

Chichester Harbour Wildlife & Ecology Report 2010-11

Report Highlights

The complete report by *Ed Rowsell*, the Conservancy's Conservation Officer is attached. Here are just a few of the highs and lows recorded in the report. To learn more about local wildlife see www.conservancy.co.uk or contact the Harbour Office on 01243 512301.

Brent Goose numbers peaked at 8,569 in February which is similar to last year. The winter average was 7,708. A **colour-ringed** Brent Goose was sighted at West Wittering, this individual had been ringed as a chick in Siberia in 1991.

An upward trend in **Wigeon** numbers continued with the highest recorded peak in the harbour of 2,968.



Black-tailed Godwit
by George Spraggs

Black-tailed Godwit

numbers fell, with the autumn passage peaking at 603. Winter numbers dropped to zero in December as the birds moved to other sites such as Pagham and Pulborough Brooks which have suitable wet grassland fields.



Cetti's Warbler

12 pairs of **Cetti's Warbler**, a recent colonist to the British Isles, were noted around the harbour.



**Cuckoo Flower or
Lady's Smock**

830 **Lady's Smock** flowers were recorded on the meadows at Fishbourne.

The **Lagoon Spire Snail**, thought to be extinct in the UK, was discovered to have a strong population on a site in Chichester Harbour.



**Solent Seals by
Emily Whitley**

The results of the **Solent Seal Project** concluded the population comprises of 23-25 animals.

Surveys of **juvenile fish** identified nearly 30 species including Bass, Mullet, Garfish and Black Bream.

APRIL 2011

WILDLIFE AND ECOLOGY REPORT CHICHESTER HARBOUR 2009-10

REPORT BY CONSERVATION OFFICER

1 Introduction

Covering the period between September 2010 and February 2011, this report constitutes a review of the current state of harbour wildlife. It includes the monitoring, research and management work carried out during the period in accordance with the AONB Management Plan, and work towards achieving biodiversity targets.

2 Birds

2.1 Wintering and migration

2.1.1 High tide Counts 2009/10

The weather for this season's counts again gave the full set of extremes, all of which gave their challenges for counts, including the sunny and hot September count, storm conditions in November and then the longest cold snap in recent history; all of which undoubtedly has had an effect on counts.

Brent goose numbers peaked at 8,569 in February, which is similar to last year. A consistent population remained throughout the mid winter period, leading to a winter average of 7,708. Productivity counts indicate that only 3.1% of the population were juvenile birds, which while being an improvement on last year, is not sufficient to maintain the population. With annual mortality averaging 15%, productivity must exceed mortality to achieve a stable population, currently the population may be declining due to poor productivity.

On the whole the other wildfowl species seem to have had a fairly stable year. Some of the results seem to be influenced by the extreme cold conditions, with Shelduck numbers almost double the previous 2 years. Wigeon numbers have continued on an upward trend with the highest recorded peak in the harbour of 2,968. A good increase in Red-breasted Merganser numbers, peaking at 253 was also recorded. Teal, Mallard and Pintail numbers have remained fairly stable.

After last years increases Little Grebe and Little Egret numbers have dropped. The cold weather appeared to drive the Egrets to warmer climes, with a low of 9 birds recorded in January. Goldeneye numbers continued to tumble with a peak of just 16 birds and a winter average of just 8. This is part of a national decline that may relate to a north-east shift in wintering distribution.

Other interesting, but less common, wildfowl species picked up in this year's counts included Eider, Common Scoter and Great Northern Diver

Species	2009/10	2008/09	2007/8
Little Grebe	55(dec)↓	79(nov)	63 (jan)
Little Egret	198(sept)↓	266(oct)	264 (sep)
Brent goose	8,569(feb) =	8,757(feb)	12,171 (jan)
Shelduck	926(jan)↑	560(jan)	449 (jan)
Wigeon	2,968(oct)↑	2435(jan)	2735 (oct)
Teal	1,329(jan)=	1,687(jan)	1066 (jan)
Mallard	502(dec)=	438 (nov)	594 (sep)
Pintail	188(jan)=	211(jan)	184 (feb)
Goldeneye	16(dec)↓	25(jan)	26 (feb)
Red-breasted Merganser	253(dec)↑	156(feb)	211 (feb)

Table 1. Peak numbers of wildfowl 2009-10

It was generally a good year for waders, with some notable exceptions and a few species still giving cause for concern.

Curlew and Bar-tailed Godwit numbers demonstrated an increased peak and a stable winter population. Grey Plover also had a good year with a peak of 1,960 birds in December. Greenshank numbers have stabilised with an autumn passage peak of 88 and a continued trend for a resident winter population. Oystercatcher numbers, while not reaching the exceptional peak of last year (2,986), continue on an upward trend. Ringed Plover numbers showed a continued improvement with a good early passage, a peak of 422 in August and a winter average of 191. Knot numbers, while remaining unpredictable, peaked at 2,180 and consistent winter numbers lead to a winter average of 825.

Conversely Black-tailed Godwit numbers continued to fall with a low autumn passage peaking at 603, and winter numbers dropping to zero in December. Black-tailed Godwit are reliant on the availability of suitable wet grassland fields, and will move widely to locate suitable feeding sites, e.g. to Pagham, Pulborough Brooks and the Avon Valley. Golden Plover trends in the harbour are historically unpredictable; numbers indicate a cold weather effect leading to very low winter numbers. Sanderling numbers are continuing to be a cause for concern: autumn passage numbers were low with just 22 recorded, and a reduction in spring peak with 210 in March, but better winter numbers than last year's counts. An international project is underway to learn more about this species and possible reasons for its decline (see 2.1.2 for more details).

Redshank and Lapwing numbers showed something of a recovery, or at least stabilisation after the recent declines, but are still of concern. After the huge peak of 26,311 last year Dunlin numbers have stabilised with a peak of 17,465 and very similar to last year a winter average of 11,000. This species continues to decline nationally. Turnstone counts may indicate a decline but it is difficult to pick out any pattern, however, poor winter numbers and a slight reduction in winter/spring peaks may be of concern.

Species	Autumn 09/10	Autumn 08/09	Nov–Mar 09/10	Nov–Mar 08/09
Oystercatcher	1,332	2,986	1,207	868
Ringed Plover	422	132	293	395
Golden Plover	431	610	1,115	1,090
Grey Plover	771	766	1,960	1,416
Lapwing	588	421	1,740	1,563
Knot	28	49	2,180	1,035
Sanderling	22	160	210	242
Dunlin	4,773	1,613	17,465	26,311
Black-tailed Godwit	603	444	361	613
Bar-tailed Godwit	278	407	1,006	802
Curlew	1,461	1,481	1,763	1,456
Redshank	2,028	1,467	1,673	1,810
Greenshank	88	82	22	25
Turnstone	108	155	284	330

Table 2: Peak numbers of waders 2009-10

2.1.2 Ringing studies

The colour ringing studies led by Farlington Ringing Group continue to give us valuable information on Black-tailed Godwit and Greenshank. Large numbers of sightings have continued to be recorded with many local and UK sightings and records from France, the Netherlands and Spain. No catch attempts have been made for these species this year within Chichester Harbour, however, ringing work has continued in Iceland over the summer for Black-tailed Godwits. The single Spotted Redshank colour ringed in 2009 in Chichester harbour has also been regularly recorded in Thorney Deeps and the Prinsted area.

The international study looking at Sanderling has continued with the Conservancy working in collaboration with Farlington Ringing Group to contribute to the study. One (unsuccessful) attempt has been made to capture Sanderling and equip them with colour rings. The project should contribute to our understanding of this declining species, as its population is considered to be in unfavourable condition within the Chichester and Langstone Harbour SPA.

A successful catch of Brent Geese was undertaken this winter at Black Point, Hayling Island. Where 20 Brent geese were fitted with colour-rings. 54 dunlin were also captured and ringed. A number of colour-ringed Brent Geese were located at West Wittering this winter, including a bird first ringed as a chick in Siberia in 1991: it will be marking its 20th birthday this summer.

2.1.3 Other over-wintering and migratory birds

Whilst the extreme cold conditions experienced this winter undoubtedly make life difficult for resident and regular bird winter visitors to the harbour, it does sometimes have the consequence that less usual species turn up in the harbour. This included White-fronted and Pink-footed geese, Smew, Scaup, Snow Bunting and Lapland Bunting.

Other unusual species sighted around the harbour (but not related to the cold weather) included an American wader species the Buff-breasted Sandpiper and a Red-flanked Bluetail, which attracted thousands of birders to Sandy Point.

2.2 Bird Atlas

Spring 2011 will mark the final stage of the national bird atlas project. Over a 3 year period BTO directed 4 hours of survey effort covering the breeding and over-winter periods at every tetrad (4km square) in the UK and Ireland. Progress has been rapid for Chichester Harbour with the entire harbour area already covered, all by local volunteer ornithologists.

2.3 Breeding Birds

The weather in the spring and early summer should have got this year's breeding season off to a good start. However, conditions deteriorated in the latter part of the season which may have affected chick survival rates for some species.

2.3.1 Breeding waterfowl and waders

After a very good breeding season for Shelduck in 2009, it has slumped in 2010. Only 4 broods were located totalling 33 birds, with nearly all successful breeding occurring in Thorney Deeps (29) in 2010.

Evidence of breeding was reduced for most wader species compared to the previous year. Birds were seen in suitable habitat, with some apparently starting nesting, including 15 Redshank (17 in 2009), 8 Oystercatcher, 8 Lapwing and 4 pairs of Ringed Plover. However, successful breeding was only identified for Lapwing with 3 pairs fledging 6 young on Thorney Island.

2.3.2 Breeding seabirds

Evidence of breeding in seabirds was close to non-existent with a peak of just 16 Little Terns, none of which attempted to breed. Common Terns fared little better with 3 apparent nests resulting in 1 fledged chick.

However, this is not as bad as it first appears. Nesting attempts by these species in Chichester Harbour normally follow failed nesting in Langstone Harbour. Langstone Harbour had a spectacularly successful year for breeding Seabirds in 2010. Little Terns successfully fledged a minimum of 44 chicks,

Sandwich Tern fledged 112 chicks, Black-headed Gull 5,500 and Mediterranean Gull around 160 fledged young, with the only species not faring as well was Common Tern with a mere 7 fledged chicks. If this success can continue in Langstone Harbour it is hoped that birds will spread back into Chichester harbour in the future.

2.2.3 Other species

National surveys have shown a major decline in some cold sensitive species (for example 88% in Dartford Warblers and Kingfisher 80-90%). Numbers of Kingfishers are certainly down around the harbour. Cetti's Warbler, a recent colonist to the British Isles is considered a cold sensitive species. It was therefore with relief that 12 pairs were noted in their previous territories around the harbour, 9 of which were located on Eames Farm, which is identical to last years count.) The 9 pairs at Eames produced a minimum of 24 fledged chicks.

Barn Owls successfully bred on Thorney Island again, fledging 2 young. Turtle Doves are continuing a long pattern of decline both nationally and locally. Only one calling male was located in the harbour area.

3 Habitats

3.1 Botanical Monitoring

Fishbourne Meadows is continuing to improve on most measures with a record 830 Lady's Smock (*Cardamine pratensis*) flowers. However, there was a decline of flowering Southern Marsh Orchids (*Dactylorhiza praetermissa*) down to 330 (500 last year), which may relate to the particularly dry spring. The intensive management by the Friends of Chichester Harbour volunteers has significantly reduced pernicious weeds such as Hemlock Water Dropwort (*Oenanthe crocata*) and Creeping Thistle (*Cirsium arvensis*)

It was a mixed but generally good year for orchids on Thorney Island and Eames Farm; Green-winged Orchid (*Orchis morio*) 239 (212 last year), Pyramidal Orchid (*Anacamptis pyramidalis*) 425 (563 last year) and Bee Orchid 65 (137 last year). Autumn Lady's Tresses (*Spiranthes spiralis*), which is only found on Eames Farm, had a poor year declining to just 6 plants (70 last year). Which may relate to the dry spring conditions experienced in 2010.

3.2 Unusual and rare plants

The Sea Heath (*Frankenia laevis*) population at Ellanore is still just about surviving but tidal erosion is slowly depleting the extent of the colony, conversely the recently colonised area at Thornham Point is flourishing. The population of Spiked Star of Bethlehem (*Ornithogalum pyrenaicum*) at Fishbourne is also doing well, with nearly 100 flower spikes counted this spring (last year 69). Close liaison between the WSCC road verge nature reserve officer, the highways department and local residents avoided

detrimental early cutting, as had happened in previous years, allowing the plant to set seed.

3.3 Rare arable flora

It was another good year for some of the Harbour's rare arable flora. The nationally scarce Spreading Hedge Parsley (*Torilis arvensis*) has expanded its population and held the highest recorded population since we have been monitoring the site with 90 plants (last year 48). Appropriate management of the critically endangered Shepherd's Needle (*Scandix pecten-veneris*) population has also been reinstated. No plants were located last year, but this year 25 plants were found within the managed field margin. After a good year in 2009 Grass Poly (*Lythrum hyssopifolium*) a nationally rare species of conservation concern, did not reappear this year; probably due to the dry spring reducing its favoured waterlogged conditions. We continue to work with landowners to encourage suitable conditions and management for these rare species within the AONB farmland.

3.4 Botanical surveys and management plans

In partnership with the Hampshire and Isle of Wight Wildlife Trust a detailed survey of the seagrass beds around the harbour continued this summer. This summer's work now means that all the known major areas of seagrass beds have been surveyed in detail using handheld GPS. It is estimated that approximately 100ha of seagrass beds occur within Chichester Harbour. Both of the intertidal species Dwarf Eelgrass (*Zostera noltii*) and Narrow-leaved Eelgrass (*Zostera marina* var. *stenophylla*) were located, and possible records of the sub-tidal species Common Eelgrass (*Zostera marina*). Future resurveying will enable us to assess the status of seagrass beds in Chichester Harbour and monitor any changes.

Work has been continuing by the Sussex Botanical Recording Society on the 'New Sussex Flora'. Detailed recording of plant species to tetrad level for the whole of Sussex is due to be completed next year. The Society has kindly provided its records for tetrads within the harbour area.

The implementation of the management plan for Salterns Copse is progressing well with coppicing work by volunteer work parties well attended and keeping up with the work schedule. Selective felling to open up the canopy and encourage a more varied age structure was undertaken in the winter of 2010. A post and rail fence has been erected to reduce unauthorised access to the site.

A 5 year management plan for Maybush Copse is currently in development. The plan will assist with the programming of work, site monitoring and allocation of tasks between the various bodies involved in the site management.

3.5 Fixed point photography

The managed realignment sites at Thornham Point, West Chidham and Chalkdock Marsh were all covered by this years programme. A GPS-enabled camera which 'geo-referenced' the images has been used extensively allowing the photos to be linked with the GIS.

4. Other taxa

The population of the moth (*Coleophora vibecella*), a Biodiversity Action Plan priority species on Eames Farm, is the strongest known colony in the UK and may be used as a donor site to re-establish the moth in other locations. Illegal grazing by horses on the site poses a threat to the moth and its food plant Dyers Greenweed (*Genista tinctoria*), and is being tackled robustly. A student has commenced work mapping the extent of the foodplant, which will be used as a baseline to monitor the moth population.

A snail survey was undertaken in autumn 2009 by Dr Martin Willing (a leading authority on molluscs), with financial support of Chichester District Council's Wildlife Improvement Grant. This survey failed to locate the rare Desmoulin's Whorl Snail (*Vertigo moulinsiana*) on a site where we undertook urgent management work to improve the site for this species in 2007. A further survey was undertaken in spring 2010 in an attempt to re-locate the population, however, this again failed to locate the species. If the species is still present it is hoped that continued appropriate site management, will allow the population to grow to detectable levels. A further survey on the Lagoon Spire Snail (*Heleobia stagnorum*), thought to be extinct in the UK, confirmed a strong population on a site in Chichester Harbour and provided a valuable insight into the ecological needs of this species.

4.1 Terrestrial mammals

Water Voles, or evidence of their presence, have been regularly observed at Fishbourne Meadows, East Itchenor Marsh and Chichester Canal. The Otter survey programme has continued but no further signs have been discovered since the 2007 sighting at the entrance to the harbour. Regular sightings of individual and 'boxing' Brown Hares have been reported, centred on the Bosham peninsula and Eames Farm

A bat walk at Chichester Marina in September was very well attended: the warm evening resulted in detecting and viewing good numbers of Common and Soprano Pipistrelle, and smaller numbers of Daubenton's and Natterer's bats.

4.2 Marine mammals

The Solent Seal Project is now complete and the final report available from the Hampshire Wildlife Trust, detailing the work that has been undertaken. The report concludes that the Solent population comprises of 23-25 animals and provides a comprehensive overview and analysis of the finding of the

research. It will form a key document for the future protection of the Harbour Seal (*Phoca vitulina*) population in the Solent and the Harbour.

The photo identification element of the seal project is on-going. A student is currently working on an identification database which will be used for future sightings and to exchange information with researchers investigating colonies in Brittany and Kent.

4.3 Reptiles and amphibians

Following last year's survey of the new Maybush Copse site, mitigation measures to avoid harm to protected reptiles while undertaking the required engineering operations, were implemented. A combination of vegetation management, erection of a reptile proof fence and translocation of reptiles from the affected areas have been used to remove reptiles from harms way. In total 59 slow-worms (*Anguis fragilis*) and 19 Common Toads (*Bufo bufo*) were safely moved; a Grass Snake (*Natrix natrix*) was also recorded on the site. A good population of Grass Snakes have also been found on the education team's site 'Beaky's Wildlife Walk' at Dell Quay

Work continues on collating *ad hoc* records and generating interest in reptiles and amphibians in the AONB. Known sites were surveyed and continued presence confirmed.

5. Specific projects and research

5.1 Juvenile Fish Survey

The need to conduct small fish surveys in Chichester Harbour was identified by a number of organisations. It became apparent that it would be a good use of resources to work together to encompass each organisation's requirements into one joint survey plan, sharing resources and generated data.

The project was launched as a collaboration between Sussex Sea Fisheries Commission (now the Sussex Inshore Fisheries and Conservation Authority (IFCA)) and the Conservancy with training, equipment and knowledge kindly provided by the Environment Agency.

During June and again in August, five sites were surveyed using a beach seine net. The sites were selected to ensure a good geographical spread of sampling throughout the Harbour, whilst covering a range of habitat types.

Across the two surveys nearly 30 species were identified some of which were expected such as Mullet, Bass and Gobies but others which were quite a surprise, for instance Garfish, 15-Spined Stickleback and black bream. There was a general lack of flat fish recorded; a juvenile plaice was the only record.

The wide variety of species caught during the survey not only indicates the great biodiversity of the harbour, but also just how important the harbour is to different fish species during different stages of their life cycle. Different species of fish utilise the harbour in different ways; the small Gobies are territorial and are resident in the harbour all year round, juvenile Herring and Sprat seek shelter from predators in the shallow waters of the harbour whereas Bass use the harbour for breeding.

The data gathered from the survey is multi-faceted and will be utilised by ourselves, the Centre for Environment Fisheries and Aquaculture, Sussex IFCA and the Environment Agency and no doubt other organisations in the future. It is planned that the survey will be repeated annually, which is when its value will further increase, to help identify trends in fish populations.

5.2 Solent Disturbance and Mitigation Project and Wader Roost Strategy

Work has progressed on both of these Solent Forum Nature Conservation group initiated projects and the Conservancy has maintained a close engagement with their development.

After three year's field work across the Solent the Wader Roost and Brent Goose Strategy has now published its final strategy (available from http://www.solentforum.org/forum/sub_groups/Nature_Conservation_Group/Waders%20and%20Brent%20Goose%20Strategy/). The Strategy identifies the important wader roosts and inland fields for Brent Geese, highlights the need for a coherent network of sites and lays out an approach for their protection. The Strategy also characterises what makes a site important for waders or Brent Geese, proposing sites that may become important in the future and provides advice on what features should be present to encourage the use of new sites.

The Solent Disturbance and Mitigation Project is an attempt to establish the potential impact recreational disturbance has on the Solent European Marine Site. Field work recording the effect of disturbance on birds and a series of visitor surveys is now complete and the reports available from the Solent Forum website http://www.solentforum.org/forum/sub_groups/Nature_Conservation_Group/Disturbance%20and%20Mitigation%20Project/

A householder survey has also been completed and a visitor model is being generated based on the results. This data is currently being modelled in detail for Chichester Harbour and Southampton Water results scaled up to determine the current effect upon the Special Protection Area bird assemblage of the Solent. Predictions will then be made on the potential effect of an increasing resident population, with the final stage looking at mitigation of the potential impacts run in parallel to the modelling.

5.3 Graylingwell Park monitoring project

A contract to monitor the effectiveness of the mitigation package for the Graylingwell Park development is being managed by the Conservancy. Natural England and Chichester District Council agreed the mitigation package to overcome concerns relating to recreational disturbance impact on the Special Protection Area (SPA). The monitoring contract will assess the effectiveness of the measures and if necessary propose amendments to the type and delivery of the mitigation measures.

5.3 Goose Watch

Goosewatch, which is a project to enable volunteers to assist with monitoring the use of inland fields by Brent Geese, has had a successful second year. The team has consolidated into around 10 regular volunteers with others submitting *ad hoc* records. Goose-watchers recording the presence/absence of geese on a weekly or fortnightly basis, undertook 89 surveys, covering 1009ha and submitting 788 records,. 16% of the records were positive for Brent Geese, meaning that Geese are using fields covering an area of 501ha.

The same team have signed up for this year's survey and are out busily recording goose activity around the harbour.

6. Data and administration

Continued refinements are being made to our data handling systems to enable easier analysis and accessibility of our data holdings.

The employment of an MSc student on work placement has rapidly progressed a number of data entry and analysis projects, including data entry to populate the Conservation Management System (CMS) and the collation and analysis of historic Brent Goose data. This work will enable the updating of a number of GIS layers regularly used in our planning work.

The now populated CMS database will enable the more effective planning, recording and reporting of our management activity. The software also provides a link to our GIS system to enable the rapid assessment and visualisation of the information and management activity at a given location.

Mapmate, a simple biological recording system has been adopted to amalgamate a number of existing systems used for storing our extensive set of records.

7. Recommendation

The Conservancy is asked to note this report.