2009/10 – 2015/16. A total of 694 sites were surveyed, 345 of which were covered in three or more seasons. Detailed accounts are provided for 72 regularly-occurring waterbird species; comprising 40 species within the 'wildfowl and allies' category (swans, geese, ducks, and their allies), 22 wading bird species, and 10 gull species. For each regularly-occurring waterbird species, a national (and all-Ireland) population estimate is provided. Furthermore, it was possible to calculate population trends for 34 of these species. Summary data are provided for an additional 63 non-regularly-occurring waterbird species.

The total number of waterbirds wintering in Ireland was estimated at 757,910 waterbirds for the period 2011/12 – 2015/16, which represents a 15% decline since the period 2006/07 – 2010/11. Of the 19 wildfowl and ally species that were assessed, 17 species are showing declining trends over the recent five year period, with Scaup showing the greatest decline (>80%). Over the recent 22-year period, three species (Goldeneye, Pochard and Scaup) have declined by >50% and a further seven species have declined by 25–50% (Mallard, Pintail, Red-breasted Merganser, Shoveler, Tufted Duck and Wigeon). Conversely, Little Egret and Gadwall have increased by >50% over the 22-year period, and Grey Heron and Little Grebe have increased by 25–50%. Light-bellied Brent and Barnacle geese populations have increased in the long-term but shown population declines in the short term. Greenland White-fronted Goose, Icelandic Greylag Goose and Bewick Swan populations show continued declines while Whooper Swan have increased across all time periods assessed.

Nine of the 10 wader species assessed are showing declining trends over the recent five year period, with Knot showing the greatest decline (48%). Four wader species have declined by >50% over the 22-year period (Dunlin, Grey Plover, Lapwing and Purple Sandpiper), while three others (Black-tailed Godwit, Greenshank and Sanderling) have increased by >50% during the same period. It was not possible to calculate population trends for gull species.

Population data were also used to calculate thresholds relating to site importance at both the national and international (flyway) level. A total of 47 sites supported numbers of international importance and a further 85 sites supported numbers of national importance. Cork Harbour, Dublin Bay, Dundalk Bay, Lough Swilly, and Wexford Harbour and Slobs each supported over 20,000 wintering waterbirds, a criteria under the Ramsar Convention used to identify sites of international importance.

This report also includes an assessment of the current pressures and predicted future threats facing Ireland's wintering waterbirds. Based on this assessment, the most significant pressures and threats are: climate change, energy production (e.g. wind farms), hunting, recreational and other disturbance, shellfish harvesting and aquaculture, as well as afforestation, bycatch, and mixed source water pollution/eutrophication. A synthesis of these pressures and threats is included, highlighting information gaps where applicable.

## Acknowledgements

This report is the product of tens of thousands of hours work by a large number of committed observers across the country, comprised primarily of volunteers, as well as professional conservation staff of the National Parks and Wildlife Service and BirdWatch Ireland. The success of I-WeBS is owed to the hard work, passion, and time they devote to monitoring Ireland's wintering waterbirds in their local areas, which ultimately allows us to know what is happening at both local and national level. This publication is therefore dedicated to every waterbird counter, both current and past, that has contributed to the Irish Wetland Bird Survey (I-WeBS) and additional waterbird surveys across the island of Ireland. Each valued counter is listed in Appendix 1. The resulting waterbird databases are an outstanding resource. The National Parks and Wildlife Service and BirdWatch Ireland are extremely grateful and proud to lead on publishing this latest report on the status and distribution of Ireland waterbirds, especially in the 25th Anniversary season of I-WeBS.

We are grateful to the British Trust for Ornithology (BTO) for providing data for the two cross-border sites, Lough Foyle and Carlingford Lough. We thank the Irish Brent Goose Research Group (Graham McElwaine & Kendrew Colhoun), the Irish Whooper Swan Study Group (Graham McElwaine) and the Greenland White-fronted Goose Study Group (Alyn Walsh) for data and input. The Irish Air Corps provided pilots and aircraft for aerial censuses. Additional special thanks go to the various people who kindly provided photographs to accompany the species accounts, and to Olivia Crowe and Helen Boland for their advice and input throughout.

# 1 Introduction

Overwintering waterbirds are one of the most conspicuous and numerous elements of the Irish avifauna. Ireland has an abundance of wetlands, both coastal and inland, and while these are biodiversity-rich habitats year-round, numbers of birds surge at these wetlands each autumn with the arrival of migratory waterbirds. The majority of species that occur in Ireland migrate from breeding grounds in the north and north-west (principally Canada, Greenland and Iceland) or from the north-east (Scotland and northern continental Europe, including Scandinavia, Russia and Siberia) (Wetlands International, 2012). Ireland's geographic position places it along an important migratory route – the East Atlantic Flyway – with birds travelling from northern breeding grounds to Ireland and to other important wintering areas farther south. Ireland's relatively mild climate, moderated by the influences of the Atlantic Ocean and Gulf Stream, together with its diversity and abundance of productive wetland habitats, make it particularly attractive for wintering waterbirds, especially when other parts of northwest Europe are frozen over. While many waterbirds remain in Ireland for the duration of the winter, others occur on passage before migrating further south.

The importance of Ireland's wetlands for wintering waterbirds has long been recognised due to early national surveys undertaken during the 1970s (Hutchinson, 1979) and repeated during the 1980s (Sheppard, 1993). In 1994/95, the Irish Wetland Bird Survey (I-WeBS) was initiated. It is funded by the National Parks and Wildlife Service and coordinated by the I-WeBS Office based at BirdWatch Ireland. The primary objective of I-WeBS is to monitor the numbers and distribution of waterbird populations wintering in the Republic of Ireland, and the survey focuses on wintering waterbirds, as opposed to autumn and spring migrants. I-WeBS runs in parallel with the UK Wetland Bird Survey (WeBS), which covers Britain and Northern Ireland.

I-WeBS monitors coastal wetland sites together with inland lakes, turloughs, rivers and callows. However, the survey methods are unsuitable for some waterbird species that utilise other habitats, such as non-wetland habitat (e.g. terrestrial grassland), non-estuarine coastline, small and ephemeral wetlands, and the open sea; the latter of which is difficult to monitor from land-based surveys. Consequently, a number of additional, taxa-specific surveys are conducted on an annual or multi-annual basis for Bewick's Swan *Cygnus columbianus bewickii*, Whooper Swan *Cygnus cygnus*, Barnacle Goose *Branta leucopsis*, Icelandic Greylag Goose *Anser anser*, Greenland White-fronted Goose *Anser albifrons flavirostris* and Light-bellied Brent Goose *Branta bernicla hrota*. These surveys are coordinated largely by specialist working groups and better account for the number and relative abundance of these species, than I-WeBS data alone. In addition, the Non-estuarine Coastal Waterbird Survey (NEWS) is undertaken approximately every nine years and provides data on the abundance and distribution of waterbirds along non-estuarine coasts not monitored during I-WeBS counts, and particularly important for species such as Ringed Plover *Charadrius hiaticula*, Sanderling *Calidris alba*, Purple Sandpiper *Calidris maritima* and Turnstone *Arenaria interpres*.

Collectively, the waterbird data collected have been used to provide a basis for site selection and designation of Special Protection Areas (SPAs) under the European Birds Directive (2009/147/EC), and for reporting on the long-term monitoring of these wetland sites. In addition, these data enable the population size and trends of a range of waterbird species to be described. Further, the results often form the basis for informed decision-making by planners, conservationists and developers on the sustainable use and management of wetland habitats and their waterbird communities. I-WeBS, together with the targeted surveys, therefore provide the principal tools used in the conservation of wintering waterbird populations in Ireland and the wetlands that they rely upon.

This report provides a summary of wintering waterbird data collected from 2009/10 to 2015/16 inclusive, following on from earlier reports (Delany, 1996, 1997, Colhoun, 1999, 2000, 2001a, 2001b, Crowe, 2005, and Boland & Crowe, 2012). Overviews of results for all seasons covered by this report are presented elsewhere (Crowe *et al*., 2011, 2012b; Boland *et al*., 2014; Crowe *et al*., 2016; Lewis *et al*., 2016; Lewis *et al*., 2017b; and Burke *et al*., 2018a). However, this report, while combining information

on site assessment and waterbird numbers and trends, aims to provide a single comprehensive account on the current status of waterbirds and their key sites in the Republic of Ireland.

# 2 Methods

## 2.1 Waterbirds covered by the scheme

The term 'waterbirds' is defined as birds that are ecologically dependent on wetlands (Ramsar Convention, 1971) and is synonymous with *waterfowl* (Wetlands International, 2012). A waterbird population is a distinct assemblage of individuals of a species, where there is little immigration or emigration, occasionally resulting in a definitive gene pattern and thus recognition as a unique species or subspecies. There is often overlap of populations at some stage of the annual life-cycle, but most species tend to remain isolated in their flyways (Wetlands International, 2006). For the purposes of this report, the term *waterbird* includes species in the families Anatidae (swans, geese and ducks), Gaviidae (divers), Podicipedidae (grebes), Rallidae (Water Rail *Rallus aquaticus*, Moorhen *Gallinula chloropus* and Coot *Fulica atra*), Haematopodidae (oystercatchers), Charadriidae (plovers, lapwings), Scolopacidae (sandpipers, curlews, woodcocks, phalaropes) and Laridae (gulls and terns, excluding Kittiwake *Rissa tridactyla*). It also includes Cormorant *Phalacrocorax carbo*, Shag *Phalacrocorax aristotelis*, Little Egret *Egretta garzetta*, Grey Heron *Ardea cinerea* and Kingfisher *Alcedo atthis* (with no species account provided for the latter). While counts of gulls and terns are optional under I-WeBS, they are encouraged.

Note: the taxonomy and nomenclature followed in this report follows that of the *List of birds of the European Union* (EU Commission, 2018), as per reporting requirements under Article 12 of the Birds Directive for the period 2013-2018.

## 2.2 The Core Count Scheme

I-WeBS counts are undertaken by a network of skilled amateur ornithologists and professional staff of the partner organisations. Large sites require a team of counters and participants are encouraged to try to coordinate counts of adjacent sites between which waterbird movements are likely to occur, hence the scheme is facilitated on a local basis by voluntary Local Coordinators.

Counts conducted for I-WeBS are known as core counts, and are undertaken once per month between September and March inclusive. Count dates are pre-determined in order to maximise coordination of counts across the entire country, and thereby minimise duplication. While counts are recommended in all seven months, this is not always achieved so emphasis is put on achieving monthly counts during the mid-winter period of November to February when waterbird numbers of most species reach their peak. Counters are particularly encouraged to undertake counts in January as these totals contribute to the International Waterbird Census each year, coordinated by Wetlands International.

It is recommended that counts are conducted over a short time period (up to three hours) on recommended dates, or on the nearest appropriate date, and that there is at least a three week gap between successive count dates. This flexibility is important to allow for local conditions such as counter availability and weather conditions. Further, it is recommended that counts of coastal sites be carried out at or near high tide. For these reasons, dates on mid-month weekends with high tides as close to midday as possible are usually selected and, given differences in tidal cycle regimes around Ireland, counts for south and west coast sites are scheduled one week later than those of east coast and inland sites.

Occasionally, extra counts within some months are submitted for a site. In this situation, the count that was conducted on or near the pre-determined date is selected as a core count, and all others are thereafter referred to as duplicate counts.

## 2.3 Count methods

I-WeBS uses the well-established technique of counting the numbers of waterbirds at wetland sites by the 'look-see' method (Bibby *et al*., 1992) which involves counters recording the number of individuals of each waterbird species within their defined count area during each monthly survey.

Large sites are subdivided into smaller count units (subsites) to facilitate coverage by an individual or small group of counters. Large sites usually require a team of counters to ensure that counts are conducted over a relatively short period (within three hours), thus minimising duplicate counting of birds, particularly for those species that move extensively. Data for each count unit covered are submitted separately on specially designed forms, or are submitted on-line.

In addition to ground-based core counts, aerial surveys are sometimes undertaken to facilitate coverage of large and inaccessible sites over a short period of time (usually less than two hours per site). Five sites have been covered by aerial survey between November and January on a regular seasonal basis: the Shannon and Fergus Estuary, Lough Derg, Shannon Callows, Little Brosna Callows and River Suck Callows. Lough Ree is included occasionally. Aerial surveys have some limitations however. For example, while all birds may be seen, the accuracy of counts is sacrificed due to the difficulties with identification of the smaller and more scattered species, along with the necessity to provide rapid estimates, particularly where large mixed flocks are concerned.

## 2.4 Additional related surveys

I-WeBS monitors the larger coastal wetland sites together with inland lakes, turloughs, rivers and callows. However, the resulting dataset is incomplete for some waterbird species that utilise other habitats, such as non-wetland habitat (e.g. grassland used by many species, particularly foraging geese and swans), non-estuarine coastline, small and ephemeral wetlands, and the open sea; the latter of which is obviously difficult to monitor from land-based surveys (Crowe, 2005). Accordingly, a number of additional, taxa-specific surveys are conducted on an annual or multi-annual basis. These include:

International Migratory Swan Census: Coordinated international censuses of the two migratory swan species that winter in Ireland, Bewick's Swan and Whooper Swan, have been organised at four or five-yearly intervals since 1986. This census is carried out over one weekend in January, which usually coincides with the dates chosen for the mid-winter International Waterbird Census. Counts in the Republic of Ireland are organised under the auspices of I-WeBS and the Irish Whooper Swan Study Group (IWSSG).

International Census of Greenland Barnacle Goose: Separate aerial surveys of wintering Barnacle Goose from the north-east Greenland breeding population have been conducted in spring (late March/ early April) every four to five years, since 1956/57. These geese predominantly overwinter on offshore and nearshore islands along the west coast of Ireland. A few regularly-used mainland sites are usually ground-counted simultaneously.

Icelandic breeding Goose Census: All sites known to support Icelandic Greylag Goose are surveyed annually over one weekend in November. Known feral flocks are not included in associated population estimates. From November 2018, Pink-footed Goose was included as a target species in this survey in the Republic of Ireland.

Greenland White-fronted Goose Census: This species is concentrated at relatively few sites during the winter and as many are non-wetland sites, this species is not well monitored using I-WeBS counts alone. Annual censuses of Greenland White-fronted Goose are carried out in Ireland and Britain during spring and autumn each season by NPWS Staff and members of the Greenland White-fronted Goose Study Group.

All-Ireland Light-bellied Brent Goose Census: Special surveys of Light-bellied Brent Goose (from the high arctic, north-east Canadian breeding population) have been in operation since 1996, with winter counts in Ireland going back to 1960. These are organised by the Irish Brent Goose Research Group (IBGRG). Currently, annual surveys are carried out at all well-known sites.

Non-estuarine Coastal Waterbird Survey (NEWS): Very few tracts of open coastline are surveyed during core counts, largely due to manpower constraints. Several waterbird species, particularly those that use sandy, shingle and rocky shore substrates or inshore waters, are therefore poorly censused. The first thorough non-estuarine waterbird census was conducted in the Republic of Ireland during the 1997/98 season (Colhoun & Newton 2000), a second census was carried out during 2006/07 (Crowe *et al.*, 2012a) and a third during the 2015/16 season (Lewis *et al*., 2017a).

Special census data have been included in this report where appropriate, and the sources of these data are gratefully acknowledged.

## 2.5 Data analyses and interpretation

This report presents individual species accounts for all regularly-occurring waterbird species recorded in the Republic of Ireland during winter. This report follows on from the previously reported period (2001/02 – 2008/09) (Boland & Crowe, 2012), in that site assessment data are provided for the period 2009/10 – 2015/16, although summary data (e.g. means and peaks) relate to the 'current period' defined as the recent five-year period 2011/12 – 2015/16. For waterbird species, 'regular' is defined here as a species that occurred at a site in five out of the seven seasons assessed (i.e. between 2009/10 – 2015/16). Various levels of data are presented and the following sections provide information as to how these data were compiled.

### 2.5.1 Waterbird population estimates

Obtaining estimates of the total number of waterbirds that winter in Ireland is important for a number of reasons. In addition to the scientific requirement to obtain such estimates and understand how numbers may change over time (see 'trends' section below), as a member of the European Union and signatory to EU Directive 2009/147/EC (the 'Birds Directive'), Ireland is obliged to monitor its waterbirds and provide for their conservation. As a consequence, population estimates based on I-WeBS and other data are an important component of Ireland's reporting process (Article 12) to Europe.

Burke *et al*. (2018b) provide updated population estimates for a total of 44 waterbird species, based on calculations of I-WeBS data together with data from more targeted surveys (e.g. goose and swan species censuses). All-Ireland estimates were calculated using a five-year mean for the period 2011/12-2015/16; consistent with the approach used previously in Ireland (e.g. Crowe & Holt, 2013; Crowe *et al*., 2008) and also consistent with the current data period reported here. Full details describing the analysis and modelling procedures can be found in Burke *et al*. (2018b). Note that population estimates are not generated for species that are currently not monitored adequately by I-WeBS methodology. These include species that can occur considerable distances offshore, such as the divers and seaducks, skulking species such as Moorhen, Water Rail and Snipe, and gulls which are not routinely counted.

### 2.5.2 Trends and annual indices

As the same sites are not necessarily covered by I-WeBS in all months and seasons, relative changes in waterbird numbers cannot be determined simply by comparing the total number of birds counted each season. Statistical modelling techniques have therefore been developed that enable relative changes in numbers to be estimated from incomplete datasets.

The first stage in the analysis was therefore to produce a modelled (imputed) count estimate where counts for a given month were missing or where a count was flagged as poor quality (e.g. due to poor visibility). To minimise the level of imputation and improve the overall analysis, only sites which had good count coverage (i.e. over 50% of occasions across the entire period) were included (after Underhill & Prŷs-Jones, 1994). The Underhill Index (Underhill & Prŷs-Jones, 1994) modelling approach was used to impute missing/poor quality counts, which uses a multiplicative log-linear index model with site, year and month factors (Underhill & Prŷs-Jones, 1994). The resulting dataset for the subset of sites was therefore complete for all months and seasons and comprised a combination of actual count data and imputed count data. For each species, counts were then summed over all months and over all sites to provide a season total. The season counts were then indexed by constraining the value for the first season (1994/95) to 1, and totals for all other seasons were expressed relative to this baseline. It is important to assess population trends using data that represents the period when the population was at its most stable. For all species other than wading birds, season totals are calculated by summing all monthly data between September and March. For wading birds, season totals were constrained to the months November to February.

The mean annual change was then expressed for each species as the slope of a line of best fit through the log of indices. However this method does not provide any details on the pattern of change (i.e. direction, magnitude or timing). Therefore the annual indices were modelled using a Generalised Additive Model (GAM). GAMs are non-parametric and flexible extensions of the generalised linear model which fit a smoothed trend to the annual indices. Count data were assumed to follow independent Poisson distribution with 0.3T degrees of freedom (e.g. after Atkinson *et al*., 2006). The resulting smoothed count data were then indexed as above. The GAM methodology and resultant smoothed indices allow for the calculation of proportional change in population size between one season and another, and this method was used to calculate the trend values reported, namely the 5-year change, 12-year change, and 22-year change, which is the percentage change in population size across the specified time period using:

$$\text{Change} = ((I_y - I_x) / I_x) \times 100$$

where $I_y$ is the index from the current year and $I_x$ is the index value at the start of the selected time period.

The final result is therefore percentage change in population size across a specified time period. Larger values indicate larger proportional changes in population size; positive values indicating relative increases, while negative values indicate relative decreases over the specified time period.

One final trend assessment was undertaken: 'historical change' (1987 – 2016) for the Republic of Ireland. Population estimates of wintering waterbirds are available from the period 1984/85-1986/87 (Sheppard, 1993), however they were reported at an all-Ireland level. To enable a direct comparison of national population estimates between the current timeframe and the mid-1980s, population estimates were therefore generated for each species for the 1980s period based on the respective proportions occurring during the 2006/07 – 2010/11 period (published in Crowe & Holt, 2013), i.e. these proportions were applied to All-Ireland population estimates generated for the mid 1980s to derive national estimates. A calculation of percentage change (as described above) was then used to compare the derived mid 1980s population estimate and the current national population estimate (in Burke *et al*., 2018b).

Many of the goose and swan species (e.g. Barnacle Goose and Greenland White-fronted Goose) were excluded from the trend analyses described above. Their populations are monitored by their species-specific surveys and in many cases it is assumed that the entire (or close to entire) population is counted. Trends for these species were therefore calculated by a direct comparison of census figures over time. Several other species were also excluded from trend analyses. These include elusive species such as Water Rail *Rallus aquaticus*, Moorhen *Gallinula chloropus*, Jack Snipe *Lymnocryptes minimus*, and Snipe *Gallinago gallinago* which have a secretive and retiring nature, and marine species such as Long-

tailed Duck *Clangula hyemalis* and Black-throated Diver *Gavia arctica*, which are difficult to survey from land. Introduced species, including Canada Goose *Branta canadensis* and Greylag Goose *Anser anser* (the naturalised population) have been excluded as there is no conservation requirement to define 1% thresholds for site assessment. Gulls and terns are not considered as they are not routinely counted during core counts, and their distributions are generally too widespread for adequate monitoring by these methods alone.

### 2.5.3 Site importance

For the assessment of site importance, for each site the peak count of each species in each season was compiled, irrespective of month. The mean peak count over the most recent five-season period available (2011/12 – 2015/16) was then calculated; this mean was used to dampen annual fluctuations in numbers. The peak number over the same period was also identified, along with the month(s) in which the peak count was most frequently recorded over this period; estimated only for those sites and seasons where more than three counts had been undertaken.

For each species, wetland sites were then ranked based on the five-year mean peak. Following standard criteria adopted by the Ramsar Convention (Ramsar Convention Bureau, 2000), a site was deemed to support numbers of international importance if it regularly supported 1% or more of the flyway population of one species or subspecies of waterbird – i.e. the five-year mean peak exceeded the 1% flyway (international) threshold. Similarly, a site was deemed to support numbers of national importance if it regularly supported 1% or more of the all-Ireland estimate of a species. The international, or flyway, thresholds were based on AEWA Conservation Status Review 7 (CSR7) (AEWA, 2018 – available on wpe.wetlands.org), while the all-Ireland thresholds are based on Burke *et al*. (2018b).

### 2.5.4 Pressures and threats

We are living in a rapidly changing world. The second half of the 20th century saw unprecedented growth in development, urbanisation and human population size. Unsurprisingly these over-arching changes, along with many and varied inter-related factors, have put the natural environment, including migratory waterbirds, under increasing pressure (IPBES, 2019). Predictions suggest that during the next 100 years, even greater changes will occur and this will put increasing pressure on wetlands and their biodiversity (O'Connell, 2000).

In relation to wintering waterbirds, pressures and threats can be defined as the principal factors responsible for causing individual species to decline, suppress their numbers, or restrict their ranges (DG Environment, 2017). Regular assessments of the pressures and threats facing wintering waterbirds are therefore fundamental to understanding not only why the numbers and distribution of our wintering waterbirds may be changing, but also to identify and inform conservation management measures at various spatial scales (site, region, national, flyway). This report therefore provides the results of a thorough assessment of the current pressures and threats facing Ireland's wintering waterbirds. The assessment relates to the time period as per reporting under Article 12 of the Bird's Directive, in that pressures relate to the six-year period 2013-2018, while future threats relate to the future two reporting periods (i.e. within 12 years following the end of the current period).

The assessment was undertaken for all regularly occurring Annex I waterbird species and other migratory waterbird species that trigger SPA designation nationally (DG Environment, 2017). The term 'pressure' is used to describe issues negatively affecting waterbird populations now and in the recent past, while the term 'threat' describes those issues likely to affect waterbirds populations negatively in the coming years. Pressures and threats were ranked as High (H), Medium (M) or Low (L) based on the following:

- High importance/impact: Important direct or immediate influence and/or acting over large areas (a pressure is the major cause or one of the major causes, if acting in combination with

other pressures, of significant decline of species population, distribution area or deterioration of habitat quality; or pressure acting over large areas preventing the species population of depleted species to expand);

- Medium importance/impact: Medium direct or immediate influence, mainly indirect influence and/or acting over moderate part of the area/acting only regionally (other pressure not directly or immediately causing significant declines);

- Low importance/impact: identified as a pressure or threat but not deemed to be of High or Medium importance.

## 3 Coverage

A total of 694 sites were covered between 2009/10 and 2015/16 (Figure 1), and of these sites, 81 are designated as Special Protection Areas. Of these total sites, 345 sites were covered in three or more seasons. All sites, together with grid references are listed in Appendix 2. A total of 631 sites and 1,775 subsites were covered during the most recent five-season period (2011/12-2015/16) ('current period'), upon which the assessment of site importance in the species accounts is based. Lakes comprise the largest proportion of sites covered (Table 1), followed by river/canals and estuaries.

The largest numbers of sites were covered in Counties Donegal, Galway, Mayo and Cork (Figure 2a), illustrating the abundance of wetlands available in each of these counties. When the area of each county is taken into consideration (Figure 2b), the relatively high coverage in smaller counties reflects an abundance of coastal wetland complexes in Counties Sligo, Waterford and Dublin, and the extensive drumlin lake complexes that are covered in Counties Leitrim, Cavan and Monaghan.

**Table 1** Habitat types of sites covered between 2009/10 and 2015/16

| Site habitat type | Number of sites (% of total sites in parentheses) |
|---|---|
| Lake | 357 (51) |
| River/ canal | 95 (14) |
| Estuary | 69 (10) |
| Unknown habitat | 56 (8) |
| Turlough | 43 (6) |
| Non-estuarine coast | 34 (5) |
| Grassland | 14 (2) |
| Bog/Marsh | 10 (1) |
| Reservoir | 9 (1) |
| Quarry/ gravel pit | 6 (1) |
| Lagoon | 1 (0.1) |

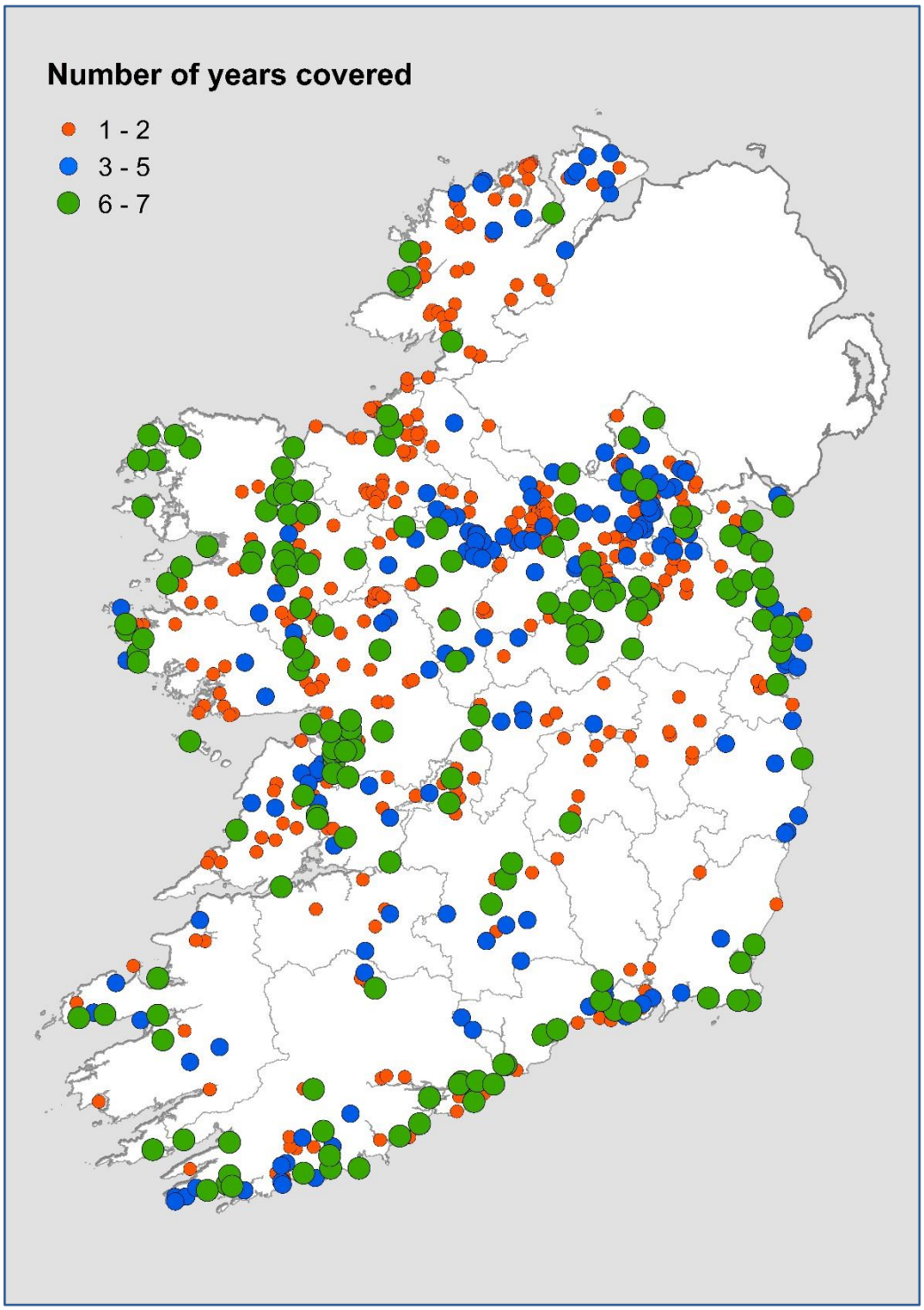



**Figure 1** Site coverage between 2009/10 and 2015/16, illustrating the number of years that each site was covered irrespective of how many times the site was counted in a year.

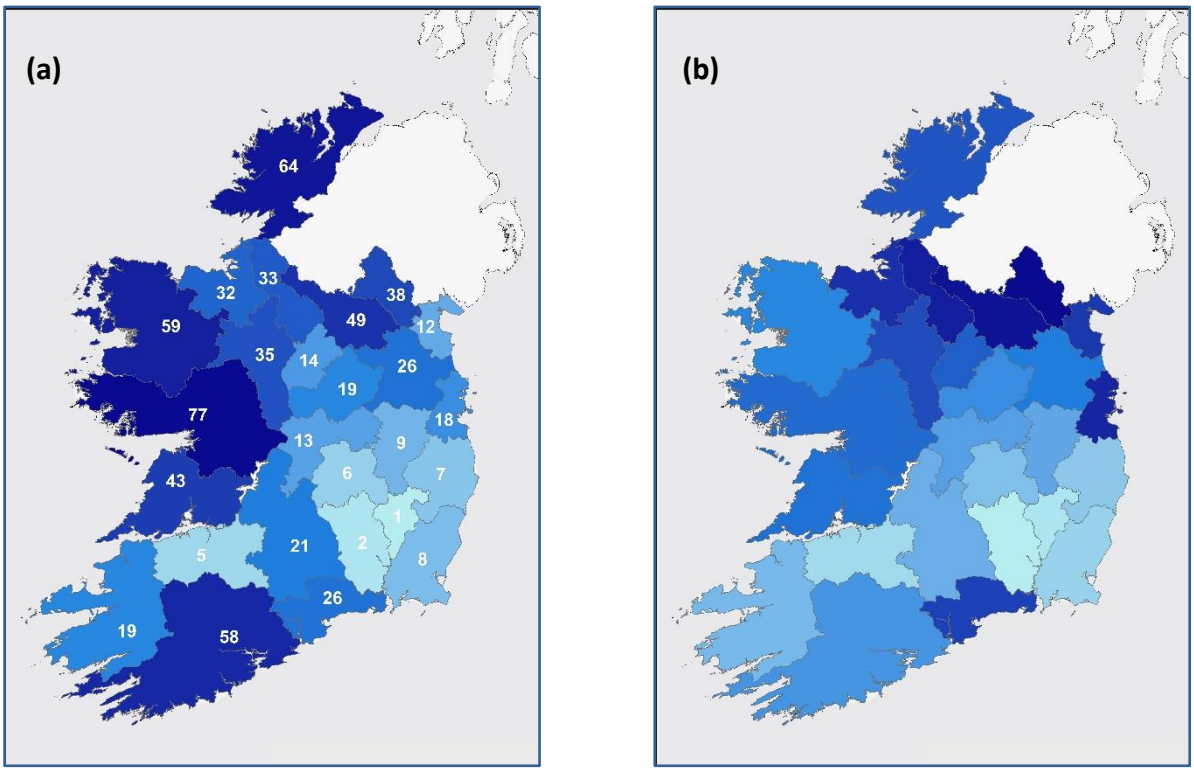



**Figure 2** Site coverage by county, illustrating (a) the total number of sites covered in each county; and (b) the total number of sites covered per county area. Darker shades represent higher coverage in each case

I-WeBS coverage during the period of this report is broadly consistent with previous years, although there are some exceptions, which affect interpretation of data presented:

- Shannon & Fergus Estuary: Due to its size, count coverage of this site, the largest wetland complex in Ireland, is difficult, and is further complicated by access difficulties in many parts. I-WeBS ground-based subsite coverage has varied greatly over the years and subsite cover has dropped considerably since 2010/11 largely due to a lack of willing count volunteers. Aerial survey data are considered to be estimates only, and low-density species can be undercounted or missed. Based on the analyses undertaken it is likely that site totals generated using I-WeBS data largely underestimate the actual number of waterbirds using the Shannon and Fergus site complex.

- Lough Ree: While counts of this third largest lake in the Republic of Ireland (Crowe, 2005) have been consistent over time, some data from the current period have not yet been submitted to I-WeBS.

- Trawbreaga Bay: this site, which is a Special Protection Area, has received poor count coverage during the current period.

# 4 Species Accounts

## 4.1 Layout of species accounts

Species Common English Name / Scientific Name / Irish Name

Population origins: the breeding range of the population that winters in Ireland is shown. For example, Whooper Swan wintering in Ireland come from a population that breeds in Iceland, thus, in the species profiles this is listed as 'Iceland (br)'. Population origins are based on the African-Eurasian Waterbird Agreement (AEWA) Conservation Status Review 7 (CSR7) (AEWA, 2018) and published by Wetlands International (2018) (wpe.wetlands.org). Note that the subspecies is listed only for polytypic species. Where more than one population/race occurs in Ireland during winter the international threshold is shown for both, and the threshold which is used to assess sites of international importance is shown in bold font.

**International threshold:** from Wetlands International (2018).

**All-Ireland threshold:** from Burke *et al*. (2018b)

**Population size (2011 – 2016):**

**All-Ireland**: from Burke *et al*. (2018b).

**ROI**: from Burke *et al*. (2018b).

**Associated with ROI SPA network:** calculated as the proportion of the estimated population that occurred within Special Protection Areas (SPAs).

**Population Change (%):**

**5 year:** Percentage change between 2011/12 and 2015/16.

**12 year:** Percentage change between 2004/05 and 2015/16.

**22 year:** Percentage change between 1994/95 and 2015/16.

**Historical:** Percentage change between the mid 1980s and 2015/16 (please refer to methods).

**Average annual change:** calculated as the slope of the line of best fit through plotted annual indices for the 22-year data period

Please note that this waterbird population data template refers to the majority of regularly-occurring waterbird species included in the report with the exception of:

- (i) selected waterbird species for which data and trends originate from species-specific surveys (refer also to Section 2.5);
- (ii) a few species for which only highly conservative population estimates are produced (e.g. Common Scoter) and thus for which no meaningful population trends can be calculated; and
- (iii) waterbird species which were identified to be 'regularly-occurring' during the time period under consideration, but are either naturalised/feral, scarce, localised or otherwise occurring in numbers that are too low for accurate population estimates and trends to be calculated.

For these species, the population data presented are simply the national population estimate from Burke *et al*. (2018b) or the mean and peak number for the current period 2011/12 – 2015/16.

Summary data for all non-regularly-occurring waterbird species recorded during the I-WeBS period 2011/12-2015/16 are shown in Appendix 3.

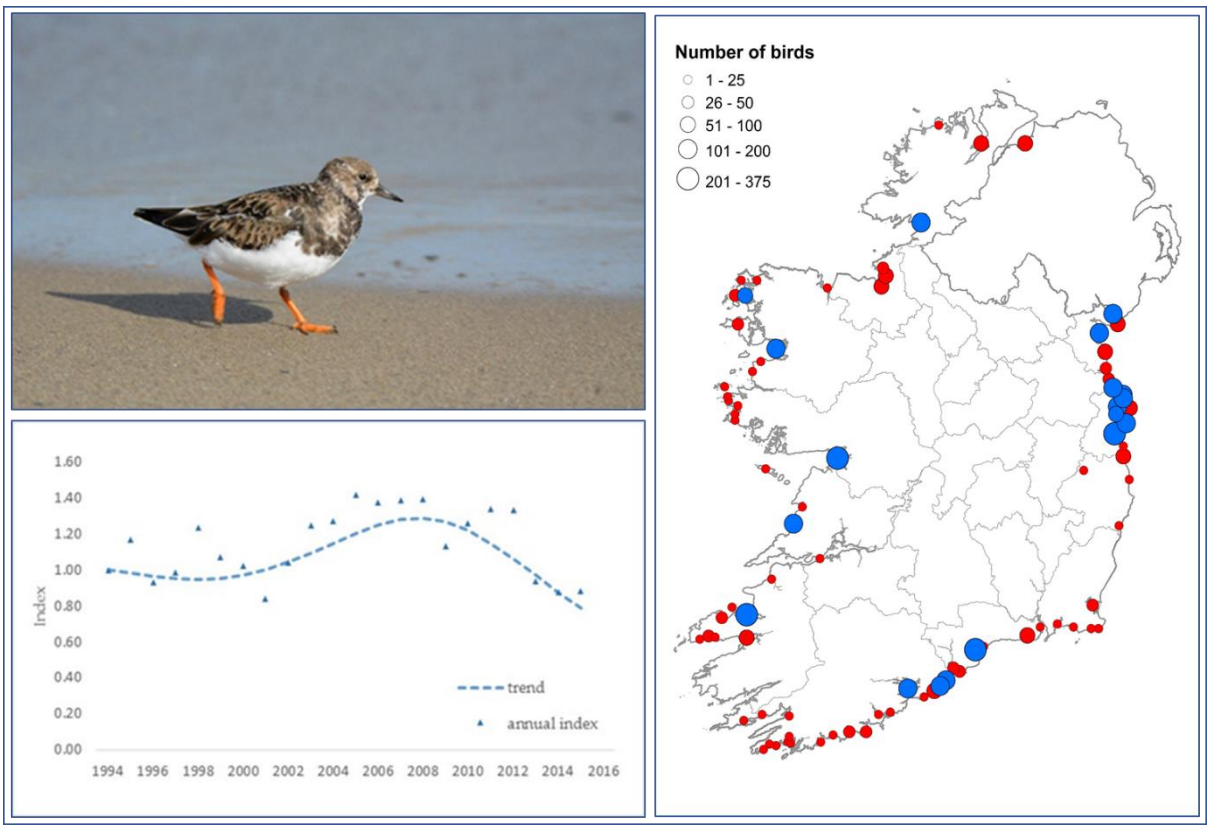



**Figure 3** Sample Figure for Turnstone. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where the species was recorded during the period between 2011/12 and 2015/16 (red circles). The species trend (1994/95 to 2015/16) graph illustrates the annual indices (triangles) together with the smoothed trend (hatched line) (Photo: Brian Burke).

**Table 2** Sample Table for a hypothetical waterbird species, showing sites supporting internationally and nationally important numbers ranked on the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period. The month(s) are given in which the peak count was most frequently recorded over the current period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of international importance** | | | | | | | | | | |
| Dundalk Bay | 5,167 | 2,631 | 3,381 | 3,157 | 4,647 | 3,749 | 3,606 | 3,708 | 4,647 | Oct, Mar |
| Cork Harbour | 1,339* | 2,415* | 2,955 | 2,770 | 2,681 | 3,299 | 3,048 | 2,951 | 3,299 | Sep |
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Clonakilty Bay [3] | 1,329 | 878 | 1,192 | 749 | 871 | 1,551 | 1,080 | 1,089 | 1,551 | Oct |
| Ballymacoda [3] | 572* | 398* | 1,404 | 629 | | 1,068 | 135* | 1,034 | 1,404 | Nov |
| Dungarvan Harbour [3] | 1,458 | 1,648 | 677 | 842 | 520 | 1,386 | 1,136 | 912 | 1,386 | Jan |
| Cashen River & Estuary [1] | | | | | | 28 | 1,200 | 307 | 1,200 | Feb, Mar |
| Shannon Callows [4] | | 220 | | 220 | | | | 220 | 220 | |
| **Sites no longer of significance** | | | | | | | | | | |
| Lough Foyle † | 113 | 213 | 122 | 66 | 318 | 97 | 50 | 131 | 318 | Jan |

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Shannon & Fergus Estuary [4] | | 1,112 | | 121 | | | | 121 | 121 | Feb |
| Waterford Harbour | 65 | | 115 | | | | | 58 | 115 | Jan |

The grid references for all sites mentioned are given in Appendix 2.

Sites that supported numbers of national importance during the former period but no data were available for the current period are listed as a footnote.

Symbols presented in the table above indicate:

* Low-quality count not included in the calculation of the mean.

† Data provided by the UK (WeBS) for the two cross-border sites (Lough Foyle and Carlingford Lough).

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

[2]Site promoted (from supporting numbers of national importance to numbers of international importance) since the 2001/02 to 2008/09 period.

[3]Site demoted (from supporting numbers of international importance to numbers of national importance) since the 2001/02 to 2008/09 period.

[4]Aerial census data.

[5]Data from species-specific survey.

[6] Species not regularly recorded at the site during the former period (2001/02 and 2008/09).

## 4.2 Notes on interpretation

Please note that all waterbird data refer to the Republic of Ireland (I-WeBS data) unless stated otherwise.

Note that some sites are counted by both ground-based and aerial surveys. When both ground and aerial sites are included in a site assessment table then they are treated as two different sites, but please bear in mind that the distribution maps may show overlapping dots.

The cross-border sites Lough Foyle and Carlingford Lough are counted as both Northern Ireland (NI) and Republic of Ireland (ROI) sites and each is therefore treated as two different sites for site assessment.

Note that where the text refers to the 'current period' this relates to the period 2011/12 – 2015/16.

## 4.3 Mute Swan *Cygnus olor* Eala bhalbh

Ireland (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 90 | **Population change (%):** | |
| **All-Ireland threshold:** | 90 | 5 year: | -4.8 |
| **Population size (2011-2016):** | | 12 year: | -7.1 |
| All-Ireland: | 9,130 | 22 year: | +11.5 |
| ROI: | 7,032 | Historical: | -9.6 |
| Associated with SPA network: | 4,365 | Average annual change: | +0.5 |

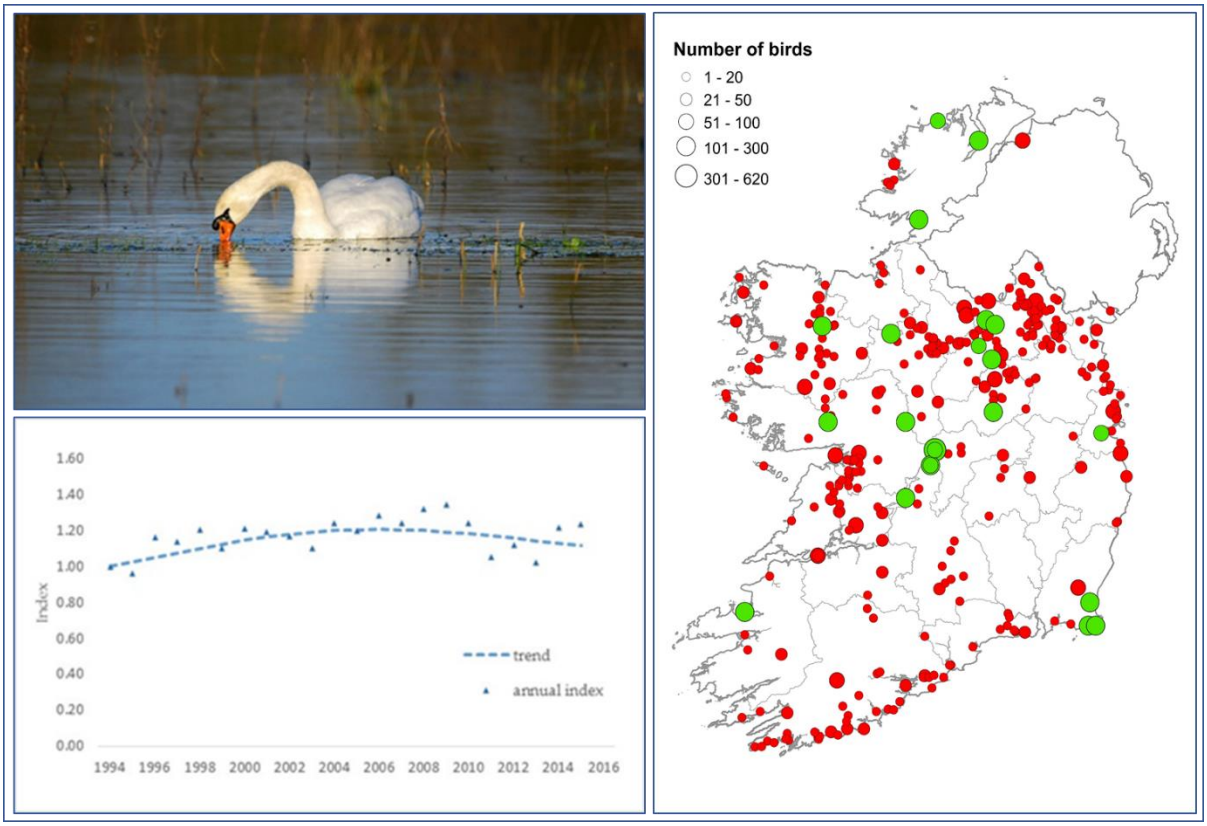



**Figure 4** Distribution map and graphed population trend for Mute Swan. The distribution map illustrates sites supporting numbers of international importance (green circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the annual indices (triangles) together with the smoothed trend (hatched line) (Photo: Brian Burke).

Mute Swan are common across the temperate Palearctic, from western Europe across to north-east China. In some parts of its range the species is migratory, but those in Ireland are sedentary, with very little recorded movement of birds across the Irish Sea. For this reason, Ireland is considered to have its own distinct population (Wetlands International, 2012). The national threshold for site importance is therefore the same as the international threshold.

Numbers appear to have declined recently, by 5% and 7% in the last 5 and 12 years respectively. A similar trend has been observed in the UK population, with a decline of 8% in the ten years to winter 2015/16 (Frost *et al*., 2018). Numbers in Northern Ireland were stable in the last five years (Burke *et al*., 2018b). It should be noted that Mute Swan are very widely dispersed across wetlands of all sizes and locations, so population estimates for the species in Ireland are likely to be underestimates of their true numbers. Numbers at their most important sites tended to peak early in the winter (October, November). From December onwards, rain levels are likely to make other smaller sites increasingly suitable, allowing birds to disperse from core count areas.

Mute Swan were recorded at 321 sites during the current period and 23 sites supported numbers of international importance; predominantly large inland lakes and river callows but also coastal bays such as Donegal and Tralee. Galway Bay and Bray Harbour did not support numbers of significance however, despite having reported numbers of international importance in previous assessments.

Improved survey coverage of the Grand Canal has found numbers of international importance in recent years at this urban site. The greater-Dublin population is now the focus of demographic study again (Prole, 2018) having previously been examined in the late 1980s (Collins, 1991).

**Table 3** Table showing sites supporting internationally/nationally important numbers of Mute Swan ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of international/national importance** | | | | | | | | | | |
| Shannon Callows [4] | 339 | 775 | 500 | 739 | | | | 620 | 739 | |
| Lough Swilly | 291 | 329 | 243 | 298 | 243 | 356 | 350 | 298 | 356 | Nov |
| Lough Derg (Shannon) [4] | 138 | 166 | 177 | 419 | | | | 298 | 419 | |
| Lough Kinale & Derragh Lough [1] | 19* | | | | 174 | 295 | 231 | 233 | 295 | |
| Tacumshin Lake | 202 | 329 | 292 | 236 | 138 | 170 | 257 | 219 | 292 | Nov, Dec |
| Lough Corrib | 620 | 356 | 161* | 246 | 270 | 305 | 8 | 207 | 305 | Nov |
| Donegal Bay | 186 | 192 | 156 | 226 | 210 | 224 | 197 | 203 | 226 | Oct |
| Tralee Bay, Lough Gill & Akeragh Lough | 204 | 178 | 166 | 162 | 174 | 230 | 256 | 198 | 256 | Sep, Jan |
| Lough Oughter Complex | 54* | 49* | 123 | 251 | 181 | 60* | | 185 | 251 | |
| Lough Ennell | 185 | 181 | 161 | 122 | 171 | 219 | 147 | 164 | 219 | Oct |
| Lady's Island Lake [1] | 65 | 129 | 206 | 68 | 102 | 39 | 333 | 150 | 333 | Oct |
| Wexford Harbour & Slobs | 86* | 145* | 128 | 147 | 138 | 147 | 176 | 147 | 176 | Nov |
| River Suck [4] | 172 | 176 | 94 | 184 | | | | 139 | 184 | |
| Little Brosna Callows | | | 116 | 147 | 147 | 112 | 113* | 131 | 147 | Nov, Dec |
| Swellan Lough [1] | | | | | 109 | | | 109 | 109 | |
| Lough Cullin [1] | 35 | 29 | 61 | 65 | 152 | 138 | 104 | 104 | 152 | Oct |
| Lough Derg (Shannon) | | 209 | 101 | | 171 | 79 | 62 | 103 | 171 | |
| Lough Gara [1] | 46 | 77 | 97* | 83 | 109 | 92 | 127 | 103 | 127 | Mar |
| Lough Gowna [1] | | 8 | | 49 | 133 | 88 | 130 | 100 | 133 | |
| Little Brosna Callows [4] | 118 | 75 | 129 | 70 | | | | 100 | 129 | |

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Dunfanaghy New Lake [1] | 131* | 142 | | | 92 | 104 | 101 | 99 | 104 | Sep, Nov, Dec |
| Shannon Callows | 13 | 88 | 155 | 58 | | 114 | 53 | 95 | 155 | |
| Grand Canal (Dublin) [1] | | | 17* | | | | 92 | 92 | 92 | |
| **Sites no longer supporting numbers of international importance** | | | | | | | | | | |
| Inner Galway Bay | 123 | 161 | 84 | 98 | 70 | 39 | 25 | 63 | 98 | |
| Eslin River | 4* | 25* | | | 46* | | | 0 | 0 | |
| Lough Ree | | 70 | | | | 2* | 58* | 0 | 0 | |
| Lough Derravaragh | 77 | 138 | 79 | 82 | 92 | 72 | 77 | 80 | 92 | |
| Bray Harbour | 100 | 98 | 83 | 54 | | | | 69 | 83 | |

* Low-quality count not included in the calculation of the mean.

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

[4]Aerial census data.

## 4.4 Bewick's Swan *Cygnus columbianus bewickii* Eala bewick

*bewickii*, Arctic N. Russia (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 220 | **Population change (%):** | |
| **All-Ireland threshold:** | 20 | 5 year: | -73.8[b] |
| **Population size (2011-2016):** | | 10 year: | -90.6[c] |
| All-Ireland: | 21[a] | 25 year: | -98.6[d] |
| ROI: | 21[a] | Historical: | -98.9[e] |
| Associated with SPA network: | 21[a] | | |

[a] from Crowe *et al*. (2015).

Population change based on the comparison of the 2015 population estimate (Crowe *et al*., 2015) with: [b] 2010 International Swan Census (Boland *et al*., 2010); [c] 2005 International Swan Census (Crowe *et al*., 2015); [d] 1990 International Swan Census (Beekman, 1997), [e] census of 1975/76 (Merne, 1977).

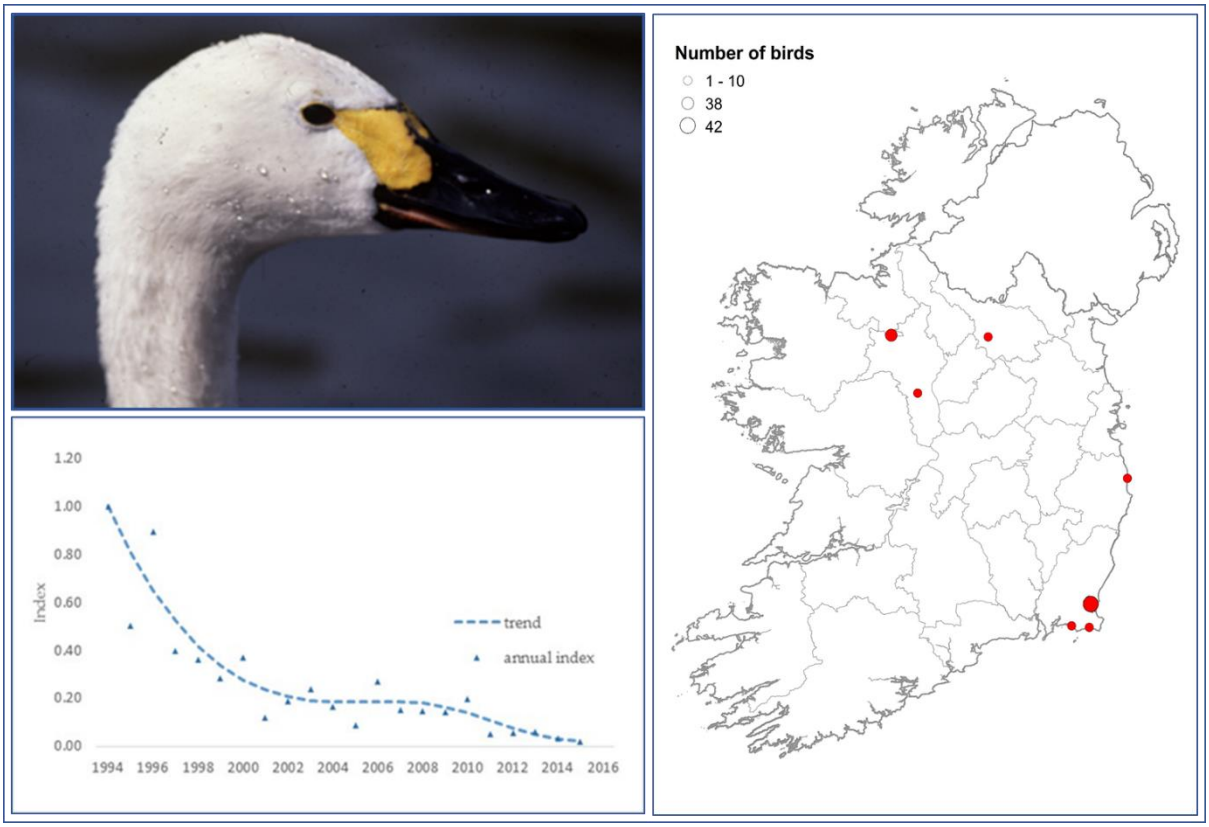



**Figure 5** Distribution map and graphed population trend for Bewick's Swan. The distribution map illustrates the peak numbers recorded at I-WeBS sites between 2011/12 and 2015/16 (red circles). The population trend graph illustrates the population size obtained from census data 1990 – 2015. (Photo: Eddie Dunn).

There are three populations of Bewick's Swan (Wetlands International, 2018). Those that breed on the open maritime tundras of European Arctic Russia winter in north-west Europe (Rees & Beekman,

2010). Their wintering range includes the Netherlands, Britain, Germany, Denmark, Belgium, France and Ireland. Historically, Bewick's Swans outnumbered Whooper Swan in Ireland (Ussher & Warren, 1900) but a rapid decline became evident in the 1970s and 1980s that has continued to the present day (Crowe *et al*., 2015). A comparison of recent (2015) census data with those from 25 and 40 years ago, the latter being the first national cenus undertaken for this species in the winter of 1975/76 (Merne, 1977), reveals a wintering population decline of 99%. This decline has been attributed largely to the species migratory 'short-stopping' and retracting from the most westerly part of its range as a result of milder winters closer to the breeding grounds (Rees & Beekman, 2010). As numbers in Ireland fell initially, the flyway population as a whole was still increasing. Since the late 1990s however, the flyway population has undergone significant declines from over 29,000 birds in 1995 to 18,000 in 2010 (Rees & Beekman, 2010). No Bewick's Swan have been recorded in Northern Ireland in recent years, and the UK trend for the species is a 77% decline in the 25 years to 2015/16 (Frost *et al*., 2018).

Between 2001/02 and 2008/09, Bewick's Swan were recorded at just 25 sites in the Republic of Ireland, with a population estimate of just over 200 swans for that period (Boland & Crowe, 2012; Crowe *et al*., 2005; Worden *et al*., 2006). In the last five years, from 2011/12 to 2015/16, Bewick's Swan were recorded at just seven sites. The remaining birds tend to favour Wexford Harbour and Slobs during the winter, with occasional movement to other sites in Wexford. It seems unlikely that Bewick's Swan numbers or distribution in Ireland are likely to improve again in the future and so these Wexford birds may be the last to winter here regularly.

**Table 4** Table showing sites that formerly held numbers of national importance of Bewick's Swan and their mean and peak counts for the period 2011/12 and 2015/16.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites no longer of significance** | | | | | | | | | | |
| Wexford Harbour & Slobs | 65* | 75* | 42 | 14 | 14 | 14 | 11 | 19 | 42 | Jan |
| The Cull & Killag (Ballyteige) | | 15 | | 10 | | 2 | | 2 | 10 | Jan |
| Tacumshin Lake | | | 2 | 2 | | 4 | 2 | 2 | 4 | |
| North Wicklow Coastal Marshes | | | 8 | | | | | 2 | 8 | |
| **Other sites** | | | | | | | | | | |
| Lough Gara | | | 38* | | | | | | | |
| River Erne: Oughter - Gowna | | | | | | | 9* | | | |
| Southern Roscommon Lakes | | | 1 | | | | | | | |

* Low-quality count not included in the calculation of the mean.

## 4.5 Whooper Swan *Cygnus cygnus* Eala Ghlórach

Iceland (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 340 | **Population Change** | |
| **All-Ireland threshold:** | 150 | 5 year: | +13.4[b] |
| **Population size (2011-2016):** | | 10 year: | +21.6[c] |
| All-Ireland: | 15,370[a] | 24 year: | +39.6[d] |
| ROI: | 11,852[a] | Historical: | +49.2[e] |
| Associated with SPA network: | 4,052[a] | | |

[a] from Crowe *et al*. (2015).

Population change based on the comparison of the 2015 population estimate (Crowe *et al*., 2015) with: [b] 2010 International Swan Census, Boland *et al*., 2010); [c] 2005 International Swan Census (Crowe *et al*., 2015); [d] 1991 International Census of Whooper Swans (Kirby *et al*., 1992), [e] 1986 Whooper Swan census of Britain, Ireland and Iceland (Salmon & Black, 1986).

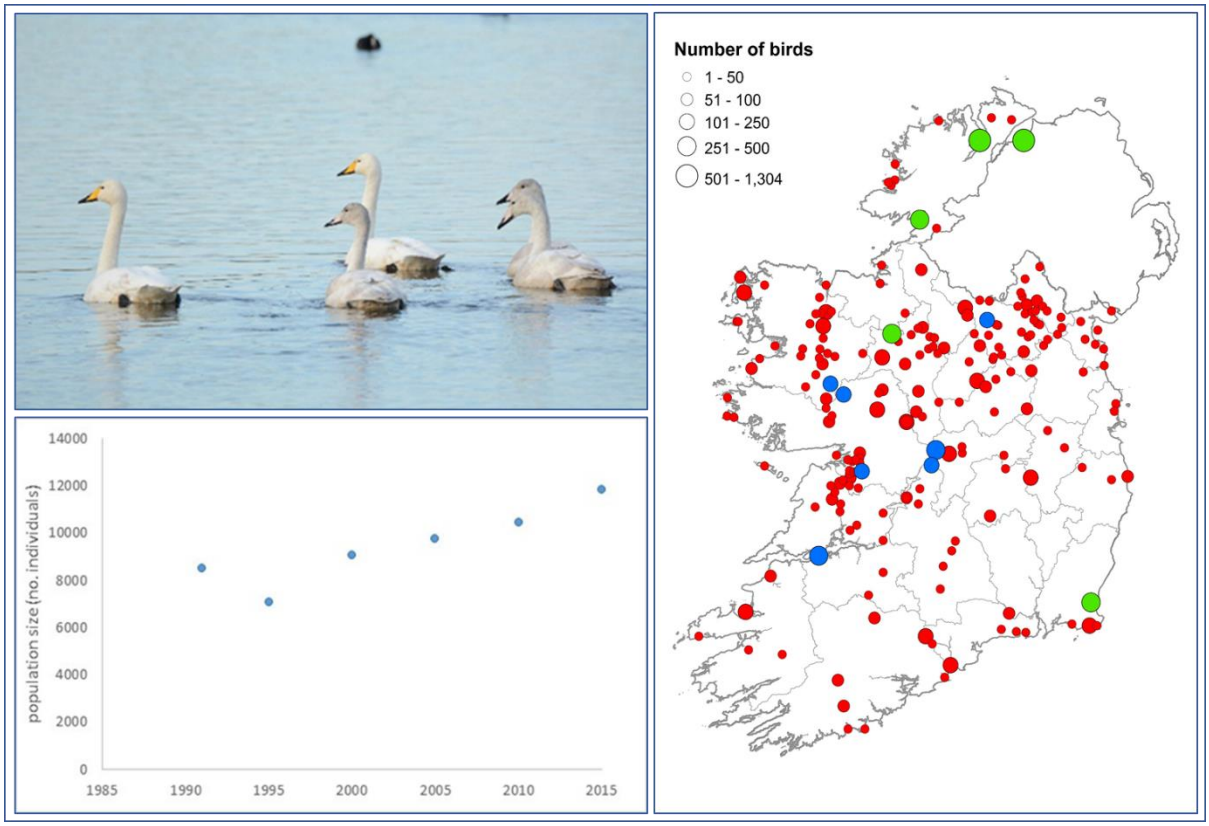



**Figure 6** Distribution map and graphed population trend for Whooper Swan. The distribution map illustrates sites supporting numbers of international importance (green circles), national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend graph illustrates the population size obtained from census data 1991 – 2015 (Photo: Brian Burke).

There are five populations of Whooper Swan (Wetlands International, 2018). Those that occur in Ireland come from the Icelandic-breeding population, which also winters in Britain, with increasing

numbers remaining to winter in Iceland (Brazil, 2003; Hall *et al*., 2016). A coordinated census has been carried out on a five-yearly basis since January 1986, when 16,700 swans were recorded across the populations wintering range. The most recent census in January 2015 found that the flyway population had increased by 16% since 2010, to 34,004 individuals – the highest census total to date (Hall *et al*., 2016).

The Republic of Ireland supported 11,852 Whooper Swan during the 2015 census, 34.9% of the flyway population (Hall *et al*., 2016). Numbers in the Republic of Ireland in 2015 had increased by 12.7% since 2010, although the proportion of the overall population had decreased (from 35.9%; Hall *et al*., 2012) following notable increases in both England and Scotland. Despite this, the proportion of young amongst flocks was highest in Ireland (Hall *et al*., 2016). Whooper Swan numbers in Northern Ireland fell by 24% from 2010 to 2015, and currently represent over 10% of the flyway population. Overall results of the 2015 census provide evidence of an overall shift to the south-east in the species' winter distribution (Hall *et al*., 2016). Numbers of juveniles in flocks was relatively high in both the Republic and Northern Ireland during the 2015 census at 22.5% and 21.8% respectively, compared to the overall proportion of 19.9% across Iceland, Ireland and Britain collectively (Hall *et al*., 2016), and the Irish Whooper Swan Study Group continues to monitor this on an annual basis (G. McElwaine pers. comm.).

Results of the 2015 census attest to the widespread distribution of Whooper Swan in Ireland – recorded in 473 subsites and 253 sites across all but two counties in Ireland. Almost 70% of swans were recorded on pasture, with 18% on permanent waterbodies, highlighting the need for targeted survey efforts at regular intervals to provide accurate estimates of population size and changes in distribution (Hall *et al*., 2016). Their distribution within the Republic of Ireland skews to the north and west, with counties Galway, Roscommon, Mayo and Cavan all supporting over 1,000 swans during the most recent census (Crowe *et al*., 2015).

Based on I-WeBS data for the current period (2011/12 – 2015/16), five sites were identified as supporting numbers of international importance, while a further seven sites supported numbers of national importance (Table 5a). Ten sites that held significant numbers of Whooper Swan between 2001/02 and 2008/09 are no longer of significance based on counts in the last five years. Coverage at some of these sites has been limited in recent years, however, and given the mobile nature of Whooper flocks within and between winters (Crowe *et al*., 2015) it is possible that more regular count coverage within and across winters may reconfirm their significance for Whooper Swan. Based on swan census data, a further three sites held numbers of international importance during 2015 (Table 5b), while a further 13 sites held numbers of national importance.

**Table 5a** Table showing sites supporting internationally and/or nationally important numbers of Whooper Swan ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of international importance** | | | | | | | | | | |
| Lough Foyle † | 2,033 | 506 | 1,509 | 2,365 | 1,390 | 556 | 702 | 1,304 | 2,365 | Oct |
| Lough Swilly | 2,877 | 948 | 2,810 | 917 | 640 | 1,125 | 618 | 1,222 | 2,810 | Oct, Mar |
| Wexford Harbour & Slobs | 302* | 203* | 437 | 387 | 195 | 576 | 535 | 426 | 576 | Nov, Jan |
| Lough Gara [1] | 392 | 141 | 252* | 382 | 453 | 333 | 23* | 389 | 453 | Mar |
| Donegal Bay [2] | 76 | 130 | 138 | 682 | 293 | 466 | 217 | 359 | 682 | Oct |

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Shannon Callows [3,4] | 255 | 207 | 299 | 305 | | | | 302 | 305 | |
| Shannon & Fergus Estuary [3 4] | 257 | 200 | 352 | 194 | | | | 273 | 352 | |
| Lough Oughter Complex | 89* | 89* | 202 | 291* | 224 | 108* | | 213 | 291 | |
| L. Coy - Blackrock - Bullaunagh – Ballylee [1] | 174 | 248 | 363 | 146 | 234 | | 66 | 202 | 363 | Nov |
| Little Brosna Callows [1] | | | 219 | 125 | 222 | 201 | 42* | 192 | 222 | Nov |
| Kilglassan Turlough/ Greaghans | 76 | 107 | 197 | 223 | 176 | | 123 | 180 | 223 | Jan |
| North Central Galway Lakes | 164* | 163 | 233 | 84 | 154 | | 193 | 166 | 233 | Jan |
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| Blackwater Callows | 225 | | 194 | 99 | 132 | 154 | | 145 | 194 | Mar |
| North East Galway Lakes | 74 | 229 | 201 | 199 | 16 | | 81 | 124 | 201 | Mar |
| East Ballinamore Lakes | 58 | 77* | 114 | | 79 | 153 | | 115 | 153 | |
| River Suck [4] | 331 | 170 | 48 | 176 | | | | 112 | 176 | |
| River Moy | 97* | 195 | 161 | | 61 | | | 111 | 161 | |
| Lough Iron | 261 | 160 | 101 | 100 | 60 | 91 | 120 | 94 | 120 | Mar |
| Corofin Wetlands | 51 | 120 | | 4 | 155 | 107 | 157 | 85 | 157 | Jan |
| River Suck | | | | | | 64 | 51 | 58 | 64 | |
| Coole Lough - Newtown Turlough | 28* | 27 | 102 | 70 | 8 | | 91 | 54 | 102 | Jan |

Sites that supported numbers of national importance during the former period but insufficient data were available for the current period: Lough Ree.

* Low-quality count not included in the calculation of the mean.

† Data provided by the UK (WeBS).

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

[2]Site promoted (from supporting numbers of national importance to numbers of international importance) since the 2001/02 to 2008/09 period.

[3]Site demoted (from supporting numbers of international importance to numbers of national importance) since the 2001/02 to 2008/09 period.

[4]Aerial census data.

**Table 5b** Sites that supported internationally and/or nationally important numbers of Whooper Swan during the 2015 swan census (Crowe *et al*., 2015; Hall *et al*., 2016).

| Site | Peak number |
|---|---|
| **Other sites supporting numbers of international importance** | |
| River Suck | 386 |
| Kilmacshane | 365 |
| Cashen River & Estuary | 341 |
| **Other sites supporting numbers of national importance** | |
| Tacumshin Lake | 316 |
| Brees Wetlands | 231 |
| Garryduff | 228 |
| Glen Lough | 215 |
| East Ballinamore Lakes | 210 |
| Ballyhaunis Lakes | 208 |
| Castleplunket Turloughs | 204 |
| Blacksod & Tullaghan Bays | 193 |
| Lower Blackwater River | 187 |
| River Foyle | 178 |
| North East Galway Lakes | 157 |
| Finn-Lacky Catchment | 156 |
| Blackwater Callows | 154 |

## 4.6 Pink-footed Goose *Anser brachyrhyncus* Gé ghobghearr

Greenland, Iceland (br)

Scarce winter visitor

**International threshold:** 5,400

**Mean/Peak - ROI (2011/12-2015/16):** 135/188

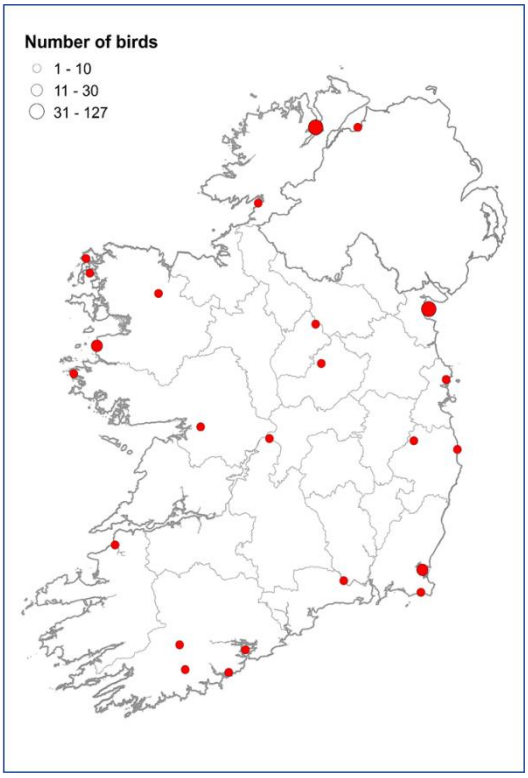



**Figure 7** Distribution map for Pink-footed Goose showing peak numbers recorded at sites between 2011/12 and 2015/16 (Photo: Brian Burke).

The Pink-footed Goose population that breeds in Iceland and Greenland winters almost exclusively in Britain, with relatively small numbers visiting Ireland (Mitchell, 2002; Brides *et al.*, 2018). Numbers have increased in recent years (Brides *et al.*, 2018) and the highest flyway population estimate ever recorded was in 2015 (536,871; Mitchell, 2016). Their numbers in Ireland have also increased, by around 100 birds – a modest number in the context of the overall population. Between 2004/05 and 2008/09 they reached a peak of 86 geese (mean 30; Boland & Crowe, 2012), whereas from 2009/10 to 2015/16 the maximum number in any one year was 184 (mean 133).

Pink-footed geese were recorded at 33 sites between 2009/10 and 2015/16, and at 26 sites during the current period (compared to 28 sites in the previous period; Boland & Crowe, 2012). They were most regularly recorded at Lough Swilly, Wexford Harbour & Slobs and Dundalk Bay.

**Table 6** Table showing sites that supported Pink-footed Goose in five or more seasons between 2009/10 and 2015/16.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Dundalk Bay | 3 | 35 | 30 | 32 | 71 | 111 | 127 | 74 | 127 | Jan |
| Lough Swilly | 14 | 7 | 46 | 1 | 34 | 3 | 42 | 25 | 46 | Mar |
| Wexford Harbour & Slobs | 9 | 27 | 12 | 22 | 9 | 13 | 5 | 12 | 22 | Nov, Jan |
| North Wicklow Coastal Marshes | 9 | 1 | 2 | 1 | | | 1 | 1 | 2 | Oct, Dec, Jan |

Other sites that supported Pink-footed Goose in less than five seasons (peak count 2011/12 – 2015/16):

Bandon River (1), Blacksod & Tullaghan Bays (2), Cashen River & Estuary (1), Cork Harbour (1), Donegal Bay (1), Drumcliff Bay Estuary (2), Inishcarra Resevoirs (1), Little Brosna Callows (2), Lough Conn (1), Lough Foyle (NI) (4), Lough Gowna (3), Lough Iron (6), Omey Strand (1), Poulaphouca Reservoir (1), Rahasane Turlough (2),River Suir Lower (3), Rogerstown Estuary (8), South Mayo Coast (26), Southern Roscommon Lakes (1), Stick Estuary (Oysterhaven) (1), Tacumshin Lake (1), Termoncarragh & Annagh Marsh (2).

## 4.7 Greenland White-fronted Goose *Anser albifrons flavirostris* Gé Bhánéadanach

Greenland (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 190 | **Population Change (%):** | |
| **All-Ireland threshold:** | 100 | 5 year: | -14.5 |
| **Population size (2018):** | | 10 year: | -5.0[c] |
| All-Ireland: | 9,590[a] | 25 year: | -20.9[d] |
| ROI: | 9,500[a] | Historical: | -12.5[e] |
| Associated with SPA network: | 9,346 - 9,428[a] | | |

[a] from Fox *et al*. (2018).

Population change based on the comparison of the 2018 population estimate (Fox *et al*., 2018) with: [b]2013 International Census (Fox *et al*., 2013); [c]2008 International Census (Fox *et al*., 2008); [d]1993 International Census (Fox *et al*., 1994); [e]spring 1985 International Census (Fox *et al*., 1994).

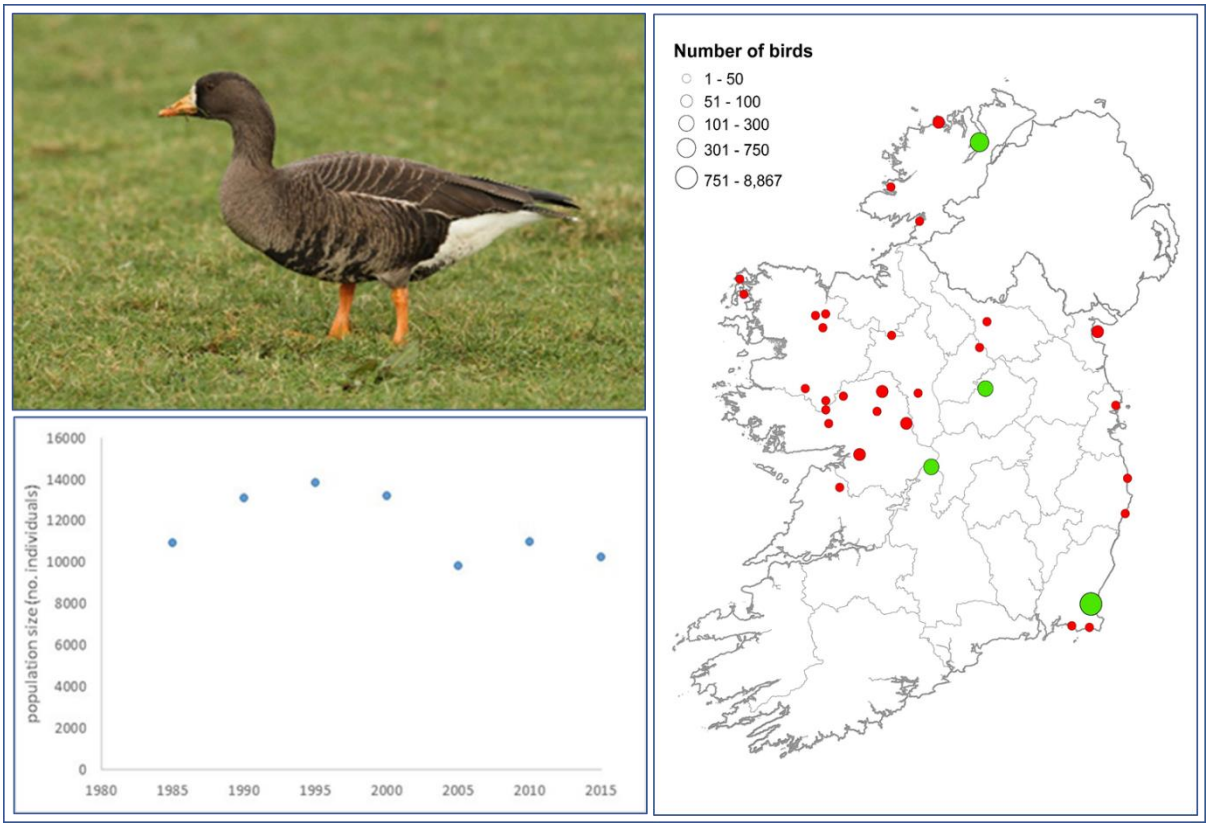



**Figure 8** Distribution map and graphed population trend for Greenland White-fronted Goose. The distribution map illustrates sites supporting numbers of international importance (green circles), national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend graph illustrates the population size obtained from census data 1985-2018 (note only all-Ireland census data are available from 1995-2005, hence gap in ROI data presented here) (Photo: Dick Coombes).

The Greenland White-fronted Goose is a subspecies of the Greater White-fronted Goose that breeds in west Greenland and winters in Britain and Ireland. Regular annual monitoring of the species in Ireland began in winter 1982/83 when a moratorium on their shooting was introduced here. In spring 1983 the Irish population stood at 9,259 geese (9,098 ROI, 161 NI; Fox *et al*., 1994) in 34 flocks, representing 56% of the flyway population. Annual monitoring across the island charted the species increase to a peak of 13,575 birds in spring 1999 (Stroud *et al*., 2012). Despite this net increase in birds, a number of areas were deserted by White-fronts during this period and an overall shift towards the north and east of their wintering range was becoming evident. The flyway population was also increasing rapidly at this time, outpacing the increases seen in Ireland, and so this shift to the north-east of their wintering range meant the Irish proportion of the flyway population actually decreased to 38% (Stroud *et al*., 2012). Since those peak counts in spring 1999, numbers have undergone acute declines both nationally and internationally. In spring 2018 the flyway population numbered 20,529 individuals, similar to the 2017 total but up from 18,879 in spring 2016 (Fox *et al*., 2018). Numbers in Ireland in winter 2016/17 were lower than they were before the shooting moratorium began in 1982/83, though Ireland still supports around 45% of the flyway population. In the most recent spring census in 2018, numbers in Ireland had risen slightly to 9,587 (Fox *et al*., 2018). There are now 20-25 extant flocks in Ireland, nine of which have held less than 30 birds in each of the last two winters (2016/17, 2017/18; Fox *et al*., 2017; 2018). Numbers at their largest wintering site on the Wexford Slobs have been buffered from much of these declines by acting as a population sink (Weegman *et al*., 2016). The overall population decline in recent years has been attributed to chronic low breeding productivity, which has been particularly evident in the Irish flocks (Fox *et al*., 2018).

The Greenland White-fronted Goose was recorded at 33 sites during the current period, down from 67 sites during the former period (2001/02 to 2008/09) (Boland & Crowe, 2012). Wexford Harbour & Slobs, Lough Swilly and the Little Brosna Callows all continued to support numbers of international importance. Lough Iron has been promoted to this list, having supported numbers of national importance during the previous period. Both the River Suck (aerial count) and Glenamaddy Turlough supported numbers of national importance on one occasion during the current period, but the mean peak was below the threshold for significance. Both of these sites are recognised as being used by the same wintering flock (Fox *et al*., 2012). Similarly, numbers at Dunfanaghy New Lake in recent years no longer reach the threshold for significance.

As with other goose and swan species, it should be noted that Greenland White-fronted geese often feed away from wetland sites during the daytime and so may not be recorded during core I-WeBS counts. The true number relying on a wetland site to roost, for example, could therefore be significantly underestimated. For this reason, targeted census counts of the Greenland White-fronted Goose provide a better account of the true numbers in an area and the sites they rely on for both feeding and roosting. In Ireland these counts are coordinated by the National Parks and Wildlife Service (NPWS), and results are published the following autumn by NPWS and the Greenland White-fronted Goose Study Group (e.g. Fox *et al*., 2018). These reports are therefore of key importance when determining the importance of a site or area to this species.

**Table 7** Table showing sites supporting internationally and/or nationally important numbers of Greenland White-fronted Goose ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of international importance** | | | | | | | | | | |
| Wexford Harbour & Slobs | 7,984* | 8,144* | 9,769 | 8,700 | 9,343 | 8,060 | 7,565 | 8,687 | 9,769 | Jan |
| Lough Swilly | 550 | 883 | 793 | 633 | 926 | 592 | 724 | 734 | 926 | Feb |
| Lough Iron [2] | 253 | 293 | 487 | 263 | 205 | 290 | 212 | 291 | 487 | Mar |
| Little Brosna Callows [4] | 230 | 230 | 200 | 200 | | | | 200 | 200 | Jan |
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Little Brosna Callows | | | 211 | 105 | 115 | 145 | 104* | 144 | 211 | Jan |
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| Dunfanaghy New Lake | | | | | 50 | 110 | 82 | 81 | 110 | Mar |

Sites that supported numbers of national importance during the former period but no data were available for the current period: Cahore Marshes.

* Low-quality count not included in the calculation of the mean.

† Data provided by the UK (WeBS).

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

[2]Site promoted (from supporting numbers of national importance to numbers of international importance) since the 2001/02 to 2008/09 period.

[3]Site demoted (from supporting numbers of international importance to numbers of national importance) since the 2001/02 to 2008/09 period.

[4]Aerial census data.

## 4.8 Greylag Goose *Anser anser* Gé ghlas

Iceland (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 980 | **Population Change (%):** | |
| **All-Ireland threshold:** | 35 | 8 year: | -20.8[b] |
| **Population size (2011-2016):** | | 14 year: | -29.4[c] |
| All-Ireland: | 3,550[a] | 19 year: | -20.8.[d] |
| ROI: | 1,954[a] | Historical: | +10.1[e] |
| Associated with SPA network: | 1,742 | | |

[a] from Burke *et al*. (2018b).

Population change based on the comparison of the 2018 All-Ireland population estimate (Burke *et al*., 2018b) with: [b] All-Ireland population estimate from 2010 (Crowe & Holt, 2013, as revised in Burke *et al*. 2018b), [c] All-Ireland population estimate from 2004 (Crowe *et al*. 2008), [d] All-Ireland population estimate from 1999 (Crowe *et al*. 2008), [e] All-Ireland census of 1986 (Merne, 1986).

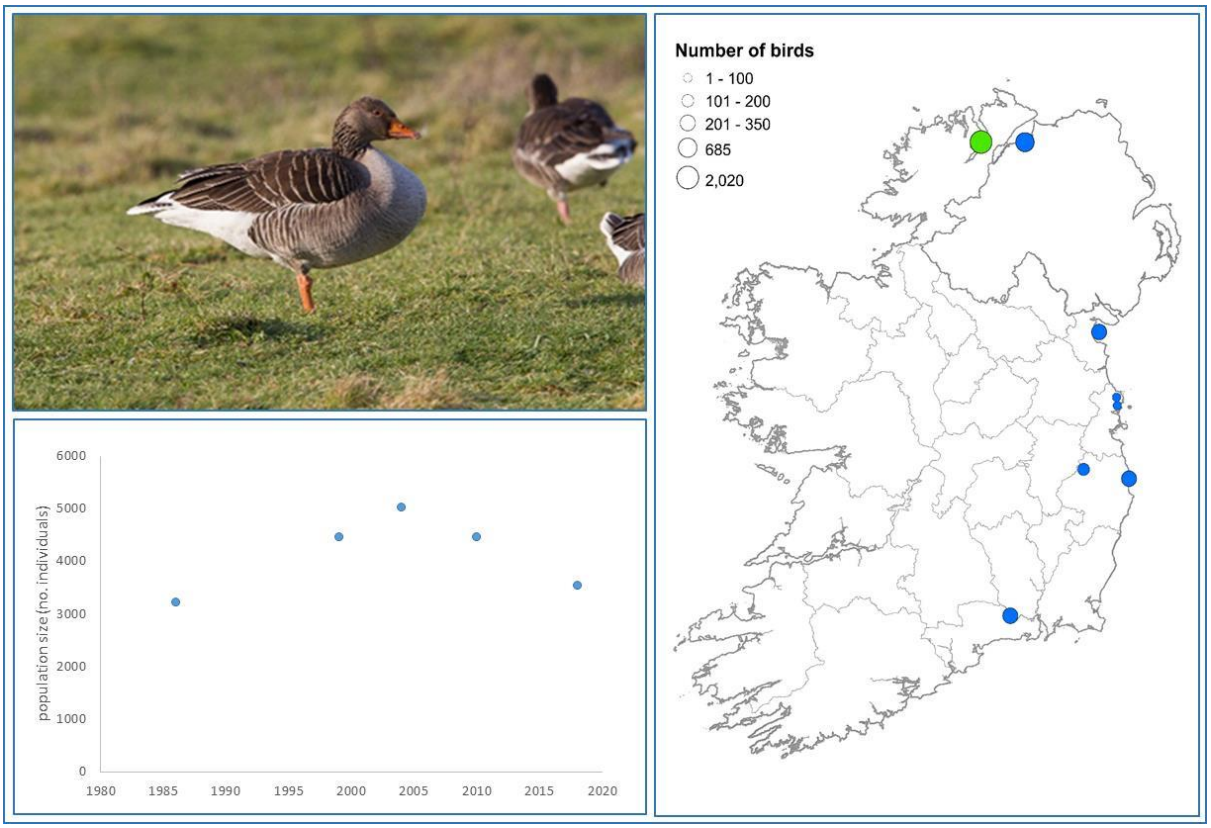



**Figure 9** Distribution map and graphed population trend for Greylag Goose. The distribution map illustrates sites supporting numbers of international importance (green circles), national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). Note that the map shows both feral and Icelandic birds (i.e. the entire mixed-origin flock). The population trend graph illustrates the population size based on modelled population estimates 1986 – 2018 (Photo: Mark Carmody).

The Icelandic-breeding Greylag Goose population predominantly winters in northern Britain, with smaller numbers in Ireland, south-west Norway and the Faroe Islands, as well as some birds

remaining in Iceland (Mitchell, 2015; Brides *et al*., 2018). The I-WeBS counter network contributes to an annual autumn census of the species across their wintering range, coordinated by the Wildfowl and Wetlands Trust (Brides *et al*., 2018). Total autumn estimates have exceeded 80,000 geese for much of the last 40 years, with over 100,000 birds estimated during periods in the mid-1980s and mid-2000s, and occasional decreases below 80,000 in the late 1990s and early 2000s (Brides *et al*., 2018). The autumn 2017 estimate of 60,692 Icelandic Greylag geese across wintering grounds in Britain, Iceland, Ireland and Norway was therefore very low, though this is likely to have been somewhat of an underestimate due to the timing of counts possibly missing some migrating birds. Large numbers of resident Greylag geese in core wintering areas in Britain (e.g. Orkney, Moray Firth) further complicate attempts to estimate the abundance of Icelandic geese (Brides *et al*., 2018). This is also an issue in Ireland, particularly in the Lough Swilly and Foyle area which hosts the largest numbers of both Icelandic and resident Greylag geese in the country (Boland & Crowe, 2008).

Numbers of Icelandic Greylag geese in Ireland have fluctuated since coordinated waterbird monitoring began here (Sheppard, 1993; Crowe *et al*., 2008; Crowe & Holt, 2013). A northward contraction of their range was identified as far back as the 1930s (Berry, 1939) and continues to the present day (Mitchell *et al*., 2010). As their numbers and range were decreasing in Ireland, sites in Scotland recorded significant increases (Hutchinson, 1979). In more recent years, Greylag geese overwintered in southern Iceland for the first time in 2007/08 (Mitchell, 2009; Mitchell *et al*., 2010). Numbers in Ireland vary considerably throughout the winter too. At most sites, numbers build up and are sustained through the mid-winter period, as seen with most other wintering waterbird species (Boland & Crowe, 2008). Numbers at sites in Donegal, particularly Lough Swilly, tend to peak in November as birds arrive directly from Iceland and subsequently decrease as birds redistribute elsewhere by mid-winter (Boland & Crowe, 2008). Unpublished results from the ringing and neck-collaring study by NPWS, BirdWatch Ireland and Inch Wildfowlers Club provides some evidence for some birds moving from the Lough Swilly area to sites elsewhere in Ireland, Northern Ireland and Scotland within winters.

Only Lough Swilly supported numbers of international importance during the current period. In September 2017, a count of 870 Greylag Geese was recorded at Lough Swilly (L. McDaid pers. comm.). Given the timing of the count, this is likely to be the full naturalised/feral population of Greylags in the area, and this figure has been subtracted from the relevant national and local counts to determine the true numbers of Icelandic birds during the recent period.

Elsewhere, seven sites continue to support numbers of national importance. No data were available for the current period for two sites that supported numbers of national importance during the former period (Mountseskin/Gortlum and Braganstown).

**Table 8** Table showing sites supporting internationally and/or nationally important numbers of Greylag Goose ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of international importance** | | | | | | | | | | |
| Lough Swilly § | 1,999 | 2,006 | 1,330 | 2,761 | 2,034 | 1,856 | 2,121 | 2,020 | 2,761 | Dec, Feb |
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Lough Foyle (NI)[3] †∞ | | | 1,135 | 1,360 | 729 | 32 | 170 | 685 | 1,360 | |
| Dundalk Bay | 489 | 650 | 384 | 146 | 324 | 702 | 78 | 327 | 702 | Nov, Mar |
| River Suir Lower | 288 | 320 | 564 | 376 | 59 | 247 | | 312 | 564 | |
| North Wicklow | 361 | 293 | 285 | 59* | 325 | 200* | 304 | 305 | 325 | Dec |

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Coastal Marshes | | | | | | | | | | |
| Poulaphouca Reservoir | 92 | | 158 | 152 | 193 | 150 | | 163 | 193 | Jan |
| Rogerstown Estuary | 134 | 19 | 33 | 89 | 5 | 33 | 95 | 51 | 95 | Nov |
| Skerries, Baldongan | | 185 | 122 | 68 | 6 | | | 39 | 122 | |

Sites that supported numbers of national importance during the former period but no data were available for the current period: Mountseskin/Gortlum; Braganstown.

* Low-quality count not included in the calculation of the mean.

† Data provided by the UK (WeBS).

[3]Site demoted (from supporting numbers of international importance to numbers of national importance) since the 2001/02 to 2008/09 period.

§ Lough Swilly totals include a feral flock which has recently been estimated at close to 870 birds in September 2017.

∞ Lough Foyle totals include an unknown proportion of feral birds.

## 4.9 Greylag Goose (feral) *Anser anser* Gé ghlas

Feral/ naturalised population

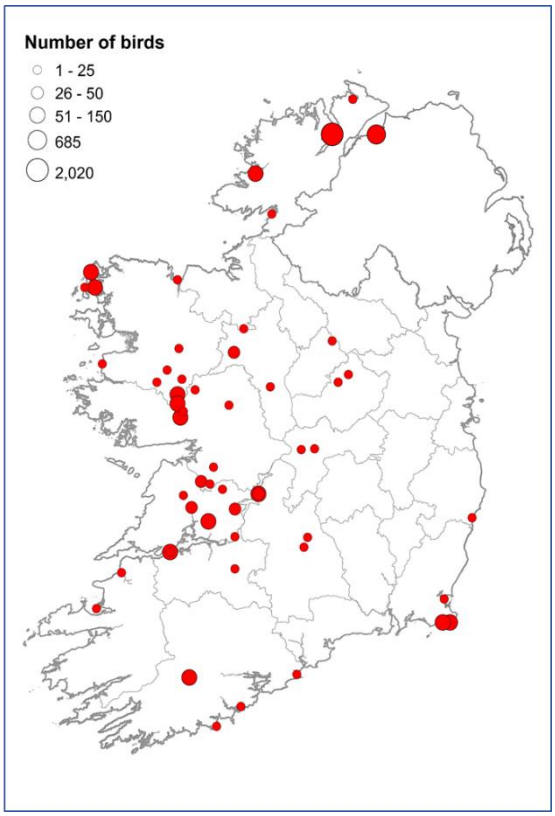



**Figure 10** Distribution map for feral Greylag Goose. The distribution map illustrates all sites where recorded during the period between 2011/12 and 2015/16 (red circles). Note that the map shows both feral and Icelandic birds (i.e. the entire mixed-origin flock) (Photo: Mark Carmody).

Resident feral/naturalised Greylag geese were recorded at 52 sites between 2011/12 and 2015/16. This was a decrease on the 82 sites reported for the former period, but numbers have continued to increase. The population now stands at over 2,800, an increase of around 1,300 individuals since 2008 (Boland & Crowe, 2008). As with other goose species, their preference for grassland feeding means numbers are likely to be underestimated somewhat through core count methodology. The resident population is likely descended both from birds released by wildfowlers, as well as from the north-west Scotland population which is thought to be the remnants of the population that once occurred more widely across Britain (Mitchell *et al*., 2012). As in the UK, it is not possible or practical to separate resident Greylags of either provenance. Movement of birds from the naturalised population in Scotland to Irish sites in the winter has been observed, through a colour-ringing study carried out by NPWS, BirdWatch Ireland and Inch Wildfowlers Club.

Wintering Greylag geese in the Swilly/Foyle area of Donegal and Tyrone are known to be a mix of both resident and Icelandic-breeding birds. Counts in September 2017 found 870 Greylag geese in the area (L. McDaid pers. comm.), making this by far the largest flock in the country. Elsewhere, flocks at Termoncarragh & Annagh Marsh (Mayo), Lough Derg and the Shannon & Fergus Estuary (Galway, Limerick) and Lady's Island Lake (Wexford) all numbered over 100 individuals on average over the recent five-year period examined.

**Table 9** Sites supporting an average 20 or more feral/naturalised Greylag geese between 2011/12 – 2015/16. Note that for Lough Swilly, an average is not given, rather the figure represents the best available estimate of feral birds at this site.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites regularly supporting 20 or more birds** | | | | | | | | | | |
| Lough Swilly ** | | | | | | | | 870 | | |
| Termoncarragh & Annagh Marsh | 141 | 97 | 194 | 96 | 110 | 142 | | 136 | 194 | Oct |
| Shannon & Fergus Estuary [5] | 100 | 158 | 238 | 165 | 80 | 170 | 4 | 131 | 238 | Jan |
| Lough Derg (Shannon) [4] | 38 | 57 | 96 | 149 | | | | 123 | 149 | |
| Lady's Island Lake | 117 | 126 | 147 | 33 | 144 | 132 | 65 | 104 | 147 | Jan |
| Inishcarra Reservoirs | 80 | 7 | 67 | 88 | 102 | 12* | 130 | 97 | 130 | Dec |
| South East Clare Lakes | 20* | 89 | 51 | 48 | 103 | 104 | 120 | 85 | 120 | Oct, Jan |
| Ballybackagh [5] | | | | | | 110 | 53 | 82 | 110 | |
| Blacksod & Tullaghan Bays | 32 | 67* | 108 | 110 | 110 | 79 | | 81 | 110 | |
| Tacumshin Lake | 95 | | 49 | 92 | 95 | 93 | 67 | 79 | 95 | Oct, Dec |
| Lough Corrib [5] | 28 | 25 | 110* | 31 | 45 | 160 | 44 | 70 | 160 | Jan |
| Rostaff Lake | 122 | 17 | 70 | 100 | | 55 | 30 | 51 | 100 | Oct |
| Ballyallia Lake [5] | 6 | 16 | | | 33 | 80 | 21 | 45 | 80 | Nov |
| Scarriff area [5] | | | | | | | 44 | 44 | 44 | |
| Lough Derg (Shannon) | | 30 | 48 | 48 | 46 | 20 | 48 | 41 | 48 | |
| Drumalough [5] | | | | | 40 | | | 40 | 40 | |
| Termon Turloughs [5] | | 18 | 1 | 89 | 58 | 49 | | 39 | 89 | Dec |
| Shannon & Fergus Estuary [4, 5] | 37 | 51 | | 40 | | | | 20 | 40 | Jan |

* Low-quality count not included in the calculation of the mean.

** The total number of feral birds occurring at Lough Swilly remains unknown. Accurate counts are hampered by mixing of birds of Icelandic and feral origin. The best available count of ferals at Lough Swilly was in October 2017 which estimated 870 individuals.

[4]Aerial census data.

[5]Site did not meet the thresholds of regularly supporting 20 or more birds during the 2001/02 to 2008/09 period.

## 4.10 Barnacle Goose *Branta leucopsis* Gé ghiúrainn

E. Greenland (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 810 | **Population Change (%):** | |
| **All-Ireland threshold:** | 160 | 5 year: | -7.2[b] |
| **Population size (2011-2016):** | | 10 year: | +32.7[c] |
| All-Ireland: | 16,240[a] | 25 year: | +101.1[d] |
| ROI: | 16,237[a] | Historical: | +113.9 |
| Associated with SPA network: | 14,450[a] | | |

[a] from Doyle *et al*. (2018).

Population change based on the comparison of the 2018 population estimate (Doyle *et al*., 2018) with: [b] 2013 census (Crowe *et al*., 2014); [c] 2008 census (Walsh *et al*., 2008); [d] 1993 Census (Merne & Walsh, 1994); [e] 1988 census spring (Merne & Walsh, 1994).

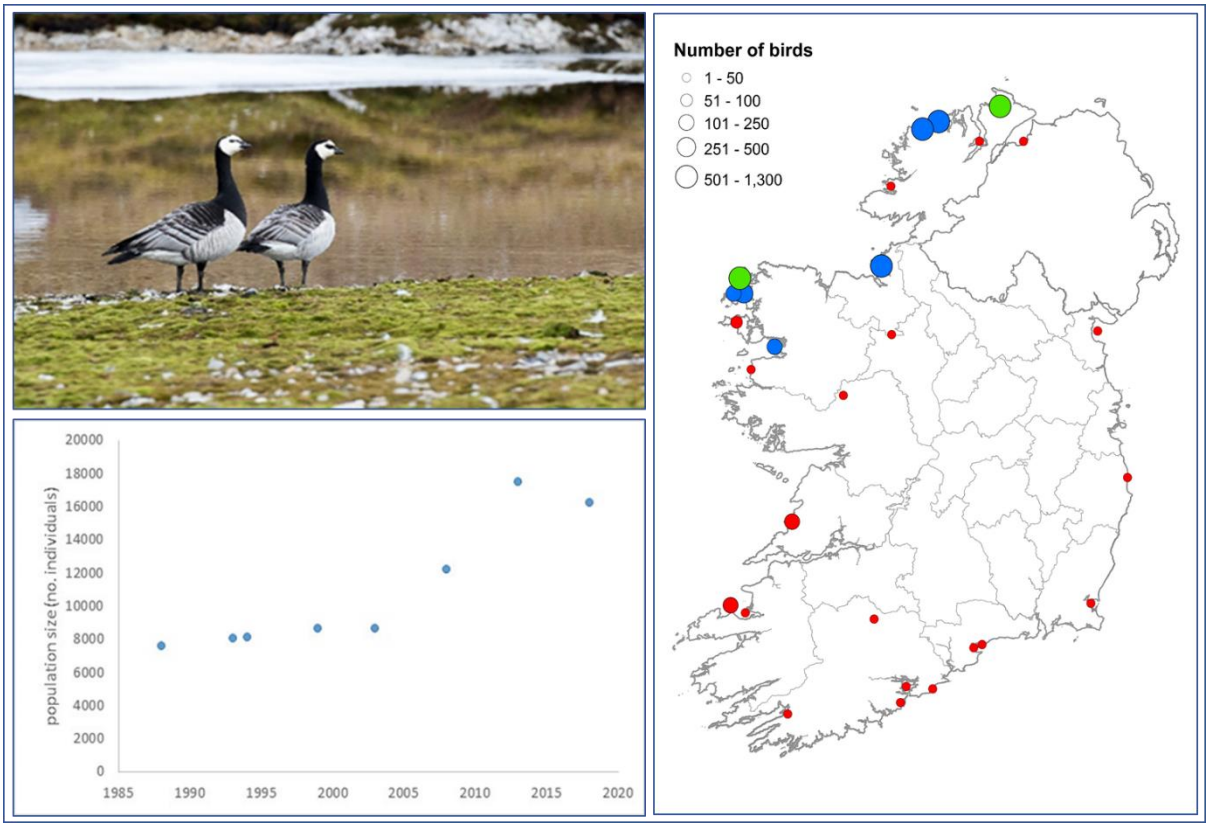



**Figure 11** Distribution map and graphed population trend for Barnacle Goose. The distribution map illustrates sites supporting numbers of international importance (green circles), national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend graph illustrates the population size obtained from census data 1988-2018 (Photo: Mark Carmody).

The Greenland-breeding Barnacle Goose population winters exclusively in Ireland and Scotland (Mitchell & Hall, 2013). In Ireland, Barnacle geese are almost exclusively found on coastal pasture fields and offshore islands in the north-west. Because of this distribution, they are not fully accounted for during core I-WeBS counts. Regular coordinated censuses of the population have been carried out on the wintering grounds since 1959, through both aerial and ground counts (Boyd, 1961; Doyle *et al*., 2018). In recent decades, censuses have been carried out on a five-yearly basis. As a result of the spring 2018 census, the flyway population was estimated at 72,162 (Mitchell & Hall, 2018), a 10.5% decrease on the census conducted in 2013 (Mitchell & Hall, 2013; Crowe *et al*., 2014) and in accordance with a flyway population decline in recent years (Doyle *et al*., 2018).

Barnacle geese were recorded at 28 sites during I-WeBS counts during the current period, and at 31 and 33 sites during the 2013 and 2018 censuses, respectively (Crowe *et al*., 2014; Doyle *et al*., 2018). Based on I-WeBS counts, Trawbreaga Bay and Termoncarragh and Annagh Marsh were identified as supporting numbers of international importance. In addition, six sites supported numbers of national importance (Table 10a).

The 2018 census further identified the Inishkea Islands and Cross Lough in north-west Mayo, Ballintemple in Sligo and Trawbreaga Bay as having supported numbers of international importance in March 2018 (Doyle *et al*., 2018) (Table 10b). On a county basis, Mayo supported the largest proportion of birds, closely followed by Donegal and Sligo, the latter of which supported a single flock consisting of over 27% of the Irish population (Doyle *et al*., 2018). Eleven sites supported numbers of national importance during the census, six of which were offshore islands and the rest of which were on or close to headlands in Mayo and Donegal. Doyle *et al*. (2018) note the risks of assuming that a spring census provides a true representation of the wintering range of Barnacle geese in Ireland, when the species might be expected to be moving northward in advance of migration at that time of year.

**Table 10a** Table showing sites supporting internationally and/or nationally important numbers of Barnacle Goose based by the ranked mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of international importance** | | | | | | | | | | |
| Trawbreaga Bay | 579 | 668 | 1,300 | 518* | | | | 1,300 | 1,300 | |
| Termoncarragh & Annagh Marsh | 697 | 750 | 780 | 1,677 | 1,200 | 600 | | 1,064 | 1,677 | Dec |
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Drumcliff Bay Estuary[3] | 1,570 | 2,500 | 2,330 | 142 | 47 | 710 | 750 | 796 | 2,330 | Nov, Feb |
| Dunfanaghy New Lake | | | | | 750 | 650 | 920 | 773 | 920 | Mar |
| Ballyness Bay | | | | | 720 | | | 720 | 720 | |
| Blacksod & Tullaghan Bays | 769 | 492* | 410 | 458 | 867 | 680 | 24 | 488 | 867 | Nov |
| Mullet West | 373 | 242* | 52 | 352 | 300 | 174 | | 220 | 352 | Nov |
| Clew Bay | | | 160 | 245 | 270 | 160 | 11 | 169 | 270 | Jan, Mar |

Sites that supported numbers of international importance during the former period but no data were available for the current period: Rathlin O'Birne.

Sites that supported numbers of national importance during the former period but no data were available for the current period: Inishkea Islands; Inishtraull Island.

* Low-quality count not included in the calculation of the mean.

**Table 10b** Sites not listed in Table 10a that supported internationally and/ or nationally important numbers of Barnacle Goose based on the aerial counts from the spring 2018 census (Doyle *et al.*, 2018).

| Site | Spring 2018 aerial census count |
|---|---|
| **Other sites supporting numbers of international importance** | |
| Ballintemple | 4,410 |
| Inishkea Islands | 2,330 |
| Trawbreaga Bay | 1,775 |
| South Mayo Coast (Cross Lough) | 804 |
| **Other sites supporting numbers of national importance** | |
| Inishshark | 638 |
| Birmore Island | 587 |
| Dooey | 450 |
| Malin Head | 380 |
| Doagh | 300 |
| Tory Sounds Islands (Inishdooey Island) | 280 |
| Croaghnakeela Island | 252 |
| Annagh Head | 243 |
| Oilean MacDara (St. MacDara's Island) | 221 |
| Tiraun | 184 |
| Moynishmore Island | 169 |

## 4.11 Canada Goose *Branta canadensis* Gé Cheanadach

Feral population and small numbers of wild migratory birds

**International threshold:** -

**All-Ireland threshold:** -

**Mean/ Peak (2011/12 – 2015/16)**: 511/719

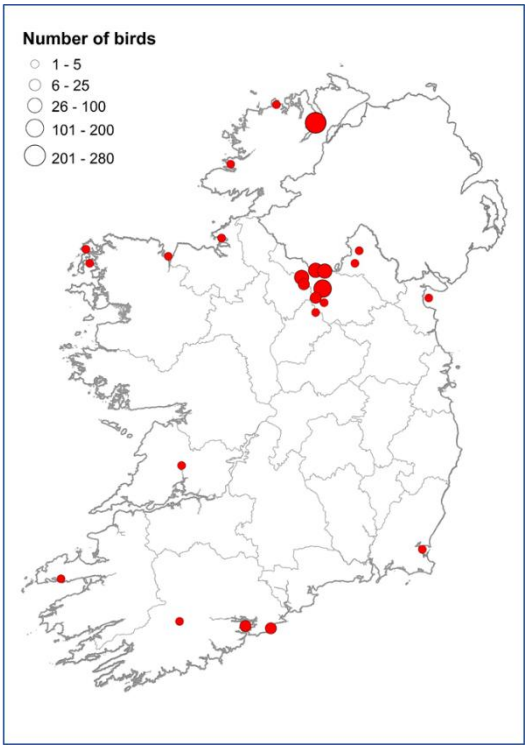



**Figure 12** Distribution map for Canada Goose showing peak numbers recorded at sites between 2011/12 and 2015/16 (Photo: Terry Flanagan).

Wetlands International (2018) recognise 14 populations of Canada Goose, and an additional four populations of the similar Cackling Goose *Branta hutchinsii.* Small numbers of wild Canada (and Cackling) geese are known to occur in Ireland on an annual basis, usually associating with 'carrier' species such as Barnacle Goose or Greenland White-fronted Goose . (e.g. Barton, 2017; Hobbs, 2016; Carmody & Hobbs, 2015). A review of records by the Irish Rare Birds Committee, in light of recent taxonomic reviews by the American Ornithologists' Union (AOU), determined that the *canadensis* and interior subspecies of Canada Goose are potential vagrants to Ireland. *Branta canadensis canadensis* most closely resembles the feral population of Canada geese in Ireland however, making it difficult to confidently identify a *canadensis* of North American origin unless it is ringed or through genetic analysis. (IRBC, 2013). The Cackling Goose was previously considered a 'small' form of Canada Goose, but has since been recognised and accepted as a separate species by the AOU and British Ornithologists' Union (BOU) (IRBC, 2013). Based on size alone, it is not too difficult to separate Cackling Goose from Canada Goose in Ireland. The 2013 review by the Irish Rare Birds Committee accepted 19 records of Cackling Goose and 29 of Canada Goose as 'presumed to be of North American origin from 1969 to 2009'.

The breeding distribution in the recent British and Irish Bird Atlas found a 600% increase in their breeding range over the 40 years to 2011, and an index increase of 0.15 from 1991 to 2011 (Balmer *et al*., 2013). I-WeBS counts are likely to provide a good indication of numbers and current wintering range, but targeted survey coverage during the breeding season is needed to confidently assess the current size of the population (Lovatt 1999). No data on breeding productivity or brood size is currently collated in Ireland.

Although Canada geese from North American-breeding populations do occur in Ireland in small numbers, the vast majority of birds in Ireland are resident and descended from feral/released birds.

Canada geese were recorded at 27 sites during the current period. Five sites recorded the species on a regular basis (Table 12) with Lough Swilly supporting the highest numbers overall based on mean and peak numbers.

**Table 12** Table showing sites that supported Canada Goose in five or more seasons between 2009/10 and 2015/16

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Lough Swilly | 323 | 260 | 355 | 245 | 8 | 352 | 438 | 280 | 438 | Sep, Nov |
| Lough Oughter Complex | | 112 | 96 | 152 | 202 | 30 | | 120 | 202 | |
| Cork Harbour | 9 | 12 | 14 | 14 | 10 | 7 | 7 | 10 | 14 | Nov |
| Ballycotton Shanagarry | 14 | 3 | 14 | 10 | 9 | | | 7 | 14 | Sep |
| An Trá Beg | 8 | | 12 | | 2 | | 10 | 5 | 12 | Nov |

Other sites recorded less than five seasons (peak count 2011/12 – 2015/16):

Adra Lough (20), Annagose Lough (3), Ballinamore Lakes (16), Ballyallia Lake (2), Blacksod & Tullaghan Bays (1), Castlemaine Harbour & Rossbehy (2), Drumcliff Bay Estuary (3), Dundalk Bay (1), Dunfanaghy New Lake (3), East Ballinamore Lakes (43), Finn-Lacky Catchment (5), Inishcarra Reservoirs (1), Killala Bay (1), Lough Gowna (2), North Wicklow Coastal Marshes (1), River Erne & lakes north of Belturbet (138), River Erne: Oughter - Gowna (7), Rogerstown Estuary (1), Sheskinmore Lough (1), Termoncarragh & Annagh Marsh (2), Wexford Harbour & Slobs (1), Woodford River Lakes (92).

## 4.12 Light-bellied Brent Goose *Branta bernicla hrota* Cadhan

*hrota*, E. Canadian High Arctic (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 400 | **Population Change (%):** | |
| **All-Ireland threshold:** | 350 | 5 year: | -15.5[b] |
| **Population size (2011-2016):** | | 10 year: | -10.2[c] |
| All-Ireland: | 35,150[a] | 20 year: | +96.1[d] |
| ROI: | 30,295[a] | Historical: | +75.1[e] |
| Associated with SPA network: | 22,405[a] | | |

[a] 2017 data from the Irish Brent Goose Research Group.

Population change based on the comparison of the 2017 all-Ireland population estimate with: [b] 2012 census; [c] 2007 census, [d] 1997 census, [e] mid 1980s population estimate (Sheppard, 1993).

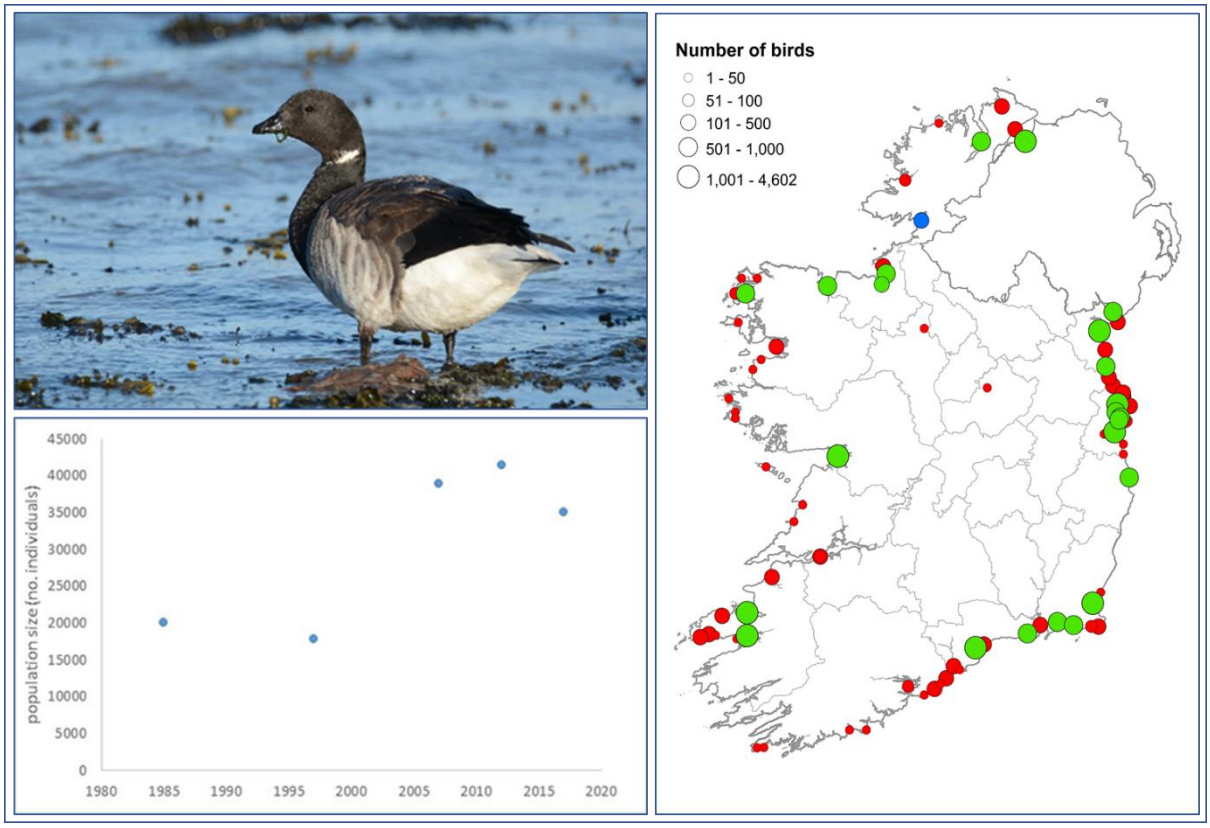



**Figure 13** Distribution map and graphed population trend for Light-bellied Brent Goose. The distribution map illustrates sites supporting numbers of international importance (green circles), national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend graph illustrates the population size obtained from census data 1985-2017 (Photo: Brian Burke).

There are eight populations of the Brent Goose (Wetlands International, 2018), including three populations of the Light-bellied *hrota* subspecies. The Light-bellied Brent Goose population (hereafter Brent Goose) that breeds in Canada's eastern Queen Elizabeth Islands winters mostly in Ireland, with small numbers in Britain, France, the Channel Islands and Spain. Since winter 1996 the Irish Brent Goose Research Group has coordinated autumn and spring censuses of the East Canadian High-Arctic

Light-bellied Brent Goose on its wintering grounds to monitor population size, productivity and mark and resight individuals for further study. Since 2001 the group has marked over 5,000 geese and over 200,000 sightings have been recorded (G. McElwaine, pers. comm.).

The population has shown huge increases in the medium and long-term, although some years of almost zero productivity mean there has been some fluctuation in numbers in the short-term. Numbers reached a peak of over 48,000 birds in winter 2011/12 but had fallen as low as 32,000 birds three years later. In the last three years (autumn 2015-2017) the population has numbered 35,000-40,000 birds. In recent years almost total breeding failure was recorded in autumn 2009, 2013 and 2017 (Colhoun *et al*., 2017); but percentage young exceeded 20% in autumns 2004, 2007 and 2011 (Irish Brent Research Group, pers. comm.), with varying levels of success in between.

The bulk of the population congregates at Strangford Lough upon arrival from staging grounds in Iceland, usually in the last few days of August. Over the following weeks the geese move on to other sites where they will spend the majority of the winter. They were recorded at 80 I-WeBS sites during the current period, a slight increase from 75 sites during the previous period (Boland & Crowe, 2012). A total of 24 sites supported numbers of international importance, only one of which (Ballymacoda) was not of similar importance during the previous period. At site level, some flocks experienced notable increases in recent seasons (e.g. Dublin Bay, Castlemaine Harbour & Rossbehy) whilst others declined by equally notable numbers, although low productivity in recent years is likely a significant factor in many of these declines. Despite hosting a similar mean count of Brent geese as in the previous period, the numbers at Donegal Bay are now of national rather than international importance. Of the two sites that no longer supported significant numbers, Trawbreaga Bay received low levels of survey coverage during the current period. Improved survey coverage in the coming years might therefore reveal this site to be of similar importance to the previous period.

Brent geese are well-known to feed on recreational grasslands from mid-winter onwards (Inger *et al*., 2006), which means many flocks are unlikely to be recorded during core I-WeBS counts. Recent work as part of a Natura Impact Statement (Scott Cawley, 2017) identified 113 terrestrial inland feeding sites used by Brent geese in Dublin City and its environs from 2012/13 to 2016/17. The abundance of these foraging sites within the Dublin Bay catchment is likely a factor in the increased numbers in Dublin Bay in recent years, despite poor productivity and declines in many other areas. Eight of these feeding sites recorded numbers of international importance in the five-year period examined (Scott Cawley, 2017).

**Table 13** Table showing sites supporting internationally and/or nationally important numbers of Light-bellied Brent Goose ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of international importance** | | | | | | | | | | |
| Dublin Bay | 5,536 | 3,292 | 4,102 | 6,134 | 3,717 | 4,862 | 4,195 | 4,602 | 6,134 | Nov |
| Tralee Bay, Lough Gill & Akeragh Lough | 4,043 | 3,118 | 3,943 | 5,962 | 2,075 | 1,323 | 1,962 | 3,053 | 5,962 | Feb |
| Lough Foyle † | 3,862 | 2,652 | 2,927 | 3,722 | 2,712 | 2,500 | 3,399 | 3,052 | 3,722 | |
| Wexford Harbour & Slobs | 2,100* | 1,900* | 4,020 | 1,448 | 2,758 | 1,890 | 1,010 | 2,225 | 4,020 | Jan |
| Rogerstown Estuary | 2,749 | 1,051 | 2,661 | 1,395 | 2,217 | 1,047 | 2,662 | 1,996 | 2,662 | Dec |
| Dundalk Bay | 1,435 | 722 | 1,802 | 1,861 | 1,800 | 1,462 | 2,337 | 1,852 | 2,337 | Dec |
| Dungarvan Harbour | 1,867 | 1,110 | 1,516 | 1,749 | 1,143 | 1,062 | 1,018 | 1,298 | 1,749 | Jan |

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Inner Galway Bay | 1,419 | 1,047 | 1,936 | 1,234 | 1,030 | 605 | 847 | 1,130 | 1,936 | Mar |
| Castlemaine Harbour & Rossbehy | 753* | 1,350 | 1,278 | 1,284 | 1,091 | 1,169 | 804 | 1,125 | 1,284 | Nov, Dec |
| Broadmeadow (Malahide) Estuary | 898 | 1,411 | 943 | 1,980 | 710 | 464 | 824 | 984 | 1,980 | Jan |
| Tramore Back Strand | 521* | 814 | 986 | 1,112 | 828 | 641 | | 892 | 1,112 | Jan |
| Hick's Tower & Robswall | 257 | 325 | 835 | | | | | 835 | 835 | |
| Bannow Bay | 2158 | | 1455 | | 943 | 478 | 404 | 820 | 1,455 | |
| North Wicklow Coastal Marshes | 390 | 780 | 1,120 | 245* | 703 | 20* | 570 | 798 | 1,120 | Mar |
| Lough Swilly | 646 | 581 | 689 | 984 | 594 | 450 | 424 | 628 | 984 | Mar |
| Blacksod & Tullaghan Bays | 913 | 492* | 586 | 1,426 | 476 | 322 | 246 | 611 | 1,426 | Jan, Feb |
| Sligo Harbour | 433 | 435 | 263 | 1,139 | 572 | 597 | 477 | 610 | 1,139 | Nov, Jan |
| Carlingford Lough † | | 160 | 278 | 1,320 | 477 | 379 | 581 | 607 | 1,320 | |
| The Cull & Killag (Ballyteige) | 480 | 216 | 308 | 545 | 184 | 602 | 946 | 517 | 946 | Dec, Mar |
| Killala Bay | 435 | 313 | 315 | 663 | 711 | 564 | 312 | 513 | 711 | Dec |
| Baldoyle Bay | 956 | | | | 580 | 588 | 342 | 503 | 588 | Dec |
| Boyne Estuary | 345 | 585 | 675 | 953 | 100 | 540 | 238 | 501 | 953 | Nov, Mar |
| Ballysadare Bay | 428 | 50 | 398 | 513 | 443 | 500 | 362 | 443 | 513 | Jan |
| Ballymacoda [1] | 4* | | 755 | 347 | | 177 | 2* | 426 | 755 | Mar |
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Donegal Bay [3] | 427 | 386 | 294 | 573 | 502 | 321 | 183 | 375 | 573 | Jan |
| **Sites no longer supporting numbers of international importance** | | | | | | | | | | |
| Trawbreaga Bay | 392 | 68 | | 573 | | | | 287 | 573 | |
| Lady's Island Lake | 310 | 670 | 541 | 140 | 248 | 28 | | 191 | 541 | Mar |

* Low-quality count not included in the calculation of the mean.

† Data provided by the UK (WeBS).

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

[3]Site demoted (from supporting numbers of international importance to numbers of national importance) since the 2001/02 to 2008/09 period.

## 4.13 Shelduck *Tadorna tadorna* Seil-lacha

N. W. Europe (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 2,500 | **Population change (%):** | |
| **All-Ireland threshold:** | 100 | 5 year: | -9.9 |
| **Population size (2011-2016):** | | 12 year: | -17.3 |
| All-Ireland: | 10,160 | 22 year: | -23.0 |
| ROI: | 6,378 | Historical: | -16.4 |
| Associated with SPA network: | 6,149 | Average annual change: | -1.5 |

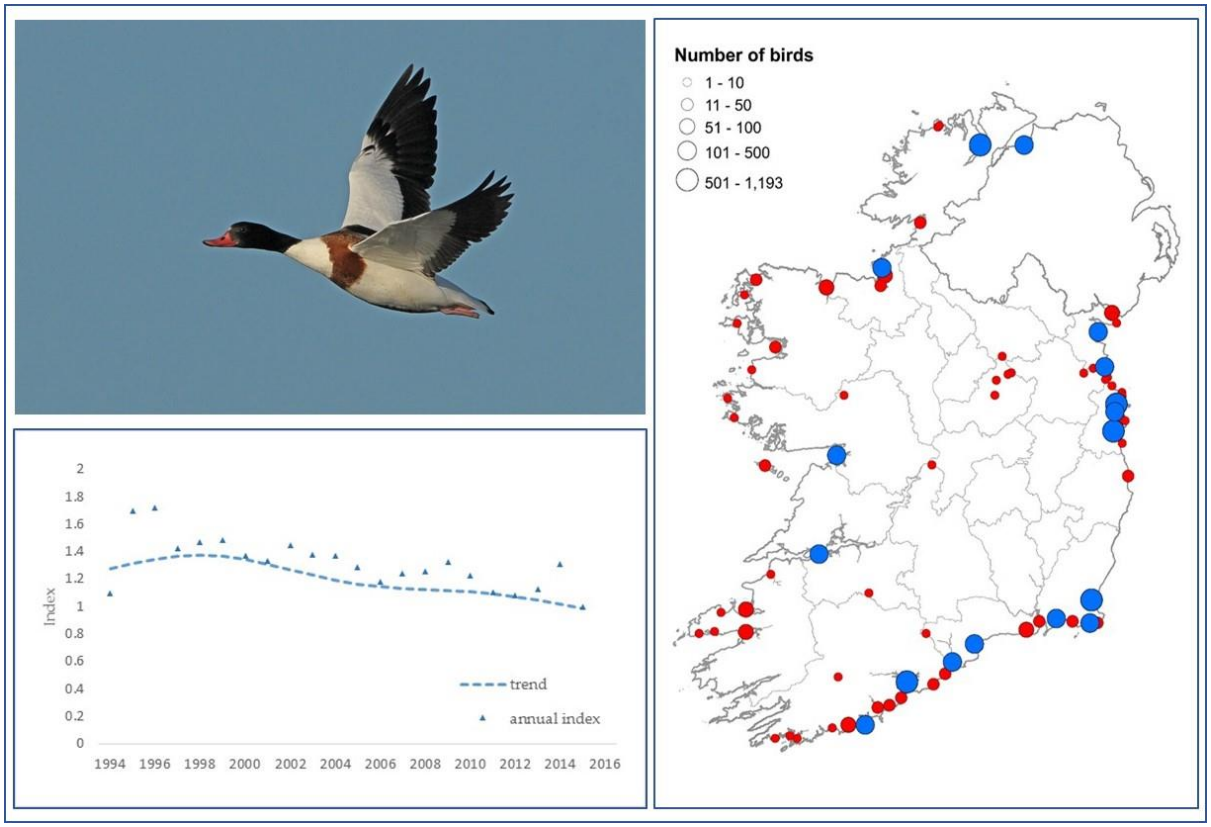



**Figure 14** Distribution map and graphed population trend for Shelduck. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the annual indices (triangles) together with the smoothed trend (hatched line) (Photo: Colum Clarke).

Ireland's breeding and wintering Common Shelduck (hereafter Shelduck) belong to the population that breeds across north-west Europe and winters in west Europe. The flyway population is stable (Wetlands International, 2018). Numbers have shown a slight but steady decline in Ireland since the mid-1990s, and this trend is consistent with that shown in Britain, while numbers have been in decline in Northern Ireland since the mid 2000s (Frost *et al*., 2018).

The species is notable for forming large aggregations of moulting birds at the end of the breeding season in late summer. Traditionally almost all western European Shelduck were thought to have migrated to the German Wadden Sea to moult where they have been systematically counted since the

late 1980s. However, recent surveys suggest that about a quarter of the moulting Shelduck in the Wadden Sea have now shifted from the German to the Dutch Wadden Sea (JMMB, 2013). In addition, late summer moulting concentrations are also known to occur in the UK, notably on the Humber Estuary, The Wash, Bridgwater Bay in the Severn Estuary, and the Firth of Forth (Patterson, 1982). In Ireland, small numbers of Shelduck are recorded during the early autumn, and build up from October through to the mid-winter period. Shelduck are widely dispersed and were recorded at 80 sites during the current period, including 17 sites that supported numbers of national importance. Cork Harbour and Dublin Bay remain the top ranked sites; numbers at the latter increased slightly in comparison to the former period. Numbers have declined at Dundalk Bay and the decline at Carlingford Lough (NI) has resulted in this site being removed from the list of significant sites. Five sites are newly listed as being of significance largely as a result of the drop in 1% threshold from 150 to 100.

**Table 13** Table showing sites supporting nationally important numbers ranked by the mean of peak counts of Shelduck between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Dublin Bay | 1,142 | 821 | 603 | 731 | 961 | 2,927 | 744 | 1,193 | 2,927 | Nov, Dec |
| Cork Harbour | 952* | 1,369* | 1,021 | 1,281 | 1,241 | 1,073 | 955 | 1,114 | 1,281 | Feb |
| Rogerstown Estuary | 886 | 730 | 752 | 793 | 877 | 652 | 624 | 740 | 877 | Dec, Feb |
| Lough Swilly | 636 | 802 | 742 | 517 | 661 | 748 | 533 | 640 | 748 | Feb, Mar |
| Wexford Harbour & Slobs | 87* | 243* | 600 | 259 | 530 | 1,116 | 261 | 553 | 1,116 | Nov, Feb |
| Dundalk Bay | 742 | 447 | 265 | 199 | 463 | 254 | 455 | 327 | 463 | Jan, Mar |
| Bannow Bay | 393 | | 366 | | 201 | 369 | 353 | 322 | 369 | Dec |
| Dungarvan Harbour | 269 | 399 | 341 | 297 | 337 | 348 | 231 | 311 | 348 | Feb |
| Shannon & Fergus Estuary [4] | 499 | 408 | 279 | 210 | | | | 245 | 279 | Mar |
| Broadmeadow (Malahide) Estuary | 341 | 479 | 8 | 262 | 120 | 222 | 303 | 183 | 303 | Nov |
| Lough Foyle † | 122 | 139 | 209 | 140 | 129 | 195 | 218 | 178 | 209 | Mar |
| Boyne Estuary [1] | 83 | 118 | 151 | 218 | 150 | 182 | 186 | 177 | 218 | Feb |
| Courtmacsherry Bay, Broadstrand Bay & Dunworley [1] | 113 | 227 | 129 | 165 | 135 | 146 | 150 | 145 | 165 | Dec, Feb |
| Blackwater Estuary [1] | 79 | 8* | 132 | 156 | 198 | 120 | 94 | 140 | 198 | Feb, Mar |
| Drumcliff Bay Estuary [1] | 133 | 65 | 124 | 84 | 94 | 209 | 155 | 133 | 209 | Feb |
| Tacumshin Lake | 134 | 98 | 178 | 136 | 122 | 97 | 72 | 121 | 178 | Mar |
| Inner Galway Bay [1] | 104 | 92 | 88 | 83 | 90 | 122 | 115 | 100 | 122 | Mar |
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| Baldoyle Bay | 238 | | | | 52 | 97 | 88 | 79 | 97 | |
| Carlingford Lough † | 278 | 237 | 292 | 37 | 37 | 26 | 26 | 84 | 292 | Mar |

* Low-quality count not included in the calculation of the mean.

† Data provided by the UK (WeBS).

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

[4]Aerial census data.

## 4.14 Wigeon *Mareca penelope* Rualacha

Western Siberia, N.W. & N.E. Europe (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 140,000 | **Population change (%):** | |
| **All-Ireland threshold:** | 560 | 5 year: | -4.9 |
| **Population size (2011-2016):** | | 12 year: | -24.0 |
| All-Ireland: | 55,730 | 22 year: | -39.2 |
| ROI: | 50,452 | Historical: | -43.6 |
| Associated with with SPA network: | 38,514 | Average annual change: | -1.8 |

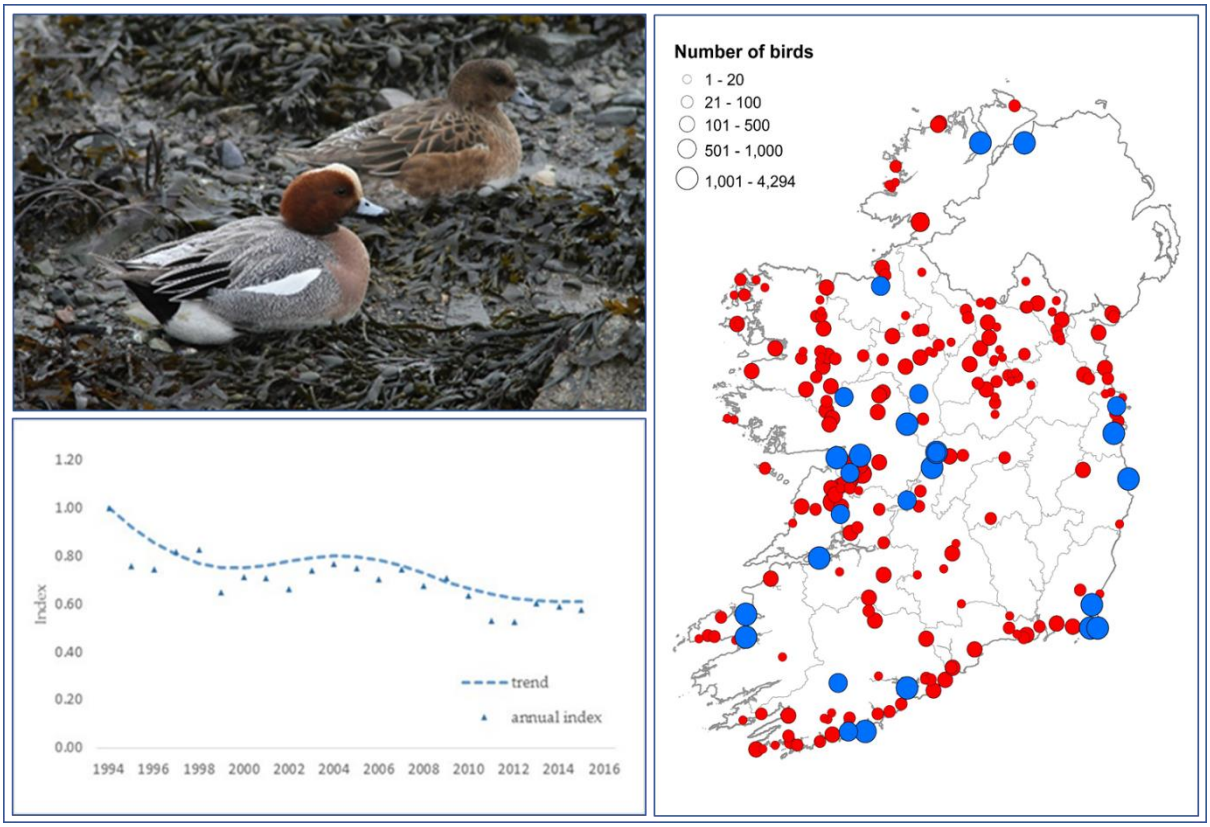



**Figure 15** Distribution map and graphed population trend for Wigeon. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the annual indices (triangles) together with the smoothed trend (hatched line) (Photo: Dick Coombes).

The population of Eurasian Wigeon (hereafter Wigeon) that winters throughout north-west Europe breeds across north-west and north-east Europe as far as western Siberia. This flyway population is in decline. Wintering populations of Wigeon in Republic of Ireland and Northern Ireland have shown long term declines, while long-term increases have been recorded in Britain (Frost *et al*., 2018).

Numbers of Wigeon in Ireland build up from early autumn and peak in January. Wigeon are widespread on a variety of coastal and inland complexes, and they were recorded at 243 sites during the current period. Some 28 sites supported numbers of national importance including nine sites that have been promoted to this listing. Little Brosna Callows and Tacumshin Lake remain highly ranked

sites although declines in numbers are evident at both. Numbers at Wexford harbour & Slobs, ranked second most important during the former period, have declined substantially. Numbers have similarly declined at Lough Foyle (NI). Numbers for the River Suck (aerial counts) have increased while a substantial increase at Castlemaine Harbour & Rossbehy is likely due to improved coverage.

In Northern Ireland, Lough Foyle, Loughs Neagh & Beg and Strangford Lough remain the top ranked sites based on numbers for this species (Frost *et al*., 2018).

**Table 14** Table showing sites supporting nationally important numbers of Wigeon ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Little Brosna Callows | | | 4,291 | 3,425 | 5,273 | 4,185 | 1,711* | 4,294 | 5,273 | Jan |
| Little Brosna Callows [4] | 1,455 | 2,375 | 2,350 | 5,700 | | | | 4,025 | 5,700 | |
| Tacumshin Lake | 3,350 | 3,500 | 3,000 | 4,620 | 2,350 | 3,790 | 5,000 | 3,752 | 5,000 | Oct, Dec |
| Rahasane Turlough | 4,000 | 3,500 | 2,300 | 3,500* | 5,100 | 3,100 | 2,700 | 3,300 | 5,100 | Jan |
| River Suck [4] | 2,868 | 3,146 | 3,385 | 3,127 | | | | 3,256 | 3,385 | |
| Castlemaine Harbour & Rossbehy [1] | 298* | 3,038 | 761 | 2,128 | 4,007 | 4,774 | 3,880 | 3,110 | 4,774 | Oct |
| Shannon Callows [4] | 900 | 4,702 | 3,676 | 2,023 | | | | 2,850 | 3,676 | |
| Shannon & Fergus Estuary [4] | 1,933 | 1,976 | 1,789 | 2,594 | | | | 2,192 | 2,594 | |
| Lough Foyle † | 1,273 | 1,409 | 782 | 1,830 | 1,663 | 1,349 | 3,395 | 1,804 | 3,395 | Sep, Oct |
| Inner Galway Bay | 2,211 | 1,042 | 3,564 | 1,325 | 1,557 | 1,181 | 1,119 | 1,749 | 3,564 | Jan |
| Lough Swilly | 1,313 | 1,343 | 1,173 | 971 | 2,206 | 2,228 | 2,122 | 1,740 | 2,228 | Nov |
| Wexford Harbour & Slobs | 6,450* | 3,420* | 2,113 | 1,606 | 2,560 | 792 | 1,000 | 1,614 | 2,560 | Jan |
| Courtmacsherry Bay, Broadstrand Bay & Dunworley | 962 | 1,478 | 1,088 | 1,667 | 1,599 | 992 | 1,762 | 1,422 | 1,762 | Dec |
| Cork Harbour | 1,236* | 1,388* | 1,508 | 1,056 | 1,503 | 1,578 | 1,245 | 1,378 | 1,578 | Jan |
| Tralee Bay, Lough Gill & Akeragh Lough | 814 | 745 | 269 | 434 | 1,520 | 2,550 | 1,446 | 1,244 | 2,550 | Oct |
| Lady's Island Lake [1] | 2,492 | 622 | 1,200 | 919 | 942 | 844 | 1,219 | 1,025 | 1,219 | Feb |
| Dublin Bay [1] | 1,911 | 806 | 610 | 445 | 691 | 2,201 | 1,106 | 1,011 | 2,201 | Nov |
| North Wicklow Coastal Marshes | 771 | 1,602 | 1,253 | 510* | 849 | 845* | 913 | 1,005 | 1,253 | Feb |
| Rogerstown Estuary | 690 | 490 | 813 | 585 | 686 | 1,342 | 1,532 | 992 | 1,532 | Jan, Feb |
| Southern Roscommon Lakes | 837 | 392 | 824 | 1,145 | 1,247 | 864 | 439 | 904 | 1,247 | Jan |
| Ballyallia Lake [1] | 631 | 532 | 629 | 666 | 784 | 1,122 | 921 | 824 | 1,122 | Dec |
| North Central Galway Lakes [1] | 1,020* | 1,070 | 637 | 397 | 650 | | 1,315 | 750 | 1,315 | Jan |

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Shannon Callows | 732 | 1,398 | 970 | 641 | | 1,351 | | 741 | 1,351 | Dec, Jan, Feb |
| Inishcarra Reservoirs | 1,168 | 287 | 102 | 1,512 | 1,067 | 85* | 277 | 740 | 1,512 | Jan |
| Clonakilty Bay [1] | 425 | 354 | 641 | 685 | 981 | 499 | 783 | 718 | 981 | Nov, Jan |
| Ballysadare Bay [1] | 291 | 201 | 483 | 369 | 910 | 565 | 793 | 624 | 910 | Jan |
| Cahermore Turlough [1] | | 1 | 406 | 410 | 557 | 533 | 1,000 | 581 | 1,000 | Dec, Jan |
| Lough Derg (Shannon) [1,4] | 1,013 | 340 | 461 | 662 | | | | 562 | 662 | Jan |
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| Dundalk Bay | 1,073 | 1,116 | 615 | 399 | 452 | 269 | 239 | 475 | 639 | |
| Blackwater Callows | 973 | | 533 | 234 | 411 | 104 | | 321 | 533 | |
| Kilcolman Marsh | 335 | 135 | 105 | 200 | 300 | 150 | 120 | 175 | 300 | |

Sites that supported numbers of national importance during the former period but no data were available for the current period: Lough Ree and Cahore Marshes.

* Low-quality count not included in the calculation of the mean.

† Data provided by the UK (WeBS).

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

[4]Aerial census data.

## 4.15 Gadwall *Mareca strepera* Gadual

*strepera*, N.W. Europe (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 1,200 | **Population change (%):** | |
| **All-Ireland threshold:** | 20 | 5 year: | -39.3 |
| **Population size (2011-2016):** | | 12 year: | -3.1 |
| All-Ireland: | 890 | 22 year: | +54.9 |
| ROI: | 515 | Historical: | +55.0 |
| Associated with SPA network: | 284 | Average annual change: | +2.0 |

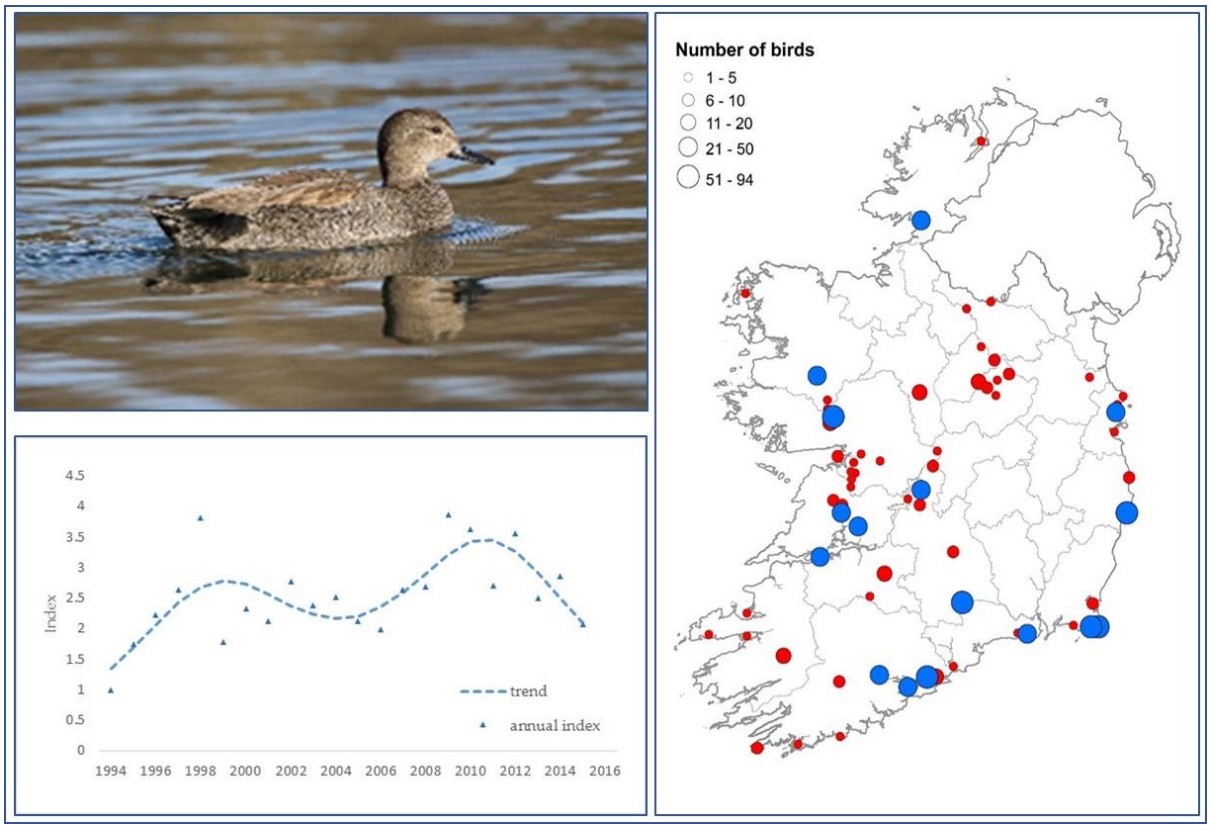



**Figure 16** Distribution map and graphed population trend for Gadwall. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the annual indices (triangles) together with the smoothed trend (hatched line) (Photo: Mark Carmody).

Gadwall that occur in Ireland belong to the population that breeds across north-west Europe and spends winter in west Europe. This population has an increasing trend (Wetlands International, 2018). This species has a positive trend in Ireland across the long-term although a short term decline is evident. Gadwall has also shown continued increase in Britain since the late 1970s. Following a decline in numbers in Northern Ireland since the early 1990s, numbers have increased (Frost *et al*., 2018).

Gadwall were recorded at 71 sites during the current period including 16 sites that supported numbers of national importance. Lady's Island Lake was the top ranked site with a mean number more than double that reported for the former period, while Buckroney Fen, the second highest

ranked site, is newly listed as a site of significance. Numbers at Lough Carra and Lough Corrib have declined, the latter no longer qualifying as a significant site for this species. While numbers at the Corofin Wetlands appear to have declined, poor count coverage in recent seasons means that the true status for this site is unknown.

**Table 15** Table showing sites supporting nationally important numbers of Gadwall ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Lady's Island Lake | 129 | 32 | 149 | 34 | 147 | 22 | 117 | 94 | 149 | Sep |
| Buckroney Fen [1] | | | 79 | | | | | 79 | 79 | |
| Tacumshin Lake | 132 | 158 | 57 | 88 | 43 | 80 | 47 | 63 | 88 | Dec |
| Doolough Headford (Turloughcor) | 18 | 50 | 94 | 107 | 10 | 50 | 30 | 58 | 107 | Feb |
| Lough Aderry | 3 | 25* | 19 | 66 | 77 | 65 | 59 | 57 | 77 | Dec |
| Marlfield Lake | 41 | 40 | 41 | 62 | | | | 52 | 62 | |
| Pat Reddan's Lake | 29 | 27 | 30 | 42 | 34 | 71 | 19 | 39 | 71 | Jan |
| Blarney Lake [1] | | | | | | 35 | | 35 | 35 | |
| Tramore Back Strand [1] | 6* | 62 | 28 | 37 | 43 | 25 | | 33 | 43 | Jan |
| Shannon & Fergus Estuary [1] | | 66 | 13 | 14 | 49 | 33 | 42 | 30 | 49 | Dec |
| Lough Carra | 25 | 20 | 30 | | | | | 30 | 30 | |
| South East Clare Lakes [1] | 4* | 52 | 25 | 34 | 38 | 36 | 14 | 29 | 38 | Feb |
| Broadmeadow (Malahide) Estuary [1] | | 2 | | 120 | 4 | | | 25 | 120 | Sep, Nov |
| Ballyallia Lake [1] | 30 | 71 | 18 | 42 | 18 | 25 | 10 | 23 | 42 | Dec |
| Cork Harbour [1] | 8* | 13* | 22 | 12 | 15 | 36 | 25 | 22 | 36 | Dec, Feb |
| Donegal Bay [1] | | | | 40 | | 2 | | 21 | 40 | Sep, Oct |
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| Lough Corrib | 97 | 19 | 23* | 43 | 14 | 8 | 4 | 17 | 43 | |
| Corofin Wetlands | 82 | 12 | | 13 | | | 34 | 9 | 34 | Oct, Jan |

Sites that supported numbers of national importance during the former period but no data were available for the current period: Castlemartyr Lake.

* Low-quality count not included in the calculation of the mean.

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

## 4.16 Teal *Anas crecca* Praslacha

*crecca*, N. & N.W Europe (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 5,000 | **Population change (%):** | |
| **All-Ireland threshold:** | 360 | 5 year: | -6.0 |
| **Population size (2011-2016):** | | 12 year: | -2.9 |
| All-Ireland: | 35,740 | 22 year: | +4.1 |
| ROI: | 27,644 | Historical: | - |
| Associated with SPA network: | 20,950 | Average annual change: | +0.1 |

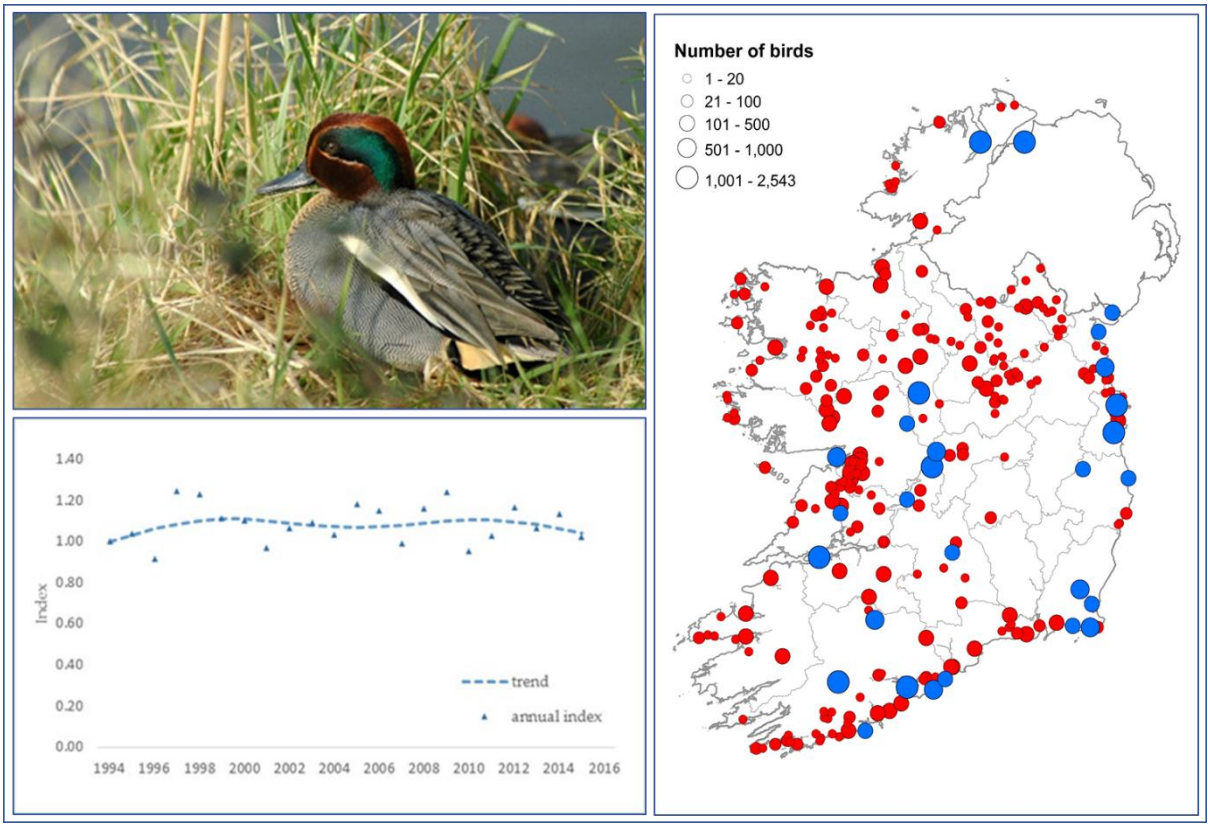



**Figure 17** Distribution map and graphed population trend for Teal. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the annual indices (triangles) together with the smoothed trend (hatched line) (Photo: Brian Burke).

One of three recognised populations of Common Teal (hereafter Teal) breeds across north and north-west Europe and winters across north-west Europe. This population is increasing at the flyway scale. Teal are resident and a winter migrant in Ireland and numbers have increased over the long-term although a recent short-term decline is now evident (Figure 17). Teal have a similarly positive trend in the UK (Frost *et al*., 2018).

Teal are very widespread in Ireland, occurring in a wide range of inland and coastal wetland habitats, including small lakes and ponds, bogs, drainage ditches and rivers, all of which are under-represented

during I-WeBS. Therefore, deriving accurate population estimates and thresholds for this species is particularly difficult. In the UK, it was estimated that 21% of Teal are missed during WeBS counts (Kershaw & Cranswick, 2003). The thresholds presented above should be treated as known underestimates.

Teal were recorded at 265 sites during the current period, and 28 sites supported numbers of national importance. Lough Swilly, Little Brosna Callows and Inishcarra reservoirs remain the top ranked sites with relatively stable numbers compared with the former period. Numbers at Lough Foyle (NI) have nearly doubled since the former period, while numbers at Rahashane Turlough and Blackwater Callows have declined to an extent that these sites no longer qualifies as significant. Numbers at Wexford Harbour & Slobs and Kilcolman Marsh have also declined substantially.

**Table 16** Table showing sites supporting nationally important numbers of Teal ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Lough Swilly | 2,203 | 2,399 | 2,625 | 1,791 | 3,045 | 3,059 | 2,196 | 2,543 | 3,059 | Nov |
| Lough Foyle † | 2,020 | 1,325 | 1,360 | 1,844 | 4,803 | 2,187 | 1,510 | 2,341 | 4,803 | Dec, Jan |
| Little Brosna Callows | | | 1,778 | 899 | 593 | 3,000 | 1,718* | 1,568 | 3,000 | Jan |
| Inishcarra Reservoirs | 2,025 | 585 | 490 | 2,035 | 2,082 | 250* | 534 | 1,285 | 2,082 | Jan |
| Rogerstown Estuary | 1,003 | 1,448 | 1,211 | 1,469 | 685 | 2,008 | 967 | 1,268 | 2,008 | Nov, Jan |
| Shannon & Fergus Estuary [4] | 373 | 945 | 1,283 | 1,218 | | | | 1,251 | 1,283 | |
| Cork Harbour | 753* | 1,216* | 1,015 | 1,251 | 1,240 | 1,221 | 1,399 | 1,225 | 1,399 | Jan, Feb |
| Dublin Bay | 980 | 1,358 | 909 | 981 | 1,378 | 1,233 | 1,291 | 1,158 | 1,378 | Dec, Feb |
| Southern Roscommon Lakes | 754 | 268 | 1,147 | 903 | 1,316 | 1,108 | 531 | 1,001 | 1,316 | Jan |
| Tacumshin Lake | 1,280 | 980 | 945 | 950 | 1,017 | 1,090 | 1,000 | 1,000 | 1,090 | Dec, Feb |
| Inner Galway Bay | 1,054 | 952 | 1,854 | 1,382 | 594 | 635 | 529 | 999 | 1,854 | Jan |
| River Slaney | | | | 862 | 262* | | | 862 | 862 | |
| Boyne Estuary [1] | 385 | 806 | 423 | 1,125 | 462 | 841 | 533 | 677 | 1,125 | Oct, Dec |
| Shannon Callows [1,4] | 270 | 573 | 835 | 285 | | | | 560 | 835 | |
| Kilcolman Marsh | 1,000 | 150 | 700 | 250 | 1,000 | 300 | 500 | 550 | 1,000 | Jan |
| Ballycotton Shanagarry [1] | 553 | 250* | 585 | 551 | 340 | 416 | 614 | 501 | 614 | Oct, Dec |
| Ballymacoda | 215* | 107* | 549 | 411 | | 524 | 166* | 495 | 549 | Nov |
| Courtmacsherry Bay, Broadstrand Bay & Dunworley [1] | 431 | 442 | 469 | 537 | 583 | 421 | 387 | 479 | 583 | Oct |
| Dundalk Bay | 1,065 | 512 | 275 | 625 | 681 | 358 | 321 | 452 | 681 | Jan |
| Wexford Harbour & Slobs | 570* | 656* | 378 | 461 | 257 | 488 | 654 | 448 | 654 | Jan |
| The Cull & Killag (Ballyteige) [1] | 160 | 415 | 91 | 458 | 357 | 849 | 478 | 447 | 849 | Nov |

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Lough Derg (Shannon) [4] | 242 | 161 | 445 | 448 | | | | 447 | 448 | |
| North Wicklow Coastal Marshes | 552 | 502 | 346 | 213* | 582 | 356* | 369 | 432 | 582 | Jan |
| Poulaphouca Reservoir [1] | 154 | | 758 | 551 | 220 | 167 | | 424 | 758 | |
| Cabragh Wetlands [1] | 500 | 500 | 410 | 600 | 350 | 450 | 250 | 412 | 600 | Nov, Jan |
| Ballyallia Lake [1] | 500 | 181 | 466 | 351 | 481 | 402* | 333 | 408 | 481 | Jan, Feb |
| Carlingford Lough † | 287 | 385 | 673 | 287 | 385 | 357 | 337 | 408 | 673 | Jan |
| River Suck [1,4] | 211 | 400 | 308 | 479 | | | | 394 | 479 | |
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| Rahasane Turlough | 1,000 | 300 | 550 | 320 | 83 | 400 | 100 | 291 | 550 | |
| Blackwater Callows | 568 | | 445 | 168 | 43 | 126 | | 196 | 445 | |

Sites that supported numbers of national importance during the former period but no data were available for the current period: Pollardstown Fen.

* Low-quality count not included in the calculation of the mean.

† Data provided by the UK (WeBS).

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

[4]Aerial census data.

## 4.17 Mallard *Anas platyrhynchos* Mallard

*platyrhynchos*, N. Europe (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 53,000 | **Population change (%):** | |
| **All-Ireland threshold:** | 280 | 5 year: | -11.8 |
| **Population size (2011-2016):** | | 12 year: | -21.4 |
| All-Ireland: | 28,230 | 22 year: | -26.1 |
| ROI: | 18,810 | Historical: | - |
| Associated with SPA network: | 11,278 | Average annual change: | -1.4 |

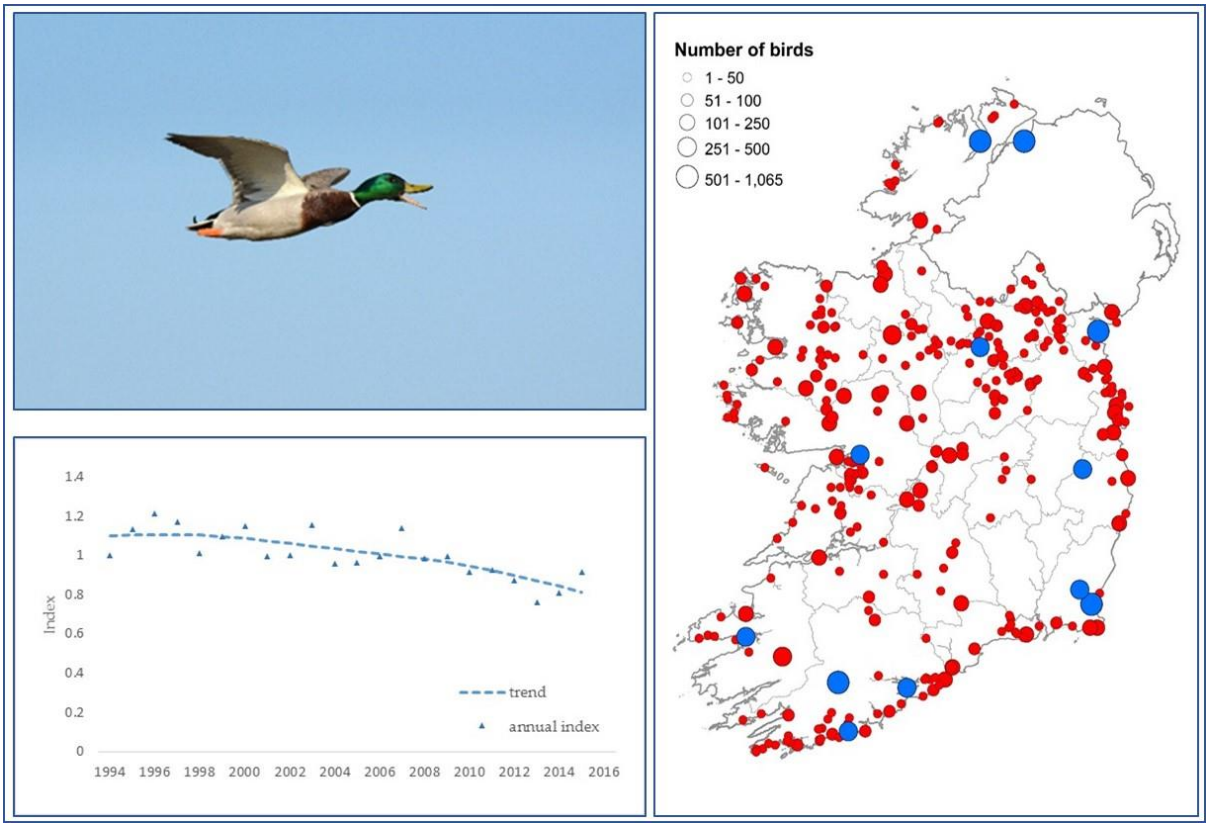



**Figure 18** Distribution map and graphed population trend for Mallard. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the annual indices (triangles) together with the smoothed trend (hatched line) (Photo: Brian Burke).

Mallard that occur in Ireland belong to the population that breed across northern Europe and these have a non-breeding range that extends across north-west Europe, east to the Baltic. This population is stable (Wetlands International, 2018). Irish-breeding birds are resident, and are augmented each winter by migrants, possibly some from the Icelandic breeding population (Wernham *et al*., 2002). Numbers of Mallard have declined throughout I-WeBS, as well as in Northern Ireland and Britain. Frost *et al*. (2018) suggest that the declines in wintering Mallard could be related to fewer releases by shooting estates and/or perhaps short-stopping by Russian birds.

Mallard are widely distributed across freshwater and coastal wetlands and were recorded at 337 sites during the current period. Numbers of national importance were identified at twelve sites. Lough Swilly, Lough Foyle, Dundalk Bay and Wexford Harbour & Slobs are among the most important sites, consistent with the former period, but while numbers at Lough Swilly and Lough Foyle (NI) appear stable, numbers have declined at Dundalk Bay and Wexford Harbour & Slobs.

Loughs Neagh & Beg remains the most important site complex in Ireland for Mallard although numbers have declined (Frost *et al*., 2018).

**Table 17** Table showing sites supporting nationally important numbers of Mallard ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Lough Swilly | 524 | 1,179 | 973 | 516 | 536 | 1,769 | 1,533 | 1,065 | 1,769 | Sep |
| Lough Foyle † | 995 | 1,079 | 1,103 | 1,099 | 755 | 842 | 1,173 | 994 | 1,173 | Oct |
| Dundalk Bay | 807 | 694 | 840 | 766 | 964 | 538 | 1281 | 878 | 1,281 | Sep |
| Wexford Harbour & Slobs | 1,444* | 1,374* | 1,995 | 460 | 493 | 671 | 606 | 845 | 1,995 | |
| Inishcarra Reservoirs | 880 | 93 | 97 | 957 | 722 | 2* | 493 | 567 | 957 | Dec |
| Castlemaine Harbour & Rossbehy [1] | 224* | 495 | 357 | 444 | 360 | 283 | 436 | 376 | 444 | Oct, Nov |
| Cork Harbour | 285* | 410* | 400 | 319 | 323 | 389 | 439 | 374 | 439 | Oct |
| Poulaphouca Reservoir [1] | 121 | | 727 | 283 | 198 | 213 | | 355 | 727 | |
| Lough Gowna [1] | | 8 | | 220 | 444 | 244 | 358 | 317 | 444 | |
| Rahasane Turlough [1] | 220 | 400 | 350 | 290 | 224 | 191 | 488 | 309 | 488 | Sep |
| Clonakilty Bay [1] | 77 | 90 | 329 | 89 | 199 | 214 | 636 | 293 | 636 | Oct |
| River Slaney [1] | 55* | | | 289 | 98* | | | 289 | 289 | |

Sites that supported numbers of national importance during the former period but no data were available for the current period: Kiltullagh Lough.

* Low-quality count not included in the calculation of the mean.

† Data provided by the UK (WeBS).

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

[4]Aerial census data.

## 4.18 Pintail *Anas acuta* Biorearrach

N. Europe & W. Siberia (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 600 | **Population change (%):** | |
| **All-Ireland threshold:** | 20 | 5 year: | -32.5 |
| **Population size (2011-2016):** | | 12 year: | -24.2 |
| All-Ireland: | 1,570 | 22 year: | -42.9 |
| ROI: | 1,017 | Historical: | - |
| Associated with SPA network: | 1,010 | Average annual change: | -0.9 |

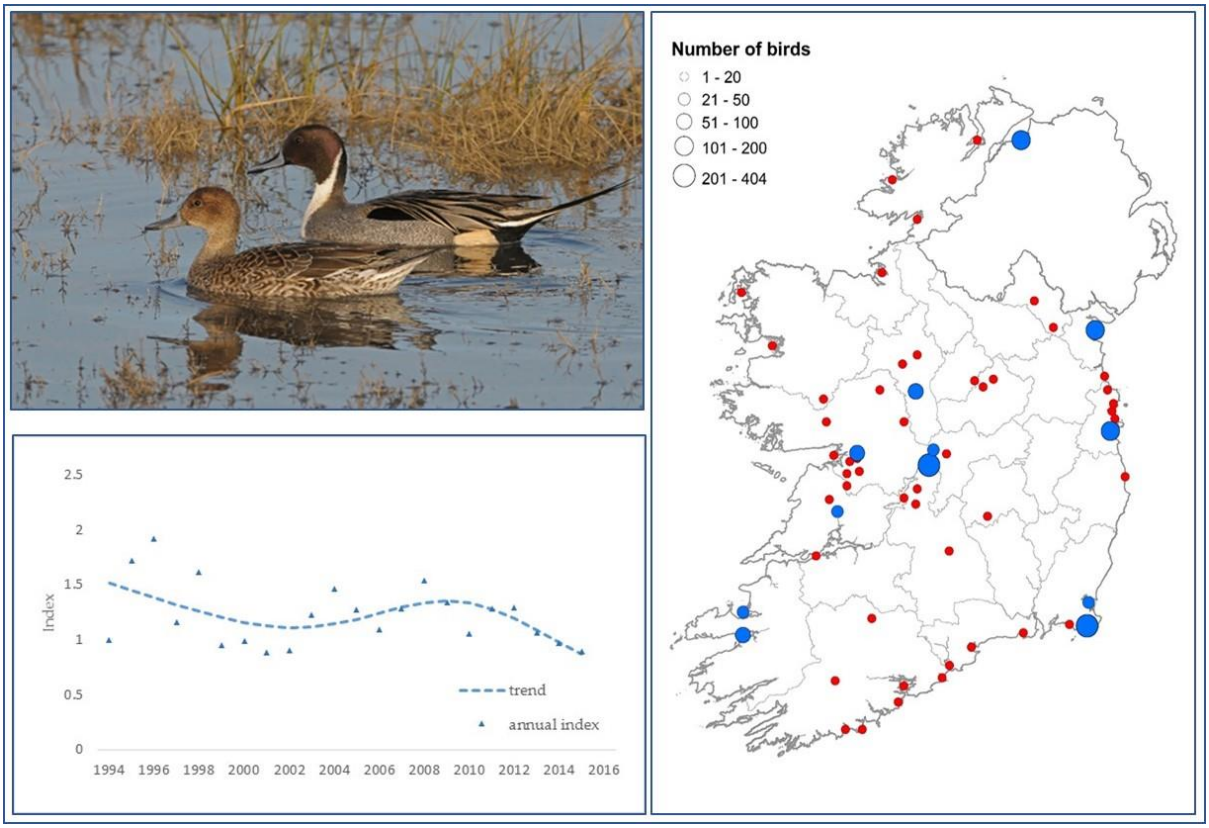



**Figure 19** Distribution map and graphed population trend for Pintail. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the annual indices (triangles) together with the smoothed trend (hatched line) (Photo: Colum Clarke).

Wetlands International (2018) recognises three populations of the Northern Pintail (hereafter Pintail). The population that breeds across northern Europe and western Siberia, and winters in north-west Europe, including Ireland, has a stable population trend. While wintering numbers have fluctuated throughout I-WeBS, a long-term trend for decline is evident, contrasting to the trend for Northern Ireland where numbers have increased since the early 2000s.

The distribution of Pintail in Ireland is relatively localised, with birds distributed on a combination of inland and coastal wetland sites. They were recorded at 60 sites during the current period and 12 sites were identified to support numbers of national importance. The Little Brosna Callows, Dundalk Bay, Tacumshin Lake and Dublin Bay remain among the top most important sites in the Republic of Ireland and numbers at these sites appear stable with the exception of Dundalk Bay where a decline in numbers is evident. Numbers at the cross-border site Lough Foyle have increased, making this the third most important site for Pintail. Numbers at the Southern Roscommon Lakes have declined by half since the former period and a substantial decline is also evident for Wexford Harbour & Slobs.

**Table 18** Table showing sites supporting nationally important numbers of Pintail ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Little Brosna Callows | | | 641 | 232 | 240 | 275 | 630 | 404 | 641 | Jan |
| Tacumshin Lake | 254 | 170 | 111 | 280 | 338 | 176 | 262 | 233 | 338 | Dec |
| Lough Foyle † | 112 | 156 | 195 | 198 | 188 | 196 | 170 | 189 | 198 | Jan, Feb |
| Dublin Bay | 162 | 173 | 212 | 160 | 200 | 150 | 124 | 169 | 212 | Feb |
| Dundalk Bay | 110 | 78 | 120 | 213 | 132 | 191 | 149 | 161 | 213 | Jan |
| Castlemaine Harbour & Rossbehy [1] | 6* | 46 | 120 | 45 | 122 | 110 | 56 | 91 | 122 | Dec |
| Southern Roscommon Lakes | 23 | | 30 | 30 | 103 | 22 | 126 | 62 | 126 | Jan |
| Rahasane Turlough | 124 | 53 | 102 | 4 | 54 | 54 | 44 | 52 | 102 | Nov |
| Wexford Harbour & Slobs | 258* | 124* | 99 | 33 | 75 | 2 | 15 | 45 | 99 | Dec |
| Shannon Callows [1] | 6 | 6 | | | | | 180 | 45 | 180 | Mar |
| Ballyallia Lake [1] | 33 | 10 | 58 | 28 | 8 | 32 | 11 | 27 | 58 | Dec |
| Tralee Bay, Lough Gill & Akeragh Lough [1] | | | | 34 | 49 | 36 | 9 | 26 | 49 | Feb |
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| Broadmeadow (Malahide) Estuary | 66 | 72 | | 29 | 6 | | 15 | 10 | 29 | |
| Baldoyle Bay | 12 | | | | 4 | 4 | | 3 | 4 | |

* Low-quality count not included in the calculation of the mean.

† Data provided by the UK (WeBS).

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

## 4.19 Shoveler *Spatula clypeata* Spadalach

N., N.W. & Central Europe (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 650 | **Population change (%):** | |
| **All-Ireland threshold:** | 20 | 5 year: | -38.0 |
| **Population size (2011-2016):** | | 12 year: | -35.0 |
| All-Ireland: | 2,020 | 22 year: | -35.0 |
| ROI: | 1,865 | Historical: | - |
| Associated with SPA network: | 1,325 | Average annual change: | -0.3 |

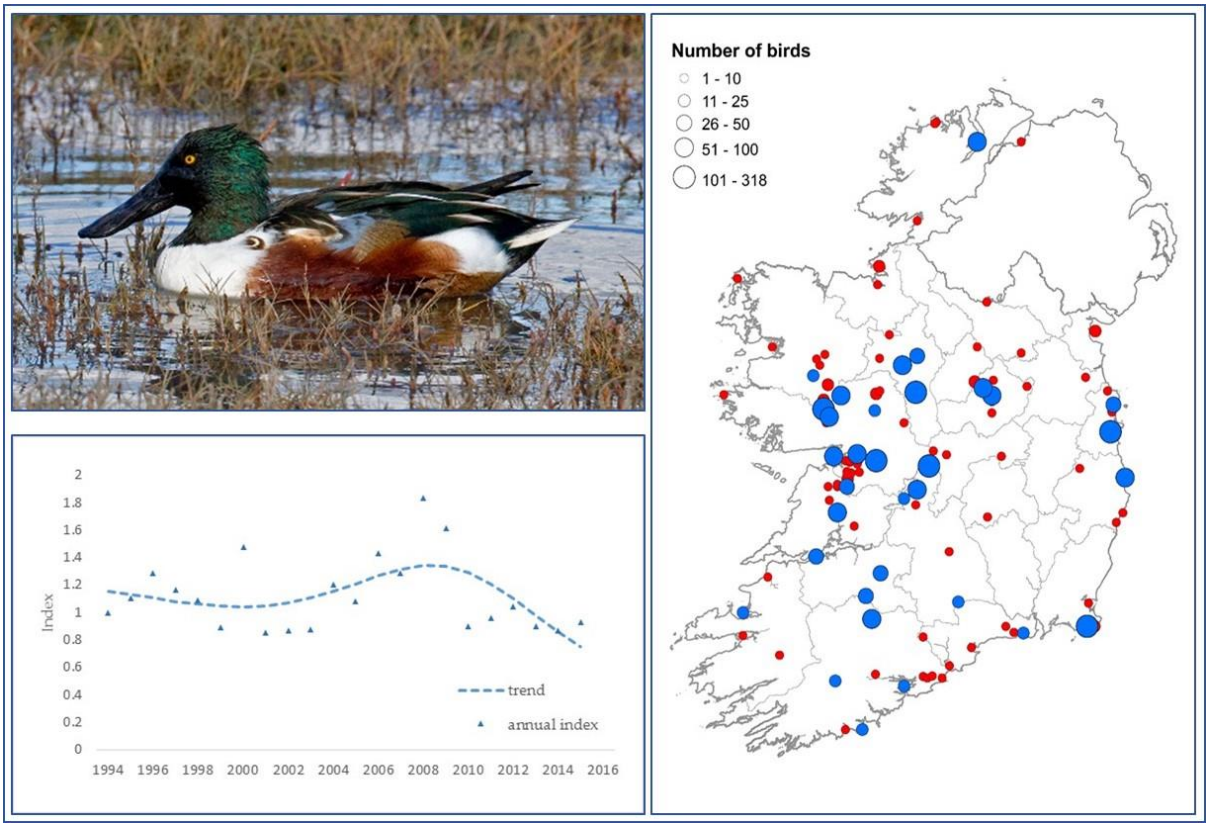



**Figure 19** Distribution map and graphed population trend for Shoveler. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the annual indices (triangles) together with the smoothed trend (hatched line) (Photo: Shay Connolly).

Wetlands International (2018) recognises three populations of Northern Shoveler (hereafter Shoveler). The population that breeds across north, north-west and central Europe, and winters in north-west and central Europe occurs in Ireland and has an increasing trend at flyway level.

Numbers in Ireland declined up until 2002/03, and then increased to beyond former levels up to around 2008/2009. Since then however, numbers have declined. Recent research by Pavón-Jordán *et al*. (2018), which included I-WeBS data, provided evidence for a north-eastwards shift of the centre of the wintering population of species preferring shallow waters such as Shoveler, during the 1990s and

early 2000s, but a shift south-westwards thereafter, in response to large-scale changes in winter weather conditions (linked to NAO index values). While this may help explain the trend in wintering Shoveler numbers in Ireland up to 2008/09, the reasons for the declines since then remain a mystery. The overall trend in Northern Ireland has been declining since the early 1990s, while in Britain as a whole, the trend is for increasing numbers (Frost *et al*., 2018).

Shoveler occur on a variety of inland and coastal habitats in Ireland, and they were recorded at 106 sites during the current period. No site currently supports numbers of international importance. Some 33 sites were identified as supporting numbers of national importance with Lough Rea, the Southern Roscommon Lakes (principally Lough Funshinagh and Lough Croan) and the Little Brosna Callows ranked the most important sites, consistent with the former period although mean numbers have declined. Numbers at Tacumshin Lake, Rostaff Lake and Dublin Bay appear stable. The mean numbers at Rahasane Turlough have increased slightly, while the mean number at Doolough Headford (Turloughcor) have more than doubled since the former period.

**Table 20** Table showing sites supporting nationally important numbers ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Lough Rea [3] | 744 | 555 | 276 | 322 | 294 | 369 | 328 | 318 | 369 | Dec |
| Little Brosna Callows [3] | | | 306 | 531 | 34 | 220 | 46* | 273 | 531 | Feb |
| Southern Roscommon Lakes [3] | 154 | 114 | 221 | 172 | 182 | 323 | 296 | 239 | 323 | Jan |
| Tacumshin Lake | 93 | 113 | 72 | 110 | 159 | 175 | 99 | 123 | 175 | Dec, Mar |
| Rostaff Lake | 82 | 20 | 110 | 42 | 190 | 44 | 140 | 105 | 190 | Dec, Jan |
| Dublin Bay | 249 | 73 | 101 | 79 | 126 | 97 | 115 | 104 | 126 | Nov, Dec |
| Rahasane Turlough | 216 | 150 | 200 | 160 | 10 | 122 | 8 | 100 | 200 | Nov |
| Doolough Headford (Turloughcor) | 101 | 66 | 85 | 193 | 86 | 50 | 35 | 90 | 193 | Jan |
| Pat Reddan's Lake | 44 | 35 | 82 | 58 | 95 | 57 | 147 | 88 | 147 | Jan |
| Lough Swilly | 37 | 115 | 100 | 57 | 70 | 120 | 79 | 85 | 120 | Nov |
| North Central Galway Lakes | 17* | 40 | 30 | 52 | 150 | | 100 | 83 | 150 | Jan |
| Kilcolman Marsh | 190 | 42 | 34 | 113 | 83 | 29 | 155 | 83 | 155 | Jan |
| Lough Owel | 300 | 366 | 120 | 106 | 177 | 2 | | 81 | 177 | Nov |
| Inner Galway Bay | 253 | 44 | 81 | 159 | 101 | 23 | 23 | 77 | 159 | Jan |
| Ballyallia Lake | 190 | 32 | 64 | 88 | 76 | 98 | 16 | 68 | 98 | Dec, Feb |
| Lough Iron | 20 | 28 | 58 | 91 | 16 | 62 | 97 | 65 | 97 | Jan, Mar |
| North Wicklow Coastal Marshes | 47 | 55 | 53 | 17* | 47 | 79* | 83 | 61 | 83 | |
| Castleplunket Turloughs | 57 | 21 | 123 | 31 | | | 104 | 52 | 123 | |

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Charleville Lagoons | | 50 | 34 | 52 | 50 | | | 45 | 52 | Oct, Feb, Mar |
| Shannon & Fergus Estuary [1] | | 33 | 32 | 51 | 41 | 45 | 55 | 45 | 55 | Jan |
| Termon Turloughs | 11 | 25 | 56 | 50 | 39 | 12 | 15 | 34 | 56 | Jan |
| Annaghmore Lakes | 68 | 2 | 9 | 61 | 59 | | 24 | 31 | 61 | Jan, Feb |
| Lough Gur | | 12 | 22 | 24 | | 40 | | 29 | 40 | |
| Rogerstown Estuary | 36 | 21 | 26 | 34 | 42 | 15 | 25 | 28 | 42 | Dec, Jan |
| Courtmacsherry Bay, Broadstrand Bay & Dunworley[1] | 1 | 20 | 21 | 21 | 12 | 31 | 42 | 25 | 42 | Feb |
| Inishcarra Reservoirs | 212 | 1 | 6 | 59 | 20 | 2* | 5 | 23 | 59 | Dec |
| Lough Derg (Shannon) [1] | | 7 | 89 | | | | | 22 | 89 | Jan |
| Tralee Bay, Lough Gill & Akeragh Lough [1] | 111 | 2 | 70 | 34 | 2 | | 2 | 22 | 70 | Dec |
| Marlfield Lake | 16 | 13 | 19 | 25 | | | | 22 | 25 | |
| Cork Harbour | 25* | 17* | 33 | 19 | 24 | 23 | 9 | 22 | 33 | Jan, Feb |
| Lough Carra | | 18 | 21 | | | | | 21 | 21 | |
| North East Galway Lakes [1] | 75 | 48 | 24 | 27 | 6 | | 24 | 20 | 27 | Jan |
| Tramore Backstrand [1] | | 5 | 1 | 8 | 21 | 48 | | 20 | 48 | |
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| Coole Lough - Newtown Turlough | 197* | 12 | 45 | 8 | 1 | 10 | | 13 | 45 | |
| Glen Lough | 28 | | 8 | 7 | 26 | 21* | 6 | 12 | 26 | |
| Corofin Wetlands | 40 | 24 | | 18 | 18 | | 16 | 10 | 18 | |
| Cabragh Wetlands | 30 | 12 | 7 | 7 | 12 | 7 | 14 | 9 | 14 | |
| Castlelough | 20 | 25 | | | 3 | 4 | | 4 | 4 | |

Sites that supported numbers of national importance during the former period, but no data were available for the current period: Cordara Turlough, Dublin Zoo Ponds, Greaghans.

* Low-quality count not included in the calculation of the mean.

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

[3]Site demoted (from supporting numbers of international importance to numbers of national importance) since the 2001/02 to 2008/09 period.

## 4.20 Pochard *Aythya ferina* Póiseard cíordhearg

Russia, N.E. & N.W. Europe (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 2,000 | **Population change (%):** | |
| **All-Ireland threshold:** | 110 | 5 year: | -67.5 |
| **Population size (2011-2016):** | | 12 year: | -90.6 |
| All-Ireland: | 11,150 | 22 year: | -86.3 |
| ROI: | 4,729 | Historical: | - |
| Associated with SPA network: | 4,100 | Average annual change: | -9.1 |

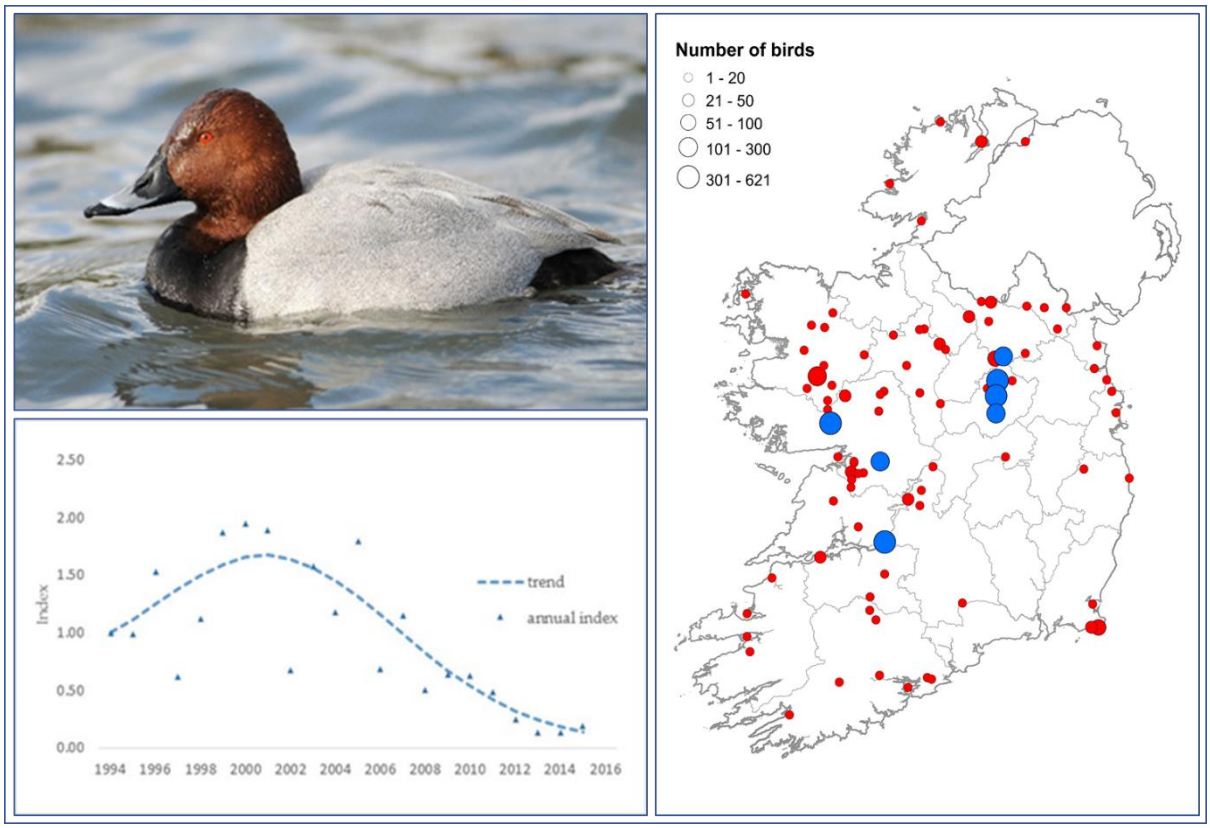



**Figure 21** Distribution map and graphed population trend for Pochard. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the annual indices (triangles) together with the smoothed trend (hatched line) (Photo: Michael Finn).

Wetlands International (2018) recognises three populations of (Common) Pochard, all of which are in decline. The population that breeds across Russia and north-west and north-east Europe, and winters in north-east and north-west Europe occurs in Ireland.

Numbers of Pochard wintering in Ireland have fluctuated widely throughout I-WeBS, but there has been a substantial decline since the early 2000s. This downwards trend is consistent with Britain and Northern Ireland (Frost *et al.*, 2018).

As with Goldeneye and Tufted Duck, Loughs Neagh and Beg support the largest numbers of Pochard in the UK and on the island of Ireland, but a decline in their numbers has been evident for some time (e.g. Maclean *et al*., 2006). Site-related issues are thought to be at least partially responsible. Previous research suggested that high levels of nutrient input caused hyper-trophic conditions, with detrimental effects on the chironomid larvae that constitute a major dietary component of Pochard and other diving duck species (Maclean *et al*., 2006). However, more recent research suggested that climate-driven shifts in the wintering distributions were responsible for these declines (e.g. Tománková *et al*., 2013) while a recent paper by Pavón-Jordán *et al*. (2018), provides evidence of long-term north-eastwards shifts in the wintering distributional abundance of species preferring deep water such as Pochard.

Pochard were recorded at 94 sites during the current period. The 1% threshold for national importance has been reduced substantially from 380 during the former period, to the current 110, although this has resulted in very few new sites of significance for Pochard. Seven sites supporting numbers of national importance were identified for the period 2011/12 – 2015/16. Lough Corrib remains the most important site but numbers have declined substantially and this site no longer supports numbers of international importance. Substantial declines in numbers are also evident at the other sites, Lough Sheelin being particularly notable.

**Table 20** Table showing sites supporting nationally important numbers of Pochard ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Lough Corrib [3] | 3,162 | 15,450 | 233* | 420 | 801 | 1,261 | | 621 | 1,261 | Nov |
| River Shannon (Lower) [1,4] | 467 | 172 | 125 | 758 | | | | 442 | 758 | Nov |
| Lough Derravaragh | 784 | 962 | 504 | 427 | 650 | 171 | 332 | 417 | 650 | Feb |
| Lough Owel | 600 | 557 | 500 | 565 | 780 | 116 | 17 | 396 | 780 | Feb |
| Lough Ennell | 476 | 619 | 600 | 252 | 55 | 17 | 367 | 258 | 600 | Feb |
| Lough Sheelin | 725 | 600 | 365 | 130 | 13 | 19 | 674 | 240 | 674 | Jan |
| Lough Rea [1] | 25 | 13 | 64 | 84 | 85 | 468 | 140 | 168 | 468 | Jan |

Sites that supported numbers of national importance during the former period but no data were available for the current period: Lough Kinale & Derragh Lough.

* Low-quality count not included in the calculation of the mean.

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

[3]Site demoted (from supporting numbers of international importance to numbers of national importance) since the 2001/02 to 2008/09 period.

[4]Aerial census data.

## 4.21 Tufted Duck *Aythya fuligula* Lacha bhadánach

N. & N.W. Europe (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 8,900 | **Population change (%):** | |
| **All-Ireland threshold:** | 270 | 5 year: | -45.8 |
| **Population size (2011-2016):** | | 12 year: | -47.0 |
| All-Ireland: | 27,470 | 22 year: | -28.0 |
| ROI: | 16,927 | Historical: | - |
| Associated with SPA network: | 11,852 | Average annual change: | +0.1 |

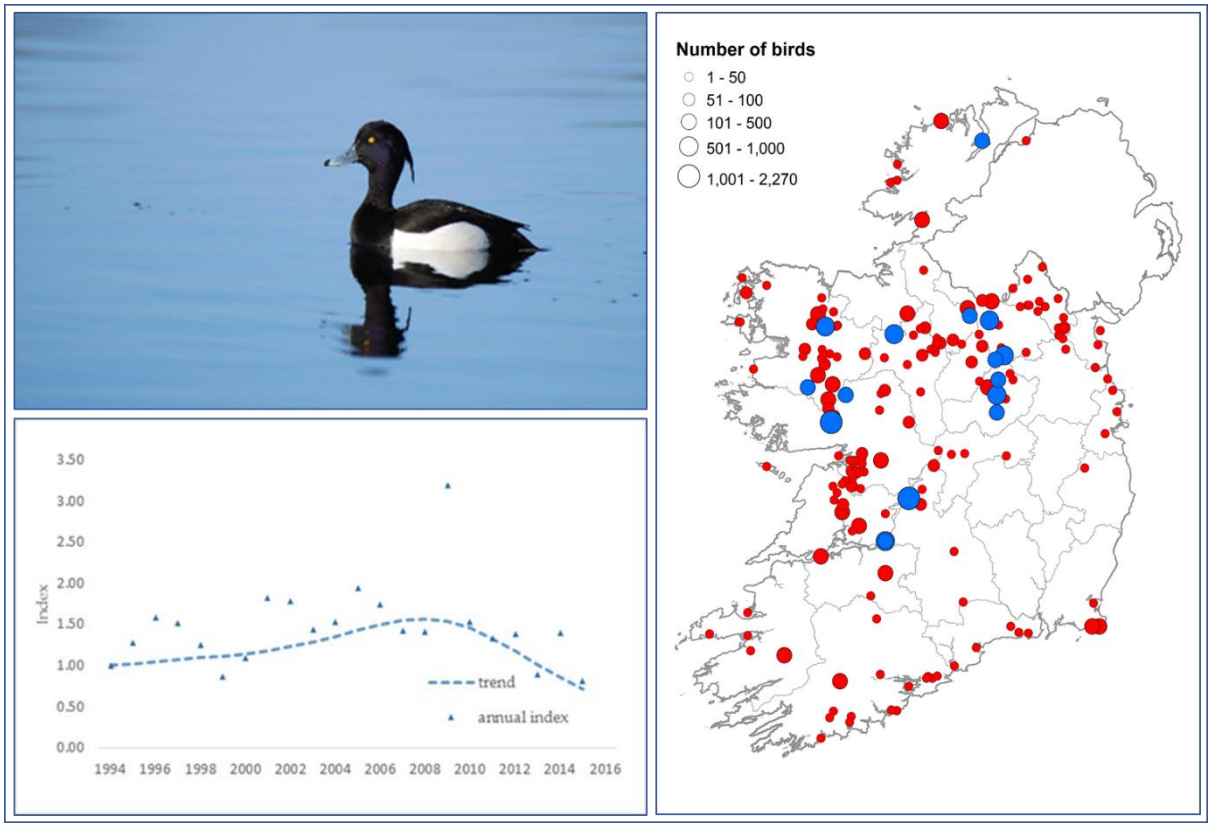



**Figure 22** Distribution map and graphed population trend for Tufted Duck. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the annual indices (triangles) together with the smoothed trend (hatched line) (Photo: Brian Burke).

The population of Tufted Duck that breeds and winters throughout north-west Europe is one of three populations recognised by Wetlands International and all are in decline (Wetlands International, 2018).

Numbers of Tufted Duck in Ireland showed an increasing trend through I-WeBS until around 2010, but a decline in numbers since then and the current low index values have led to both long- and short-term population declines being reported. There has been a severe decline in Northern Ireland since the

mid-1990s, but this contrasts to an increasing trend in the UK as a whole. Loughs Neagh and Beg support the largest numbers of Tufted Duck in the UK and on the island of Ireland, but a decline in the numbers has been evident for some time (e.g. Maclean *et al*., 2006). As with Pochard above, wintering population declines at these sites, as well as at the wider scale have been attributed to a shift in the wintering distributions in a north-eastward direction as a response to changes in temperature, with the birds remaining closer to their breeding grounds and fewer migrating to Ireland (migratory short-stopping) (Lehikoinen *et al*., 2013; Pavón-Jordán *et al*., 2018).

Tufted Duck are widely distributed, especially on western and midland wetland complexes and they were recorded at 194 sites during the current period. Seventeen sites were identified to support numbers of national importance which includes five sites that were not of significance during the former period. Lough Corrib remains the most important site in the Republic of Ireland although numbers have declined, a similar trend apparent also for Lough Derg (Shannon). Lough Sheelin was highly ranked during the former period but numbers there have declined substantially with the current mean number less than half of that during the former period. Five sites no longer support numbers of national importance however, but as count coverage at Lough Ree has been poor during the current period, the true status of this site is unknown.

**Table 21** Table showing sites supporting nationally important numbers of Tufted Duck ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Lough Corrib | 15,482 | 1,854 | 1,595* | 1,246 | 1,235 | 6,558 | 42 | 2,270 | 6,558 | Jan |
| Lough Derg (Shannon) | | 1,976 | 1,785 | | 1,196 | 932 | 339 | 1,063 | 1,785 | Nov, Dec |
| Lough Derg (Shannon) [4] | 1,732 | 3,367 | 962 | 1,039 | | | | 1,001 | 1,039 | |
| Lough Cullin | 1,060 | 363 | 1,240 | 812 | 600 | 1,200 | 270 | 824 | 1,240 | Nov, Jan |
| River Shannon (Lower) | | 212 | 539 | 457 | 538 | 1,017 | 925 | 695 | 1,017 | Nov, Dec |
| Lough Owel | 600 | 700 | 1044 | 807 | 810 | 696 | 97 | 691 | 1,044 | Nov |
| Lough Oughter Complex | | 94* | 682 | 715* | 655 | 147* | | 669 | 682 | |
| Lough Gara [1] | 330 | 1678 | 442* | 364 | 415 | 950 | 24* | 576 | 950 | Nov |
| Lough Sheelin | 946 | 1272 | 623 | 730 | 465 | 455 | 440 | 543 | 730 | Jan |
| River Shannon (Lower) [4] | 680 | 812 | 375 | 611 | | | | 493 | 611 | |
| Lough Kinale & Derragh Lough | 323* | | | | 667 | 258 | 529 | 485 | 667 | Mar |
| Lough Derravaragh [1] | 339 | 473 | 266 | 479 | 767 | 633 | 150 | 459 | 767 | Dec |
| Lough Ennell [1] | 416 | 680 | 511 | 650 | 387 | 511 | 188 | 449 | 650 | Jan |
| Lough Swilly | 777 | 713 | 634 | 343 | 226 | 423 | 479 | 421 | 634 | Sep, Nov |
| Lough Mask [1] | 372 | 509 | | 270* | 291 | 391 | | 341 | 391 | |
| North Central Galway Lakes [1] | 48* | 21 | 220 | 232 | 164 | | 570 | 297 | 570 | Jan |
| Ballinamore Lakes[1] | | | 513 | | 74 | | | 294 | 513 | |
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| Lough Arrow | | | 345 | 188 | 234 | 209 | | 244 | 345 | |
| River Erne & lakes north of Belturbet | 146* | 319* | 242 | 186 | 225 | | | 218 | 242 | |

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Inishcarra Reservoirs | 448 | 174 | 50 | 509 | 35 | | 47 | 160 | 509 | |
| Dublin Zoo Ponds | 79 | | | | | 350* | | | 350* | |
| Lough Ree | | 760 | | | | | 192* | | 192* | |

* Low-quality count not included in the calculation of the mean.

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

[4]Aerial census data.

## 4.22 Scaup *Aythya marila* Lacha iascán

*marila*, N. Europe (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 3,100 | **Population change (%):** | |
| **All-Ireland threshold:** | 25 | 5 year: | -81.9 |
| **Population size (2011-2016):** | | 12 year: | -89.5 |
| All-Ireland: | 2,650 | 22 year: | -98.1 |
| ROI: | 167 | Historical: | - |
| Associated with SPA network: | 163 | Average annual change: | -13.2 |

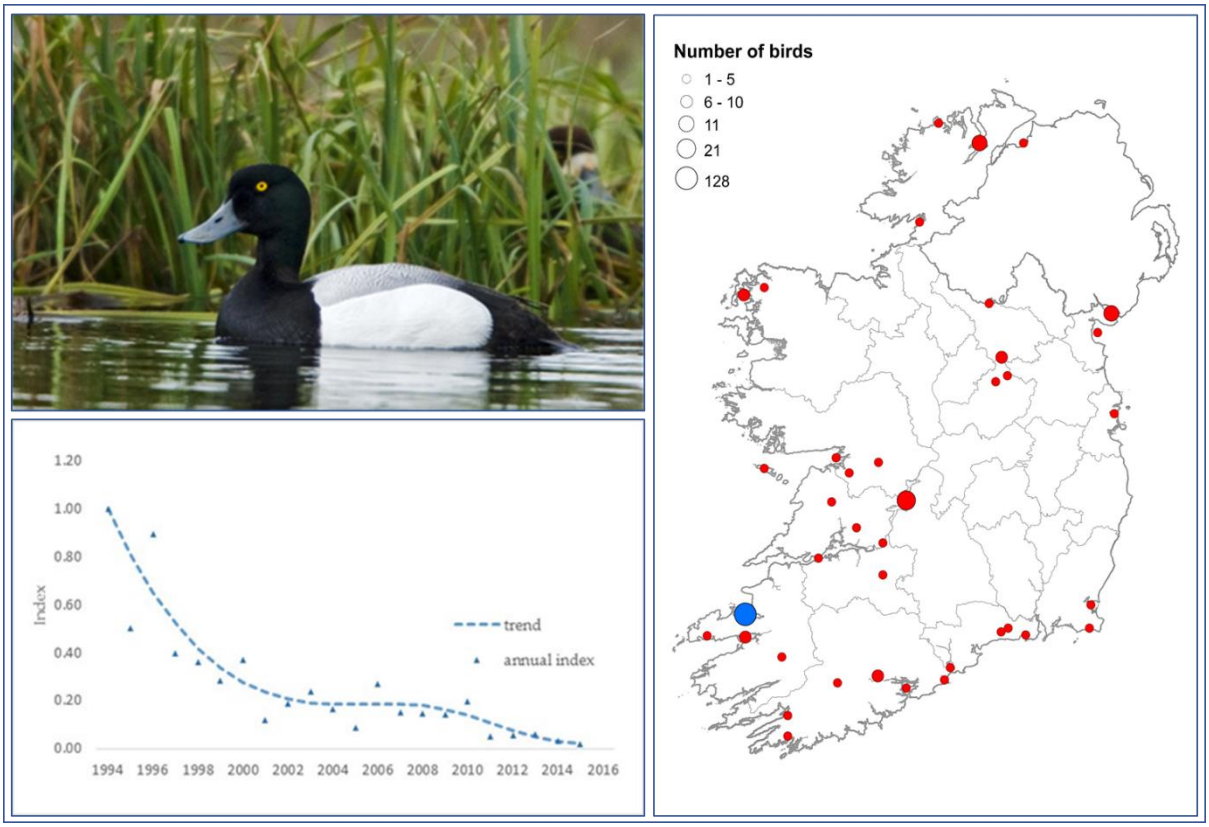



**Figure 23** Distribution map and graphed population trend for Scaup. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the annual indices (triangles) together with the smoothed trend (hatched line) (Photo: Ken Kinsella).

The population of Greater Scaup (hereafter Scaup) that breeds across northern Europe and western Siberia winters across western Europe. This population is declining (Wetlands International, 2018). A relatively large and continuous decline in wintering numbers has also been evident throughout I-WeBS. Numbers in Britain are stable over the long-term, but a -53% decline is evident over the past ten years (Frost *et al.*, 2018).

The reasons for the population decline are not well understood. However, the main threats to wintering Scaup in the EU are reported to be (1) degradation of wintering habitat, (2) drowning in

fishing nets, (3) oxygen deficiencies in wintering areas, (4) pollution – especially oil spills and (5) disturbance in wintering and breeding areas (EU Commission, 2009).

Scaup breed on freshwater wetlands but spend winter mainly at coastal sites. They prefer shallow waters, usually less than 10 m deep, leading to a preference for estuaries and shallow bays. Scaup were recorded at 43 sites during the current period. Tralee Bay, Lough Gill and Akeragh Lough was the top ranked site in both the current and former period, although a decline in numbers is evident. Notably, two sites are no longer of significance and these have both sustained declines in numbers, while the status of the species at Brandon Bay in County Kerry is not known for the current period.

**Table 22** Table showing sites supporting nationally important numbers of Scaup ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Tralee Bay, Lough Gill & Akeragh Lough | 257 | 581 | 178 | 95 | 210 | 124 | 35 | 128 | 210 | Oct |
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| Lough Swilly | 31 | 2 | 8 | 18 | 17 | 3 | 7 | 11 | 18 | |
| Carlingford Lough † | 62 | 57 | 12 | 22 | 4 | 4 | | 11 | 22 | |

Sites that supported numbers of national importance during the former period but no data were available for the current period: Brandon Bay - Inner Brandon Bay.

* Low-quality count not included in the calculation of the mean.

† Data provided by the UK (WeBS).

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

[4]Aerial census data.

## 4.23 Eider *Somateria mollissima* Éadar

*mollissima*, Baltic, Denmark & the Netherlands (br)[1]

*mollissima*, Norway & Russia (br)[2]

Population origin(s) of wintering birds uncertain and may possibly originate from some combination of up to three populations.

| | |
|---|---|
| **International threshold:** | 9,800[1]/ 5,200[2] |
| **All-Ireland threshold:** | 55 |
| **Population size (2011-2016):** | |
| All-Ireland: | 5,660 |
| ROI: | 1,373 |
| Associated with SPA network: | 130 |

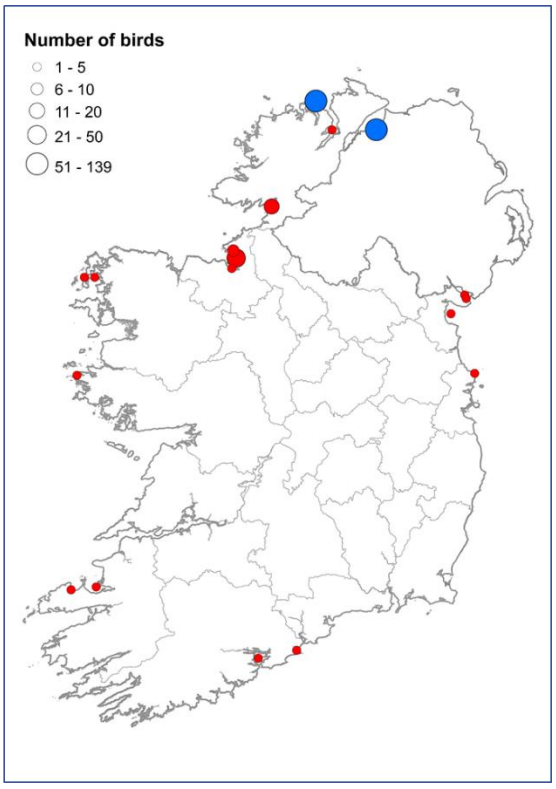



**Figure 24** Distribution map for Eider. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). (Photo: Dick Coombes).

Wetlands International (2018) describe three breeding populations of (Common) Eider and the wintering range of these populations is largely unknown. The status of these populations is mixed. The nominate *mollissima* (Baltic, Denmark & Netherlands) is stable/fluctuating, the populations from Norway/NW Russia is stable/increasing while *Somateria mollissima borealis* breeding in Svalbard and Franz Joseph (Russia and Norway) is possibly declining.

Within the Republic of Ireland, Eider have increased in wintering numbers over time with Burke *et al*. (2018b) reporting short- and long-term changes in estimates of +76% and +101% respectively since the previous assessment period of 2006/07-2010/11 (Crowe & Holt, 2013) and 1994/95-1998/99 (Crowe *et al*., 2008). The increase in numbers is consistent with Northern Ireland. However, population estimates for Eider must be treated with some caution as flocks may sometimes be located too far offshore for accurate counts to be made from land-based vantage points, while weather and count conditions can hamper the attainment of accurate counts. Across the UK as a whole, the species is exhibing a decline over the long-term (Frost *et al*., 2018).

Eider were recorded at 18 sites during the current period (2011/12-2015/16) and, with a mostly northerly distribution, occurred predominantly in Counties Sligo, Mayo and Donegal, although records were also obtained for Cork, Dublin, Galway, Kerry and Louth.

The cross-border site, Lough Foyle (NI) continues to support numbers of national importance and be the most important site for this species.

**Table 23** Table showing sites supporting nationally important numbers of Eider ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Lough Foyle † | 452 | 206 | 13 | 75 | 181 | 45 | 380 | 139 | 380 | |
| Fanad North Coast [1] | | | | 118 | | | | 118 | 118 | |

Sites that supported numbers of national importance during the former period but no data were available for the current period: Inishtrahull Island.

† Data provided by the UK (WeBS).

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

## 4.24 Long-tailed Duck *Clangula hyemalis* Lacha earrfhada

W. Siberia & N. Europe (br)[1]

Iceland & Greenland (br)[2]

**International threshold:** 16,000[1]/ 600[2]

**All-Ireland threshold:** -

**Mean/ Peak (2011/12 – 2015/16)**: 71/111

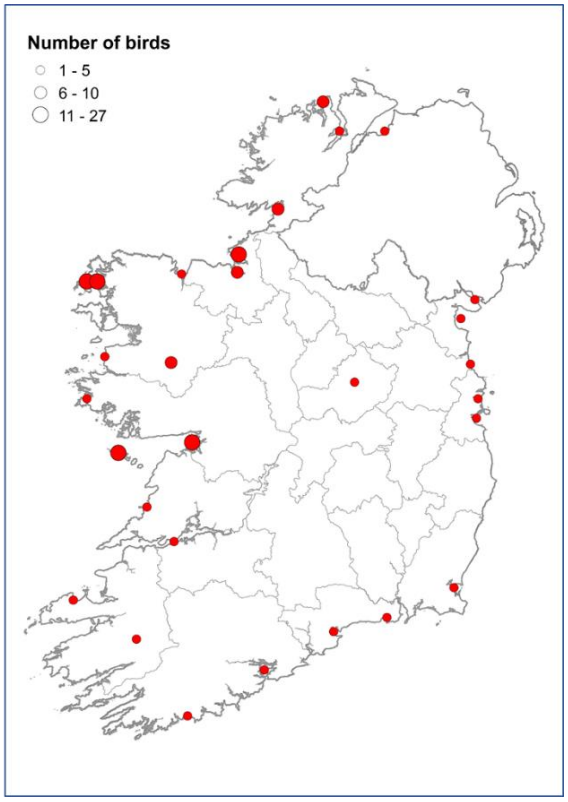



**Figure 25** Distribution map for Long-tailed Duck showing peak numbers recorded at sites between 2011/12 and 2015/16 (Photo: Dick Coombes).

There are two populations of Long-tailed Duck (Wetlands International, 2018). Both populations can occur in the north Atlantic in Irish waters in winter, i.e. those from Iceland/ Greenland and west Siberian/northern Europe; these populations are stable and decreasing, respectively (Wetlands International, 2018). These seaducks often occur some distance from the shoreline, and hence may be undetected or underestimated from ground-based surveys such as I-WeBS. The absence of detailed aerial or boat-based surveys of key locations used by this species makes it difficult to generate accurate population size and trend information in Britain and Ireland.

Long-tailed Duck were recorded at 29 sites in the Republic of Ireland during the current period with no site regularly supporting in excess of 20 birds.

**Table 24** Table showing sites that supported Long-tailed Duck in five or more seasons between 2009/10 and 2015/16.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Mullet West[3] | 17 | 14 | 14 | 27 | 17 | 19 | | 19 | 27 | Nov |
| Drumcliff Bay Estuary | 6 | 6 | 8 | 23 | 7 | 10 | 14 | 12 | 23 | Nov |
| Inishmore, Aran Islands | 1 | 17 | 7 | 17 | | 13 | 17 | 11 | 17 | Jan |
| Blacksod & Tullaghan Bays | 2 | | 1 | 1 | 5 | 3 | 20 | 6 | 20 | |
| Inner Galway Bay | 5 | 3 | 10 | 12 | 4 | | 1 | 5 | 12 | Mar |
| Donegal Bay | 10 | 16 | 2 | 3 | 7 | 2 | 10 | 5 | 10 | |

[3]Site demoted (from supporting numbers of national importance during the 2001/02 to 2008/09 period).

Other sites recorded in less than five seasons (peak count 2011/12 – 2015/16):

Ballysadare Bay (9), Brandon Bay - Inner Brandon Bay (1), Broadmeadow (Malahide) Estuary (3), Carlingford Lough (NI) (5), Cork Harbour (1), Dublin Bay (2), Dundalk Bay (3), Dungarvan Harbour (3), Fanad North Coast (6), Killala Bay (3), Lough Carra (6), Lough Foyle NI (2), Lough Leane & Killarney Valley (1), Lough Owel (1), Lough Swilly (2), Mannin Bay (1), Mid-Clare Coast (Mal Bay - Doonbeg Bay) (1), Nanny Estuary & shore (1), Rosscarbery (1), Shannon & Fergus Estuary (2), South Mayo Coast (2), Tramore Back Strand (1), Wexford Harbour & Slobs (4).

## 4.25 Common Scoter *Melanitta nigra* Scótar

*nigra*, W. Siberia, Scandinavia, Iceland, Scotland, Ireland (br)

| | |
|---|---|
| **International threshold:** | 7,500 |
| **All-Ireland threshold:** | 110 |
| **Population size (2011-2016):** | |
| All-Ireland: | 10,640 |
| ROI: | 10,607 |
| Associated with SPA network: | 6,182 |

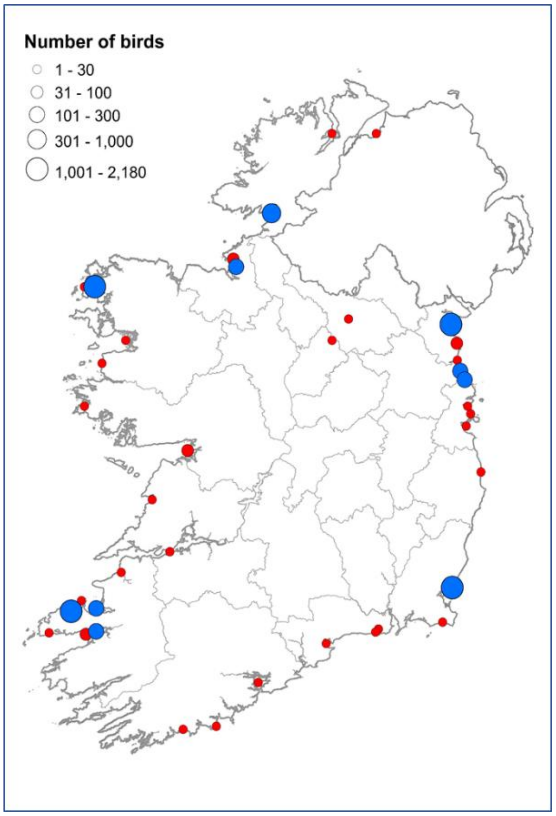



**Figure 26** Distribution map for Common Scoter. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles) (Photo: Oran O'Sullivan).

Common Scoter that winter in Ireland come from a wide breeding range that spans between Iceland and Scandinavia east to western Siberia. The status of this population is uncertain but is considered stable/increasing (Wetlands International, 2018). Given that this sea duck can occur at considerable distances offshore, they are often undetected or underestimated during I-WeBS counts and hence no trend information is provided, furthermore, as a result, the population estimate should be treated with caution. A small breeding population remains in Counties Galway, Mayo and Sligo (Balmer *et al.*, 2013).

Common Scoter were recorded at 40 coastal sites during the current period, with ten sites identified as supporting numbers of national importance. Numbers have declined at the former top ranked site, Wexford Bay, while numbers at Blacksod & Tullaghan Bays, Brandon Bay - Inner Brandon Bay and Dundalk Bay have increased, which can be at least partially attributed to better count coverage in recent seasons. Dunany Point - Clogher Head is notable for no longer qualifying for listing as a significant site with much reduced numbers.

**Table 25** Table showing sites supporting nationally important numbers of Common Scoter ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Blacksod & Tullaghan Bays | 621 | 9* | 1,076 | 1,210 | 3,632 | 2,100 | 2,882 | 2,180 | 3632 | Feb |
| Brandon Bay - Inner Brandon Bay | | | 2,275 | 1,760 | 400 | | | 1,478 | 2275 | Feb |
| Dundalk Bay | 467 | 775 | 1,137 | 1,443 | 220 | 2,000 | 2,089 | 1,378 | 2089 | Jan |
| Wexford Bay | 8,261 | 400 | 1,080 | 736 | 1,704 | 1,269 | | 1,197 | 1704 | |
| Donegal Bay | 2,327 | 1,791 | 1,855 | 135 | 457 | 140 | 1,132 | 744 | 1855 | Feb |
| Nanny Estuary & Shore | 437 | 41 | 94* | 99* | 312 | | 150 | 231 | 312 | Dec, Feb |
| Castlemaine Harbour & Rossbehy | 560* | 448 | 300 | 685 | | 14 | 50 | 210 | 685 | |
| Delvin River - Hampton Cove | | | | 349 | 220 | 152 | 62 | 196 | 349 | |
| Sligo Harbour [1] | | | | 830 | | | | 166 | 830 | Jan, Feb |
| Tralee Bay, Lough Gill & Akeragh Lough [1] | 38 | 63 | 326 | 200 | | 25 | | 110 | 326 | Mar |
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| Dunany Point - Clogher Head | 198 | 41 | 12 | 148 | | | 50 | 53 | 148 | |
| Broadmeadow (Malahide) Estuary | 278 | | | 30 | | | | 6 | 30 | |

* Low-quality count not included in the calculation of the mean.

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

## 4.26 Goldeneye *Bucephala clangula* Órshúileach

*clangula*, N. & N.W.Europe (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 11,400 | **Population change (%):** | |
| **All-Ireland threshold:** | 40 | 5 year: | -37.1 |
| **Population size (2011-2016):** | | 12 year: | -50.3 |
| All-Ireland: | 3,820 | 22 year: | -63.8 |
| ROI: | 1,256 | Historical: | -60.9 |
| Associated with SPA network: | 793 | Average annual change: | -4.3 |

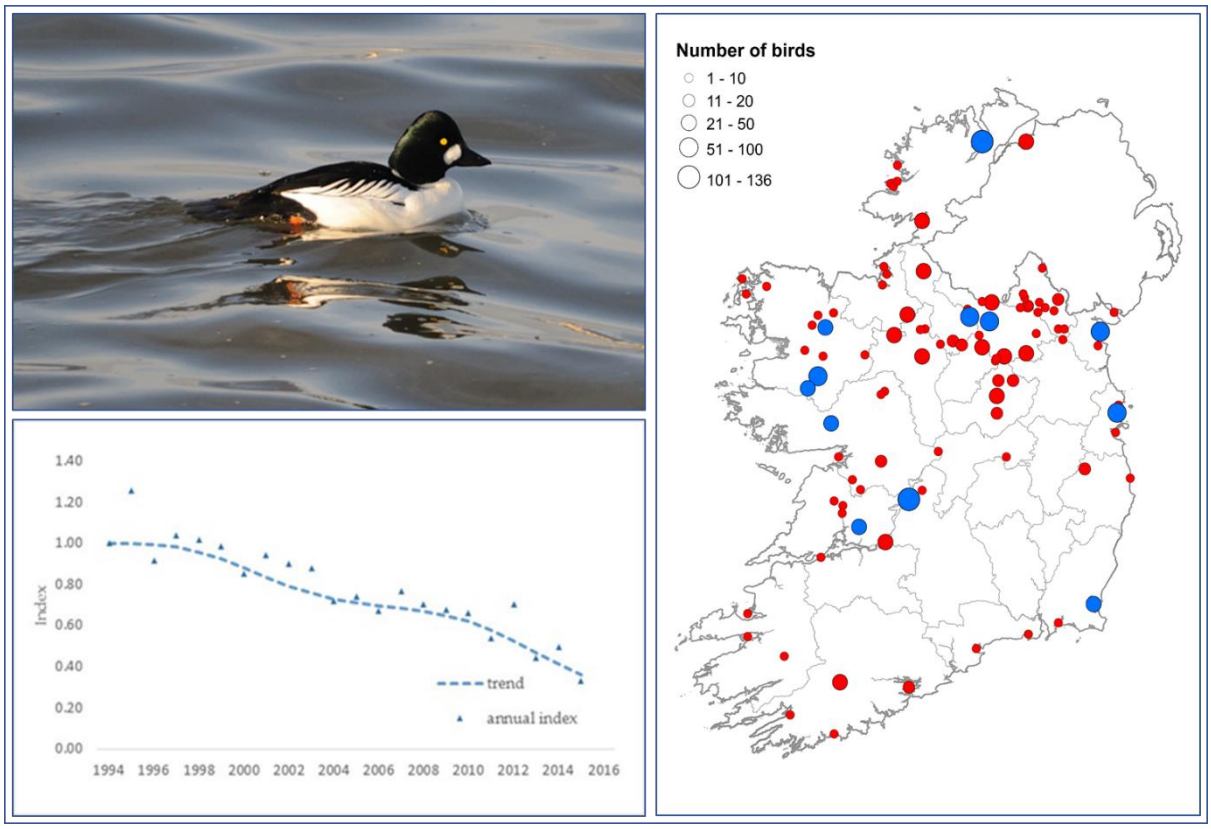



**Figure 27** Distribution map and graphed population trend for Goldeneye. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the smoothed trend (hatched line) (Photo: John Fox).

The flyway population of (Common) Goldeneye which breeds across north and north-west Europe and winters in north-west and central Europe is one of four populations of this species. The population trend is unclear (stable/decline) (Wetlands International, 2018). The indices for the Republic of Ireland have shown a declining trend since I-WeBS began, while the UK has observed an equally sustained decline in wintering numbers (-58% over 25 years) (Frost *et al*., 2018).

Loughs Neagh and Beg support the largest numbers in the UK and hold the vast majority of the all-Ireland wintering population, although a decline in the number of Goldeneye at this site has been evident for some time (e.g. Maclean *et al*., 2006).

Wintering population declines have been attributed to a shift in the wintering distributions in a north-eastward direction as a response to changes in temperature, with the birds remaining closer to their breeding grounds with fewer migrating to Ireland (migratory short-stopping) (Lehikoinen *et al*., 2013).

Goldeneye were distributed at 105 coastal and inland sites during the current period. Twelve sites supported numbers of national importance; an increase on the seven sites identified during the former period and a result of the 1% national threshold being reduced from 95 to 40 birds.

Lough Derg (Shannon) (aerial) supported the largest mean numbers, while Lough Sheelin, the top ranked site during the former period no longer qualified for this listing. Numbers at Lough Swilly were relatively stable while those at Lough Carra, Braodmeadow (Malahide) Estuary and Lough Oughter Complex have declined.

**Table 26** Table showing sites supporting nationally important numbers of Goldeneye ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Lough Derg (Shannon) [4] | 443 | 145 | 134 | 137 | | | | 136 | 137 | |
| Lough Swilly | 147 | 171 | 174 | 150 | 94 | 131 | 63 | 122 | 174 | Feb |
| Lough Carra | 102 | 129 | 94 | | | | | 94 | 94 | |
| Broadmeadow (Malahide) Estuary | 126 | 93 | 51 | 66 | 36 | 92 | 31 | 55 | 92 | Dec |
| Lough Oughter Complex | | 13* | 56 | 66 | 43 | 14* | | 55 | 66 | |
| Dundalk Bay [1,4] | 32 | 6 | 34 | 100 | 50 | 31 | 51 | 53 | 100 | Mar |
| Ballinamore Lakes [1] | | | 66 | | 40 | | | 53 | 66 | |
| Lough Cullin [1] | 41 | 74 | 41 | 48 | 45 | 51 | 52 | 47 | 52 | Nov, Jan |
| Wexford Harbour & Slobs [1] | 49* | 37* | 53 | 11 | 63 | 53 | 57 | 47 | 63 | Nov, Jan |
| South East Clare Lakes [1] | 11* | 55 | 68 | 54 | 50 | 38 | 26 | 47 | 68 | Feb |
| Lough Corrib[1] | 59 | 62 | 52* | 90 | 48 | 36 | | 44 | 90 | Jan |
| Lough Mask [1] | 73 | 47 | | 4* | 21 | 61 | | 41 | 61 | |
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| Lough Sheelin | 6 | 32 | 23 | 21 | 25 | 38 | 24 | 26 | 38 | |
| River Shannon (Lower)[4] | 171 | 21 | 35 | 31 | | | | 33 | 35 | |

* Low-quality count not included in the calculation of the mean.
[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.
[4]Aerial census data.

## 4.27 Smew *Mergellus albellus* Síolta gheal

N. Scandinavia, N. Russia (br)

Scarce winter visitor

**International threshold:** 300

**Mean/ Peak (2011/12 – 2015/16)**: 3/4

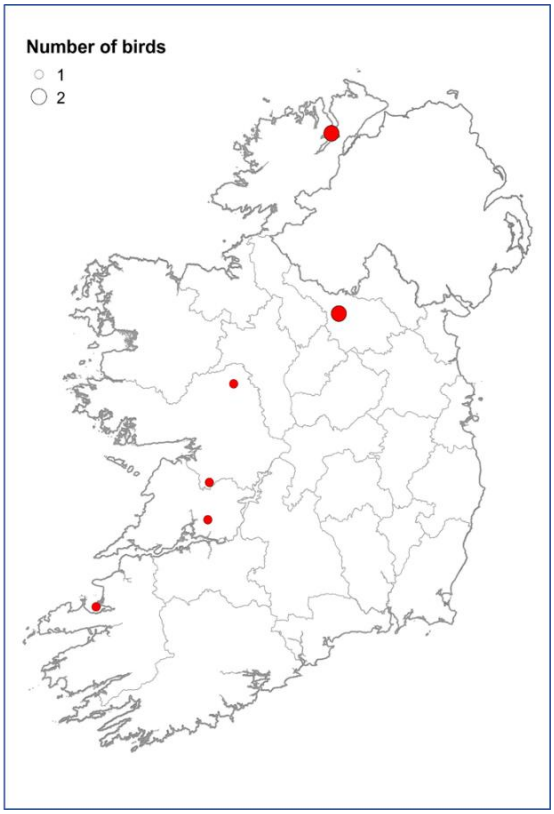



**Figure 28** Distribution map for Smew showing peak numbers recorded at sites between 2011/12 and 2015/16 (Photo: Mark Carmody).

Smew are a scarce winter visitor to Ireland from the population that breeds across northern Scandinavia and Russia and winters in north-west and central Europe. The status of this population is unclear (stable?) (Wetlands International, 2018).

This species was recorded at six sites during the current period including regular occurrence at Lough Swilly where a peak count of three birds was recorded during 2010/11.

**Table 27** Table showing sites that supported Smew in five or more seasons between 2009/10 and 2015/16.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Lough Swilly | 2 | 3 | 2 | 2 | 1 | 1 | 1 | 1 | 2 | Jan |

Other sites recorded in less than five seasons (peak count): Glenamaddy Turlough (1), Lough Cutra - Ballynakill L. (1), Lough Oughter Complex (2), South East Clare Lakes (1), Tralee Bay, Lough Gill & Akeragh Lough (1).

## 4.28 Red-breasted Merganser *Mergus serrator* Síolta rua

N, N.W. Europe, Iceland & Greenland (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 860 | **Population change (%):** | |
| **All-Ireland threshold:** | 25 | 5 year: | -18.4 |
| **Population size (2011-2016):** | | 12 year: | -8.1 |
| All-Ireland: | 2,430 | 22 year: | -28.1 |
| ROI: | 1,913 | Historical: | +5.2 |
| Associated with SPA network: | 966 | Average annual change: | -0.9 |

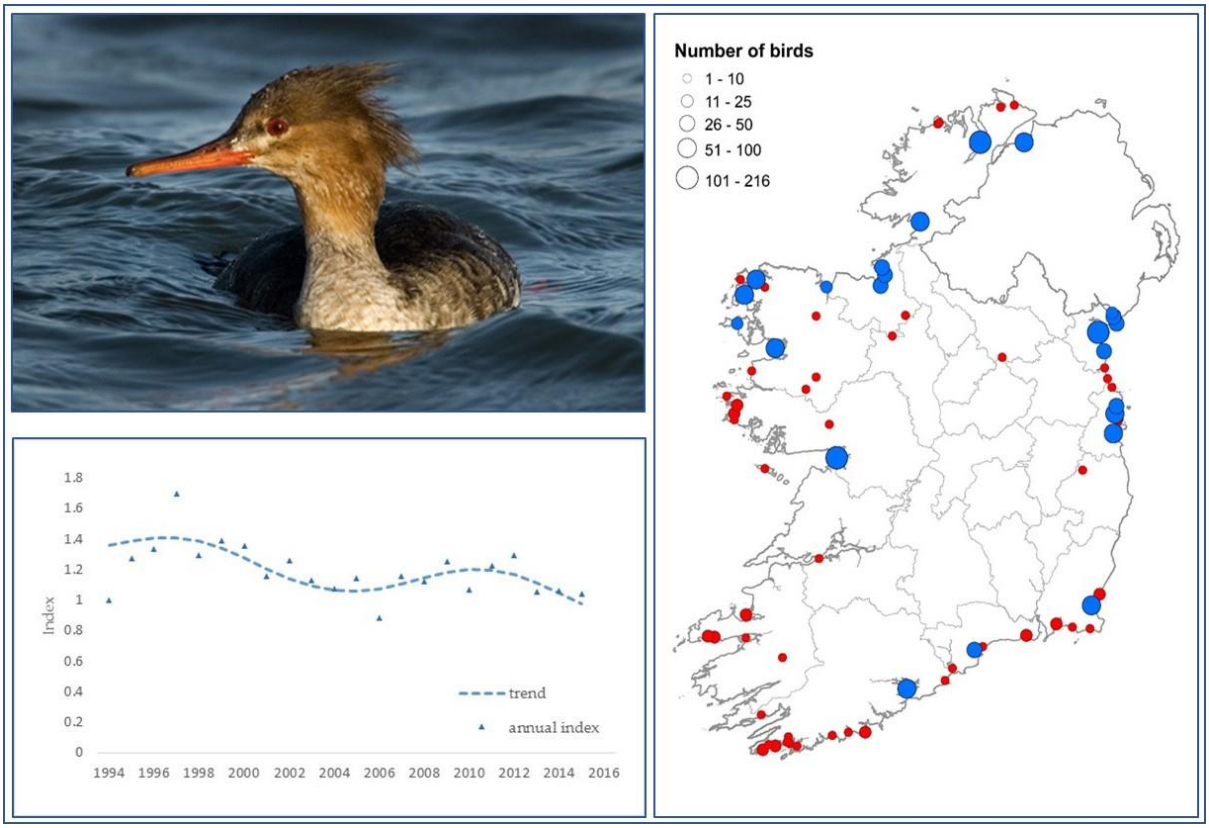



**Figure 29** Distribution map and graphed population trend for Red-breasted Merganser. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the smoothed trend (hatched line) (Photo: Clive Timmons).

Wetlands International (2018) recognises three populations of Red-breasted Merganser. The population that breeds across north and north-west Europe, Iceland and east Greenland, and winters across north, north-west and central Europe and Iceland occurs within Ireland. The status of this population is unclear (stable/decline) (Wetlands International, 2018).

The trend of the wintering population in the Republic of Ireland is for decline over both the long- and short-term periods; consistent with the UK. Wintering population declines have been attributed to a shift in the wintering distributions in a north-eastward direction as a response to changes in

temperature, with the birds remaining closer to their breeding grounds and fewer migrating to Ireland (migratory short-stopping) (Pavón-Jordán *et al*., 2018).

Red-breasted Merganser are widely distributed around coastal sites, and they were recorded at 73 sites during the current period. This is a decrease on the 89 sites reported during the former period.

A reduction in the 1% national threshold from 35 to 20 has likely resulted in an increase in the number of sites supporting numbers of national importance; from 15 during the fomer period, to 23 sites during the current period. Dundalk Bay and Inner Galway Bay remain the top two ranked sites with numbers apparently stable. Numbers at Carlingford Lough (NI), the third highest ranked site during the former period have declined based on our most recent data, and this also appears to be the case at the other cross-border site Lough Foyle. Numbers at Donegal Bay, Wexford Harbour & Slobs and Clew Bay appear relatively stable.

**Table 28** Table showing sites supporting nationally important numbers of Red-breasted Merganser ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Dundalk Bay | 60 | 114 | 247 | 181 | 109 | 455 | 90 | 216 | 455 | Sep, Jan |
| Inner Galway Bay | 207 | 169 | 248 | 223 | 191 | 221 | 117 | 200 | 248 | Nov |
| Lough Swilly | 136 | 71 | 89 | 154 | 154 | 126 | 167 | 138 | 167 | Nov, Dec |
| Wexford Harbour & Slobs | 136* | 43* | 100 | 78 | 92 | 137 | 95 | 100 | 137 | Nov |
| Donegal Bay | 65 | 82 | 50 | 156 | 117 | 106 | 70 | 100 | 156 | Oct |
| Clew Bay | 64 | 81 | 103 | 107 | 63 | 112 | 105 | 98 | 112 | |
| Blacksod & Tullaghan Bays | 80 | 43* | 109 | 76 | 125 | 87 | 36 | 87 | 125 | |
| Lough Foyle † | 101 | 120 | 35 | 73 | 101 | 58 | 98 | 73 | 101 | Feb |
| Dublin Bay | 58 | 63 | 114 | 50 | 60 | 57 | 69 | 70 | 114 | Feb |
| Cork Harbour | 63* | 61* | 71 | 50 | 55 | 86 | 70 | 66 | 86 | Jan, Feb |
| Broadmeadow (Malahide) Estuary | 161 | 78 | 87 | 57 | 80 | 35 | 26 | 57 | 87 | Jan |
| Broadhaven & Sruwadaccon Bays | 80 | 21 | 79 | 67 | 42 | 34 | | 56 | 79 | Nov |
| Dungarvan Harbour [1] | 32 | 31 | 38 | 40 | 46 | 81 | 40 | 49 | 81 | Nov, Dec |
| Dundalk Bay Outer (North: Ballagan Point – Giles Quay) [1] | 45 | | 3 | 9 | | 16* | 177 | 47 | 177 | Jan |
| Dunany Point – Clogher Head | 65 | 98 | 40 | 42 | | | 84 | 42 | 84 | Mar |
| Ballysadare Bay | 37 | 23 | 43 | 20 | 35 | 45 | 33 | 35 | 45 | Jan, Feb |
| Sligo Harbour [1] | 23 | 15 | 40 | 30 | 32 | 37 | 23 | 32 | 40 | Jan |
| Drumcliff Bay Estuary [1] | 19 | 7 | 57 | 13 | 22 | 18 | 30 | 28 | 57 | Jan |
| Rogerstown Estuary [1] | 30 | 16 | 30 | 22 | 20 | 39 | 23 | 27 | 39 | Mar |
| Carlingford Lough † | 24 | 35 | 37 | 13 | 6 | 44 | 15 | 23 | 44 | Dec, Jan |
| Carlingford Lough (ROI) | | | | | | | 76 | 38 | 76 | |
| Achill Island [1] | 12 | 11 | 16 | 16 | 28 | 23 | 22 | 21 | 28 | |

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Killala Bay [1] | 3 | 10 | 23 | 25 | 19 | 27 | 6 | 20 | 27 | |

* Low-quality count not included in the calculation of the mean.

† Data provided by the UK (WeBS).

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

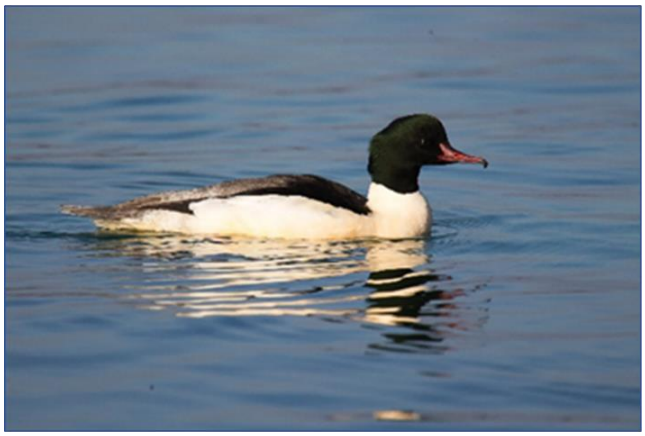
## 4.29 Goosander *Mergus merganser* Síolta mhór

*merganser*, Scandinavian Baltic, W. Russia, Britain (br)

Scarce

**International threshold:** 2,100

**Mean/ Peak (2011/12 – 2015/16)**: 14/24



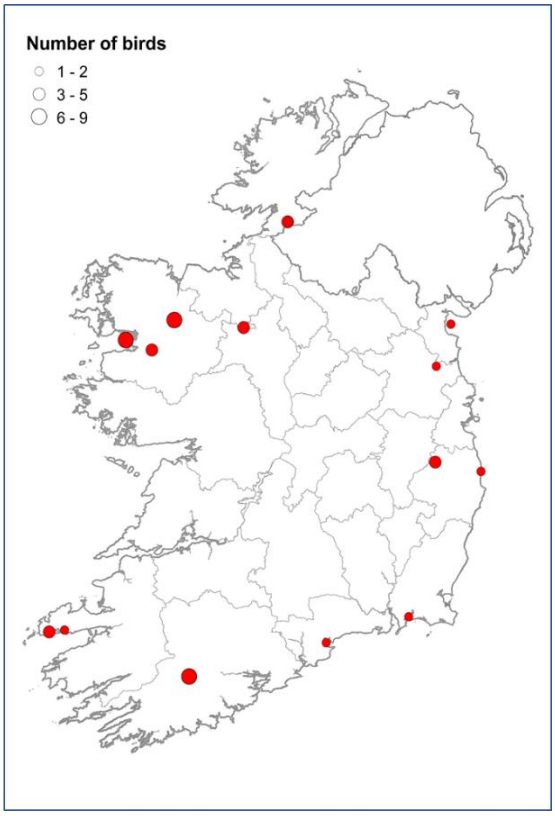



**Figure 30** Distribution map for Goosander showing peak numbers recorded at sites between 2011/12 and 2015/16 (Photo: Mark Carmody).

Small numbers of Goosander have bred in Ireland and these birds belong to the population that breeds in Britain, Scandinavia, the Baltic and western Russia. The status of this population is unclear (stable/decline) (Wetlands International, 2018).

Just two confirmed records of breeding were reported in the last Bird Atlas (2007-2011) (Balmer *et al*., 2013). It is possible that birds recorded in Ireland during the winter are Irish breeding birds. Nesting Goosander are secretive and can easily be missed, so the winter numbers and distribution may be indicative of more widespread nesting (BirdWatch Ireland, 2013). However, numbers during winter are also likely increased by winter visitors from the continent. There is evidence that wintering numbers are increasing (Balmer *et al*., 2013), and I-WeBS data supports this with the mean number of birds increasing from six during the fomer period (Boland & Crowe, 2012) to a mean of 14 for the current period (2011/12 – 2015/16).

Two sites recorded the species with most regularity between 2009/10-2015/16 (see Table 29), with Inishcarra Reservoirs recording a peak count of nine individuals.

**Table 29** Table showing sites that supported Goosander in five or more seasons between 2009/10 and 2015/16.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Inishcarra Reservoirs | 1 | 5 | 9 | 3 | 5 | | 2 | 4 | 9 | Jan |
| Lough Swilly | 2 | 1 | 1 | | 2 | 1 | 1 | 1 | 2 | Jan |

Other sites recorded in less than five seasons (peak count 2011/12 – 2015/16):

An Trá Beg (1), Bannow Bay (1), Cashel Turlough (3), Clew Bay (6), Dundalk Bay (1), Dungarvan Harbour (2), Lough Acapple (3), Lough Cullin (9), Lough Gara (5), Lough Shivnagh (Tully) (1), North Wicklow Coastal Marshes (1), Poulaphouca Reservoir (3), River Boyne (1), Ventry Harbour (4).

## 4.30 Red-throated Diver *Gavia stellata* Lóma rua

Arctic and boreal west Eurasia, Greenland (br)

| | |
|---|---|
| **International threshold:** | 3,000 |
| **All-Ireland threshold:** | 20 |
| **Population size (2011-2016):** | |
| All-Ireland: | 770 |
| ROI: | 657 |
| Associated with SPA network: | 193 |

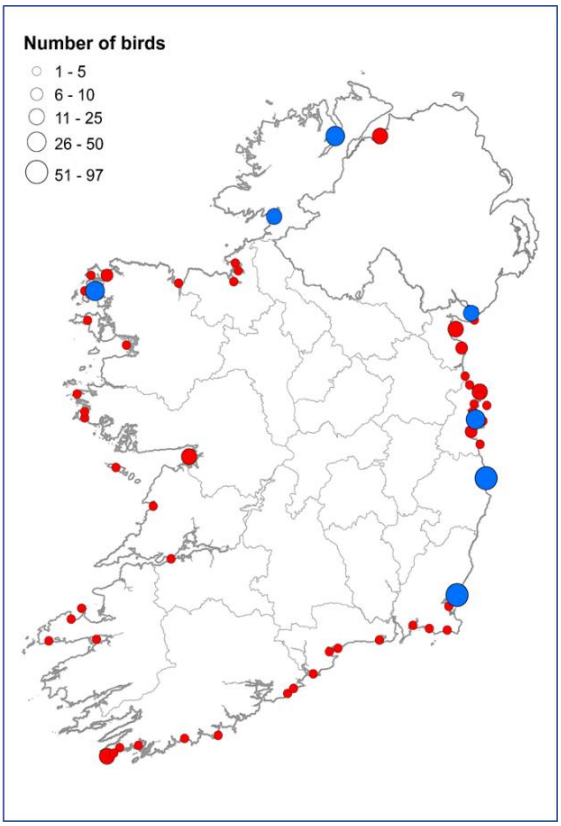



**Figure 31** Distribution map for Red-throated Diver illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles) (Photo: John Fox).

The north-west European wintering population of Red-throated Diver breeds across Arctic and boreal west Eurasia and Greenland; the population status is uncertain (stable?) (Wetlands International, 2018).

The species exhibits a widespread coastal distribution during winter and flocks are often located some distance from the shoreline, and are likely frequently undetected or underestimated. Thus no trend information is provided and the population estimate should be treated with caution.

Red-throated Diver were recorded at 61 sites during the current period and seven sites held numbers that exceeded the nominal 1% threshold of 20 birds during the period 2011/12 – 2015/16. The five-year

mean for the top-ranked site (North Wicklow Coastal Marshes) is more than double that recorded for the former period, while numbers at Wexford Bay are highly consistent with the former period. In contrast, numbers have dropped at Lough Foyle (NI), and it is one of six sites that are no longer of significance when compared to the former period.

**Table 30** Table showing sites supporting nationally important numbers of Red-throated Diver ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| North Wicklow Coastal Marshes | 27 | 58 | 115 | 86* | 86 | 32* | 89 | 97 | 115 | Dec |
| Wexford Bay | 38 | 4 | 32 | | 103 | 111 | | 62 | 111 | Dec, Jan, Feb |
| Baldoyle Bay [1] | 2 | | | | 14 | 64 | | 39 | 64 | Nov, Dec |
| Blacksod & Tullaghan Bays [1] | 6 | 3* | 53 | 23 | 31 | 16 | 64 | 37 | 64 | |
| Lough Swilly [1] | 6 | 6 | 36 | 20 | 32 | 7 | 34 | 26 | 36 | Nov |
| Carlingford Lough (RoI) [1] | | | | | | | 46 | 23 | 46 | |
| Donegal Bay | 10 | 36 | 4 | 38 | 34 | 17 | 12 | 21 | 38 | Oct |
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| Dundalk Bay | 46 | 8 | 26 | 13 | 14 | 10 | 17 | 16 | 26 | Jan, Mar |
| Inner Galway Bay | 20 | 17 | 19 | 24 | 4 | 5 | 2 | 11 | 24 | Mar |
| Lough Foyle † | 128 | 19 | 7 | 14 | 33 | 22 | 17 | 19 | 33 | |
| Brandon Bay - Inner Brandon Bay | | | 2 | 13 | | | | 5 | 13 | Jan, Feb |
| Clonea Strand | 30 | 32 | 1 | 11 | 2 | 3 | | 4 | 11 | |

Sites that supported numbers of national importance during the former period but no data were available for the current period: Garrarus & Kilfarrassy.

* Low-quality count not included in the calculation of the mean.

† Data provided by the UK (WeBS).

[1] Site not of significant importance during the former period, between 2001/02 and 2008/09.

## 4.31 Black-throated Diver *Gavia arctica* Lóma Artach

*arctica*, N. Europe & W. Siberia (br)

Scarce

**International threshold:** 3,500

**Mean/ Peak (2011/12 – 2015/16)**: 21/45

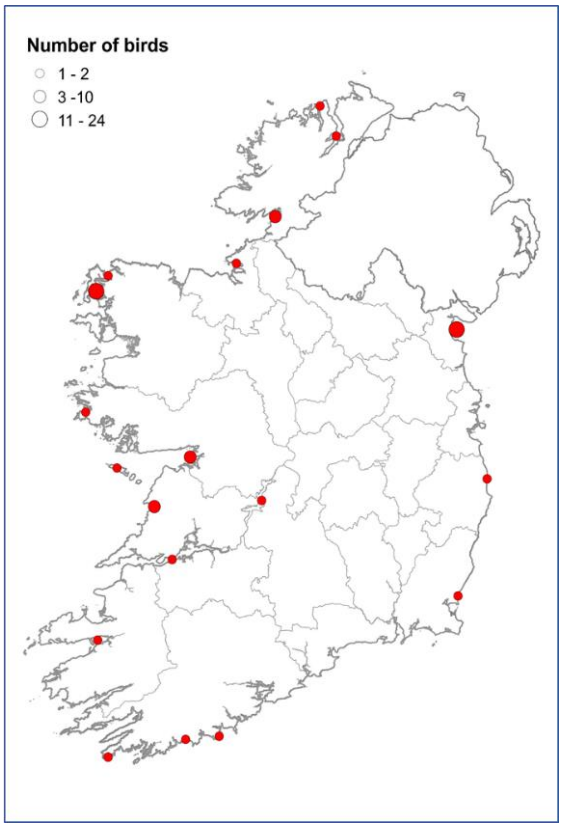



**Figure 32** Distribution map for Black-throated Diver showing peak numbers recorded at sites between 2011/12 and 2015/16 (Photo: Dick Coombes).

The population of Black-throated Diver that breeds across northern European and west Siberian has a large wintering range that includes northwest Europe, the Mediterranean, Black and Caspian Seas. The status of this population is uncertain, possibly in decline (Wetlands International, 2018).

This species occurs in small numbers in British and Irish waters. Small numbers were recorded during the current period at 19 sites. Inner Galway Bay, Blacksod and Tullaghan Bays, and Donegal Bay supported the species with most regularity (Table 31).

**Table 31** Table showing sites that supported Black-throated Diver in five or more seasons between 2009/10 and 2015/16.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Inner Galway Bay | 28 | 41 | 8 | 5 | | 8 | 5 | 5 | 8 | Jan |
| Blacksod & Tullaghan Bays | 2 | | 1 | 1 | 12 | 1 | 3 | 4 | 12 | Feb |
| Donegal Bay | 13 | 13 | 3 | 3 | 6 | 4 | 1 | 3 | 6 | Jan |

Other sites recorded in less than five seasons (peak count): Barley Cove Bay (1), Broadhaven & Sruwadaccon Bays (3), Castlemaine Harbour & Rossbehy (1), Courtmacsherry Bay, Broadstrand Bay & Dunworley (1), Drumcliff Bay Estuary (1), Dundalk Bay (2), Fanad North Coast (1), Inishmore, Aran Islands (1), Liscannor Bay (Liscannor - Rinanoughter) (1), Lough Derg (Shannon) (1), Lough Swilly (3), Mannin Bay (1), North Wicklow Coastal Marshes (1), Rosscarbery (1), Shannon & Fergus Estuary (2), Wexford Bay (1)

## 4.32 Great Northern Diver *Gavia immer* Lóma mór

N. America, Greenland, Iceland, Bear Island (br)

| | |
|---|---|
| **International threshold:** | 50 |
| **All-Ireland threshold:** | 20 |
| **Population size (2011-2016):** | |
| All-Ireland: | 2,240 |
| ROI: | 2,128 |
| Associated with SPA network: | 518 |

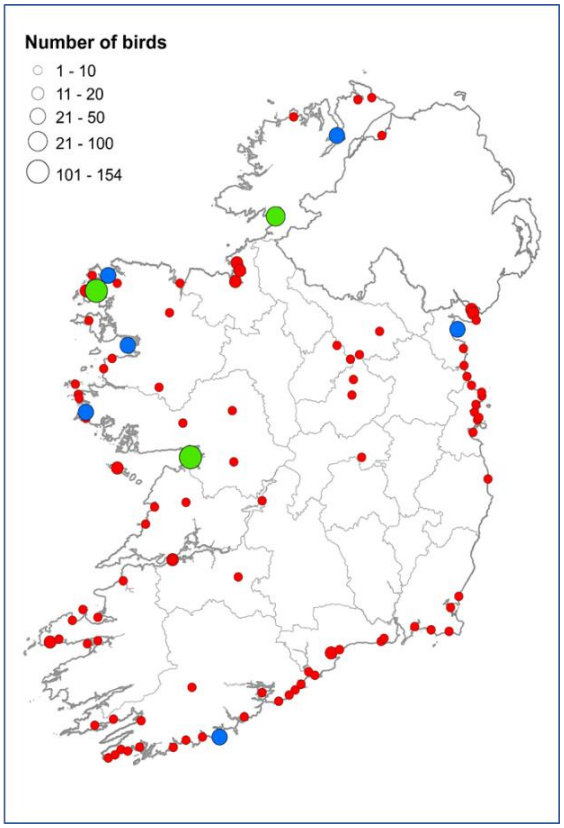



**Figure 33** Distribution map for Great Northern Diver. The distribution map illustrates sites supporting numbers of international importance (green circles), national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). (Photo: John Fox).

Great Northern Diver that breed in North America, Greenland, Iceland and Bear Island spend winter in coastal north-west Europe. This population has an uncertain population trend and is possibly in decline (Wetlands International, 2018).

The species exhibits a widespread coastal distribution during winter utilising shallow nearshore waters to a greater degree at certain times (e.g. storms, driving onshore winds). As flocks are often located some distance from the shoreline, and are likely frequently undetected or underestimated, no trend information is provided, and the population estimate should be treated with caution.

Great Northern Diver was recorded at 101 sites during the current period with three sites supporting numbers of international importance, consistent with the former period. A further six sites supported numbers of national importance, based on the nominal threshold of 20 individuals. Numbers at Lough Foyle (NI) have dropped below the threshold and this site is no longer of significance. With the exception of Dundalk Bay and Courtmacsherry Bay, Broadstrand Bay & Dunworley, all sites of significance have a north-west coast distribution.

**Table 32** Table showing sites supporting internationally and/or nationally important numbers of Great Northern Diver ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of international importance** | | | | | | | | | | |
| Inner Galway Bay | 168 | 305 | 146 | 157 | 209 | 86 | 173 | 154 | 209 | Jan, Mar |
| Blacksod & Tullaghan Bays | 70 | 41_ | 93 | 196 | 123 | 74 | 34 | 104 | 196 | Feb |
| Donegal Bay | 110 | 173 | 58 | 94 | 134 | 40 | 39 | 73 | 134 | Jan |
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Mannin Bay [1] | 34 | 25 | | 64 | 22 | 28 | 12* | 38 | 64 | Oct |
| Broadhaven & Sruwadaccon Bays [1] | 42 | 31 | 59 | 26 | 19 | 44 | | 37 | 59 | Feb |
| Clew Bay [1] | 38 | 18 | 44 | 26 | 36 | 39 | 28 | 35 | 44 | Jan |
| Courtmacsherry Bay, Broadstrand Bay & Dunworley [1] | 29 | 27 | 11 | 29 | 42 | 45 | 17 | 29 | 45 | Dec |
| Dundalk Bay | 16 | | 35 | 10 | 37 | 15 | 29 | 25 | 37 | Jan |
| Lough Swilly [1] | 33 | 10 | 24 | 19 | 14 | 20 | 27 | 21 | 27 | Feb, Mar |
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| Lough Foyle † | 55 | 9 | 3 | 3 | 7 | 11 | 3 | 5 | 11 | |

Sites that supported numbers of international importance during the former period but no data were available for the current period: Keeragh Islands.

* Low-quality count not included in the calculation of the mean.

† Data provided by the UK (WeBS).

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

## 4.33 Little Grebe *Tachybaptus ruficollis* Spágaire tonn

*ruficollis*, Europe E. to Urals, N.W. Africa (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 4,700 | **Population change (%):** | |
| **All-Ireland threshold:** | 20 | 5 year: | -4.3 |
| **Population size (2011-2016):** | | 12 year: | +9.7 |
| All-Ireland: | 2,200 | 22 year: | +44.4 |
| ROI: | 1,594 | Historical: | - |
| Associated with SPA network: | 944 | Average annual change: | +2.4 |

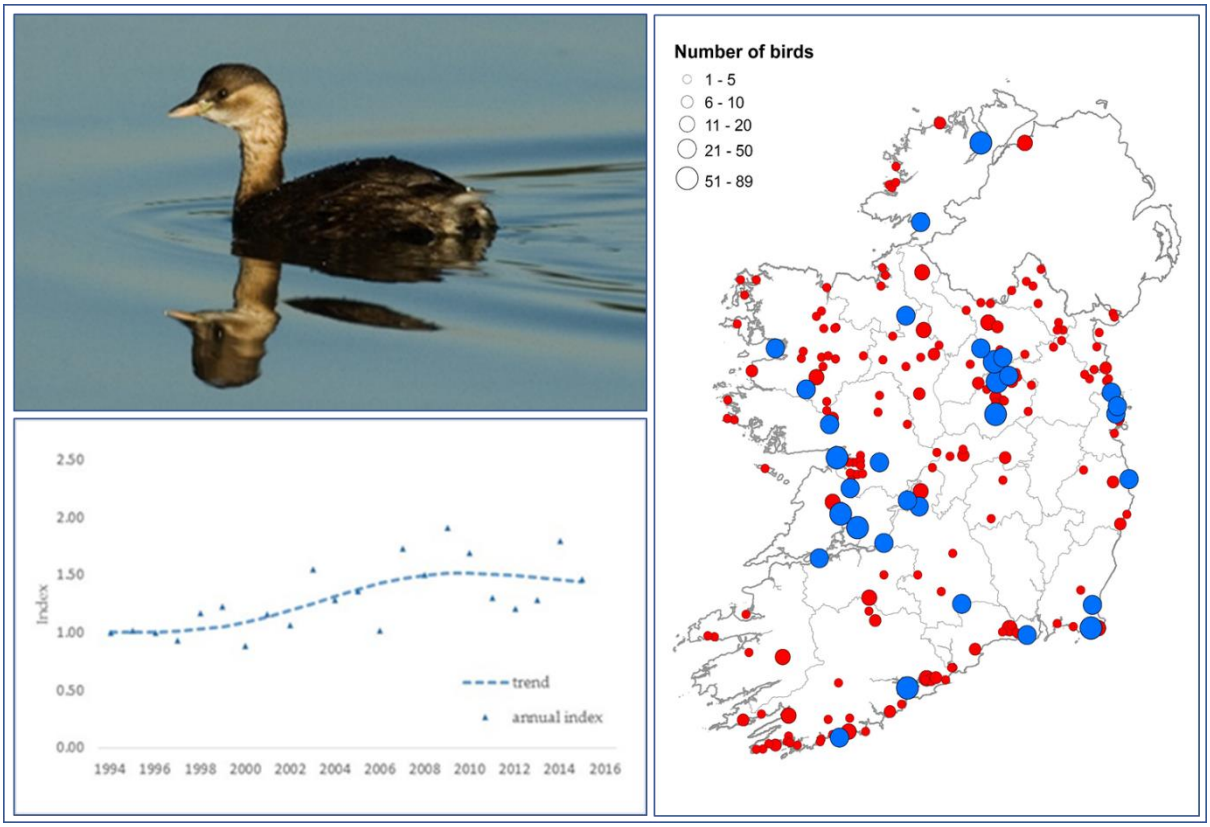



**Figure 34** Distribution map and graphed population trend for Little Grebe. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the smoothed trend (hatched line) (Photo: Clive Timmons).

The population of Little Grebe that occurs across Europe and north-west Africa has an uncertain trend (stable/decline) (Wetlands International, 2018). In Ireland, numbers have been increasing across the long-term but a short-term decline (-4% over recent 5-year period) is now evident. This is consistent with Britain where a 2% decline in numbers over the past ten years has been reported (Frost *et al.*, 2018) although stable/increasing over the long-term. Numbers in Northern Ireland however were stable up until the mid-2000s and are now exhibiting a decline.

Little Grebe is widely dispersed on a variety of coastal and inland wetlands and can be quite secretive and hence overlooked during counts, so population estimates and trends for this species should be treated with caution. They were recorded at 212 sites during the current period, including 31 sites which supported numbers of national importance. The increase in sites of significance is partially attributed to the decrease in 1% threshold from 25 to 20 since the former period, with 19 sites now promoted to this listing.

The top three ranked sites during the former period (Lough Derravaragh, Lough Ennell and Lough Ree) have observed declines in numbers, with no site achieving a mean number of more than 100 birds. However, Lough Ree, which appears to no longer support numbers of national importance, has received inconsistent count coverage in recent seasons so may well still be of significance. Numbers at Lough Swilly, Cork Harbour and Inner Galway Bay are highly consistent with the former period.

**Table 33** Table showing sites supporting nationally important numbers of Little Grebe ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Lough Swilly | 72 | 59 | 78 | 58 | 110 | 109 | 88 | 89 | 110 | Sep, Nov |
| Inner Galway Bay | 82 | 71 | 83 | 70 | 114 | 121 | 37 | 85 | 121 | Nov |
| South East Clare Lakes [1] | 54* | 76 | 60 | 95 | 72 | 68 | 77 | 74 | 95 | Oct |
| Cork Harbour | 56* | 65* | 85 | 62 | 71 | 93 | 57 | 74 | 93 | Dec, Jan |
| Lough Derravaragh | 124 | 236 | 32 | 96 | 95 | 110 | 35 | 74 | 110 | Jan |
| Lough Ennell | 259 | 124 | 46 | 63 | 83 | 65 | 98 | 71 | 98 | Sep, Nov |
| Ballyallia Lake [1] | 80 | 64 | 39 | 35 | 63 | 116 | 50 | 61 | 116 | Dec |
| Tacumshin Lake | 21 | 30 | 17 | 35 | 28 | 72 | 122 | 55 | 122 | Nov |
| Lough Kinale & Derragh Lough [1] | 29* | | | | 37 | 61 | 55 | 51 | 61 | Sep |
| North Wicklow Coastal Marshes | 51 | 51 | 34 | 45 | 52 | 22* | 42 | 43 | 52 | Jan, Feb, Mar |
| Lough Gowna [1] | | | | 21 | 37 | 57 | 39 | 39 | 57 | Oct |
| River Shannon (Lower) [1] | | 24 | 25 | 28 | 52 | 39 | 44 | 38 | 52 | Nov |
| Lough Glore [1] | 38 | 40 | 50 | 40 | 62 | 17 | 13 | 36 | 62 | Nov |
| Shannon & Fergus Estuary [1] | 7 | 12 | 15 | 34 | 32 | 45 | 54 | 36 | 54 | Sep |
| Termon Turloughs [1] | 8 | 58 | 4 | 18 | 39 | 62 | 53 | 35 | 62 | Sep |
| Lough Sheelin | 27 | 21 | 12 | 75 | 16 | 51 | 13 | 33 | 75 | Feb |
| Donegal Bay | 26 | 25 | 17 | 33 | 32 | 49 | 27 | 32 | 49 | Jan |
| Clew Bay [1] | 32 | 41 | 23 | 34 | 30 | 30 | 34 | 30 | 34 | Oct |
| Lough Arrow [1] | | | 34 | 19 | 28 | 38 | | 30 | 38 | |
| Lough Corrib [1] | 55 | 19 | 32 | 27 | 27 | 45 | 5 | 27 | 45 | Nov |
| Wexford Harbour & Slobs | 24* | 12* | 24 | 4 | 21 | 32 | 42 | 25 | 42 | |

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Tramore Back Strand [1] | | 5 | 12 | 18 | 33 | 35 | | 25 | 35 | Feb |
| Lough Eorna [1] | 21 | 48 | 36 | 15 | 16 | 20 | 32 | 24 | 36 | Sep, Mar |
| Lough Derg (Shannon) [1] | | 88 | 24 | | 32 | 18 | 18 | 23 | 32 | Oct |
| Kilkeran Lake [1] | 26 | 40 | 33 | 12 | | | | 23 | 33 | |
| Broadmeadow (Malahide) Estuary [1] | 13 | 28 | 23 | 21 | 8 | 33 | 26 | 22 | 33 | Dec |
| Lough Mask [1] | 17 | 10 | | 4* | 16 | 27 | | 22 | 27 | |
| Marlfield Lake | 30 | 32 | 20 | 23 | | | | 22 | 23 | |
| Knock Lake | | | | 16 | 27 | 10 | 29 | 21 | 29 | Sep |
| Rogerstown Estuary [1] | 18 | 10 | 24 | 15 | 15 | 22 | 25 | 20 | 25 | Nov |
| Lough Rea [1] | 17 | 22 | 14 | 18 | 32 | 20 | 14 | 20 | 32 | |
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| Lough Foyle † | 35 | 16 | 23 | 13 | 10 | 35 | 7 | 18 | 35 | Sep |
| Lough Carra | 43 | 27 | 15 | | | | | 15 | 15 | |
| Bantry Bay | 8 | 35 | 6 | 13 | 11 | 17 | 10 | 11 | 17 | Dec |
| Corofin Wetlands | 27 | 43 | | 31 | | | 25 | 11 | 31 | Nov, Jan |
| Lough Owel | 16 | 7 | 16 | 9 | 3 | 5 | 2 | 7 | 16 | Nov |

Sites that supported numbers of national importance during the former period but no data were available for the current period: Lough Ree.

* Low-quality count not included in the calculation of the mean.

† Data provided by the UK (WeBS).

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

## 4.34 Great Crested Grebe *Podiceps cristatus* Foitheach mór

*cristatus*, N. & W. Europe (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 6,300 | **Population change (%):** | |
| **All-Ireland threshold:** | 30 | 5 year: | -31.7 |
| **Population size (2011-2016):** | | 12 year: | -7.6 |
| All-Ireland: | 2,930 | 22 year: | +4.8 |
| ROI: | 1,734 | Historical: | - |
| Associated with SPA network: | 1,298 | Average annual change: | -0.1 |

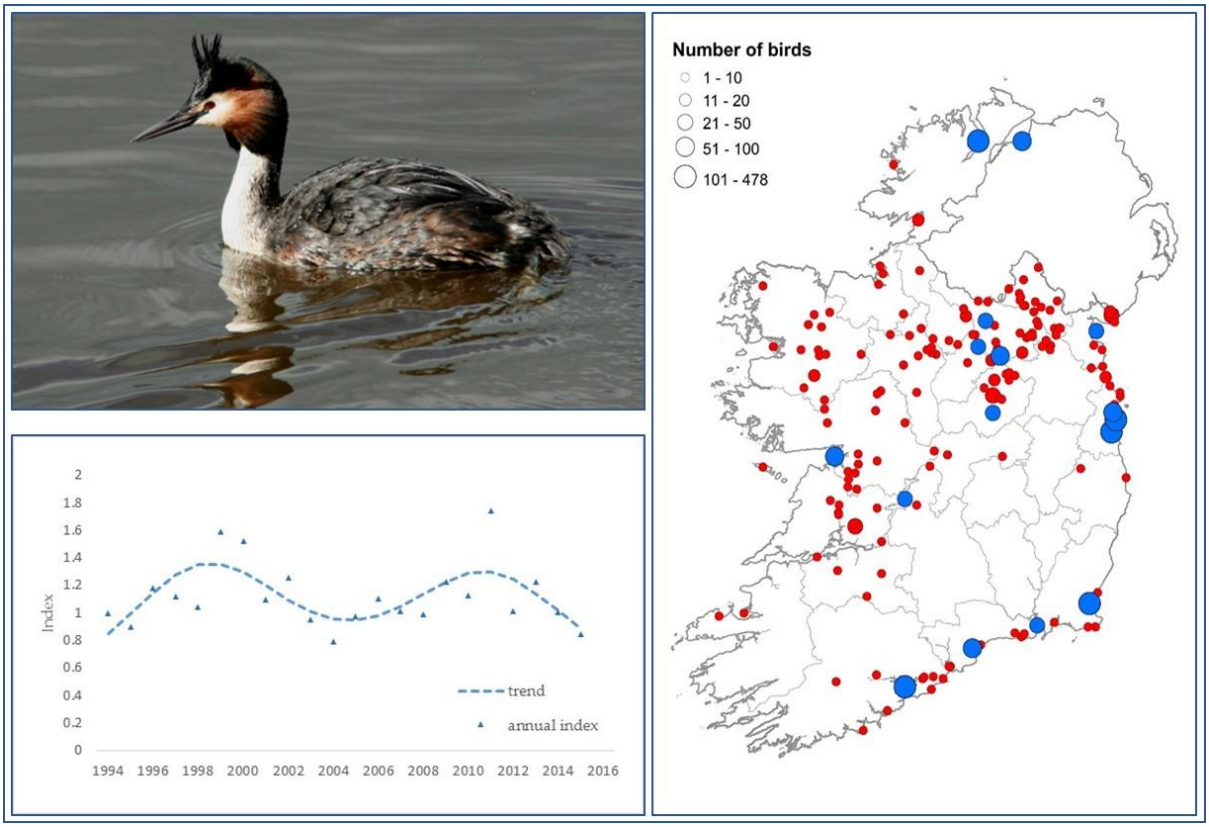



**Figure 35** Distribution map and graphed population trend for Great Crested Grebe. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the smoothed trend (hatched line) (Photo: Dick Coombes).

Wetlands International (2018) recognises five populations of *Podiceps cristatus*, and birds occurring in Ireland belong to the population that breeds across north and west Europe, including Scandinavia, Germany, Switzerland and Italy. The population trend of this species is uncertain (stable/declining) (Wetlands International, 2018). In Ireland, numbers have been stable across the long-term but a short-term decline (over 5- and 12-year periods) is now evident. This is similar to Britain where a 20% decline in numbers over the past ten years has been reported (Frost *et al.*, 2018).

Great Crested Grebe are relatively widespread in Ireland and were recorded at 176 sites during the current period. Some 16 sites recorded numbers of national importance (Table 34), with Dublin Bay ranked the highest, with mean numbers more than four times higher than the former period, and a peak count of 930 individuals. Numbers at Lough Swilly, Wexford Harbour & Slobs and Cork Harbour are relatively stable in comparison with the former period. Notably, Carlingford Lough (NI) was the highest ranked site during the former period but is now no longer of significance.

**Table 34** Table showing sites supporting nationally important numbers of Great Crested Grebe ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Dublin Bay | 255 | 421 | 930 | 254 | 755 | 143 | 307 | 478 | 930 | Nov |
| Lough Swilly | 296 | 110 | 255 | 150 | 196 | 161 | 166 | 186 | 255 | Nov |
| Wexford Harbour & Slobs | 19* | 103* | 76 | 24 | 233 | 215 | 76 | 125 | 233 | Nov |
| Cork Harbour | 183* | 140* | 154 | 117 | 82 | 94 | 87 | 107 | 154 | Oct, Feb |
| Baldoyle Bay [1] | 63 | | | | 124 | 189 | | 104 | 189 | Nov, Dec |
| Broadmeadow (Malahide) Estuary | 54 | 44 | 34 | 120 | 60 | 72 | 84 | 74 | 120 | Nov |
| Lough Foyle † | 160 | 37 | 20 | 45 | 158 | 76 | 70 | 74 | 158 | Oct |
| Dungarvan Harbour [1] | 12 | 59 | 112 | 103 | 50 | 52 | 22 | 68 | 112 | Jan |
| Inner Galway Bay [1] | 48 | 40 | 84 | 27 | 53 | 69 | 33 | 53 | 84 | Nov |
| Lough Sheelin | 24 | 21 | 29 | 41 | 78 | 64 | 41 | 51 | 78 | Jan |
| Lough Gowna [1] | | 3 | | 26 | 53 | 61 | 47 | 47 | 61 | Sep, Mar |
| Waterford Harbour [1] | 69 | | 24 | | 62 | | | 43 | 62 | |
| Lough Derg (Shannon) [1] | | 171 | 41 | | 41 | 61 | 22 | 41 | 61 | Sep, Mar |
| Lough Ennell [1] | 25 | 36 | 58 | 23 | 54 | 39 | 21 | 39 | 58 | Mar |
| Dundalk Bay | 48 | 31 | 45 | 73 | 1 | 19 | 43 | 36 | 73 | Jan |
| Lough Oughter Complex | | 8* | 44 | 18* | 27 | 3* | | 36 | 44 | |
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| Carlingford Lough † | 186 | 110 | 68 | 2 | 2 | 6 | 3 | 16 | 68 | Jan |

* Low-quality count not included in the calculation of the mean.

† Data provided by the UK (WeBS).

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

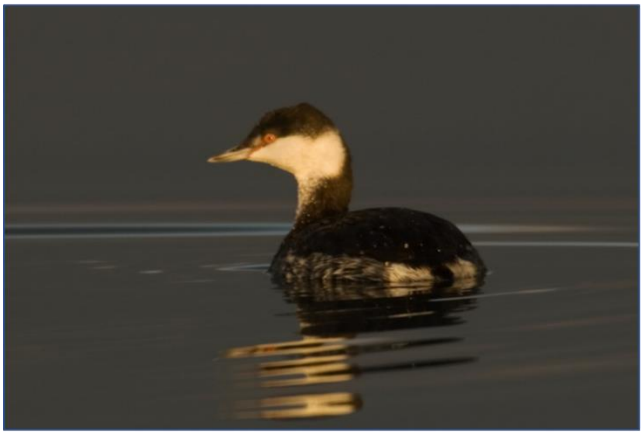
## 4.35 Slavonian Grebe *Podiceps auritus* Foitheach cluasach

*auritus*, N.W. Europe (br)

Scarce winter visitor

**International threshold:** 50

**Mean/ Peak (2011/12 – 2015/16)**: 86/153



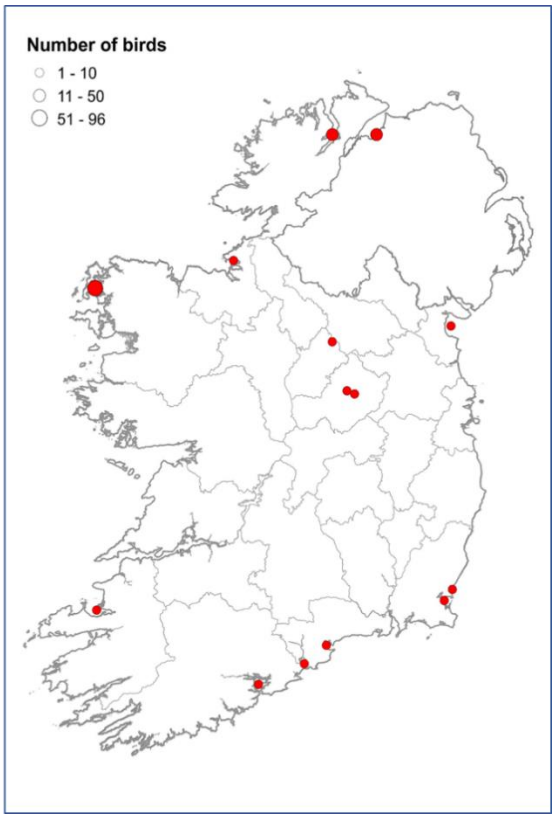



**Figure 36** Distribution map for Slavonian Grebe showing peak counts (2011/12 – 2015/16) (Photo: Clive Timmons).

The north-west European population of Slavonian Grebe is one of three populations recognised by Wetlands International (2018) and is declining/stable. The species is relatively scarce in Ireland, with a predominantly coastal distribution (Balmer *et al*., 2013). This species was recorded at 14 sites during the current period, occurring regularly at five sites (Table 35).

Lough Swilly and Blacksod & Tullaghan Bays held the largest numbers based on the five-year mean (2011/12-2015/16), consistent with the former period, while Lough Foyle (NI) also recorded the highest mean number of 22 birds for the same period, and the highest peak number (43) of individuals during 2013/14.

**Table 35** Table showing sites that supported Slavonian Grebe in five or more seasons between 2009/10 and 2015/16.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Blacksod & Tullaghan Bays | 13 | 1 | 12 | 36 | 20 | 10 | 96 | 35 | 96 | Feb |
| Lough Foyle † | 60 | 11 | 7 | 3 | 43 | 22 | 37 | 22 | 43 | |
| Lough Swilly | 46 | 4 | 10 | 24 | 20 | 19 | 10 | 17 | 24 | Feb |
| Wexford Harbour & Slobs | 2 | 5 | 3 | 4 | 3 | 4 | 8 | 4 | 8 | Jan |
| Dundalk Bay | 1 | | | 6 | 4 | 3 | 2 | 3 | 6 | Mar |

† Data provided by the UK (WeBS).

Other sites recorded in less than five seasons (peak count 2011/12 – 2015/16): Blackwater Estuary (1), Cork Harbour (1), Drumcliff Bay Estuary (2), Dungarvan Harbour (2),), Lough Gowna (1), Lough Owel (2), Slevin's Lake (1), Tralee Bay, Lough Gill & Akeragh Lough (3), Wexford Bay (8).

## 4.36 Cormorant *Phalacrocorax carbo* Broigheall

*carbo*, N.W. Europe (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 1,200 | **Population change (%):** | |
| **All-Ireland threshold:** | 110 | 5 year: | -5.0 |
| **Population size (2011-2016):** | | 12 year: | -27.7 |
| All-Ireland: | 10,870 | 22 year: | +6.9 |
| ROI: | 7,967 | Historical: | +3.7 |
| Associated with SPA network: | 3,263 | Average annual change: | +0.1 |

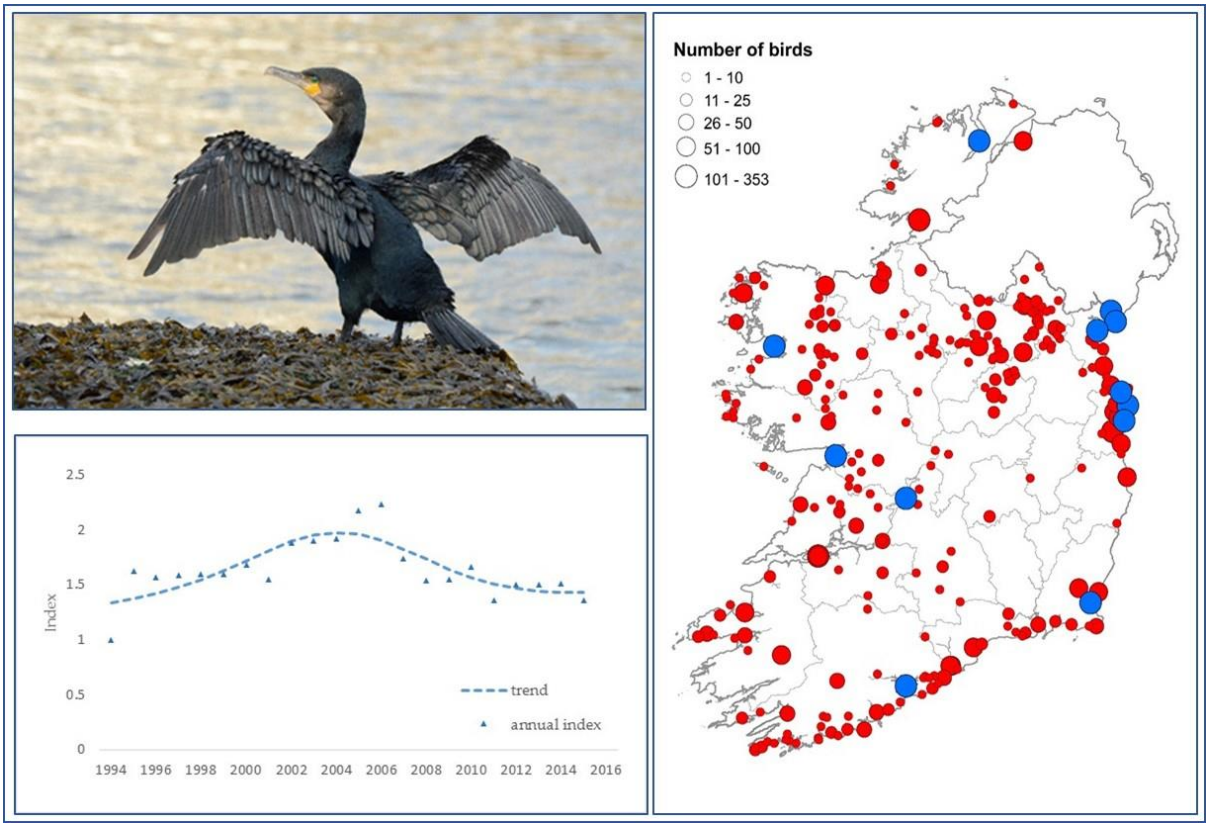



**Figure 37** Distribution map and graphed population trend for Cormorant. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the smoothed trend (hatched line) (Photo: Brian Burke).

There are 15 populations of Great Cormorant (hereafter Cormorant) (Wetlands International, 2018), distributed over much of Europe as well as parts of Africa, Asia, America and Australia. Birds breeding and wintering in Ireland belong to the north-west European population, predominantly the subspecies *carbo* that also occurs in Norway, Iceland and Britain. It is likely that Cormorants of the subspecies *sinensis* (Northern and Central European population) are also present here in significant but unquantified numbers (Newson *et al.*, 2004). The majority of breeding Cormorant in Ireland are thought to be resident, although some have been recorded moving south for the winter, with

recoveries from northern France and the south coast of Portugal (Wernham *et al*., 2002). Wintering numbers have declined in Ireland over much of the last 40 years – by 9% since the 1980s (Sheppard, 1993), 27.7% in the last 12 years, and by 5% in the last 5 years. In the UK, by contrast, the 25-year and 10-year trends show that numbers of Cormorant have increased by 51% and 11% respectively (Frost *et al*., 2018), boosted by increased wintering numbers from the continent (Newson *et al*., 2007).

The largest concentrations of wintering Cormorant in Ireland is within coastal bays, although the species is widespread inland too, particularly on the larger lakes and parts of the north midlands and west of the country where there are high densities of waterbodies with fish. Cormorant were recorded at 278 sites during the current period. The list of sites supporting numbers of national importance has increased from 9 to 12, all but one of which are coastal sites. The recent Bird Atlas (Balmer *et al*., 2013) found a net 18% increase in the range of Cormorant wintering in Ireland since the previous atlas in 1981-84, the majority of new sites being inland. It is worth noting that this is a species that is liable to be under-recorded during core I-WeBS counts, particularly in coastal areas.

**Table 36** Table showing sites supporting nationally important numbers of Cormorant ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Wexford Harbour & Slobs | 196* | 218* | 393 | 463 | 328 | 395 | 188 | 353 | 463 | Jan |
| Cork Harbour | 170* | 283* | 317 | 363 | 263 | 330 | 401 | 335 | 401 | Nov |
| Inner Galway Bay | 204 | 497 | 194 | 290 | 270 | 665 | 144 | 313 | 665 | Nov, Jan |
| Carlingford Lough † | 381 | 91 | 52 | 153 | 131 | 355 | 378 | 214 | 378 | Jan |
| Lambay Island [1] | 50 | | | | 200 | | 20* | 200 | 200 | |
| Lough Swilly [1] | 83 | 174 | 109 | 60 | 190 | 95 | 536 | 198 | 536 | Oct, Jan |
| Skerries Islands | | | | | 340 | | 25 | 183 | 340 | Nov, Jan |
| Ireland's Eye [1] | | | | | 200 | | 150 | 175 | 200 | |
| Dundalk Bay Outer (North: Ballagan Point - Giles Quay) [1] | 228 | 110* | 103 | 156 | 220 | 50* | 203 | 171 | 220 | Jan |
| Dundalk Bay | 256 | 127 | 155 | 139 | 142 | 94 | 104 | 127 | 155 | Sep |
| Clew Bay [1] | 34 | 249 | 220 | 182 | 83 | 70 | 72 | 125 | 220 | Oct |
| Lough Derg (Shannon) [1] | | 149 | 62 | | 116 | 153 | 163 | 124 | 163 | Oct |
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| Shannon & Fergus Estuary | 49 | 83 | 86 | 187 | 40 | 118 | | 108 | 187 | Jan |
| Dublin Bay | 211 | 98 | 151 | 53 | 198 | 41 | 71 | 103 | 198 | Oct |
| Carlingford Lough (ROI) | 58* | | 49 | | | | 13 | 31 | 49 | |

Sites that supported numbers of national importance during the former period but no data were available for the current period: Ballagan Point – Cooley Point.

* Low-quality count not included in the calculation of the mean.

† Data provided by the UK (WeBS.

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

## 4.37 European Shag *Phalacrocorax aristotelis* Seaga

*aristotelis*, Coastal N Europe (br)

**International threshold:** 2,000

**Mean/ Peak (2011/12 – 2015/16)**: 1,500/1,948

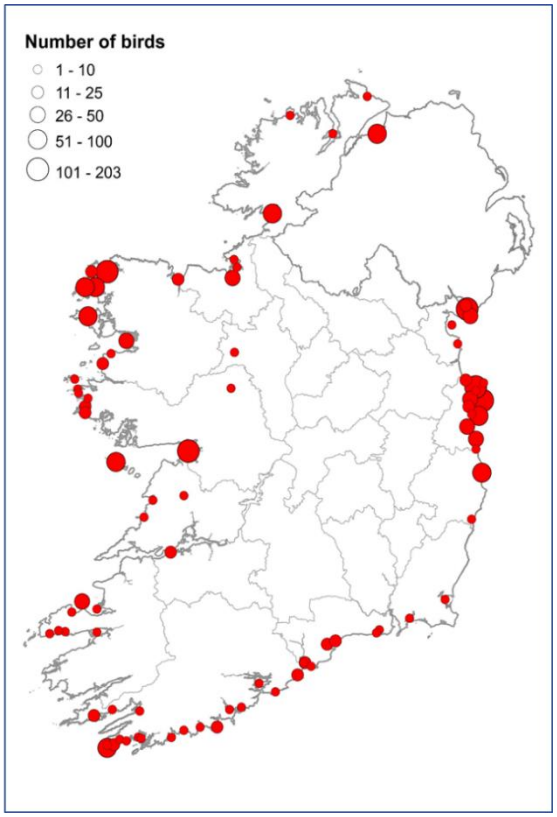



**Figure 38** Distribution map for Shag showing sites that supported an average one or more bird between 2011/12 and 2015/16 (Photo: Paul Troake).

There are three populations of European Shag (hereafter Shag) that occur predominantly in coastal waters between northern Europe and Morocco. The nominate subspecies *aristotelis* inhabits coastal northern Europe, including Ireland. Shag dispersal is limited and birds seen around the Irish coast in winter are unlikely to have bred much further away than 100km or so (Wernham *et al*., 2002).

Because of their pelagic nature, Shag are not monitored accurately by I-WeBS counts, although they are often recorded in significant numbers at sites around the coast. Some 17 sites are listed in Table 37 as supporting 20 or more individuals on a regular basis and these provide some indication of important inshore areas used by the species.

**Table 37** Table showing sites that supported Shag in five or more seasons between 2009/10 and 2015/16 with a mean peak of 20 individuals or greater.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Inner Galway Bay | 211 | 177 | 388 | 163 | 214 | 166 | 82 | 203 | 388 | Jan |
| Broadhaven & Sruwadaccon Bays | 246 | 254 | 349 | 102 | 165 | 115 | | 183 | 349 | Nov |
| Blacksod & Tullaghan Bays | 52 | 28 | 125 | 106 | 110 | 41 | 96 | 96 | 125 | Feb |
| Inishmore, Aran Islands [6] | | 22 | 61 | 199 | 36 | 93 | 79 | 94 | 199 | Oct, Dec |
| North Wicklow Coastal Marshes | 9 | 106 | 176 | 54 | 46 | 44* | 78 | 89 | 176 | Jan |
| Donegal Bay | 79 | 81 | 16 | 84 | 66 | 89 | 56 | 62 | 84 | Oct |
| Achill Island [6] | | 12 | 17 | 21 | 67 | 56 | 99 | 52 | 99 | Sep, Oct |
| Mullet West | 61 | 70 | 55 | 54 | 62 | 32 | | 51 | 62 | |
| Ballysadare Bay | 27 | 316 | 42 | | 25 | 113 | 4 | 46 | 113 | Jan |
| Clew Bay[6] | 16 | 18 | 6 | 17 | 37 | 75 | 31 | 33 | 75 | Oct, Nov |
| Rogerstown Estuary | 28 | 44 | 40 | 47 | 36 | 21 | 10 | 31 | 47 | Oct |
| Dublin Bay [6] | 2 | 25 | 19 | 23 | 36 | 3 | 71 | 30 | 71 | |
| Dundalk Bay Outer (North: Ballagan Point – Giles Quay) [6] | 4 | 15 | | 58 | 38 | 20 | 12 | 26 | 58 | |
| Mannin Bay | 5 | 12 | 5 | 11 | 36 | 31 | 41 | 25 | 41 | Sep, Oct |
| South Mayo Coast [6] | 80 | 100 | 7 | 63 | 4 | 11 | 30 | 23 | 63 | Sep, Nov |
| Carlingford Lough † | 1 | 12 | 2 | 6 | | 54 | 51 | 23 | 54 | |
| Dungarvan Harbour [6] | 1 | 15 | 8 | 39 | 27 | 25 | 10 | 22 | 39 | Feb |

† Data provided by the UK (WeBS).

[6] Species not regularly recorded at the site during the former period (2001/02 and 2008/09).

## 4.38 Little Egret *Egretta garzetta* Éigrit bheag

*garzetta*, W Europe (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 1,100 | **Population change (%):** | |
| **All-Ireland threshold:** | 20 | 5 year: | +8.0 |
| **Population size (2011-2016):** | | 12 year: | +76.8 |
| All-Ireland: | 1,390 | 22 year: | +3,747.2 |
| ROI: | 1,274 | Historical: | - |
| Associated with SPA network: | 957 | Average annual change: | +27.2 |

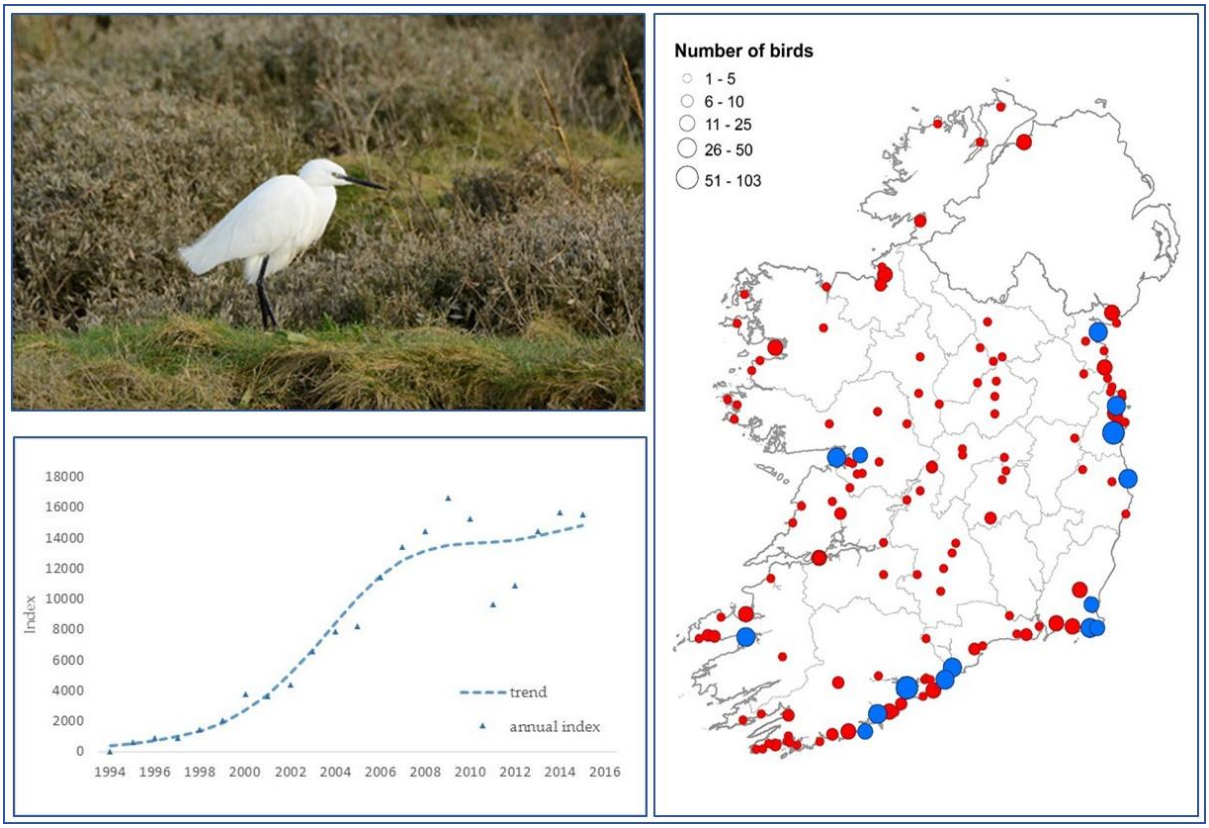



**Figure 39** Distribution map and graphed population trend for Little Egret. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the smoothed trend (hatched line) (Photo: Brian Burke).

Wetlands International (2018) recognises four populations of Little Egret. The population that breeds in Ireland and the UK and south-east to Italy, Algeria, Tunisia and Morocco is in decline. However, Little Egret in Ireland have continued to expand in range and numbers since they became established here during the late 1990s (Smiddy & Duffy, 1997; Smiddy & O'Sullivan, 1999), and the colonisation and range expansion is one of the most notable of any bird in Britain and Ireland over the past 20 years (Balmer *et al*., 2013). It is likely that increases in breeding and wintering populations in France and Spain during the 1980s and 1990s coincided with the expansion into Britain and Ireland (Balmer *et al*., 2013) and there has been an average annual increase of 27% throughout I-WeBS.

Little Egret were recorded at 140 sites during the current period, compared with 117 during the former period. Their distribution remains predominantly coastal, especially in the south (where the breeding population originated) and east, although the number of inland sites has also increased. Fifteen sites exceeded the nominal threshold of 20 birds (Table 38). Cork Harbour remains the most important site, with Dublin Bay and Rogerstown Estuary still ranked highly. While the five-year mean for Carlingford Lough (NI) did not exceed the 1% threshold, a peak count in 2015/16 (41 birds) did exceed this threshold.

**Table 38** Table showing sites supporting nationally important numbers of Little Egret ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Cork Harbour | 184* | 121* | 67 | 64 | 83 | 131 | 168 | 103 | 168 | Sep |
| Dublin Bay | 87 | 73 | 48 | 19 | 59 | 69 | 59 | 51 | 69 | Sep, Oct |
| Rogerstown Estuary | 42 | 1 | 43 | 48 | 57 | 46 | 55 | 50 | 57 | Sep |
| Inner Galway Bay [1] | 44 | 35 | 26 | 19 | 46 | 84 | 32 | 41 | 84 | Nov |
| Castlemaine Harbour & Rossbehy [1] | 18* | 53 | 24 | 36 | 35 | 53 | 37 | 37 | 53 | Oct |
| Dundalk Bay | 40 | 29 | 34 | 35 | 35 | 30 | 48 | 36 | 48 | Sep |
| Blackwater Estuary | 41 | 39* | 17 | 19 | 40 | 36 | 54 | 33 | 54 | Sep |
| Ballymacoda | 18* | 30* | 32 | 23 | | 42 | 36 | 33 | 42 | Sep |
| Bandon Estuary [1] | | | | | 31 | | | 31 | 31 | |
| North Wicklow Coastal Marshes [1] | 42 | 33 | 10 | 18* | 50 | 8* | 28 | 29 | 50 | Sep, Oct |
| Tacumshin Lake | 15 | 10 | 10 | 29 | 14 | 11 | 77 | 28 | 77 | |
| Rahasane Turlough [1] | 67 | 9 | 41 | 14 | 32 | 21 | 13 | 24 | 41 | Mar |
| Lady's Island Lake [1] | 20 | 91 | 22 | 9 | 28 | 35 | 25 | 24 | 35 | Sep |
| Courtmacsherry Bay, Broadstrand Bay & Dunworley | 38 | 21 | 19 | 8 | 31 | 25 | 31 | 23 | 31 | Sep |
| Wexford Harbour & Slobs | 5* | 20* | 15 | 19 | 27 | 30 | 19 | 22 | 30 | Oct |
| **Sites no longer regularly supporting 20 birds or more** | | | | | | | | | | |
| Bannow Bay | 145 | | 39 | | 12 | 12 | 13 | 19 | 39 | |
| The Cull & Killag (Ballyteige) | 24 | 5 | 12 | 22 | 9 | 28 | 17 | 18 | 28 | Sep |
| Baldoyle Bay | 56 | | | | 18 | 3 | 7 | 9 | 18 | Oct |

* Low-quality count not included in the calculation of the mean.

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

## 4.39 Grey Heron *Ardea cinerea* Corr réisc

*cinerea*, N. & W. Europe (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 5,000 | **Population change (%):** | |
| **All-Ireland threshold:** | 25 | 5 year: | +1.9 |
| **Population size (2011-2016):** | | 12 year: | -12.9 |
| All-Ireland: | 2,610 | 22 year: | +31.9 |
| ROI: | 1,943 | Historical: | - |
| Associated with SPA network: | 850 | Average annual change: | +0.9 |

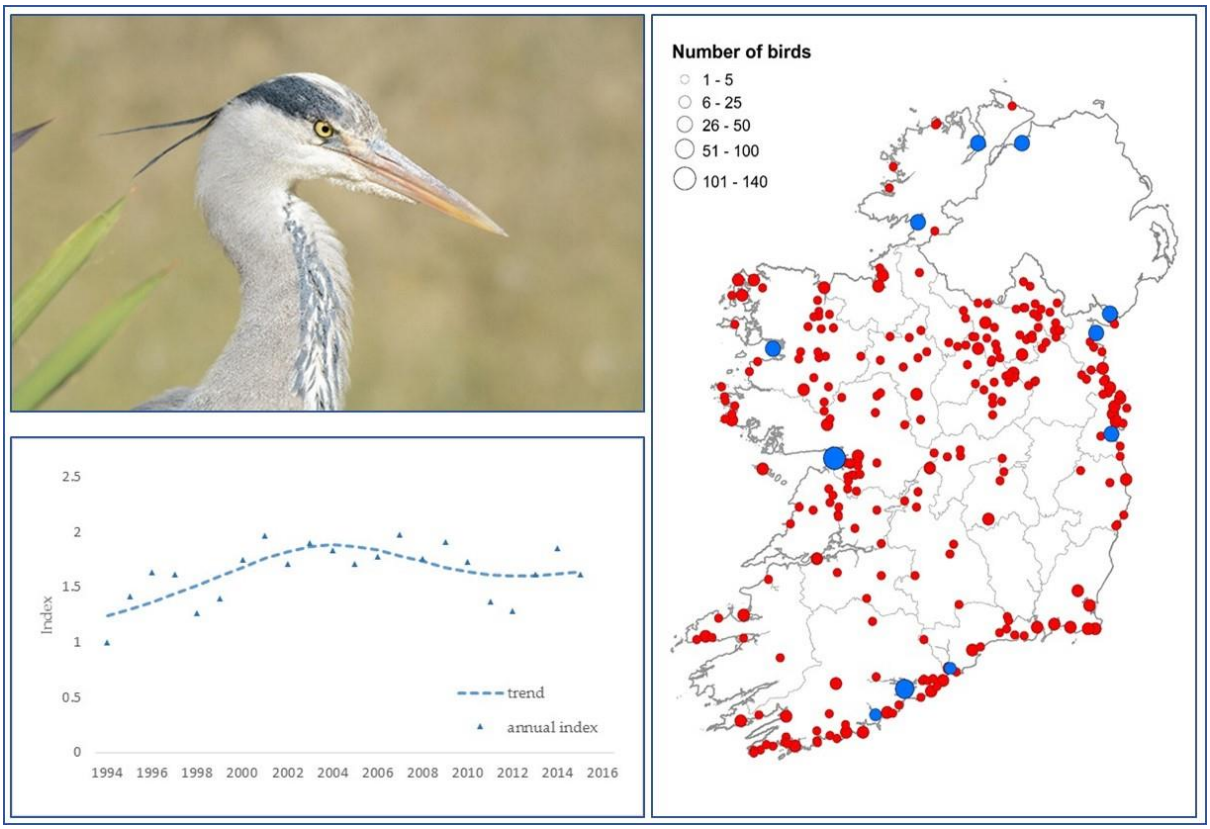



**Figure 40** Distribution map and graphed population trend for Grey Heron. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the annual indices (triangles) together with the smoothed trend (hatched line) (Photo: Brian Burke).

Wetlands International (2018) recognise four populations of *Ardea cinerea*, and the population that breeds across north and western Europe is declining. Resident in Ireland, wintering numbers are augmented by birds moving in from the north and east (Wernham *et al*., 2002). Grey Heron numbers have shown a gradually increasing trend throughout I-WeBS (Figure 40).

Grey Heron are found in a variety of freshwater wetlands as well as estuaries and rocky shores. About a third of the wintering population was estimated to use non-estuarine shores during the last non-estuarine coastal waterbird survey NEWS-III (Lewis *et al*., 2017) and given the widespread nature of the species, the flyway and all-Ireland estimates should be treated as known underestimates.

Widely distributed in Ireland, Grey Heron are usually recorded in small numbers at most sites. They were recorded at 285 sites during the current period and 11 sites were identified as supporting numbers of national importance including the two cross-border sites Carlingford Lough and Lough Foyle. Inner Galway Bay, Cork Harbour, Lough Swilly and Clew Bay remain the top ranked sites with relatively stable numbers compared with the former period.

**Table 39** Table showing sites supporting nationally important numbers of Grey Heron ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Inner Galway Bay | 56 | 152 | 136 | 118 | 155 | 212 | 77 | 140 | 212 | Nov |
| Cork Harbour | 59* | 75* | 70 | 49 | 78 | 99 | 110 | 81 | 110 | Sep |
| Lough Swilly | 38 | 64 | 45 | 35 | 52 | 56 | 59 | 49 | 59 | Nov, Jan |
| Clew Bay | 27 | 57 | 36 | 51 | 36 | 34 | 77 | 47 | 77 | Oct |
| Dublin Bay | 54 | 30 | 28 | 15 | 68 | 40 | 44 | 39 | 68 | Oct |
| Donegal Bay | 52 | 34 | 13 | 45 | 40 | 60 | 31 | 38 | 60 | |
| Carlingford Lough † | 30 | 14 | 17 | 13 | 10 | 62 | 53 | 31 | 62 | Jan, Feb |
| Dundalk Bay | 50 | 18 | 25 | 16 | 43 | 26 | 36 | 29 | 43 | Nov |
| Lough Foyle † | 30 | 36 | 22 | 12 | 27 | 51 | 39 | 29 | 51 | Sep |
| Blackwater Estuary [1] | 21 | 25* | 16 | 12 | 38 | 42 | 17 | 25 | 42 | |
| Bandon Estuary [1] | | | | | 25 | | | 25 | 25 | |
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| Broadmeadow (Malahide) Estuary | 77 | 20 | 12 | 19 | 19 | 27 | 26 | 21 | 27 | Oct |

Sites that supported numbers of national importance during the former period but no data were available for the current period: Dublin Zoo Ponds.

* Low-quality count not included in the calculation of the mean.

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

† Data provided by the UK (WeBS).

## 4.40 Water Rail *Rallus aquaticus* Rálóg uisce

*aquaticus*, Europe, N. Africa, W. Asia (br)

**International threshold:** 6,400

**Mean/ Peak (2011/12 – 2015/16)**: 46/67

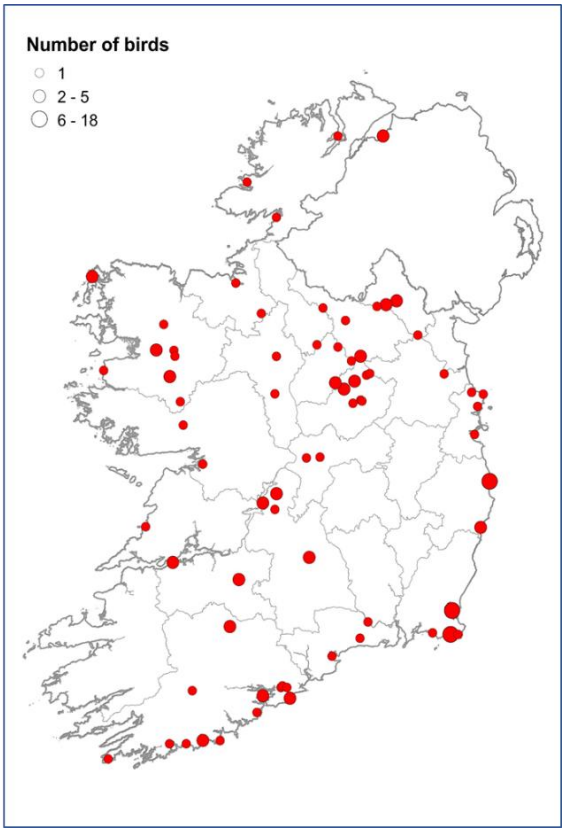



**Figure 41** Distribution map for Water Rail showing peak numbers recorded at sites between 2011/12 and 2015/16 (Photo: Shay Connolly).

Ireland's Water Rail belong to the population that breeds in Europe, north Africa, western Asia and east to the Ob basin, and winter in western Europe, north Africa and south-west Asia. The status of this population is unknown (Wetlands International, 2018). Ringing recoveries show that the resident Irish Water Rail population is augmented in the winter by birds from Fennoscandia and central Europe (Wernham *et al*., 2002).

The species requires muddy ground for foraging and shows a preference for shallow still or slow-flowing water, surrounded by dense riparian, emergent, submergent or aquatic vegetation (del Hoyo *et al*., 1996). Water Rail are highly secretive and therefore is not accurately monitored by I-WeBS core count methodology alone. They were recorded at 87 sites between 2009/10 and 2015/16, and at 72 sites during the current period, with ten sites supporting the species with most regularity (Table 40). A peak count (18) was recorded at North Wicklow Coastal Marshes in 2014/15.

**Table 40** Table showing sites that supported Water Rail in five or more seasons between 2009/10 and 2015/16

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 |
|---|---|---|---|---|---|---|---|---|---|
| North Wicklow Coastal Marshes | 7 | 4 | 5 | 3 | 5 | 18 | 6 | 7 | 18 |
| Tacumshin Lake [6] | 1 | 1 | | 1 | 1 | 1 | 12 | 4 | 12 |
| Wexford Harbour & Slobs | 6 | 4 | 3 | 2 | 6 | 3 | 3 | 3 | 6 |
| Cabragh Wetlands | 2 | 4 | 1 | 2 | 2 | 4 | 2 | 2 | 4 |
| Lough Iron | 3 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 2 |
| Clonakilty Bay [6] | 3 | 2 | 3 | | | 1 | 2 | 1 | 3 |
| Lough Foyle [6] † | | 2 | 1 | | 2 | 3 | 1 | 1 | 3 |
| Kilcolman Marsh [6] | 3 | 2 | 2 | 1 | 1 | 1 | 2 | 1 | 2 |
| Lough Derravaragh [6] | 1 | 2 | 1 | | | 2 | 1 | 1 | 2 |
| Lough Glore [6] | 3 | 3 | 1 | 1 | 1 | | | 1 | 1 |

† Data provided by the UK (WeBS).

[6] Species not regularly recorded at the site during the former period (2001/02 and 2008/09).

Other sites recorded in less than five seasons (peak count 2011/12 – 2015/16):

Annaghmore Lakes (1), Arklow Ponds (2), Ballindeereen Turlough (1), Ballinlough (1), Ballybackagh (1), Ballybutler (Butlerstown) Lake (1), Ballycotton Shanagarry (3), Ballysadare Bay (1), Boora Lakes - Back Lakes Finnamores (1), Castlebar Lakes/ Islandeady chain (2), Castlemartyr Lake (1), Cloghanhill (1), Cork Harbour (4), Courtmacsherry Bay, Broadstrand Bay & Dunworley (1), Donegal Bay (1), Dromore Lakes (Monaghan) (2), Dromore River (2), Drum Lakes (1), Dublin Bay (1), Dungarvan Harbour (1), East Ballinamore Lakes (1), Glen Lough (4), Inishcarra Reservoirs (1), Knock Lake (1), Lady's Island Lake (1), Lissagriffin Lake (1), Lough Aderry (1), Lough Arrow (1), Lough Carra (3), Lough Corrib (1), Lough Derg (Shannon) (2), Lough Eorna (1), Lough Gowna (1), Lough Gur (2), Lough Kinale & Derragh Lough (1), Lough Levally (1), Lough Oughter Complex (1), Lough Sallagh (1), Lough Sheelin (3), Lough Sheever (1), Lough Swilly (1), Manulla Lakes (1), Mid-Clare Coast (Mal Bay - Doonbeg Bay) (1), Pat Reddan's Lake (2), Rahans Lake (1), Ringabella Creek (1), River Boyne (1), River Suir Lower (1), Rogerstown Estuary (1), Rosscarbery (1), Shannon & Fergus Estuary (2), Sheskinmore Lough (1), Shreeland Lakes (incl. Lough Doo) (1), Skerries Islands (1), Slevin's Lake (1), South Mayo Coast (1), Southern Roscommon Lakes (1), Termoncarragh & Annagh Marsh (2), The Cull & Killag (Ballyteige) (1), Walshestown South Turlough (1), Washpool Lough (1), White/Annagh Lough (1).

## 4.41 Moorhen *Gallinula chloropus* Cearc uisce

*chloropus*, Europe & N Africa (br)

**International threshold:** 37,100

**All-Ireland threshold:** -

**Mean/ Peak (2011/12 – 2015/16)**: 739/867

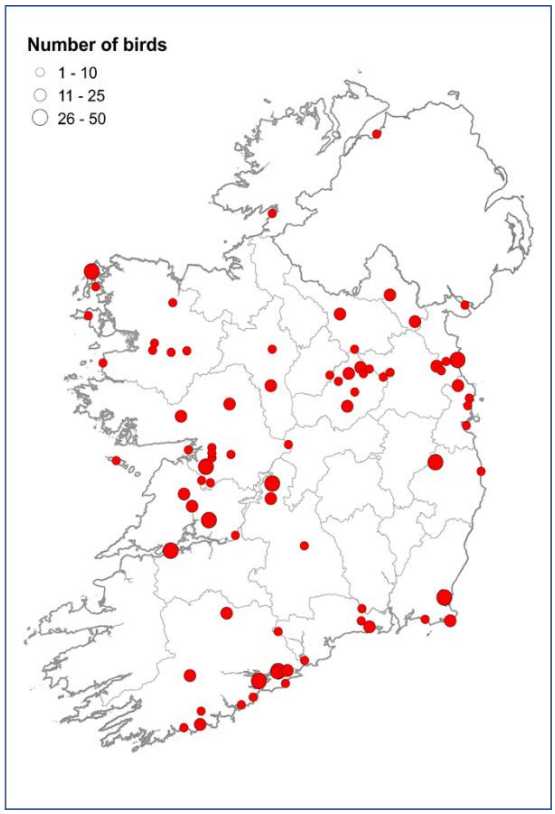



**Figure 42** Distribution map for Moorhen showing sites that supported an average one bird or more between 2011/12 and 2015/16 (Photo: Brian Burke).

Ireland's wintering and breeding Moorhen belong to the population that breeds in Europe and north Africa, and winters in Europe, northern Africa and sub-Saharan Africa (Wetlands International, 2018). This population is thought to be stable/in decline (Wetlands International, 2018).

Moorhen is a skulking species that is difficult to monitor effectively through I-WeBS methodology alone, thus their wintering status in Ireland is unknown. Moorhen are widely distributed in a variety of wetland types throughout the country, including small wetlands that are not monitored during I-WeBS. While it is often possible to detect their presence as they are quite vocal, they tend to occur in fringe vegetation, thus ascertaining true numbers is almost impossible at most sites. The site totals presented here should be treated as underestimates.

Moorhen were recorded at 225 sites between 2011/12 and 2015/16, and some 79 sites supported the species on a regular basis.

**Table 41** Table showing sites that supported Moorhen in five or more seasons between 2009/10 and 2015/16 with a mean peak of 15 individuals or greater between 2011/12 – 2015/16.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 |
|---|---|---|---|---|---|---|---|---|---|
| Boyne Estuary [6] | 31 | 61 | 50 | 25 | 30 | 32 | 1 | 28 | 50 |
| Cork Harbour | 22 | 35 | 21 | 15 | 28 | 38 | 25 | 25 | 38 |
| Shannon & Fergus Estuary [6] | 17 | 26 | 18 | 26 | 25 | 34 | 21 | 25 | 34 |
| Lough Aderry [6] | 12 | 10 | 11 | 25 | 21 | 36 | 9 | 20 | 36 |
| Wexford Harbour & Slobs [6] | 38 | 13 | 14 | 13 | 16 | 32 | 21 | 19 | 32 |
| Southern Roscommon Lakes [6] | 11 | 15 | 14 | 24 | 20 | 20 | 11 | 18 | 24 |
| South East Clare Lakes [6] | 24 | 8 | 12 | 39 | 9 | 20 | 7 | 17 | 39 |
| Pat Reddan's Lake [6] | 11 | 34 | 11 | 6 | 11 | 13 | 34 | 15 | 34 |

[6] Species not regularly recorded at the site during the former period (2001/02 and 2008/09).

Other sites recorded in five or more seasons (peak count 2011/12-2015/16):

Achill Island (7), Annaghmore Lakes (7), Ballinlough (Westmeath) (2), Ballyallia Lake (19), Ballyboy (6), Ballybutler (Butlerstown) Lake (13), Ballycotton Shanagarry (6), Ballyhonock Lough (17), Ballyshunnock Reservoir (22), Blacksod & Tullaghan Bays (6), Blackwater Callows (5), Blackwater Estuary (4), Brees Wetlands (4), Broadmeadow (Malahide) Estuary (9), Cabragh Wetland (5), Carlingford Lough (NI) (6), Cashel Turlough (4), Castlebar Lakes/ Islandeady chain (7) Castlemartyr Lake (9), Clonakilty Bay (15), Corofin Wetlands (15), Donegal Bay (3), Donore Bog (10), Dromore River (17), Dublin Bay (7), Glen Lough (5), Hynestown Lake Naul (20), Inishcarra Reservoirs (11) Inishmore, Aran Islands (5), Inner Galway Bay (5), Kilcolman Marsh (11), Killineer Quarry, Drogheda (3), Knockaderry Reservoir (6), Lady's Island Lake (18), Lough Alick (2), Lough Bane (1), Lough Corrib (15), Lough Cutra - Ballynakill L. (1), Lough Derravaragh (17), Lough Ennell (13), Lough Eorna (11), Lough Foyle (NI) (6), Lough Glore (11), Lough Iron (4), Lough Lene (2), Lough Oughter Complex (11), Lough Rea (4), Lough Sheelin (7), Lydacan Castle Turlough (36), Madame Lake (Bateman's Lough) (8), Monalty Lough (11), North East Galway Lakes (16), North Wicklow Coastal Marshes (6), Pollnagarragh Marshes (5), Poulaphouca Reservoir (28), Rahasane Turlough (3), Ringabella Creek (6), River Boyne (17), River Shannon (Lower) (7), River Suir Lower (5), Rogerstown Estuary (8), Rosscarbery (4), Shannon Callows (4), Slevin's Lake (2), South Mayo Coast (4), Stick Estuary (Oysterhaven) (3), Termon Turloughs (7), Termoncarragh & Annagh Marsh (27), The Cull & Killag (Ballyteige) (5), Wetland near Drumcarrabaun (Belcarra/Ballyglass Road) (7), White Lough (6).

## 4.42 Coot *Fulica atra* Cearc cheannann

*atra*, E. N. & W Europe (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 15,500 | **Population change (%):** | |
| **All-Ireland threshold:** | 190 | 5 year: | -32.9 |
| **Population size (2011-2016):** | | 12 year: | -35.3 |
| All-Ireland: | 18,520 | 22 year: | -15.4 |
| ROI: | 13,303 | Historical: | - |
| Associated with SPA network: | 12,280 | Average annual change: | -0.1 |

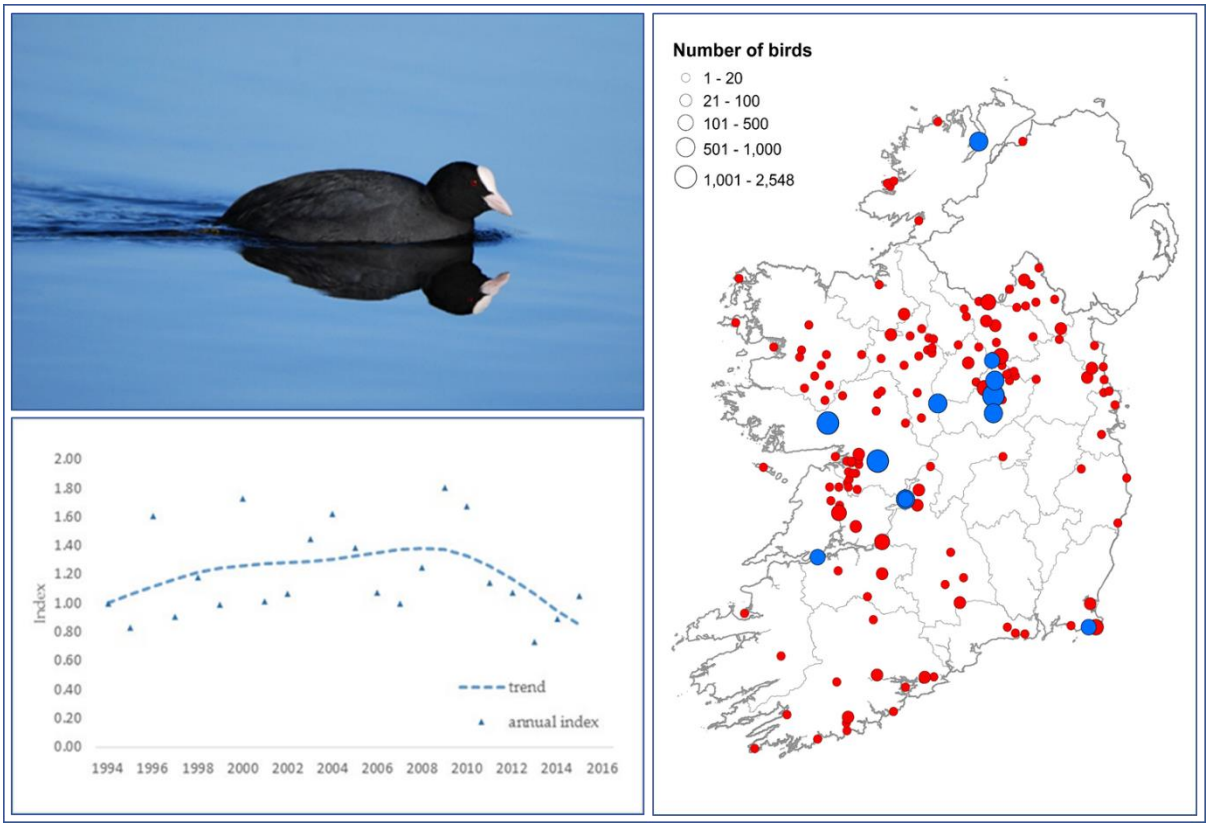



**Figure 43** Distribution map and graphed population trend for Coot. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the annual indices (triangles) together with the smoothed trend (hatched line) (Photo: Brian Burke).

Wetlands International (2018) recognises three populations of (Common) Coot, and the nominate race *F. a. atra* occurs through Eurasia and northern Africa. Coot that winter in Ireland belong to the population that breeds in east, north and western Europe, and winters in north-west Europe. This population is thought to be stable/in decline (Wetlands International, 2018).

Numbers of Coot have fluctuated widely throughout I-WeBS but showed a pattern for increasing numbers up until 2010, with numbers decreasing thereafter. This trend is broadly consistent with the UK where a decline has also been noted over the past decade (Frost *et al*., 2018). In Northern Ireland,

the annual index reached its lowest level after a steep decline in 2008/09 and despite a small recovery in numbers since then, the long-term trend is for decline (Frost *et al*., 2018).

Coot distribution is widespread because they favour a range of wetlands from lakes, ponds, gravel pits, and canals to slow-moving rivers, open marshes and lagoons (e.g. del Hoyo *et al*., 1996). However, one general requirement is the accessibility of submerged vegetation for foraging and hence shallow-water wetlands dominate the distribution during autumn migration and winter (Holm *et al*., 2011).

Coot were recorded at 158 sites during the current period, predominantly on inland wetlands and especially in the west and midlands. Some 11 sites supported numbers of national importance. The increase in sites of significance is largely due to the reduction in 1% national threshold from 330 to the current 190. Lough Corrib, Lough Owel and Lough Rea remain the highest ranked sites, but while the five-year mean has increased at Lough Rea, numbers have dropped substantially at Lough Corrib and Lough Owel. Lough Derg (Shannon) (aerial counts) and Lough Derravaragh also remain among the most important sites for this species, although numbers have dropped at both, while numbers remain relatively stable at Lough Ennel and Lough Swilly. Lough Ree recorded only one (poor quality) count of Coot during 2015/16, and with overall poor count coverage during the period assessed, an accurate assessment of the status of this site for Coot is not possible.

**Table 42** Table showing sites supporting nationally important numbers of Coot ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Lough Rea | 1,987 | 2,244 | 2,541 | 2,392 | 2,616 | 2,353 | 2,839 | 2,548 | 2,839 | Nov |
| Lough Owel | 5,000 | 3,830 | 1,535 | 2,528 | 2,100 | 2,935 | 1,700 | 2,160 | 2,935 | Nov |
| Lough Corrib | 10,520 | 9,329 | 7,007* | 4,183 | 236 | 174 | 4 | 1,149 | 4,183 | Nov |
| Lough Derg (Shannon) [4] | 963 | 1,597 | 760 | 1,171 | | | | 966 | 1,171 | |
| Lough Derravargh | 1,381 | 1,242 | 450 | 1,131 | 961 | 1,108 | 381 | 806 | 1,131 | Jan |
| Lough Ennell | 598 | 418 | 696 | 368 | 476 | 765 | 950 | 651 | 950 | Feb |
| Lough Swilly | 627 | 781 | 601 | 569 | 480 | 602 | 457 | 542 | 602 | Nov |
| Lough Kinale & Derragh Lough | 220* | | | | 446 | 289 | 704 | 480 | 704 | |
| Tacumshin Lake [1] | 340 | 270 | 55 | 330 | 350 | 580 | 631 | 389 | 631 | Dec |
| Lough Derg (Shannon) | | 1,348 | 857 | | 286 | 296 | 70 | 377 | 857 | Oct |
| Shannon & Fergus Estuary[4, 1] | | 10 | | 200 | | | | 200 | 200 | |
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| Lough Sheelin | 478 | 209 | 131 | 48 | 4 | 683 | 35 | 180 | 683 | Jan |
| River Erne & lakes north of Belturbet | | 56* | 138 | 42 | 180 | | | 120 | 180 | |

Sites that supported numbers of national importance during the former period but insufficient data were available for the current period: Lough Ree.

* Low-quality count not included in the calculation of the mean.

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

[4]Aerial census data.

## 4.43 Oystercatcher *Haematopus ostralegus* Roilleach

*ostralegus*, N. C. & W Europe (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 8,200 | **Population change (%)** | |
| **All-Ireland threshold:** | 610 | 5 year: | -21.5 |
| **Population size (2011-2016):** | | 12 year: | -28.0 |
| All-Ireland: | 60,540 | 22 year: | +21.5 |
| ROI: | 42,875 | Historical: | -7.2 |
| Associated with SPA network: | 24,178 | Average annual change: | +0.8 |

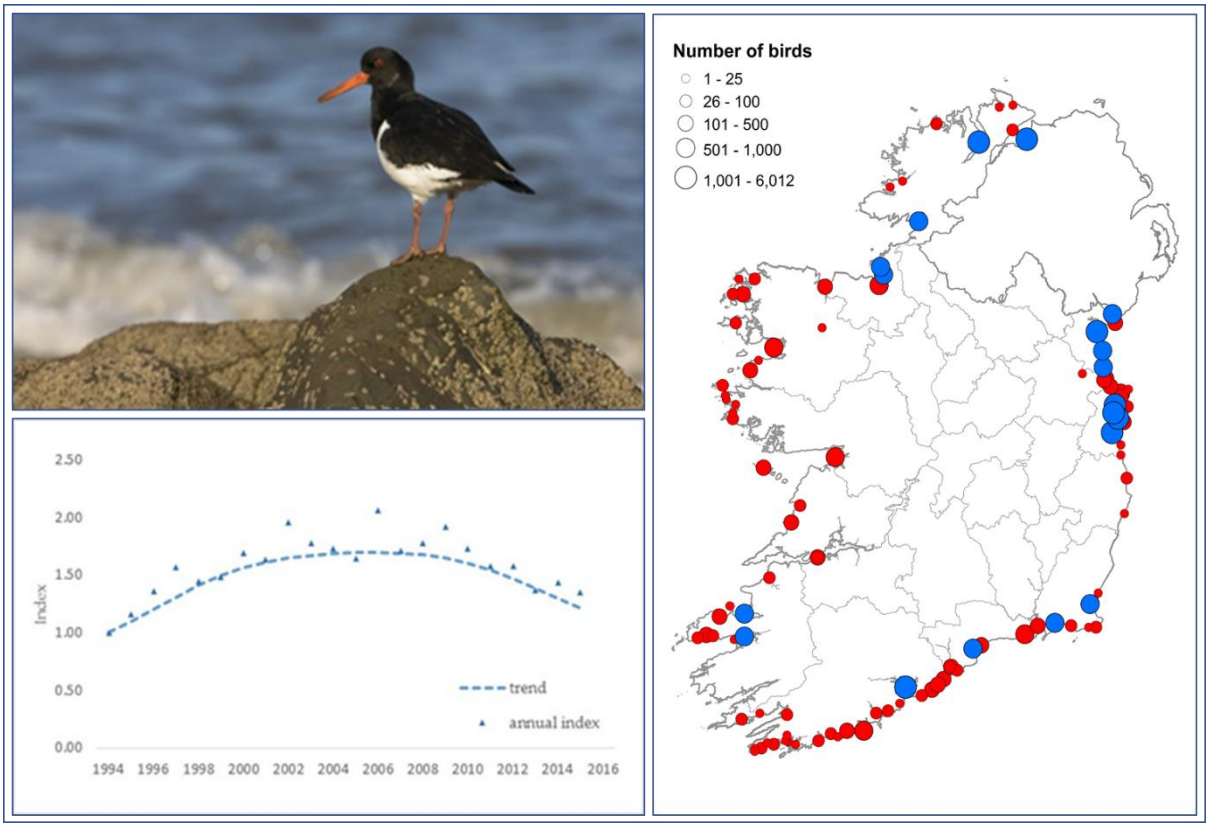



**Figure 44** Distribution map and graphed population trend for Oystercatcher. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the annual indices (triangles) together with the smoothed trend (hatched line) (Photo: David Dillon).

Ireland's wintering Eurasian Oystercatcher (hereafter Oystercatcher) are from the population that breeds in northern and western Europe, and that winters in western Europe and northern and western Africa (Delany *et al*., 2009). This population is considered to be declining/stable at flyway level (Wetlands International, 2018). Numbers in Ireland increased from 1994 when I-WeBS began, but the index started to downturn from around 2006 and has declined further since then (Figure 44). Similarly, in the UK, the species is showing a declining trend for the latest ten and 25-year periods (Frost *et al*., 2018).

Oystercatcher were recorded at 106 sites between 2011/12 and 2015/16, with 19 sites supporting numbers of national importance. One site, Dundalk Bay, supported numbers of international importance during the former period (2004/05-2008/09), and despite the reduction in the international threshold from 10,200 to the current 8,200, the site no longer qualifies for this status. However, despite the five-year mean declining substantially, Dundalk Bay remains the top-ranking site supporting numbers of national importance. Of the other significant sites, numbers at Lough Foyle (NI) and Dublin Bay appear relatively stable, numbers at Rogerstown Estuary have declined somewhat, while numbers Lough Swilly have increased slightly. Also, of note is a substantial decline in five-year mean at Carlingford Lough (NI). Seven sites were promoted to the list of sites supporting numbers of national importance, while three sites are no longer of significance during the current period.

**Table 43** Table showing sites supporting nationally important numbers of Oystercatcher ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Dundalk Bay [3] | 10,830 | 8,920 | 7,095 | 6,502 | 8,094 | 3,993 | 4,377 | 6,012 | 8,094 | Oct |
| Lough Foyle † | 3,647 | 2,792 | 2,801 | 3,544 | 4,584 | 2,480 | 3,404 | 3,363 | 4,584 | |
| Dublin Bay | 4,324 | 2,804 | 3,408 | 3,025 | 3,074 | 3,315 | 3,588 | 3,282 | 3,588 | Dec |
| Lough Swilly | 1,351 | 1,397 | 2,105 | 2,362 | 1,859 | 2,810 | 2,086 | 2,244 | 2,810 | Nov |
| Rogerstown Estuary | 2,024 | 1,781 | 2,116 | 2,491 | 1,531 | 1,519 | 1,697 | 1,871 | 2,491 | Nov |
| Cork Harbour | 1,190* | 1,560* | 1,939 | 1,294 | 1,452 | 2,334 | 1,274 | 1,659 | 2,334 | Sep |
| Hick's Tower & Robswall [1] | 1,013 | 1,750 | 1,500 | | | | | 1,500 | 1,500 | |
| Broadmeadow (Malahide) Estuary | 1,285 | 1,471 | 78 | 1,300 | 1,833 | 1,355 | 1,291 | 1,171 | 1,833 | Oct |
| Boyne Estuary [1] | 3,577 | 1,435 | 1,099 | 1,537 | 655 | 844 | 610 | 949 | 1,537 | |
| Donegal Bay | 1,065 | 1,254 | 994 | 798 | 839 | 1,160 | 739 | 906 | 1,160 | Nov |
| Dungarvan Harbour | 827 | 1,011 | 697 | 835 | 1,047 | 889 | 937 | 881 | 1,047 | Dec |
| Sligo Harbour | 987 | 601 | 566 | 949 | 810 | 809 | 828 | 792 | 949 | Nov |
| Tralee Bay, Lough Gill & Akeragh Lough | 1,052 | 943 | 1,021 | 1,032 | 581 | 608 | 690 | 786 | 1,032 | Jan |
| Wexford Harbour & Slobs [1] | 155* | 216* | 812 | 666 | 520 | 1,115 | 610 | 745 | 1,115 | Jan |
| Dunany Point – Clogher Head [1] | 1094 | 508 | 675 | 537 | 650* | | 770 | 661 | 770 | |
| Carlingford Lough † | 839 | 710 | 933 | 726 | 241 | 703 | 619 | 644 | 933 | Jan |
| Castlemaine Harbour & Rossbehy [1] | 1,354* | 1,030 | 757 | 570 | 506 | 787 | 570 | 638 | 787 | Oct |
| Drumcliff Bay Estuary [1] | 875 | 719 | 872 | 498 | 563 | 653 | 568 | 631 | 872 | Nov |
| Bannow Bay [1] | 1,477 | | 421 | | 594 | 900 | 552 | 617 | 900 | Jan |
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| Baldoyle Bay | 880 | | | | 277 | 1,113 | 219 | 536 | 1,113 | |

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Waterford Harbour | 328 | | 515 | | 446 | | | 481 | 515 | |
| Nanny Estuary & shore | 848 | 291 | 396* | 378* | 369 | 228 | 560 | 386 | 560 | |

* Low-quality count not included in the calculation of the mean.

† Data provided by the UK (WeBS).

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

[3]Site demoted (from supporting numbers of international importance to numbers of national importance) since the 2001/02 to 2008/09 period.

## 4.44 Ringed Plover *Charadrius hiaticula* Feadóg chladaigh

*hiaticula*, N. Europe (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 540 | **Population change (%)** | |
| **All-Ireland threshold:** | 120 | 5 year: | -17.9 |
| **Population size (2011-2016):** | | 12 year: | -30.1 |
| All-Ireland: | 11,660 | 22 year: | -6.6 |
| ROI: | 10,545 | Historical: | +19.8 |
| Associated with SPA network: | 3,065 | Average annual change: | -0.03 |

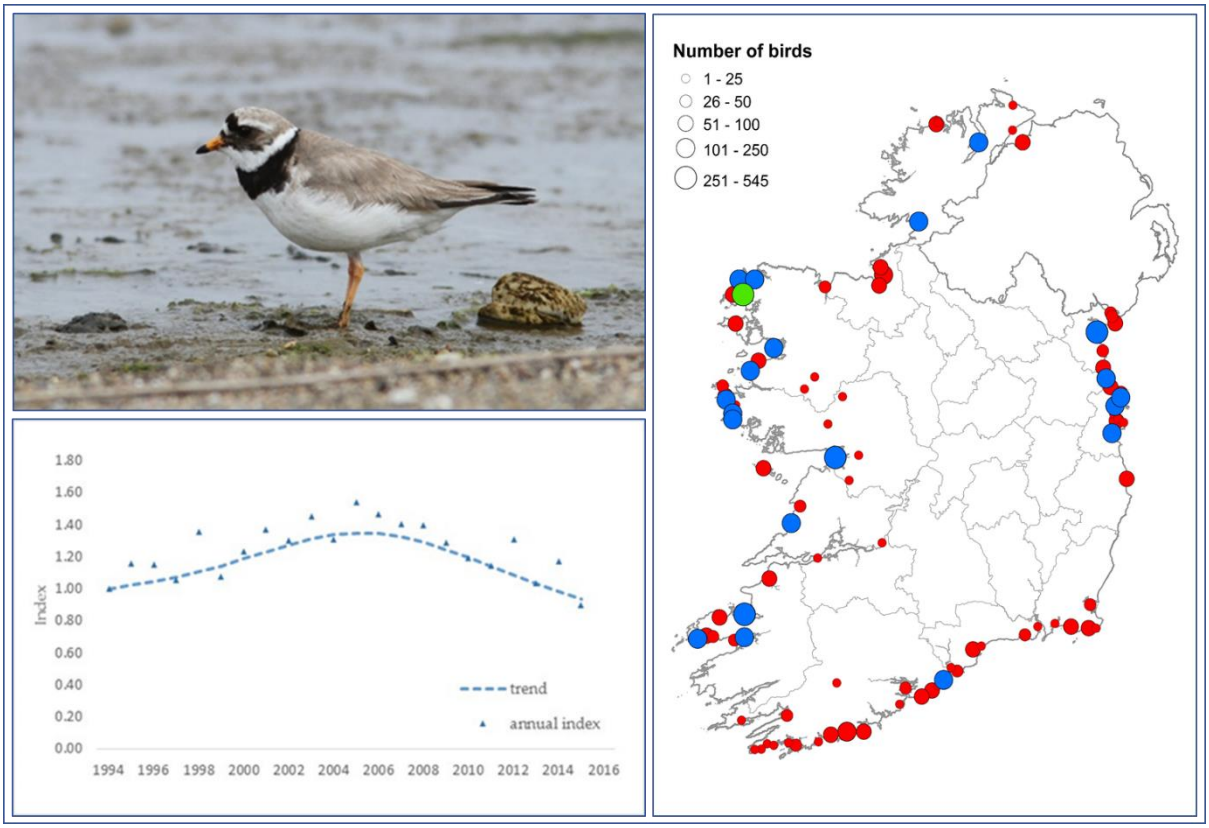



**Figure 45** Distribution map and graphed population trend for Ringed Plover. The distribution map illustrates sites supporting numbers of international importance (green circles), national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the annual indices (triangles) together with the smoothed trend (hatched line) (Photo: Dick Coombes).

Three populations of the Common Ringed Plover (hereafter Ringed Plover) are recognised (Wetlands International, 2018). Ringed Plover that winter in Ireland originate from the nominate population that breeds in Iceland, Baltic, southern Scandinavia, Britain, Ireland and France, and winters in western Europe, the Mediterranean and north Africa (Delaney *et al.*, 2009; Wetlands International, 2018). Specifically, Ringed Plover that winter in Ireland are thought to originate from the population that breeds in western Europe, including southern Scandinavia, but Ireland also provides important

passage sites for birds breeding in east Canada, Greenland, Iceland and Fennoscandia en route to wintering areas in Africa (Wernham *et al*., 2002; Delaney *et al*., 2009).

Wetlands International (2018) have listed the flyway population of Ringed Plover as being in decline/stable, and numbers in Northern Ireland and Great Britain are in long-term decline (Frost *et al*., 2018). In contrast to Britain and Northern Ireland, the trend for Ringed Plover in the Republic of Ireland was increasing up until around 2008/09 but numbers have since been in steady decline which has resulted in a 12-year trend of -30%.

Ringed Plover were recorded at 96 sites during the current period. The international threshold now stands at 540 (Wetlands International, 2018) and one site (Blacksod & Tullaghan Bays) surpassed this threshold during the current period, after being the top ranked site that supported numbers of national importance during the former period. Five sites were promoted to the list of 20 sites supporting numbers of national importance, while three sites are no longer of significance.

Ringed Plover are widely distributed around the coast of Ireland and can also occur at a few inland sites (Balmer *et al*., 2013). Despite being associated with sandy/sandy-mud substrates (e.g. Summers *et al*., 2002), some flocks of Ringed Plover have a tendency to leave estuarine habitats at high tide to roost along open shorelines, especially where a high tide leaves few roosting options. Hence good numbers can also occur along gravelly and rocky shorelines, and Lewis *et al*. (2017) reported that over 60% of the national population of Ringed Plover can occur along non-estuarine coasts.

**Table 44** Table showing sites supporting internationally and/ or nationally important numbers of Ringed Plover ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of international importance** | | | | | | | | | | |
| Blacksod & Tullaghan Bays [2] | 684 | 709* | 564 | 575 | 621 | 594 | 373 | 545 | 621 | Nov |
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Tralee Bay, Lough Gill & Akeragh Lough | 111 | 187 | 180 | 630 | 536 | 126 | 145 | 323 | 630 | Jan |
| Dundalk Bay | 146 | 226 | 285 | 316 | 187 | 241 | 395 | 285 | 395 | Dec |
| Inner Galway Bay | 245 | 242 | 394 | 287 | 283 | 183 | 273 | 284 | 394 | Jan |
| Clew Bay | 267 | 375 | 142 | 342 | 309 | 107 | 259 | 232 | 342 | Oct, Nov |
| Lough Swilly | 146 | 178 | 366 | 80 | 134 | 386 | 174 | 228 | 386 | Nov |
| Ballymacoda [1] | 86* | 103* | 127 | 325 | | 204 | 152* | 219 | 325 | Sep |
| Omey Strand | 332 | 290 | 226* | 194 | 262 | 248 | 155 | 215 | 262 | Oct |
| Mid-Clare Coast (Mal Bay – Doonbeg Bay) [1] | | 95 | 1* | 77 | 131 | 325 | 240 | 193 | 325 | |
| South Mayo Coast | 216 | 555 | 209 | 250 | 156 | 260 | 40 | 183 | 260 | Dec |
| Dublin Bay | 267 | 205 | 314 | 217 | 139 | 121 | 109 | 180 | 314 | Sep, Nov |
| Rogerstown Estuary | 153 | 113 | 105 | 284 | 167 | 161 | 125 | 168 | 284 | Sep, Oct |
| Donegal Bay | 45 | 56 | 60 | 148 | 140 | 219 | 237 | 161 | 237 | Feb |
| Termoncarragh & Annagh Marsh | 224 | 237 | 194 | 118 | 184 | 147 | | 161 | 194 | Nov |
| Skerries Coast | 123* | 180 | 113 | 149 | 150 | 91 | 171 | 135 | 171 | Oct |

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Nanny Estuary & Shore | 184 | 148 | 110* | 120* | 134 | 124 | 135 | 131 | 135 | Oct, Nov |
| Castlemaine Harbour & Rossbehy [1] | 189* | 100 | 103 | 197 | 27 | 258 | 60 | 129 | 258 | Nov |
| Mannin Bay | 158 | 155 | 98* | 126 | 119 | 140 | 152* | 128 | 140 | Oct |
| Ballyconneely Bay | 123 | 148 | 128* | 124 | 143 | 109 | | 125 | 143 | Sep |
| Broadhaven & Sruwadaccon Bays [1] | 208 | 62 | 125 | 95 | 100 | 160 | | 120 | 160 | Nov |
| Ventry Harbour [1] | 120 | 80 | 75 | 112 | 150 | 199 | 63 | 120 | 199 | Jan |
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| Clonakilty Bay | 184 | 73 | 129 | 106 | 68 | 80 | 150 | 107 | 150 | Nov |
| Carlingford Lough † | 54 | 52 | 99 | 20 | 20 | 28 | 38 | 41 | 99 | |
| Hick's Tower & Robswall | 185 | | 12 | | | | | 12 | 12 | |

Sites that supported numbers of national importance during the former period but no data were available for the current period: Smerwick Harbour.

* Low-quality count not included in the calculation of the mean.

† Data provided by the UK (WeBS).

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

[2]Site promoted (from supporting numbers of national importance to numbers of international importance) since the 2001/02 to 2008/09 period.

## 4.45 Golden Plover *Pluvialis apricaria* Feadóg bhui

*altifrons*, Iceland, Faeroes & Greenland (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 9,300 | **Population change (%):** | |
| **All-Ireland threshold:** | 920 | 5 year: | -9.7 |
| **Population size (2011-2016):** | | 12 year: | -52.6 |
| All-Ireland: | 92,060 | 22 year: | -43.4 |
| ROI: | 80,707 | Historical: | - |
| Associated with SPA network: | 63,123 | Average annual change: | -3.5 |

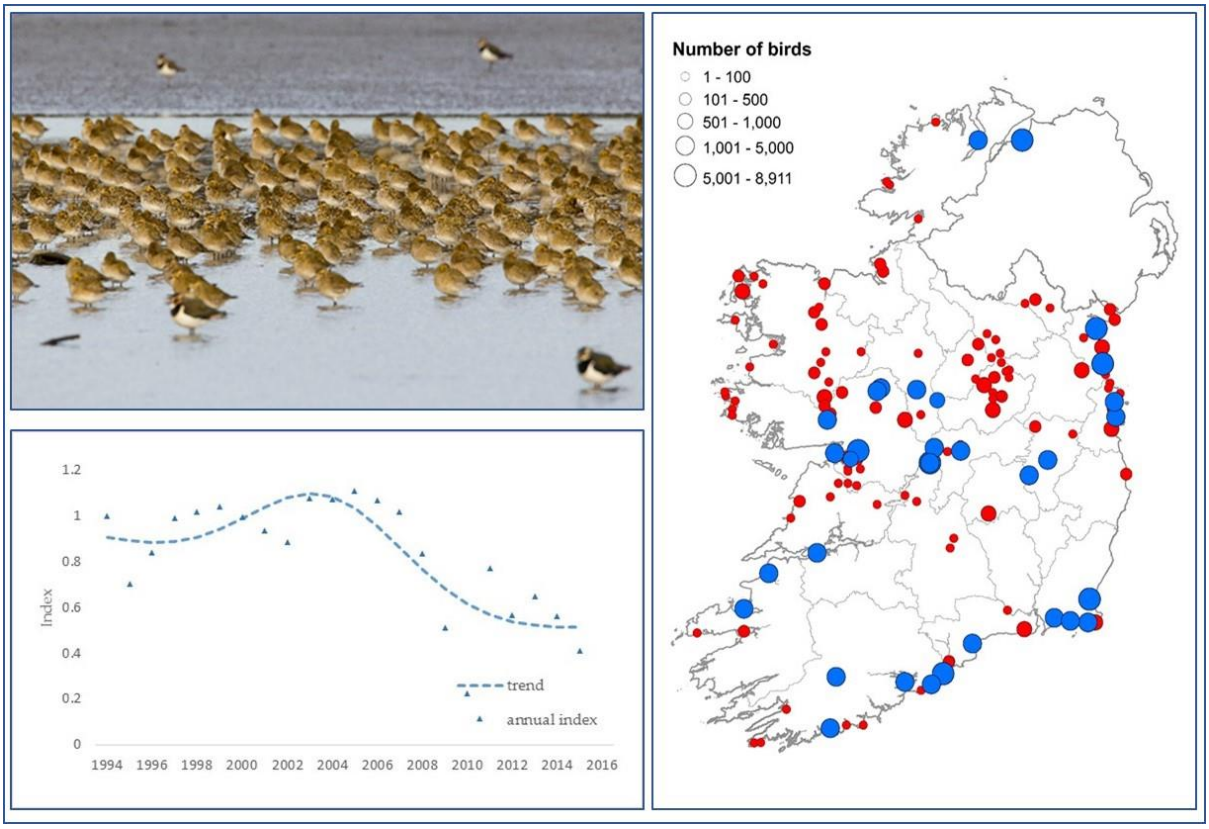



**Figure 46** Distribution map and graphed population trend for Golden Plover. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the annual indices (triangles) together with the smoothed trend (hatched line) (Photo: Mark Carmody).

The vast majority of Eurasian Golden Plover (hereafter Golden Plover) that overwinter in Ireland are from the *altifrons* population which breed in Iceland, the Faeroes and Greenland. This population winters in Ireland, Britain, France, Iberia and north-west Africa. It unknown where the *apicaria* population, which breeds in Ireland, migrates to spend winter, but it is likely that a portion of the population remains in the country, with the rest moving south to winter elsewhere (Wernham *et al*., 2002). The flyway population is unclear (Wetlands International, 2018). In Ireland there is a clear trend for decline, particularly since the mid 2000s, while in Britain there is also a ten-year trend for decline (Frost *et al*., 2018). The reason for these declines it not well known. A substantial eastward shift was

noted in the British population suggesting that short-stopping is a possible factor at play (Gillings *et al*., 2006).

Wintering Golden Plover are widely distributed throughout Ireland from coastal regions to the midlands. However, they are much less prevalent on inland sites in the south of Ireland. This species is highly gregarious. Large flocks are known to gather on a range of habitats, primarily on grassland, cultivated lowlands and coastal mudflats.

During the current period Golden Plover were recorded at 138 sites, a decrease from 158 during the former period. Wexford Harbour and Slobs and Dundalk Bay remain the top sites in the country for this species although they no longer support numbers of international importance. In addition to these two top-ranked sites, a further 32 sites were found to hold numbers of national importance including four sites that held significant numbers for the first time since the beginning of the survey.

**Table 45** Table showing sites supporting nationally important numbers of Golden Plover ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Wexford Harbour & Slobs [3] | 4,800* | 1,000* | 10,000 | 4,907 | 12,350 | 6,200 | 11,100 | 8,911 | 12,350 | Jan |
| Dundalk Bay [3] | 7,235 | 4,984 | 8,797 | 9,060 | 8,450 | 5,150 | 5,685 | 7,428 | 9,060 | - |
| Ballymacoda | | 98* | 8,561 | 3,200 | | 8,400 | 1* | 6,720 | 8,561 | - |
| Lough Foyle † | 5,091 | 2,366 | 4,375 | 7,978 | 5,462 | 6,870 | 6,026 | 6,142 | 7,978 | |
| Little Brosna Callows | | | 6,000 | 3,600 | 6,300 | 7,480 | 2,035* | 5,845 | 7,480 | Nov, Jan |
| Boyne Estuary | 537 | 39 | 12,213 | 7,062 | 3,000 | 1,100 | 5,000 | 5,675 | 12,213 | Dec, Feb |
| Rahasane Turlough | 1,500 | 3,500 | 6,000 | 300* | 6,000 | 4,700 | 3,500 | 5,050 | 6,000 | Nov |
| Shannon Callows [4] | 1,680 | 200 | 7,610 | 1,750 | | | | 4,680 | 7,610 | |
| Cork Harbour | 4,500* | 3,357* | 5,211 | 6,900 | 2,602 | 3,650 | 1,970 | 4,067 | 6,900 | Nov, Dec |
| Southern Roscommon Lakes | 4,000 | 661 | 6,261 | 4,085 | 4,395 | 4,052 | 488 | 3,856 | 6,261 | Jan |
| Bannow Bay | 3,517 | | 2,073 | | 4,100 | 6,000 | 3,000 | 3,793 | 6,000 | Jan |
| Derryoughter West [1] | | | | | | | 3,500 | 3,500 | 3,500 | |
| Kildare Curragh | | | | | | | 3,500 | 3,500 | 3,500 | |
| Tacumshin Lake | 10,250 | 1,500 | 8,000 | 2,500 | 1,500 | 1,000 | 3,000 | 3,200 | 8,000 | Jan |
| Inishcarra Reservoirs | 3,150 | 516 | 1,500 | 5,075 | 3,220 | 750* | 2,800 | 3,149 | 5,075 | Jan |
| Dungarvan Harbour | 8,990 | 692 | 15 | 1,497 | 3,450 | 3,250 | 5,371 | 2,717 | 5,371 | Jan |
| Rosscarbery | 152 | 3,400 | 3,300 | 1,600 | 3,700 | 2,800 | 1,800 | 2,640 | 3,700 | Nov, Jan |
| Glenamaddy Turlough | 200 | 2,500 | | | 5,000 | | | 2,500 | 5,000 | - |
| Shannon & Fergus Estuary [4] | 270 | 670 | 3,150 | 1,561 | | | | 2,356 | 3,150 | |
| Lough Swilly | 1,756 | 1,832 | 2,765 | 3,000 | 1,409 | 2,358 | 1,379 | 2,182 | 3,000 | Nov |
| Ballycotton Shanagarry | 41 | 1* | 141 | 1,740 | 3,250 | 2,880 | 2,650 | 2,132 | 3,250 | Dec, Jan |
| The Cull & Killag (Ballyteige) | 530 | 400 | 290 | 400 | 1,550 | 4,500 | 3,500 | 2,048 | 4,500 | Mar |
| Lough Corrib | 609 | 3,931 | 844* | 179 | 6,848 | 535 | 420 | 1,996 | 6,848 | Nov |

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Tralee Bay, Lough Gill & Akeragh Lough | 2,500 | 2,300 | 3,000 | 3,300 | | 170 | 2,225 | 1,739 | 3,300 | - |
| Baldoyle Bay [1] | 672 | | | | 2,500 | 450 | 2,000 | 1,650 | 2,500 | |
| Rogerstown Estuary | 664 | 40 | 530 | 3,300 | 130 | 2,000 | 2,050 | 1,602 | 3,300 | Jan |
| Shannon Callows | 500 | 461 | 1,650 | 1,000 | | 1,290 | 1,000 | 1,235 | 1,650 | Jan |
| Cashen River & Estuary [1] | | | 2,000 | | 800* | 1,120 | 360 | 1,160 | 2,000 | |
| Inner Galway Bay | 247 | 527 | 1,612 | 930 | 1,441 | 1,213 | 412 | 1,122 | 1,612 | Nov |
| Little Brosna Callows [4] | 2,045 | | 2,200 | | | | | 1,100 | 2,200 | |
| Lough Ree | | 205 | | | | | 2,050 | 1,025 | 2,050 | |
| Kiltullagh Lough | 2,200 | 3,000 | | 1,700 | 300 | | | 1,000 | 1,700 | - |
| Kiltiernan Turlough [1] | | | 80 | 500 | 2,000 | 1,420* | 1,200 | 945 | 2,000 | Jan |
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| Tramore Back Strand | 100* | 350 | | 150 | 1,000 | 2,503 | | 913 | 2,503 | Feb |
| Dublin Bay | 1,360 | 430 | 390 | 404 | 1,080 | 742 | 1,155 | 754 | 1,155 | |
| Killala Bay | 280 | 570 | 700 | 1251 | 52 | 338 | | 468 | 1,251 | |
| Broadmeadow (Malahide) Estuary | 72 | 1,000 | 260 | 1,000 | 200 | 5 | | 293 | 1,000 | |
| Braganstown | 142 | | | 60 | 6 | | | 33 | 60 | |
| Lough Ree | | 205 | | | | | 2,050* | | 0 | |

* Low-quality count not included in the calculation of the mean.

† Data provided by the UK (WeBS).

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

[3]Site demoted (from supporting numbers of international importance to numbers of national importance) since the 2001/02 to 2008/09 period.

[4]Aerial census data.

## 4.46 Grey Plover *Pluvialis squatarola* Feadóg ghlas

*squatarola,* Arctic Russia east to Taymyr Peninsula & N. E. Canada (br)

| | | | |
|---|---|---|---|
| **International threshold** | 2,000 | **Population change (%):** | |
| **All-Ireland threshold:** | 30 | 5 year: | -42.4 |
| **Population size (2011-2016):** | | 12 year: | -40.5 |
| All-Ireland: | 2,940 | 22 year: | -61.8 |
| ROI: | 2,812 | Historical: | -24.8 |
| Associated with SPA network: | 2,550 | Average annual change: | -3.6 |

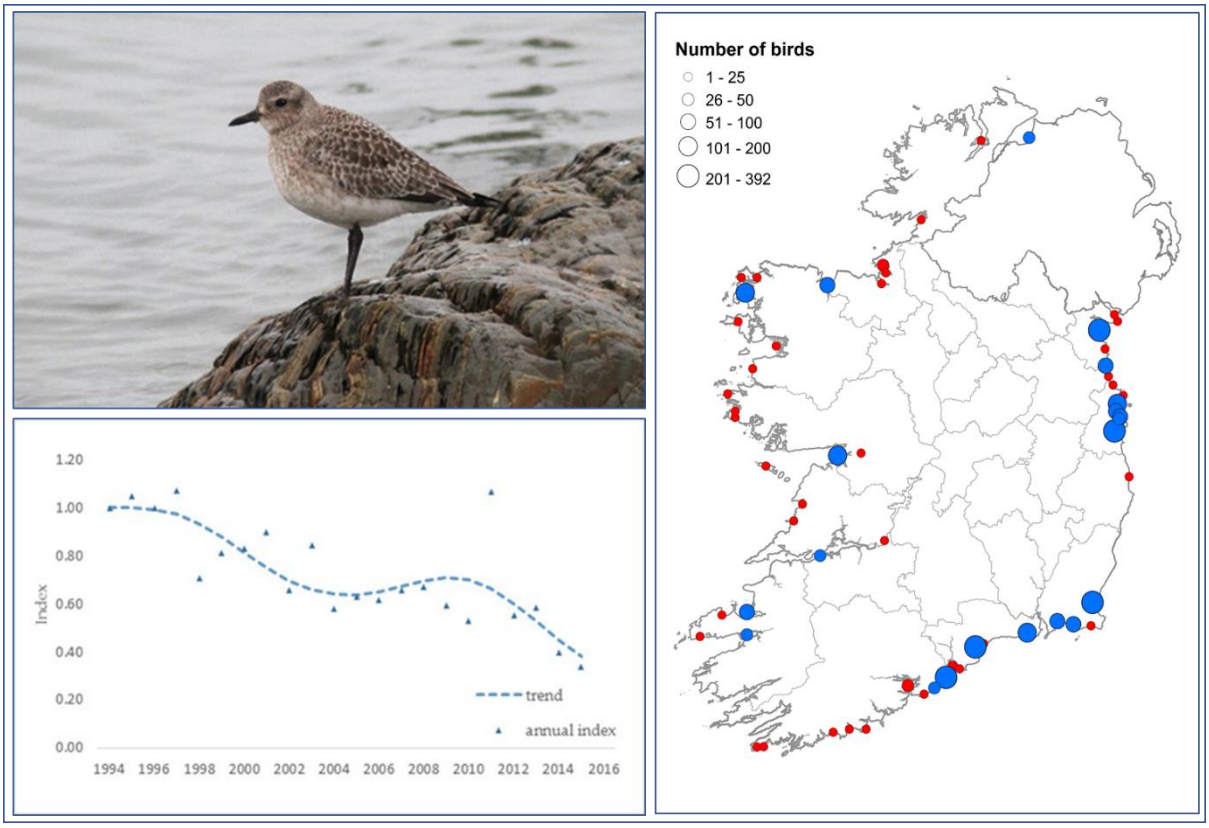



**Figure 47** Distribution map and graphed population trend for Grey Plover. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the annual indices (triangles) together with the smoothed trend (hatched line) (Photo: Dick Coombes).

Grey Plover that overwinter in Ireland are of the nominate subspecies *squatarola* which breed across Arctic Russia east to the Taymyr Peninsula & north-east Canada. The non-breeding range extends from the Wadden Sea, Britain and Ireland to south and west Africa (Wetlands International, 2018). The flyway population is in decline (Wetlands International, 2018). In the UK the trend for Grey Plover is stable (Frost *et al*., 2018) while in the Republic of Ireland numbers have undergone a steep decline since the former period with an overall downward trend of -3.6% per annum in the last 22 years.

Grey Plover are distributed predominantly around coastal areas in Ireland. Wintering birds are often solitary at both estuarine and non-estuarine sites. There is also a considerable difference between the

results of the two previous Non-Estuarine Coastal Waterbird Surveys (NEWS). During NEWS III (2015/16), 6.7% of the estimated wintering Grey Plover population was found to be using non-estuarine sites, compared to *c.*20% during NEWS II in 2006/07 (Lewis *et al*., 2017, Crowe *et al*., 2008).

Grey Plover were recorded at 68 sites between the period 2011/12 – 2015/16 and some 21 sites were found to hold numbers of national importance. Of the significant sites, six were newly assigned to the list. However, the 1% national threshold has been revised downwards from 65 to 30 since the former period which will have been a contributing factor in the increased number of sites supporting significant numbers.

**Table 46** Table showing sites supporting nationally important numbers of Grey Plover ranked by on the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Wexford Harbour & Slobs | 17* | 33* | 1,000 | 129 | 42 | 261 | 528 | 392 | 1,000 | Dec |
| Dublin Bay | 394 | 293 | 200 | 307 | 310 | 452 | 240 | 302 | 452 | Feb, Mar |
| Dundalk Bay | 284 | 176 | 64 | 340 | 333 | 133 | 289 | 232 | 340 | Nov, Feb |
| Ballymacoda | 51* | 52* | 375 | 61 | | 257 | 56* | 231 | 375 | Feb |
| Dungarvan Harbour | 410 | 243 | 189 | 285 | 220 | 173 | 200 | 213 | 285 | Feb |
| Rogerstown Estuary | 223 | 210 | 371 | 242 | 151 | 120 | 64 | 190 | 371 | Sep |
| Tramore Back Strand | 18* | 130 | 168 | 96 | 140 | 145 | | 137 | 168 | Jan |
| Inner Galway Bay | 136 | 35 | 68 | 72 | 243 | 136 | 28 | 109 | 243 | Mar |
| Blacksod & Tullaghan Bays [1] | 56 | 17* | 122 | 100 | 117 | 111 | 67 | 103 | 122 | Feb |
| Tralee Bay, Lough Gill & Akeragh Lough[1] | 14 | 14 | 414 | 4 | 14 | 15 | 52 | 100 | 414 | Oct, Jan |
| Killala Bay[1] | 2 | 311 | 70 | 124 | 101 | 36 | 139 | 94 | 139 | Jan |
| Boyne Estuary | 80 | 31 | 100 | 108 | 50 | 71 | 100 | 86 | 108 | Dec |
| The Cull & Killag (Ballyteige) | 38 | 66 | 45 | 77 | 96 | 99 | 101 | 84 | 101 | Feb |
| Bannow Bay [1] | 118 | | 72 | | 76 | 77 | 25 | 63 | 77 | Dec, Jan |
| Hick's Tower & Robswall[1] | 176 | 82 | 52 | | | | | 52 | 52 | Nov |
| Broadmeadow (Malahide) Estuary | 150 | 169 | 3 | 140 | 9 | 6 | 100 | 52 | 140 | Jan |
| Ballycotton Shanagarry | 50 | 3_< | 76 | 53 | 31 | 33 | 22 | 43 | 76 | Feb |
| Castlemaine Harbour & Rossbehy [1] | | 73 | 96 | 41 | 45 | 30 | | 42 | 96 | Nov, Feb |
| Shannon & Fergus Estuary [4] | 10 | 10 | 5 | 70 | | | | 38 | 70 | |
| Baldoyle Bay | 166 | | | | 55 | 28 | 8 | 30 | 55 | Sep |
| Lough Foyle † | 26 | 22 | 22 | 48 | 32 | 9 | 40 | 30 | 48 | Feb |

* Low-quality count not included in the calculation of the mean.
† Data provided by the UK (WeBS).
[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.
[4]Aerial census data.

## 4.47 Lapwing *Vanellus vanellus* Pilibín

Europe & W. Asia (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 72,300 | **Population change (%):** | |
| **All-Ireland threshold:** | 850 | 5 year: | -14.0 |
| **Population size (2011-2016):** | | 12 year: | -52.0 |
| All-Ireland: | 84,690 | 22 year: | -67.6 |
| ROI: | 69,823 | Historical: | -58.4 |
| Associated with SPA network: | 48,232 | Average annual change: | -5.2 |

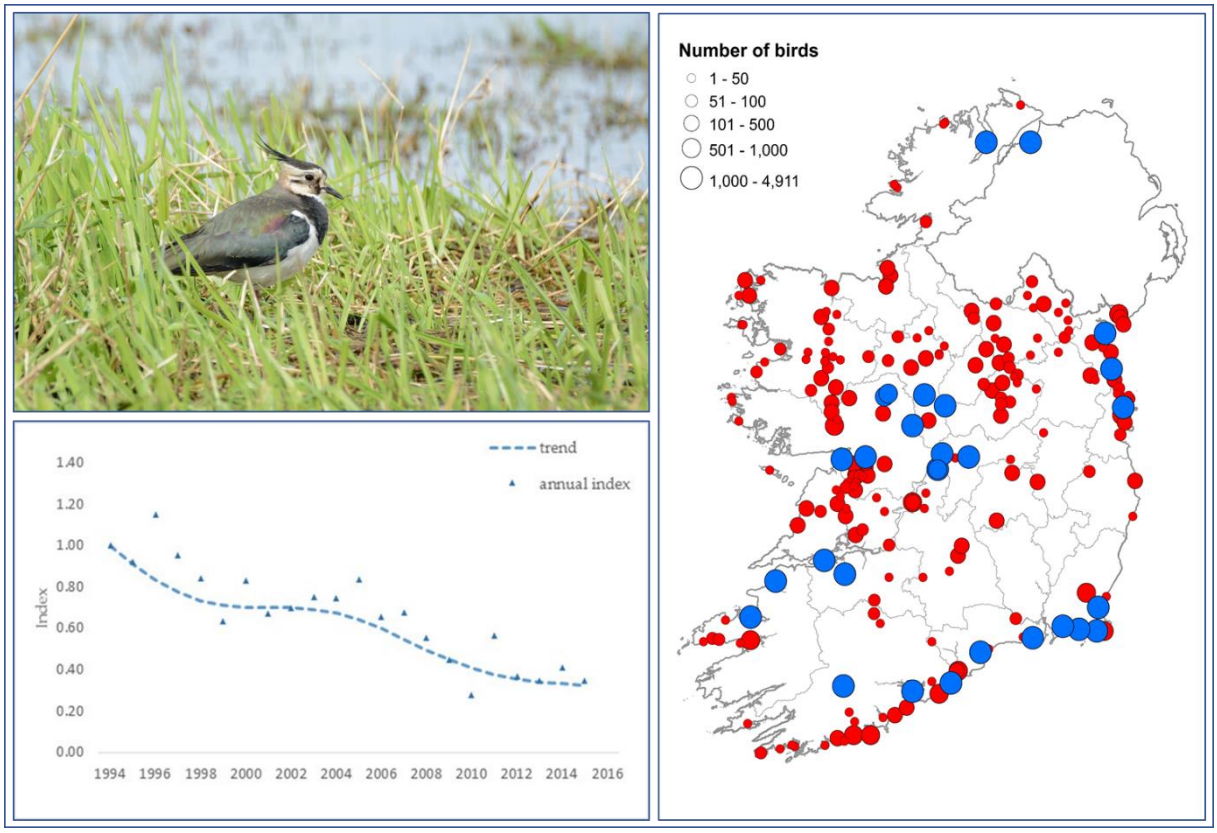



**Figure 48** Distribution map and graphed population trend for Lapwing. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the annual indices (triangles) together with the smoothed trend (hatched line) (Photo: Brian Burke).

Wetlands International (2018) now recognises just one population of the Northern Lapwing (hereafter Lapwing) that breeds across Europe and western Asia, and winters across Europe, Asia Minor, north Africa, south-west and central Asia and the Caspian coast. As a consequence, the 1% international threshold has increased from 20,000 to 72,300 since the former period (Boland & Crowe, 2012). This population is in decline (Wetlands International, 2018).

In Ireland, this wader has shown a decline overall throughout I-WeBS; consistent with both Britain and Northern Ireland (Frost *et al.*, 2018). Lapwing are sensitive to severe winters, and movements

westward from northern Europe into Britain and Ireland, and south to France and Iberia during particularly cold periods are known (Wernham *et al*., 2002). Furthermore, a relatively large proportion of Lapwing are known to spend winter away from coastal wetlands, often in non-wetland habitats such as agricultural land. Therefore, this species is considered poorly monitored by wetland waterbird monitoring methods and assigning accurate national estimates of wintering populations is difficult (Delaney *et al*., 2009).

Lapwing were recorded at 226 sites between 2011/12 and 2015/16 with no site supporting numbers of international importance. Some 30 sites supported numbers of national importance including eight sites that were not of significance during the former period. The increase in sites on the former period can be attributed to the decrease in the 1% national threshold from 2,100 to 850, and it is notable that no site supported a five-year mean of greater than 5,000 individuals, a threshold that was exceeded by four sites during the former period. The Shannon Callows (aerial census) was the highest ranked site for the current period although this was based on data from two seasons only.

In particular, numbers at Bannow Bay, the top ranked site for the 2004/05 – 2008/09 period, have declined substantially since the former period. Substantial declines in numbers are also evident at Tralee Bay, Lough Gill & Akeragh Lough, Wexford Harbour & Slobs, Little Brosna Callows, Rogerstown Estuary, The Cull and Killag, and Inner Galway Bay, amongst others.

**Table 47** Table showing sites supporting nationally important numbers of Lapwing ranked by on the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Shannon Callows [4] | 2,837 | 1,397 | 7,672 | 2,149 | | | | 4,911 | 7,672 | |
| Dundalk Bay | 5,284 | 4,073 | 4,511 | 4,135 | 5,506 | 4,202 | 2,862 | 4,243 | 5,506 | Jan |
| Wexford Harbour & Slobs | 3,030* | 1,180* | 7,667 | 3,985 | 2,150 | 4,815 | 1,596 | 4,043 | 7,667 | Jan |
| Rogerstown Estuary | 1,268 | 710 | 2,855 | 5,805 | 897 | 2,099 | 5,185 | 3,368 | 5,805 | Feb |
| Shannon & Fergus Estuary [4] | 218 | 799 | 3,062 | 3,187 | | | | 3,125 | 3,187 | |
| Little Brosna Callows | | | 3,055 | 1,135 | 1,978 | 6,200 | 3,015* | 3,092 | 6,200 | Jan |
| Lough Swilly | 1,879 | 1,823 | 2,728 | 1,681 | 2,080 | 3,666 | 3,229 | 2,677 | 3,666 | Nov |
| River Deel [1] | | | | 2,600 | | | | 2,600 | 2,600 | |
| Lough Foyle † | 2,663 | 1,130 | 2,459 | 960 | 2,616 | 3,697 | 2,886 | 2,524 | 3,697 | |
| Southern Roscommon Lakes | 3,229 | 614 | 4,988 | 1,327 | 1,819 | 2,867 | 331 | 2,266 | 4,988 | Nov, Jan |
| Boyne Estuary [1] | 1,775 | 670 | 4,750 | 658 | 1,200 | 1,757 | 1,354 | 1,944 | 4,750 | Jan, Feb |
| Cork Harbour | 1,974* | 2,715* | 2,217 | 1,934 | 1,750 | 1,942 | 1,740 | 1,917 | 2,217 | Dec |
| Inner Galway Bay | 1,023 | 1,336 | 2,385 | 909 | 2,041 | 1,947 | 1,629 | 1,782 | 2,385 | Jan |
| Rahasane Turlough | 300 | 570 | 3,500 | 330 | 2,600 | 400 | 2,000 | 1,766 | 3,500 | Nov |

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Inishcarra Reservoirs | 1,800 | 384 | 480 | 2,727 | 1,806 | 269* | 1,870 | 1,721 | 2,727 | Dec |
| Tacumshin Lake | 4,150 | 1,800 | 4,180 | | 900 | 2,000 | 1,020 | 1,620 | 4,180 | Jan |
| Cashen River & Estuary [1] | | | 3,000 | | 602* | 847 | 960 | 1,602 | 3,000 | Jan |
| The Cull & Killag (Ballyteige) | 2,180 | 245 | 910 | 685 | 2,062 | 2,120 | 1,602 | 1,476 | 2,120 | Nov |
| River Suck [4] | 3,442 | 1,811 | 1,050 | 1,767 | | | | 1,409 | 1,767 | |
| Dungarvan Harbour | 1,768 | 1,564 | 829 | 751 | 2,414 | 1,322 | 1,368 | 1,337 | 2,414 | Feb |
| Tralee Bay, Lough Gill & Akeragh Lough | 2,297 | 3,458 | 2,835 | 2,996 | 139 | 469 | 238 | 1,335 | 2,996 | Jan |
| Bannow Bay | 3,401 | | 1,845 | | 2,450 | 974 | | 1,317 | 2,450 | Nov, Dec, Jan |
| Ballymacoda [1] | 11* | 4* | 1,465 | 747 | | 1,239 | 53* | 1,150 | 1,465 | |
| Lough Ree | | 1,443 | | | | | 1,150 | 1,150 | 1,150 | |
| Boora Lakes – Back Lakes Finnamores [1] | 249* | | | | 705 | | 1,570 | 1,138 | 1,570 | |
| Shannon Callows | 963 | 327 | 1,550 | 863 | | 1,778 | 120 | 1,078 | 1,778 | Nov |
| Tramore Back Strand [1] | | 715 | 15 | 1,205 | 1,270 | 1,629 | | 1,030 | 1,629 | Jan |
| Little Brosna Callows [4] | 1,110 | 570 | 1,150 | 800 | | | | 975 | 1,150 | Jan |
| Kiltullagh Lough [1] | 1,710 | 5,500 | | 1,850 | 32 | | | 941 | 1,850 | |
| Glenamaddy Turlough [1] | 650 | 445 | | | 1,800 | | | 900 | 1,800 | |
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| River Suck | | | | | | 1,400 | 284* | 842 | 1,400 | |

Sites that supported numbers of national importance in the former period but no data were available for the current period: Cahore Marshes.

* Low-quality count not included in the calculation of the mean.

† Data provided by the UK (WeBS)

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

[4]Aerial census data.

## 4.48 Knot *Calidris canutus* Cnota

*islandica*, N.E. Canada & Greenland (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 5,300 | **Population change (%):** | |
| **All-Ireland threshold:** | 160 | 5 year: | -48.5 |
| **Population size (2011-2016):** | | 12 year: | -32.2 |
| All-Ireland: | 16,270 | 22 year: | -39.7 |
| ROI: | 13,752 | Historical: | -30.3 |
| Associated with SPA network: | 12,831 | Average annual change: | -0.4 |

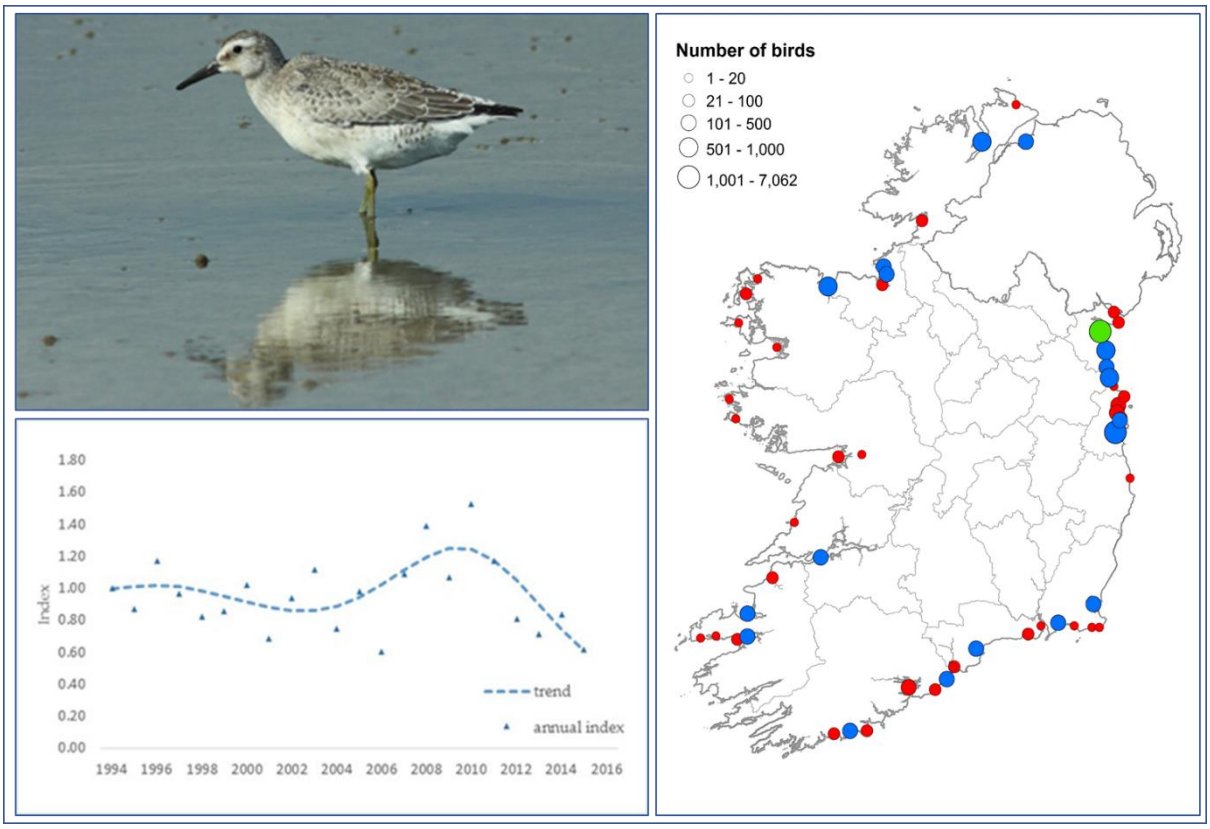



**Figure 49** Distribution map and graphed population trend for Knot. The distribution map illustrates sites supporting numbers of international importance (green circles), national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the annual indices (triangles) together with the smoothed trend (hatched line) (Photo: Dick Coombes).

The Red Knot (hereafter Knot) that winter in Ireland and Britain are predominately of the *islandica* population. This population breeds in the islands of high Arctic Canada and Greenland, and spends winter in western Europe, particularly the Wadden Sea, Britain and Ireland. At flyway level, the *islandica* population has fluctuated since the early 1990s (Wetlands International, 2018) but is relatively stable, while in both Ireland and Britain, long-term trends for decline are evident.

Knot migrate and winter in large flocks which occur exclusively at coastal sites as their preference is for sandy beaches and tidal mud- or sand-flats (van Roomen *et al*, 2015). The highest concentrations

are found at estuarine sites along the south and east coasts. During the current period, Knot were found at 55 sites around the coast. Dundalk Bay retains its top-ranking position and is the only site to support numbers of international importance. Dublin Bay continues to hold high numbers but a decline in numbers since the former period means that it is now the highest ranked site that supports numbers of national importance. A total of 18 sites were found to support Knot in numbers of national importance, six of which did not qualify in the former period. At five sites, including Rogerstown Estuary and Broadmeadow (Malahide) Estuary, numbers declined below the threshold.

**Table 48** Table showing sites supporting internationally and/ or nationally important numbers of Knot ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of international importance** | | | | | | | | | | |
| Dundalk Bay | 13,855 | 14,692 | 12,837 | 3,900 | 6,578 | 6,460 | 5,535 | 7,062 | 12,837 | Jan |
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Dublin Bay [3] | 4,105 | 2,799 | 3,435 | 3,022 | 4,547 | 4,950 | 2,495 | 3,690 | 4,950 | Dec |
| Killala Bay | 6 | 446 | 726 | 3,260 | 336 | 537 | 54 | 983 | 3,260 | Feb |
| Nanny Estuary & shore | 4,042 | 1,500 | 1,800 | 1,400 | 212 | 1* | 660 | 814 | 1,800 | Dec, Feb |
| Lough Swilly | 1,982 | 1,402 | 1,250 | 895 | 293 | 751 | 866 | 811 | 1,250 | Nov |
| Dunany Point – Clogher Head | 397 | 2,790 | 1,410 | 810 | | | 350 | 643 | 1,410 | Nov, Feb, Mar |
| Dungarvan Harbour | 729 | 551 | 370 | 604 | 203 | 689 | 540 | 481 | 689 | Feb |
| Boyne Estuary | 1,700 | 1,500 | 855 | 1,000 | 26 | 18 | 300 | 440 | 1,000 | |
| Drumcliff Bay Estuary | 696 | 268 | 328 | 162 | 535 | 227 | 227 | 296 | 535 | Jan |
| Lough Foyle † | 38 | 350 | 218 | 239 | 243 | 306 | 290 | 259 | 306 | |
| Wexford Harbour & Slobs [1] | | 11* | 261 | 48 | 851 | 11 | 71 | 248 | 851 | |
| Castlemaine Harbour & Rossbehy [1] | 273* | 409 | 322 | 342 | 41 | 244 | 276 | 245 | 342 | Oct, Jan |
| Sligo Harbour | 950 | 521 | 130 | 250 | 260 | 111 | 278 | 206 | 278 | |
| Tralee Bay, Lough Gill & Akeragh Lough | 28 | 481 | 398 | 272 | 38 | 290 | 25 | 205 | 398 | Jan |
| Shannon & Fergus Estuary [4 1] | | | | 200 | | | | 200 | 200 | |
| Baldoyle Bay [1] | 112 | | | | 553 | | 19 | 191 | 553 | Oct, Jan |
| Clonakilty Bay [1] | 628 | 834 | 409 | 271 | 42 | 150 | 44 | 183 | 409 | Jan |
| Bannow Bay | 329 | | 170 | | 120 | 280 | 120 | 173 | 280 | Dec |
| Ballymacoda [1] | 21* | 44* | 313 | 79 | | 101 | 29* | 164 | 313 | Sep |
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| Rogerstown Estuary | 501 | 88 | 190 | 256 | 30 | 130 | 89 | 139 | 256 | Feb |

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Broadmeadow (Malahide) Estuary | 354 | 870 | 4 | 440 | 110 | 49 | 9 | 122 | 440 | Oct |
| Blacksod & Tullaghan Bays | 187 | 30* | 108 | 82 | 93 | 86 | 106 | 95 | 108 | Jan |
| Courtmacsherry Bay, Broadstrand Bay & Dunworley | 105 | 54 | 17 | 35 | 140 | 42 | 9 | 49 | 140 | Dec, Feb |
| Delvin River – Hampton Cove | | | | 8 | | | | 2 | 8 | Feb |

* Low-quality count not included in the calculation of the mean.

† Data provided by the UK (WeBS).

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

[3]Site demoted (from supporting numbers of international importance to numbers of national importance) since the 2001/02 to 2008/09 period.

[4]Aerial census data.

## 4.49 Sanderling *Calidris alba* Luathrán

*alba* N.E. Canada, N. & N.E. Greenland, Svalbard, W. Taymyr (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 2,000 | **Population change (%):** | |
| **All-Ireland threshold:** | 85 | 5 year: | -14.1 |
| **Population size (2011-2016):** | | 12 year: | -0.1 |
| All-Ireland: | 8,420 | 22 year: | +91.8 |
| ROI: | 7,572 | Historical: | +234.4 |
| Associated with ROI SPA network: | 3,169 | Average annual change: | +3.9 |

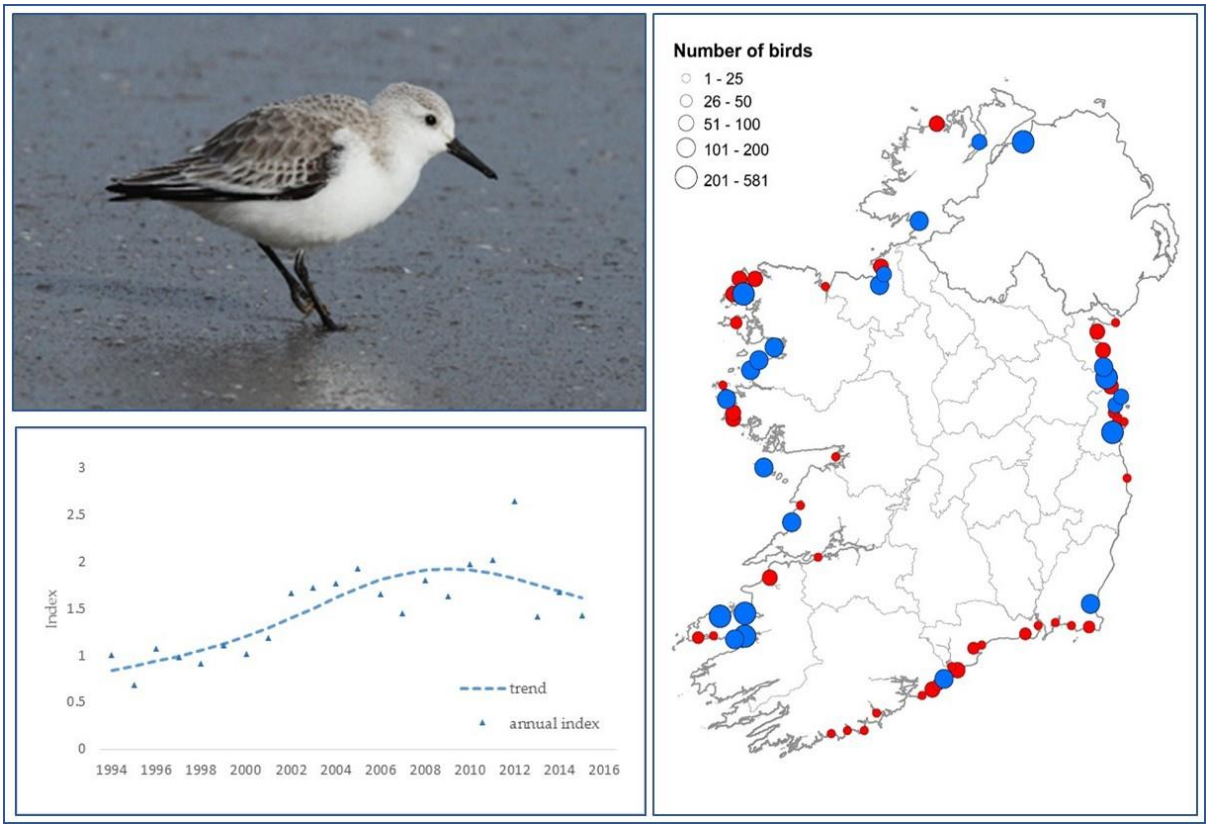



**Figure 50** Distribution map and graphed population trend for Sanderling. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the annual indices (triangles) together with the smoothed trend (hatched line) (Photo: Dick Coombes).

The Sanderling is a long-distance migratory wading bird that occurs in Ireland during winter but also on passage in March, August and September. Sanderling occurring in Ireland are of the nominate subspecies *C. a. alba* which breed across north-east Canada, north and north-east Greenland, Svalbard and western Taymyr (Wetlands International, 2018). At a flyway level, this population is stable (Wetlands International, 2018).

It was once believed that Sanderling wintering in Britain & Ireland originated solely from Siberia (Wernham *et al.*, 2002). However, colour-marking studies have revealed that Greenland-breeding birds, which occur here during passage, also overwinter here. The *alba* population winters along the

East Atlantic Flyway (Atlantic coast of Europe and Africa) in addition to the African east coast plus West and central Asia (Reneerkens *et al*., 2009).

In Ireland, Sanderling numbers have continued to increase since the former period with an annual increase of 3.9%. This trend is also reflected in Northern Ireland and Britain (Frost *et al*., 2018). The reasons for the increasing flyway population are not well understood. The High Arctic breeding range of Sanderling makes studies of their breeding biology difficult (Reneerkens *et al*., 2009), so aspects of their breeding system and links between the breeding and non-breeding grounds of different populations are not well established (Wernham *et al*., 2002). However, a current project of the International Wader Study Group (www.waderstudygroup.org/projects/sanderling-project/) is using data gathered by a network of volunteers on the age ratios of migrating and wintering Sanderling at different sites and at different times throughout the European wintering range of the species. These age ratios currently are the only reliable estimate of the annual reproductive success at the population level which, over the years, will help to create a clearer picture of how migration and recruitment of juvenile Sanderling varies along the East Atlantic Flyway and to which extent annual reproductive success contributes to the growth of the Sanderling population.

Wintering populations of Sanderling occur primarily in coastal areas, often on sandy beaches. In Ireland, many open sandy shorelines are not well covered by I-WeBS and so many of the important sites for this wader, as identified by other surveys, do not feature in this report. For instance, the 2015/16 Non-Estuarine Coastal Waterbird Survey (NEWS-III) found that a significant proportion of Ireland's estimated population of Sanderling can occur along the open coast, non-estuarine coast (Lewis *et al*., 2017).

Sanderling were recorded at 67 sites between 2011/12 – 2015/16. This is an increase of five sites since the former period. A total of 23 sites supported numbers of national importance. The sandy beaches of Tralee Bay, Lough Gill & Akeragh Lough continue to rank as the top site for Sanderling. Blacksod & Tullaghan Bays has seen a noteworthy increase in Sanderling and is now the second most important site for these birds. Numbers at seven sites have now declined below the threshold and no longer hold significant numbers (Table 49).

**Table 49** Table showing sites supporting nationally important numbers of Sanderling ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Tralee Bay, Lough Gill & Akeragh Lough | 586 | 590 | 1296 | 1058 | 800 | 581 | 520 | 851 | 1,296 | Jan, Mar |
| Blacksod & Tullaghan Bays | 228 | 445* | 333 | 944 | 328 | 331 | 711 | 529 | 944 | Oct |
| Dublin Bay | 674 | 300 | 411 | 405 | 510 | 266 | 841 | 487 | 841 | Oct |
| Castlemaine Harbour & Rossbehy | 452* | 505 | 400 | 727 | 350 | 300 | | 444 | 727 | Feb |
| Lough Foyle † | 488 | 518 | 673 | 379 | 300 | 148 | 650 | 430 | 673 | |
| Nanny Estuary & shore | 421 | 246 | 104* | 259* | 350 | 300 | 339 | 330 | 350 | Sep, Oct |
| Brandon Bay – Inner Brandon Bay | | | 444 | 270 | 243 | | | 319 | 444 | Jan |
| Ballysadare Bay | 192 | 62 | 140 | 668 | | 58 | 110 | 195 | 668 | |
| Ballymacoda | 84* | 114* | 194 | 195 | | 185 | 49* | 191 | 195 | Nov |

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Castlemaine Outer: Inch offshore [1] | | 441 | 350 | 204 | | | | 185 | 350 | |
| Clew Bay | 66 | 79 | 148 | 450 | | 84 | 125 | 161 | 450 | Jan |
| Mid-Clare Coast (Mal Bay – Doonbeg Bay) | 178 | 70 | | 250 | 32* | 118 | 270 | 160 | 270 | |
| South Mayo Coast | 144 | 264 | 128 | 250 | 178 | 171 | 60 | 157 | 250 | Nov |
| Boyne Estuary | 100 | 251 | 230 | 192 | 150 | 100 | 100 | 154 | 230 | |
| Omey Strand [1] | 66 | 114 | 121* | 140 | 231 | 97 | 132 | 150 | 231 | Oct |
| Donegal Bay | 57 | 205 | 85 | 254 | 123 | 69 | 169 | 140 | 254 | Feb |
| Inishmore, Aran Islands[1] | 80 | 49 | 180 | 67 | 190 | 96 | 99 | 126 | 190 | Jan |
| Wexford Harbour & Slobs [1] | | 3* | 182 | 106 | 61 | 130 | 123 | 120 | 182 | Jan, Feb |
| Carrowmore Beach [1] | 40 | 68 | 103 | 92 | 96 | 167 | | 115 | 167 | |
| Lough Swilly [1] | 9 | 45 | 77 | 95 | 26 | 226 | 66 | 98 | 226 | Feb |
| Rogerstown Estuary [1] | 30 | 6 | 20 | 300 | 31 | 1 | 130 | 96 | 300 | Jan |
| Sligo Harbour | | 1 | 93 | 75 | 102 | 64 | 133 | 93 | 133 | Nov |
| Skerries Coast [1] | 20* | 52 | 66 | 64 | 120 | 90 | 113 | 91 | 120 | Feb |
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| Termoncarragh & Annagh Marsh | 94 | 127 | 115 | 76 | 102 | 27 | | 80 | 115 | Oct, Nov |
| Ballycotton Shanagarry | 131 | 1* | 44 | 71 | 76 | 92 | 108 | 78 | 108 | Dec, Feb |
| Mannin Bay | 77 | 72 | 131 | 45 | 85 | 70 | 58 | 78 | 131 | Oct |
| Mullet West | 70 | 42* | 71 | 52 | 76 | 95 | | 74 | 95 | Nov |
| Dunany Point – Clogher Head | 110 | 177 | 155 | 16 | 27* | | 20 | 64 | 155 | |
| Dungarvan Harbour | 75 | 12 | 41 | | 23 | 59 | 94 | 54 | 94 | Feb |
| Inishbofin | 56 | 65 | 10 | | | | | 10 | 10 | |

* Low-quality count not included in the calculation of the mean.

† Data provided by the UK (WeBS).

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

## 4.50 Curlew Sandpiper *Calidris ferruginea* Gobadán crotaigh

C. & W. Siberia (br)

Passage migrant

**International threshold:** 4,000

**Mean/ Peak (2011/12 – 2015/16)**: 22/65

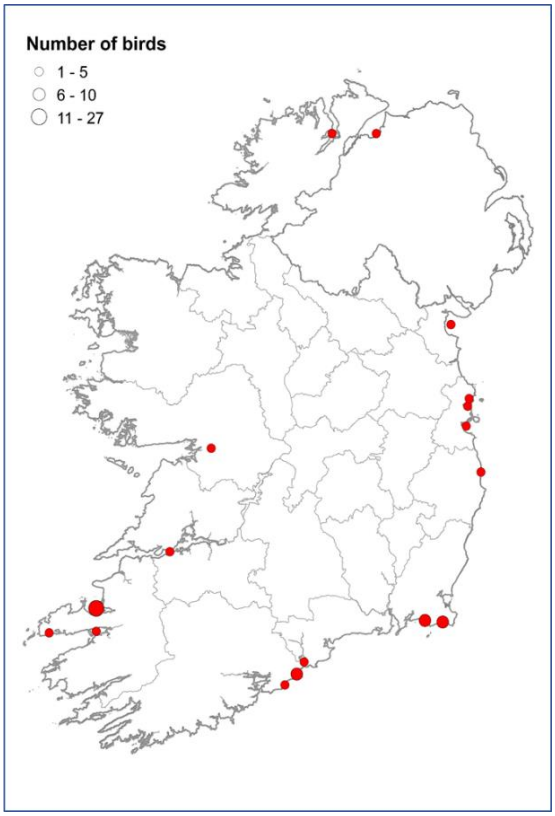



**Figure 51** Distribution map for Curlew Sandpiper showing peak counts (2011/12 – 2015/16) (Photo: Dick Coombes).

Wetlands International recognises two populations of Curlew Sandpiper; one that breeds in central and western Siberia and winters in south-west Asia and east and south Africa, and one that breeds in western Siberia and winters in west Africa. Both populations are in decline.

Curlew Sandpiper occur as passage migrants in Ireland and small numbers are recorded mostly during autumn passage, in September and October. They were recorded at 17 sites during the current period with a peak of 27 birds recorded at Tralee Bay, Lough Gill & Akeragh Lough in 2011/12.

**Table 50** Table showing sites that supported Curlew Sandpiper in five or more seasons between 2009/10 and 2015/16.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 |
|---|---|---|---|---|---|---|---|---|---|
| Tacumshin Lake | | | 7 | 9 | 7 | 1 | 1 | 5 | 9 |
| Lough Swilly | 1 | 8 | 3 | | | 4 | 2 | 2 | 4 |

Other sites recorded in less than five seasons (peak count 2011/12 – 2015/16):

Ballycotton Shanagarry (1), Ballymacoda (9), Blackwater Estuary (1), Broadmeadow (Malahide) Estuary (2), Castlemaine Harbour & Rossbehy (4), Dublin Bay (1), Dundalk Bay (5), Lough Foyle (NI) (5), North Wicklow Coastal Marshes (1), Rahasane Turlough (1), Rogerstown Estuary (4), Shannon & Fergus Estuary (2), The Cull & Killag (Ballyteige) (6), Tralee Bay, Lough Gill & Akeragh Lough (27), Ventry Harbour (1).

## 4.51 Purple Sandpiper *Calidris maritima* Gobadán cosbhuí

*maritima,* N. Europe & W. Siberia (br)[1]

*maritima,* N.E. Canada & Greenland (br)[2]

| | | | |
|---|---|---|---|
| **International threshold:** | 710[1]/110[2] | **Population change (%):** | |
| **All-Ireland threshold:** | 20 | 5 year: | -35.6 |
| **Population size (2011-2016):** | | 12 year: | -63.1 |
| All-Ireland: | 660 | 22 year: | -60.6 |
| ROI: | 465 | Historical: | -57.8 |
| Associated with ROI SPA network: | 82 | Average annual change: | -5.6 |

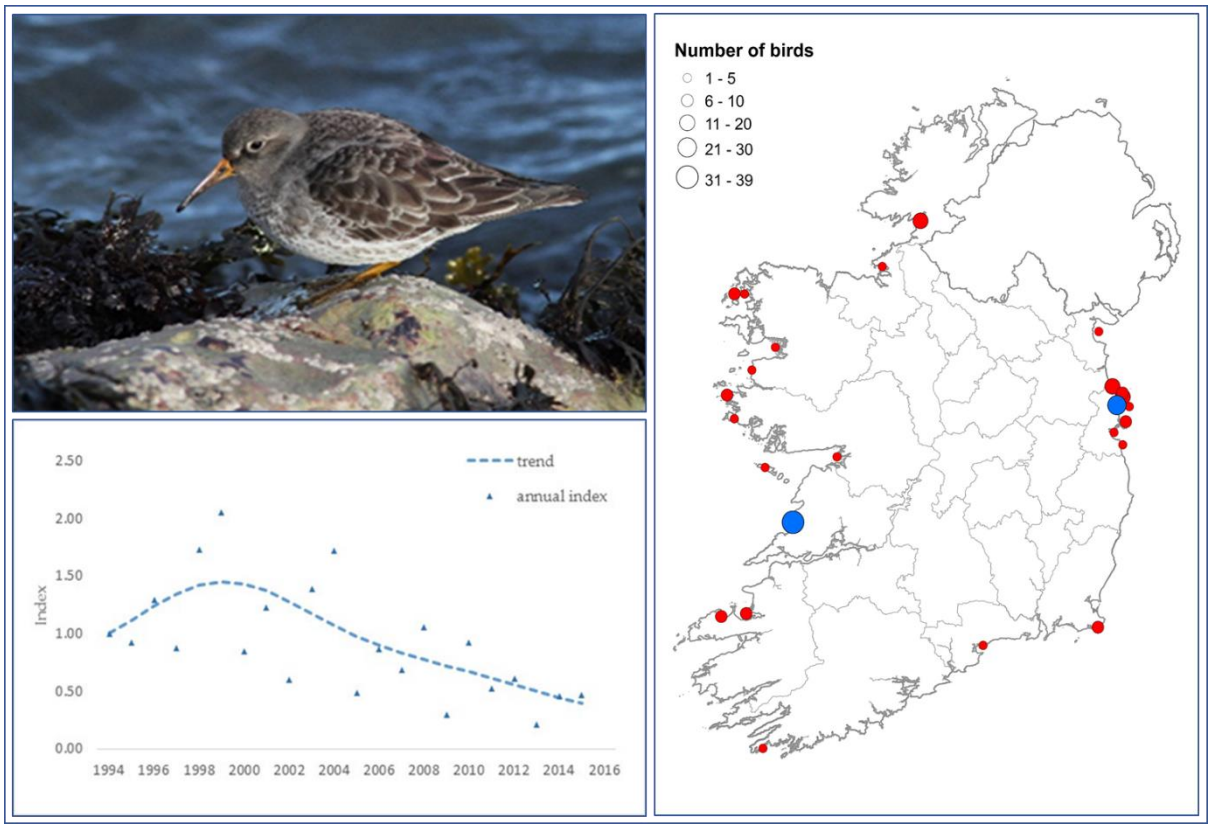



**Figure 52** Distribution map and graphed population trend for Purple Sandpiper. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the annual indices (triangles) together with the smoothed trend (hatched line) (Photo: Dick Coombes).

The breeding range of Purple Sandpiper extends across the western part of the Arctic, from northeast Canada, eastward to Greenland, Iceland, Svalbard, Scandinavia, and the Taymyr Peninsula (Delaney *et al*., 2009). Wetlands International (2018) recognises two populations of Purple Sandpiper; one breeding across northern Europe and western Siberia, and one breeding across north-east Canada and Greenland. These populations have increasing and decreasing trends respectively (Wetlands International, 2018).

It is possible to assign birds to breeding origins based on bill lengths (Nicoll *et al*., 1988). A long-billed population is thought to originate from Canada or east Greenland, while a short-billed population originates from southern Norway (Nicoll *et al*., 1988; Summers *et al*., 1992; Summers, 1994). While it was thought likely that birds wintering in Ireland were of Canadian origin, early evidence of this was provided in 2010 when researchers assessed biometrics of birds caught in County Clare. This research indicated that at least part of the Irish wintering population belongs to the long-winged, long-billed population which also winter in Scotland, occur in Iceland on stopover, and likely originate from Canadian breeding stock (Foster *et al*., 2010). It has since been confirmed using data from geolocators (fitted to birds at the same site in Clare) that these Purple Sandpiper migrate from Canada, using Greenland and/ or Iceland as a migratory stopover, and, in some cases, even making non-stop journeys to Ireland from Canada in under three days (Summers *et al*, 2014).

In Ireland, numbers appear to have declined since the early 2000s, while a long-term trend for decline is also evident in the UK (Frost *et al*., 2018). However, caution is advised when interpreting trends for this species because they show a preference for rocky shores (often in remote areas), and are consequently poorly monitored by I-WeBS core count methodology alone. Indeed, Lewis *et al*. (2017) estimated up to 78% of the wintering Purple Sandpiper population use non-estuarine coast, and that there was an increase in both numbers (% change) and distribution (% change) between the non-estuarine surveys of 2006/07 and 2015/16 (Crowe *et al*., 2012a; Lewis *et al*., 2017 respectively) further reducing our confidence in the trends.

Purple Sandpiper were recorded at 25 sites during the current period (2011/12 – 2015/16) and two sites supported numbers of national importance (Table 51). Mid Clare Coast (Mal Bay - Doonbeg Bay) remains the highest ranked site, while Rogerstown Estuary has been promoted since the former period.

**Table 51** Table showing sites supporting nationally important numbers of Purple Sandpiper ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Mid-Clare Coast (Mal Bay – Doonbeg Bay) | 67 | | 1 | 86 | | 23 | 84 | 39 | 86 | |
| Rogerstown Estuary [1] | 76 | 5 | 6 | 3 | 72 | 32 | 4 | 23 | 72 | Feb, Mar |
| **Other sites supporting peak counts on one or more occasion that exceeded the threshold for national importance** | | | | | | | | | | |
| Tralee Bay, Lough Gill & Akeragh Lough | 57 | | 37 | | | | | 7 | 37 | Jan |
| Skerries Coast | | 13 | 29 | 6 | 5 | 3 | 28 | 14 | 28 | Nov |
| Delvin River – Hampton Cove | | | | 26 | 16 | 3 | 10 | 14 | 26 | Dec |
| Donegal Bay | 8 | 42 | 7 | 25 | 3 | 24 | 5 | 13 | 25 | Jan |
| Rossadilisk | 8 | | | 23 | 5 | 4 | | 3 | 26 | |

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

## 4.52 Dunlin *Calidris alpina* Breacóg

*alpina*, N. Scandinavia, N. Russia, N.W. Siberia (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 13,300 | **Population change (%):** | |
| **All-Ireland threshold:** | 460 | 5 year: | -23.0 |
| **Population size (2011-2016):** | | 12 year: | -41.7 |
| All-Ireland: | 45,760 | 22 year: | -63.0 |
| ROI: | 37,409 | Historical: | -52.1 |
| Associated with ROI SPA network: | 30,836 | Average annual change: | -4.8 |

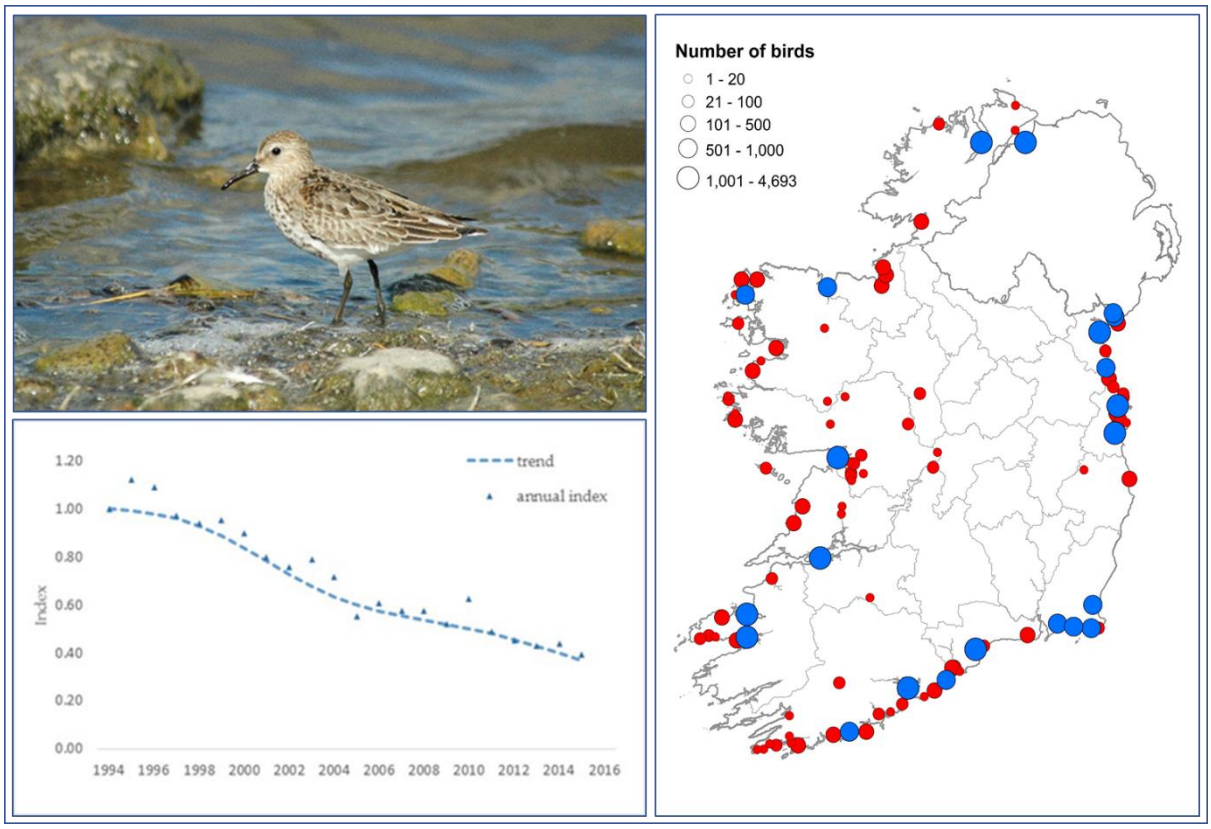



**Figure 53** Distribution map and graphed population trend for Dunlin. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the annual indices (triangles) together with the smoothed trend (hatched line) (Photo: Brian Burke).

The Dunlin that winter in Ireland are primarily of the *alpina* population which breed in northern Scandinavia, northern Russia and north-western Siberia. This subspecies winters in western Europe, the Mediterranean and northern and western Africa (Wetlands International, 2018). The *schinzii* population breeds in Ireland and Britain but winters in north-western Africa and south-western Europe. During spring and autumn passage, the subspecies *arctica*, which breeds in north east Greenland, also occurs in Ireland in unknown proportions *en route* to wintering grounds in Africa.

Currently, the flyway population of the *alpina* population is considered stable but has shown a slight short-term decline (Wetlands International, 2018). In Britain and Northern Ireland, the population has undergone long-term declines (Frost *et al*., 2018). Similarly, in Ireland the population has continued to decline since the last reporting period (Crowe & Holt, 2013).

Wintering Dunlin occur primarily around Ireland's coast but can also be found in small numbers at a few inland sites. Dunlin were recorded at 105 sites during the current period. Of these, 22 sites supported numbers of national importance (including both ROI and NI sections of the cross-border site Carlingford Lough). The increase in the list of significant sites, from 15 during the former period (Boland & Crowe, 2012) to the current 22 sites is likely a result of the 1% threshold having decreased markedy since the former period.

**Table 52** Table showing sites supporting nationally important numbers of Dunlin ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Lough Swilly | 4,714 | 5,577 | 4,178 | 3,243 | 4,428 | 5,286 | 6,330 | 4,693 | 6,330 | Jan, Feb |
| Cork Harbour | 2,632* | 5,037* | 4,939 | 6,789 | 3,117 | 3,801 | 2,934 | 4,316 | 6,789 | Feb |
| Dublin Bay | 4,270 | 6,490 | 3,559 | 4,163 | 5,907 | 3,603 | 3,376 | 4,122 | 5,907 | Feb |
| Dundalk Bay | 2,678 | 3,221 | 2,030 | 4,063 | 3,989 | 3,086 | 3,662 | 3,366 | 4,063 | Nov |
| Lough Foyle † | 1,183 | 1,515 | 1,650 | 1,597 | 2,511 | 2,701 | 1,890 | 2,070 | 2,701 | |
| Rogerstown Estuary | 3,151 | 1,061 | 1,904 | 1,860 | 581 | 2,264 | 3,469 | 2,016 | 3,469 | Feb |
| Dungarvan Harbour | 3,150 | 1,381 | 1,125 | 1,786 | 2,506 | 2,232 | 1,402 | 1,810 | 2,506 | Feb |
| Inner Galway Bay | 1,409 | 1,675 | 640 | 987 | 1,894 | 1,732 | 1,639 | 1,378 | 1,894 | Jan |
| Shannon & Fergus Estuary [4] | 2,782 | 2,853 | 1,330 | 1,030 | | | | 1,180 | 1,330 | Oct |
| Castlemaine Harbour & Rossbehy [1] | 411* | 1,424 | 3,499 | 471 | 485 | 636 | 400 | 1,098 | 3,499 | Oct |
| Tralee Bay, Lough Gill & Akeragh Lough [1] | 593 | 962 | 1,411 | 1,136 | 1,500 | 386 | 887 | 1,064 | 1,500 | Jan |
| Blacksod & Tullaghan Bays [1] | 513 | 361* | 1,214 | 972 | 1,533 | 592 | 541 | 970 | 1,533 | Nov |
| Bannow Bay [1] | 1238 | | 728 | | 830 | 1,150 | 670 | 845 | 1,150 | Jan |
| Ballymacoda | 88* | 868* | 958 | 369 | | 1,089 | 213* | 805 | 1,089 | Sep, Feb |
| Killala Bay [1] | 65 | 440 | 624 | 870 | 656 | 1,219 | 481 | 770 | 1,219 | Jan |
| Clonakilty Bay | 953 | 1081 | 916 | 586 | 880 | 552 | 651 | 717 | 916 | Nov |
| Carlingford Lough (RoI) | | | 120 | | | | 1,250 | 685 | 1,250 | |
| Wexford Harbour & Slobs [1] | 30* | 800* | 1548 | 501 | 185 | 332 | 760 | 665 | 1,548 | Oct |
| Tacumshin Lake [1] | 1,425 | 240 | 800 | 500 | 1,110 | 100 | 800 | 662 | 1,110 | Sep, Mar |
| Boyne Estuary [1] | 470 | 1477 | 739 | 572 | 535 | 617 | 720 | 637 | 739 | Jan, Feb |
| Carlingford Lough † | 1,370 | 2,210 | 1,159 | 561 | 351 | 461 | 406 | 588 | 1,159 | |
| The Cull & Killag (Ballyteige) [1] | 605 | 304 | 650 | 470 | 476 | 556 | 508 | 532 | 650 | Sep |

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| Ballysadare Bay | 1200 | 1218 | 648 | 205 | 234 | 445 | 650 | 436 | 650 | Jan |
| Courtmacsherry Bay, Broadstrand Bay & Dunworley | 999 | 1183 | 691 | 128 | 200 | 291 | 448 | 352 | 691 | Dec |
| Sligo Harbour | 662 | 434 | 145 | 528 | 152 | 483 | 413 | 344 | 528 | Nov |

* Low-quality count not included in the calculation of the mean.

† Data provided by the UK (WeBS).

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

[4]Aerial census data.

## 4.53 Ruff *Calidris pugnax* Rufachán

N. & C. Europe, N.W. Russia, W. & C. Siberia (br)

Scarce winter visitor and passage migrant

**International threshold:** 22,000

**Mean/ Peak (2011/12 – 2015/16)**: 62/121

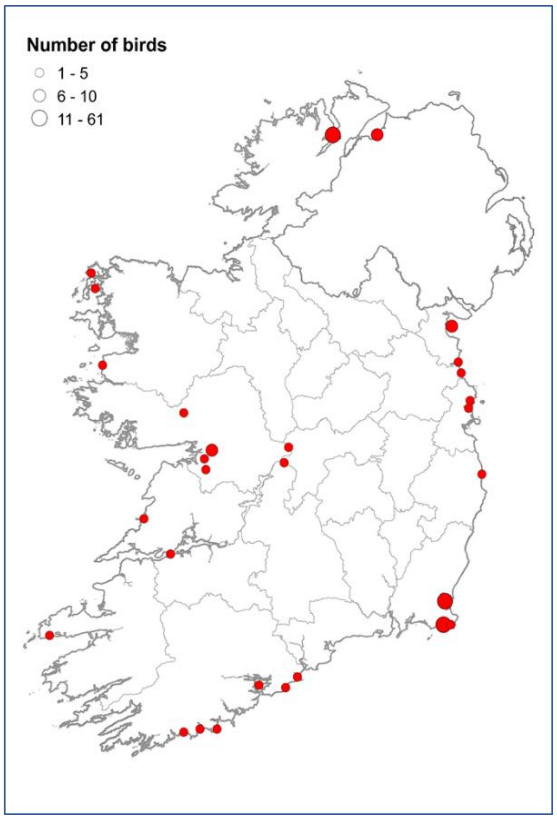



**Figure 54** Distribution map for Ruff showing peak counts (2011/12 – 2015/16) (Photo: Dick Coombes).

Two populations of Ruff are recognised in western Eurasia and Africa (Wetlands International, 2018). The population that breeds in north and central Europe and western Siberia, and winters in West Africa is known to be in decline (Wetlands International, 2018; Zöckler, 2002). Small numbers of Ruff occur in Ireland both on passage and throughout the winter period. This species was recorded at 29 sites between 2011/12 and 2015/16 and most regularly at six sites (Table 53).

**Table 53** Table showing sites that supported Ruff in five or more seasons between 2009/10 and 2015/16 with the peak count recorded between 2011/12 – 2015/16.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 |
|---|---|---|---|---|---|---|---|---|---|
| Tacumshin Lake | 3 | | | | 10 | 7 | 61 | 16 | 61 |
| Wexford Harbour & Slobs | 7 | 9 | 25 | 7 | 7 | 8 | 9 | 11 | 25 |
| Lough Swilly | 7 | 7 | 5 | | 3 | 10 | 22 | 8 | 22 |
| Rahasane Turlough | 2 | 8 | 9 | 3 | 3 | 2 | 7 | 5 | 9 |
| Dundalk Bay | 3 | 2 | | | 8 | 3 | 7 | 4 | 8 |
| **Site** | **09/10** | **10/11** | **11/12** | **12/13** | **13/14** | **14/15** | **15/16** | **Mean 11-15** | **Peak 11-15** |
| Broadmeadow (Malahide) Estuary | 4 | 1 | 4 | 1 | 2 | 5 | | 2 | 5 |

Other sites recorded in less than five seasons (peak count 2011/12 – 2015/16):

Ballycotton Shanagarry (1), Ballymacoda (3), Blacksod & Tullaghan Bays (1), Boyne Estuary (1), Clonakilty Bay (3), Cork Harbour (1), Courtmacsherry Bay, Broadstrand Bay & Dunworley (3), Doolough Headford (Turloughcor) (3), Kiltiernan Turlough (4), Lady's Island Lake (1), Little Brosna Callows (5), Lough Foyle (NI) (6), Lydacan Castle Turlough (1), Mid-Clare Coast (Mal Bay - Doonbeg Bay) (3), Nanny Estuary & shore (1), North Wicklow Coastal Marshes (2), Rogerstown Estuary (2), Rosscarbery (2), Shannon & Fergus Estuary (1), Shannon Callows (1), South Mayo Coast (2), Termoncarragh & Annagh Marsh (1), Ventry Harbour (1).

## 4.54 Jack Snipe *Lymnocryptes minimus* Naoscach bhídeach

Europe (br)

**International threshold:** 20,000

**Mean/ Peak (2011/12 – 2015/16)**: 7/11

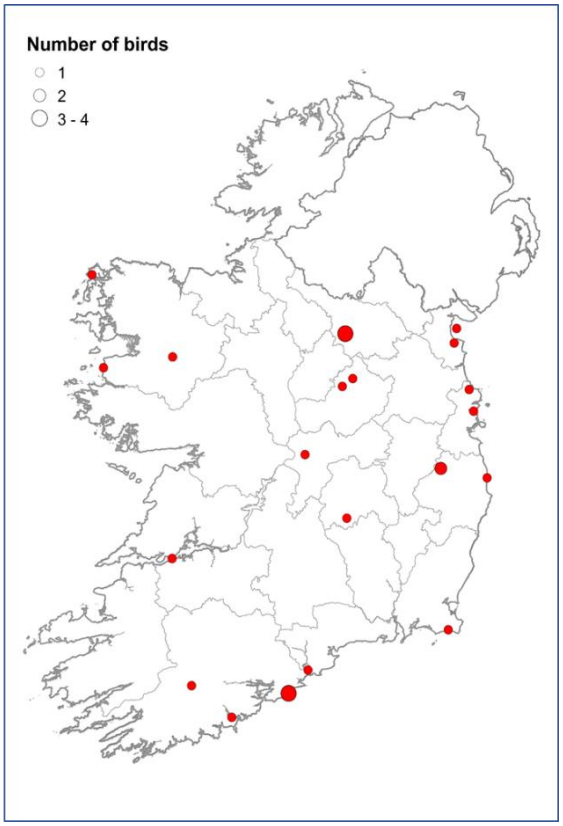



**Figure 55** Distribution map for Jack Snipe showing peak counts (2011/12 – 2015/16) (Photo: Niall T. Keogh).

Jack Snipe are a winter visitor and passage migrant to Ireland and Britain. Wetlands International (2018) recognise two populations of Jack Snipe; a population breeding in northern Europe and wintering mainly in southern and western Europe and west Africa, and a population breeding in western Siberia, and wintering mainly in south-west Asia and north-east Africa (Delaney *et al*., 2009). The status of these populations is poorly understood, mainly because this species is secretive, difficult to detect, and difficult to monitor accurately. Jack Snipe are smaller than Snipe, secretive, and tend to crouch down when approached, only flying when in very close proximity. Similarly, the species is difficult to monitor in Ireland via core count methodology alone and we therefore have no reliable data on population size.

Jack Snipe were recorded at 20 sites between 2011/12 and 2015/16, and most regularly at two sites (Table 54). The vast majority of records were of single individuals, the peak count being four individuals at River Erne: Oughter – Gowna in 2013/14.

**Table 54** Table showing sites that supported Jack Snipe in five or more seasons between 2009/10 and 2015/16 with the peak count recorded between 2011/12 – 2015/16.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 |
|---|---|---|---|---|---|---|---|---|---|
| Ballycotton Shanagarry | 2 | 1 | 1 | 2 | 3 | 2 | 1 | 2 | 3 |
| Shannon & Fergus Estuary | | 2 | 1 | 1 | 1 | 1 | | 1 | 1 |

Other sites recorded in less than five seasons (peak count 2011/12-2015/16):

Bandon Estuary (1), Blackwater Estuary (1), Broadmeadow (Malahide) Estuary (1), Cloghanhill (1), Dundalk Bay (1), Durrow Curragh (River Erkina) (1), Inishcarra Reservoirs (1), Keenan's Cross Pond (1), Knock Lake (1), Lough Derravaragh (1), Lough Iron (1), North Wicklow Coastal Marshes (1), Poulaphouca Reservoir (2), River Erne: Oughter – Gowna (4), South Mayo Coast (1), Tacumshin Lake (1), Termoncarragh & Annagh Marsh (2), Wetland near Drumcarrabaun (Belcarra/Ballyglass Road) (3).

## 4.55 Snipe *Gallinago gallinago* Naoscach

*gallinago* Europe (br)

*faeroeensis* Iceland, Faroe Islands, Shetland and Orkney Islands (br)

**International threshold:** 100,000

**Mean/ Peak (2011/12 – 2015/16)**: 784/883

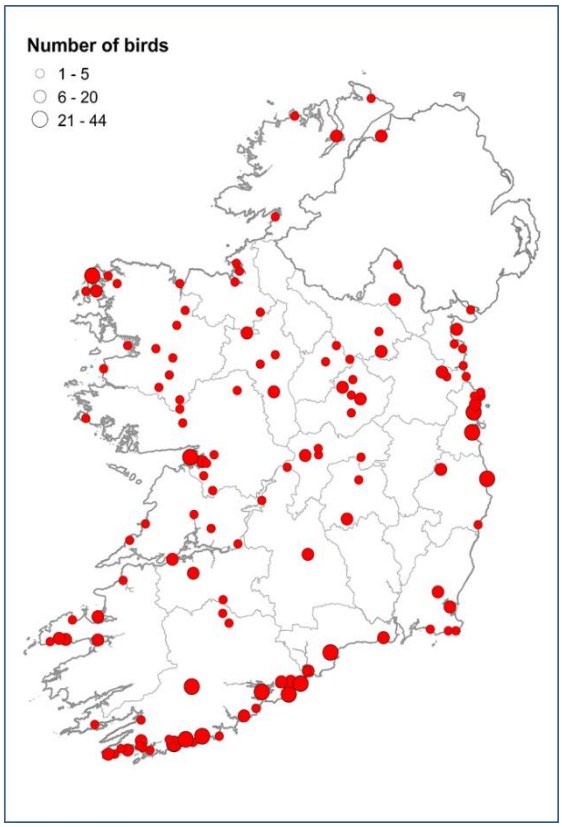



**Figure 56** Distribution map for Snipe showing sites that supported an average of one or more bird between 2011/12 and 2015/16 (Photo: John Fox).

Ireland's wintering Common Snipe (hereafter Snipe) comprise residents and migrants from the nominate *gallinago* race which breeds across northern Europe, as well as migrants from the *faeroeensis* population, which breeds in Iceland, the Faeroes and the Shetland and Orkney Islands (Delany *et al*., 2009). Wetlands International (2018) lists the flyway population of nominate *gallinago* as being stable, while the population trend of *faeroeensis* is unknown. The majority of the mainly Icelandic-breeding *faeroeensis* are thought to overwinter in Ireland (Wernham *et al*., 2002, Delany *et al*., 2009) meaning Ireland provides vital wintering grounds for this population that numbers around 5,700 individuals (Wetlands International, 2018).

The population trend for Snipe in Ireland remains uncertain as they are very difficult to monitor and are almost certainly undercounted. They are a skulking species with a widely dispersed distribution and many remain undetected unless flushed. Snipe were recorded at 159 sites during the period 2011/12 – 2015/16 and twelve sites supported this species with most regularity (Table 55).

**Table 55** Table showing sites that supported Snipe in five or more seasons between 2009/10 and 2015/16 with an average of 20 birds or more between 2011/12 and 2015/16.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 |
|---|---|---|---|---|---|---|---|---|---|
| Cork Harbour | 72 | 70 | 33 | 55 | 32 | 56 | 44 | 44 | 56 |
| Termoncarragh & Annagh Marsh | 180 | 44 | 47 | 35 | 31 | 64 | | 44 | 64 |
| Ballymacoda | 3 | 31 | 87 | 34 | | 22 | 3* | 36 | 87 |
| Broadmeadow (Malahide) Estuary | 10 | 46 | 20 | 25 | 56 | 25 | 36 | 32 | 56 |
| North Wicklow Coastal Marshes | 37 | 20 | 35 | 44 | 16 | 30 | 22 | 29 | 44 |
| Ballycotton Shanagarry | 57 | 34 | 17 | 23 | 45 | 35 | 23 | 29 | 45 |
| Rosscarbery | 12 | 10 | 9 | 10 | 31 | 47 | 38 | 27 | 47 |
| Dublin Bay | 16 | 18 | 12 | 62 | 20 | | 31 | 25 | 62 |
| Inishcarra Reservoirs | 52 | 12 | 3 | 46 | 23 | | 47 | 22 | 47 |
| Clonakilty Bay | 2 | 62 | 64 | 15 | 10 | 6 | 10 | 21 | 64 |
| Inner Galway Bay | 8 | 5 | 25 | 6 | 3 | 13 | 56 | 21 | 56 |
| Wexford Harbour & Slobs | 73 | 31 | 4 | 31 | 36 | 20 | 10 | 20 | 36 |

## 4.56 Black-tailed Godwit *Limosa limosa* Guilbneach earrdhubh

*islandica*, Iceland (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 1,100 | **Population change (%):** | |
| **All-Ireland threshold:** | 200 | 5 year: | +3.0 |
| **Population size (2011-2016):** | | 12 year: | +29.8 |
| All-Ireland: | 19,800 | 22 year: | +77.7 |
| ROI: | 17,862 | Historical: | +135.0 |
| Associated with ROI SPA network: | 16,575 | Average annual change: | +3.5 |

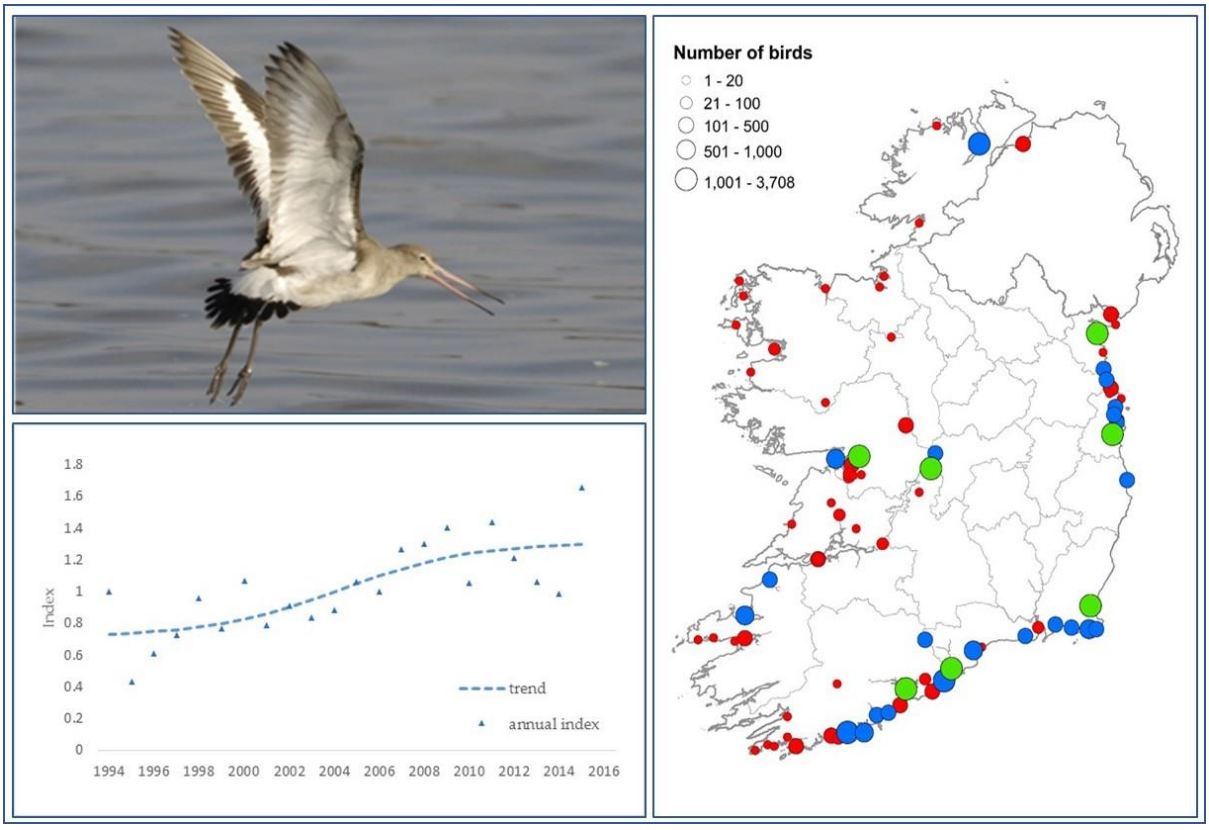



**Figure 57** Distribution map and graphed population trend for Black-tailed Godwit. The distribution map illustrates sites supporting numbers of international importance (green circles), national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the annual indices (triangles) together with the smoothed trend (hatched line) (Photo: John Fox).

Wetlands International (2018) recognises four populations of the Black-tailed Godwit in Western Eurasia and Africa and one of these, *Limosa limosa islandica,* breeds almost exclusively in Iceland and winters in Ireland, Britain, France, Portugal, Spain and Morocco (Delany *et al*., 2009). This population has undergone a sustained population increase and range expansion over the last century (e.g. Gill *et al*., 2007; Gunnarsson *et al*., 2011).

Numbers of Black-tailed Godwit wintering in Ireland have shown a more or less sustained increase over time, with an overall average rate of 3.5% per year increase resulting in a 78% increase in numbers over a 22-year period. A similarly impressive increase has been reported in the UK where the index reached a record high in the 2016/17 season (Frost *et al*., 2018).

Black-tailed Godwits are distributed predominantly on estuaries along the east and south coasts, and also at a small selection of inland sites. They were recorded at 89 sites during the current period (101 sites during the period 2009/10 - 2015/16). At many of their coastal sites, they use both estuaries and nearby grasslands and flooded fields throughout the winter for feeding (Hutchinson & O'Halloran, 1994; Hayhow, 2009).

Seven sites supported numbers of international importance during the current period, half the number identified during the former period but likely simply due to the 1% international threshold increasing from 470 to 1,100 individuals in the intervening time. Of these sites, Dundalk Bay and Cork Harbour are now promoted above Little Brosna Callows in the top rankings. However the drop in five-year mean for the latter site may be a result of a lower count coverage during the current period, compared with the former period. Of note also is Seagrange Park, which supported numbers of international importance during the former period, but for which no data were available for the current period. Notable increases in five-year means are observed for Blackwater Estuary, Dublin Bay and Rahasane Turlough.

Twenty-three sites supported numbers of national importance during the current period based on the five-year mean, while seven of these sites recorded peak counts that exceeded the threshold for international importance. A notable increase in the five-year mean was recorded for Lough Swilly, possibly linked to an increase in count coverage during the period, while numbers at Tacumshin Lake increased fourfold. Conversely, the five-year mean at Blackwater Callows has declined substantially for this former internationally-ranked site despite relatively similar count coverage during both current and former periods. Of the sites no longer of significance, Lough Foyle (NI) and Ringabella Creek are notable for recording a much lower five-year mean for the current, compared with the previous period.

As noted previously, incomplete count coverage of the Shannon & Fergus Estuary in recent seasons precludes an accurate assessment of its status for Black-tailed Godwits using I-WeBS data. A recent survey of the estuarine system recorded a peak count of 3,440 individuals during September 2017 (MKOS, 2017) suggesting that this site still continues to support numbers of international importance.

**Table 56** Table showing sites supporting internationally and/ or nationally important numbers of Black-tailed Godwit ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of international importance** | | | | | | | | | | |
| Dundalk Bay | 5,167 | 2,631 | 3,381 | 3,157 | 4,647 | 3,749 | 3,606 | 3,708 | 4,647 | Oct, Mar |
| Cork Harbour | 1,339* | 2,415* | 2,955 | 2,770 | 2,681 | 3,299 | 3,048 | 2,951 | 3,299 | Sep |
| Little Brosna Callows | | | 4,150 | 254 | 380 | 3,423 | 150* | 2,052 | 4,150 | Nov |
| Wexford Harbour & Slobs | 1,900* | 2,493* | 3,100 | 410 | 2,321 | 1,475 | 1,926 | 1,846 | 3,100 | Nov |
| Blackwater Estuary | 509 | 407* | 378 | 525 | 815 | 634 | 5,150 | 1,500 | 5,150 | Jan |
| Dublin Bay | 1,449 | 1,375 | 927 | 1,362 | 1,768 | 873 | 2,185 | 1,423 | 2,185 | Mar |
| Rahasane Turlough | 500 | 100 | 600 | 250 | 1,700 | 2,000 | 2,500 | 1,410 | 2,500 | Oct, Nov |

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Lough Swilly | 198 | 522 | 742 | 1,500 | 786 | 915 | 1,529 | 1,094 | 1,529 | Mar |
| Clonakilty Bay [3] | 1,329 | 878 | 1,192 | 749 | 871 | 1,551 | 1,080 | 1,089 | 1,551 | Oct |
| Ballymacoda [3] | 572* | 398* | 1,404 | 629 | | 1,068 | 135* | 1,034 | 1,404 | Nov |
| Dungarvan Harbour [3] | 1,458 | 1,648 | 677 | 842 | 520 | 1,386 | 1,136 | 912 | 1,386 | Jan |
| Courtmacsherry Bay, Broadstrand Bay & Dunworley [3] | 654 | 693 | 807 | 763 | 677 | 434 | 696 | 675 | 807 | Dec |
| Tralee Bay, Lough Gill & Akeragh Lough | 949 | 840 | 1,408 | 1,300 | 230 | 6 | 83 | 605 | 1,408 | Dec |
| Tacumshin Lake | 808 | 183 | 760 | 707 | 860 | 80 | 380 | 557 | 860 | Mar |
| Inner Galway Bay | | 9 | 1,004 | 29 | 1,115 | | 470 | 524 | 1,115 | Jan |
| Bandon Estuary [1] | | | | | 493 | | | 493 | 493 | |
| Rogerstown Estuary [3] | 568 | 148 | 450 | 883 | 597 | 237 | 191 | 472 | 883 | Oct, Mar |
| Tramore Back Strand | 37* | 322 | 130 | 500 | 517 | 575 | | 431 | 575 | Dec, Jan |
| Lady's Island Lake [1] | 501 | 133 | 101 | 1096 | 356 | 360 | 102 | 403 | 1,096 | Mar |
| Boyne Estuary | 264 | 309 | 319 | 249 | 331 | 457 | 406 | 352 | 457 | Sep |
| Nanny Estuary & shore [1] | 10 | 232 | 183* | 90* | 276 | 105 | 545 | 309 | 545 | Sep |
| Cashen River & Estuary [1] | | | | | | 28 | 1,200 | 307 | 1,200 | Feb, Mar |
| North Wicklow Coastal Marshes [1] | 297 | 173 | 185 | 125* | 386 | 65* | 343 | 305 | 386 | |
| The Cull & Killag (Ballyteige) | 220 | 93 | 120 | 190 | 291 | 576 | 230 | 281 | 576 | Nov |
| Baldoyle Bay | 270 | | | | 389 | 139 | 296 | 275 | 389 | Sep, Dec, Mar |
| Bannow Bay | 5,653 | | 584 | | 188 | 190 | 60 | 256 | 584 | |
| Blackwater Callows [3] | 1451 | | 119 | 36 | 758 | 50 | | 241 | 758 | Nov |
| Broadmeadow (Malahide) Estuary | 478 | 258 | 296 | 355 | 206 | 167 | 121 | 229 | 355 | Sep, Mar |
| Stick Estuary (Oysterhaven) | 132 | 188 | 220 | 390 | 155 | 232 | 135 | 226 | 390 | |
| Shannon Callows [4] | | 220 | | 220 | | | | 220 | 220 | |
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| Ballycotton Shanagarry | 62 | 76* | 173 | 177 | 152 | 207 | 235 | 189 | 235 | Oct |
| Ringabella Creek | 201 | 99 | 86 | 132 | 174 | 158 | 149 | 140 | 174 | |
| Lough Foyle † | 113 | 213 | 122 | 66 | 318 | 97 | 50 | 131 | 318 | |
| Shannon & Fergus Estuary [4] | | 1,112 | | 121 | | | | 121 | 121 | |
| Shannon & Fergus Estuary | | 2500 | 150 | 400 | 13 | 4 | | 113 | 400 | |
| Waterford Harbour | 65 | | 115 | | | | | 58 | 115 | |

Sites that supported numbers of international importance during the former period but no data were available for the current period: Seagrange Park.

* Low-quality count not included in the calculation of the mean.

† Data provided by the UK (WeBS).

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

[3]Site demoted (from supporting numbers of international importance to numbers of national importance) since the 2001/02 to 2008/09 period.

[4]Aerial census data.

## 4.57 Bar-tailed Godwit *Limosa lapponica* Guilbneach stríocearrach

*lapponica,* N. Europe (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 1,500 | **Population change (%):** | |
| **All-Ireland threshold:** | 170 | 5 year: | -17.6 |
| **Population size (2011-2016):** | | 12 year: | +0.2 |
| All-Ireland: | 16,530 | 22 year: | +31.7 |
| ROI: | 13,385 | Historical: | -26.1 |
| Associated with ROI SPA network: | 12,303 | Average annual change: | +0.5 |

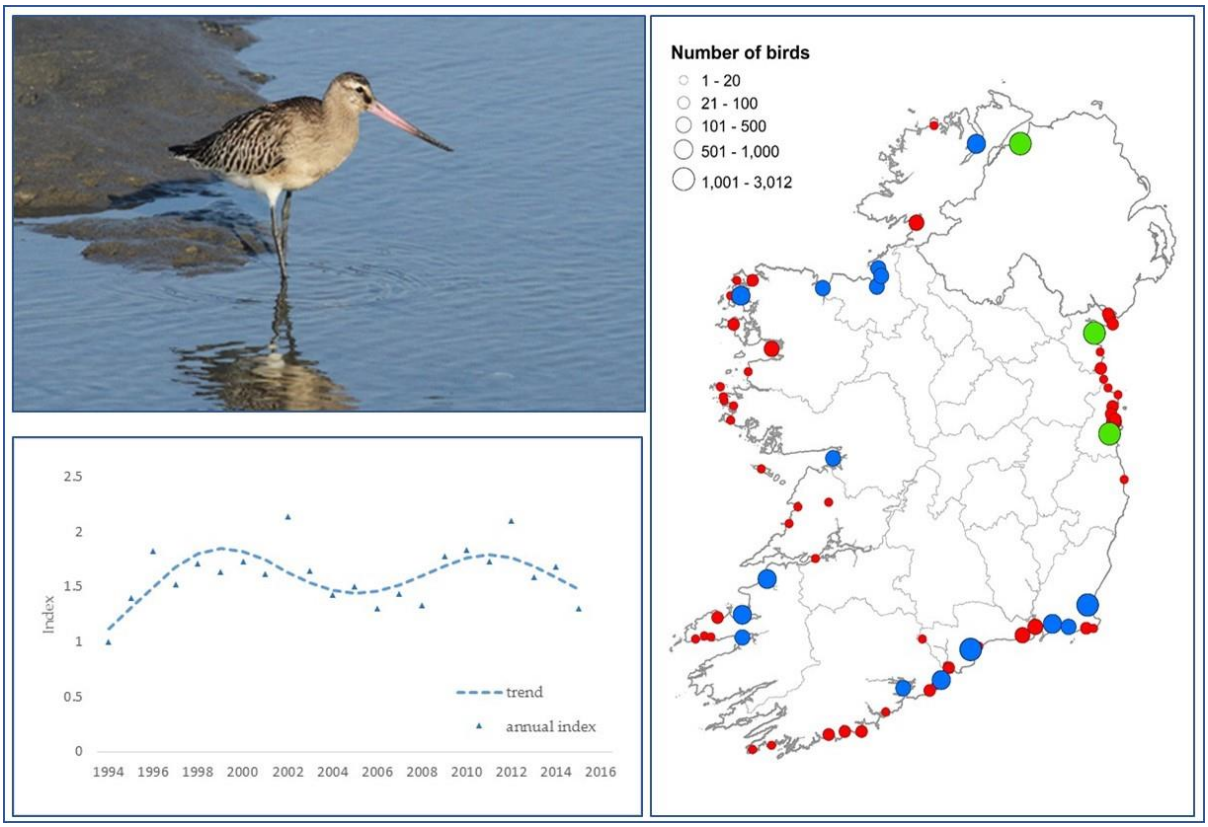



**Figure 58** Distribution map and graphed population trend for Bar-tailed Godwit. The distribution map illustrates sites supporting numbers of international importance (green circles), national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the annual indices (triangles) together with the smoothed trend (hatched line) (Photo: Dick Coombes).

Wetlands International (2018) recognises three populations of the Bar-tailed Godwit in Western Eurasia and Africa and the nominate population *lapponica,* which breeds in northern Europe and western Siberia (Delany *et al*., 2009), occurs during winter in Ireland. This flyway population is increasing (Wetlands International, 2018). Numbers of Bar-tailed Godwit have remained broadly stable throughout I-WeBS although a drop in numbers in recent seasons has resulted in a short-term (5-year) trend for decline. Numbers wintering in the UK exhibited a substantial decline during the 2000s (Musgrove *et al*., 2011) but have since recovered to near former levels (Frost *et al*., 2018).

Bar-tailed Godwit distribution in Ireland is entirely coastal, especially in sandy intertidal habitats and there is an east coast bias to their distribution. They were recorded at 75 sites during the current period (2011/12 – 2015-16). Numbers of international importance were recorded at three sites, namely Dundalk Bay, Lough Foyle (NI) and Dublin Bay, consistent with the top three ranked sites during the former period (2001/02 – 2008/09) and all three sites well exceeding the new larger 1% international threshold of 1,500.

Wexford Harbour & Slobs has been demoted from supporting numbers of international importance and now joins the list of 16 sites supporting numbers of national importance. Of these, Dungarvan Harbour, Bannow Bay, Blacksod & Tullaghan Bays and Tralee Bay, Lough Gill & Akeragh Lough remain the highest ranked sites with five-year means higher than the former period. Four sites are no longer of significance during the current period (Tramore Back Strand, Baldoyle Bay, Broadmeadow (Malahide) Estuary and Hick's Tower & Robswall) and all have substantial declines in their five-year means compared to the former period. As noted previously, incomplete count coverage of the Shannon & Fergus Estuary in recent seasons precludes an accurate assessment of its status for Bar-tailed Godwits, but as high numbers have been recorded previously from aerial surveys and ground-based surveys, this site may well continue to support numbers of national importance.

**Table 57** Table showing sites supporting internationally and/or nationally important numbers of Bar-tailed Godwit ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of international importance** | | | | | | | | | | |
| Dundalk Bay | 4,533 | 3,119 | 3,135 | 5,038 | 3,431 | 1,821 | 1,637 | 3,012 | 5,038 | Jan |
| Lough Foyle † | 1,501 | 1,473 | 1,801 | 2,611 | 2,087 | 2,675 | 2,521 | 2,339 | 2,675 | |
| Dublin Bay | 1,540 | 1,745 | 1,917 | 2,141 | 1,710 | 1,658 | 2,173 | 1,920 | 2,173 | Jan, Mar |
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Dungarvan Harbour | 1,023 | 1,000 | 962 | 996 | 1,151 | 1,127 | 1,321 | 1,111 | 1,321 | Dec |
| Wexford Harbour & Slobs [3] | 200* | 913* | 1,250 | 830 | 435 | 1,644 | 964 | 1,025 | 1,644 | Nov, Jan |
| Blacksod & Tullaghan Bays | 872 | 291* | 1,016 | 1,085 | 1,223 | 740 | 856 | 984 | 1,223 | Nov |
| Bannow Bay | 1,050 | | 276 | | 808 | 890 | 1,114 | 772 | 1,114 | Dec |
| Tralee Bay, Lough Gill & Akeragh Lough | 524 | 421 | 1,170 | 1,280 | 30 | 350 | 388 | 644 | 1,280 | Feb |
| Ballymacoda | 30* | 44* | 627 | 598 | | 547 | 50* | 591 | 627 | |
| Cashen River & Estuary [1] | | | 23 | | 36* | 122 | 1,600 | 582 | 1,600 | |
| Lough Swilly [1] | 406 | 399 | 871 | 683 | 418 | 443 | 256 | 534 | 871 | Feb |
| Inner Galway Bay [1] | 467 | 605 | 590 | 585 | 271 | 672 | 219 | 467 | 672 | Jan |
| Drumcliff Bay Estuary [1] | 863 | 168 | 496 | 589 | 507 | 359 | 137 | 418 | 589 | Feb |
| The Cull & Killag (Ballyteige) [1] | 233 | 158 | 161 | 397 | 430 | 521 | 90 | 320 | 521 | Jan |
| Castlemaine Harbour & Rossbehy [1] | 221* | 250 | 115 | 332 | 288 | 437 | 405 | 315 | 437 | |
| Ballysadare Bay [1] | 15 | 54 | 400 | 255 | 297 | 146 | 437 | 307 | 437 | Jan |
| Cork Harbour | 396* | 301* | 312 | 351 | 300 | 290 | 249 | 300 | 351 | Jan |
| Killala Bay | 15 | 241 | 131 | 324 | 263 | 196 | 310 | 245 | 324 | |

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Sligo Harbour | 438 | 220 | 277 | 232 | 150 | 260 | 303 | 244 | 303 | |
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| Tramore Back Strand | | 195 | 60 | 265 | 112 | 147 | | 146 | 265 | Jan, Feb |
| Baldoyle Bay | 105 | | | | 162 | 150 | 48 | 120 | 162 | Jan |
| Broadmeadow (Malahide) Estuary | 358 | 286 | 62 | 213 | 133 | 14 | 60 | 96 | 213 | Jan |
| Hick's Tower & Robswall | 400 | 55 | 64 | | | | | 64 | 64 | |

* Low-quality count not included in the calculation of the mean.

† Data provided by the UK (WeBS).

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

[3]Site demoted (from supporting numbers of international importance to numbers of national importance) since the 2001/02 to 2008/09 period.

## 4.58 Whimbrel *Numenius phaeopus* Crotach eanaigh

*islandicus,* Iceland, Faeroes, Scotland (br)

passage migrant

**International threshold:** 6,700

**Mean/ Peak (2011/12 – 2015/16)**: 97/170

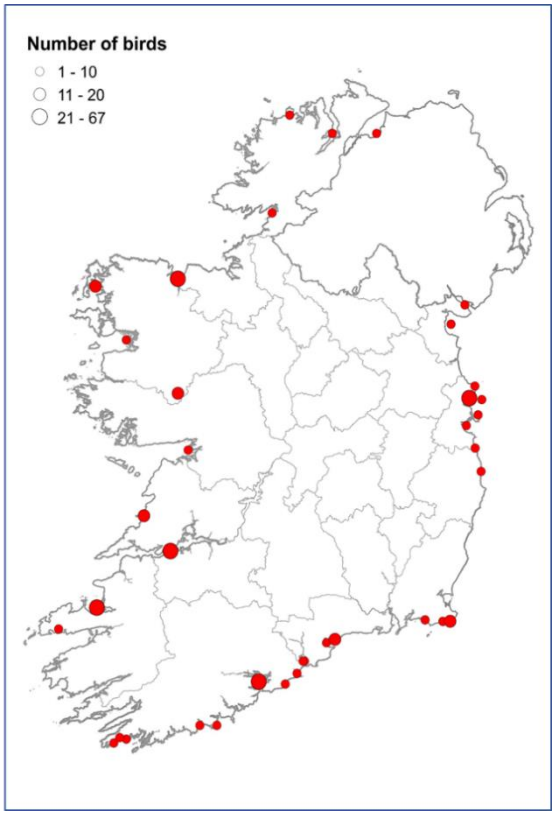



**Figure 59** Distribution map for Whimbrel showing peak counts (2011/12 – 2015/16) (Photo: Dick Coombes).

Five populations of Whimbrel are now recognised in Western Eurasia and Africa (Wetlands International, 2018). The population of the form *islandicus* breeds in Iceland and migrates to west Africa in autumn (Carneiro & Alves, 2017; Alves *et al*., 2016) and it is these birds that we see in Ireland as passage migrants. The size and trend of this population is uncertain (Delaney *et al*., 2009).

During the return migration to Iceland in spring, recent research has shown that Whimbrel do not always fly direct to Iceland and some may perform a stopover in Ireland, hence Whimbrel are observed more often in spring than autumn (Carneiro & Alves, 2017; Alves *et al*., 2016).

**Table 58** Table showing sites that supported Whimbrel in five or more seasons between 2009/10 and 2015/16 with the peak count recorded between 2011/12 – 2015/16.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 |
|---|---|---|---|---|---|---|---|---|---|
| Cork Harbour | 11 | 13 | 2 | 67 | 8 | 4 | 3 | 17 | 67 |
| Rogerstown Estuary | 2 | | 2 | 28 | 1 | 1 | 1 | 7 | 28 |
| Ballymacoda | 2 | 3 | 3 | 1 | | 2 | 1 | 2 | 3 |
| Blackwater Estuary | 1 | | 2 | 1 | 1 | 1 | 1 | 1 | 2 |
| Lower Blackwater River | | 1 | 1 | | 1 | 1 | 1 | 1 | 1 |

Other sites recorded in less than five seasons (peak count 2011/12 – 2015/16):

Ballybackagh (19), Ballycotton Shanagarry (1), Blacksod & Tullaghan Bays (13), Bray Harbour (1), Carlingford Lough (NI) (6), Clew Bay (9), Clonakilty Bay (3), Clonea Strand (14), Courtmacsherry Bay, Broadstrand Bay & Dunworley (1), Croagh Bay (1), Crookhaven (1), Dingle Harbour (2), Donegal Bay (1), Dublin Bay (4), Dundalk Bay (7), Dunfanaghy Estuary (8), Dungarvan Harbour (2), Inner Galway Bay (1), Ireland's Eye (1), Killala Bay (50), Lady's Island Lake (11), Lambay Island (10), Lough Foyle (NI) (1), Lough Swilly (2), Mid-Clare Coast (Mal Bay – Doonbeg Bay) (12), North Wicklow Coastal Marshes (2), Shannon & Fergus Estuary (52), Skerries Islands (2), Tacumshin Lake (1), The Cull & Killag (Ballyteige) (1), Toormore Bay (1), Tralee Bay, Lough Gill & Akeragh Lough (28).

## 4.59 Curlew *Numenius arquata* Crotach

*arquata,* Europe (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 7,600 | **Population change (%)** | |
| **All-Ireland threshold:** | 350 | 5 year: | -2.4 |
| **Population size (2011 – 2016):** | | 12 year: | -21.1 |
| All-Ireland: | 35,240 | 22 year: | -41.0 |
| ROI: | 28,300 | Historical: | -64.2 |
| Associated with ROI SPA network: | 15,408 | Average annual change: | -2.8 |

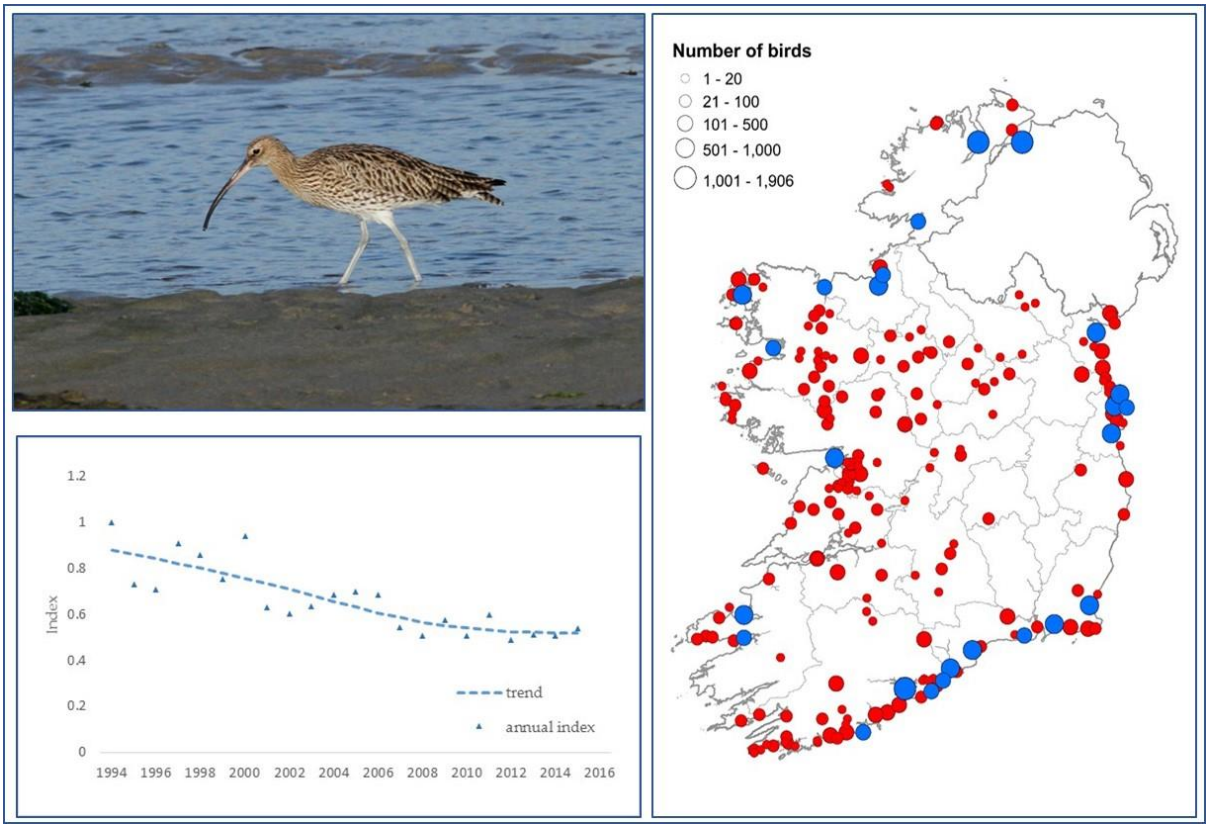



**Figure 60** Distribution map and graphed population trend for Curlew. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the annual indices (triangles) together with the smoothed trend (hatched line) (Photo: Dick Coombes).

Three populations of the Eurasian Curlew (hereafter Curlew) have been recognised, with birds overwintering in Ireland belonging to the nominate *arquata* race which breeds in Europe and winters mainly in Europe and western Africa (Delany *et al.*, 2009). This population is in decline (Wetlands International, 2018).

Declines in breeding populations of *N. a. arquata* have been recorded or are suspected to be occurring across much of the breeding range (Brown, 2015). While a 60% decline in breeding Curlew over the

last 25 years was estimated for the Republic of Ireland by the last Bird Atlas (2007-11 Bird Atlas unpublished data) (Balmer *et al*., 2013), a more recent national survey (2015-2017) recorded a total of 138 breeding pairs, representing a population decline of 96% in less than 30 years (O'Donoghue *et al*., 2019).

The numbers of Curlew wintering in Ireland have declined since the 1980s (Sheppard 1993, Crowe *et al*., 2008), and numbers in the Republic of Ireland have declined throughout I-WeBS by on average almost 3% per year. This decline has started to level off in recent seasons assessed however, which has resulted in the redcued rate of decline for the recent 5-year trend. In Britain, wintering numbers reportedly increased during the 1980s and 1990s but have shown a steady decline since the early 2000s, consistent with a similar decline since the mid-1990s in Northern Ireland (Calbrade *et al*., 2010; Frost *et al*., 2018).

Curlew are one of our most widespread wader species, occurring in a variety of wetland and non-wetland habitats, although largest numbers occur mainly on muddy estuaries and shores. A relatively large proportion of the national population also occur along non-estuarine coasts (Lewis *et al*., 2017).

Curlew were recorded at 220 sites during the period 2011/12 – 2015/16. Numbers of national importance were recorded at 25 sites; an increase of nearly double on the former period and due to a lowering of the 1% all-Ireland threshold from 550 to 350. Lough Foyle, Lough Swilly and Cork Harbour remain the top three-ranked sites in Ireland for this species; consistent with the former period (Boland & Crowe, 2012).

**Table 59** Table showing sites supporting nationally important numbers of Curlew ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Lough Foyle † | 1,834 | 1,656 | 2,106 | 1,763 | 2,097 | 1,902 | 1,661 | 1,906 | 2,106 | |
| Lough Swilly | 1,720 | 1,800 | 1,742 | 1,351 | 2,437 | 2,336 | 1,432 | 1,860 | 2,437 | Sep, Feb |
| Cork Harbour | 992* | 1,397* | 1,662 | 1,266 | 1,163 | 1,987 | 1,524 | 1,520 | 1,987 | Sep |
| Dublin Bay | 1,240 | 688 | 1,169 | 874 | 932 | 1,424 | 567 | 993 | 1,424 | |
| Wexford Harbour & Slobs | 440* | 409* | 561 | 629 | 305 | 1320 | 1,024 | 768 | 1,320 | Nov |
| Tralee Bay, Lough Gill & Akeragh Lough | 1,002 | 1,250 | 1,341 | 1,468 | 242 | 209 | 523 | 757 | 1,468 | Feb |
| Dundalk Bay | 842 | 1,079 | 796 | 1,105 | 707 | 349 | 607 | 713 | 1,105 | Oct, Feb |
| Blackwater Estuary | 435 | 891* | 466 | 605 | 1,072 | 598 | 701 | 688 | 1,072 | Sep |
| Rogerstown Estuary | 803 | 33 | 922 | 518 | 684 | 600 | 625 | 670 | 922 | Mar |
| Ballysadare Bay [1] | 408 | 446 | 501 | 552 | 774 | 444 | 836 | 621 | 836 | Jan |
| Inner Galway Bay | 843 | 690 | 672 | 409 | 578 | 615 | 744 | 604 | 744 | Nov |
| Bannow Bay | 824 | | 183 | | 1,016 | 307 | 812 | 580 | 1,016 | Jan |
| Blacksod & Tullaghan Bays [1] | 454 | 374* | 722 | 544 | 624 | 609 | 359 | 572 | 722 | |
| Dungarvan Harbour [1] | 659 | 763 | 447 | 391 | 861 | 564 | 591 | 571 | 861 | Feb |
| Skerries Islands [1] | | | | | 460 | | 550 | 505 | 550 | Feb |
| Castlemaine Harbour | 367* | 977 | 619 | 670 | 363 | 350 | 428 | 486 | 670 | Dec, Feb |

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| & Rossbehy [1] | | | | | | | | | | |
| Clew Bay [1] | 488 | 512 | 600 | 585 | 363 | 317 | 423 | 458 | 600 | Feb |
| Ballymacoda [1] | 145* | 393* | 508 | 367 | | 485 | 457* | 453 | 508 | Sep |
| Donegal Bay [1] | 396 | 392 | 486 | 485 | 409 | 447 | 393 | 444 | 486 | Oct |
| Courtmacsherry Bay, Broadstrand Bay & Dunworley | 250 | 270 | 535 | 375 | 422 | 423 | 410 | 433 | 535 | Sep, Feb |
| Sligo Harbour [1] | 480 | 355 | 468 | 410 | 577 | 256 | 366 | 415 | 577 | Jan |
| Ballycotton Shanagarry [1] | 288 | 153* | 476 | 406 | 370 | 404 | 394 | 410 | 476 | Feb |
| Killala Bay [1] | 51 | 342 | 548 | 279 | 331 | 368 | 517 | 409 | 548 | Jan |
| Tramore Back Strand [1] | 98* | 477 | 233 | 472 | 595 | 204 | | 376 | 595 | Jan, Feb |
| Lambay Island [1] | 200 | 100 | | | 350 | | 200* | 350 | 350 | |
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| Shannon & Fergus Estuary [4] | 595 | 476 | 222 | 438 | | | | 330 | 438 | |
| Blackwater Callows | 248 | | 62 | 97 | 400 | 333 | | 223 | 400 | Feb |
| Carlingford Lough † | | | 309 | 153 | 106 | 140 | 161 | 174 | 309 | |

* Low-quality count not included in the calculation of the mean.

† Data provided by the UK (WeBS).

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

[4]Aerial census data.

## 4.60 Common Sandpiper *Actitus hypoleucos* Gobadán coiteann

W. & Central Europe (br)

**International threshold:** 12,000

**Mean/ Peak (2011/12 – 2015/16)**: 24/42

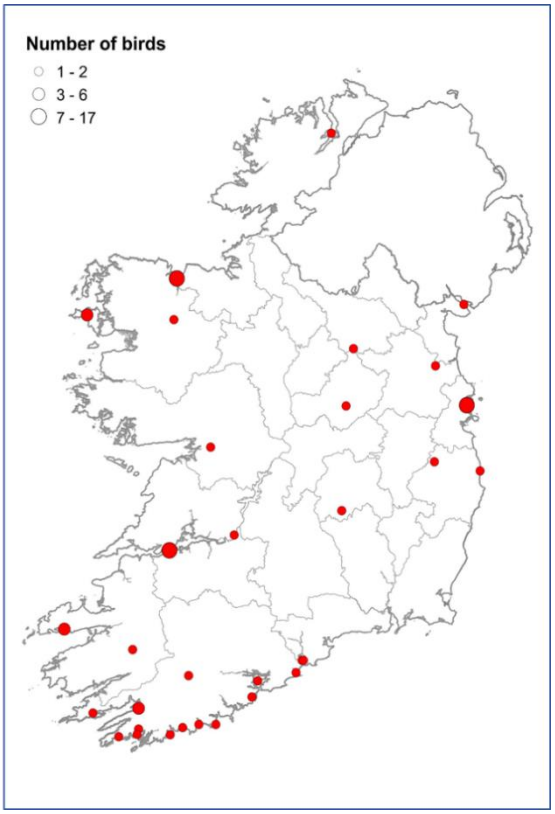



**Figure 61** Distribution map for Common Sandpiper showing peak counts (2011/12 – 2015/16) (Photo: Dick Coombes).

Two populations of the Common Sandpiper are recognised in western Eurasia. Birds breeding in western and central Europe winter in west Africa, while birds breeding in eastern Europe and western Siberia, winter mainly in eastern, central and southern Africa. These populations are considered to be declining/stable and stable respectively (Wetlands International, 2018).

Common Sandpiper are more typically a breeding migrant to Ireland with a very short breeding season (Wernham *et al*., 2002) and a distribution focused along the west coast (Balmer *et al*., 2013). The breeding population is believed to migrate to west Africa, south of the Sahara (Wernham *et al*., 2013).

During the non-breeding season, Ireland supports a small number of Common Sandpiper although their breeding origins are unknown. As a small number of breeding Common Sandpiper are known to remain in Britain to overwinter (Dougall *et al*., 2010), this may also occur in Ireland despite the species being highly migratory (del Hoyo *et al*., 1996).

Common Sandpiper were recorded at 41 sites between 2011/12 and 2015/16, and regularly recorded at three sites, Broadmeadow (Malahide) Estuary, An Trá Beg and Cork Harbour (Table 60). The peak count was 17 individuals recorded at Broadmeadow (Malahide Estuary) in February 2013.

**Table 60** Table showing sites that supported Common Sandpiper in five or more seasons between 2009/10 and 2015/16.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 |
|---|---|---|---|---|---|---|---|---|---|
| Broadmeadow (Malahide) Estuary | 6 | 4 | 1 | 17 | | 1 | | 4 | 17 |
| An Trá Beg | 1 | | 2 | 3 | | 2 | 2 | 2 | 3 |
| Cork Harbour | | 2 | 1 | | 1 | 1 | 1 | 1 | 1 |

Other sites recorded in less than five seasons (peak count 2011/12 – 2015/16):

Achill Island (6), Ballydehob Estuary (1), Ballymacoda (2), Bantry Bay (3), Bear Haven (1), Blackwater Estuary (2), Carlingford Lough (NI) (1), Clonakilty Bay (1), Courtmacsherry Bay, Broadstrand Bay & Dunworley (1), Durrow Curragh (River Erkina) (2), Inishcarra Reservoirs (2), Killala Bay (17), Lough Cullin (1), Lough Ennell (1), Lough Leane & Killarney Valley (1), Lough Sheelin (1), Lough Swilly (1), Lower Blackwater River (1), Myross Island & Inlet (Blind Harbour) (1), North Wicklow Coastal Marshes (2), Poulaphouca Reservoir (1), Rahasane Turlough (2), Ringabella Creek (1), River Boyne (1), River Shannon (Lower) (2), Rosbrin Cove (2), Rosscarbery (1), Shannon & Fergus Estuary (11), Toormore Bay (2).

## 4.61 Spotted Redshank *Tringa erythropus* Cosdeargán breac

N. Scandinavia & N.W. Russia (br)

Scarce winter visitor

**International threshold:** 1,000

**Mean/ Peak (2011/12 – 2015/16)**: 13/17

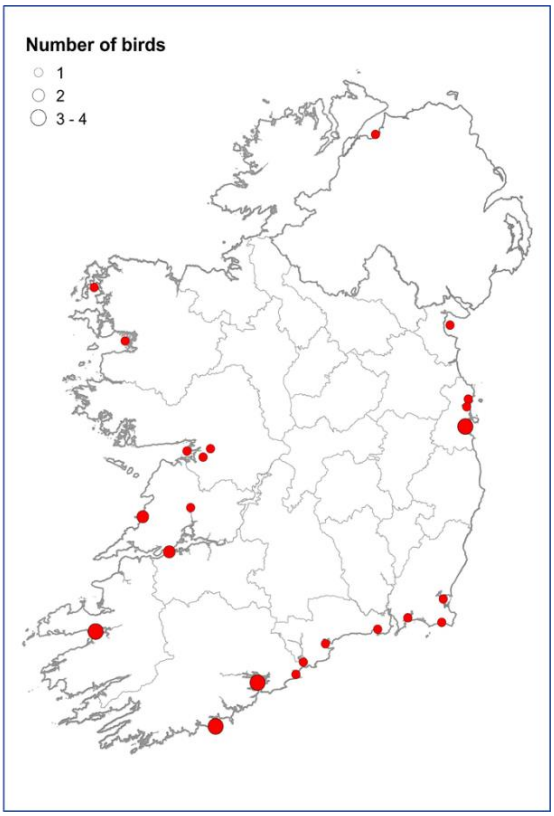



**Figure 62** Distribution map for Spotted Redshank showing peak counts (2011/12 – 2015/16) (Photo: Mark Carmody).

The Spotted Redshank is considered a scarce winter visitor to Ireland. The European breeding population of Spotted Redshank breeds in Fennoscandia and western Russia and migrates south to winter in west European coastal areas and west and central Africa (Delany *et al*., 2009). The trend of this population is uncertain (Wetlands International, 2018).

Small numbers occur in Ireland throughout the non-breeding period, and Spotted Redshank was recorded at 23 sites between 2011/12 and 2015/16, occurring with most regularity at Cork Harbour, Courtmacsherry Bay, Broadstrand Bay & Dunworley, Wexford Harbour & Slobs and Dundalk Bay (Table 61).

**Table 61** Table showing sites that supported Spotted Redshank in five or more seasons between 2009/10 and 2015/16.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 |
|---|---|---|---|---|---|---|---|---|---|
| Cork Harbour | | 2 | 4 | 4 | 2 | 3 | 2 | 4 | 4 |
| Courtmacsherry Bay, Broadstrand Bay & Dunworley | 1 | 1 | 2 | 3 | 2 | 1 | 1 | 2 | 3 |
| Wexford Harbour & Slobs | 3 | | 1 | | 1 | 1 | 1 | 1 | 3 |
| Dundalk Bay | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 |

Other sites recorded in less than five seasons (peak count 2011/12-2015/16):

Ballyallia Lake (1), Ballymacoda (1), Bannow Bay (1), Blacksod & Tullaghan Bays (1), Blackwater Estuary (1), Broadmeadow (Malahide) Estuary (1), Castlemaine Harbour & Rossbehy (4), Clew Bay (1), Dublin Bay (3), Dungarvan Harbour (1), Inner Galway Bay (6), Kiltiernan Turlough (1), Lough Foyle (NI) (1), Mid-Clare Coast (Mal Bay – Doonbeg Bay) (2), Rahasane Turlough (1), Rogerstown Estuary (1), Shannon & Fergus Estuary (2), Tacumshin Lake (1), Tramore Back Strand (1).

## 4.62 Greenshank *Tringa nebularia* Laidhrín glas

N. Europe (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 3,300 | **Population change (%):** | |
| **All-Ireland threshold:** | 20 | 5 year: | -1.5 |
| **Population size (2011 – 2016):** | | 12 year: | +11.5 |
| All-Ireland: | 1,320 | 22 year: | +83.9 |
| ROI: | 1,208 | Historical: | +182.3 |
| Associated with ROI SPA network: | 594 | Average annual change: | +2.7 |

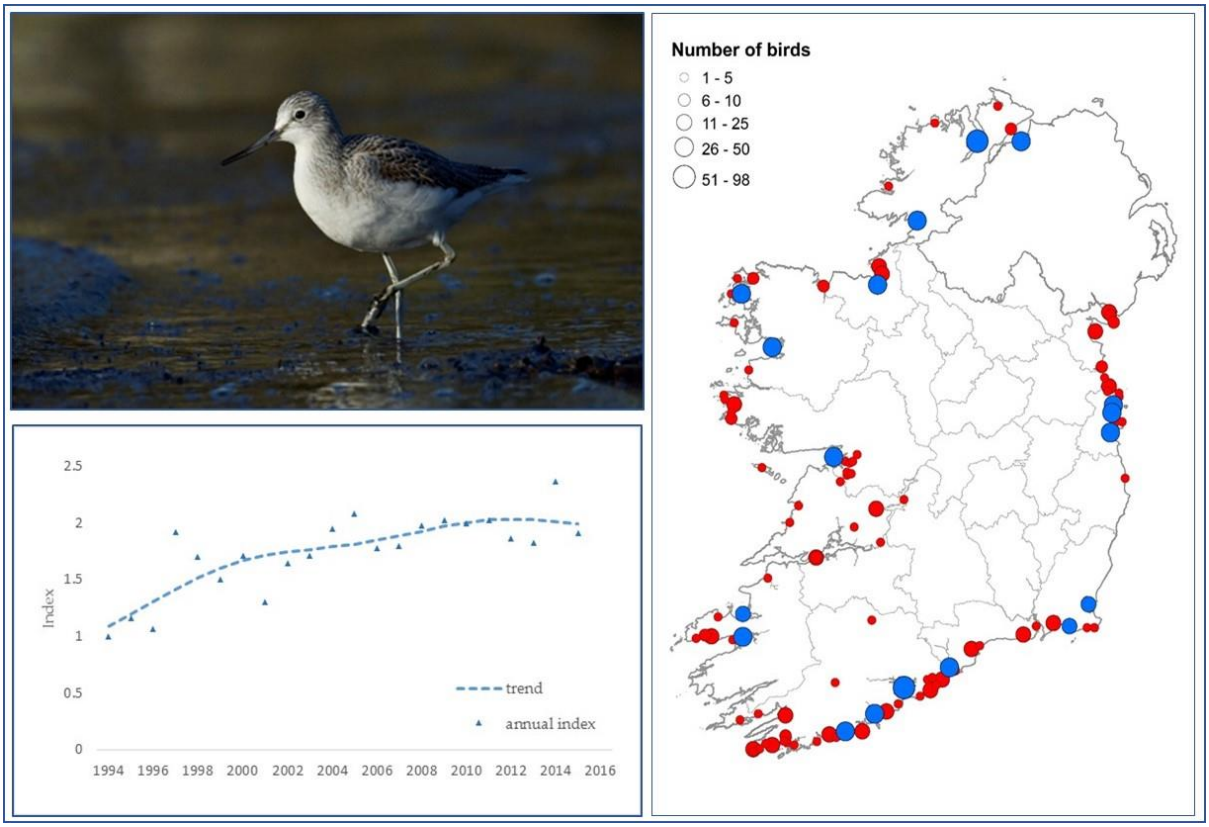



**Figure 63** Distribution map and graphed population trend for Greenshank. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the annual indices (triangles) together with the smoothed trend (hatched line) (Photo: Clive Timmons).

Two populations of Common Greenshank (hereafter Greenshank) are recognised in Western Eurasia and Africa and the Greenshank wintering in Ireland originate from the population that breeds across northern Europe, from Scotland east to Finland and the Baltic States (Delany *et al*., 2009). It has been suggested that many Greenshank wintering in Ireland originate from the Scottish breeding population (Nethersole-Thompson & Nethersole Thompson, 1979; Hutchinson, 1986), however the lack of ring-recoveries from the Scottish population means that this is not confirmed (Wernham *et al*., 2002). The population trend across the breeding range is thought to be stable/increasing (Wetlands International, 2018) and across the long-term, numbers wintering in Ireland have increased steadily (Figure 63),

consistent with an increasing trend observed in the UK (Frost *et al*., 2018). The increase in wintering numbers is at least partly attributed to an increasingly milder climate (e.g. Maclean *et al*., 2008; Pearce-Higgins *et al*., 2011).

Greenshank are almost exclusively distributed along the coast of Ireland and was recorded at 107 sites during the current period. A large proportion (>40%) of the national population has been estimated to occur along non-estuarine coast (Lewis *et al*., 2017). The most recent Bird Atlas (2007-2011) (Balmer *et al*., 2013) revealed the species at a few inland sites in Ireland, and in the UK, where an increase in abundance and the number of sites occupied is evident (Mendez *et al*., 2018).

Based on the most recent five-year mean, 18 sites supported numbers of national importance during the current period, including three sites that were not of significance during the former period (2001/02 and 2008/09). Cork Harbour and Lough Swilly supported the largest numbers, consistent with the former period. Indeed, with the exception of Castlemaine Harbour & Rossbehy, all top ten ranked sites shown in Table 62, were ranked within the top ten during the former period. All of these sites are Special Protection Areas with the exception of Clew Bay. Improved count coverage at Castlemaine Harbour & Rossbehy during the period assessed is most likely responsible for the improved ranking of this site.

**Table 62** Table showing sites supporting nationally important numbers of Greenshank ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Cork Harbour | 79* | 93* | 88 | 82 | 85 | 124 | 111 | 98 | 124 | Oct |
| Lough Swilly | 68 | 44 | 55 | 50 | 92 | 108 | 80 | 77 | 108 | Sep |
| Dublin Bay | 28 | 43 | 40 | 46 | 34 | 47 | 78 | 49 | 78 | |
| Rogerstown Estuary | 50 | 14 | 83 | 32 | 36 | 35 | 59 | 49 | 83 | Sep |
| Inner Galway Bay | 45 | 35 | 55 | 44 | 43 | 40 | 38 | 44 | 55 | Jan |
| Clew Bay | 35 | 39 | 35 | 44 | 53 | 42 | 44 | 44 | 53 | Oct, Nov |
| Broadmeadow (Malahide) Estuary | 29 | 26 | 26 | 43 | 64 | 30 | 34 | 39 | 64 | Sep |
| Castlemaine Harbour & Rossbehy [1] | 9* | 43 | 8 | 26 | 2 | 123 | 21 | 36 | 123 | Oct, Nov |
| Ballysadare Bay | 25 | 50 | 41 | 18 | 54 | 30 | 28 | 34 | 54 | Jan |
| Blackwater Estuary | 29 | 33* | 24 | 24 | 64 | 33 | 24 | 34 | 64 | Sep |
| Donegal Bay | 21 | 31 | 23 | 31 | 44 | 50 | 16 | 33 | 50 | Feb |
| Clonakilty Bay | 35 | 21 | 32 | 16 | 24 | 41 | 42 | 31 | 42 | Sep |
| Lough Foyle † | 47 | 31 | 23 | 35 | 23 | 29 | 43 | 31 | 43 | |
| Blacksod & Tullaghan Bays | 27 | 12* | 31 | 34 | 23 | 38 | 25 | 30 | 38 | Nov |
| Bandon Estuary [1] | | | | | 26 | | | 26 | 26 | |
| Wexford Harbour & Slobs [1] | 4* | 6* | 16 | 9 | 15 | 27 | 46 | 23 | 46 | Oct |
| Tralee Bay, Lough Gill & Akeragh Lough | 10 | 17 | 14 | 18 | 20 | 30 | 27 | 22 | 30 | Oct |
| The Cull & Killag | 19 | 5 | 15 | 19 | 23 | 17 | 24 | 20 | 24 | |

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| (Ballyteigue) | | | | | | | | | | |
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| Dungarvan Harbour | 22 | 22 | 13 | 16 | 16 | 31 | 21 | 19 | 31 | Feb |
| Carlingford Lough † | 14 | 15 | 29 | 8 | 15 | 14 | 23 | 18 | 29 | |
| Dundalk Bay | 23 | 17 | 11 | 21 | 14 | 17 | 21 | 17 | 21 | |
| Courtmacsherry Bay, Broadstrand Bay & Dunworley | 32 | 18 | 13 | 12 | 19 | 26 | 13 | 17 | 26 | Sep |
| Shannon & Fergus Estuary | 5 | 11 | 14 | 16 | 23 | 9 | 10 | 14 | 23 | Sep, Oct |
| Baldoyle Bay | 25 | | | | 6 | 11 | 3 | 7 | 11 | Oct, Nov, Dec |

* Low-quality count not included in the calculation of the mean.

† Data provided by the UK (WeBS).

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

## 4.63 Redshank *Tringa totanus* Cosdeargán

*robusta*, Iceland, Faeroe Islands (br)[1]

*totanus*, Britain & Ireland (br)[2]

| | | | |
|---|---|---|---|
| **International threshold:** | 2,400[1]/ 760[2] | **Population change (%):** | |
| **All-Ireland threshold:** | 240 | 5 year: | -2.5 |
| **Population size (2011 – 2016):** | | 12 year: | -13.7 |
| All-Ireland: | 23,800 | 22 year: | +11.2 |
| ROI: | 16,812 | Historical: | +2.3 |
| Associated with ROI SPA network: | 12,898 | Average annual change: | +0.7 |

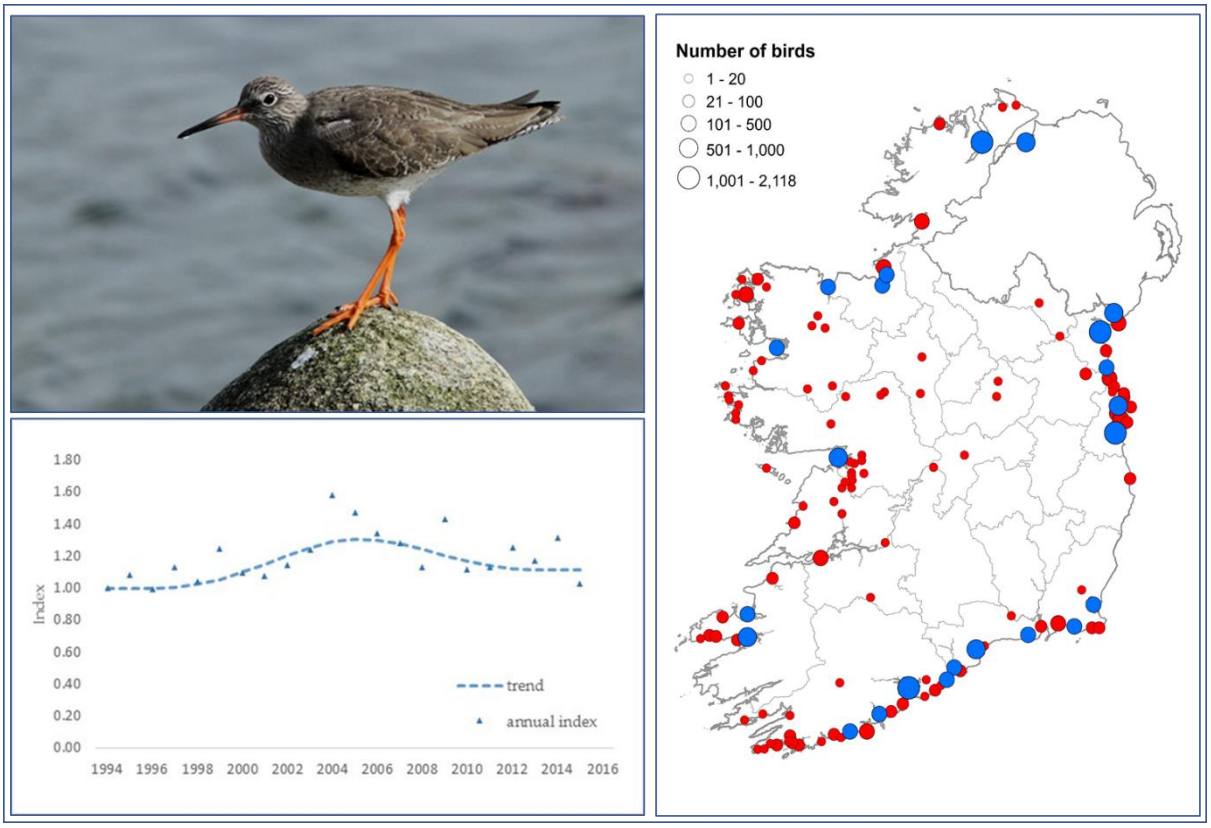



**Figure 64** Distribution map and graphed population trend for Redshank. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the annual indices (triangles) together with the smoothed trend (hatched line) (Photo: Dick Coombes).

Ireland's wintering Common Redshank (hereafter Redshank) are mainly from two populations, *robusta* which breeds in Iceland and the Faeroe Islands, and *totanus* which breeds in Britain and Ireland (Delany *et al.*, 2009). Both populations are exhibiting a decline at flyway level (Wetlands International, 2018). Note the proportion of *totanus* wintering in Ireland is unknown.

The overall numbers of this wader wintering in Ireland have shown an increasing trend since I-WeBS began, with the greatest increase observed during the earlier seasons, between 1994/95 and 2004/05. However numbers have dipped since the mid-2000s which has resulted in a short-term decline.

Redshank are predominantly coastally distributed in Ireland and were recorded at 133 sites during the current period (2011/12 – 2015/16). Despite the 1% international threshold for Redshank having decreased from 3,900 to 2,400 since the last period (Boland & Crowe, 2012), there are no longer any sites in the Republic of Ireland where numbers exceed the international threshold for this species. The three most important sites for Redshank are Lough Swilly, Dublin Bay and Dundalk Bay, consistent with the former period with just some small changes in their rank. However, while the five-year mean for Lough Swilly and Dublin Bay are relatively consistent with the former period, the current five-year mean for Dundalk Bay suggests numbers have declined at this site.

A total of 23 sites supported numbers of national importance based on the most recent five-year mean, including eight sites that were not of significant importance for Redshank during the former period (2001/02 and 2008/09). The two cross-border site, Lough Foyle and Carlingford Lough, both support Redshanks in numbers of national importance.

**Table 63** Table showing sites supporting nationally important numbers of Redshank ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Lough Swilly | 2,127 | 2,094 | 2,455 | 1,765 | 1,825 | 2,707 | 1,838 | 2,118 | 2,707 | Sep, Jan |
| Dublin Bay | 2,639 | 2,790 | 2,509 | 2,077 | 2,460 | 1,889 | 1,648 | 2,117 | 2,509 | Sep |
| Dundalk Bay | 4,532 | 1,745 | 1,317 | 1,995 | 1,485 | 1,588 | 2,057 | 1,688 | 2,057 | Oct, Mar |
| Cork Harbour | 1,365* | 1,673* | 1,352 | 1,739 | 1,436 | 1,906 | 1,542 | 1,595 | 1,906 | Oct |
| Rogerstown Estuary | 987 | 378 | 1,104 | 689 | 844 | 945 | 1,007 | 918 | 1,104 | |
| Dungarvan Harbour | 1,023 | 802 | 604 | 958 | 1,126 | 1,042 | 697 | 885 | 1,126 | Nov, Dec |
| Lough Foyle † | 1,305 | 495 | 1,001 | 624 | 1,068 | 735 | 890 | 864 | 1,068 | |
| Castlemaine Harbour & Rossbehy [1] | 383* | 651 | 413 | 854 | 817 | 968 | 766 | 764 | 968 | Oct |
| Carlingford Lough † | 801 | 608 | 919 | 659 | 481 | 685 | 570 | 663 | 919 | |
| Inner Galway Bay | 624 | 507 | 902 | 451 | 688 | 785 | 480 | 661 | 902 | Nov |
| Boyne Estuary | 590 | 453 | 277 | 411 | 501 | 486 | 552 | 445 | 552 | Sep, Mar |
| The Cull & Killag (Ballyteige) [1] | 308 | 182 | 334 | 297 | 448 | 516 | 518 | 423 | 518 | Sep |
| Ballysadare Bay | 97 | 206 | 208 | 154 | 306 | 880 | 277 | 365 | 880 | Feb |
| Wexford Harbour & Slobs [1] | 80* | 42* | 273 | 457 | 276 | 595 | 215 | 363 | 595 | Nov |
| Tralee Bay, Lough Gill & Akeragh Lough | 496 | 1039 | 605 | 666 | 166 | 103 | 183 | 345 | 666 | Nov |
| Blackwater | 431 | 583* | 338 | 435 | 331 | 288 | 265 | 331 | 435 | Oct |

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Estuary | | | | | | | | | | |
| Sligo Harbour | 376 | 131 | 103 | 340 | 309 | 695 | 184 | 326 | 695 | Feb |
| Clonakilty Bay [1] | 262 | 404 | 251 | 278 | 324 | 392 | 339 | 317 | 392 | Oct |
| Clew Bay | 314 | 477 | 345 | 296 | 258 | 257 | 310 | 293 | 345 | Oct |
| Tramore Back Strand [1] | 50* | 99 | 79 | 205* | 434 | 307 | | 273 | 434 | Feb |
| Ballymacoda [1] | 168* | 258* | 188 | 344 | | 284 | 252* | 272 | 344 | |
| Killala Bay [1] | 41 | 310 | 200 | 207 | 138 | 486 | 251 | 256 | 486 | Sep |
| Bandon Estuary [1] | | | | | 249 | | | 249 | 249 | |
| **Sites no longer supporting numbers of national importance** | | | | | | | | | | |
| Shannon & Fergus Estuary [4] | 174 | 290 | 230 | 245 | | | | 238 | 245 | |
| Broadmeadow (Malahide) Estuary | 459 | 364 | 87 | 374 | 171 | 130 | 363 | 225 | 374 | Oct |
| Baldoyle Bay | 284 | | | | 144 | 152 | 125 | 140 | 152 | Sep, Jan, Mar |

* Low-quality count not included in the calculation of the mean.

† Data provided by the UK (WeBS).

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

[4]Aerial census data.

## 4.64 Turnstone *Arenaria interpres* Piardálaí trá

*interpres*, N.E. Canada, Greenland (br)

| | | | |
|---|---|---|---|
| **International threshold:** | 1,400 | **Population change (%):** | |
| **All-Ireland threshold:** | 95 | 5 year: | -31.2 |
| **Population size (2011 – 2016):** | | 12 year: | -31.3 |
| All-Ireland | 9,480 | 22 year: | -21.0 |
| ROI | 6,296 | Historical: | - |
| Associated with ROI SPA network | 2,352 | Average annual change | +0.3 |

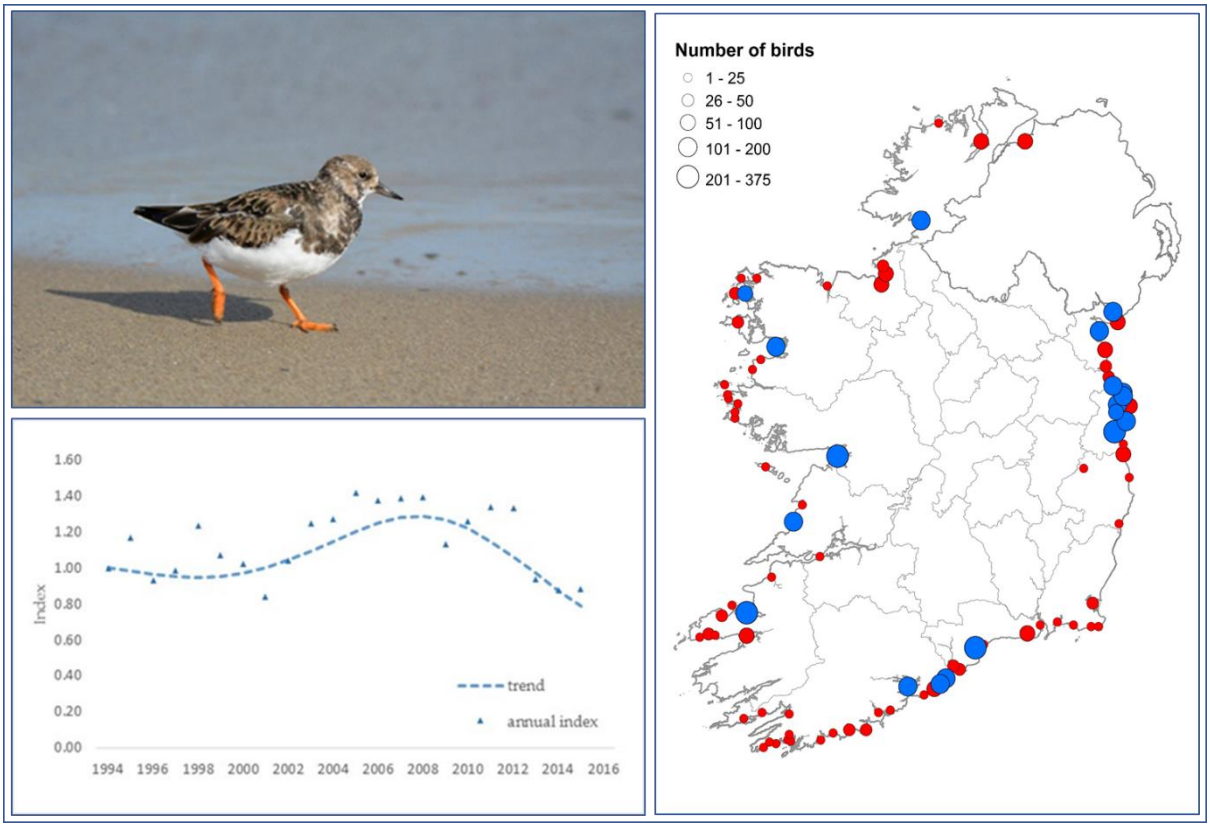



**Figure 65** Distribution map and graphed population trend for Turnstone. The distribution map illustrates sites supporting numbers of national (all-Ireland) importance (blue circles), and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles). The population trend (1994/95 to 2015/16) graph illustrates the annual indices (triangles) together with the smoothed trend (hatched line) (Photo: Brian Burke).

Ireland's wintering Ruddy Turnstone (hereafter Turnstone) originate from a nominate population breeding in north-eastern Canada and northern and eastern Greenland whose non-breeding range extends across coastal western Europe with some birds reaching west Africa. This population is thought to be increasing (Wetlands International, 2018). In Britain, Turnstone numbers have been in decline since the 1990s (Frost *et al*., 2018) while in Ireland, numbers exhibited an increase from the early 2000s but have declined markedly since 2008, with the index in 2015/16 being the lowest in the long-term dataset.

Turnstone are specialists of rocky shores and open coasts, and Lewis *et al*. (2017) estimated that 48% of birds occur in this habitat in Ireland. It is therefore important to note that the trends presented here are based solely on I-WeBS core counts which monitors only a small proportion of non-estuarine coastline, and these trends should therefore be treated with some caution.

Turnstone are entirely coastally distributed in Ireland and were recorded at 88 sites during the current period 2011/12 – 2015/16. A total of 19 sites supported numbers of national importance, including seven sites that were not of significant importance during the former period (2001/02 and 2008/09). Consistent with the former period, Dublin Bay, Inner Galway Bay, Tralee Bay, Lough Gill and Akeragh Lough and Dungarvan Harbour are the key sites in the Republic ranked by mean number, while the cross-border site Carlingford Lough continues to support numbers of national importance (Table 64).

**Table 64** Table showing sites supporting nationally important numbers of Turnstone ranked by the mean of peak counts between 2011/12 and 2015/16, and sites that are no longer of significant importance when compared with the 2001/02 – 2008/09 period.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites supporting numbers of national importance** | | | | | | | | | | |
| Dublin Bay | 329 | 392 | 349 | 227 | 466 | 250 | 584 | 375 | 584 | Oct |
| Inner Galway Bay | 222 | 246 | 393 | 393 | 183 | 182 | 155 | 261 | 393 | Nov, Jan |
| Tralee Bay, Lough Gill & Akeragh Lough | 202 | 315 | 213 | 265 | 93 | 385 | 162 | 224 | 385 | Jan |
| Dungarvan Harbour | 149 | 300 | 106 | 264 | 217 | 247 | 199 | 207 | 264 | Jan |
| Skerries Islands | | | | | 240 | | 140 | 190 | 240 | Jan, Feb |
| Rogerstown Estuary | 81 | 95 | 176 | 224 | 207 | 110 | 223 | 188 | 224 | Oct |
| Dundalk Bay | 178 | 105 | 107 | 221 | 259 | 120 | 207 | 183 | 259 | Dec |
| Skerries Coast | 84* | 184 | 173 | 134 | 198 | 183 | 211 | 180 | 211 | Oct, Nov |
| Mid-Clare Coast (Mal Bay - Doonbeg Bay) [1] | 203 | 57 | 60 | 287 | 88* | 116* | 163 | 170 | 287 | |
| Ballymacoda [1] | 25* | 73* | 182 | 148 | | 174 | 2* | 168 | 182 | Oct |
| Carlingford Lough † | 150 | 124 | 118 | 141 | 114 | 202 | 164 | 148 | 202 | |
| Cork Harbour | 136* | 176* | 207 | 177 | 104 | 89 | 109 | 137 | 207 | Feb |
| Clew Bay [1] | 99 | 122 | 177 | 162 | 75 | 77 | 91 | 116 | 177 | Nov, Dec |
| Delvin River - Hampton Cove [1] | | | | 133 | 141 | 22 | 166 | 116 | 166 | |
| Ireland's Eye [1] | | | | | 80 | 20* | 150 | 115 | 150 | |
| Ballycrenane/Warren [1] | | | | | | 148 | 78 | 113 | 148 | |
| Donegal Bay | 103 | 155 | 102 | 115 | 121 | 92 | 97 | 105 | 121 | Feb |

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Broadmeadow (Malahide) Estuary | 175 | 175 | 23 | 221 | 94 | 85 | 75 | 100 | 221 | Oct |
| Blacksod & Tullaghan Bays [1] | 153 | 102* | 151 | 103 | 71 | 101 | 57 | 97 | 151 | Nov |

Sites that supported numbers of national importance during the former period but no data were available for the current period: Ballagan Point – Cooley Point.

* Low-quality count not included in the calculation of the mean.

† Data provided by the UK (WeBS).

[1]Site not of significant importance during the former period, between 2001/02 and 2008/09.

## 4.65 Little Gull *Hydrocoloeus minutus* Sléibhín beag

C. & E. Europe (br)

Localised, largely pelagic in winter

**International threshold:** 1,000

**Mean/ Peak (2011/12 – 2015/16)**: 9/25

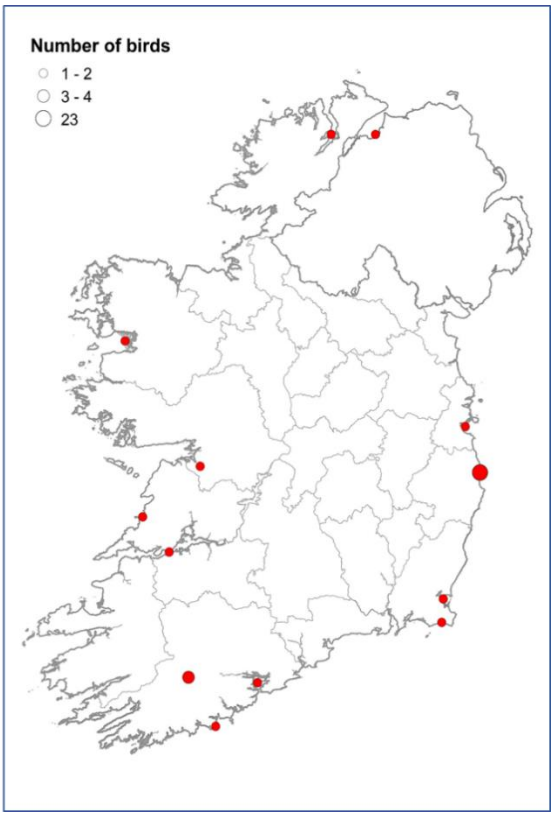



**Figure 66** Distribution map for Little Gull showing peak counts (2011/12 – 2015/16) (Photo: Brian Burke).

Little Gull from the north, east and central European breeding population (North Scandinavia, Baltic states, West Russia, Belarus, and Ukraine) occur in Irish waters during winter. Many are moving through on passage to wintering grounds in south-west Europe, the Mediterranean and north-west Africa, but small numbers over-winter here. It is not possible to determine a trend for Little Gull in Ireland based on I-WeBS data, due both to the fact that counting gulls is optional and that Little Gull are predominantly pelagic so often won't be seen from the coast. At-sea seabird surveys have recorded several hundred individuals along the shallow banks in the Irish Sea. Large numbers (tens to hundreds) can be recorded in bays along the Dublin and Wicklow coasts when stormy weather and easterly/south-easterly winds force them to take shelter ashore (e.g. Milne, 2004; R. Coombes *pers. comm.).*

Little Gull continue to be most frequently recorded by counters at North Wicklow Coastal Marshes, including a peak count of 23 birds in 2014/15. The species was recorded at a total of 13 sites during the current period (2011/12 – 2015/16).

**Table 65** Table showing sites that supported Little Gull in five or more seasons between 2009/10 and 2015/16.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 |
|---|---|---|---|---|---|---|---|---|---|
| North Wicklow Coastal Marshes | 4 | 2 | | | 3 | 23 | 2 | 6 | 23 |

Other sites recorded in less than five seasons (peak count):

Cahermore Turlough (1), Clew Bay (1), Cork Harbour (1), Courtmacsherry Bay, Broadstrand Bay & Dunworley (1), Dublin Bay (1), Inishcarra Reservoirs (4), Lough Foyle (NI) (1), Lough Swilly (1), Mid-Clare Coast (Mal Bay - Doonbeg Bay) (1), Shannon & Fergus Estuary (2), Tacumshin Lake (2), Tralee Bay, Wexford Harbour & Slobs (1).

## 4.66 Mediterranean Gull *Larus melanocephalus* Sléibhín meánmhuirí

W. Europe, Mediterranean & N.W. Africa (br)

**International threshold:** 2,400

**Mean/ Peak (2011/12 – 2015/16)**: 229/439

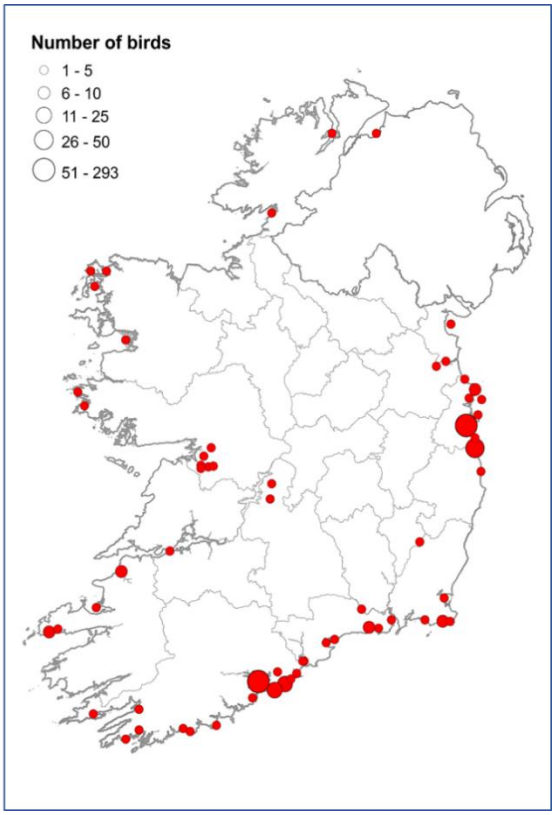



**Figure 67** Distribution map for Mediterranean Gull showing peak counts (2011/12 – 2015/16) (Photo: Brian Burke).

Just one population of Mediterranean Gull has been identified, with its breeding range stretching from Azerbaijan in the east, with significant numbers on the Black Sea, and scattered breeding through central, south and western Europe (Wetlands International, 2018). The population size and range has been expanding from the core around the Black Sea since the 1950s (Mitchell *et al*., 2004). Numbers in the UK have increased significantly since Seabird 2000, with *c*.800 pairs in recent years and an unexpectedly rapid increase to 1,736 pairs at the Langstone Harbour (Portsmouth) colony in 2018.

Mediterranean Gull began breeding in Ireland in 1995 and are now firmly established at Lady's Island Lake in Wexford, with a peak of 72 pairs breeding in 2016 (Daly *et al*., 2016) and 49 pairs in 2018 (Daly *et al*., 2018) and one or two pairs have been recorded breeding at gull colonies elsewhere in the midlands and west (Perry, 2013; Newton, 2017). Small numbers (total of eight pairs in 2018; Booth Jones & Wolsey, 2018) have bred annually at two to four sites in Northern Ireland in recent years.

As breeding numbers of Mediterranean Gull in this part of their range have increased in the last 20+ years, so too have their wintering numbers. They were recorded at 61 sites during the current period (2011/12 – 2015-16), in contrast to 44 sites during the former period. Although recording gulls during I-WeBS counts is optional, comparisons of sites that have consistently opted to do so illustrates the scale of the change over that period. Numbers in Dublin Bay have gone from a peak of seven individuals during the 1996/97-2000/01 period (Crowe, 2005) to 70 individuals between 2001/02 and

2008/09 (Boland & Crowe, 2012), with a maximum count of 293 in 2015/16. Similarly, mean numbers in Dublin Bay increased from 33 in the former period to 99 in the current period. Such increases are also evident at Cork Harbour, where a peak of seven birds was recorded between 1996/97 and 2000/01, which rose to a peak of 146 in the recent period, with a doubling of the mean numbers between the former and current period also. There is, therefore, undoubtedly an increase in wintering Mediterranean Gull in Ireland in recent years, although it is not possible to quantify the extent of that increase or number of the wintering population here. Mediterranean Gull were recorded at 60 during the current period, an increase from 45 sites during the former period.

**Table 66** Table showing sites that supported Mediterranean Gull in five or more seasons between 2009/10 and 2015/16.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 |
|---|---|---|---|---|---|---|---|---|---|
| Dublin Bay | 27 | 101 | 113 | 23 | 39 | 27 | 293 | 99 | 293 |
| Cork Harbour | 21 | 52 | 8 | 43 | 72 | 146 | 97 | 73 | 146 |
| Ballycotton Shanagarry | 1 | 1 | 3 | 14 | | | 1 | 4 | 14 |
| Broadhaven & Sruwadaccon Bays | 1 | | 4 | 1 | 1 | 4 | | 3 | 4 |
| Ventry Harbour | 10 | 3 | 1 | 2 | 9 | | 1 | 3 | 9 |
| Blacksod & Tullaghan Bays | 1 | 1 | 1 | 1 | 2 | 5 | | 2 | 5 |
| Lough Foyle† | 4 | 1 | 1 | 3 | 1 | 1 | 5 | 2 | 5 |
| Mannin Bay | 4 | 3 | 1 | 2 | 1 | 2 | 1 | 1 | 2 |
| North Wicklow Coastal Marshes | 1 | | 1 | 1 | 1 | 1 | 2 | 1 | 2 |

† Data provided by the UK (WeBS).

Other sites recorded in less than five seasons (peak count):

Ballinduff Turlough & Grassland (1), Ballybranagan (19), Ballycrenane/Warren (1), Ballydehob Estuary (2), Ballymacoda (5), Ballyshunnock Reservoir (10), Bantry Bay (1), Bear Haven (5), Blackwater Estuary (2), Bray Harbour (50), Caherglassaun Lough (1), Cahermore Turlough (1), Cashen River & Estuary (6), Clew Bay (1), Clonea Strand (1), Courtmacsherry Bay, Broadstrand Bay & Dunworley (2), Croagh Bay (1), Delvin River - Hampton Cove (1), Dingle Harbour (1), Donegal Bay (1), Dundalk Bay (1), Dungarvan Harbour (1), Ireland's Eye (1), Kilkeran Lake (2), Killineer Quarry, Drogheda (1), Kiltiernan Turlough (1), L. Coy - Blackrock - Bullaunagh – Ballylee (1), Lady's Island Lake (3), Lambay Island (1), Lough Aderry (1), Lough Eorna (1), Lough Swilly (1), Lower Blackwater River (1), Omey Strand (1), Pat Reddan's Lake (3), Rahasane Turlough (1), Ringabella Creek (1), River Boyne (5), River Suir Lower (1), Rogerstown Estuary (1), Rosscarbery (2), Shannon & Fergus Estuary (1), Skerries Coast (7), Slaney Upper (2), South Dublin Coastline (1), Tacumshin Lake (8), Termoncarragh & Annagh Marsh (1), The Cull & Killag (Ballyteige) (1), Tralee Bay, Lough Gill & Akeragh Lough (5), Tramore Back Strand (1), Waterford Harbour (1), Wexford Harbour & Slobs (1).

## 4.67 Black-headed Gull *Larus ridibundus* Sléibhín

W Europe (br)

**International threshold:** 31,000

**All-Ireland threshold:** -

**Mean/Peak (2011/12 – 2015/16)**: 48,821/57,892

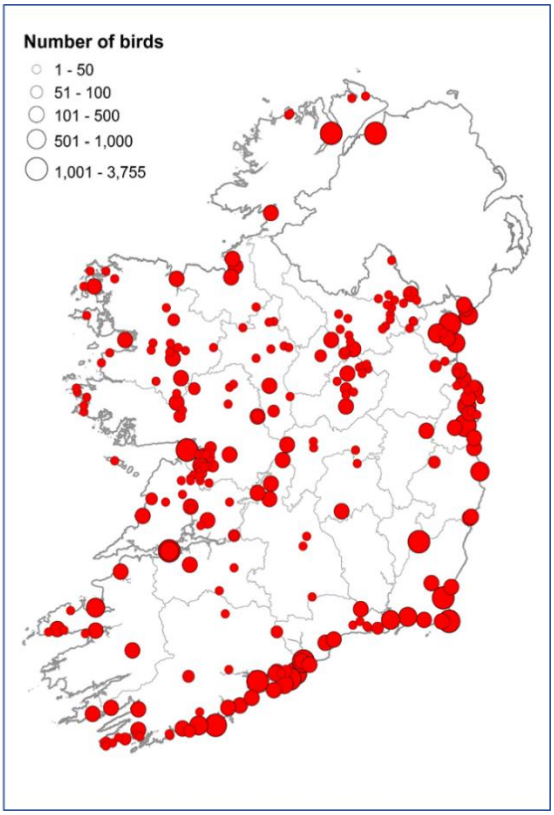



**Figure 68** Distribution map for Black-headed Gull showing all sites where recorded during the period between 2011/12 and 2015/16 (red circles) (Photo: Brian Burke).

The Black-headed Gull is our most widespread and numerous wintering gull, being found regularly on inland and coastal wetlands throughout the winter. As with other gull species, the fact that recording gulls is optional during I-WeBS counts means we cannot draw any firm conclusions as to their trends or total numbers here during the winter. In addition, this species often feeds away from wetland sites. Based on colour-ring resightings, the Irish wintering population is likely comprised of a mix of Irish-breeding birds as well as individuals from the UK, Scandinavia and Baltic states (Wernham *et al*., 2002). Most Irish-breeding Black-headed Gull remain here throughout the year but a small proportion of predominantly juvenile birds move south to Europe or north Africa (Wernham *et al*., 2002; McGreal, 2014). A survey of breeding gulls in Ireland was completed in 2018, the results of which are pending, that will provide an indication of the population trajectory since Seabird 2000. The North & West European population is thought to be stable or declining (Wetlands International, 2018) and the UK breeding population is thought to have increased in recent years (JNCC, 2018).

A comparison of totals between the current and former period (2004/05-2008/09) shows increases of over 25,000 on both the mean and peak figures of Black-headed Gull. The number of sites at which they were recorded has increased from 228 during the former period, to 247 for the current period (2011/12 – 2015/16) which is more likely a reflection of increased survey effort rather than increased

occurrence or expansion of range. Some 13 sites regularly supported over 1,000 individuals while four sites dropped below 1,000 individuals since the former period.

**Table 67** Table showing sites that supported Black-headed Gull in five or more seasons between 2009/10 and 2015/16 with an average 1,000 individuals or more between 2011/12 and 2015/16.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sites regularly supporting 1,000 individuals or more** | | | | | | | | | | |
| Lough Foyle † | 2,573 | 2,266 | 5,293 | 3,201 | 4,023 | 4,085 | 2,172 | 3,755 | 5,293 | |
| Cork Harbour | 466 | 5,357 | 3,790 | 1,814 | 3,275 | 4,289 | 3,878 | 3,409 | 4,289 | |
| Inner Galway Bay | 2,302 | 3,200 | 2,115 | 2,360 | 2,207 | 7,672 | 1,185 | 3,108 | 7,672 | Jan |
| Shannon & Fergus Estuary[4] | | | 1,377 | 4,661 | | | | 3,019 | 4,661 | |
| Lough Swilly | 1,301 | 1,426 | 3,078 | 1,840 | 3,044 | 2,883 | 1,345 | 2,438 | 3,078 | Feb |
| Dublin Bay | 2,234 | 2,356 | 2,269 | 1,622 | 2,649 | 1259 | 2,768 | 2,113 | 2,768 | Sep, Jan |
| Dundalk Bay | 5,066 | 4,362 | 5,047 | 1,148 | 2,041 | 1,295 | 680 | 2,042 | 5,047 | Sep |
| Lady's Island Lake | 1,100 | 1,584 | 1,270 | 1,266 | 2,478 | 1,040 | 2,425 | 1,696 | 2,478 | |
| Wexford Harbour & Slobs [1] | 3,992 | 705 | 2,455 | 1,156 | 632 | 1,780 | 1,239 | 1,452 | 2,455 | Feb |
| Courtmacsherry Bay, Broadstrand Bay & Dunworley | 1,222 | 1,134 | 1,379 | 654 | 1,421 | 2,090 | 1,318 | 1,372 | 2,,090 | Sep, Oct |
| Ballymacoda [1] | 115 | 629 | 880 | 1,920 | | 1,105 | 665* | 1,302 | 1,920 | Sep, Nov |
| Ballycrenane/Warren[1] | | | | | | 1,390 | 673 | 1,032 | 1,390 | |
| Blackwater Estuary | 4,442 | 350 | 2,300 | 762 | 817 | 705 | 530 | 1,023 | 2,300 | Sep, Jan |
| **Sites where numbers have dropped below 1,000 individuals since the former period** | | | | | | | | | | |
| Tralee Bay, Lough Gill & Akeragh Lough | 1,322 | 1,128 | 2,071 | 2,064 | 20 | 250 | 61 | 893 | 2,071 | |
| Broadmeadow (Malahide) Estuary | 930 | 565 | 845 | 368 | 659 | 571 | 496 | 588 | 659 | |
| River Slaney | 12 | | 117 | 291 | | | | 204 | 291 | |

Sites that supported numbers of national importance during the former period but no data were available for the current period: North Wexford Coast.

* Low-quality count not included in the calculation of the mean.

[1]Site not of significant importance during the former period (2001/02 and 2008/09), in that less than 1,000 individuals were recorded.

† Data provided by the UK (WeBS).

## 4.68 Common Gull *Larus canus* Faoileán bán

*canus*, N. W. & C Europe (br)

**International threshold:** 16,400

**All-Ireland threshold:** -

**Mean/ Peak (2011/12 – 2015/16)**: 21,438/30,216

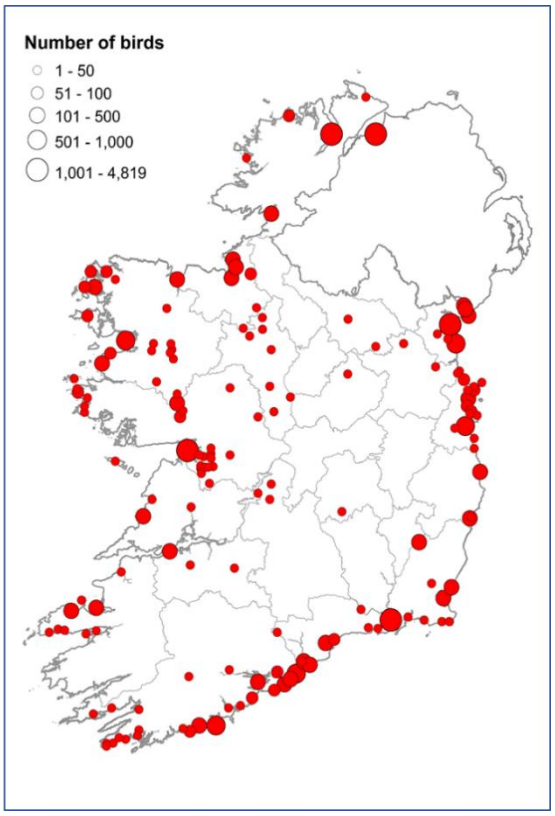



**Figure 69** Distribution map for Common Gull showing all sites where recorded during the period between 2011/12 and 2015/16 (red circles) (Photo: Brian Burke).

The nominate form of the Common Gull (or Mew Gull) breeds in Iceland, the Faroes, Ireland, Britain, France, Belgium, the Netherlands, Scandinavia and the Baltic States as far east as the White Sea. Common Gull are migrants or partial migrants, with birds from Scandinavia and Europe shifting to the south and west towards Ireland, Britain and the Bay of Biscay (Wernham *et al*., 2002). Irish-breeding Common Gull are partial migrants (Radford, 1960; Wernham *et al*., 2002; McGreal, 2014). Of 69 colour-ringed Common Gull resighted away from their Lough Mask colony, there were 148 resightings in total from 2006 to 2013, all of which occurred in Ireland and most of which were along the South Galway and Clare coastline (McGreal, 2014). This indicates a strong dispersal bias towards the south/southwest, in agreement with Radford (1960).

The All-Ireland breeding population was estimated at 1,600 pairs from 1999-2002 (Mitchell *et al*., 2004), and a peak of over 11,000 individuals was recorded during I-WeBS counts in the early 2000s (Boland & Crowe, 2012). This indicates a significant influx of individuals in the winter, particularly given the fact that recording gulls is optional in I-WeBS so the latter figure is undoubtedly an underestimate.

Common Gull were recorded at 160 sites during the current period (2011/12 – 2015/16). The five-year mean and peak numbers of Common Gull were over double those recorded for the former period. Although comparisons of I-WeBS gull numbers should be done with much caution, the fact that Common Gull were recorded at the same number of sites as in the former period, and Ballymacoda is the only 'new' site to hold >500 individuals on a regular basis, this suggests that there may be a true increase in wintering numbers in recent years. Winter gull roost surveys in the UK have found significant increases in the English wintering population (minimum estimates) in recent decades, with declines in Scotland, Wales and Northern Ireland.

**Table 68** Table showing sites that supported Common Gull in five or more seasons between 2009/10 and 2015/16 with an average 500 individuals or more between 2011/12 and 2015/16.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Lough Foyle † | 2,513 | 1,754 | 7,225 | 3,032 | 7,756 | 2,124 | 3,957 | 4,819 | 7,756 | |
| Lough Swilly | 3,087 | 1,048 | 3,899 | 1,879 | 1,363 | 1,141 | 938 | 1,844 | 3,899 | |
| Dundalk Bay | 3,208 | 1,496 | 2,855 | 2,276 | 1,193 | 894 | 752 | 1,594 | 2,855 | Jan |
| Waterford Harbour | | | 1,271 | | 1,200 | | | 1,236 | 1,271 | |
| Inner Galway Bay | 1,458 | 1,272 | 1,717 | 1,697 | 846 | 1,432 | 381 | 1,215 | 1,717 | Nov, Jan |
| Courtmacsherry Bay, Broadstrand Bay & Dunworley | 465 | 347 | 389 | 383 | 2,459 | 655 | 321 | 841 | 2,459 | Dec, Feb |
| Clew Bay | 205 | 1,067 | 621 | 370 | 723 | 785 | 435 | 587 | 785 | Feb |
| Ballymacoda [1] | 326 | 418 | 275 | 1,300 | | 344 | 387 | 577 | 1,300 | Sep |
| Dublin Bay | 579 | 573 | 410 | 309 | 985 | 272 | 890 | 573 | 985 | |
| Dunany Point – Clogher Head | 1,660 | 452 | 960 | 300 | 9* | | 386 | 549 | 960 | Sep |
| **Sites where numbers have dropped below 500 individuals since the former period** | | | | | | | | | | |
| Blackwater Estuary | 557 | 167 | 1,200 | 461 | 239 | 244 | 150 | 459 | 712 | Jan |
| Ballycotton Shanagarry | 1,204 | 293 | 375 | 210 | 531 | 258 | 168 | 308 | 531 | |

Sites that supported numbers of national importance during the former period but no data were available for the current period: Clogher Head – Baltray; North Wexford Coast.

* Low-quality count not included in the calculation of the mean.

[1]Site not of significant importance during the former period (2001/02 and 2008/09), in that less than 500 individuals were recorded.

† Data provided by the UK (WeBS).

## 4.69 Ring-billed Gull *Larus delawarensis* Faoileán bandghobach

N. America (br)

Scarce winter visitor

**International threshold:** 25,500

**Mean/ Peak (2011/12 – 2015/16):** 9/14

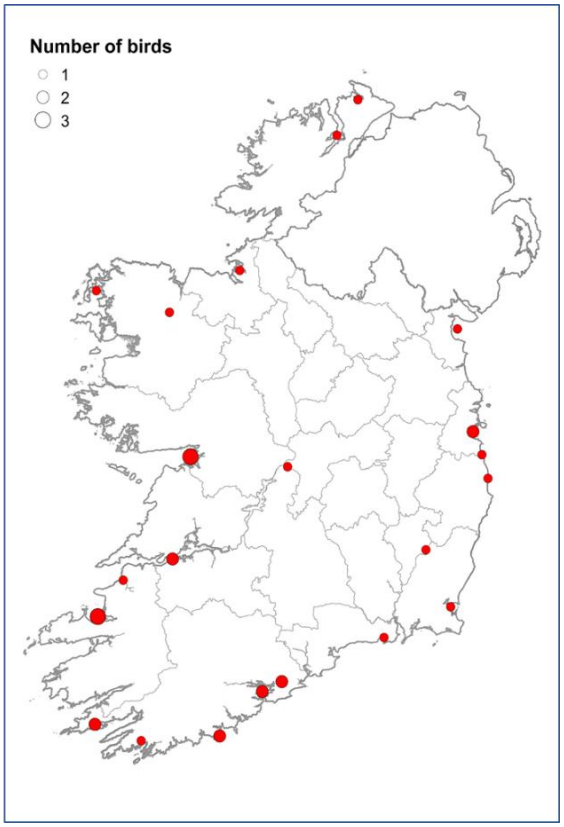



**Figure 70** Distribution map for Ring-billed Gull showing peak counts (2011/12 – 2015/16) (Photo: Brian Burke).

The Ring-billed Gull is common in North America and generally winters is in the southern United States and around the Gulf of Mexico. It is the most common Nearctic gull that appears as a vagrant in Europe. The first Ring-billed Gull in Ireland were recorded in 1979 in the Belmullet area, and they have since become a regular occurrence at many sites in the north and west throughout the winter. They were recorded at 22 I-WeBS sites during the current period, usually as single birds but occasionally as two or three individuals. As with other gulls, the fact that counts of this group aren't mandatory means they are undoubtedly under-recorded. As with other vagrant gulls they are also probably misidentified during counts to some extent and are liable to be confused with Common Gull at a distance or by unfamiliar counters. The number of sites and mean/peak numbers have not varied much throughout I-WeBS, with peak counts of 10-16 birds and records from 23-28 sites across the three periods analysed (Crowe, 2005; Boland & Crowe, 2012).

**Table 69** Table showing sites that supported Ring-billed Gull in five or more seasons between 2009/10 and 2015/16.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 |
|---|---|---|---|---|---|---|---|---|---|
| Inner Galway Bay | 1 | 1 | | 1 | 2 | 3 | 1 | 1 | 3 |
| Shannon & Fergus Estuary | 2 | 2 | 2 | 1 | 2 | 2 | | 1 | 2 |
| Cork Harbour | | 1 | 2 | | 1 | 1 | 1 | 1 | 2 |

Other sites recorded in less than five seasons (peak count):

Ballydehob Estuary (1), Bear Haven (2), Blacksod & Tullaghan Bays (1), Bray Harbour (1), Cashen River & Estuary (1), Courtmacsherry Bay, Broadstrand Bay & Dunworley (2), Dublin Bay (2), Dundalk Bay (1), Little Brosna Callows (1), Lough Aderry (1), Lough Conn (1), Lough Swilly (1), North Wicklow Coastal Marshes (1), Slaney Upper (1), Sligo Harbour (1), Tralee Bay, Lough Gill & Akeragh Lough (3), Tramore Back Strand (1), Trawbreaga Bay (1), Wexford Harbour & Slobs (1).

## 4.70 Lesser Black-backed Gull *Larus fuscus* Droimneach beag

*graellsii,* W. Europe (br)[1]

*intermedius* S. Scandinavia (br)[2]

**International threshold:** 5,500[1] / 6,300[2]

**All-Ireland threshold:** -

**Mean/ Peak (2011/12 – 2015/16)**: 11,842/ 20,832

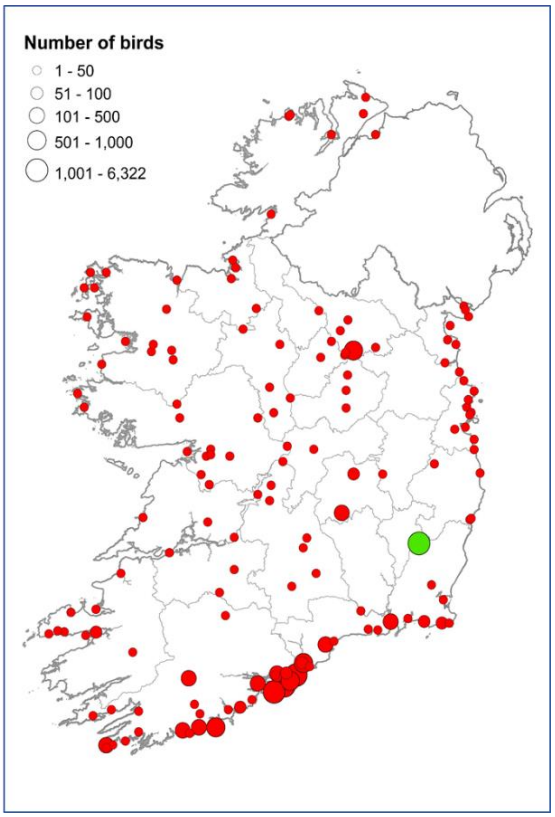



**Figure 71** Distribution map for Lesser Black-backed Gull showing sites of international importance (green circles) and all other sites where recorded during the period between 2011/12 and 2015/16 (red circles) (Photo: Brian Burke).

Lesser Black-backed Gull that winter in Ireland consist of both the *graellsii* (breeds in south-west Greenland, Iceland, the Faeroes, Ireland, Britain, Belgium and France) and *intermedius* (breeds in S Scandinavia and central Europe) subspecies (Wernham *et al*., 2002). The trend for non-breeding (wintering) birds in Ireland remains uncertain as counts of gulls during I-WeBS are optional.

Lesser Black-backed Gull were recorded at 147 sites during the current period and nine sites supported over 200 individuals (mean peak 2011/12- 2015/16), most of which recorded peak numbers in autumn and spring which will have consisted largely of roosting individuals gathering pre- and post-migration. Other sites recorded several hundred Lesser Black-backed Gull in mid-winter however, and wintering numbers have undoubtedly increased since the middle of the last century (Hutchinson, 1989). Ballymacoda, Ballycotton Shanagarry and the Blackwater Estuary remain key sites, although numbers at the latter have now dropped below the international threshold.

Lesser Black-backed Gull show a contraction in breeding and wintering range with age, with adult birds wintering closer to the breeding grounds than younger individuals (Ross-Smith *et al*., 2015). Colour ringing schemes throughout their range have provided information on the breeding, migratory and wintering behaviours of all three races of Lesser Black-backed Gull (Ross-Smith *et al*., 2015). Recent colour-ringing projects at Irish breeding colonies on Lough Mask, Lough Ree, at Cape Clear and in Dublin should provide similarly insightful information on the Irish population in the coming years.

**Table 70** Table showing sites that supported Lesser Black-backed Gull in five or more seasons between 2009/10 and 2015/16 with an average 200 individuals or more

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Slaney Upper[1] | | | | | | 6,322 | | 6,322 | 6,322 | |
| Ballymacoda | 15 | 367 | 2,100 | 6,100 | | 4,960 | 351* | 4,386 | 4,960 | Sep |
| Ballycotton Shanagarry | 2,250 | 619 | 1,035 | 3,037 | 1,277 | 2,210 | 773 | 1,666 | 3,037 | Sep, Jan |
| Blackwater Estuary [3] | 6,510 | 566 | 2,931 | 198 | 321 | 209 | 224 | 777 | 2,931 | Jan |
| Courtmacsherry Bay, Broadstrand Bay & Dunworley | 689 | 288 | 1,027 | 584 | 313 | 501 | 834 | 652 | 1,027 | Sep, Mar |
| Lissagriffin Lake [1] | | | 170 | 500 | 171 | 850 | 440 | 426 | 850 | Feb |
| Dungarvan Harbour [1] | 539 | 164 | 193 | 446 | 723 | 88 | 80 | 306 | 723 | Nov |
| Clonakilty Bay [1] | | 109 | 151 | 47 | 562 | 175 | 220 | 231 | 562 | Oct, Mar |
| Lough Aderry [1] | 520 | 10 | 58 | 135 | 364 | 315 | 194 | 213 | 364 | Oct |
| **Sites where numbers have dropped below 200 individuals since the former period** | | | | | | | | | | |
| Waterford Harbour | | | 29 | | 255 | | | 142 | 255 | |
| Dublin Bay | 19 | 195 | 28 | 25 | 5 | 20 | 16 | 19 | 28 | Feb |
| Cork Harbour | 60 | 299 | 72 | 167 | 120 | 142 | 162 | 133 | 167 | Sep |

* Low-quality count not included in the calculation of the mean.

[1]Site not of significant importance during the former period (2001/02 and 2008/09).

[3]Site demoted (from supporting numbers of international importance) since the 2001/02 to 2008/09 period.

## 4.71 Herring Gull *Larus argentatus* Faoileán scadán

*argentatus*, N. & N.W. Europe (br)

**International threshold:** 14,400

**All-Ireland threshold:** -

**Mean/ Peak (2011/12 – 2015/16)**: 11,524/ 13,959

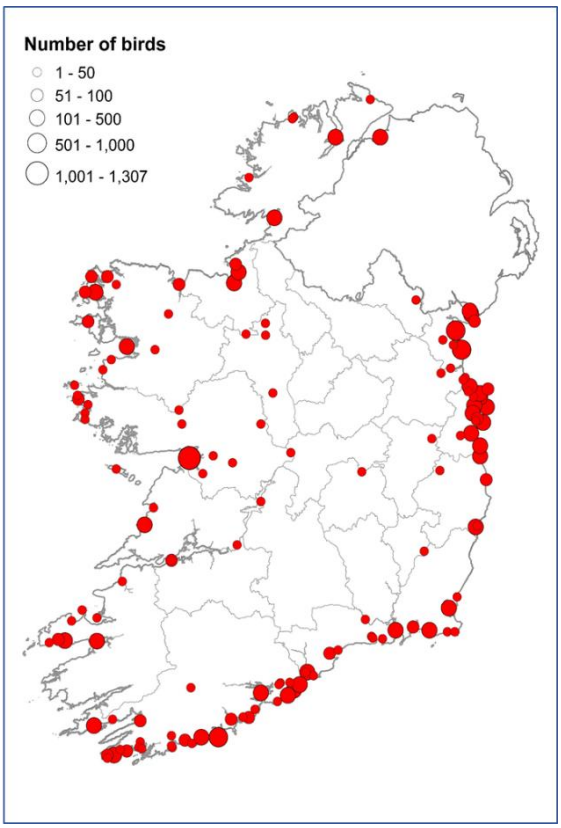



**Figure 72** Distribution map for Herring Gull showing all sites where recorded during the period between 2011/12 and 2015/16 (red circles) (Photo: Brian Burke).

The north-west European population of Herring Gull continues to decline (Wetlands International, 2018). As counts of gulls during I-WeBS are optional, it is not possible to ascertain the true numbers or trends of the wintering population. However, the mean and peak numbers of Herring Gull recorded each year during I-WeBS have increased since the previous period (Boland & Crowe, 2012), but this may be largely attributable to increased survey coverage. A census of breeding seabirds is currently ongoing in Ireland and the UK ('Seabirds Count' 2015-2018) which will provide an indication of how the breeding population is faring, although counting the increasing urban-nesting population is difficult. The majority of the Irish wintering population is thought to be comprised of Irish and UK birds (Wernham *et al*., 2002). The species remains red-listed as a breeding species in Ireland (Colhoun & Cummins, 2013) due to long-term declines in their breeding numbers and range.

Herring Gull are largely coastal in Ireland in both summer and winter, though recent rooftop-breeding at inland locations in Meath and Westmeath may lead to more regular use of inland sites during the winter in future years. Herring Gull were recorded at 138 sites during the current period. Of these, some 15 sites regularly supported over 200 Herring Gull from 2011/12 to 2015/16, with

another four supporting over 200 individuals in the years they were surveyed (refer to Table 71). Numbers counted vary significantly between months and years and it seems likely that even day to day variability in weather conditions, food availability and time of counts may influence the numbers recorded to some extent. Peak counts of over 2,000 Herring Gull were recorded at Inner Galway Bay, Dunany Point – Clogher Head, Courtmacsherry Bay, and Dundalk Bay. Numbers in Dublin Bay averaged almost 400 birds, with a peak count of over 500 in 2015/16. Over 3,000 Herring Gull were recorded during a targeted gull roost survey in Dublin Bay that winter (H. Boland *pers. comm.*), highlighting the inadequacy of I-WeBS core counts to accurately document true numbers and site importance for this species group.

**Table 71** Table showing sites that supported Herring Gull in five or more seasons between 2009/10 and 2015/16 with an average 200 individuals or more between 2011/12 and 2015/16

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Inner Galway Bay | 688 | 617 | 850 | 504 | 767 | 3,833 | 582 | 1,307 | 3,833 | Jan, Mar |
| Dunany Point - Clogher Head | 200 | 505 | 805 | 446 | 192* | | 1171 | 807 | 1,171 | Sep |
| Courtmacsherry Bay, Broadstrand Bay & Dunworley | 363 | 138 | 237 | 166 | 2,008 | 892 | 229 | 706 | 2,008 | Oct |
| Dundalk Bay | 743 | 888 | 2,300 | 329 | 407 | 204 | 269 | 702 | 2,300 | Oct |
| Bear Haven [1] | 745 | | 72 | 222* | 520 | 891 | 165 | 412 | 891 | Feb |
| Lambay Island | | | | | 300 | | 500 | 400 | 300 | |
| Lough Swilly | 272 | 195 | 201 | 193 | 148 | 613 | 833 | 398 | 833 | Nov |
| Dublin Bay | 422 | 341 | 519 | 135 | 490 | 261 | 538 | 389 | 538 | Sep |
| Skerries Coast [1] | 250 | 240 | 235 | 325 | 422 | 331 | 523 | 367 | 523 | Sep, Oct |
| Lough Foyle † | | | 511 | 481 | 271 | 139 | 425 | 365 | 511 | |
| Rogerstown Estuary | 596 | 45 | 739 | 189 | 237 | 300 | 332 | 359 | 739 | Mar |
| Donegal Bay [1] | 281 | 190 | 211 | 753 | 276 | 193 | 281 | 343 | 753 | Oct |
| Ballysadare Bay [1] | 117 | 258 | 200 | 25 | 176 | 505 | 641 | 309 | 641 | Feb |
| Sligo Harbour [1] | 168 | 221 | 215 | 137 | 252 | 383 | 210 | 239 | 383 | Feb |
| Ballycotton Shanagarry | 432 | 324 | 193 | 239 | 396 | 181 | 136 | 229 | 396 | Sep |
| **Other sites where species was recorded in less than five seasons but average number exceeded 200** | | | | | | | | | | |
| Ireland's Eye | | | | | 300 | 200* | 300 | 300 | 300 | |
| Skerries Islands | | | | | 250 | | 340 | 295 | 340 | Nov, Dec |
| Delvin River - Hampton Cove | | | | 220 | 410 | 239 | 296 | 291 | 410 | Oct |
| Ballycrenane/Warren | | | | | | 325 | 180 | 253 | 325 | |
| **Sites where numbers have dropped below 200 individuals since the former period** | | | | | | | | | | |
| Blackwater Estuary | | | 208 | 76 | 159 | 122 | 150 | 143 | 208 | Sep, Dec |
| Avoca River/Arklow | 187 | 145 | 139 | | | | 133 | 136 | 139 | |

Sites that supported numbers of national importance during the former period but no data were available for the current period: Clogher Head – Baltray.

* Low-quality count not included in the calculation of the mean.

[1]Site not of significant importance during the former period (2001/02 and 2008/09).

† Data provided by the UK (WeBS).

## 4.72 Iceland Gull *Larus glaucoides* Faoiléan íoslannach

*glaucoides*, S. & W. Greenland (br)

Scarce winter visitor

**International threshold:** 2,100

**Mean/ Peak (2011/12 – 2015/16)**: 23/ 63

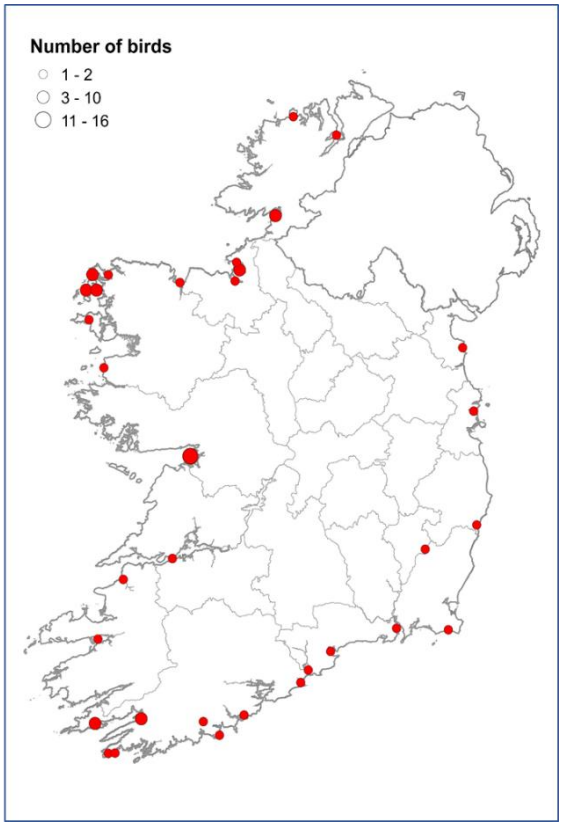



**Figure 73** Distribution map for Iceland Gull showing peak counts (2011/12 – 2015/16) (Photo: Dick Coombes).

The nominate *glaucoides* population of Iceland Gull breeds in south and west Greenland and winters in northern and western Europe. The population is thought to be stable, but reliable data is lacking (Wetlands International, 2018). Iceland Gull are recorded in varying numbers at coastal sites in Ireland each winter, usually juvenile birds. Inner Galway Bay and Killybegs Harbour are the most reliable sites to see them each winter, though the latter has not been counted for I-WeBS in recent years. They were recorded at 34 sites during the current period but are likely to be under-recorded by observers not familiar with the species. Smaller numbers of the conspecific North American Kumlien's (*L. g. kumlieni*) race are recorded in Ireland annually and individuals of the North American Thayer's (*L. g. thayeri*) race also are also recorded here on occasion (Hobbs, 2016; Fahy, 2013).

**Table 72** Table showing sites that supported Iceland Gull in five or more seasons between 2009/10 and 2015/16.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 |
|---|---|---|---|---|---|---|---|---|---|
| Inner Galway Bay | 1 | | 16 | | 2 | 1 | 1 | 4 | 16 |

Other sites recorded in less than five seasons (peak count 2011/12 – 2015/16):

Arklow Ponds (2), Avoca River/Arklow (1), Ballyconneely Bay (2), Ballymacoda (1), Ballysadare Bay (1), Bantry Bay (3), Bear Haven (8), Blacksod & Tullaghan Bays (1), Blackwater Estuary (1), Broadhaven & Sruwadaccon Bays (2), Broadmeadow (Malahide) Estuary (2), Cashen River & Estuary (2), Castlemaine Harbour & Rossbehy (1), Cork Harbour (1), Courtmacsherry Bay, Broadstrand Bay & Dunworley (1), Donegal Bay (8), Drumcliff Bay Estuary (3), Dungarvan Harbour (1), Killala Bay 1), Lissagriffin Lake (1), Lough Swilly (2), Madame Lake (Bateman's Lough) (1), Mid-Clare Coast (Mal Bay - Doonbeg Bay) (1), Mullet West (9), Shannon & Fergus Estuary (2), Slaney Upper (1), Sligo Harbour(3), South Mayo Coast (1), Stick Estuary (Oysterhaven) (1), Tacumshin Lake (1), Termoncarragh & Annagh Marsh (5), Waterford Harbour (1).

## 4.73 Glaucous Gull *Larus hyperboreus* Faoileán glas

*hyperboreus*, Svalbard & N. Russia (br)[1]

*leuceretes*, N. Canada to Greenland & Iceland (br)[2]

Scarce winter visitor

**International threshold:** 340[1]/3,100[2]

**Mean/ Peak (2011/12 – 2015/16)**: 20/34

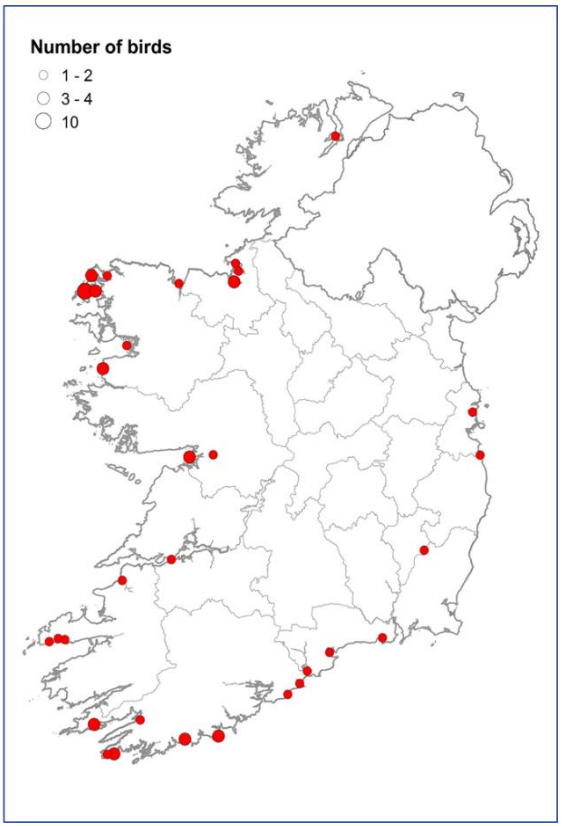



**Figure 74** Distribution map for Glaucous Gull showing peak counts (2011/12 – 2015/16) (Photo: Brian Burke).

Glaucous Gull breed at northly lattitudes to the east (*hyperboreus*, Svalbard & N Russia) and west (*leuceretes*, Canada, Greenland & Iceland) of Ireland (Wetlands International, 2018). They occur annually in Ireland, though in very small numbers. Both populations are deemed to be stable, with possible increases in the *hyperboreus* population and possible decreases in the *leuceretes* population, though quality of estimates and trends is poor and based on best estimate (Wetlands International, 2018). As with Iceland Gull, the majority of Glaucous Gull recorded in Ireland tend to be juveniles and their distribution here is almost completely coastal. Glaucous Gull were recorded at 33 sites during the current period, although are likely to be under recorded.

**Table 73** Table showing sites that supported Glaucous Gull in five or more seasons between 2009/10 and 2015/16.

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 |
|---|---|---|---|---|---|---|---|---|---|
| Termoncarragh & Annagh Marsh | 1 | | 4 | 3 | 4 | 1 | | 3 | 4 |
| Inner Galway Bay | | 1 | 3 | 2 | 1 | | 1 | 1 | 3 |

Other sites recorded in less than five seasons (peak count 2011/12-2015/16):

An Trá Beg (1), Ballycotton Shanagarry (2), Ballymacoda (1), Ballysadare Bay (4), Bear Haven (4), Blacksod & Tullaghan Bays (3), Blackwater Estuary (2), Bray Harbour (1), Broadhaven & Sruwadaccon Bays (2), Cashen River & Estuary (1), Clew Bay (2), Courtmacsherry Bay, Broadstrand Bay & Dunworley (3), Crookhaven (3), Dingle Harbour (1), Drumcliff Bay Estuary (1), Dungarvan Harbour (1), Killala Bay (1), Lissagriffin Lake (1), Lough Swilly (2), Mullet West (10), Rahasane Turlough (1), Rosscarbery (3), Shannon & Fergus Estuary (1), Slaney Upper (1), Sligo Harbour (1), South Mayo Coast (3), Tramore Back Strand (1), Ventry Harbour (1).

## 4.74 Great Black-backed Gull *Larus marinus* Droimneach mór

N. & W. Europe (br)

**International threshold:** 3,600

**All-Ireland threshold:** -

**Mean/ Peak (2011/12 – 2015/16)**: 4,010/4,392

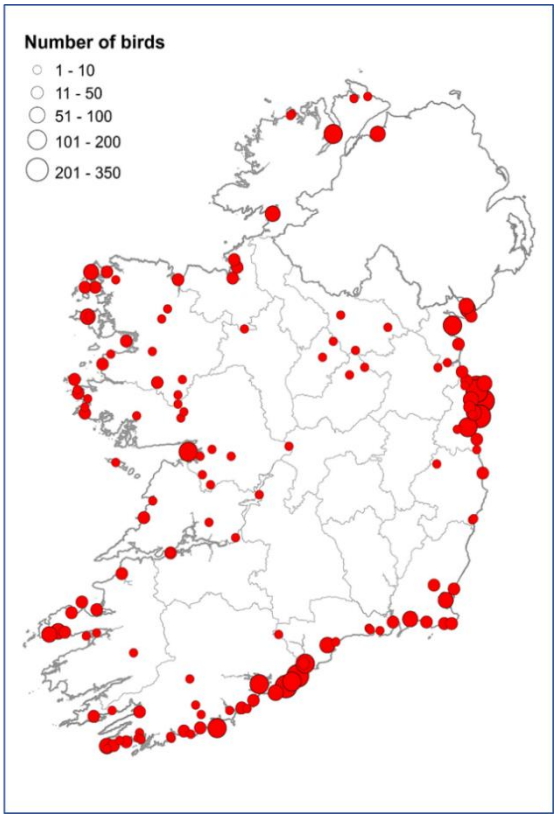



**Figure 75** Distribution map for Great Black-backed Gull showing sites that supported an average one or more bird between 2011/12 and 2015/16 (Photo: Brian Burke).

The north and west European population of Great Black-backed Gull is thought to be declining (Wetlands International, 2018). Counting of gulls during I-WeBS is optional, and it is therefore not possible to estimate their wintering numbers in Ireland with any degree of accuracy. Their breeding numbers are currently being assessed under the 'Seabirds Count (2015-2018) survey, which should give some indication as to the health of the wintering population here given that Irish- and UK-breeding birds are thought to comprise the majority of our wintering population (Wernham *et al.*, 2002). Great Black-backed Gull is currently amber-listed as a species of conservation concern in Ireland due to moderate declines in breeding numbers and range (Colhoun & Cummins, 2013). Their breeding and wintering distribution is predominantly coastal.

Great Black-backed Gull were recorded at 144 sites during the current period, an increase of 16 sites on the former period. Fifteen sites were identified as regularly supporting 100 or more wintering individuals from 2011/12 to 2015/16. The importance of sites such as Lambay Island, Skerries Islands, Ireland's Eye and Rockabill suggest that large numbers of Great Black-backed Gull use offshore islands for roosting and resting during the winter.

**Table 74** Table showing sites that supported Great Black-backed Gull in five or more seasons between 2009/10 and 2015/16 with an average 100 individuals or more between 2011/12 and 2015/16

| Site | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | Mean 11-15 | Peak 11-15 | Month(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| Lambay Island[1] | | | | | 300 | | 400 | 350 | 400 | |
| Ballymacoda[1] | 72 | 506 | 268 | 382 | | 315 | 127* | 322 | 382 | |
| Skerries Islands | | | | | 100 | | 370 | 235 | 370 | |
| Skerries Coast[1] | 179 | 133 | 210 | 263 | 128 | 145 | 403 | 230 | 403 | |
| Ballycotton Shanagarry | 400 | 381 | 118 | 172 | 264 | 425 | 165 | 229 | 425 | |
| Ireland's Eye | | | | | 250 | 200* | 200 | 225 | 250 | |
| Dublin Bay | 84 | 124 | 358 | 116 | 190 | 52 | 263 | 196 | 358 | Sep |
| Blackwater Estuary | 175 | 465 | 182 | 118 | 195 | 261 | 77 | 167 | 261 | Sep |
| Cork Harbour | 17 | 349 | 149 | 116 | 128 | 246 | 170 | 162 | 246 | Sep |
| Lough Swilly[1] | 57 | 64 | 93 | 13 | 58 | 328 | 260 | 150 | 328 | Nov |
| Dundalk Bay[1] | 188 | 209 | 164 | 141 | 109 | 125 | 113 | 130 | 164 | Sep |
| Ballycrenane/ Warren[1] | | | | | | 190 | 67 | 129 | 190 | |
| Inner Galway Bay[1] | 171 | 109 | 172 | 66 | 137 | 98 | 123 | 119 | 172 | Nov |
| Courtmacsherry Bay, Broadstrand Bay & Dunworley[1] | 136 | 181 | 85 | 110 | 208 | 102 | 78 | 117 | 208 | Oct |
| Rockabill[1] | | | | | 100 | | | 100 | 100 | |

[1]Site not of significant importance during the former period (2001/02 and 2008/09).

# 5 Pressures and threats facing wintering waterbirds

Waterbirds face significant challenges across their range throughout the year, with pressures on the breeding grounds, across their migratory route and on their wintering grounds; all potentially contributing to decreased productivity and increased mortality which ultimately leads to population declines. Here on the wintering grounds, waterbirds are sensitive to changes that may reduce the area of suitable habitat to feed or roost without disturbance, which may impact their ability to survive the winter or refuel in advance of their lengthy northward migration in the spring. Large-scale climatic changes are also causing shifts in distribution meaning birds from the north-east no longer need to travel as far as Ireland to find suitable wintering grounds. Discussed below are some of the most well understood and significant issues facing wintering waterbirds in Ireland. For the purpose of this discussion the term 'pressure' is used to describe issues negatively affecting waterbird populations currently and in the recent past, and the term 'threat' describes those issues likely to affect waterbirds populations negatively in the coming years. It is important to note that the current assessment relates to the time period as per reporting under Article 12 of the Birds Directive, in that pressures relate to the six-year period 2013-2018, while future threats relate to the future two reporting periods (i.e. within 12 years following the end of the current period). The pressures and threats are discussed in order of their significance (high, medium or low), although a wider and more general discussion is also provided under each heading. Pressures and threats are grouped as follows:

(1) Hunting and shooting; (2) Climate change; (3) Energy production and related infrastructure; (4) Recreational and other disturbance; (5) Fisheries and aquaculture; (6) Agriculture and forestry; (7) Urbanisation and development; (8) Water quality; (9) 'Others'. The final category 'others' is a discussion on other known potential pressures or threats facing waterbirds, but where the risks are either considered to be currently low, or where detailed information and data are lacking. Note, the list is not exhaustive, as there are likely many current and future threats which have not yet been identified.

The full list of high and medium pressures and threats identified for each species, including reference matierals, rationale and notes, is available in a supplementary file available at the following URL: www.npws.ie/publications/irish-wildlife-manuals. Only high and medium pressures and threats are included in this supplementary file, as per reporting requirements under Article 12 of the Birds Directive.

## 5.1 Hunting, shooting and incidental killing

### 5.1.1 Hunting and shooting

The E.U. Birds Directive recognises the legitimacy of hunting of wild birds as a form of sustainable use, providing social, cultural, economic and environmental benefits, and lists species on Annex II of the directive which may be hunted. The Wildlife (Wild Birds) (Open Seasons) Orders 1979 to 2012 specify the waterbird species which may be hunted in Ireland, when they may be legally hunted and, in some cases, exactly where hunting is permitted (https://www.npws.ie/legislation/irish-law/open-seasons-order / http://www.irishstatutebook.ie/eli/2012/si/402/made/en/print)

Two goose species (Canada and Greylag), ten ducks (Mallard, Teal, Gadwall, Wigeon, Pintail, Shoveler, Scaup, Tufted Duck, Pochard and Goldeneye) and four waders (Golden Plover, Snipe, Jack Snipe and Woodcock) may be legally hunted in the Republic of Ireland. The significance of hunting is considered to be a medium pressure/threat upon these species.

Most species with an open season may be taken throughout the state between 1st September and 31st January each winter, although there are greater restrictions around the hunting of Greylag and

Canada geese in Ireland, to ensure that birds from the resident feral/naturalised populations rather than the migratory populations are hunted.

In Iceland, an average of >40,000 Greylag geese were hunted each year from 2013 to 2016 (Environment and Food Agency of Iceland 2017), constituting a direct and high-level pressure and threat on the flyway population. This is therefore considered to be a high-level pressure/threat. Note that while Barnacle geese are hunted in both Greenland and Iceland, the numbers involved are low, so this is likely to only constitute a low-level pressure and threat.

In Ireland it is not mandatory to record and submit the number of birds harvested by an individual or group during the open season. It is therefore impossible to quantify the number of individuals of species listed on the Open Seasons Orders that are harvested each year. Such information would be beneficial to inform sustainable hunting practices. The medium threat categorisation above, should be considered as the best estimate.

The potential impacts of hunting are complex. For instance, hunting of certain wild bird species may be a source of compensatory mortality, reducing population density through harvesting which in turn benefits other individuals within the population. However, hunting may also be a source of additive mortality and have a direct negative impact on the numbers and conservation status of the target species, with the population unable to compensate for the removal of individuals through increased survival rates or higher reproductive output. In addition to the direct mortality of individuals, legal hunting is a source of unquantifiable disturbance which may have a negative impact on flocks and populations of quarry and non-quarry species through energy loss and an inability to meet nutritional needs. The potential for these indirect impacts underscores the importance of having a network of wildfowl sanctuaries where flocks that are flushed from one site can rest and feed at another site nearby without the risk of further shooting disturbance.

### 5.1.2 Illegal shooting and killing

An entirely separate issue to the above is the intentional illegal shooting and killing of species not on the quarry list, although this is impossible to quantify accurately. Hunting of Greenland White-fronted geese is illegal in Ireland, but a small number of poaching incidents have come to light in recent years, and many incidents are likely to go unnoticed and unreported. A similar ban is in place in Iceland but over 1,000 Greenland White-fronted geese are known to have been mistakenly shot during the previous reporting period (Stroud *et al*., 2012). Given the declines this species has undergone in Ireland in recent decades, additional mortality of birds constitutes a medium-level threat to their wintering numbers and range in Ireland.

Although shooting of Greenland White-fronts is generally the result of misidentification or poaching, illegal shooting in Ireland is often the result of conflict. Perceived conflicts between fishermen and Cormorants means this species is illegally persecuted in many parts of the country, despite evidence that their impact on salmonids is minimal (Tierney *et al*., 2011) and that their winter population trend in Ireland is negative in the short (-5%) and medium term (-28%). Any increase in the illegal killing of Cormorants could constitute a medium-level threat to the population in the coming years, with the potential for localised loss of the species at specific wetland sites. In some areas, birds are suspected to have been illegally killed due to conflicts such as agricultural impacts from geese (Brent, Barnacle, White-front, Pink-foot) and Whooper Swans. Such cases are likely to be limited in number and distribution, although cases are often difficult to substantiate or quantify.

Some-cases of illegal shooting of Grey Herons are known to have occurred in recent years (e.g. NPWS, 2013), the motivations behind which are not clear. Although cases of illegal shooting of waterbird species in Ireland are undoubtedly largely under-recorded, it is suggested that, at current levels of persecution they are unlikely to impact the conservation status of the respective species (i.e. low-level pressure). Any increase in the intensity or area of illegal shooting would be cause for significant concern, however.

### 5.1.3 Poisoning through lead gunshot and angling weights

In Europe, it is estimated that three million waterbirds suffer sub-lethal effects and a further one million die annually as a result of lead gunshot ingestion (Andreotti *et al.*, 2017). Studies in Europe have found high levels of lead toxicity and/or mortality when examining lead toxicity in swans (e.g. Newth *et al*., 2016), geese (e.g. Mudge, 1983) and both dabbling and diving ducks (e.g. Pain, 1990; Mateo *et al*., 1998), although levels can vary considerably between species within those groups and again depending on the site in question. Newth *et al*. (2013) found that lead poisoning continued to affect a wide range of British waterbirds long after legal restrictions were introduced, noting that lead may persist and accumulate in the environment for tens or hundreds of years and remain accessible to feeding waterbirds long after deposition (Rooney *et al*., 2007). Pain *et al.* (2015) estimated that in the UK 50,000 to 100,000 wildfowl (*c.* 1.5 to 3% of the wintering wildfowl population) die each winter as a direct result of lead poisoning. A recent report (Lead Ammunition Group, 2018), estimated that a further 150,000 to 300,000 wildfowl in the UK may suffer sub-lethal poisoning annually from lead shot ingestion.

In response to the risk of poisoning of waterbirds from the ingestion of lead gunshot and angling weights, a number of countries introduced legislation restricting or banning their use (Newth *et al.*, 2013). The UN Convention on Migratory species, to which Ireland is party, also adopted a resolution calling for all Parties to phase out lead ammunition across all habitats by November 2017. In Ireland, there are currently no restrictions on lead ammunition use, however, and there has been little study on the threat of lead poisoning to date. O'Halloran *et al*. (1991) investigated lead toxicity levels in Irish Mute Swans and found that almost 70% of dead birds examined died directly from lead poisoning, and others are likely to have died due to sub-lethal effects resulting in collisions. At some sites, spent gunshot was the source of lead poisoning, but at others it was discarded anglers' weights. Three Whooper Swans were also found to have died from lead poisoning as part of the study (O'Halloran *et al*., 1991). While O'Connell *et al.* (2009) reported a marked decrease in Mute Swan blood lead levels in Co. Cork from 1983 to 2006, they also determined that a small percentage of the study population still had significantly elevated lead levels, likely resulting in sublethal effects.

The extent of lead pollution and risk to waterbirds is likely to be site-specific, dependent upon both the level of hunting and fishing and the number of waterbirds aggregated at the site. This risk may be lower in Ireland compared to elsewhere Europe given the lower densities of anglers and shooters in Ireland (e.g., see www.face.eu/members/). Thus, given the limited available information, the current pressure and predicted threat of lead poisoning from gunshot and angling weights to wildfowl in Ireland was identified as of low impact. However, further investigation is required in Ireland to assess the likely true impact and risk.

### 5.1.4 Bycatch

The incidental killing of seabirds in gillnets, trammel nets and other fishing gear has long been known as a problem across much of the world. There are no data as to the extent that this issue is likely to be affecting Irish birds. In Irish waters, the highest densities of static nets that may be cause for concern for birds are off the south-coast (Gerritsen & Lordan, 2014). Zydelis *et al*. (2013) reviewed the feeding ecology of seabird species to determine their susceptibility to bycatch in gillnets. Based on their review, the species frequently recorded during I-WeBS counts that are likely to dominate bycatch composition are sea ducks including Common Scoter, Velvet Scoter, Long-tailed Duck and Eider. Diver and Grebe species in coastal and offshore waters are also considered susceptible to bycatch (Zydelis *et al*., 2013). Gulls are also occasionally netted as bycatch.

## 5.2 Climate change

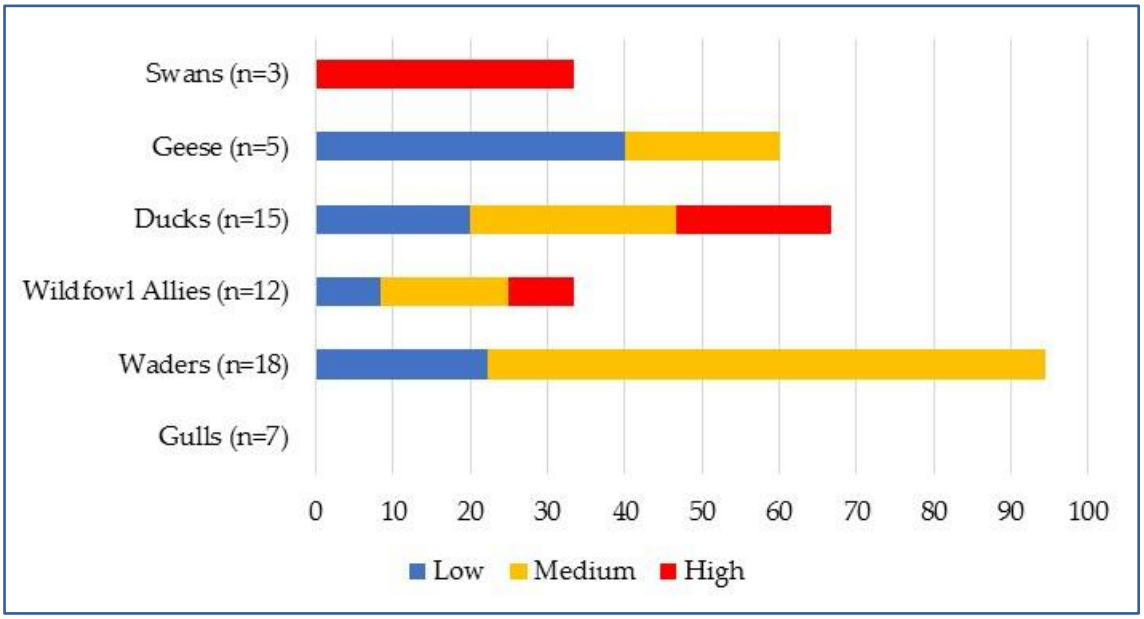



**Figure 76** The proportion of each species grouping affected by climate change (i.e. temperature rise or sea level rise combined) with the pressure/threat ranked as high, medium or low.

### 5.2.1 Temperature rise

Climate change is arguably the most significant threat facing wild bird populations, particularly those that migrate long distances (Robinson *et al*., 2009). Migratory waterbirds are dependent upon the right habitat being available in the right place at the right time. Changes in temperature, precipitation levels and sea level all greatly increase the risk of a temporal or spatial ecological mismatch occurring, which may have deleterious effects on bird populations (Robinson *et al*., 2009; Reneerkens *et al*., 2016) as well as affecting the range and distributions of species.

Given that Ireland is at the western edge of the wintering range for many waterbird species that breed in Scandinavia, Northern Europe and Arctic Russia, it is likely that the effects of climate change and increasing winter temperatures are making it increasingly disadvantageous for many species to migrate as far as Ireland for the winter. The most notable example of this is the Bewick's Swan, whose numbers have been declining here since at least the 1980s despite flyway population increases until the early 2000s. There are only *c*. 20 Bewick's Swans remaining in Ireland (Crowe *et al*., 2015; Burke *et al*., 2018b), wintering in the south-east in county Wexford, and it is likely that this species will cease to winter here in the coming years. Rising temperature is therefore both a high-level pressure and threat for Ireland's Bewick's Swan population.

Based on research by Gillings *et al*. (2006), Lehikoinen *et al*. (2013) and Pavón-Jordan *et al*. (2018), in combination with recent observed population trends for the respective species in Ireland (Burke *et al*., 2018b), climate change-related temperature changes have been ranked as a pressure and a threat for 14 waterbird species as follows:

**High-level:** Goldeneye, Great Crested Grebe, Pochard, Tufted Duck.

**Medium-level:** Coot, Cormorant, Golden Plover, Lapwing, Pintail, Shelduck, Shoveler, Wigeon.

Gillings *et al*. (2006) found that the winter distribution of Golden Plover and Lapwing in Britain has shifted east since the mid-1980s, which correlated with increased mean winter temperatures and a reduction in the frequency of cold spells which would allow waders to winter closer to their breeding

grounds. Lehikoinen *et al*. (2013), using data from I-WeBS and WeBS amongst other datasets from the International Waterbird Census (IWC), demonstrated strong north-eastwards shifts in the centres of gravity of the wintering range of three diving duck populations along the North-West European flyway in response to changes in temperature since 1980. Numbers of Tufted Duck, Goldeneye and Goosander increased by over 140,000 in the north-east part of their wintering range (Finland, Sweden), as rising temperatures have provided more ice-free habitat closer to their breeding grounds. Over the same period, countries such as Ireland, France, the Netherlands and Switzerland in the south-west of the flyway have lost in the region of 128,000 individuals (Lehikoinen *et al*., 2013). More recently, Pavón-Jordan *et al*. (2018), also using I-WeBS data as well as other datasets from the IWC, identified changes in wintering waterbird distributions at large geographical scales in response to short- and long-term changes in weather conditions. Again, the pattern was for a shift to the north-east as conditions in northern Europe became more favourable (i.e. more mild and wet). The study shows a long-term north-east shift of populations of species preferring deep waters. Shallow-water species also showed a north-east shift during the 1990s and early 2000s but shifted to the south-west again after the mid 2000s in response to several consecutive harsh winters. Although they did not exhibit a similar shift south-westward again in response to the harsh winters in the mid 2000s, the rapid north-east increases in abundance of deep-water species ceased at this time. Many climate change scenarios predict a continued increase in winter mildness (IPCC, 2012), which suggests that continued north-east shifts of the ranges of many of Ireland's wintering waterbirds are likely (Pavón-Jordan *et al*., 2018). The results of this study also illustrate the different reactions of waterbird species to changes in weather and climate, with individual ecology and habitat requirements being important factors.

The effects of temperature changes on waterbird populations are not just felt on the wintering grounds. Arctic-breeding wading birds are becoming increasingly negatively affected by changes in temperatures on their breeding grounds. For example, researchers reported in 2018 that summer temperatures in Zackenburg (north-east Greenland) have increased steadily over the last few decades which has led to an ecological mismatch between the timing of insects and the timing of shorebird chicks (Team Piersma, 2018). Furthermore, climatic models have shown that the amount of snow is a key driver of this mismatch, and while snow melts quicker with higher summer temperatures, climate models also predict that the amount of winter precipitation (and snow) will increase. During 2018 the amount of snow was so excessive that shorebirds such as Sanderling flocked together in snow-free areas and failed to breed, while many also perished. Despite the Sanderling breeding range extending beyond north-east Greenland, such failures on the breeding grounds may well result in changes to overall population size in the future, especially if such patterns are repeated with more regularity.

It has been reported that levels of nest predation on wader breeding grounds in northern-temperate and Arctic zones, where almost all of our wintering waterbirds breed, have increased twofold and threefold, respectively, compared with historic values and in line with increased ambient temperature and temperature variability (Kubelka *et al*., 2018). However, these results have been disputed (Bulla *et al*., 2019). Increased nest predation, as a result of climate change, may therefore be an important factor in the recent noted declines in global wader populations.

Other issues facing these birds on the breeding grounds as a result of climate change include suitable habitat shifting, contracting and declining (Wauchope *et al*., 2016) and timing mismatches between chick hatching and peak food abundance (e.g. McKinnon *et al*., 2012; Reneerkens *et al*., 2016). Along the migration route there is a risk that climate change will reduce the availability of suitable habitat at stopover sites and a bird's ability to build up adequate nutrients and fat stores, thus reducing survival (Studds *et al*., 2017) or impacting an adult's ability to reproduce successfully following spring migration (Drent *et al*., 2007). In addition to the immediate and short-term impacts of climate change at specific life history stages or locations along the migratory flyway, there are also cumulative effects to consider as well as the likelihood of negative carryover effects manifesting later in the year, or in subsequent years (O'Connor & Cooke, 2015). Johnson *et al*. (2013) projected future abundance of

wintering waterbirds in north-west Europe under a scenario of increased global mean temperature of 2.8°C by 2050 and 4.4°C by 2080. They found that climate change has already been a significant driver of large-scale population trends and that most species are likely to undergo large population declines under the projected scenarios, with a mean population trends of -33% to 2080 across 45 species. Interestingly, there were projected to be 58% more birds in the entire wintering waterbird assemblage in 2080, with a small number of species benefitting significantly from the changes. Based on the UK SPA network, they predicted that the existing network of protected sites is likely to support significant populations of wintering waterbirds in the future, although that is not to say that the network will protect each species from climate change impacts (Johnson *et al*., 2013).

### 5.2.2 Sea level rise and wave exposure changes

Sea level rise and wave exposure changes due to climate change have been categorised as a medium-level threat to 11 wader and two wildfowl species, and as a low-level threat (at present) to eight wildfowl and ally species and a further six waders wintering in Ireland.

At coastal sites, storm surges and flooding events can temporarily result in intertidal areas being unavailable for foraging waterbirds, while over time these events can affect the shape of estuaries and the nature and distribution of sediments (e.g. Stevens, 2010; Jang *et al*., 2013) with knock-on effects on the distribution and abundance of invertebrates, thus potentially affecting the numbers and composition of waterbirds supported by an estuary. Global mean sea level has risen by 0.19 m over the period 1901–2010 (IPCC, 2013). Predicted changes to the Irish coastline are expected to result from a combination of sea level rise, increasing frequency of storm surge events and from coastal erosion. Flooding at coastal locations is likely to be exacerbated by predicted increases in rainfall and consequent enhanced river flow (Crowe *et al*., 2013). An average sea level rise of 0.5 to 1 m by the end of the century, in combination with storm surge events, could result in approximately 300 to over 1,000 km$^2$ of coastal lands around Ireland being inundated by the sea (DeVoy, 2008). A rise of 1 m in sea level would see 30% of existing wetlands disappearing (DeVoy, 2008). The habitats most at risk include low-lying coastal lagoons, saltmarsh and estuaries, and of particular vulnerability are those that are prevented from extending landward because of the presence of some fixed or artificial boundary (Wall *et al*., 2016). Crowe *et al*. (2013) identified a total of 71 sites that regularly support significant concentrations of waterbirds and that are low-lying and vulnerable to increasing sea levels. Given the increased prevalence of flooding, as well as the predictions for future sea level rise, there has been a greatly increased focus on flood defence and relief schemes around the country, with some coastal works under construction, others at planning stage, as well as plans to modify rivers, lakes and turloughs in the midlands and west. In many cases this involves dredging to deepen the river channel, removal of trees, building concrete walls, constructing earth embankments and pumping stations and other similar solutions. These hard engineering responses to flooding have the potential to significantly impact waterbirds at previously suitable sites as these man-made structures prevent natural coastal habitats (e.g. saltmarsh, intertidal habitat) from moving landward as sea level rises, squeezing them up against the hard defences. This is known as 'coastal squeeze' and means the extent and functioning of the coastal habitats reduce over time, along with the habitats and species that they support; effectively a form of habitat loss (Pontee, 2013). Impacts from hard flood defences are not unique to the coast however; for example, works to relieve or prevent flooding in the midlands on the River Shannon, its tributaries and nearby lakes and turloughs could significantly reduce the suitable available habitat for dabbling duck species in the region. Finally, outside the wintering season in Ireland, prolonged drought conditions may impact the amount of suitable foraging habitat available for species such as Barnacle geese on their return here in the autumn, though this currently considered a low-level threat.

## 5.3 Energy production and related infrastructure

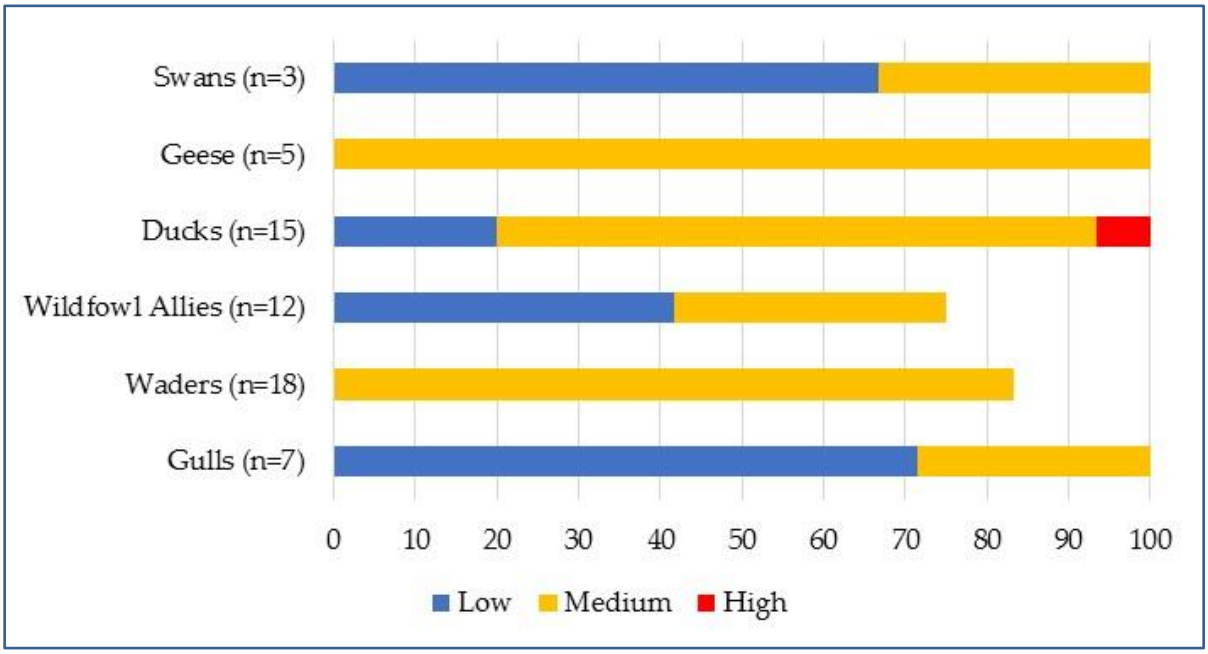



**Figure 77** The proportion of each species grouping affected by energy production (i.e. wind-wave-tidal devices & electricity/communications infrastructure combined) with the pressure/threat ranked as high, medium or low.

### 5.3.1 Onshore wind energy

As the environmental and economic threats of climate change loom, governments across much of the world have set ambitious targets to decarbonise their economies. Many have also recognised the potential economic opportunities that come with rapidly developing sectors such as the renewable energy industry. Wind energy from onshore windfarms is currently the largest contributing source of renewable energy in Ireland – providing 85% of Ireland's renewable energy in 2016, and 20.9% of our total electricity demand (SEAI, 2017). The first commercial windfarm in Ireland was established in 1992 and by the end of 2017 Ireland had 3,127MW of installed wind power capacity, almost all of which was onshore (WindEurope, 2018). The bulk of Irish wind energy projects are in upland and coastal areas, although developments in other areas are becoming increasingly technologically and economically feasible. Onshore windfarm capacity in Ireland grew by 426MW in 2017, breaking previous records and ensuring Ireland had the highest level of newly installed wind capacity relative to its total power consumption in Europe in 2017 (WindEurope, 2018). Increased production of renewable energy will be vital in reducing greenhouse gas emissions and reducing our climate impact, but it is important that renewable energy developments are located sensitively so as to avoid deleterious ecological impacts.

Existing onshore windfarms have been considered a low-level pressure to Irish waterbirds to date, though there is no formal compilation of pre-, during- or post-construction windfarm survey datasets at a national level on which any analysis can be carried out.

The EU Renewable Energy Directive (2009/28/EC) requires the EU to meet at least 20% of its energy needs with renewables by 2020 and 32% by 2030. Each country was set individual targets based on their existing and potential renewable energy resources and Ireland was set the target of producing 16% of its energy needs from renewable sources by 2020. In the Government Strategy for Renewable Energy: 2012-2020 (2012) five strategic goals were outlined, the first of which was to develop more renewable energy from onshore and offshore wind power for both the domestic and export markets.

Continued future expansion of onshore windfarms is considered to pose a medium-level threat to Whooper Swan, Greenland White-fronted Goose, as well as 11 duck species and 15 waders, and a low-level threat to other goose and swan species, as well as Coot.

The main potential hazards to birds from windfarms are collision mortality, disturbance (displacement, exclusion, barriers to movement) and loss of habitat (Langston & Pullan, 2003). It should be noted that the relationship between windfarms and birds is complex and the potential for impacts is dependent on a number of factors including the extent, type and timing of the development, local topography, habitats at the site and in the vicinity, numbers and species of birds present, and their distribution in the local area (Drewitt & Langston, 2006; McGuinness *et al*., 2015). The processes for acquiring planning permissions in Ireland for such developments should protect designated SPA sites and their listed waterbirds from the impacts of windfarm developments. However, there are potential risks from windfarms situated away from designated wetlands but adjacent to grassland feeding sites for geese (especially Greenland White-fronted Goose), Whooper Swans and some wading birds (mostly Curlew, Lapwing, Golden Plover), as well as the possibility of windfarms being placed between important wetland sites resulting in waterbirds coming into contact with windfarms as they move between different wetlands, or that their movement is impeded.

### 5.3.2 Offshore wind energy

While Ireland's renewable energy supply largely comes from onshore windfarms at present, there is expected to be significant and rapid growth in offshore windfarms in the short-term, with other offshore sources such as wave energy, and to a lesser extent tidal turbines, being developed in the medium-to-long term. Ireland's only offshore windfarm to date was deployed as a demonstrator project in 2004 at the Arklow Bank on the east coast. Licenses have been granted for a number of larger developments in the Irish Sea which have yet to be built, and a number of other projects are in the early planning and consenting stages (Burke, 2018). In the short-term, offshore wind energy developments in Ireland are likely to be concentrated in the Irish Sea as the east coast offers more accessible sites of depths under 50m.

Much of the concern surrounding the ecological impacts of offshore renewable devices is centred around seabirds, including seaducks, divers, grebes, cormorants, gulls and terns, which are all recorded during I-WeBS. Ramiro & Cummins (2016) determined scores for Irish seabird species based on their relative sensitivities to collision with offshore windfarms, displacement by offshore windfarms, and impacts from wave and tidal devices. Based on their results, in combination with I-WeBS data on population sizes and distribution and the projected developments in the coming years, offshore renewable energy devices are thought to pose a high-level threat to Common Scoter, and a medium-level threat to Herring Gull and Lesser Black-backed Gull, as well as to Cormorant, Red-breasted Merganser, and both Great Northern Diver and Red-throated Diver. Other diver, grebe, sea duck and gull species in Irish waters are likely to be at low threat level from these developments in the near future.

### 5.3.3 Collision risk

As the number and footprint of renewable energy developments increases in Ireland, so too does the potential for cumulative impacts that may negatively affect local waterbird populations. The development of associated grid infrastructure should be given due consideration in combination with proposed renewable energy developments. For example, the development of the above-ground cable network to transmit electricity may increase the risk of collision mortalities in some areas. With this in mind, the expansion of electricity and communication cable network is considered to pose a medium-level threat to Whooper Swan, Greenland White-fronted Goose, Greylag Goose, Pink-footed Goose, Light-bellied Brent Goose and Barnacle Goose. Given their restricted range, collision with cables only represents a low-level threat to the remaining Bewick's Swans in Ireland, and conversely their widespread distribution means the Irish Mute Swan population is similarly at low risk. Although

occasional incidents are known, collision mortality from overhead cables has represented only a low-level pressure to these species in recent years.

## 5.4 Recreational and other disturbance

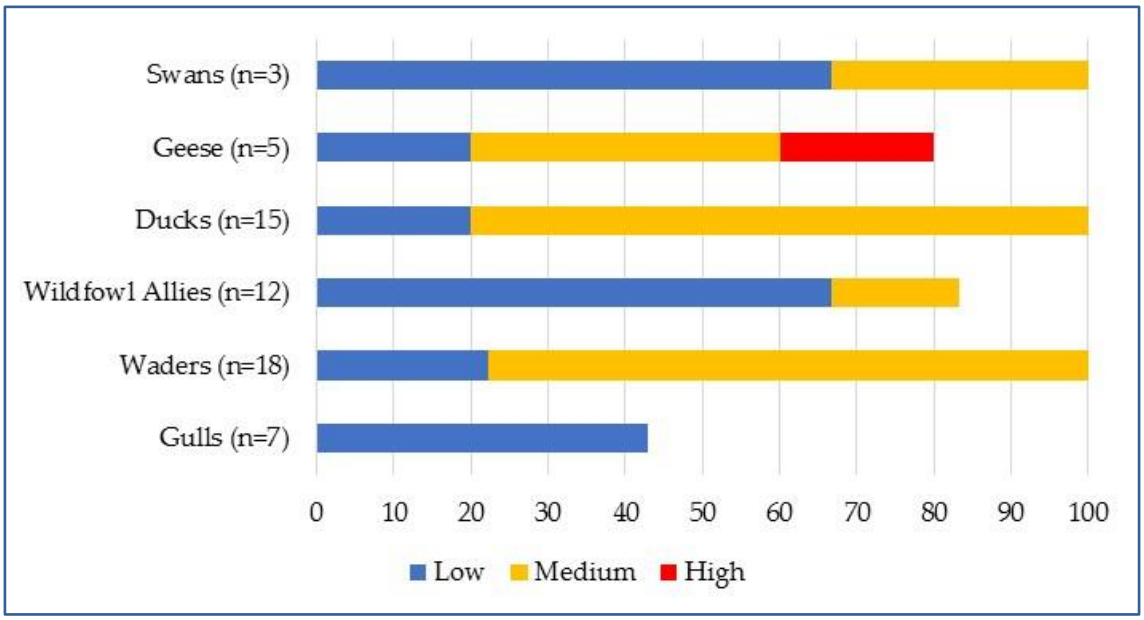



**Figure 78** The proportion of each species grouping affected by recreational and other disturbance. The pressure/threat is ranked as high, medium or low.

### 5.4.1 Land-based recreational disturbance

Disturbance relates to any activity that results in a waterbird being displaced from an area. Moving in response to disturbance, especially if frequent, can exert pressures upon a waterbird's foraging success as well as exerting an energetic cost due to flying to an alternative foraging area. Disturbance can also act upon roosting habitat thereby increasing a bird's energy expenditure in the same way. While many of the aforementioned pressures and threats exert effects via disturbance, recreational use of coastal and inland wetlands provides perhaps the most visually obvious form of disturbance to waterbirds, as birds generally move, often taking flight, in response.

Following review, continued or increased disturbance is considered to pose a medium-level pressure and a high-level threat to Greenland White-fronted Goose, and a medium-level threat to Whooper Swan.

Continued or increased disturbance poses a medium-level pressure and threat to:

- Greylag Goose and Light-bellied Brent Goose;
- 11 species (73%) of ducks and 12 species (67%) of wader.

In Dublin, there have been some conflicts between Light-bellied Brent geese and urban residents who are unhappy with the geese fouling sports pitches although this is currently considered to be a low-level pressure and threat.

The effects of disturbance upon waterbirds have been a topic of interest, research and concern to ecologists, wildlife managers and wildlife surveyors for many years. Waterbird behavioural responses to disturbance can vary from subtle declines in intake rates to more serious changes such as avoidance of entire areas or sites (Mitchell *et al.*, 1989). Waterbirds have been found to exhibit different behavioural responses to various disturbance types (Lafferty, 2001; Kirby *et al.*, 1993). However,

repeatedly across studies (e.g. Phalan & Nairn, 2007; Adcock *et al*., 2018), dogs on and off lead, and people walking (especially within intertidal areas) are found to elicit the highest levels of response behaviour from waterbirds. Indeed, a recent study found that consistent recreational use of shorelines particularly by dogs, has a negative impact on waterbird numbers (Stigner *et al*., 2016). This is perhaps because while some waterbird species in areas with levels of recreational activity have been found to habituate to some activity types (Nairn, 2005), birds typically do not habituate to dogs running off lead because canids represent a seemingly genuine predator threat (Lafferty, 2001; Sastre *et al*., 2009).

The true significance of any disturbance impact is hard to predict. For example, the fact that a bird flies away from a disturbance does not automatically imply a serious negative effect if the bird has alternative habitat to go to, of similar quality and/or if birds return to the former area once the disturbance event has finished. In this context, it becomes impossible to distinguish between animals that do not respond to disturbance because they are unaffected by it and those that are constrained to stay in the area but may suffer severe costs (e.g. reduced foraging time or nest defence) as a result (Gill, 2007). However, it is important to note that even a short-term displacement can be of significance, if the birds have no similar quality habitat to move to, or if displacement leads to knock-on ecological effects such as increased competition within and/or between different species for a common food source. Birds will also suffer more of an impact when already under pressure for example, in cold weather events when struggling to feed enough to survive. Ultimately, if the effects of disturbance reduce species fitness[1] (i.e. reduce survival or reproductive success) then consequences at population level may result, and numbers of birds may decline, at site-level and beyond. Providing recreational spaces while simultaneously protecting the sensitive ecology of a site will continue to be a challenge for conservation managers (Batey, 2013) and ultimately acceptable levels of human disturbance may need to be determined and then managed (e.g. Beale, 2007; Gill, 2007). For example, a recent study has suggested that by restricting dogs in areas in use for recreation, waterbird numbers can be significantly increased overall (Stigner *et al*., 2016).

### 5.4.2 Water-based disturbance

Waterbird species that occur on the water are also subject to disturbance events from a variety of sources. Many coastal and inland wetlands play host to a wide variety of recreational activities including boat trips, kayaking, windsurfing and paddle boarding, although many of these activities are more prevalent during summer months and outside of the wintering waterbird period. That said, a study of the effects of kite-surfing on waterbirds outside of the winter months indicated that kitesurfing does affect the behaviour of waterbirds but to a lower extent than some other activities (Adcock *et al*., 2018), and that cumulative levels of disturbance at some sites may already be at a serious level. Given the increase in outdoor recreational activities and the increasing number of proposals for coastal walkways, greenways and blueways, recreational activities around coastal and inland wetlands is set to increase. As ever, the potential for cumulative impacts will need to be addressed adequately. Greenland White-fronted Goose has been identified as an Irish species at high risk from disturbance from sports, tourism and leisure activities in the coming years. Certainly, any increase in activity at their main sites in Wexford has the potential to impact a large proportion of the Irish and flyway populations.

Disturbance from boat traffic (shipping lanes, ferry operations etc.) also presents a problem for marine species. A recent Irish study found that Red-breasted Mergansers have a high degree of behavioural sensitivity to disturbance from marine traffic, while similar studies featuring Great Northern Diver suggested that this species is less sensitive (Gittings *et al*., 2015, 2016b). Red-breasted Merganser and Great Crested Grebe have been identified as species for which disturbance from boat traffic constitutes a medium-level pressure and threat, while for Common Scoter this is deemed to be a low-level pressure in recent years but potentially a medium-level threat for the future. Species such as Cormorant, Great Northern Diver and Red-throated Diver are highly mobile in response to food

[1] Defined as a measure of the relative contribution of an individual to the gene pool of the next generation.

availability and widely dispersed, so are unlikely to be under the same level of pressure or threat from boat traffic disturbance. Other marine species including Slavonian Grebe, Eider, Long-tailed Duck and Velvet Scoter are present in Ireland in small numbers and with a somewhat scattered distribution, again meaning that boat traffic disturbance is unlikely to represent anything more than a low-level pressure or threat.

## 5.5 Fisheries and aquaculture

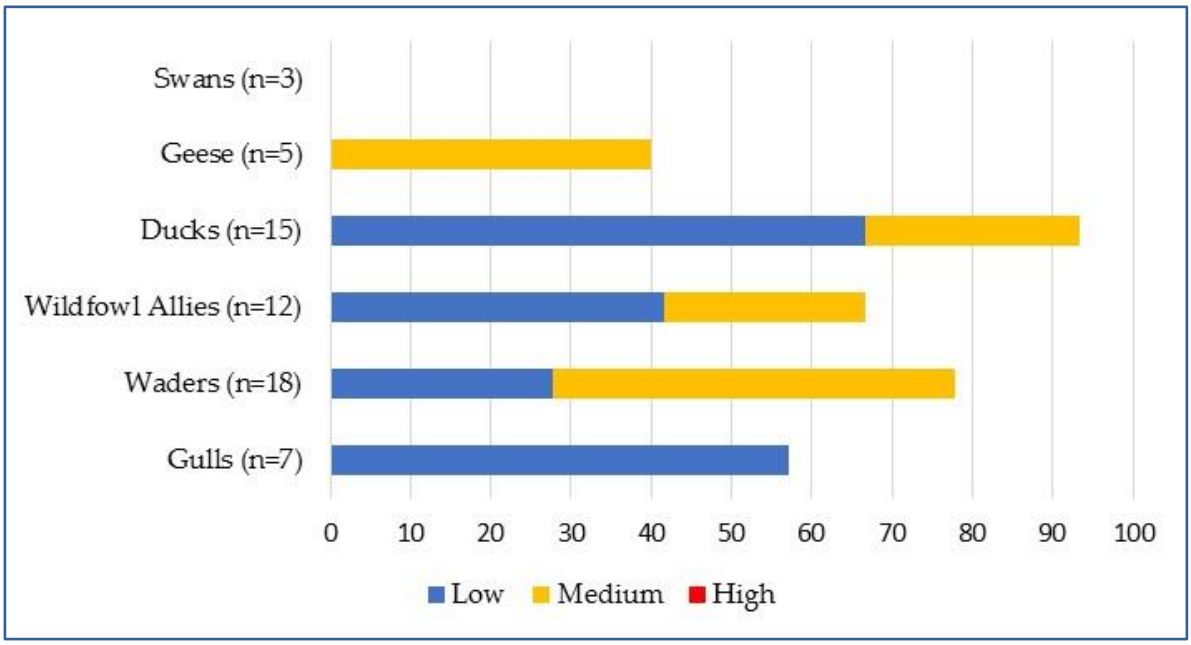



**Figure 79** The proportion of each species grouping affected by shellfish harvesting and aquaculture. The pressure/threat is ranked as high, medium or low.

### 5.5.1 Shellfish harvesting and dredging

This category includes the dredging of shellfish as the final product (e.g. Cockle *Cerastoderma edule*), or the dredging and subsequent relaying of seed (e.g. Mussel *Mytilus edulis*) for on-growing and later harvesting by dredging.

These activities are thought to comprise a medium-level pressure and threat to 15 waterbird species, namely:

- Ducks and sea ducks – Common Scoter, Eider, Scaup and Shelduck;
- Divers and grebes – Great Northern Diver, Red-breasted Merganser and Red-throated Diver;
- Waders – Bar-tailed Godwit, Curlew, Dunlin, Grey Plover, Knot, Oystercatcher, Ringed Plover and Sanderling.

In addition, harvesting of bottom-grown mussels at Wexford Harbour poses a medium-level threat to Greenland White-fronted Goose. Currently diurnal harvesting is undertaken, in an area where roughly 70% of the Irish population of this species roost at night. If harvesting was to continue after dark in the future, then this has the potential to significantly impact on a large proportion of the population.

Impacts upon waterbirds include competition for a common resource (i.e. the shellfish is also a waterbird prey item), damage to benthic sediments and impacts upon non-target benthic species, and the associated disturbance that occurs in association with the activities.

The harvesting of Cockles is confined largely to Dundalk Bay. As with aquaculture in Special Protection Areas (see below), there is a requirement that this activity operates in compliance with the requirements of the Habitats and Birds Directives. The European Union (Birds and Natural Habitats) (Sea-Fisheries) Regulations 2013 (SI 290 of 2013) also provide for the submission of a draft *Fisheries Natura Plan* and *Appropriate Assessment* of the plan to identify where a fishery may be allowed to proceed while also addressing risks to protected species and habitats (e.g. Fisheries Natura Plan for Cockle in Dundalk Bay, 2016-2020 (Department of Agriculture, Food and the Marine). On-going monitoring of waterbird populations is essential in these sites in order to identify any impacts at the earliest possible point in time.

### 5.5.2 Aquaculture

Aquaculture of both shellfish and finfish is a growing sector in Ireland. BIM (2018) reported that aquaculture output in 2017 increased to 47,147 tonnes of farm-gate produce, worth €208.4 million. Intertidal and shallow subtidal habitats of coastal bays and estuaries are widely used for various types of aquaculture, including seed mussel nurseries/intertidal on-growing (bottom culture) (e.g. Castlemaine Harbour, Carlingford Lough), and the cultivation of the Pacific Oyster *Crassostrea gigas* (e.g. Dungarvan Harbour, Ballymacoda Bay, Bannow Bay, Galway Bay). The growing of Pacific Oysters using the bag and trestle system is the most widespread activity within Special Protection Areas and occurred in 16 SPAs in 2012, occupying a total area of 2,262 ha (Gittings & O'Donoghue, 2012). These figures may well have now increased.

Intertidal trestles can cover extensive areas of intertidal and shallow subtidal habitat. For waterbirds, the presence of trestles can therefore be equivalent to habitat loss as the habitat becomes unsuitable due to the cover itself, and the deleterious effects on the benthic prey due to the smothering of the habitats with faecal and pseudofaecal material, as well as other detritus generated by the culture process.

Extensive research on the potential impacts of this activity upon waterbirds has been undertaken within Ireland. Gittings & O'Donoghue (2012) categorised species responses to these activities and reported considerable variation: Oystercatcher, Curlew, Redshank, Greenshank and Turnstone exhibited a neutral/positive response; Light-bellied Brent Goose, Black-headed Gull, Common Gull and Herring Gull exhibited a variable response (i.e. response varied between sites); Shelduck, Ringed Plover, Lapwing, Sanderling, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Great Black-backed Gull exhibited negative responses; while Grey Plover and Knot exhibited an exclusion response (i.e. they were completely excluded from oyster trestle blocks.

In light of the above research, aquaculture is considered to pose a medoim level pressure and threat to eight wader species as follows: Bar-tailed Godwit, Black-tailed Godwit, Curlew, Dunlin, Grey Plover, Knot, Oystercatcher and Sanderling. In addition, there is a medium-level threat to Light-bellied Brent Goose due to the potential for impacts upon intertidal seagrass beds as well as from disturbance caused from the activities.

The species that show the strongest negative patterns of association with trestles appear to be those that tend to feed in large flocks of tightly-packed individuals (e.g. Knot, Sanderling, Dunlin). Gittings & O'Donoghue (2016a) suggest that the negative behavioural response may be due to the oyster trestles interfering with the flocking behaviour by making it difficult for individuals in large flocks to remain in contact as they become dispersed across several lines of trestles. Another possible reason for waterbirds to avoid trestles is that the perceived predation risk may be higher within the trestle blocks due to the trestles interfering with sightlines. In contrast, the Grey Plover showed a strongly negative pattern of association with trestles, but is a species that tends to feed as widely dispersed individuals rather than flocks. Individual birds require open areas to detect prey at the surface over a wide area, and then make short runs to catch the prey and it was suggested that the presence of oyster trestles may interfere with this behaviour (Gittings & O'Donoghue, 2016a). As with cockle harvesting (dredging) above, there is a requirement that aquaculture activities operate in compliance with the

requirements of the Habitats and Birds Directives. To this end, several Appropriate Assessments have been undertaken in recent years with varying conclusions. On-going monitoring is being carried out at several sites (for more information refer to: http://www.fishingnet.ie/sea-fisheriesinnaturaareas/).

### 5.5.3 Marine fisheries

Commercial fisheries in Irish waters are diverse, with many different techniques employed: eight main groups which include demersal otter trawls, beam trawls, demersal seines, gill and trammel nets, longlines, dredges, pots and pelagic trawls (Cummins *et al*., 2016). Pressures on the environment from fishing arise from the over-harvesting of target species and the unintentional catching of non-target fish species and other species such as cetaceans, seals, seabirds and benthic organisms (see 'bycatch' below). Fishing activities such as trawling and dredging can injure or kill benthic organisms and can result in the damage or destruction of habitats (Wall *et al*., 2016). Over-fishing is the biggest problem. Ireland currently has the third highest rate of overfishing in Europe with quotas coming in at more than 20 per cent above targets (TAC, total allowable catch) (Carpenter & Heisse, 2019). Larger, longer-lived species (e.g., tuna, cod) have been significantly depleted leading to fishing fleets increasingly concentrating on catching smaller, shorter-lived, plankton-eating species such as mackerel, sardine and sandeel, mostly known as 'forage fish,' as well as invertebrates such as mussels, prawn and shrimp, which are nearer the bottom of the food chain. This has major implications for marine food webs and ultimately marine food webs risk collapse if over-fishing is not addressed (Pauly *et al*., 1998). Recent concerns have arisen over the practice of pair trawling in sheltered inshore bays and estuaries such as Cork Harbour. This is a practice whereby two boats drag a single large net between each other. Pair trawling, which is banned in the UK, targets sprat which is processed into fish meal. Sprat is a small shoaling fish and is a keystone of the marine ecosystem being prey for larger fish such as cod, as well as sea birds and piscivorous waterbirds. Not only does the activity appear unsustainable, but there is also a risk of by-catch and disturbance to seabirds.

## 5.6 Agriculture and forestry

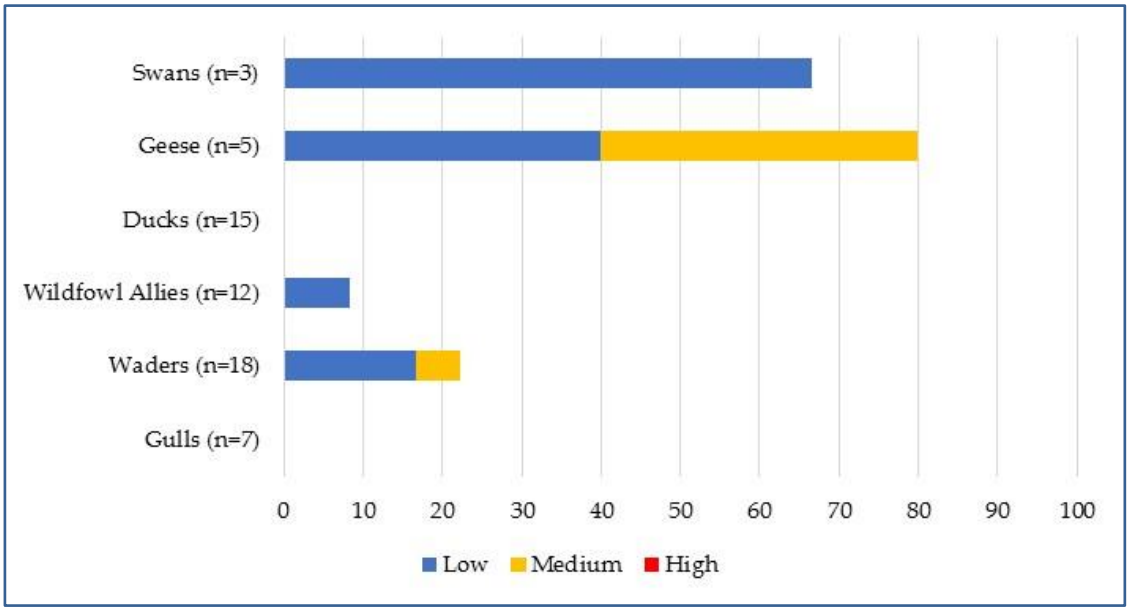



**Figure 80** The proportion of each species grouping affected by issues surrounding agriculture and forestry (all factors combined). The pressure/threat is ranked as high, medium or low.

Almost 70% of Ireland's land area is under agricultural use (EPA, 2015) and farmland borders most inland wetlands that are relied upon by migratory waterbirds during the winter. Our migratory swan

and goose species feed directly on agricultural grasslands, stubble fields and winter cereals, often returning to nearby waterbodies to roost at night. Waders such as Lapwing, Golden Plover and Curlew are also heavily reliant on agricultural lands away from wetlands where they can feed on the invertebrates in the soil. These species are therefore particularly vulnerable to changes in agricultural land use and management.

For most swans and geese in Ireland the main threat is likely to be conversion of improved pasture and semi-improved wet grassland to other crop types or to forestry. In the past, conversion of grasslands to biomass crops around Lough Foyle made previously popular feeding areas unsuitable for swans and geese, although many of these areas have since reverted to grass. A shift towards increased biofuel production is likely to occur within Irish agriculture in the coming years (SEAI, 2016) which could potentially displace geese from currently relied-upon feeding areas. Over-wintering geese are highly site faithful (Wilson *et al*., 1991), so changes to habitats at a few key sites could have a significant negative impact on local flocks and regional species distribution as a result. Conversion of one agricultural land use to another is therefore considered a medium-level threat for both Greylag Goose (Icelandic) and Greenland White-fronted Goose. In recent years it is thought to have acted as a low-level pressure for both species, as well as for Light-bellied Brent geese, Whooper and Bewick's Swans and grassland-feeding waders (Lapwing, Golden Plover) and likely constitutes a continued low-level threat for the coming years. For Barnacle geese, the threat that their preferred coastal and offshore island grassland sites might be converted to different crop types appears to be low at present.

Ireland is projected to increase forest cover by 15,000ha annually to reach targets of 18% forest cover by 2046 (DAFM, 2014). Many of the sites favoured by Greenland White-fronted Goose in the north-west and midlands are on marginal agricultural land of modest grazing value, which are typical of sites that have been afforested in recent years. Although the SPA network should prevent significant habitat change at protected wetland sites, grassland feeding sites away from those wetlands have no statutory protection. This has been flagged as a significant threat for flocks in Connemara, Mayo, the River Suck and the Midland Lakes, amongst others, as well as having reduced suitable habitat on the South Slob in Wexford in the past. There is also the threat that afforestation will take place on lands neighbouring those areas used by Greenland White-fronted geese, which may deter them from feeding even if suitable foraging habitat remains in the area. Smaller scale modifications to agricultural habitats including division of fields by fencing, or tree planting on field boundaries, which may also deter geese and swans from feeding on previously preferred sites. Given that the majority of the Irish population of Greenland White-fronted Goose now resides on sites in Wexford that are unlikely to be further impacted by forestry in the near future, forestry is currently considered here to represent a medium-level threat to this species. There are some species that we know little about in an Irish context, such as Snipe and Jack Snipe that may also be impacted to a similar extent (i.e. medium-level threat) by the establishment of forestry on previously wet and rushy grassland sites. Shallow, nutrient-rich waterbodies with plenty of submerged vegetation, preferred by species such as Coot (Lewis *et al*., 2018), could be seriously impacted by increased forestry cover in the surrounding areas, although water protection measures (setback, buffer zones, silt traps etc.) should prevent significant impacts on the habitat and ensure any threat to the waterbirds therein is minimal.

Changes to grassland management can also significantly reduce the suitability of important sites for grassland-feeding waterbirds. Greenland White-fronted geese prefer longer grass heights than other goose species, whereas Barnacle geese show preference for swards of <10cm in height, and Light-bellied Brent geese prefer even shorter swards (<5cm for Dark-bellied Brent, likely similar for Light-bellied Brent) (Vickery & Gill, 1999). Given that Greenland White-fronted geese in most of the 'down-country' flocks (i.e. outside Wexford) feed on marginal land that is already grazed at low intensity, there is a threat of agricultural abandonment in many areas which would quickly lead to a tall sward height that would exclude the geese from feeding. This represents a low-level threat that may impact White-fronts at specific feeding sites in their range outside Wexford and may also be problematic for grassland-feeding waders such as Curlew, in the same areas. For Barnacle geese, agricultural abandonment also poses a threat, particularly on offshore islands where maintaining grazing is

logistically difficult (e.g., has occurred in Scotland (McKenzie, 2014)), though any immediate risk is thought to be low. Lapwing and Golden Plover may be similarly impacted, although given their widespread distribution, the threat to the Irish populations of these species remains low overall. Conversely, overgrazing by sheep, particularly in years of poor grass growth or when sheep continue to graze fields into the winter, also threatens to deplete the foraging resource below a minimum sward height considered unprofitable for Barnacle geese to feed (Vickery & Gill, 1999), though again the threat in the immediate future is likely to be of a low-level. For Light-bellied Brent geese that prefer a short sward, the cessation of mowing at urban greenfield sites can quickly result in sites becoming unusable. In recent years there has been a trend for managing sections of parklands for pollinating invertebrates, which requires a reduced frequency of mowing to allow wildflowers to grow amongst longer grass (National Biodiversity Data Centre, 2015). Care should be taken to ensure a balance is achieved between positive conservation actions such as this and the requirements of the local Light-bellied Brent Goose populations that favour the same parklands.

Grazing by geese and swans has also led to conflict with some landowners who are unhappy at the loss of forage that was intended for livestock. Such conflicts tend to be localised in Ireland and pale in significance compared to the high levels of conflict on the island of Islay in Scotland, where the financial impacts of estimated agricultural damage have risen greatly over the last 20 years as goose numbers have increased dramatically to over 50,000 (mostly Barnacle Goose, smaller numbers of Greeland White-fronted Goose and Greylag Goose) (McKenzie & Shaw, 2017). In Ireland, agri-environment measures such as those available under GLAS (Green, Low-Carbon, Agri-environment Scheme) and the NPWS farm plan scheme provide financial supports to famers and landowners in many areas to manage their lands for the benefit of over-wintering geese. This does not always provide a solution however and deliberate scaring continues at some sites, often through the use of gas-bangers. Intentional scaring of geese and swans, although not necessarily common, is widespread throughout their respective wintering ranges in Ireland. Disturbance results in increased energy expenditure as the birds seek refuge and suitable feeding habitat elsewhere. Depending on the availability of habitat in the wider area, this could potentially be very energetically costly for birds attempting to build resources over the winter and in advance of migration. At present this is deemed a low-level pressure for these goose (White-fronted, Brent, Barnacle, Greylag) and swan (Whooper, Bewick's) species in Ireland.

## 5.7 Urbanisation and development

Given that many of Ireland's coastal and inland wetlands are located close to centres of human settlement and industry, pressures and threats from land use (primarily habitat loss and habitat fragmentation) exist and may increase in the future. For example, figures from the 2016 census published by the Central Statistics Office revealed that 1.9 million people, or 40% of the Irish population, reside within 5km of the coast, and of these, some 40,000 people live less than 100 metres from the nearest coastline. Major cities such as Dublin, Cork, Limerick and Galway are located beside major coastal wetlands of international importance, and key pressures and threats are likely to be related to infrastructure development such as roads, port developments, industry and flood defence schemes (note that flood defence schemes are considered further under 'climate change' above).

Implementation of the European Union (EU) Birds and Habitats Directives has resulted in the creation of a comprehensive network of sites for habitat and species protection, the Natura 2000 network. Where plans or projects have the potential to impact these sites, provisions arising from Articles 6 (3) and (4) of EU Council Directive 92/43/EEC (Habitats Directive) and transposed into Irish law by the European Communities (Birds and Natural Habitats) Regulations S.I. No 477 of 2011 (Appropriate Assessment) come into play, aiming to establish whether a proposed plan or project either alone or in combination with others, could have significant negative effects on a Natura 2000 site, in view of the site's conservation objectives. In the future it is likely that more projects will pass to Stage 4 of this assessment, where compensatory measures to effectively offset the damage to the Natura site will be

necessary. Across all assessments, the challenge remains to adequately assess cumulative (in-combination) impacts with the necessary robustness.

Note that the current assessment relates to the period 2008-2013 only (as per reporting under Article 12 of the Bird's Directive). Currently development of land is considered to pose a medium-level threat to Greenland White-fronted Goose and Light-bellied Brent Goose, particularly applicable where urban green spaces used for foraging may be developed (in the case of Light-bellied Brent Goose), or where housing developments may disturb flocks of Greenland White-fronted geese.

## 5.8 Water quality

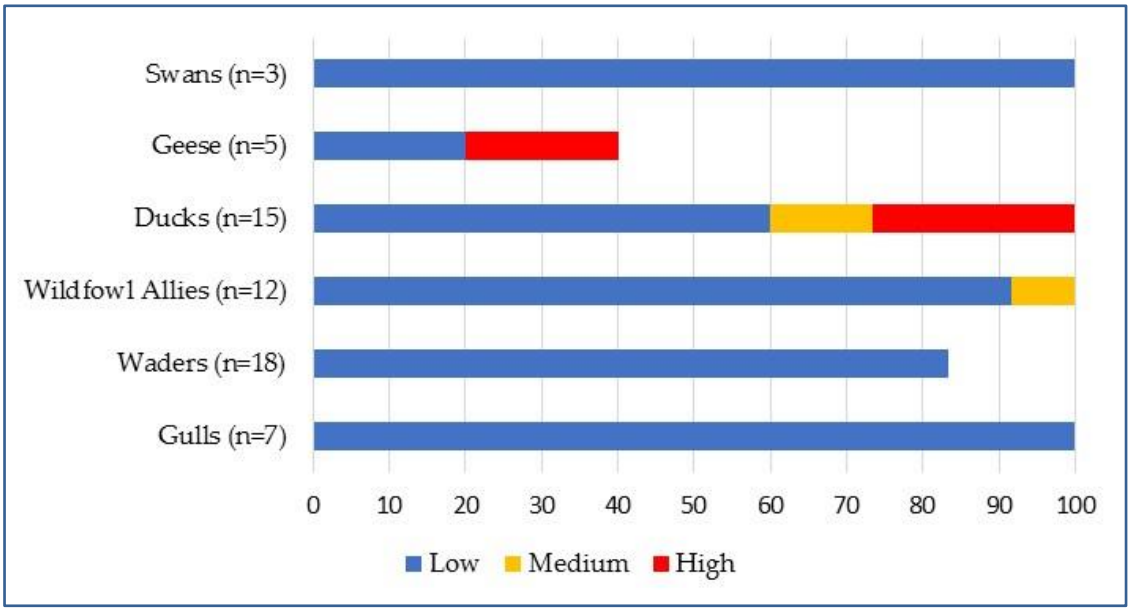



**Figure 81** The proportion of each species grouping affected by water quality (all pressures combined). The pressure/threat is ranked as high, medium or low.

### 5.8.1 Mixed source water pollution

This category includes all types of marine pollution including agricultural and urban sources and the threat of oil spills. This is currently considered a low-level pressure and threat to Ireland's wintering waterbirds. The one exception is in the case of the Greenland White-fronted Goose. Wall *et al*. (2016) highlight the possibility and risk of future incidents of marine water pollution in Irish waters. Such an incident near Wexford could potentially result in the majority of the Irish flock of Greenland White-fronted Goose being exposed to, for example, an oil spill, when at roost. This would have a significant impact on the Irish and global population. For this reason, this risk is classified as a high-level threat.

### 5.8.2 Eutrophication – freshwater bodies

Eutrophication, which is caused by nutrient enrichment, remains the most significant issue for surface waters in Ireland (Wall *et al*., 2016). The most recent report on the water quality in Ireland (Trodd & O'Boyle, 2018) found that a quarter of rivers and lakes are failing in this environmental quality assessment criteria. High levels of phosphorus in the north-east of the country are impacting on lake water quality, while high nitrogen concentrations in the south and south-east are impacting on the quality of many of our estuaries.

Over a quarter of lakes and rivers have average phosphate and phosphorus concentrations (respectively) above what is considered the limit for 'good' ecological status. High levels of these

nutrients impact the ecological health of the water body in question by stimulating excessive plant growth with resulting knock-on effects for macroinvertebrate fauna, fish and waterbirds. In Ireland the main sources of excessive amounts of phosphates in water bodies are industrial and sewage discharges, as well as through the application of animal manure and inorganic fertilisers to agricultural lands.

Eutrophication of freshwater bodies is considered to pose a high-level pressure and medium-level threat to four waterbird species namely, Goldeneye, Pochard, Scaup and Tufted Duck; and a medium-level pressure and threat to Coot and Gadwall.

The pathways by which nutrient loading affects waterbird communities in freshwater systems are similar to those in coastal waters, although diffuse sources (especially agricultural run-off) may be relatively more important, as point sources are less prevalent at freshwater sites (Pringle & Burton, 2017). Møller and Laursen (2015) explored long-term associations between changes in fertiliser use and winter population indices of 50 freshwater and coastal waterbird species across Europe. The numbers of 14 species were positively related to fertiliser use, while numbers of 36 species showed negative relationships with fertiliser use. Freshwater systems, and shallow lakes in particular, may be more sensitive to changes in nutrient loading than coastal systems, due to lower flushing and dilution of the system (MacDonald, 2006). Declines in waterbird numbers have at least been partially attributed to eutrophication of freshwater habitats. For example, high levels of nutrient input at Lough Neagh and Lough Beg SPA in Northern Ireland were implicated in the decline of wintering diving duck populations at the site. Previous studies suggested that the nutrient input caused hyper-trophic conditions, with detrimental effects on the chironomid larvae that constitute the major dietary component for Pochard, Scaup, Tufted Duck and Goldeneye (e.g. Maclean *et al*., 2006). However, climate change and migratory short-stopping are now also considered a contributing factor to the observed declines in wintering numbers at this SPA (Tománková *et al*., 2013).

### 5.8.3 Eutrophication – coastal waters

The most recent report on the water quality in Ireland (Trodd & O'Boyle, 2018) found that a significant proportion of sites are affected by nutrient enrichment; a third of estuaries and coastal waters are failing environmental quality assessment criteria. Nearly a third of estuaries and coastal water bodies exceeded established nitrogen thresholds (winter dissolved inorganic nitrogen; DIN) and 18 of the 102 estuaries and coastal water bodies assessed from 2014 to 2016 were eutrophic or partially eutrophic. High levels of these nutrients impact the ecological health of the water body in question by stimulating excessive plant growth with resulting knock-on effects for macroinvertebrate fauna, fish and waterbirds. In Ireland the main sources of excessive amounts of phosphates in water bodies are industrial and sewage discharges, as well as through the application of animal manure and inorganic fertilisers to agricultural lands.

For the period being assessed, eutrophication of coastal waters is considered to be a low-level pressure and threat to Ireland's waterbirds.

One of the obvious signs of eutrophication of Irish estuaries is increased primary productivity and excessive growth of green macroalgae (*Ulva* spp.). Green macroalgal blooms or 'mats' generally develop in spring, persist throughout the summer and continue to cover intertidal flats into late autumn and early winter before decaying or being broken up by storms. At low cover and biomass, negative effects upon mud-dwelling macroinvertebrates appear negligible, with some invertebrate species being attracted into the algae themselves as epifauna (e.g. Raffaelli *et al*., 1998). At high algal cover and biomass however, most burrowing mud dwellers are inhibited while hypoxic or anoxic conditions can occur at the mud-weed interface. The knock-on effects upon foraging waterbirds are complex. While the macroalgae may be a food source for herbivorous species such as Wigeon or Light-bellied Brent Goose, some studies have shown waterbird distribution to be negatively correlated with algal mat coverage (e.g. Cabral *et al*., 1999; Raffaelli, 1999; Lewis *et al*., 2014). In particular, wading birds appear to be affected differently based on their foraging strategies and prey preferences. An

Irish study found that Redshanks may be constrained in obtaining their required daily energy intake on algal covered mudflats in contrast to Black-tailed Godwits that appear to not be adversely affected (Lewis *et al*., 2014).

### 5.8.4 Cessation of sewage discharges

While organic enrichment and the resulting macroalgal mats may have some deleterious effects on certain waterbird species, organic enrichment, fuelled by emissions from waste water treatment plants and combined sewer overflows (CSOs), may have served to benefit many foraging waterbirds due to proliferations of macroinvertebrates, principally detritivores, close to the locations of discharges (e.g. Lewis *et al*., 2002; Alves *et al*., 2012). While many areas around Ireland still require upgrades to existing waste water treatment plants, over time many estuaries are likely to have reductions in the amount of organic nutrients entering them as improvements are made. This is likely to lead to reductions in the macroinvertebrate prey base, at least in parts of the site where they had previously flourished due to enrichment (Lewis & Kelly, 2012). Such implications of improvements to waste water treatment have been noted previously (e.g. Burton *et al*., 2002), as have a reduction in bird numbers. A more recent review of the literature by Pringle & Burton (2017) identified a number of studies that had investigated the effects of nutrient loading of coastal waders on bird communities. Although results from many studies were correlative rather than causative, they do suggest that the effects of changes in water quality are somewhat site- and species-specific in many instances, but may lead to, and have been implicated in, both waterbird population increases and declines. Given that nutrients, in particular phosphorus, can be stored in sediment, reversal of the effects of eutrophication is likely to take considerably longer than the time over which the effects of eutrophication built up (Møller and Laursen, 2015), and hence improvements to organic loading is considered a future threat to waterbirds (their numbers and distribution), at least at some sites. The threat is considered to be of medium-level and the species likely to be affected are: Bar-tailed Godwit, Black-tailed Godwit, Curlew, Dunlin, Grey Plover, Knot, Redshank, Ringed Plover, Purple Sandpiper and Turnstone.

## 5.9 Others

### 5.9.1 Avian influenza

Avian influenza is a disease of birds caused by a Type A influenza virus. Most of these viruses cause either no clinical disease or only mild symptoms in the infected birds and are called Low Pathogenic Avian Influenza (LPAI). These LPAI strains are not unusual in waterfowl (ducks, swans and geese) around the world. However, a characteristic of the influenza virus family is their ability to mutate rapidly and for new strains to appear. Some of the mutants have the ability to cause more severe disease and these are called Highly Pathogenic Avian Influenza (HPAI), an example of which is the highly pathogenic H5N1 strain which arose in Southeast Asia and resulted in an epidemic between 2002 and 2006 (DAF, 2006).

In Ireland, there were outbreaks of highly pathogenic avian influenza in winters 2016/17 (strain H5N8) and 2017/18 (strain H5N6). The outbreak of H5N8 was first recorded in a dead Mute Swan in Hungary in October 2016. It subsequently spread west through much of Europe and was first recorded in Ireland in December 2016. Wigeon, Whooper Swans, Mute Swan and Grey Heron in counties Wexford, Cork, Tipperary, Roscommon, Leitrim and Galway were subsequently found to have died from this strain of flu. Owners of poultry flocks were required to confine all poultry and captive birds in a secure building in the months following the first recorded case in a wild bird to minimise the risk of commercial flocks contracting the flu. These measures were lifted in April 2017 and no commercial bird flocks in Ireland contracted avian influenza from wild birds. The H5N6 outbreak the following year was restricted to raptors – a White-tailed Eagle and Buzzard in Tipperary and another White-tailed Eagle in Clare. Two Greylag Geese were found to have died of bird flu (H5N6) in Armagh in

Northern Ireland in June 2018 also. It is highly likely that the true number of birds lost to these avian flu outbreaks was underestimated, though the overall impact was less than feared.

It is generally the case that such highly pathogenic strains of avian influenza evolve and spread in domestic poultry in Asia in the first instance (e.g. H5N8 in 2014/15; The Global Consortium for H5N8 and Related Influenza Viruses 2016). The resultant strains of avian influenza are subsequently brought to Europe by migratory waterbirds moving westwards in autumn and winter (Gilbert *et al*., 2006; The Global Consortium for H5N8 and Related Influenza Viruses 2016). Future epidemics of highly pathogenic avian influenza may pose a threat to all waterbird species in Ireland, particularly where outbreaks occur at sites with a large number and diversity of waterbirds (e.g. Dundalk Bay, Dublin Bay, Wexford Harbour, Cork Harbour, Shannon Estuary, Lough Swilly etc). The Department of Agriculture have an early warning system in place, together with the National Parks and Wildlife Service, BirdWatch Ireland and the National Association of Regional Game Councils, with regard to surveillance for signs of disease in wild birds in the Republic of Ireland.

### 5.9.2 Invasive alien species

Common Cord-grass *Spartina anglica* is a perennial saltmarsh grass that is the product of a hybridisation event that occurred on the south coast of England some 100 years ago (McCorry *et al*., 2003). Being more vigorous than its parents, the grass rapidly colonised coastal areas and stabilised mudflats. Its potential use as a tool to reclaim mudflats led to the grass being planted on many sites around the coasts of Britain, Ireland and Northern Europe during the 1920s. Common Cord-grass was first planted in 1925 in Cork Harbour (Cummins, 1930) and subsequent plantings occurred along many other coastal stretches. A number of negative impacts of this introduction were subsequently identified however (Stokes *et al*., 2004). The spread of *S. anglica* on coastal mudflats and saltmarsh results in a less diverse, monospecific sward and reduces both the intertidal feeding area and invertebrate prey base for foraging waders and other birds as it matures (Stokes *et al*., 2004), as well as causing the loss of macroalgae and eelgrass (e.g. *Zostera* spp.) beds which may impact waterfowl including Light-bellied Brent Geese and Wigeon (Robinson & Colhoun, 2006; Percival *et al*., 1998). However in some areas the grass has been observed to provide shelter and roosting areas for some bird species (e.g. Redshank, Snipe).

The spread of Common Cord-grass is listed as one of the three main threats upon Atlantic Saltmarsh, an Annex I habitat (McCorry & Ryle, 2009). However some studies and observations suggest that negative impacts may not be as serious as previously predicted and the spread of the species and subsequent effects appear to vary on a site by site basis. There are some concerns that *S. anglica* may benefit from warmer spring temperatures as a result of climate change (Nehring & Hesse, 2008).

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## Appendix 1 – Participant counters

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D. Berridge
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S. Boyd
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N. Brennan
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J. Brophy
A. Brown
S. Brown
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T. Burkitt
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D. Carty
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V. Cashera
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C. Casey
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G. Cassidy
J. Cassidy
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D. Clabby
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P. Clancy
D. Clarke
C. Clenaghan
G. Clerkin
C. Clotworthy
M. Cobley
K. Colgan
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M. Collier
D. Collins
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R. Collins
J. Coman
D. Comerford
J. Concannon
J. Conneely
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F. Connolly
M. Connolly
C. Conroy
J. Conroy
B. Convery
D. Cooke
D. Coombes
T. Cooney
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A. Copland
J. Copner
W. Cormacan
J. Cornish
S. Corry
P. Cosgrove
M. Cotter
D. Cotton
D. Coveney
J. Coveney
M. Cowming
S. Cox
D. Craig
K. Craig
S. Craig
J. Crawford
J. Cribbon
N. Cribbon
J. Croke
J. Cromie
J. Cronin
J. Crosher
F. Cross
C. Croton
O. Crowe
C. Crowley
M. Crowley
R. Crowley
S. Crowley
P. Crushell
T. Cuffe
C. Cullen
D. Cullen
S. Cullen
A. Cummins
S. Cummins
C. Cunningham
M. Cunningham
J. Curtin
J. Curtis
J. Cusack
B. Coussen
A. Dale
E. Dale
D. Daly
G. Daly
P. Dansie
G. D'Arcy
C. Darling
D. Ellis
H. Davey
M. Davis
P. Davis
L. De Beer
T. De Beer
E. De Milo
J. Deasy
C. Deasy O'Leary

H. Deenan
K. Deering
A. Delaney
E. Delaney
H. Delany
S. Delany
B. Denny
P. Denny
L. Desierdo
D. Devlin
J. Devlin
J. M. Dick
D. Dillon
D. Dodrill
C. Doherty
T. Doherty
A. Donaghy
D. Donnelly
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H. Doyle
K. Doyle
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S. Doyle
T. Doyle
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M. Dromey
N. Duff
B. Duffy
M. Duffy
P. Duffy
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T. Finnen
K. Finney
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P. Fitzgerald
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D. Fitzpatrick
F. Fitzsimons
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M. Morris
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S. Mullins
R. Mundy
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D. Murphy
F. Murphy
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T. O'Brien
M. O'Clery
M. O'Coilleain
B. O'Connell
D. O'Connell
J. O'Connell
M. O'Connell
P. O'Connell
A. O'Connor
B. O'Connor
D. O'Connor
F. O'Connor
J. O'Connor
K. M. O'Connor
A. O'Dónaill
C. O'Donnell
D. O'Donnell
G. O'Donnell
P. O'Donnell
A. O'Donoghue
B. O'Donoghue
P. O'Donoghue
T. O'Donoghue
S. O'Donoghue
F. O'Donovan
G. O'Donovan
J. O'Donovan
R. O'Driscoll
F. O'Duffy
P. O'Dwyer
C. O'Gibne
P de C. O'Grady
J. O'Halloran
S. O'Hehir
D. O'Higgins

D. O'Keefe
G. O'Keefe
M. O'Keefe
C. O'Keeffe
D. O'Keefe
K. O'Leary
P. O'Leary
B. O'Loughlin
D. O'Loughlin
B. O'Mahony
C. O'Mahony
D. O'Mahony
M. O'Mahony
L. O'Malley
N. O'Malley
O. O'Maolin
M. O'Meara
C. O'Neill
F. O'Neill
F. O'Reilly
M. O'Reilly
K. O'Rourke
D. Osborne
B. O'Shea
P. Osterrieth
D. O'Sullivan
L. O'Sullivan
M. O'Sullivan
O. O'Sullivan
P. O'Sullivan
R. O'Sullivan
D. O'Teangana
L. O'Toole
S. O'Toole
F. Owens
G. Owens
J. Palmer
G. Pearson
C. Peppiatt
D. Perry
K. Perry
B. Phalan
A. Phillip
P. Phillips
G. Phipps

S. Pierce
M. Pollitt
C. Pollock
B. Porter
S. Powell
B. Power
G. Power
J. Power
F. Prendergast
P. Price
A. Prins
G. Prole
E. Quinn
F. Quinn
H. Quinn
J. Quinn
P. Quinn
S. Quinn
N. Raftery
V. Raine
T. Ramage
P. Reaney
S. Redican
T. Reed
D. Rees
S. Rees
E. Regan
B.Reidy
D. Reidy
M.Reilly
M. Reilly
P. Reynolds
M. Ridgeway
A. Robb
B. Robson
M. Roche
P. Rocke
T. Roderick
J. Roe
G. Rogan
J. Rogers
S. Ronayne
N. Rooney
A. Rosner
D. Roycroft

K. Ruge
B. Ryan
D. Ryan
F. Ryan
L. Ryan
M. Ryan
P. Ryan
S. Ryan
T. Ryan
C. Saich
D. Scanell
D. Scott
G. Scott
L. Scott
C. Seale
J. Shackleton
J. Shannon
M. Sharkey
N. Sharkey
J. Sharma
M. Sheehy
L. Shelley
H. Shepherd
E. Sheppard
R. Sheppard
P. Sheridan
A. Sherington
T. Shevlin
C. Shiel
J. Shine
C. Shoebridge
M. Shorten
J. Shorten
D. Silke
J. Simms
D. Skehan
J. Small
P. Smiddy
A. Smith
J. Smyth
M. Somers
S. Somers
M. Souter
A. Speer
T. Spillane

B. Staniford
R. Steed
B. Stembridge
R. Stephens
R. Stirling
C. Stockdale
A. Stoney
D. Storey Branagh
B. Strickland
W. Stringer
D. Strong
L. Stuart
M. Styles
D. Suddaby
V. Swan
M. Swann
E. Sweeney
M. Sweeney
O. Sweeney
K. Tapp
T. Tarpey
P. Taylor
R. Taylor
T. Tedstone
R. Teesdale
M. ten Cate
A. Thomas
C. Thomas
G. Thomas
R. Thompson
M. Tickner
D. Tierney
N. Tierney
V. Toal
A. Toland
J. Toland
R. Tottenham
R. Towe
S. Travis
D. Treacy
M. Trewby
P. Troake
C. Tweney
P. Twomey
M. UiLéime
H. van Pesch
P. Vaughan
B. Vennemann
M. Viney
E. Virkki
Y. von Cramon
B. Waldron
B. Wall
E. Wallace
A. Walsh
P. Walsh
P. Walton
S. Walton
G. Ward
P. Warner
T. Waterman
S. & T. Waters
T. Watkins
B. Watson
P. Watson
R. Watson
A. Webb
J. Wells
D. Whaley
J. Whearty
F. Wheeldon
R. Wheeldon
J. Whelan
R. Whelan
J. Whilde
C. White
P. White
J. Whitla
T. Whyte
B. Wickham
G. Wilkinson
C. Williams
G. Williams
T. Williams
C. Wilson
G. Wilson
J. Wilson
M. Wilson
F. Wolstenholme
P. Wolstenholme
W. Woodrow
K. Woods
L. Woods
R. Woodward
P. Woodworth
J. Wray
M. Wright
J. Wyllie
A. Wynne
G. Young
M. Zajac

# Appendix 2 – I-WeBS sites

The full list of I-WeBS sites mentioned in the report is given below. The central Irish grid reference of each site is provided.

| | |
|---|---|
| **County Carlow** | |
| Slaney Upper | S895580 |
| **County Cavan** | |
| Adra Lough | H300003 |
| Annaghierin Lake | H700034 |
| Annalee River | H6111 |
| Bailieborough Lough | N671967 |
| Barnagrow Lough | H670070 |
| Billis: Ballyjamesduff | N560940 |
| Bracklagh Lough | N395826 |
| Castle Lough | N669990 |
| Clonty Lake | H275123 |
| Cornagrow Lough | N510932 |
| Cornakilly, Virginia | N555861 |
| Corraghy Lough | H690050 |
| Corraneary Lough | H650052 |
| Druminnick Lough | H688057 |
| East Ballinamore Lakes | H200150 |
| Evvey Lake Kingscourt | N763941 |
| Galloncurra Lough: Bailieborough | N6396 |
| Garty Lough: Arvagh | N279978 |
| Glasshouse Lough | H270060 |
| Green Lough | H425035 |
| Guinikin Lough: Arvagh | N272966 |
| Hollybank Lake: Arvagh | N265975 |
| Kilmore Lough | N610917 |
| Kilnaleck Lakes | N4389 |
| Lisgrea Lough | N593899 |
| Lisnananagh Lough | H495031 |
| Lough Acurry | N585990 |
| Lough Oughter Complex | H350070 |
| Lough Ramor | N600860 |
| Lough Sheelin | N450840 |
| Lough Sillan | H700066 |
| Lough Tacker | H690080 |
| Lower Lough: Arvagh | N262980 |
| Mass Rock Field (near Arvagh) | N300990 |
| Milltown Lough (Cavan) | H710039 |
| Mountnugent | N493851 |
| Mullagh Lough | N680850 |
| Nadreegeel Loughs | N550937 |
| Parkers Lough: Bailieborough | N648972 |
| River Erne & lakes north of Belturbet | H365195 |
| River Erne: Oughter - Gowna | N360970 |
| Rockfield Lake | H274035 |
| Roosky Lough | H647045 |
| Shinan Lough | H710050 |
| Swellan Lough | H412040 |
| Tullylorcan Lough | H635037 |
| White Lough (near Shercock) | H669043 |
| Woodford River | H243140 |
| Woodford River Lakes | H300200 |
| **County Clare** | |
| Ballinsheen Lough | R385945 |
| Ballyallia Lake | R345810 |
| Ballycar Lough | R414687 |
| Ballyvelaghan Lake (Burren Village Lake) | M280113 |
| Cahermurphy Lough | R099662 |
| Carran Polje | R282980 |
| Castlelough | R345980 |
| Corofin Wetlands | R290890 |
| Cregg Lough, Whitegate | R743890 |
| Derrynacarragh Lough | R207778 |
| Doo Lough | R120720 |
| Dromoland Lough | R387757 |
| Dromore Lakes (Clare) | R3586 |
| Drumcliff | R330800 |
| Farrihy Lough | Q914644 |
| Gortaganniv Lough | R262759 |
| Inagh River | R175840 |
| Kilfenora | R180940 |

| | |
|---|---|
| Kilkee Reservoir | Q900618 |
| Knockaunroe/ Rinnamona | R310938 |
| Lickeen Lough | R170910 |
| Liscannor Bay (Liscannor - Rinanoughter) | R0886 |
| Lough Atorick | R630965 |
| Lough Girroge | R347797 |
| Lough Graney | R556930 |
| Lough Naminna | R176710 |
| Lough O'Grady | R610840 |
| Lough Raha | R267860 |
| Mid-Clare Coast (Mal Bay - Doonbeg Bay) | R020750 |
| Poulataggle | M403007 |
| Pouleenacoona | M365018 |
| Quin/Keevagh | R410756 |
| River Fergus | R330890 |
| River Shannon (Lower) | R640620 |
| River Shannon (Lower) Aerial | R640620 |
| Ruan Turlough | R3387 |
| Scarriff area | R6480 |
| Shannon & Fergus Estuary | R200520 |
| Shannon & Fergus Estuary Aerial | R200520 |
| South East Clare Lakes | R460720 |
| Tulla Turlough | M360020 |
| Tullaher Lough | Q955620 |
| Turloughmore (Clare) | R345995 |
| **County Cork** | |
| Adrigole Harbour | V805495 |
| Argideen River | W330467 |
| Ballin Lough | W200390 |
| Ballybranagan | W9161 |
| Ballybutler (Butlerstown) Lake | W9272 |
| Ballycotton Shanagarry | W9865 |
| Ballycrenane/Warren | X020683 |
| Ballydehob Estuary | V990350 |
| Ballyhea Gravel Pit | R538172 |
| Ballyhonock Lough | W993733 |
| Ballymacoda | X0672 |
| Ballynacarriga Lake | W285503 |
| Bandon Estuary | W600495 |
| Bandon River | W370530 |
| Bantry Bay | V990485 |
| Barley Cove Bay | V770245 |
| Bear Haven | V680455 |
| Blarney Fen - Clogheenmilcon | W625755 |
| Blarney Lake | W605745 |
| Buttevant | R545135 |
| Carrigillihy Lake | W212330 |
| Castlemartyr Lake | W9672 |
| Castlenalact Lake | W480600 |
| Charleville Lagoons | R5426 |
| Clonakilty Bay | W400380 |
| Cloyne | W920670 |
| Cork Harbour | W800666 |
| Corran Lake | W220400 |
| Courtmacsherry Bay, Broadstrand Bay & Dunworley | W515380 |
| Croagh Bay | V900290 |
| Crookhaven | V815265 |
| Curraghlicky Lake | W235467 |
| Farranamanagh Lough | V830377 |
| Gallanes Lough, Clonakilty | W396431 |
| Glandore Harbour/Union Hall | W210345 |
| Ilen Estuary | W050290 |
| Inishcarra Reservoirs | W330700 |
| Kilcolman Marsh | R580109 |
| Kilkeran Lake | W337340 |
| Lissagriffin Lake | V770263 |
| Lough Aderry | W9373 |
| Lough Atarriff | W260460 |
| Lough Cluhir | W200325 |
| Lough Gal | W700750 |
| Lough Gorm | W195394 |
| Madame Lake (Bateman's Lough) | W407468 |
| Mahona Lough | W232507 |
| Myross Island & Inlet (Blind Harbour) | W205313 |
| Nohoval Lake | W718506 |
| Ringabella Creek | W7656 |
| Roaringwater Bay | W001307 |
| Rosbrin Cove | V980315 |
| Rosscarbery | W290360 |
| Scart Bridge | R522150 |
| Shreeland Lakes (incl. Lough Doo) | W178359 |
| Stick Estuary (Oysterhaven) | W680510 |
| Toon River Callows, Parkanillane | W290702 |

| | |
|---|---|
| Toormore Bay | V855300 |
| **County Donegal** | |
| Ballyness Bay | B910330 |
| Black Lough, Carrowmeenagh | C569435 |
| Cashelnagor Lough | B922259 |
| Clooney Lough | G720990 |
| Culdaff | C533494 |
| Donegal Bay | G890730 |
| Doon Lough | G703980 |
| Drimagraa Lough | G855828 |
| Dunfanaghy Estuary | C010370 |
| Dunfanaghy New Lake | C020380 |
| Dunlevy Lough | B915195 |
| Fanad North Coast | C190445 |
| Gartan Lough | C050158 |
| Glencoagh Lough | G865790 |
| Gweebarra Bay | G780994 |
| Kiltooris Lough | G675975 |
| Kindrum Lough | C185430 |
| Kinny Lough | C204442 |
| L. More (Creeslough) | C064307 |
| L. Natooey | C148303 |
| Lettertreane Lough | G887840 |
| Lough Acapple | G998671 |
| Lough Adrihidbeg (Dungloe) | B780111 |
| Lough Alaan | H153960 |
| Lough Bhaile na Creige | B907289 |
| Lough Birroge | G695985 |
| Lough Derryduff | G745970 |
| Lough Doo, Buncrana | C359394 |
| Lough Effish | L573438 |
| Lough Fad | G725980 |
| Lough Fern | C180230 |
| Lough Finn | B910014 |
| Lough Foyle | C530330 |
| Lough Illion | B747094 |
| Lough Inn | C517387 |
| Lough Nacung Upper | B890210 |
| Lough Namafin | G800839 |
| Lough Naminn | C398418 |
| Lough Shivnagh | B955028 |
| Lough Shivnagh (Tully) | H005673 |
| Lough Swilly | C300250 |
| Loughanvrickabrack | C463367 |
| Loughs Akibbon & Nacally | C060180 |
| Magheradrumman Lough | C205450 |
| Maghery Lake | B722095 |
| Meenaguse Lough | G903882 |
| Mintiags Lough | C3840 |
| Rath Lough | G965688 |
| River Deele | H2598 |
| River Finn | H2894 |
| River Foyle | C350100 |
| Rosapenna Lough | C112381 |
| Sand Lough | B958207 |
| Sandfield Lough | G708951 |
| Shannagh Lough | C213453 |
| Sheskinmore Lough | G695956 |
| Still Lough | G703988 |
| Summy Lough | G705970 |
| Tamur Lough | G811858 |
| Tawny Lough (Donegal) | C200389 |
| Trawbreaga Bay | C440480 |
| Trawenagh Bay | B780045 |
| Trusk Lough | H130900 |
| Tullinlough | G834850 |
| **County Dublin** | |
| Baldoyle Bay | O240420 |
| Broadmeadow (Malahide) Estuary | O220470 |
| Delvin River - Hampton Cove | O200643 |
| Dublin Bay | O210340 |
| Dublin Zoo Ponds | O128355 |
| Grand Canal (Dublin) | O138326 |
| Hick's Tower & Robswall | O250435 |
| Hynestown Lake Naul | O153601 |
| Ireland's Eye | O290410 |
| Knock Lake | O190610 |
| Lambay Island | O315510 |
| Rockabill | O322625 |
| Rogerstown Estuary | O230520 |
| Skerries Coast | O270575 |
| Skerries Islands | O268598 |
| Skerries, Baldongan | O225575 |
| South Dublin Coastline | O270260 |
| St Stephen's Green | O160335 |
| **County Galway** | |
| Abbert River/Ardskea | M452420 |
| Ballindeereen Turlough | M400150 |
| Ballinduff Turlough & Grassland | M460070 |

| | |
|---|---|
| Ballyboy | M481129 |
| Ballyconneely Bay | L620430 |
| Ballynaboola | S674099 |
| Ballynakill Lake | L640582 |
| Ballynakill Lough (Gorumna Isl.) | L865226 |
| Bog SE of Lettershinna | L840420 |
| Boggaun Lough | M733359 |
| Caherglassaun Lough | M410060 |
| Cahermore Turlough | M410080 |
| Caranavoodaun Turlough | M450150 |
| Carrowreagh | M715352 |
| Castleboy Grassland | M513112 |
| Cockstown West | M485103 |
| Coolcam Turlough | M577710 |
| Coole Lough - Newtown Turlough | M415030 |
| Coollisduff | M222597 |
| Corralough | M618694 |
| Cregaclare (E of Ardrahan) | M483130 |
| Creganna Marsh | M382225 |
| Croaghill Turlough | M592710 |
| Curragh Turlough | M565677 |
| Doolough Headford (Turloughcor) | M290440 |
| Dooyertha River | M55235 |
| Flooded area E of Blindwell | M370597 |
| Foxhall/Cloghans Hill | M335605 |
| Glenamaddy Turlough | M635610 |
| Gort | M455058 |
| Gorteen | M535597 |
| Grassland at Ardacong | M440549 |
| Headford Road | M320320 |
| Inishbofin | L550650 |
| Inishmore, Aran Islands | L830110 |
| Inner Galway Bay | M320180 |
| Inner Streamstown Bay | L640525 |
| Killaclogher River | M5640 |
| Kiltiernan Turlough | M430140 |
| Kiltullagh Lough | M6159 |
| Knockatogher Turlough | M590270 |
| Kylemore Lough | L770585 |
| L. Coy - Blackrock - Bullaunagh - Ballylee | M495075 |
| Loch na Créibhinne | L990215 |
| Loch Ros Amhíl | L967252 |
| Lough Adrehid | M052429 |
| Lough Anillaun | L614582 |
| Lough Aroolagh | L924383 |
| Lough Aughawoolia | L971414 |
| Lough Corrib | M270400 |
| Lough Cutra - Ballynakill L. | R470965 |
| Lough Illauntrasna (Gorumna Isl.) | L887254 |
| Lough Mannagh Turlough | M400010 |
| Lough Poll | M136291 |
| Lough Rea | M610150 |
| Loughaunavneen/Loch Tanaí (Camus) | L950305 |
| Loughaunawarls | M489169 |
| Lower Lough Corrib (swans) | M300350 |
| Lydacan Castle Turlough | M440070 |
| Mannin Bay | L620470 |
| Mullaghmore | M6148 |
| North Central Galway Lakes | M370580 |
| North East Galway Lakes | M600480 |
| Omey Strand | L575560 |
| Owenbristy | M431121 |
| Pollahalia (near Headford) | M328433 |
| Polleagh Turlough | M575685 |
| Pollnagarragh Marshes | M480160 |
| Raford River | M6327 |
| Rahasane Turlough | M480195 |
| River Clare | M350330 |
| Rossadillisk | L570585 |
| Termon Turloughs | R410980 |
| Tullaghnafrankagh Lough | M430150 |
| Tully Lough (Inverin) | M004222 |
| Un-named lake between Tulla & Clonteen | M385023 |
| Waterdale (floodplain NW of Claregalway) | M368360 |
| **County Kerry** | |
| An Trá Beg | Q485003 |
| Ballinskelligs Bay | V4665 |
| Brandon Bay - Inner Brandon Bay | Q530130 |
| Cashen River & Estuary | Q870385 |
| Castlemaine Harbour & Rossbehy | Q700000 |
| Castlemaine Outer: Inch offshore | V6398 |
| Crompaun River | Q853304 |

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|---|---|
| Dingle Harbour | Q4401 |
| Kenmare Estuary | V9170 |
| Lake Yganavan | V705995 |
| Lixnaw Canal | Q8930 |
| Lough Caragh | V7290 |
| Lough Leane & Killarney Valley | V9587 |
| Magharees Islands | Q6020 |
| Mountain Lakes SW of Lough Leane | V830810 |
| R. Laune | V808937 |
| Smerwick Harbour | Q370050 |
| Tralee Bay, Lough Gill & Akeragh Lough | Q700150 |
| Ventry Harbour | V380990 |
| **County Kildare** | |
| Ballynafagh Lake (Prosperous) | N810290 |
| Balrath | N675605 |
| Gilltown Bridge (nr Kilcullen) | N865065 |
| Grasslands near Dunlavin (north of) | N863040 |
| Kildare Curragh | N775135 |
| Lakelands Naas | N895193 |
| Pollardstown Fen | N7715 |
| River Barrow (Monasterevin-Athy) | N660030 |
| River Barrow (Monasterevin-Portarlington) | N610130 |
| **County Kilkenny** | |
| Holly Lake (aka L. Cullin) | S613185 |
| The Loughane (nr. Urlingford) | S317635 |
| **County Laois** | |
| Ballycolla | S386827 |
| Durrow Curragh (River Erkina) | S3778 |
| Landfill Ponds N80 North of Portlaoise | N450033 |
| River Barrow, Rathcoffey | N344123 |
| River Barrow: Mountmellick (Clonterry) | N476092 |
| River Nore | S402888 |
| **County Leitrim** | |
| Acres Lake (Drumshanbo) | G967099 |
| Annaghmaconway Lough | N131999 |
| Ballinamore Lakes | H215100 |
| Ballinamore/Ballyconnell Canal | H9906 |
| Beaghmore Lough | N225987 |
| Calloughs Lough | H226049 |
| Carrigallen Lakes | H230033 |
| Clooncorick Lough | H240044 |
| Clooncose Lough | N180927 |
| Cullies Lough | H260015 |
| Cullies River (nr. Carrigallen) | H253020 |
| Drowes River Bundrowes Bridge | G795585 |
| Drumshanbo Lough | N148909 |
| Dumb Lough | H255046 |
| Eslin River | N055885 |
| Fearglass Lough | N173919 |
| Glencar Lough | G749434 |
| Gortermone Lough | N216967 |
| Gulladoo Lough | N240990 |
| Keeldra Lough | N149962 |
| Killananima | G813305 |
| Kilnamar Lough | H259060 |
| Laheen Lough | H260071 |
| Lough Cam | H161038 |
| Lough MacNean (Upper) | H040390 |
| Lough Nabelwy | N191938 |
| Lough Sallagh | N160914 |
| Mullanadarragh Lough | H212014 |
| North West Leitrim Mountain Lakes | G900400 |
| Rinn Lough Wetlands | N100940 |
| River Shannon Upper (Drumsna - Carrick-on-Shannon) | M958960 |
| Shannon-Erne Waterway | G9604 |
| Tully South Lough | N220977 |
| **County Limerick** | |
| Annagh Lough (Longford) | N217923 |
| Camoge River | R6243 |
| Cordara Turlough | N030635 |
| Doogary Lough | N205952 |
| Fortwilliam Turlough | N015633 |
| Gorteen Lake | N227795 |
| Inny River | N2158 |
| Leebeen Lough | N265893 |
| **County Longford** | |
| Lough Forbes | N080820 |
| Lough Gowna | N300900 |
| Lough Gur | R6441 |
| Lough Kinale & Derragh Lough | N390811 |
| Lough Naback | N245945 |
| Lough Ree | N020530 |

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|---|---|
| Morningstar River | R5836 |
| Mungret | R530550 |
| Rinn River | N088830 |
| River Deel | R340430 |
| Turreen Turlough | N018650 |
| **County Louth** | |
| Boyne Estuary | O150770 |
| Braganstown | O020943 |
| Carlingford Lough (RoI) | J210106 |
| Dunany Point - Clogher Head | O146880 |
| Dundalk Bay | J106003 |
| Dundalk Bay Outer (North: Ballagan Point - Giles Quay) | J232062 |
| Fane River Plain | J040005 |
| Keenan's Cross Pond | O0991 |
| Killineer Quarry, Drogheda | O072760 |
| Parsanstown, near Clogher Head | O130862 |
| Port Oriel: Collon | N9882 |
| River Glyde | O065945 |
| **County Mayo** | |
| Achill Island | F6406 |
| Attymass Lakes | G286126 |
| Balla Wetlands | M260850 |
| Ballybackagh | M250550 |
| Ballyglass Wetlands | M225780 |
| Ballyhaunis Lakes | M500850 |
| Blacksod & Tullaghan Bays | F690250 |
| Brees Wetlands | M310830 |
| Broadhaven & Sruwadaccon Bays | F770350 |
| Bulkan River | M201632 |
| Callow Lakes | G313037 |
| Carras Lough | M315625 |
| Carrowmore Beach | L796816 |
| Carrowmore Lake | F830300 |
| Carrowmore Lough | M232885 |
| Carrownacon Lakes | M200775 |
| Cashel Turlough | M077833 |
| Castlebar Lakes/ Islandeady chain | M090880 |
| Clew Bay | L900900 |
| Cloonagh Lough (Mayo) | G205218 |
| Cuiltybo Lough | M335861 |
| Derrymannin Lake | G214114 |
| Doocastle Turlough | G5808 |
| Doolough & Finlough | L835672 |
| Garrets Lake | G106143 |
| Gibson's Lough | M077931 |
| Keel Lough | F650060 |
| Kilglassan Turlough/ Greaghans | M280650 |
| Killala Bay | G250300 |
| Killaturly Lake | M411985 |
| Kilnalag Turlough | M609696 |
| Kinlooey Lough | M033816 |
| Knappaghbeg Lough | M010805 |
| Little River/Sraheens | M273905 |
| Lough Alick | G214145 |
| Lough Carra | M180710 |
| Lough Conn | G180110 |
| Lough Cullin | G230030 |
| Lough Levally | G140045 |
| Lough Mask | M110630 |
| Lough Muck (Mayo) | G305032 |
| Lough Nacapduff | G040122 |
| Lough Nahaltora | L792743 |
| Manulla Lakes | M208878 |
| Mullet West | F620250 |
| River Moy | G249121 |
| River Robe (near Brikeens, E of N17) | M400730 |
| River Robe (W of N17) | M3071 |
| Robe River (near Roundfort) | M260660 |
| Rostaff Lake | M250490 |
| Shrule Turlough | M275520 |
| Skealoghan Turlough | M250625 |
| South Mayo Coast | L740750 |
| Straide River | M268985 |
| Tawnyard Lough | L915673 |
| Termoncarragh & Annagh Marsh | F663350 |
| Toormore River | M2395 |
| Washpool Lough | M215841 |
| Wetland near Drumcarrabaun (Belcarra/Ballyglass Road) | M203820 |
| **County Meath** | |
| Balgeeth | N700728 |
| Ballyhoe Lakes | N850950 |
| Baltrasna | N527769 |
| Black Lough (Drewstown) | N687684 |
| Breakey Lough | N736902 |

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|---|---|
| Clooney Lough (Castletown) | N830820 |
| Croboy Lough & fields | N622485 |
| Crossakeel | N652736 |
| Cruicetown | N790850 |
| Donore Bog | O0470 |
| Fordstown | N724698 |
| Gravelstown | N780808 |
| Kells (Meath) | N720724 |
| Lough Bane | N550711 |
| Lough Brackan | N8788 |
| Moat, Oldcastle | N514804 |
| Murphy's Quarry, Gormanston | O156686 |
| Nanny Estuary & shore | O170700 |
| Newcastle Lough | N795908 |
| River Blackwater (Meath) | N755763 |
| River Boyne | O007728 |
| Tara Mines Tailings Ponds | N840710 |
| Wetlands at Greenan/ Garrynabolie | N540740 |
| White Lough | N692688 |
| Whitewood Lough | N7988 |
| Yellow River | N842744 |
| **County Monaghan** | |
| Annaghmakerig Lough | H585205 |
| Annagose Lough | H580250 |
| Baraghy Lough | H6612 |
| Bawn area | H7111 |
| Blackwater Catchment | H710420 |
| Carlougharoe Lough | H570225 |
| Creeve Lakes | H7316 |
| Creevy Lough (Monaghan) | H830070 |
| Descart Lough | N822973 |
| Dromore Lakes (Monaghan) | H620170 |
| Dromore River | H690195 |
| Drum Lakes | H560160 |
| Drumgole Lough | H590190 |
| Drumhay Lake | H580180 |
| Drumillard Lake | H818213 |
| Fane River | H874142 |
| Finn-Lacky Catchment | H610340 |
| Gortnawinny Lake | H5128 |
| Inner Lough Dartrey | H6117 |
| Killy Lough (Monaghan) | H630042 |
| Killygola Lake | H8221 |
| Lakelands | H773242 |
| Lough Avaghon | H6813 |
| Lough Egish | H7914 |
| Lough Fea (Monaghan) | H8202 |
| Lough Laragh | H800220 |
| Lough Morne | H7613 |
| Lough Nagarnaman | H820110 |
| Lough Naglack | H855024 |
| Lough Ross | H8816 |
| Loughs Feagh & Drumate | H590226 |
| Monalty Lough | H8602 |
| Muckno Lough | H840200 |
| Muckno Mill Lough | H842222 |
| Newbliss | H563234 |
| Rahans Lake | N832976 |
| Rossmore Forest Park | H655310 |
| Slieve Beagh Lakes | H560430 |
| **County Offaly** | |
| Blackwater Railway Lake | N005260 |
| Boora Lakes - Back Lakes Finnamores | N180195 |
| Charleville Pond | N312225 |
| Cloghanhill | N0919 |
| Derryounce (Lough Lurgan) | N530148 |
| ESB, Rhode | N506346 |
| Little Brosna Callows | M970115 |
| Little Brosna Callows (Aerial) | M970115 |
| Pallas Lake | N275195 |
| Raheen Lough | N465180 |
| Shannon Callows | N000215 |
| Shannon Callows (Aerial) | N000215 |
| Turraun Nature Reserve | N178236 |
| **County Roscommon** | |
| Annaghmore Lakes | M890840 |
| Ballinagard (S. of Roscommon) | M872625 |
| Ballintober East Turlough | M737748 |
| Ballintober Turlough | M727747 |
| Brideswell | M945455 |
| Cartron Lough | M991952 |
| Castleplunket Turloughs | M790780 |
| Cavetown Lough | M831973 |
| Drumalough | M633824 |
| Farramagalliagh East Turlough | G877016 |
| Feacle Turlough | M908434 |
| Fields north of Bellagh Lough | M956947 |
| Fin Lough (Roscommon) | G865040 |

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|---|---|
| Frenchpark | M743929 |
| Grange Lough | M980870 |
| Kilglass Lough | M980860 |
| Kiltybranks | M595915 |
| Lough Acrick | N012850 |
| Lough Boderg | N015920 |
| Lough Drumharlow | G910020 |
| Lough Key | G8305 |
| Lough Meelagh | G890120 |
| Lough Skean | G860130 |
| Lowfield Lough | M992946 |
| Lung River | M6595 |
| NW of Kilglass (adjoining L. Boderg) | M970860 |
| River Suck | M800400 |
| River Suck (Aerial) | M800400 |
| Southern Roscommon Lakes | M880600 |
| Stream/ grasslands near Clogher Bridge | M986943 |
| Thomas Street Turlough | M865465 |
| Tully Lough | M987919 |
| Turlough South of L. Key | G870010 |
| Wetland at Cloongasny Beg | M981895 |
| Wetlands east of Elphin | M950880 |
| **County Sligo** | |
| Ardnaglass River (nr Dunmoran) | G5234 |
| Ardogelly (nr Aughris Hd) | G4934 |
| Ballyconnell Bog | G570450 |
| Ballygawley Lough | G695287 |
| Ballysadare Bay | G620310 |
| Brownstown (west of Easkey) | G340387 |
| Bunduff Lakes | G710550 |
| Bunnanaddan | G606112 |
| Castleloye Turlough | G5413 |
| Cloghcor | G602438 |
| Cloonacleigha Lough | G610147 |
| Cloonagh Lough (Sligo) | G582465 |
| Colgagh Lough | G740360 |
| Drumcliff Bay Estuary | G630430 |
| Drumcliff River/Collinsford | G710410 |
| Garvogue River | G708352 |
| Knocknawhishoge | G689137 |
| Leitrim South Turlough | G548115 |
| Lough Anelteen | G765363 |
| Lough Arrow | G790115 |
| Lough Dargan (Sligo) | G724282 |
| Lough Gara | M700980 |
| Lough Gill | G750335 |
| Mullaghgar (nr Lough Gill) | G750356 |
| North Sligo Coast | G710580 |
| Outer Sligo Bay | G560460 |
| Owenmore River | G6608 |
| Quarryfield W Turlough | G590104 |
| Sligo Harbour | G650380 |
| Templehouse Lake | G6117 |
| Turlough W of Ballinvally | G570121 |
| Unshin River | G704270 |
| **County Tipperary** | |
| Ardcrony Turlough | R891873 |
| Ballingarry | R9896 |
| Cabragh Wetlands | S108552 |
| Clover River | S215578 |
| Drangan Beg | S030300 |
| Field with stream near Ballinruddery | M908000 |
| Flooded pasture, Ballinderry | R906908 |
| Gortdrum | R870410 |
| Grange: near Holycross | S065551 |
| Lough Aran | R855940 |
| Lough Derg (Shannon) | R800900 |
| Lough Derg (Shannon) Aerial | R800900 |
| Lough Duff | R905817 |
| Lough Eorna | R880860 |
| Lyonstown Stud Farm | S110365 |
| Marlfield Lake | S170220 |
| Pat Reddan's Lake | R890960 |
| River Suir Middle | S050450 |
| River Suir Upper | S133616 |
| Rockwell College Lake | S070340 |
| Walshs Sandpit Rathcool | S196385 |
| **County Waterford** | |
| Ballinlough | S447035 |
| Ballylough | S6504 |
| Ballyscanlan Lake | S541030 |
| Ballyshunnock Reservoir | S550020 |
| Belle Lake | S663045 |
| Blackwater Callows | W930990 |
| Blackwater Estuary | X110800 |
| Boatstrand-Annestown | X490989 |
| Carrickavrantry Reservoir | S549022 |

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|---|---|
| Clonea Strand | X317942 |
| Coolderry, Ballylusky | R920882 |
| Dungarvan Harbour | X260920 |
| Garrarus & Kilfarrassy | X535980 |
| Kilmacomb (South of Belle Lake) | S658028 |
| Kilmeaden Cream (Blackknock) | S5108 |
| Knockaderry Reservoir | S495060 |
| Lower Blackwater River | X100800 |
| Mid-Waterford Coast | X4097 |
| Outer Tramore Bay | X595995 |
| Pouldrew Pond | S509115 |
| River Barrow (Cheekpoint-New Ross) | S690190 |
| River Bride | W975940 |
| River Suir Lower | S500140 |
| Tramore Back Strand | S615015 |
| Waterford Harbour | S703070 |
| Whiting Bay | X152777 |
| **County Westmeath** | |
| Ballinlough (Westmeath) | N645658 |
| Crowinstown Lough | N640640 |
| Glen Lough | N282670 |
| Grasslands near Ballynacarrigy | N287613 |
| Lough Derravaragh | N410680 |
| Lough Drin | N455568 |
| Lough Ennell | N400465 |
| Lough Glore | N490720 |
| Lough Iron | N340630 |
| Lough Lene | N510680 |
| Lough Owel | N400580 |
| Lough Sheever | N460554 |
| Newtown Lough | N639680 |
| Plunkett's Quarry, Castletown | N458779 |
| Slevin's Lake | N451560 |
| Tang River | N1653 |
| Walshestown South Turlough | N400540 |
| Waterstown Lough | N100455 |
| White/Annagh Lough | N512730 |
| **County Wexford** | |
| Bannow Bay | S820090 |
| Cahore Marshes | T205450 |
| Lady's Island Lake | T1006 |
| River Slaney | S980310 |
| Tacumshin Lake | T0506 |
| The Cull & Killag (Ballyteige) | S930070 |
| Wexford Bay | T115285 |
| Wexford Harbour & Slobs | T060213 |
| **County Wicklow** | |
| Arklow Ponds | T250744 |
| Avoca River/Arklow | T240736 |
| Bray Harbour | O270193 |
| Buckroney Fen | T295808 |
| North Wicklow Coastal Marshes | O310040 |
| Poulaphouca Reservoir | O000100 |
| Vartry Reservoir | O2002 |

# Appendix 3 – Summary data for non-regularly occurring waterbirds

Summary table of I-WeBS data for all non-regularly-occurring waterbirds recorded during the period 2009/10-2015/16.

| Species | Scientific name | Number of records 2009/10 - 2015/16 | Number of seasons recorded 2009/10 - 2015/16 | Number of sites 2011/12 - 2015/16 | Peak Count 2011/12 - 2015/16 |
|---|---|---|---|---|---|
| Black Swan | *Cygnus atratus* | 39 | 7 | 8 | 6 |
| Bean Goose | *Anser fabalis* | 7 | 2 | 1 | 2 |
| European White-fronted Goose | *Anser albifrons albifrons* | 2 | 2 | 2 | 2 |
| Bar-headed Goose | *Anser indicus* | 23 | 3 | 1 | 1 |
| Snow Goose | *Anser caerulescens* | 10 | 4 | 3 | 1 |
| Dark-Bellied Brent Goose | *Branta bernicla bernicla* | 13 | 6 | 5 | 2 |
| Brent Goose (Black Brant) | *Branta bernicla nigricans* | 10 | 5 | 5 | 1 |
| Egyptian Goose | *Alopochen aegyptiacus* | 15 | 2 | 2 | 6 |
| Ruddy Shelduck | *Tadorna ferruginea* | 15 | 7 | 1 | 2 |
| Muscovy Duck | *Cairina moschata* | 66 | 3 | 1 | 1 |
| Mandarin | *Aix galericulata* | 19 | 5 | 2 | 16 |
| American Wigeon | *Anas americana* | 19 | 7 | 5 | 1 |
| Green-winged Teal | *Anas carolinensis* | 33 | 7 | 17 | 1 |
| Baikal Teal | *Anas formosa* | 1 | 1 | 0 | 0 |
| Black Duck | *Anas rubripes* | 2 | 2 | 0 | 0 |
| Garganey | *Anas querquedula* | 21 | 7 | 4 | 15 |
| Blue-winged Teal | *Anas discors* | 5 | 3 | 2 | 1 |
| Ring-necked Duck | *Aythya collaris* | 41 | 7 | 7 | 2 |
| Lesser Scaup | *Aythya affinis* | 1 | 1 | 1 | 1 |
| Surf Scoter | *Melanitta perspicillata* | 15 | 5 | 4 | 2 |
| Velvet Scoter | *Melanitta fusca* | 13 | 6 | 6 | 3 |
| Ruddy Duck | *Oxyura jamaicensis* | 4 | 3 | 2 | 1 |
| Pied-billed Grebe | *Podilymbus podiceps* | 2 | 2 | 1 | 1 |
| Red-necked Grebe | *Podiceps grisegena* | 18 | 6 | 4 | 3 |
| Black-necked Grebe | *Podiceps nigricollis* | 9 | 4 | 5 | 4 |
| Bittern | *Botaurus stellaris* | 3 | 2 | 1 | 1 |
| Great White Egret | *Ardea alba* | 8 | 3 | 3 | 1 |
| Cattle Egret | *Bubulcus ibis* | 2 | 2 | 1 | 1 |
| Glossy Ibis | *Plegadis falcinellus* | 14 | 6 | 8 | 20 |
| Spoonbill | *Platalea leucorodia* | 55 | 7 | 5 | 10 |

| Species | Latin name | Number of records 2009/10 - 2015/16 | Number of seasons recorded 2009/10 - 2015/16 | Number of sites 2011/12 - 2015/16 | Peak Count 2011/12 - 2015/16 |
|---|---|---|---|---|---|
| American Coot | *Fulica americana* | 5 | 2 | 2 | 1 |
| Crane | *Grus grus* | 8 | 3 | 3 | 5 |
| Avocet | *Recurvirostra avosetta* | 1 | 1 | 1 | 1 |
| Dotterel | *Charadrius morinellus* | 1 | 1 | 1 | 1 |
| American Golden Plover | *Pluvialis dominica* | 8 | 4 | 2 | 1 |
| Semi-palmated Sandpiper | *Calidris pusilla* | 2 | 2 | 2 | 2 |
| Little Stint | *Calidris minuta* | 28 | 7 | 6 | 3 |
| White-rumped Sandpiper | *Calidris fuscicollis* | 3 | 2 | 2 | 4 |
| Pectoral Sandpiper | *Calidris melanotos* | 6 | 3 | 2 | 2 |
| Buff-breasted Sandpiper | *Tryngites subruficollis* | 7 | 4 | 1 | 1 |
| Long-billed Dowitcher | *Limnodromus scolopaceus* | 1 | 1 | 1 | 2 |
| Woodcock | *Scolopax rusticola* | 22 | 7 | 8 | 4 |
| Green Sandpiper | *Tringa ochropus* | 55 | 7 | 18 | 27 |
| Lesser Yellowlegs | *Tringa flavipes* | 3 | 2 | 2 | 1 |
| Wood Sandpiper | *Tringa glareola* | 9 | 4 | 4 | 2 |
| Wilson's Phalarope | *Phalaropus tricolor* | 3 | 3 | 1 | 1 |
| Grey Phalarope | *Phalaropus fulicarius* | 1 | 1 | 1 | 1 |
| Sabine's Gull | *Larus sabini* | 2 | 2 | 1 | 3 |
| Yellow-legged Gull | *Larus michahellis* | 31 | 7 | 9 | 4 |
| American Herring Gull | *Larus argentatus smithsonianus* | 1 | 1 | 0 | 0 |
| Ivory Gull | *Pagophila eburnea* | 1 | 1 | 1 | 1 |
| Sandwich Tern | *Thalasseus sandvicensis* | 387 | 7 | 50 | 450 |
| Roseate Tern | *Sterna dougallii* | 17 | 6 | 5 | 27 |
| Common Tern | *Sterna hirundo* | 101 | 7 | 21 | 300 |
| Arctic Tern | *Sterna paradisaea* | 46 | 7 | 15 | 45 |
| Common/ Arctic Tern | *Sterna sp.* | 1 | 1 | 1 | 163 |
| Forster's Tern | *Sterna forsteri* | 5 | 4 | 2 | 1 |
| Little Tern | *Sternula albifrons* | 36 | 5 | 7 | 59 |
| Black Tern | *Childonias niger* | 8 | 3 | 3 | 4 |
| White-winged Black Tern | *Childonias leucopterus* | 2 | 2 | 2 | 1 |
| Kingfisher | *Alcedo atthis* | 385 | 7 | 69 | 12 |
| Dipper | *Cinclus cinclus* | | | 1 | 2 |
| Kittiwake | *Rissa tridactyla* | 68 | 6 | 11 | 165 |