

Oxwich Marsh

Ringing Report 2017

Report to Natural Resources Wales and
The Gower Society

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1 Introduction

Background

- 1.1 Oxwich Marsh is located on the south coast of the Gower Peninsula, approximately 13 km to the west of Swansea. The 'marsh' supports a range of habitats, including extensive reed bed, scattered scrub and wet woodland, ditches, areas of open water and species-rich grassland.
- 1.2 From a local ornithological perspective, the populations of reed bed warblers are the most notable feature, as there is very little reed bed in Gower. Reed warbler, sedge warbler and Cetti's warbler all breed at Oxwich, with the former two species also using the reed bed in considerable numbers during passage periods. Other migrant species such as whitethroat, blackcap and chiffchaff hold territory in fringing scrub and woodland.
- 1.3 Since Gower Ringing Group (Gower RG) began ringing at Oxwich (in March 2013), possibilities for collecting data sets on different species have been explored. This has seen us create a variety of different net rides through reed bed, rush pasture and scrub habitats. The work has been supported by Natural Resources Wales (NRW), the land managers, and for the past three years by grant funding from The Gower Society.

Aims of Ringing at Oxwich Marsh

- 1.4 Bird ringing has a number of aims. These include understanding migration i.e. where birds migrate to, where they stage during these journeys, how long it takes them to reach their wintering or summering quarters, and how they move in response to periods of harsh weather or food shortage. Ringing and recapture of individual birds therefore allows us detailed insight into bird movements.
- 1.5 Ringing also enables understanding of how long individual species live, their moult strategies, how site faithful they are, the stage they have reached in the breeding process, and what physical condition they are in. For example, the amount of fat and muscle on a bird, and the stage of development of brood patches in females (and some male birds) can be visually assessed and categorised using basic standardised scoring systems.
- 1.6 The cumulative data collected by ringers allows insight into the ecology and population dynamics of birds, and forms an excellent basis for research. This is of particular importance in the context of climatic change, with many birds having to adapt to changing seasonal temperatures and peak times of food availability if population levels are to be maintained. Understanding where birds breed, winter and stage (stop during migration) also enables more effective international conservation, principally through the designation and management of important habitats vital to sustaining populations.
- 1.7 As the capture and handling of birds inevitably results in a degree of physical stress, it follows that all ringing activity should have a clear purpose. At Oxwich Marsh, the aims are as follows:
 - To capture reed bed warblers in order to obtain data on site fidelity, timing of breeding, and to gain insight into the importance of the site to these species during the breeding season and passage periods;
 - To capture good numbers of reed bunting, a species that previous ringing effort has established occurs at the site in good numbers, and which existing data suggests moves around numerous sites locally during the year (including other ringing sites);
 - To capture good numbers of finches, particularly goldfinch, siskin, greenfinch and chaffinch. All typically undertake seasonal movements and greenfinch in particular has been subject to a recent national-level decline due to trichomonosis;
 - To capture a range of migrant and wintering passerine species that are not likely to breed in the marsh, as the area is very challenging to survey due to its extent and inaccessibility, and also due to the fact that only a few birdwatchers regularly visit it;
 - To raise the profile of ringing locally, and to integrate our efforts with other local groups involved in bird conservation in South Wales; and, overall,

- To collect a long-running, high quality data set on birds for Oxwich Marsh.

Training and Awareness Raising

- 1.8 Oxwich is an excellent site for training ringers. This is due to the number and diversity of birds captured, and the fact that the site operates year-round. It complements some of the other projects the Gower RG is involved in (such as the Retrapping Adults for Survival (RAS) study on pied flycatcher at Cwm Clydach, and the Constant Effort Site at WWT Llanelli) which result in extremely valuable data, but comparatively few birds being captured. 2017 saw us take on a number of new trainees, a number of whom are embarking on careers in ecology.
- 1.9 We produce regular on-line summaries of our activities on the Gower RG blog (<http://gowerbirdringinggroup.blogspot.co.uk/>). These are often accessed by 500-1,000 people.
- 1.10 In 2017 we also had articles summarising ringing activity published in the the Gower Ornithological Society's annual publication 'Gower Birds' and in the the Gower Society's 'Gower Journal.' In addition, we also hosted the Welsh Ringing Course for the third (successive) year, between 8 and 11 September 2017.

2 Methods

Overview

- 2.1 The site was drier in 2017 than it had been in 2016 and 2015. Water levels were lower in the reed bed and in marginal habitats throughout the year. The other significant difference from 2016 was that cattle were absent for much of the year (between March and the end of the calendar year).
- 2.2 Due to the drier conditions, we added two new net rides near the South Pond (where we capture most of our snipe); during the autumn and early winter period (before reed had died back and been subject to wind-blow) we were able to manipulate roosting areas for snipe (by carving out patches in the reeds in areas where we could set nets). In other years the presence of cattle has resulted in a wider variety of opportunities for roosting snipe, as they trample down parts of the reed bed when moving through it.
- 2.3 Although in theory we can deploy in excess of 1600 feet / 500 metres of net at the site (as we have sufficient rides cut to allow this), we vary the net rides used in accordance with time of year, water levels and available personnel, and it is rare that we have more than 800 feet of net at the site.
- 2.4 The feeding station initially established in March 2013, and comprising two feeders stocked with sunflower hearts, was maintained through much of 2016. During part of the autumn feeding was suspended due to the prevalence of trichomonosis in the greenfinch population.

Data collected

- 2.5 For each bird captured, the following information was recorded:
- species;
 - initials of the individual that processed the bird;
 - time and date of capture;
 - age;
 - sex (where apparent) and sexing method;
 - moult stage (including a moult code / primary moult score / count of retained old greater coverts where relevant);
 - presence and stage of development of brood patch (using a standardised scoring system);
 - presence of cloacal protrusion (male birds in the spring and summer);
 - fat (presence and extent of deposit);
 - wing length; and
 - weight.
- 2.6 For some species additional data were collected. Basic wing formulas were taken for chiffchaff and willow warbler to confirm species (willow warbler is a long distance migrant and as such has a longer wing which is different in shape and has different feather tipping [emargination] to that of the similar chiffchaff), measurements of hind claw length and bill depth were taken to help determine pipit species, and tail fork length (the distance between the shortest and longest tail feathers) and total tail length was measured in adult swallows, as this can be used to determine sex in the species.
- 2.7 Despite the amount of information recorded, birds were handled for less than 1 minute in most cases. If there was any concern about their condition, or they were diseased, they were released without ringing.
- 2.8 Four standard reference texts were used as guides:

- Svensson, L. (1992). Identification guide to European passerines (5th Ed). Privately published, Stockholm.
- Baker, K. (2016). Identification of European non-passerines. British Trust for Ornithology, Thetford.
- Demongin, L. (2016). Identification guide to birds in the hand. Beauregard-Vendon.
- Redfern, C.F & Clark, J.A. (2001). The ringer's manual. British Trust for Ornithology, Thetford.

2.9 The former three texts are concerned with techniques for species identification, sexing and ageing of birds. Accurate ageing is often dependent on an understanding of moult strategies in individual species and the typical characteristics of juvenile and adult feathers. The latter text provides considerable information with regard to standardised techniques for scoring / coding of moult state, fat, the development of the brood patch, how to take non-standard measurements etc. Further information on any aspect of this is available through the BTO.

3 Results

Overview

- 3.1 In 2017 **3,492** birds of **46** species were ringed at Oxwich. Recaptures from previous years and controlled birds (those initially ringed at other sites) took the total of unique birds processed at the site to **3,857**. Swallow (709), blue tit (427) and goldfinch (324) were the most frequently captured species.
- 3.2 In 2016 **3,681** unique birds of **52** species were processed at Oxwich, with swallow (595) and goldfinch (479) the most frequently captured species. In 2015 and 2014 **3,925** unique birds of **47** species, and **3,564** unique birds of **48** species were processed at Oxwich respectively. 2013 was a pilot year and both numbers and the diversity of the catch were lower. The breakdown of annual totals is shown in Table 1 below (and over page).

Table 1. Total number of (unique) birds trapped at Oxwich Marsh, 2013-2017.

| No | Species | 2013 | 2014 | 2015 | 2016 | 2017 |
|----|--------------------------|------|------|------|------|------|
| 1 | Mute swan | | | | | 7 |
| 2 | Sparrowhawk | | 3 | | 2 | |
| 3 | Water rail | | | | 3 | |
| 4 | Jack snipe | | 1 | 2 | 14 | 10 |
| 5 | Snipe | | 11 | 4 | 19 | 55 |
| 6 | Woodpigeon | | 1 | | | |
| 7 | Kingfisher | 1 | 7 | 3 | 1 | 2 |
| 8 | Green woodpecker | | | 2 | | |
| 9 | Great Spotted woodpecker | 3 | 14 | 23 | 21 | 33 |
| 10 | Skylark | | 2 | 2 | | |
| 11 | Sand martin | | 14 | 8 | 33 | 19 |
| 12 | Swallow | 23 | 382 | 399 | 595 | 709 |
| 13 | House martin | | 1 | | 5 | 104 |
| 14 | Tree pipit | | 13 | 3 | 37 | 19 |
| 15 | Meadow pipit | 8 | 48 | 65 | 14 | 45 |
| 16 | Yellow wagtail | | | | | 3 |
| 17 | Grey wagtail | | | | 1 | 7 |
| 18 | Pied/White wagtail | | | 7 | 44 | 101 |
| 19 | Wren | 41 | 74 | 96 | 76 | 70 |
| 20 | Dunnock | 17 | 61 | 50 | 39 | 74 |
| 21 | Robin | 24 | 101 | 68 | 49 | 77 |
| 22 | Redstart | | | 1 | 1 | |
| 23 | Whinchat | | | 2 | | |
| 24 | Stonechat | | 6 | 10 | 21 | 14 |
| 25 | Wheatear | | | | 1 | |
| 26 | Blackbird | 14 | 32 | 39 | 29 | 57 |
| 27 | Song thrush | 5 | 7 | 18 | 10 | 17 |
| 28 | Redwing | | 8 | 99 | 42 | 92 |
| 29 | Mistle thrush | | | 1 | | |
| 30 | Cetti's warbler | 10 | 28 | 24 | 26 | 40 |
| 31 | Grasshopper warbler | 2 | 6 | 11 | 19 | 13 |
| 32 | Sedge warbler | 62 | 120 | 145 | 177 | 142 |
| 33 | Reed warbler | 113 | 153 | 159 | 227 | 192 |
| 34 | Lesser whitethroat | | 2 | 2 | 1 | |
| 35 | Whitethroat | 17 | 42 | 34 | 36 | 23 |
| 36 | Garden warbler | | 21 | 5 | 16 | 8 |
| 37 | Blackcap | 51 | 300 | 190 | 71 | 98 |

| No | Species | 2013 | 2014 | 2015 | 2016 | 2017 |
|--------------|-----------------------|------------|-------------|-------------|-------------|-------------|
| 38 | Yellow-browed warbler | | 1 | | 16 | |
| 39 | Wood warbler | | 1 | | | |
| 40 | Chiffchaff | 43 | 140 | 100 | 145 | 101 |
| 41 | Willow warbler | 22 | 94 | 85 | 146 | 72 |
| 42 | Goldcrest | 20 | 73 | 167 | 106 | 83 |
| 43 | Firecrest | 1 | 3 | 3 | 4 | 2 |
| 44 | Long-tailed tit | 17 | 30 | 37 | 42 | 21 |
| 45 | Marsh tit | | 2 | | | |
| 46 | Willow tit | | | | 1 | |
| 47 | Coal tit | | 3 | 7 | 8 | 7 |
| 48 | Blue tit | 224 | 393 | 469 | 235 | 427 |
| 49 | Great tit | 36 | 127 | 153 | 135 | 149 |
| 50 | Nuthatch | | | 2 | 1 | |
| 51 | Treecreeper | 2 | 1 | 7 | 7 | 3 |
| 52 | Magpie | 1 | 1 | 1 | 1 | |
| 53 | Starling | | 2 | | | 2 |
| 54 | Chaffinch | 30 | 196 | 265 | 208 | 157 |
| 55 | Brambling | | 1 | | 1 | 8 |
| 56 | Greenfinch | 3 | 355 | 468 | 244 | 139 |
| 57 | Goldfinch | 3 | 445 | 464 | 479 | 324 |
| 58 | Siskin | | 62 | 58 | 150 | 218 |
| 59 | Lesser redpoll | | | 7 | 2 | 2 |
| 60 | Bullfinch | 17 | 19 | 13 | 2 | 14 |
| 61 | Yellowhammer | | | | | 1 |
| 62 | Little bunting | | | | 1 | |
| 63 | Reed bunting | 40 | 157 | 147 | 117 | 96 |
| Total | | 850 | 3564 | 3925 | 3681 | 3857 |

3.3

Statistical comparison between years is not possible, as the total amount of net, the net rides used, and the number of visits each month varied depending on the personnel available and the weather conditions. Notwithstanding this, however, we aim to ring in the marsh twice a week during passage periods and at least once a week at other times. Where there are very obvious differences between years, these tend to be apparent. Clear differences between 2017 and previous years include:

- A far better capture of common snipe than in previous years. This reflected ideal water levels near the South Pond during much of the autumn and winter period, and our ability to manipulate roosting locations through cutting of rides and pockets in the reed in this area. It was interesting that the increase in common snipe captured was not reflected in jack snipe.
- Increased numbers of local resident species including great spotted woodpecker (thirty-three individuals coming to a feeder is a very high number) dunnoek, robin, blackbird and blue tit. This suggests it was a good breeding season for many resident species.
- Increased captured of wagtails during autumn passage. Previously we had set tape lures for pied/white wagtails at the end of a net ride erected to capture swallows coming in to roost. In 2017 we set nets (and tapes) for wagtails a few hundred metres from the swallow nets, with the possible result that the calls were more audible. We caught three yellow wagtails among the pied/white wagtails. We also (briefly) used a pipit triangle to target grey wagtails (with some success).
- Low catches of leaf warblers. This was particularly notable in common migrant breeders, with willow warbler and chiffchaff numbers well down on 2016 (- 51 % and – 30 % respectively). It was also a poor autumn for goldcrest (- 22 % compared with 2016 and – 50 % compared with 2015), we caught only two firecrest, and following the record total of sixteen yellow-browed warbler in 2016 we failed to capture the species in 2017.
- A further decline in greenfinch numbers. While it is not scientifically robust (for reasons noted above) to draw too many conclusions about population trends, we have put nets around the

feeders on the marsh for the last few years. During this time the number of birds caught has decline by 70 % from 468 in 2015 to 134 this year.

- A lack of goldfinches in the autumn and second winter period of the year. Following a good spring peak, with 119 birds captured in March, there was no July influx of juveniles (possibly indicating poor local productivity) or substantial capture during the autumn passage period. Conversely siskin numbers increased in 2017, albeit this was largely due to an exceptional day capture of 71 birds in late December.

3.4 Mute swan, yellow wagtail and yellowhammer were new (ringed) birds for the site, taking the overall total to sixty-three species. There were no rarities or scarcities processed in 2017, with the most notable result being the capture of eight bramblings between 19 November and 23 December.

3.5 Absentees from the annual total were lesser whitethroat, redstart, nuthatch, sparrowhawk and magpie. All have been captured in small numbers in the past few years. Despite the abundance of jays around the marsh, we have yet to catch one; this is surely the next bird to be trapped at Oxwich.

Species Accounts

Mute Swan

3.6 Two adult birds and five juveniles were rounded up and processed on 9 September 2017, during the Welsh Ringing Course.

3.7 One of the adults (the female) had been previously ringed (at Goodrington Park, Torbay) in January 2010, and was also present on the marsh in 2016 (when it was ring read in the field). The bird had moved 135 km in a north north-westerly direction between its ringing location and Oxwich.

3.8 Weights varied between 11.7 kg and 7.6 kg. The adult male and female birds were the heaviest.

Sparrowhawk

3.9 Although we failed to capture a sparrowhawk in 2017, an Oxwich-ringed bird was reported (found dead) in nearby Nicholaston in October. It had been ringed as a young male in August 2014.

Jack snipe

3.10 Ten jack snipe were captured in 2017 (fourteen in 2016).

3.11 Birds were trapped between late January and 25 March, in early to mid-October and in late December. All were caught around the margins of the South Pond.

3.12 Weight was very variable (range 49.1 g to 75.0 g), but none of the birds were noted as carrying visible fat deposits. The heaviest bird was captured in early February. There was no obvious correlation between time (in the season) of capture and weight.

3.13 There were no recaptures of jack snipe in 2017.

Snipe

3.14 Fifty-five snipe were captured at Oxwich in 2017 (nineteen in 2016).

3.15 All were captured close to the South Pond. In the first winter / spring period snipe were trapped between 28 January and 2 April and in the autumn and second winter period between 8 October and 23 December inclusive.

3.16 A snipe initially ringed on 27 October 2017 was recaptured on 23 December 2017. Between initial ringing and recapture its weight had risen from 97 g to 129.3 g (a 33 % increase). This demonstrates that some snipe, at least, are likely to remain on the marsh through much of the late autumn and winter period.

- 3.17 A between-winter recapture of snipe is the goal for 2018. It would be really interesting to start to understand the degree of site fidelity in the species. Capturing fifty-five birds in 2017 should increase our chances of a recapture significantly.

Kingfisher

- 3.18 A second successive poor year for kingfisher. Birds were captured on 10 and 13 August (only one bird was captured in 2016). Both were juveniles.
- 3.19 There was no clear evidence of local breeding. In 2014, which remains the best year for the species, breeding may have occurred on the North Pond, and a total of seven birds were trapped.

Great spotted woodpecker

- 3.20 Thirty-three individual great spotted woodpeckers were captured, making 2017 the best year to date for the species. There were thirteen recaptured birds from previous years, with the newly ringed birds comprising sixteen juveniles and four adults. New birds were captured between 20 May and 19 November.
- 3.21 The first juvenile was captured on 17 June (4 June in 2016), demonstrating local breeding. Catching four new woodpeckers in October and November 2017 (and three new woodpeckers in December 2016) suggests birds forage or disperse more widely during the late autumn and winter period.
- 3.22 All woodpeckers were captured in close proximity to feeders. These are more than 300 m from the nearest mature woodland.

Sand martin

- 3.23 Small numbers of sand martin were trapped among swallows during evening visits to the marsh between 7 August and 9 September. Of nineteen birds captured (thirty-three in 2016), sixteen were recent fledglings.

Swallow

- 3.24 Of seven hundred and nine swallows captured in 2017, 539 were juveniles and 170 adults. There were two birds controlled at the marsh and six between-year recaptures. In addition, one of our swallows (ringed in autumn 2015), was controlled on St Mary's, Isles of Scilly, in April 2017, when it will have been on northerly passage.
- 3.25 The swallows controlled at Oxwich had been ringed at Pembrey, Carmarthenshire, approximately 14 km to the north-west of Oxwich in August 2016 and August 2017 respectively. In addition, two swallows ringed at Oxwich in 2015 and seven birds ringed in 2016 were recaptured in 2017.

House martin

- 3.26 The one hundred and four house martins ringed in 2017 were captured on a single date, 27 August. We had had limited success capturing passage tree pipits (a target in mid to late August), so switched our tape to house martin, as there were a few birds foraging over the South Pond at the time.
- 3.27 A large flock (of in excess of five hundred birds) rapidly formed, and following a couple of small catches, during a net round just after midday we captured over eighty birds in three 12 m nets. Of the day total, only two birds were adults, with the remainder juveniles.

Tree pipit

- 3.28 Tree pipits were captured between 10 August and 9 September inclusive (14 August and 29 August in 2016). The largest catches were six birds on 26 August and five on 2 September.
- 3.29 The year total of nineteen birds was respectable, but well down on 2016, when thirty-seven were captured. Capture is highly weather dependent.

3.30 Biometrics taken included bill depth and hind claw length, as these, together with a range of other supporting features, can be used to definitively separate birds from the relatively similar meadow pipit. In the hand the short hind claw and the sturdy bill of tree pipit are often immediately apparent, along with plumage features.

3.31 Weights varied between 19.3 g and 23.4 g (seventy two birds captured at the site to date have ranged between 18.2 g and 25.1 g) and wing lengths between 82 mm and 91 mm.

Meadow pipit

3.32 We attempted to catch meadow pipits on several dates between mid-September and mid-October, capturing forty-five birds as a result.

3.33 There were few days when pipits were visibly migrating in number, and we concentrated on other species with higher likely recapture / control rates.

3.34 There was no indication of breeding on the marsh in 2017 (a recently fledged juvenile was captured in 2016).

Yellow wagtail

3.35 The total of three yellow wagtails were captured on three dates; 30 August, 8 and 9 September.

3.36 All were juveniles. Two could be sexed as males due to depth of colour.

3.37 The yellow wagtails were all captured coming into roost with pied / white wagtails. Their capture was relatively unexpected, as very few yellow wagtails are ringed in Wales (e.g. none in 2016), and they don't breed in the Gower recording area.

Grey wagtail

3.38 Seven first winter grey wagtails were captured in 2017. The birds were tape lured into a triangle of nets at dusk / within one hour of sunrise.

3.39 Weights were 16.4 g – 18.4 g.

3.40 Capture of grey wagtails is something we can potentially look to expand on in 2018.

Pied / white wagtail

3.41 Pied / white wagtails were captured between 7 August and 24 September 2017 inclusive (30 August and 20 September in 2016).

3.42 The wagtails were captured at dusk using tape lures; the majority were kept overnight in roost boxes and released the following morning.

3.43 Numbers were highest in early to mid-September, and included a peak catch of thirty-three birds on 9 September. The weight of the wagtails varied considerably (between 19 g and 28 g), and some birds were noted carrying reasonable fat deposits (up to a score of four based on the British Working Group [BWG] system).

Wren

3.44 Wren holds territory in various locations around the marsh, and seventy unique birds were captured in 2017 (seventy-six in 2016, ninety-six in 2015, seventy-four in 2014). Most other locally-resident multi-brooded species were captured in higher numbers in 2017 than in previous years, but wren bucked this apparent trend.

3.45 There were twelve recaptures from previous years. The oldest of these was a bird ringed in August 2014 and recaptured in May 2017.

3.46 The first fledgling was captured on 17 June (3 July in 2016, 27 June in 2015, 21 June in 2014).

Dunnock

- 3.47 The 2017 total of seventy-six dunnocks processed was a considerable increase on the thirty-nine birds captured in 2016, and indicated a good breeding season for the species.
- 3.48 There were fourteen between year recaptures, the oldest of which was a bird ringed in February 2014 and recaptured in June 2017.
- 3.49 First brood birds (several recently-fledged birds with primaries in pin) were first noted on 29 April, with more captured in early May. Recently fledged birds, with un-feathered breasts and obvious gape flanges) continued to be captured until late September. In 2016 the first fledged juvenile was captured on 4 June, suggesting limited first brood success.

Robin

- 3.50 A total of seventy-seven unique robins was the best total for the species for several years.
- 3.51 Birds were mainly captured between May and July (when recently-fledged juveniles were numerous) and in September and October, indicating immigration to the area.
- 3.52 Robin holds territory at the marsh, and the first fledged juvenile was trapped on 7 May (14 May in 2016, 23 May in 2015, 13 May in 2014). There were eleven between year recaptures of birds initially ringed in 2015 and 2016.
- 3.53 Considerable differences in weight were noted between birds, with the smallest weighing 14.3 g and the largest 24.1 g; despite this, however, only one bird was given a fat score of four, and a further four birds a score of three (using the BWG system).

Stonechat

- 3.54 Fourteen stonechats were ringed on the marsh in 2016 (twenty-one in 2016). Family parties began moving through in early June (but there was no evidence of breeding on site).
- 3.55 Two adults and twelve juveniles were trapped. Most were caught on the bund (a line of nets on a bank passing through an area of ruderal habitats as well as reed bed).

Blackbird

- 3.56 A total of fifty-seven unique blackbirds, including forty-one juveniles, indicated a good breeding season for the species locally (only twenty-nine birds were captured in total in 2016).
- 3.57 There were seven recaptures from previous years, the oldest of which was a young male bird initially ringed in November 2013 and re-trapped in mid-May 2017.
- 3.58 The species holds territory around the edges of the marsh, and the first fledgling was captured on 29 April (14 May in 2016, 30 May in 2015, 3 May in 2014).
- 3.59 The longest-winged bird (wing of 137 mm; range 120 mm – 137 mm over the season) was captured in May (and was carrying no fat), so the bird was likely to be part of the local breeding population.

Song thrush

- 3.60 A reasonable year for song thrush, with seventeen individuals captured.
- 3.61 There were four recaptures from previous years, the oldest of which was a bird ringed in November 2014 and re-trapped in May 2017.
- 3.62 The first fledged juvenile was caught on 3 June, indicating successful local breeding.

Redwing

- 3.63 Redwing were captured between 25 October and 13 November 2017.
- 3.64 Forty-two were aged as first winter birds, and fifty adults (based principally on the pattern of the tertial tips and tail feather characteristics).
- 3.65 The weight of birds varied between 50.1 g and 71 g. None were carrying significant fat (the highest fat score recorded was 3 [based on the British Working Group scoring system]).

Cetti's warbler

- 3.66 Cetti's warbler is one of the most obvious species at Oxwich Marsh due to its explosive song.
- 3.67 A total of forty unique birds were captured, which was by far our best annual total for the species to date (twenty-six in 2016, twenty-four in 2015, twenty-eight in 2014). The first young bird was captured on 17 June (25 June in 2016).
- 3.68 Capture of new birds carrying fat was noted in October (as per previous years). Cetti's warbler does not typically carry visible fat, and this indicates likely migration / dispersal of birds into the marsh in the autumn period. Adults and juveniles become increasingly difficult to reliably separate in the autumn due to a lack of clear plumage differences following post juvenile / post breeding moult, so it was unfortunately not possible to age these late birds.

Grasshopper warbler

- 3.69 A good year for grasshopper warbler, with thirteen individuals captured (nineteen in 2016) between 22 April and 26 August (17 April and 10 September in 2016).
- 3.70 Breeding was proven for the third successive year. A female with a brood patch was captured on 28 May and again on 17 June. A second adult (presumably a male – but with no clear cloacal protrusion) was captured on 28 May and again on 23 July. This suggests that both birds were present throughout the breeding season. Regular reeling was also noted, particularly around dawn and dusk, and a recently fledged juvenile was captured on 8 July (30 June in 2016).
- 3.71 It was a very poor September for reed bed warblers, and what was looking like a very good year for the species petered out early.

Sedge warbler

- 3.72 Small numbers of sedge warbler hold territory on the marsh.
- 3.73 The first returning migrant was heard on 12 April (13 April in 2016, 15 April in 2015, 17 April in 2014). Young birds were captured from 5 July (18 June in 2016, 23 July in 2015, 20 July in 2014) and the final record of the species was of a bird on 16 September (2 October in 2016).
- 3.74 During autumn migration some birds were carrying considerable fat: the heaviest weighed 17.4 g (16.9 g in 2016, 18.2 g in 2015), and was trapped on 29 July. Migration was already well underway by mid-July, however, with sedge warblers with fat scores of six and seven (fat covering two-thirds of the breast muscle) captured on 17 July.
- 3.75 The total of one hundred and forty-two sedge warblers captured included eight birds ringed in 2016, but none from previous years (which is disappointing). There were two sedge warblers controlled at Oxwich. A bird that had been ringed as a juvenile at Uskmouth, Newport in August 2016 was captured on the marsh in June 2017, and an adult ringed at Teifi Marshes, Ceredigion, in April 2016 was caught in August 2017.
- 3.76 The largest day-catch was of fifty-six birds on 29 July.

Reed warbler

- 3.77 A total of one hundred and ninety-two unique reed warblers were trapped on the marsh in 2017 (two hundred and twenty-seven in 2016). The first fledgling was trapped on 20 June (30 June in 2016, 11 July in 2015, 21 June in 2014).
- 3.78 Reed warblers were captured between 4 May and 24 September. The lack of late birds contrasted with 2016, when singletons were recorded on several dates in October, and the last was captured in mid-November.
- 3.79 There were eleven between year recaptures of reed warbler (only three in 2016), which was encouraging. The best of these was a male initially ringed on 27 July 2013 and retrapped each year on site since, including during June 2017.
- 3.80 Size and weight varied. Wing lengths were 58 - 70 mm, with those at the bottom end of the range (typically recently fledged birds) checked against the identification criteria for Blyth's reed warbler and those towards the top end against those for marsh warbler. Weight varied between 8.9 g (an underweight juvenile) and 16.6 g (a bird with a fat score of five captured on 29 July and likely to be preparing to migrate).
- 3.81 A reed warbler ringed as a juvenile at Meandro de Ranillas, Zaragoza, Spain on 19 August 2016 was recaptured at Oxwich on 29 July 2017. Oxwich is approximately 1,130 km north north-west of its Spanish ringing site, and the bird may have returned through Zaragoza in the late summer of 2017 during its south bound migration.

Whitethroat

- 3.82 It was a poor year for whitethroat.
- 3.83 Twenty-three unique whitethroats were captured in 2017 (thirty-six in 2016, thirty-four in 2015, forty-two in 2014). The first bird was trapped on 22 April (26 April in 2016) and the last on 16 September (11 September in 2016, 3 October in 2015, 20 September in 2014).
- 3.84 There was limited evidence of successful local breeding. In 2016 and 2015, when birds clearly bred in scrub within the trapping area (on the edge of the reed bed), the first fledglings were captured on 18 and 27 June respectively. In 2017 the first juvenile was captured on 5 July.
- 3.85 There was one between-year retrap; a young bird ringed in August 2015 was recaptured in June 2017. It was a male, showed a cloacal protrusion and appeared to be breeding on the marsh.

Garden warbler

- 3.86 Garden warbler is an uncommon passage migrant and a scarce breeder in the Gower recording area.
- 3.87 The number of garden warblers captured at Oxwich varies considerably between years. The 2017 total of eight, captured between 10 August and 16 September, is one of the lower annual returns. Of these eight birds, one was an adult and the remainder juveniles.
- 3.88 Between July 2014 and the end of 2017 we have captured fifty-one garden warblers at Oxwich. Of these, fifty have been captured between 26 July and 17 September, with thirty-eight of the total being from August.

Blackcap

- 3.89 A total of ninety-eight unique blackcaps were processed in 2017, a considerable decrease on the one hundred and ninety and the three hundred birds captured in 2015 and 2014 respectively, but a slight increase on 2016, when only seventy-six birds were processed.
- 3.90 The first blackcap was trapped on 8 April (17 April in 2016, 13 April in 2015, 12 April in 2014) and the last on 16 December (26 November in 2016, 20 October in 2015, 13 December in 2014), with

fledglings noted from 17 June (30 June in 2016, 20 June in 2015, 7 July in 2014). The highest day count was eighteen on 2 September.

3.91 There were five between year recaptures of blackcap; two from 2016 and three from 2015.

3.92 A blackcap ringed as a recently fledged juvenile on 31 July 2015 was controlled at Les Madrigueres, El Vendrell, Tarragona, Spain on 10 October 2017. The control site is 1,236 km to the south south-east of Oxwich, and it appears likely that the bird winters in the area.

Chiffchaff

3.93 Chiffchaff breeds at Oxwich, occurs in largest numbers in the marsh during autumn passage, and in small numbers in winter.

3.94 It was a below par year for the species. One hundred and one chiffchaffs were captured (one hundred and forty-five in 2016, one hundred in 2015, one hundred and forty in 2014).

3.95 The first chiffchaff of the year was captured on 25 March and the last on 19 November. Juveniles were noted from 17 June (25 June in 2016, 20 June in 2015, 21 June in 2014). There were no particularly notable day counts, which contributed to the modest overall total. The peak catch was eleven on 16 September.

3.96 There were two between-year re-traps of chiffchaff from 2016. More notable, however, were two controls: a young bird ringed in Buckinghamshire on 31 July 2016 was recaptured as a breeding male at Oxwich on 7 May 2017 (226 km to the west); and, a late report was received of a chiffchaff ringed as a recently-fledged juvenile at Oxwich in early August 2015 and recaptured in early February 2016 at Utrera, Sevilla, Spain (over 1,600 km to the south and in its likely wintering area).

Willow warbler

3.97 A poor year for willow warbler, with seventy-two birds captured. This represented a 51 % decline on the record total of one hundred and forty-six willow warblers in 2016 (85 in 2015, 94 in 2014).

3.98 Willow warblers breed around the marsh. The first bird was trapped on 15 April (8 April in 2016, 6 April in 2015) and the last on 16 September (2 October in 2016, 23 September in 2015). The first fledglings were ringed on 17 July (1 July in 2016, 15 July in 2015, 12 July in 2014), and there were two between year recaptures of birds ringed in 2016.

3.99 The only notable day count was twenty-three willow warblers on 29 July.

Goldcrest

3.100 Goldcrest breeds in woodland close to the marsh, and recently fledged juveniles are occasionally captured (such as a bird on 17 June 2017). Most birds occur in late autumn, however, with 312 of 439 birds ringed at the site to date (over 70 %) captured in October.

3.101 It was not a classic year for goldcrest; the autumn influx was not particularly noticeable at Oxwich. Of eighty-three unique birds processed, fifty-nine were captured in October. Three birds ringed in late autumn / early winter 2016 were recaptured in the first winter period of 2017, indicating that some birds overwinter locally.

Firecrest

3.102 Firecrest is a scarce but regular late autumn passage and winter visitor to Gower.

3.103 It was a frustrating year with regard to firecrest. We were unable to fit a session in during early October due to weather, and therefore could not attempt to target the species during an obvious (relatively early) influx.

3.104 Previously, our eleven firecrests had been captured between 8 October and 16 November inclusive, and it appeared likely we would have a blank year. However, singles on 19 November and 2 December were both late and very welcome. They were determined as first winter male and

female birds respectively based on the colour of their crown feathers and their tail feather characteristics (pointed and abraded).

Long-tailed tit

- 3.105 A poor year for long-tailed tit, with only twenty-one birds captured (the lowest total since 2013).
- 3.106 There were six recaptures from previous years. These included two birds ringed in late autumn / early winter 2013 and recaptured in February and May 2017 respectively.
- 3.107 The number of long-tailed tits captured at the site varies based on whether the flocks that commute through the marsh in the late autumn period fly into nets. In 2016, when forty-two unique birds were captured, day totals of twenty-one birds on 29 October and fifteen birds on 3 November heavily influenced the total.

Coal tit

- 3.108 Seven unique coal tits were trapped in 2017 (eight in 2016, seven in 2015).
- 3.109 Coal tits were captured in January, April, October and December. There was no indication of breeding on the marsh, but the species is likely to be common in nearby mixed woodland on the Penrice Estate.

Blue tit

- 3.110 Four hundred and twenty-seven blue tits were processed at Oxwich in 2017 (a 113 % increase on 2016 which was a poor year for the species with few young fledged).
- 3.111 One hundred and four birds ringed in previous years were recaptured. These included twelve birds ringed in 2013.
- 3.112 The first juveniles were caught on 3 June (18 June in 2016, 7 June in 2015, 14 June in 2014). The largest day catches were of sixty-six blue tits on 19 November and fifty-seven on 16 December.

Great tit

- 3.113 A total of one hundred and forty-nine great tits were trapped on the marsh in 2016. This total is similar to that for the past three years (range 127 – 153 individuals).
- 3.114 The species breeds locally, and the first juveniles were trapped on 3 June (11 June in 2016, 7 June in 2015, 1 June in 2014). The largest day catch was of thirty-three great tits on 17 June.
- 3.115 There were thirty-three birds that had been ringed in previous years recaptured during 2017. Of these, six had been ringed during Gower RG's first year at Oxwich in 2013.

Treecreeper

- 3.116 Three treecreepers were captured in 2017 (seven in both 2016 and 2015). These included two recently fledged juveniles on 17 June, indicating successful local breeding.

Starling

- 3.117 Two starlings were captured on 27 October 2017. A roost was present in the marsh at the time, but was not accessible. The starlings appeared to respond to a redwing tape, or to be commuting with redwing attracted to it. Several other starlings escaped from nets set for redwing during the autumn period.

Chaffinch

- 3.118 Chaffinches were commonly trapped throughout the year, and were regular visitors to the feeding station. A total of one hundred and fifty-seven unique birds were processed (two hundred and eight in 2016). These included eighteen birds ringed in previous years. The first juveniles were recorded

on 20 May (4 June in 2016, 30 May in 2015, 1 June in 2014), and the species appears to breed commonly in the vicinity of the reed bed.

3.119 The largest day total was of twenty chaffinches on 16 December. There was a clear influx of chaffinches (and associated brambling) in November and December 2017.

3.120 There were local recoveries of chaffinches from the villages Reynoldston and Ilston, both of which are within 5 km of the ringing site.

Brambling

3.121 A total of eight bramblings were captured between 19 November and 23 December 2017; six were female and two male.

3.122 The birds were associated with chaffinches and siskins.

3.123 We had only previously captured two birds at the marsh prior to 2017.

Greenfinch

3.124 One hundred and thirty-nine unique greenfinches were processed at Oxwich in 2016. Although, as previously noted, direct comparison of between-year data can only be undertaken in a qualified manner, this represents a decrease of 43 % on 2016 and 70 % on the total for 2015. This suggests that trichomonosis, which is rife in the Gower population, is resulting in local decline.

3.125 The species breeds locally, and the first juveniles of the year were trapped on 18 May (14 May in 2016). Eight birds ringed in previous years were re-trapped in 2017. Only one of these was ringed in 2015, with the remainder from 2016.

3.126 The largest day catch was of twenty birds on 9 September.

Goldfinch

3.127 A 'year of two halves' for goldfinches, with good numbers in the late winter / early spring (e.g. one hundred and nineteen in March), but few juveniles captured in mid to late summer, and no substantial influx in the autumn or second winter period.

3.128 The total of three hundred and twenty-four goldfinches captured (four hundred and seventy-nine in 2016) represented a 32 % decline on the previous year.

3.129 The species breeds locally, and the first juveniles of the year were trapped on 18 May (4 June in 2016, 30 May in 2015, 14 June in 2014). There were forty birds from previous years recaptured, including several ringed in 2014.

3.130 We await details on a bird controlled on 16 December 2017.

Siskin

3.131 2017 was the best year to date for siskin, with two hundred and eighteen birds processed, an increase of 51 % on the total for 2016.

3.132 Siskins were captured between March and September inclusive, and in December. The species breeds locally, and it is likely that they were treble-brooded in 2017, with cohorts of young birds recorded in late April / early May, in mid-June and mid-August.

3.133 A female bird ringed at Williton, Somerset on 13 March 2014 was recaptured at Oxwich on 11 March 2017, a north-westerly movement of 74 km.

Lesser redpoll

3.134 Two birds were captured on 3 November 2017.

- 3.135 There was no evidence of local breeding.

Bullfinch

- 3.136 A welcome increase in the number of bullfinches captured from two (2016) to twelve.
- 3.137 There was no evidence of breeding close to the ringing site.
- 3.138 Birds were captured sporadically between April and December 2017 inclusive. Juveniles were noted from 23 July onward.

Yellowhammer

- 3.139 A second calendar year female bird was captured close to one of the feeders on 2 April 2017.
- 3.140 Although birds are occasionally recorded on the edge of the nearby dunes, and are locally common along the fringes of Cefn Bryn, this was the first to be captured on the marsh.

Reed bunting

- 3.141 A total of ninety-six unique reed buntings were processed at Oxwich Marsh in 2017 (one hundred and seventeen in 2016) of which seventy-seven were new birds.
- 3.142 The species occurs on the marsh year-round, and the first juveniles were trapped on 3 June (18 June in 2016, 20 June in 2015, 14 June in 2014).
- 3.143 There were twenty-one between year recaptures of reed buntings, with a number of these being from 2014.

4 Conclusions

- 4.1 The fifth year of Gower RG activity at Oxwich has seen our knowledge of the site continue to grow.
- 4.2 It has been particularly pleasing to capture more snipe and wagtails, and to see a more productive season for a number of our locally-resident species. The most welcome results have been controlled birds, however. Records of locally-fledged blackcap and chiffchaff apparently wintering in Spain were excellent, while capturing a Spanish-ringed reed warbler was also a good result.
- 4.3 It was nice to capture a few new species for the site in 2017. Yellowhammer, yellow wagtail and mute swan were added to our tally (we have now processed sixty-three species at the site), and are approaching 15,000 birds ringed.
- 4.4 Of greater importance than all of the above, however, is the data set we are building on may common breeding species and passage migrants for the site. A picture is developing of the typical fledging times for local breeding species, of between year survival and timing of local movements.
- 4.5 It has also been gratifying to see the group grow. We have had some excellent new trainees join us in 2017, and they are making rapid progress in developing their skill sets. 2018 should be an exciting year for the group.

5 Acknowledgements

- 5.1 We are extremely grateful to the Gower Society for providing a third year of grant funding in 2017. Without this grant it would not have been possible to continue ringing on the marsh with the same intensity as in previous years, and the data gathered would consequently be far less useful. The grant substantially contributed towards covering our costs.
- 5.2 Nick Edwards (of Natural Resources Wales), who manages the marsh, has been consistently supportive of our efforts since we began ringing in 2013, and we are also very grateful for his continued backing.
- 5.3 Thanks are also due to members of the Gower Ringing Group who have attended regularly over the course of the year and provided the impetus and commitment to maintain our efforts. In particular: Heather Coats, Cedwyn Davies, Keith Vaughton, Wayne Morris, Emma Cole, Val Wilson, Paul Aubrey, Lynn Watts, Stephen Vickers, Sophie de Grissac, Sarah Davies, Olivia Pargeter, Martin Thomas, Kirsty Franklin, Joanne Conway, Edward O'Connor, Bethan Dalton and Alex McCubbin.
- 5.4 Finally thanks to Kelvin Jones for organising the 2016 Welsh Ringing Course, to Martin Hughes, Gwynedd Roberts, Tony Cross and Justin Walker for their support as visiting trainers, and to Gower Ringing Group members for their assistance in making everything tick.

Appendix 1: Photographs

Photo 1.

Most of the Gower RG in 2017. L-R Jo Conway, Val Wilson, Owain Gabb, Emma Cole, Sophie de Grissac, Keith Vaughton, Wayne Morris, Edward O'Connor, Martin Thomas, Stephen Vickers, Heather Coats' Kirsty Franklin, Sarah Davies and Alex McCubbin



Photo 2.

Brambling (Kirsty Franklin)

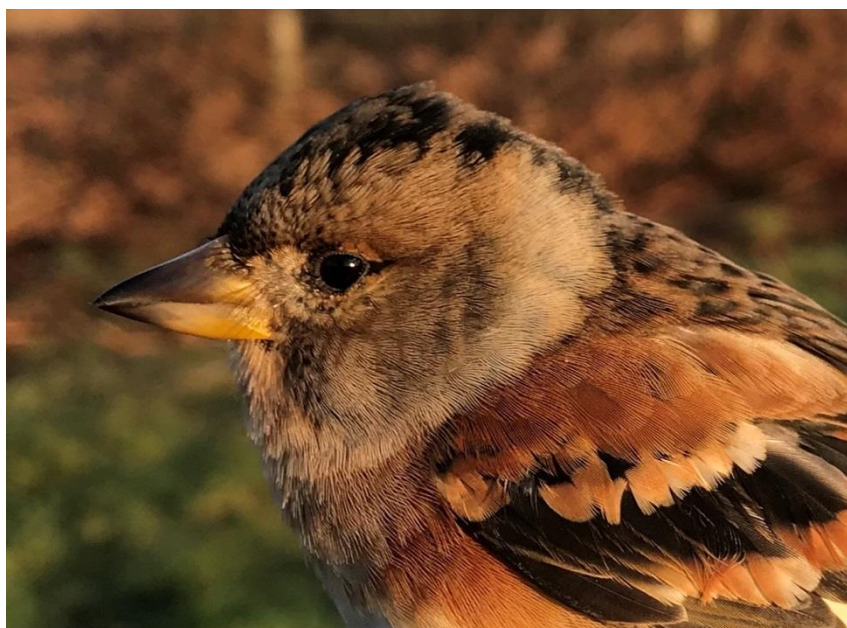


Photo 3.

Brambling (male)



Photo 4.

Hirundines (L-R swallow, house martin and sand martin)



Photo 5.

Kingfisher (Keith Vaughton)



Photo 6.

Mute Swans being processed (Val Wilson with Welsh Ringing Course attendees Claire McSweeney and Caroline Brighton).



Photo 7.

Jack snipe (L) and common snipe (R)



Photo 8.

Starling (Stephen Vickers)



Photo 9.
Yellow wagtail



Photo 10
Yellowhammer



