



National
Trust

Blakeney Breeding Bird Report including Blakeney National Nature Reserve 2016



Edited by
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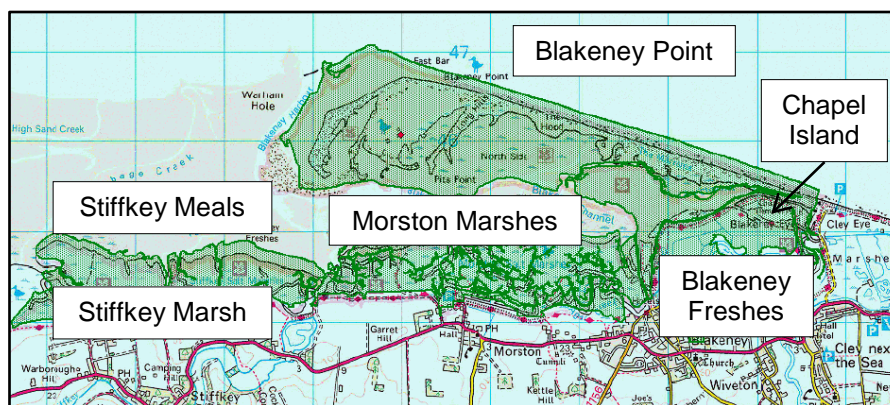
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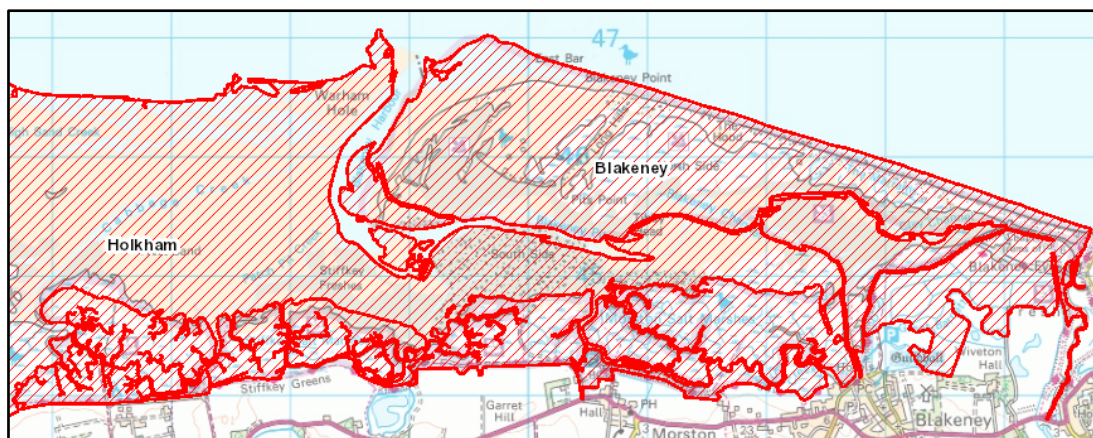
1. Introduction

1.1 Location and context

The 1097 hectare Blakeney National Nature Reserve (NNR), on the north Norfolk coast, comprises of vegetated shingle, sand dunes, saltmarsh and freshwater grazing marsh. The NNR supports up to nine Schedule 1 protected breeding bird species and part of the Norfolk Sandwich Tern population; the largest in the United Kingdom. Blakeney NNR comprises of Blakeney Point, Stiffkey Meals, Stiffkey Marsh, Morston Marshes, parts of Blakeney Freshes, Chapel Island and parts of Blakeney Harbour.

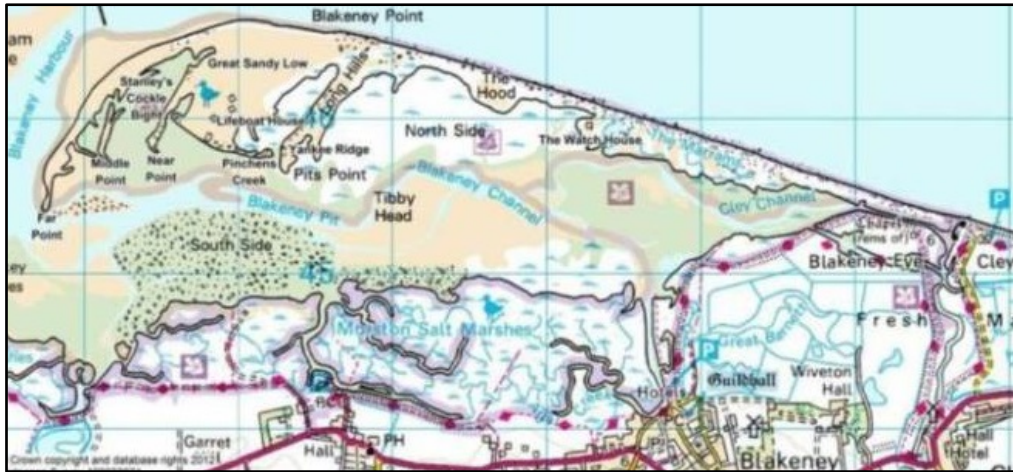


Map 1: Blakeney NNR showing National Trust ownership

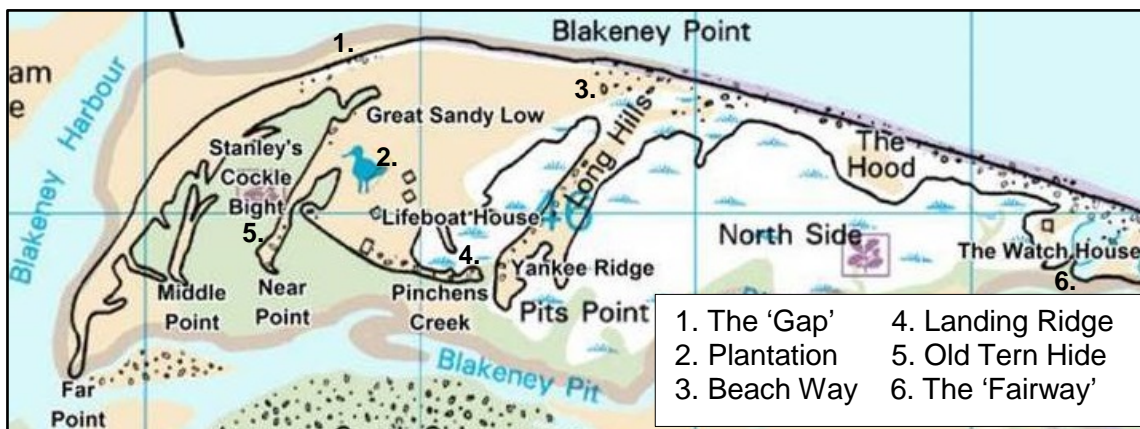


Map 2: Blakeney National Nature Reserve boundaries

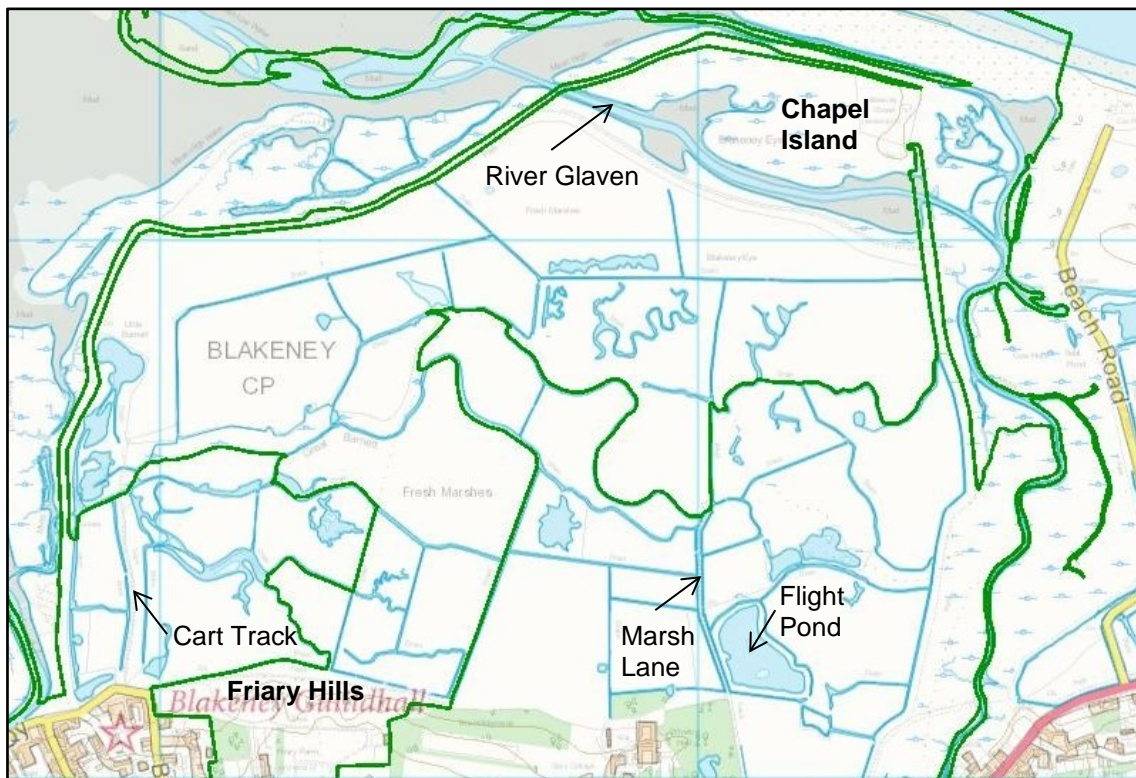
Blakeney Point is a four-mile shingle spit with an expanse of sand dunes at the western end. The spit encloses Blakeney Harbour, to the south of which lie Morston Marshes, an expanse of saltmarsh. Stiffkey Meals are located to the west, a ridge of sand on the northern edge of Stiffkey Marsh. To the east are Blakeney Freshes, an area of freshwater grazing marsh; former saltmarsh enclosed by a sea wall in the 17th century, containing reedbed, ponds and ditches. In 2006, the River Glaven was re-routed through the northeast corner of Blakeney Freshes, cutting off part of Blakeney Eye to create Chapel Island.



Map 3: Blakeney Point, Morston Marshes and Blakeney Freshes



Map 4: Blakeney Point showing National Trust ownership and local place names



Map 5: Blakeney Freshes, Friary Hills and Chapel Island showing National Trust ownership

1.2 Methodology

Breeding bird surveys were undertaken on Blakeney Point, Chapel Island and Blakeney Freshes (all of Blakeney Freshes, not just the NNR). In order to undertake survey work for Schedule 1 species, the appropriate Natural England License was held by the Countryside Manager, Victoria Egan, and persons appointed.

For wildfowl and wading birds, early morning visits were made in April, May and June counting adults from a discrete distance. Maximum counts were divided by two to establish the number of pairs. For passerines, early morning counts of signing males were undertaken in April and May. For gulls and Sandwich Terns, nest counts were undertaken in May and June. For other terns, sitting birds were counted, and nest counts conducted where possible. Weekly visits were made in June and July to monitor young wildfowl, wading birds, gulls and terns. Bittern surveys were conducted in March and April but ceased due to their absence. Due to daily ranger and volunteer presence on Blakeney Point, nest recording for the British Trust for Ornithology (BTO) scheme was possible for a number of species.

1.3 Summary

The 2016 breeding bird season brought challenges for terns. Little Terns nested in slightly greater numbers than 2015; however productivity was much lower due to predation by large gulls and Kestrel. Sandwich Terns experienced the lowest number of breeding pairs since 2001 due largely to the absence of Black-headed Gulls on Far Point as a consequence of rat disturbance and predation. However, the Norfolk population as a whole had the most productive year since 2006, with 88% of pairs breeding on Scolt Head Island and experiencing high fledging success, much like 2015 when 76% of pairs bred there. A similar number of Common Terns to 2015 bred, the second highest number of pairs since 2006, with slightly higher productivity than 2015.

As usual, there were three Marsh Harrier nests, with one of the two males serving two of the three females. Two of the nests were successful, fledging a combined total of at least three young. The usual Barn Owl pair is believed to have bred again. There were no Bittern sightings during the breeding period.

Some 40 Avocet pairs bred. Chick survival was better on Blakeney Point than in previous years, and productivity across the NNR as a whole was a very good 0.65. Lapwing also appeared to have a good survival rate. Redshank had a good year, with at least 47 pairs thought to have experienced good hatching. Two pairs of Little Ringed Plover bred on Blakeney Freshes, fledging one brood, and for the first time a pair fledged young on Blakeney Point. A total of 15 Ringed Plover pairs bred on the reserve, fledging few more than just 3 young. Snipe were heard drumming on Blakeney Freshes for the first time since 2009.

Five pairs of Mediterranean Gulls fledged two young. Two Bearded Tit territories were recorded, fledging a minimum of five young between them. Two pairs of Cetti's Warbler are thought to have bred, although no young were seen. Common passerine species bred in good numbers although some young succumbed to poor weather in late May.

2. Table of breeding birds

Species	Methodology	Blakeney Point	Blakeney Freshes	Chapel Island	Stiffkey Meals	Total pairs
Mute Swan	Nesting pairs	0	5	0	0	5
Greylag Goose	Minimum pairs	2	3	0	0	5
Canada Goose	Minimum pairs	0	4	0	0	4
Shelduck	Minimum pairs	61	13	3	0	77
Gadwall	Minimum pairs	5	*1	1	0	7
Shoveler	Minimum pairs	0	?	2	0	2
Mallard	Minimum pairs	7	7	0	0	14
Marsh Harrier	Nesting pairs	0	3	0	0	3
Kestrel	Nesting pairs	0	1	0	0	1
Red-legged Partridge	Territories	½	0	0	0	1
Grey Partridge	Territories	7	1	0	0	8
Pheasant	Territories	5	*0	0	0	5
Moorhen	Minimum pairs	0	3	0	0	3
Coot	Minimum pairs	0	2	0	0	2
Avocet	Nesting pairs	17	22	1	0	40
Oystercatcher	Territories	84	8	1	*5	98
Lapwing	Territories	0	25	0	0	25
Little Ringed Plover	Nesting pairs	1	2	0	0	3
Ringed Plover	Territories	11	0	0	4	15
Redshank	Territories	19	15	3	*10	47
Black-headed Gull	Nesting pairs	875	62	0	*15	952
Mediterranean Gull	Nesting pairs	5	0	0	0	5
Lesser Black-backed Gull	Territories	4	0	0	0	4
Herring Gull	Nesting pairs	19	0	0	?	19
Little Tern	Nesting pairs	61	0	0	0	61
Sandwich Tern	Nesting pairs	451	0	0	0	451
Common Tern	Nesting pairs	128	0	0	1	129
Arctic Tern	Nesting pairs	3	0	0	0	3
Wood Pigeon	Nesting pairs	2	?	0	0	2
Barn Owl	Nesting pairs	0	1	0	0	1
Skylark	Territories	48	?	3	*4	55
Barn Swallow	Nesting pairs	2	0	0	0	2
Meadow Pipit	Territories	151	?	2	?	153
Pied Wagtail	Nesting pairs	3	0	0	0	3
Wren	Territories	6	?	0	0	6
Dunnock	Territories	7	?	0	0	7
Sedge Warbler	Territories	0	*12	1	0	13
Grasshopper Warbler	Territories	0	1	0	0	1
Cetti's Warbler	Territories	0	2	0	0	2
Reed Warbler	Territories	0	*6	0	0	6
Bearded Tit	Territories	0	2	0	0	2
Linnet	Territories	54	?	2	*2	58
Reed Bunting	Territories	27	*1	1	?	29

* Indicates incomplete counts, lower than actual total.

3. Systematic List

Bittern *Botaurus stellaris* (Red List) (Schedule 1)

Territories: 0
 Fledged young: 0

Monitoring of booming males was undertaken fortnightly from mid-March. No booming was heard this year. The last sighting was an individual on 11th February.

Mute Swan *Cygnus olor* (Green List)

Nesting pairs: 5
 Fledged young: 20 estimated
 Productivity: 4.0

Five pairs were noted on Blakeney Freshes, with five nests found. An estimated 20 young fledged.

Greylag Goose *Anser anser* (Amber List)

Minimum pairs: 5
 Fledged young: 16 minimum
 Productivity: 3.2

Three nests were found on Blakeney Freshes, with a minimum of 16 fledging. On Blakeney Point, two pairs were present from mid-March to late May, although no young were seen.

Canada Goose *Branta Canadensis* (Naturalised)

Maximum pairs: 4
 Fledged young: 13 minimum
 Productivity: 3.25

A count of eight adults on Blakeney Freshes suggests four pairs. One nest was found with a minimum of two young known to have fledged. A group of 21 was observed on 5th August, containing a minimum of 13 juveniles.

Shelduck *Tadorna tadorna* (Amber List)

Minimum pairs: 77
 Young seen: 73 estimated
 Productivity: 0.95

Pairs had begun to occupy territories on Blakeney Point by 11th March. An early morning coordinated count of birds gathering in breeding areas was conducted on 30th April. A total of 77 pairs were recorded across the reserve plus 14 additional adults in the Glaven channel. It is thought some of the birds counted on Blakeney Freshes may have nested on nearby Friary Hills.

Location	Pairs
Blakeney Point	61
Blakeney Freshes	13
Chapel Island	3
NNR Total:	77

Several broods were observed between early June and early August. Whilst it is impossible to know which sightings were of the same individuals, it is thought a minimum of 73 individual young were recorded throughout the breeding season. This is on the assumption that all birds in Blakeney Harbour had hatched on the reserve and not further afield.

Date	Observation
04/06/2016	11 newly-hatched young led into Blakeney Harbour from the Point
06/06/2016	8 young in Blakeney Harbour between the Watch House and Hood
12/06/2016	10 young on Blakeney Freshes
13/06/2016	8 young in Blakeney Harbour off Far Point
16/06/2016	6 young in Blakeney Harbour
17/06/2016	9 young in Blakeney Harbour
18/06/2016	7 young in Stanley's Cockle Bight
21/06/2016	26 young in a crèche in the Blakeney Harbour
21/06/2016	7 young aged 2-3 days in the old Glaven channel
24/06/2016	18 young in a crèche off the Marrams
24/06/2016	29 young in a crèche off the Marrams
28/06/2016	12 young aged 2-3 days in old Glaven channel
17/07/2016	5 young in harbour towards Far Point
17/07/2016	25 young in a crèche in Blakeney Harbour towards Far Point
17/07/2016	15 young in a crèche in Blakeney Harbour towards Far Point
19/07/2016	8 young in Blakeney Harbour off Far Point
25/07/2016	36 young in a crèche off the Marrams
25/07/2016	8 young in a crèche off the Marrams
26/07/2016	9 young in a crèche in Blakeney Harbour off Middle Point
26/07/2016	5 young in Blakeney Harbour off Far Point
26/07/2016	5 young in Blakeney Harbour off Far Point (separate to above)
05/08/2016	54 young in five groups in the eastern part of Blakeney Harbour

Gadwall *Anas strepera* (Amber List)

Minimum pairs: 7

Fledged young: 2 broods

An estimated five pairs bred on Blakeney Point, from which only one nest is thought to have hatched. A pair was noted on the Chapel Island, with unknown outcome, and one brood was recorded on Blakeney Freshes.

Shoveler *Anas clypeata* (Amber List)

Minimum pairs: 2

Fledged young: unknown

Two pairs bred on the Chapel Island, of which the outcomes for both are unknown. Breeding was thought likely on Blakeney Freshes, although no data was collected.

Mallard *Anas platyrhynchos* (Amber List)

Minimum pairs: 14

Fledged young: 7 broods minimum

A total of seven broods were observed on Blakeney Freshes throughout the breeding season. Seven nests were found along Blakeney Point, including one incubated by a domestic duck. It is believed two of the Blakeney Point clutches hatched, although no young were observed.

Pochard *Aythya farina* (Red List)

Minimum pairs: unknown

Fledged young: 0

There were no records on Blakeney Freshes this year.

Tufted Duck *Aythya fuligula* (Amber List)

Minimum pairs: unknown

Fledged young: 0

On Blakeney Freshes, 14 adults were noted on the Flight Pond. It is not known how many, if any, of these birds bred and no young were observed.

Marsh Harrier *Circus aeruginosus* (Amber List) (Schedule 1)

Nesting pairs: 2½ (3 nests: 2 males; 3 females)

Fledged young: 3 minimum

Productivity: 1.0 (1.5)

Two females nested successfully in the Great Barnett reedbed in association with one male. A pair also nested to the east. Three fledged young were observed from the Barnett nests but none from the eastern nest.

Kestrel *Falco tinnunculus* (Amber List)

Nesting pairs: 1

Fledged young: unknown

On Blakeney Freshes, there were regular sightings of a hunting male throughout the breeding season. A pair was regularly seen in the southeast area of the Freshes and observed carrying food. It is believed the pair bred in the adjacent woodland near Wiveton Hall fruit farm. These birds may also have been the same ones that predated Little Tern chicks from the Watch House colony on Blakeney Point.

Red-legged Partridge *Alectoris rufa* (Naturalised)

Territories: ½

Fledged young: 0

A lone adult was observed on Blakeney Point between January and May, often associated with Grey Partridges. There were no sightings on Blakeney Freshes.

Grey Partridge *Perdix perdix* (Red List)

Territories: 8

Fledged young: 22 (4 broods)

Productivity: 2.75

On Blakeney Point, a group of up to 18 adults were present over the winter. Seven territories were identified in April. Four broods were observed between mid-July and mid-August, totalling 22 young. On 23rd November, six groups were recorded on the Point, totalling 54 birds. A pair was recorded on Blakeney Freshes, but no young.

Pheasant *Phasianus colchicus* (Naturalised)

Territories: 5

Fledged young: 0

Five females and one male were observed along Blakeney Point on 4th February. It is not known whether all five males present in February went on to breed on the Point. Although at least two males were present in the breeding season, no females were observed and no young were seen. A lone male was still present in the main dunes in late September. There were no records on Blakeney Freshes.

Water Rail *Rallus aquaticus* (Green List)

Territories: 1?

Fledged young: 0

A trail camera on the edge of the Great Barnett reedbed recorded a bird on the 14th of March. Breeding remains unconfirmed.

Moorhen *Gallinula chloropus* (Green List)

Minimum pairs: 3
 Fledged young: 4 minimum
 Productivity: 1.33

Three pairs were recorded on Blakeney Freshes, with two broods noted.

Coot *Fulica atra* (Green List)

Minimum pairs: 2
 Fledged young: 2 minimum
 Productivity: 1.0

On Blakeney Freshes, two pairs were noted from casual observations of adults. Two young were seen.

Avocet *Recurvirostra avocetta* (Amber List) (Schedule 1)

Nesting pairs: 40
 Fledged young: 26
 Productivity: 0.65

Nesting began on Blakeney Point in late April with a total of 17 pairs nesting on the Cley end of the shingle ridge. Some 15 juveniles fledged, with the first being capable of flight on 10th May. One pair bred on Chapel Island, fledging two young. On Blakeney Freshes, 22 nests were recorded with an estimated 9 fledged.

Oystercatcher *Haematopus ostralegus* (Amber List)

Territories: 98
 Fledged young: 35 estimated
 Productivity: 0.3

A total of 84 pairs nested on Blakeney Point. Some 26 pairs nested along the main shingle ridge and 58 pairs on the headland. One female laid an egg in a Black-headed Gull nest on Middle Point around 21st May; however the egg had been predated by 28th May. Two metal-ringed birds were found dead on Far Point during the breeding season; one ringed as an adult at Heacham, West Norfolk in 1992 and one ringed as a nestling at Holme, West Norfolk in 2001.

A total of 77 nests were monitored on the headland, 19 (25%) of which were relays.

Outcome	Nests monitored	Percentage
Eggs predated	34	44%
Eggs abandoned (infertile)	3	4%
Eggs hatched	23	30%
Outcome unknown	17	22%

All nests on the eastern end of the Landing Ridge suffered rat predation at the egg stage. Eggs and young were observed being predated by Common and Herring Gulls on the headland. A total of around 35 young fledged.

One pair appeared to be holding territory on Chapel Island. Approximately five pairs bred on Stiffkey Meals. A total of eight pairs nested on Blakeney Freshes, including one on the island of the Flight Pond. The number that fledged is unknown. No survey was conducted on Morston Marshes.

Lapwing *Vanellus vanellus* (Red List)

Territories: 25
Fledged young: unknown

A total of 25 territories were identified on Blakeney Freshes (see map 8, appendix 3). Hatching seemed good and young appeared to reach a good age before either being led over the sea wall, or fledging.

Little Ringed Plover *Charadrius dubius* (Green List) (Schedule 1)

Territories: 3
Fledged young: 3 estimated
Productivity: 1.0

A nest was discovered in the northwest field of Blakeney Freshes on 14th April. This nest was later predated. A second pair nested about 100 metres to the west. This nest was abandoned during strong winds and heavy rain in early June. The first pair laid a second clutch and hatched three young, of which two fledged.

A nest containing four eggs was located on Blakeney Point on 9th June. Three chicks hatched on 21st June, the first record of chicks on the Point. The fourth egg did not hatch and the last of the three chicks to hatch died in the scrape on 27th June. The two surviving chicks were seen regularly. By 13th July, only one chick was present. It is not known whether the pair split the brood or one of the chicks died. Therefore, it is presumed just one chick fledged. It remains a possibility that both may have fledged.

Ringed Plover *Charadrius hiaticula* (Red List)

Territories: 15
Fledged young: 3 minimum
Productivity: 0.2

A total of 11 territories were recorded on Blakeney Point; six along the main shingle ridge and five on the headland (see map 10, appendix 3). Four broods were observed inside the enclosure east of the Watch House in June and July, from which a minimum of three young fledged. On the headland, eight nesting attempts, made by four pairs, were monitored. One pair nested on the landing ridge three times, failing at the egg stage each time, strongly believed to be a result of Common Gull predation. A nest met the same fate on the beach, as did three nesting attempts east of the Gap. The eighth nest hatched young on 9th August, but none fledged.

On Stiffkey Meals, four territories were identified. Fledging success is not known.

Snipe *Gallinago gallinago* (Amber List)

Drumming was heard on 19th May. However, there was no further evidence of breeding.

Redshank *Tringa totanus* (Amber List)

Territories: 47
Fledged young: Good

A total of 19 pairs bred on Blakeney Point. Of nine nests monitored, eight successfully hatched and one was predated at the egg stage. Several adults were heard alarm calling along the main ridge, indicating they had small young nearby.

Fledging is therefore thought to be very good. All nests monitored contained four eggs.

On Blakeney Freshes, 15 territories were recorded. Nine broods were seen, mostly in the north-eastern fields. Adult birds were observed leading young over the sea wall onto the saltmarsh. Fledging is thought to be good. Three territories were identified on Chapel Island. At Stiffkey, there is an anecdotal record of ten nests by 11th June. No survey was conducted on Morston Marshes.

Black-headed Gull *Chroicocephalus ridibundus* (Amber List)

Nesting pairs: 952 approximately
 Fledged young: 110 estimated
 Productivity: 0.11

Birds started to arrive on territory on 11th March, with laying beginning on Blakeney Point on 23rd April. A week later, the colony deserted as a result of rat predation. Birds then spread out across the reserve, nesting on Blakeney Freshes, Arnold's Marsh and the shingle ridge either side of the Watch House. Nest building in the main colony area had resumed by 9th May, with a minimum of 20 nests counted on 11th May. Four nests were found on the very tip of Far Point on 28th May, with an estimated 600 pairs going on to nest in this location (see Appendix 2). An estimated 100 young fledged from the Point as a whole.

Ten pairs nested on an island within a scrape in the north-eastern corner of Blakeney Freshes. This was then followed by a further 45 pairs nesting a little further south. Nine live chicks and one dead were recorded 12th June. Another seven pairs nested in the north-western corner with a chick noted on 24th June. At least 10 young were observed on the Freshes as a whole; however the total young fledged is thought to have been greater.

Birds also nested at Stiffkey. A minimum of 15 pairs were recorded on 11th June. A total count was not conducted and fledging success is not known.

Colony	Approximate number of nests
Far Point main colony	200
Far Point tip	600
Middle Point tip	20
Shingle ridge east of Hood	15
Shingle ridge east of Watch House	40
Blakeney Freshes	62
Stiffkey Meals	15
Total:	952

Mediterranean Gull *Larus melanocephalus* (Amber List) (Schedule 1)

Nesting pairs: 5
 Fledged young: 2 (1 brood)
 Productivity: 0.4

The first pair was observed on the tip of Blakeney Point on 11th March. Five pairs were recorded roosting on 8th April. Following rat disturbance in late April, all but one pair abandoned. The pair that remained was often seen on the tip of Far Point. A second pair was frequently seen on the saltmarsh east of the Watch House from 11th

May and, on 24th July, two flying juveniles were seen. It is thought the other three pairs present in April moved elsewhere.

Lesser Black-backed Gull *Larus fuscus* (Amber List)

Nesting pairs: 4
Fledged young: 2
Productivity: 0.75

In April, four pairs were recorded roosting on Far Point. These went on to nest amongst Marram grass growing on the shingle towards the tip of the Point (see Appendix 2). A pair was observed with three young on 19th July, two of which fledged by 31st July. Birds were also present at Stiffkey in June, although breeding was not confirmed.

Herring Gull *Larus argentatus* (Red List)

Nesting pairs: 19 minimum
Fledged young: 6
Productivity: 0.32

On 11th April, 55 birds were counted roosting on Far Point and in the nearby harbour. By 1st May, five pairs were on eggs on the dune west of the main tern colony. On 4th May, 48 birds were counted in this area. A total of 19 pairs went on to nest by 24th May. A licence from Natural England permitted ten nests to be destroyed. From the remaining nests, six juveniles were observed on 26th July and were present into August. It is possible some pairs may have bred on Stiffkey Marsh, although no data was collected.

Little Tern *Sternula albifrons* (Amber List) (Schedule 1)

Nesting pairs: 61 (54-64)
Fledged young: 9
Productivity: 0.15

Two birds seen on Far Point on 25th April were the first sighting of the year on Blakeney Point. On 7th May, 20 birds were seen roosting on the tip of Far Point; this had risen to 110 on 18th May. Three landed briefly in the Gap enclosure on 8th May and 12 in the Watch House enclosure on 9th May. A tape lure was put in the Gap enclosure on 15th May, alongside decoys. Erosion of the shingle made this area less suitable for Little Terns, so the lure was moved to the Hood enclosure on 5th June. However, no interest was shown in the Hood enclosure.

No birds were recorded at Stiffkey.

On 28th May, seven nests were counted on the tip of Far Point, the first nests of the season. Trail cameras revealed that two of these nests were predated by a Herring Gull on 1st June. By 13th June, only one of the original nests remained, although a further 27 had been laid on the very tip. This had risen to 40 nests by 25th June. One of these nests was found to contain five eggs on 13th June, however only three eggs were present in the scrape by 25th June. This was thought to be a case of egg dumping with the alien eggs then rejected by the original pair. First chicks were seen on the tip on 2nd July, with seven broods noted. On 17th June, only three broods were present. No young fledged from the tip of Far Point due to chick predation by large gulls. The colony abandoned towards the end of July.

Five birds were sat in the Watch House enclosure by 11th June. A nest count was conducted on 27th June, during which 12 nests were marked. This included one scrape containing five eggs, presumably another case of egg dumping (see figure 1). All five eggs remained in this scrape throughout incubation, although it is believed only two chicks hatched. The first chicks were observed on 6th July. From mid-July onwards, a Kestrel visited the Watch

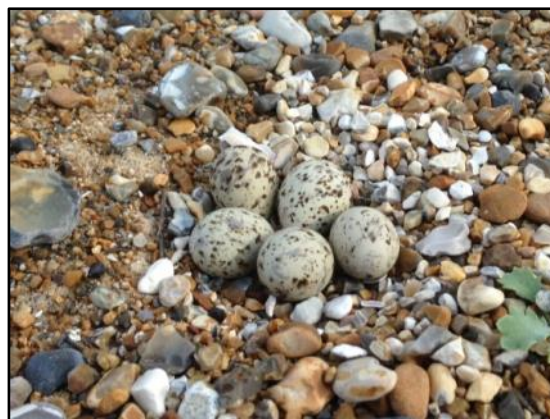


Figure 1: Five-egg clutch (A. Tegala)

House colony frequently and was observed attempting to predate chicks. On 25th July, six young fledged plus a further three on 31st July.

Colony	Total nesting pairs	Young fledged	Productivity
Watch House	13	9	0.70
Tip of Far Point	48	0	0.00
Total:	61	9	0.15

It is not known whether the nesting pairs that failed on the tip, at the beginning of June, went on to relay at the Watch House colony. It has been presumed that all birds nesting at the Watch House were different. The five-egg scrapes were recorded as two nesting pairs as they contained the eggs of two females. In the Watch House colony, a late nest was found on 19th July, plus two other birds thought to be sat on eggs; these were not recorded as separate nesting pairs and did not hatch young. Therefore a maximum of 64 pairs nested, and a minimum of 54.

Sandwich Tern *Thalasseus sandvicensis* (Amber List)

Nesting pairs: 451
 Fledged young: 175 minimum
 Productivity: 0.39

The first bird was seen from Blakeney Point on 26th March. Roost counts were conducted throughout April and early May.

Date	Roost count
04/04/2016	200
08/04/2016	600
11/04/2016	1035
16/04/2016	1400
20/04/2016	800
23/04/2016	2000
29/04/2016	130
03/05/2016	200
07/05/2016	200
09/05/2016	150
11/05/2016	206

Desertion of the Black-headed Gull colony, at the end of April, caused the majority of Sandwich Terns to move to Scolt Head Island. Around 200 birds remained in the vicinity of the Point for two weeks, with 150 roosting in the beach colony on 9th May, but had all left by late May.

On 4th June, the first “late arrivals” were observed on the tip of Far Point. Numbers built and birds began nesting in the middle of the month. A nest count conducted on 25th June recorded 451 nests. By 13th July, adults were seen flying into the colony with small fish to feed chicks. Some chicks were predated by Herring and Lesser Black-backed Gulls. A fledging count on 3rd August recorded at least 200 juveniles. The following day, 13 dead juveniles were found washed up on the tideline of the landing ridge plus at least two others on Far Point.

Common Tern *Sterna hirundo* (Amber List)

Nesting pairs: 129
 Fledged young: 13
 Productivity: 0.1

The first birds were observed on Blakeney Point on 1st May. A minimum of 30 birds roosted on the tip of Far Point on 4th May. A survey of Far Point on 28th May recorded 29 nests. This had risen to a total of approximately 125 on 16th June, when the first two chicks were also observed. A further three pairs nested on the shingle at the end of Middle Point in June. The first of the Middle Point pairs hatched three young around 24th June, but these were soon predated by large gulls, as were the eggs of the other two pairs. Many of the young on Far Point also suffered from Herring and Lesser Black-backed Gull predation. Two birds were seen on the ground in the beach colony in June, but did not stay to nest there. On 17th July, 13 almost fledged birds were observed on the tip of the Point.

One apparently incubating bird was witnessed at Stiffkey Meals in June. It is not thought that any young fledged. A pair were observed in the beach colony on Blakeney Point in June, but did not go on to nest there.

Colony	Nesting pairs	Young fledged	Productivity
Tip of Far Point	125	13	0.1
Tip of Middle Point	3	0	0.0
Beach colony	0	0	0.0
Stiffkey Meals	1	0	0.0
Total:	129	13	0.1

Arctic Tern *Sterna paradisaea* (Amber List)

Nesting pairs: 3
 Fledged young: 0

The first birds were observed on 4th May. Two sitting birds were observed on the very tip of Far Point on 8th June. One nest was found to contain two eggs, and the other contained one. Both scrapes were found to be empty on 25th June, thought to have succumbed to large gull predation either just prior to or after hatching.

A third pair nested on the shingle at the end of Middle Point, but the nest is thought to have met the same fate.

Wood Pigeon *Columba palumbus* (Green List)

Nesting pairs: 2

Fledged young: 0

A pair nested in the Plantation on Blakeney Point on 6th September. The nest had been abandoned by 11th September. Breeding was also thought likely near the Watch House, with a hatched shell found on the end of the Fairway on 11th August. No survey was carried out on Blakeney Freshes.

Barn Owl *Tyto alba* (Amber List) (Schedule 1)

Nesting pairs: 1

Fledged young: unknown

On Blakeney Freshes, a pair was seen coming out of the nest box on Marsh Lane on a number of occasions in late summer. Breeding is therefore presumed..

Skylark *Alauda arvensis* (Red List)

Singing males: 55

Fledged young: Fair

Breeding bird surveys recorded 48 singing males on Blakeney Point. Fledging was thought to be fair. A minimum of three territories were recorded on the Chapel Island. No survey was undertaken on Blakeney Freshes. A visit to Stiffkey in early May recorded three singing males.

Barn Swallow *Hirundo rustica* (Amber List)

Nesting pairs: 2

Fledged young: 9 (2 broods)

Productivity: 4.5

Two pairs nested on Blakeney Point; one under the eaves of the Old Lifeboat House roof and the other inside the Old Tern Hide on Near Point. Five young hatched from each nest, from which nine took flight in late July and one died.

Meadow Pipit *Anthus pratensis* (Amber List)

Singing males: 153

Fledged young: Good

Breeding bird surveys recorded 151 singing males on Blakeney Point. Good numbers of fledged young were seen, with several pairs fledging second broods. Two territories were recorded on Chapel Island. No surveys were conducted at Stiffkey or Blakeney Freshes.

A total of 21 nests were monitored on the headland of Blakeney Point. Six nests failed due to young perishing from exposure to stormy weather conditions in May. The outcome for two nests is unknown. The remaining 13 all fledged young, giving a 68% fledging success rate from the 19 nests with known outcomes.

Pied Wagtail *Motacilla alba yarrellii* (Amber List)

Nesting pairs: 3

Fledged young: 4+ (3 broods)

A pair nested inside the Old Tern Hide on Blakeney Point in late May. Four young flew from the nest on 1st July. Fledged juveniles were also seen on the landing ridge and near the Lifeboat House throughout July and August, believed to be broods from two nests on boats in the harbour.

Wren *Troglodytes troglodydes* (Green List)

Singing males: 6
Fledged young: 3+ broods

Breeding bird surveys recorded six singing males on Blakeney Point. On 9th June, three separate broods were observed being fed in the nest between the Marrams and Long Hills. Breeding was noted on the Freshes although no formal survey took place.

Dunnoek *Prunella modularis* (Amber List)

Singing males: 7
Fledged young: Fair

Breeding bird surveys recorded seven singing males on Blakeney Point. A pair was seen regularly in the garden in April, although no nest was found. Young were seen elsewhere on the Point, with fledging thought to be fair. Breeding was noted on the Freshes although no formal survey took place.

Sedge Warbler *Acrocephalus schoenobaenus* (Green List)

Singing males: 13+
Fledged young: unknown

One singing male was present on Chapel Island throughout the season. Only half of Blakeney Freshes was surveyed this year, recording 12 territories in the western half.

Grasshopper Warbler *Locustella neevia* (Red List)

Singing males: 1
Fledged young: unconfirmed

A male was heard calling on 30th April, in the vicinity of the duck pond to the west of the cart track. There were no further records, therefore breeding remains unconfirmed.

Cetti's Warbler *Cettia cetti* (Green List) (Schedule 1)

Singing males: 2
Fledged young: unknown

Two singing males were noted along the bottom of Friary Hills throughout the season. One was noted on the west side on 17th June. There were no records of young.

Reed Warbler *Acrocephalus scirpaceus* (Green List)

Singing males: 6+
Fledged young: unknown

Only half of Blakeney Freshes was surveyed this year. Six territories were recorded in the western half.

Bearded Tit *Panurus biarmicus* (Amber List) (Schedule 1)

Territories: 2
Fledged young: 5
Productivity: 2.5

Two territories were recorded on Blakeney Freshes. One pair nested near the cart track and fledged three young. The other pair nested in the Great Barnett reedbed, fledging two young.

Carrion Crow *Corvus corone*

Nesting pairs: 1

Fledged young: 0

One pair made a single unsuccessful nesting attempt.

Linnet *Carduelis cannabina* (Red List)

Estimated pairs: 58

Fledged young: Good

Breeding bird surveys recorded an estimated 54 pairs on Blakeney Point. Linnets, being highly mobile, are difficult to census in the breeding season; as such this count may be higher than the number of nesting pairs. Good numbers of fledged young were seen, with several pairs fledging second broods. Two singing males were recorded on the Chapel Island and a minimum of two on Stiffkey Meals. Breeding on Blakeney Freshes was not confirmed.

A total of four nests were monitored on Blakeney Point. One nests contained a clutch of four eggs and the other three all contained five eggs. All eggs hatched and all young fledged. Three of the nests were first clutches, laid in May, and one nest was a second clutch, laid in July and fledging in August.

Reed Bunting *Emberiza schoeniclus* (Amber List)

Singing males: 29

Fledged young: Fair

Breeding bird surveys recorded a total of 27 singing males on Blakeney Point, with the greatest number in the Shrubby Sea-blite along the main shingle ridge, Long Hills and Yankee Ridge. Two nests containing newly-hatched young were found on 30th May; one with four chicks and the other with five. Within a week, both broods had died in the nest due to exposure to stormy weather conditions.

It is thought one pair bred on Chapel Island. No survey was undertaken on Blakeney Freshes, although one territory was noted near the Great Barnett reedbed.

4. Nest recording

Nests were monitored for the BTO Nest Recording scheme, contributing towards national trends. A total of 250 nests of 24 species were recorded.

Species	Number of nest records	Average number of eggs	Percentage Outcome		
			Success	Failure	Unknown
Shelduck	1	11	100	0	0
Gadwall	2	8.5	50	0	50
Mallard	6	10.5	50	33	17
Grey Partridge	3	6.3	67	33	0
Oystercatcher	77	2.8	8	53	39
Avocet	17	2.9	18	0	82
Little Ringed Plover	3	3.7	33	33	33
Ringed Plover	12	2.5	17	67	17
Redshank	9	4	89	11	0
Black-headed Gull	11	1.3	0	91	9
Herring Gull	10	2.3	0	100	0
Little Tern	60	2.3	10	88	2
Sandwich Tern	1	1	0	100	0
Common Tern	2	2.5	0	0	100
Arctic Tern	2	1.5	0	0	100
Wood Pigeon	1	2	0	100	0
Skylark	1	3	100	0	0
Barn Swallow	2	5	100	0	0
Pied Wagtail	1	4	100	0	0
Meadow Pipit	21	4	62	33	5
Carrion Crow	1	4	0	100	0
Linnet	4	4.8	100	0	0
Reed Bunting	3	3.3	0	100	0
Total:	250		22%	56%	22%

5. Comments and observations

5.1 Little Tern breeding behaviour

Predation by large gulls created a significant issue on the tip of Far Point, where Herring and Lesser Black-backed Gulls were present throughout the breeding season. This resulted in complete colony failure, most nests suffering predation at the chick stage. A lack of interest in the beach and Gap enclosures is believed to be a result of habitat change over the previous winter. No birds nested in the Hood enclosure, despite the use of decoys, predators thought to be absent and habitat thought to be suitable. As in previous years, the Watch House colony did not suffer gull predation; however chick predation by Kestrel was witnessed.

Prey sampling was conducted in May, June and July by ECON Ecology with support from the National Trust. This revealed good prey availability in the harbour, at a greater abundance than in 2015, and in the sea by the Watch House colony. It is thought good prey availability in the harbour led to an increased number of pairs nesting on the tip of Far Point, where 48 pairs nested; the highest number recorded in this location. Despite prey availability appearing to also be good in the sea by the Watch House, fewer pairs bred there than in 2015.

In total, seven more pairs bred at Blakeney NNR than in 2015. However, 61 pairs are still below the five-year average of 98. The Norfolk population as a whole saw an increase from 403 pairs in 2015 to 573, also below the five-year average of 674 pairs. A total of 10.6% of breeding Little Tern pairs in Norfolk bred at Blakeney. Although productivity was 0.15 at Blakeney, it was 0.7 in Norfolk as a whole.

Location	Pairs	Fledglings	Productivity
Holme	19	10	0.53
Scolt Head Island	173	53	0.31
Holkham	26	5	0.19
Blakeney	61	9	0.15
Eccles	168	302	1.80
Winterton	96	21	0.22
Scroby Sands	30	?	?
Total:	573	400	0.70

5.2 Sandwich Tern breeding behaviour

For a second year, most of the Norfolk coast breeding Sandwich Terns nested on Scolt Head Island (88%). An estimated 2,850 young fledged from the island, bringing the Norfolk productivity to 0.79; the highest since 2006. Approximately 2,000 birds were roosting on Blakeney Point on 23rd April. It is believed that the desertion of the Black-headed Gull colony at this time, due to rat predation and disturbance, caused around 1,000 pairs to desert Blakeney Point and head to Scolt Head.

Location	Pairs	Young fledged	Productivity
Scolt Head Island	3365	2850	0.85
Blakeney Point	451	175	0.39
Total:	3816	3025	0.79

The 451 pairs that arrived in June nested on the tip of Far Point where they suffered large gull predation, but still managed productivity of 0.39. Black-headed Gulls, Common and Little Terns in the same area had nested earlier and appeared to absorb most of the large gull predation, to the benefit of the Sandwich Terns.

Historically, Scolt Head has supported the majority of breeding pairs on more occasions than Blakeney Point, as shown in the table below.

Distribution 1925-2016	Number of years	Percentage
Blakeney: all pairs	2	2%
Blakeney: most pairs	27	29%
Almost even split	9	10%
Scolt Head: most pairs	33	36%
Scolt Head: all pairs	21	23%
Total:	92	

5.3 Predation

For a second year, no evidence of fox predation was observed on Blakeney Point during the breeding season. A fox-free season was ensured by removing resident foxes between January and April, which involved daily baiting and 20 hours of night work. Some 43 mark 4 springer traps were deployed across Blakeney Freshes (25) and Point (18) between March and September. Rats were controlled during this period, with 15 hours spent looking for holes and treating with aluminium phosphide.

Despite rat control with aluminium phosphide and use of wheat-based bait, rats were present in late April. Advice was sought on how to improve rat control measures and a network of permanent bait stations, containing a more effective poison, have since been installed in attempt to prevent future rat predation to ground-nesting birds.

As in the previous two years, a Hobby was observed attempting to predate adult Little Terns. Use of trail cameras on Far Point, as part of a University College London Masters study, revealed two incidences of a Herring Gull predated Little Tern eggs in early June. Predation of Little Tern chicks by Kestrel was witnessed. Predation of Ringed Plover eggs by both Oystercatcher and Common Gull was thought very likely as was predation of Mallard eggs by Common Gull. Predation of Oystercatcher young and eggs by Common and Herring Gull was observed.

Date	Predator	Notes
01/06/2016	Herring Gull	Predated Little Tern egg
01/06/2016	Herring Gull	Predated Little Tern egg
12/06/2016	Mediterranean Gull	Disturbed Little Tern colony but driven off
03/07/2016	Hobby	Attempted to predate adult Little Tern
08/07/2016	Hobby	Thought to predate adult Little Tern
17/07/2016	Kestrel	Disturbed Little Tern colony but driven off
18/07/2016	Mediterranean Gull	Disturbed Little Tern colony but driven off
19/07/2016	Kestrel	Disturbed Little Tern colony but driven off
20/07/2016	Kestrel	Thought to predate Little Tern chick
04/08/2016	Herring Gull	Attacked juvenile Sandwich Tern

The difficulties of getting close to the Far Point colony from the land meant accurate monitoring of large gull impact on nesting terns was difficult. However, there were numerous anecdotal sightings of disturbance, attempted and successful predation by Herring and Lesser Black-backed Gulls. It is thought the significant reduction in breeding Black-headed Gulls on Far Point led to increased large gull predation pressure on terns. As well as non-breeding gulls, there was also an increased number nesting on Far Point. Ten Herring Gull nests were destroyed under licence, however a further nine pairs nested, plus four pairs of Lesser Black-backed Gulls. A letter has been sent to Natural England, asking for permission to deter Herring and Lesser Black-backed Gulls from breeding on Blakeney Point in 2017.

5.4 Human disturbance

A total of 37 human disturbances to breeding birds were recorded throughout the breeding season. This is two less disturbances than in 2015.

Date	Location	Type	Disturbance caused
03/04/2016	Shingle ridge	Dog	Disturbed wading birds
04/04/2016	Shingle ridge	Dog	Disturbed wading birds
06/04/2016	Cley end	Unauthorised vehicle	Disturbed wading birds
10/04/2016	Harbour	Aircraft - civilian	Disturbed wading birds
17/04/2016	Shingle ridge	Dog	Disturbed wading birds, gulls and Shelduck
18/04/2016	Harbour	Aircraft - military	Disturbed wading birds, gulls and Shelduck
19/04/2016	Cley end	Dog	Disturbed Avocets
25/04/2016	Cley end	Dog	Disturbed Avocets
30/04/2016	Cley end	Walkers	Disturbed Avocets
07/05/2016	Landing Ridge	Boat	Disturbed Oystercatchers
07/05/2016	Harbour	Aircraft - civilian	Disturbed wading birds, gulls
07/05/2016	Cley end	Fisher	Disturbed Avocets
12/05/2016	Landing Ridge	Photographer	Disturbed Oystercatchers
22/05/2016	Beach	Dog	Disturbed wading birds
24/05/2016	Far Point	Aircraft - military	Disturbed terns, wading birds, gulls
02/06/2016	Landing Ridge	Walkers	Disturbed Oystercatchers
06/06/2016	Far Point	Boat	Disturbed Little and Common Terns
08/06/2016	Far Point	Canoe	Disturbed Little and Common Terns
18/06/2016	Cley end	School group	Disturbed wading birds
18/06/2016	Main Dunes	School group	Disturbed passerines
18/06/2016	Landing Ridge	Photographer	Disturbed Oystercatchers
19/06/2016	Far Point	Aircraft - civilian	Disturbed terns
19/06/2016	Landing Ridge	Dog	Disturbed Redshank
22/06/2016	Entire site	Aircraft - military	Disturbed Little Terns
24/06/2016	Shingle ridge	Walkers	Disturbed Little Terns
24/06/2016	Far Point	Walkers	Disturbed terns
03/07/2016	Far Point	Aircraft - civilian	Disturbed terns
04/07/2016	Shingle ridge	Walkers	Disturbed Little Terns
05/07/2016	Shingle ridge	Dog	Disturbed Little Terns
09/07/2016	Far Point	Walkers	Disturbed wading birds
14/07/2016	Far Point	Jet ski	Disturbed Sandwich Terns
18/07/2016	Harbour	Aircraft - civilian	Disturbed wading birds
18/07/2016	Shingle ridge	Unauthorised vehicle	Disturbed wading birds
24/07/2016	Far Point	Walkers	Disturbed Sandwich Terns
28/07/2016	Far Point	Walkers	Disturbed Sandwich Terns
31/07/2016	Landing Ridge	Dog	Disturbed Oystercatchers
15/08/2016	Dunes	UAV	Disturbed passerines, wading birds

Some 35% of incidents involved disturbance to Schedule 1 protected species with 10 cases of disturbance to Little Terns (three less than 2015) and three to Avocets (two less than 2015). The most frequent causes were dogs, walkers and planes (same as 2015); however water-based disturbances can be the most prolonged due to difficulty in quickly accessing Far Point at high tide. There were four cases of boat-based disturbance (one more than 2015). There are plans for a greater boat-based National Trust presence in 2017.

Type of disturbance	Number of incidents
Dog	9
Walkers	8
Photographer	2
School groups	2
Unauthorised vehicle	2
Fisher	1
Land-based total:	24
Aircraft - civilian	5
Aircraft - military	3
Unmanned avian vehicle (UAV)	1
Air-based total:	9
Boat	2
Canoe	1
Jet ski	1
Water-based total:	4

Staff and volunteers were able to actively prevent 24 potential disturbances. This is four less disturbances than in 2015.

Date	Location	Type	Level of disturbance
23/04/2016	Far Point	Walkers	Prevented by ranger presence
30/04/2016	Shingle ridge	Dog	Prevented by ranger presence
30/04/2016	Main Dunes	Walkers	Prevented by ranger presence
01/05/2016	Landing Ridge	Dog	Prevented by ranger presence
01/05/2016	Main Dunes	Walkers	Prevented by ranger presence
04/05/2016	Landing Ridge	BBQ	Prevented by ranger presence
06/05/2016	Cley end	Dog	Stopped by volunteer presence
01/05/2016	Landing Ridge	Dog	Prevented by ranger presence
01/05/2016	Main Dunes	Walkers	Prevented by ranger presence
04/05/2016	Landing Ridge	BBQ	Prevented by ranger presence
06/05/2016	Cley end	Dog	Stopped by volunteer presence
07/05/2016	Landing Ridge	BBQ	Stopped by volunteer presence
07/05/2016	Landing Ridge	Dog	Stopped by volunteer presence
19/05/2016	Shingle ridge	Dog	Stopped by volunteer presence
21/05/2016	Shingle ridge	Dog	Stopped by volunteer presence
29/05/2016	Far Point	Walkers	Prevented by ranger presence
04/06/2016	Yankee Ridge	Walkers	Prevented by ranger presence
12/06/2016	Shingle ridge	Dog	Stopped by volunteer presence
18/06/2016	Landing Ridge	Dog	Prevented by ranger presence
19/06/2016	Shingle ridge	Dog	Stopped by volunteer presence
21/06/2016	Landing Ridge	Dog	Prevented by ranger presence
12/07/2016	Shingle ridge	Dog	Prevented by ranger presence
17/07/2016	Shingle ridge	Dog	Stopped by volunteer presence
17/07/2016	Shingle ridge	Dog	Stopped by volunteer presence
30/07/2016	Shingle ridge	Dog	Prevented by ranger presence

A total of 15 potential dog disturbances were prevented, compared to 9 incidents. This gives a combined total of 24, which is 14 less than in 2015, showing a 58% decrease in dog incidents and potential incidents. Human disturbance to Little Terns was reduced at the Watch House by erecting a mock electric fence for a second year. However, this did not prevent walkers from entering the enclosure on two occasions: 4th July and 30th July. A total of 527 volunteer hours were spent greeting visitors, preventing disturbance and monitoring the Little Terns breeding at the Watch House colony.

5.6 Habitat management

Working closely with the grazier on Blakeney Freshes, cattle were moved onto fields with the least breeding activity to minimise trampling of nests. Topping was undertaken to control thistles and also ragwort on some fields, keeping cattle off for a specified period afterwards. A total of 52 hours were also spent manually uprooting ragwort on Friary Hills and at Morston. Control of water levels on Blakeney Freshes enabled the desired amount of water to be retained throughout the breeding season to the benefit of breeding wading bird species.

6. Discussion

The breeding Marsh Harrier population on Blakeney Freshes appears to be stable. With the same pairs (three females and two males) believed to have bred for at least the last nine years. As usual they managed to fledge young. The usual pair of Barn Owls nested in the box near Marsh Lane.

Avocets are steadily increasing across the reserve. On Blakeney Point, there has been a fifth consecutive year of gradual increase in breeding numbers. Blakeney Freshes had the highest number of pairs since 2007. Chick survival was better than in previous years, with most Blakeney Point broods remaining in the Old Glaven Channel, rather than being led to Cley Eye and suffering Marsh Harrier predation.

For a third year, Little Ringed Plovers bred successfully on Blakeney Freshes, increasing to two pairs, with one pair fledging young. For the first time, a pair fledged young on Blakeney Point. The only other record was of a failed breeding attempt in 2006. Ringed Plovers showed a small decrease on Blakeney Point, from 13 to 11 pairs, but remained a consistent four pairs at Stiffkey Meals. Redshanks appear to have had another good year across the reserve.

Oystercatcher productivity was similar to 2015, at 0.3, with a slight increase in breeding pairs on Blakeney Point. Ringing recoveries of two birds thought to be breeding, revealed a mixture of ages suggesting that although the population is likely to be ageing, there still is a range of ages. Although productivity has been low in recent years, a small number of juveniles may be returning to breed. Predation of eggs and chicks by gulls appeared to have been lower than in some recent years.

Lapwings showed a decline from 35 pairs in 2015 to 25 pairs in 2016. Survival of young was, however, thought to be good.

No breeding birds on the reserve were affected by foxes; however rats had a significant negative impact on Black-headed Gulls and therefore Sandwich Terns. Black-headed Gulls disturbed by rats on Far Point dispersed across the reserve and beyond. The absence of the Far Point Black-headed Gull colony caused the prospecting Sandwich Terns to desert to Scolt Head Island. For a second year, Scolt Head experienced high productivity, demonstrating how valuable it is that Sandwich Terns have two suitable breeding areas in Norfolk should one experience predator problems. Although only 451 pairs bred at Blakeney, productivity was higher than both 2014 and 2015. Mediterranean Gulls also suffered from rats, with only one pair fledging young. Prior to the disturbance, just five pairs were noted in the colony, this is the lowest number since 2010 except for 2015 when only four pairs bred.

Instead of the usual four Little Tern colonies on Blakeney Point, there were only two. For the first time, the majority nested on the very end of the Point, and the rest in the Watch House colony. For a second year since first nesting there in 2007, none nested in the Hood enclosure, despite the use of decoys and lures. Although there was a slight increase in pairs compared to 2015, productivity was lower due to high levels of avian predation. The increase in pairs nesting on the tip is believed to be linked to good prey availability in the harbour, as discovered from prey sampling. However, complete colony failure was experienced due to nearby nesting large gulls and a reduction in nesting Black-headed Gulls to take the majority of the predation. The Gap and beach enclosures were not used by Little Terns, presumably due to habitat change and winter erosion. No tern nests were lost to tidal flooding in 2016. A combination of loss of breeding habitat, large gull predation on Far Point and Kestrel predation at the Watch House led to Little Tern productivity of 0.15.

A small number of Black-headed Gulls first nested on the shingle ridge in 2014. In 2016 this increased considerably, coinciding with displacement from the main Far Point colony as a consequence of rat disturbance and predation.

Location	Number of nesting Black-headed Gull pairs		
	2014	2015	2016
East of the Watch House (Watch House enclosure)	3	4	40
East of the Hood (Hood enclosure)	1	0	15

Approximately 40 nests were present in the Watch House enclosure by 11th May. They did not appear to have a direct negative impact on the Little Terns, with no evidence of predation. The first apparently incubating terns were not noted until 22nd June, by which time Black-headed Gull numbers had started to decrease. Little Terns nested within approximately three metres of the gulls, similar to the typical situation on the tip of Far Point.

For the first time since 2003, breeding Common Tern numbers were very similar for two years in a row. Productivity was slightly higher than in 2015, however their nesting location on the tip of Far Point meant the majority of chicks suffered predation by large gulls. Arctic Terns, down one pair from 2015, suffered complete failure due to chick and egg predation by large gulls.

For a second year, Black-headed Gulls bred on saltmarsh at Stiffkey. The exact number is not known; therefore it is unknown whether the breeding population has increased. It is thought likely that displaced birds from Blakeney Point bred there, as they did on Blakeney Freshes. It is also believed Herring Gulls bred at Stiffkey, although the number of which is also unknown. Many gull nests at Stiffkey could have been flooded. No Little Terns nested at Stiffkey Meals, but, for a second year, one Common Tern attempted.

Grey Partridge pairs on Blakeney Point rose, from five in 2015, to seven. This was exceeded only in 2013, when nine pairs were recorded. Following a drop in numbers after the December 2013 tidal surge, numbers have steadily risen since 2009 when a record three pairs bred (see Appendix 1). Productivity in 2016 was a minimum 3.14. On 23rd November, 54 birds were seen on the Point in six groups. This is the highest winter count, exceeding 35 in January 2013. This suggests a possible further increase in the breeding population in 2017, providing survival continues to be good. A record five male Pheasants were recorded on the Point in February. However, it is unlikely all five males paired up and bred on the Point and no young were seen. For a second year, Water Rail activity was noted on Blakeney Freshes in early spring, again with no evidence of breeding.

Passerines appeared to fare very well, with no signs of predation or significant disturbance. However, several young chicks perished in nests in a period of rain and cold at the end of May. On Blakeney Point, the highest ever number of Meadow Pipits bred. Linnets counts on the Point for both 2015 and 2016 are considered to be higher than the number that actually nested; we plan to refine our techniques for assessing the population of this Red Listed species. Two pairs of nesting Bearded Tits were recorded on Blakeney Freshes, compared to three in 2015, it is possible a third pair were present but not found, but both known pairs fledged young. Like in 2015, two pairs of Cetti's Warblers were observed, again with no young seen.

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Appendix 1: Historical breeding bird data

Blakeney Point

Species	Number of breeding pairs									
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Greylag Goose	1	1	1	0	1	0	0	0	0	2
Shelduck	25	30	41	35	44	50	65	68	59	61
Gadwall	0	4	5	1+	2	3	4	5	5	5
Shoveler	0	0	1	0	0	0	1	1	1	0
Mallard	3	2	2	3	0	5	5	4	6	7
Red-legged Partridge	1	1	1	1	0	1	0	1	½	½
Grey Partridge	0	1	3	3	3	5	9	7	5	7
Pheasant	0	0	0	0	0	1	1	1	3	5
Oystercatcher	142	124	135	118	110	103	102	85	79	84
Avocet	0	0	0	0	0	9	12	13	16	17
Ringed Plover	14	13	13	15	17	14	12	11	13	11
Redshank	5	5	14	13	14	15	15	16	17	19
Black-headed Gull	1800	1250	1900	1800	1807	2000	2200	2419	2104	875
Mediterranean Gull	3	3	5	5	10	12	15	8	4	5
Herring Gull	3	0	0	0	0	3	12	3	6	19
Lesser Black-b. Gull	0	0	0	0	0	0	1	1?	1?	4
Little Tern	68	101	86	70	150	139	121	110	52	61
Sandwich Tern	1800	2400	3100	2500	3562	3575	4120	2859	1113	451
Common Tern	118	103	81	75	92	67	48	87	130	128
Arctic Tern	12	17	9	9	7	7	5	4	4	3
Stock Dove	1	1	1	1	1	1	0	0	0	0
Wood Pigeon	2	4	2	2	1	1	2	1	1	2
Skylark	48	36	39	43	32	35	33	39	49	48
Barn Swallow	6	5	3	4	7	5	3	2	1	2
Meadow Pipit	88	107	109	111	102	110	100	102	128	151
Pied Wagtail	1	3	1	1	0	1	1	1	1	1
Wren	8	4	11	15	15	9	8	4	9	6
Dunnock	8	8	9	10	6	11	10	11	14	7
Starling	0	0	0	0	0	0	0	0	1	0
Linnet	26	22	17	30	20+	30	40	45	59	54
Reed Bunting	22	22	26	21	16	22	16	27	38	27

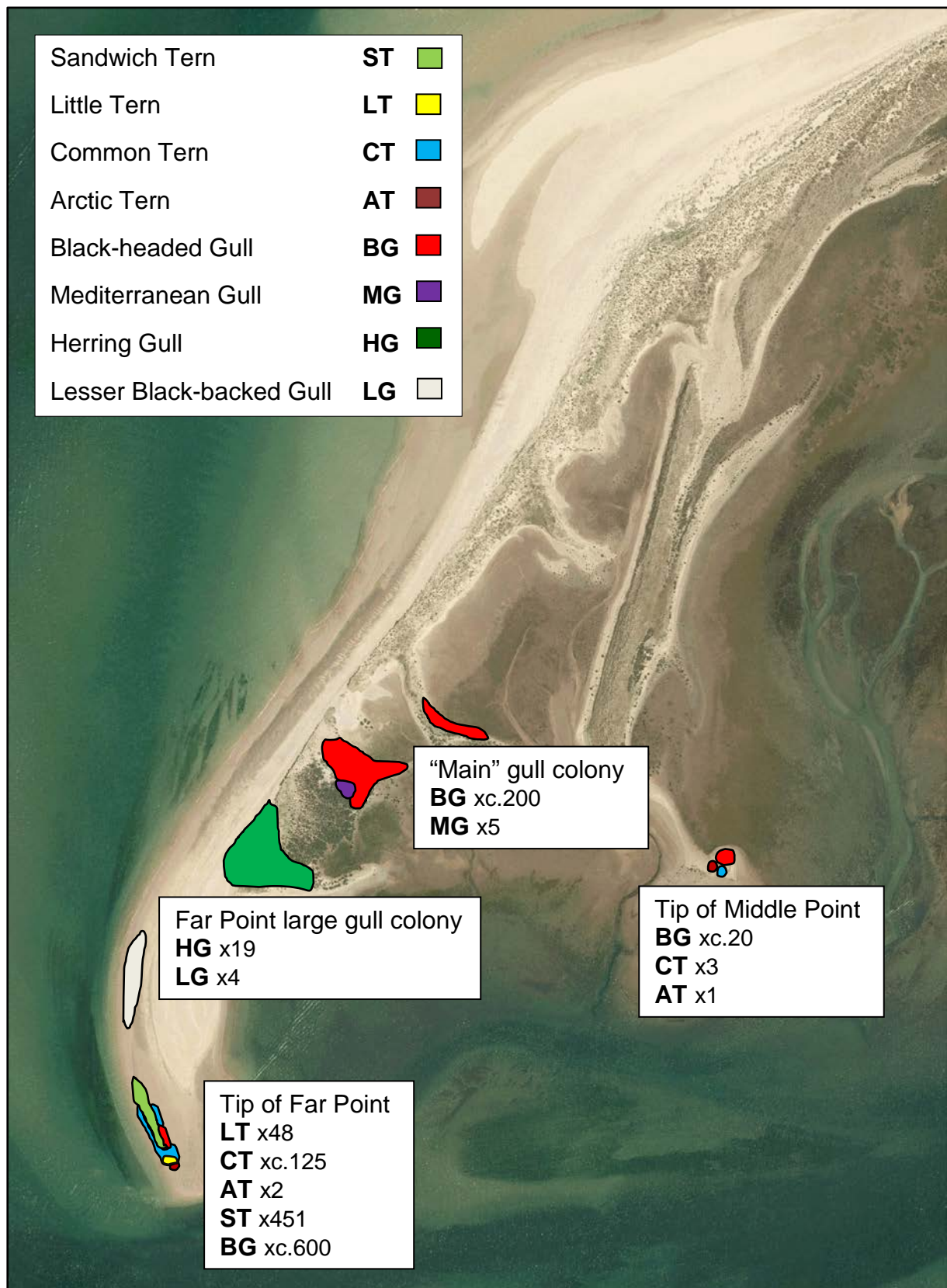
Blakeney Freshes

Species	Number of breeding pairs									
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Mute Swan	3	4	4	3	?	7	5	5	5	5
Greylag Goose	9	6	10	6	?	4	5	5	4	3
Canada Goose	1	2	2	2	?	3	3	5	2	4
Shelduck	2	1	0	7	?	20	1+	11	17	13
Gadwall	3	4	2	4	?	5	7	2	2	1
Shoveler	4	4	4	4	?	2+	8	3	2+	?
Mallard	9	8	30	25	?	23	27	20	11+	7
Pochard	1	1	3	3	?	3	2	3	4	0?
Tufted Duck	1	1	7	7	?	11	11	7	5	?
Marsh Harrier	2	3	3	3	3	3	3	3	3	3
Red-legged Partridge	1	2	2	1	?	1	1	1	2	0
Grey Partridge	4	0	0	1	?	1?	2	1	0	1
Pheasant	1	?	5	3	?	9	11	3	3	0?
Moorhen	8	11	10	8	?	9	8	6	3+	3
Coot	17	16	14	10+	?	10+	10+	10	10+	2+
Oystercatcher	20	19	9	14	?	16	16	10	7	6
Avocet	33	14	7	12	?	9	9	15	17	22
Little Ringed Plover	0	0	0	0	0	0	0	1	1	2
Lapwing	42	39	45	45	?	37	32	32	35	25
Snipe	0	1	1?	0	0	0	0	0	0	?
Redshank	20	21	19	18	?	23	22	15	15	15
Black-headed Gull	8	8	10	10	0	0	0	12	10	62
Barn Owl	1	1	1	1?	1?	1?	1	1	1	1
Skylark	50	22	27	24	?	20+	20+	20+	24	?
Meadow Pipit	13	14	19	18	?	15+	15+	15+	15+	?
Sedge Warbler	38	51	65	55	?	30+	35+	35+	21	?
Cetti's Warbler	4	7	4	2	?	3	2	1	2	2
Reed Warbler	31	19	36	48	?	30+	30+	30+	23	?
Bearded Tit	1+	4	4	4	?	3	1	2	3	2
Reed Bunting	7	8	9	7	7	7	7	7	11	?

Chapel Island

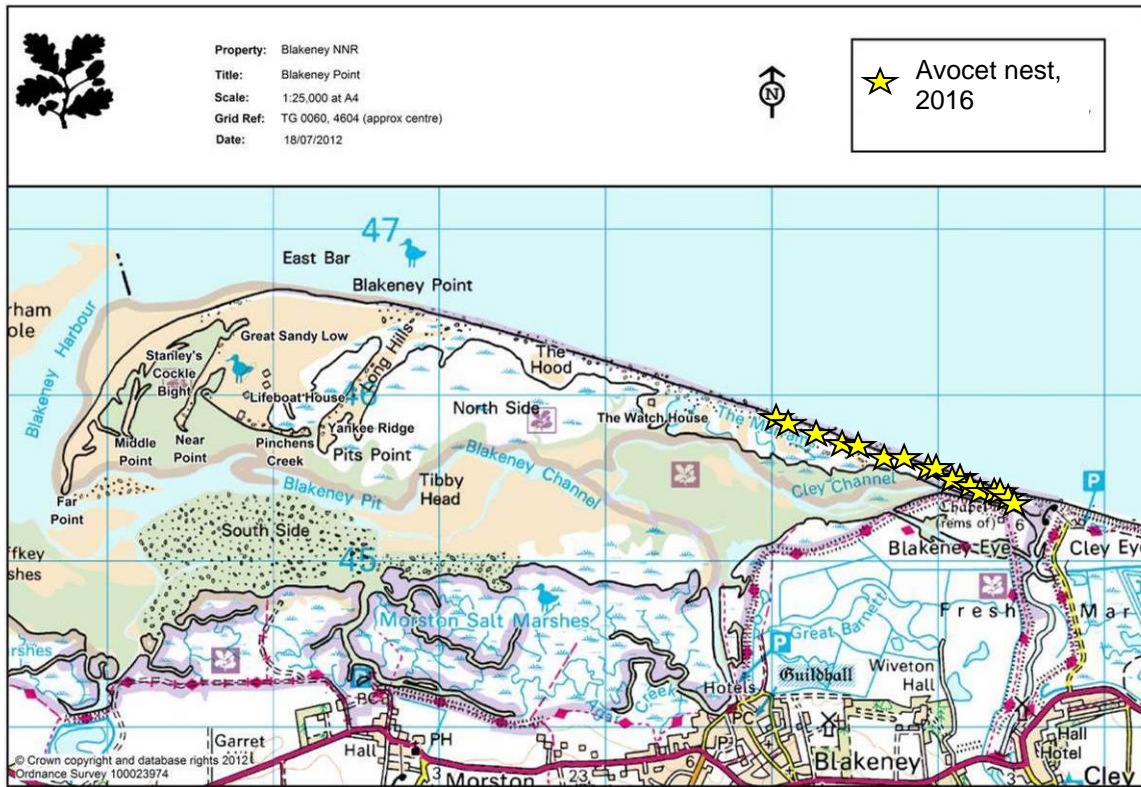
Species	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Shoveler	?	?	?	?	?	?	?	1	1	2
Shelduck	?	?	?	?	?	?	?	?	3	3
Oystercatcher	?	?	?	?	?	?	?	?	1	1
Avocet	18	16	14	10	7	0	0	0	1	1
Redshank	?	?	?	?	?	?	?	?	3	3
Skylark	?	?	?	?	?	?	?	?	4	3
Meadow Pipit	?	?	?	?	?	?	?	?	2	2
Sedge Warbler	?	?	?	?	?	?	?	?	1	1
Linnet	?	?	?	?	?	?	?	?	3	2
Reed Bunting	?	?	?	?	?	?	?	?	2	1

Appendix 2: Tern and gull colonies on Far Point

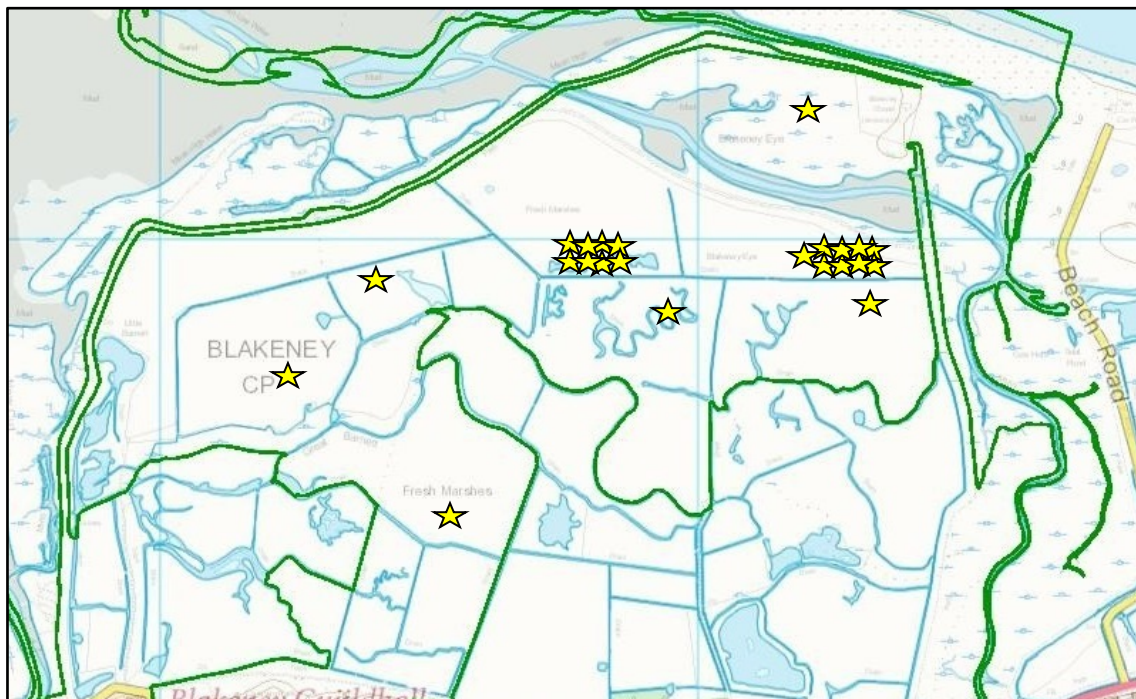


Exact shape and size of the colonies may not be completely accurate. The aim is to show the location and proximity of colonies. Numbers shown are peak nest counts.

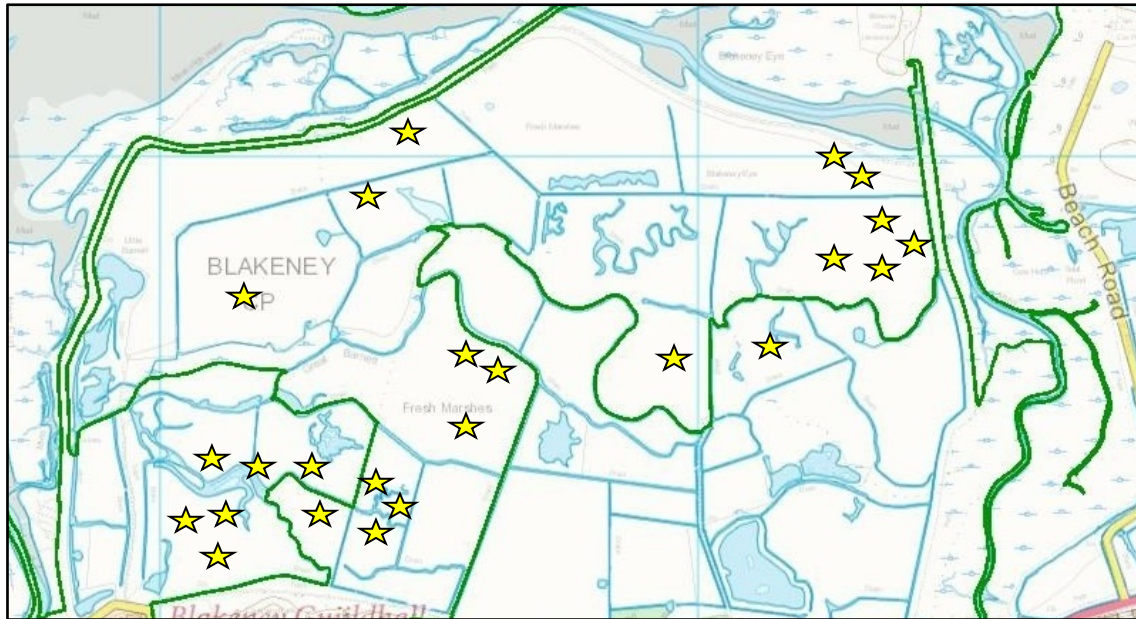
Appendix 3: Breeding wader territories



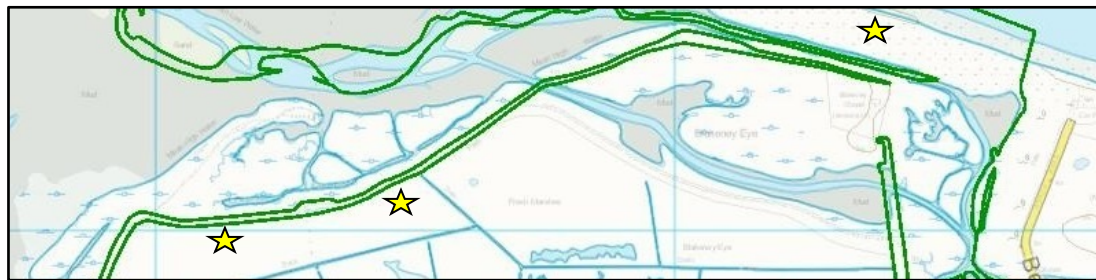
Map 6: Avocet nest sites on Blakeney Point



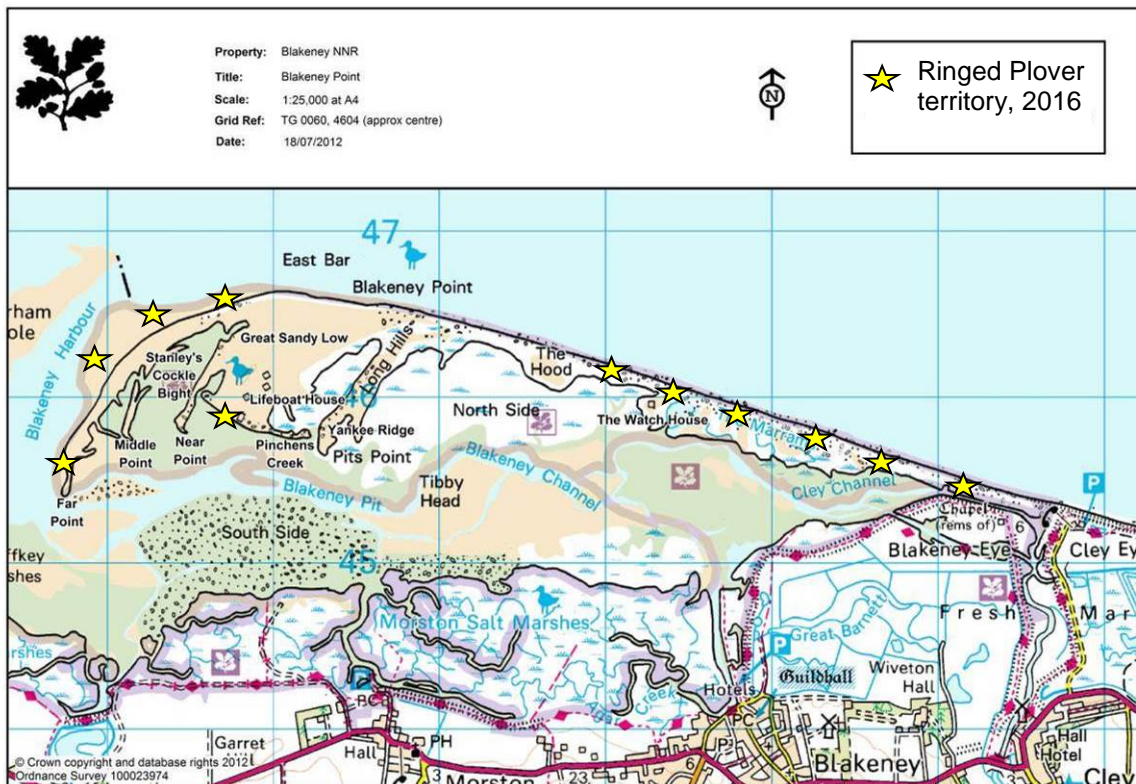
Map 7: Avocet nest sites on Blakeney Freshes and Chapel Island



Map 8: Known Lapwing nest sites on Blakeney Freshes



Map 9: Little Ringed Plover nest sites on Blakeney National Nature Reserve



Map 10: Ringed Plover territories on Blakeney Point

Appendix 4: Breeding birds at Salthouse

Although not part of the National Nature Reserve, some land further to the east, at Salthouse, is also owned and managed by the National Trust. This includes Little Eye and Gramborough Hill. Two pairs of Avocets nested on the shingle in June, with three nesting attempts made. A brood of two chicks hatched from the first nest, three from another and a third failed at the egg stage. A late count of Sand Martins, nesting in the cliff face of Gramborough Hill, recorded 34 pairs, although a total of approximately 70 holes were recorded.

Species	Pairs/ territories	Fledged young
Avocet	2	5
Ringed Plover	2	0
Skylark	2	?
Sand Martin	34	?
Meadow Pipit	2	?
Linnet	2	?

Appendix 5: Disturbance to seals

Seal disturbance incidents on Blakeney Point and Stiffkey West Sands were logged.

Date	Location	Type	Estimated number of seals disturbed
25/03/2016	Beach	Dog	Disturbed 1 Common Seal
07/05/2016	Far Point	Canoe	Pushed 5 Common Seals into the water
07/05/2016	West Sands	Boat	Pushed c.10 seals into the water
21/05/2016	West Sands	Walkers	Pushed c.20 seals into the water
08/06/2016	Far Point	Canoe	Pushed c.20 Common and 2 Grey into the water
21/06/2016	West Sands	Dog	Pushed 100+ seals into the water
23/06/2016	West Sands	Dog	Pushed c.50 seals into the water
03/07/2016	West Sands	Walkers	Pushed c.20 seals into the water
14/07/2016	West Sands	Walkers	Pushed c.50 seals into the water
24/07/2016	West Sands	Aircraft - civilian	Pushed c.50 seals into the water
24/07/2016	West Sands	Water ski	Pushed 100+ seals into the water
06/08/2016	West Sands	Dog	Pushed 300+ seals into the water
18/08/2016	Far Point	Walkers	Pushed c.50 seals into the water
12/08/2016	Far Point	Walkers	Pushed c.50 seals into the water
11/12/2016	Beach	Dog	Disturbed 20+ breeding Grey Seals

A total of 15 incidents (same as 2015) were observed with varying numbers of seals disturbed. As in 2015, the largest numbers of seals were disturbed by dogs off leads on the West Sands, accessed either on foot from Stiffkey at low tide or by boat from Blakeney Harbour at high tide. The West Sands are owned by Natural England.

Appendix 6: Low tide seal counts

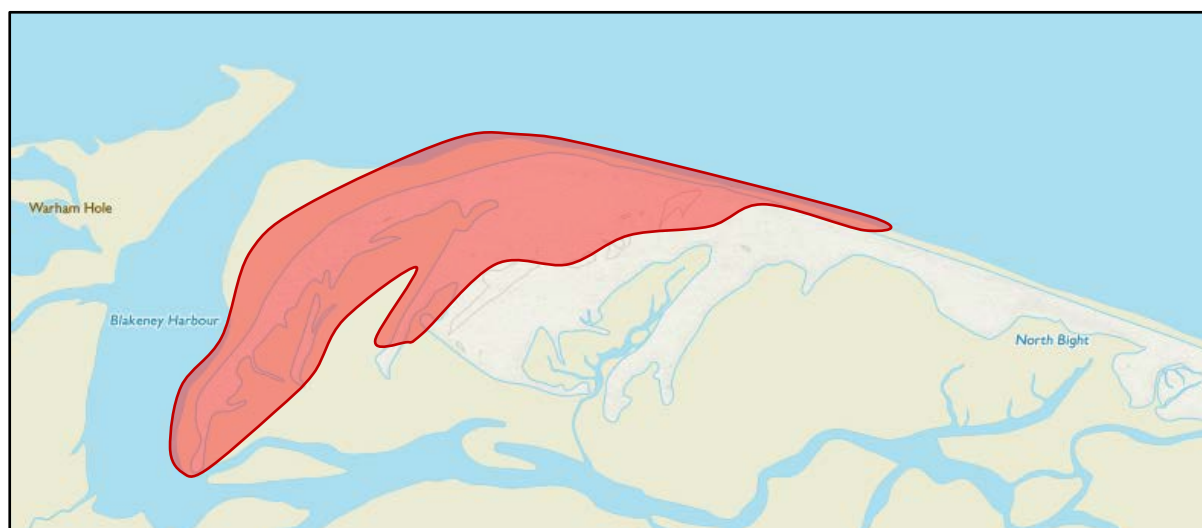
Seals hauled out on Stiffkey West Sands at low tide were counted approximately fortnightly, and occasionally more, throughout the spring and summer. Low tide is defined as the two-hour window from one hour before to one hour after low water.

Date	Grey Seal	Common Seal	Total
25/01/2016	37	0	37
05/02/2016	43	3	46
21/03/2016	133	11	144
04/04/2016	26	10	36
08/04/2016	177	16	193
18/04/2016	170	13	183
21/04/2016	84	35	119
22/04/2016	117	14	131
23/04/2016	103	14	117
28/04/2016	73	43	116
07/05/2016	54	44	98
19/05/2016	83	101	184
24/05/2016	196	67	263
10/06/2016	190	99	289
20/06/2016	226	76	302
22/06/2016	272	166	438
26/06/2016	353	179	532
17/07/2016	289	218	507
31/07/2016	439	168	607
06/08/2016	150	276	426
22/08/2016	131	225	356
31/08/2016	329	458	787
02/09/2016	361	452	813
10/09/2016	294	401	695
15/09/2016	242	224	466
30/09/2016	128	541	669
Mean (Mar-Sep):	195	167	362

This is the closest the average number of Common and Grey Seals have been since 2010. There has been an apparent decrease in Grey Seals, with the lowest average annual count since 2010. The reason for this decrease in Grey Seal numbers is not known. This decrease in numbers was not, however, matched during the pupping period (see Appendix 7).

Appendix 7: Grey Seal pup counts

The winter 2016/17 total Grey Seal pup count showed a 1% increase from winter 2015/16 (see figure 2). The rookery occupied a similar space to the previous winter, again with approximately ten pups born between the Long Hills and the Hood, with one pup born on the Hood itself for the first time. As in 2015/16, two pups were born on the Long Hills and one in New Glaux Low; however no pups were born on Yankee Ridge. For the first time, a pup was born in Glaux Low.



Map 11: Approximate extent of the Blakeney Point Grey Seal rookery in the 2016/17 season

Pups were counted approximately weekly throughout the breeding season. Total pups present were counted throughout November. From early December onwards, when weaned pups began leaving the rookery, only new-born pups were counted and added to the previous week's count.

Date	Running total:		
	Live pups	Dead pups	Total births
04/10/2016	0	1	1
31/10/2016	1	2	3
07/11/2016	56	3	59
09/11/2016	139	4	143
12/11/2016	252	6	258
16/11/2016	579	10	589
23/11/2016	1,192	13	1,215
26/11/2016	1,554	19	1,573
05/12/2016	1,891	25	1,916
09/12/2016	2,062	26	2,088
15/12/2016	2,244	29	2,273
22/12/2016	2,342	32	2,374
31/12/2016	2,365	34	2,399
05/01/2017	2,369	34	2,403
24/01/2017	2,370	34	2,404
Grand total:	2,370	34	2,404

This gave a total of 2,404 pups born, of which five were taken to the RSPCA animal rescue centre at East Winch and 34 died at the suckling stage. An unusually early dead pup was observed on the tip of Far Point on the 4th of October. The first live pup was found on the 31st of October, believed to have been born the previous day. A late new-born pup was found on the 24th of January.

For a second year, volunteers were present on the edge of the rookery to greet visitors and prevent disturbance. Volunteers were present in pairs at weekends and during the holiday period for a total of 140 hours, speaking to 430 people. During this period there was just one disturbance event (see Appendix 5).

Blakeney Point remained the largest rookery on England's east coast for a third year.

Rookery	Estimated total pup birth count
Farne Islands, Northumberland (NT)	2,295
Coquet Island, Northumberland	3
Ravenscar, North Yorkshire (NT)	10
Donna Nook, Lincolnshire	1,989
Blakeney Point, North Norfolk (NT)	2,404
Horsey, East Norfolk	1,483
England east coast minimum total:	8,183

Historical Blakeney Point records are shown in the table below. Pups were not counted in the 1990s, but anecdotal evidence states that the occasional pup was observed, sometimes on the Landing Ridge, but not necessarily every year.

Date	Estimated total pups weaned	Estimated total additional dead pups	Estimated total births
1988/89	2		2
1997/98	3		3
1999/00	5		5
2001/02	25		25
2002/03	50		50
2003/04	80		80
2004/05	100		100
2005/06	175		175
2006/07	200	13	213
2007/08	290	7	297
2008/09	413	20	433
2009/10	579	24	603
2010/11	747	17	764
2011/12	933	40	973
2012/13	1,223	25	1,248
2013/14	1,566	25	1,591
2014/15	2,426	34	2,460
2015/16	2,343	39	2,382
2016/17	2,369	34	2,404
Minimum total births (Oct 1988 – Jan 2017):			13,808

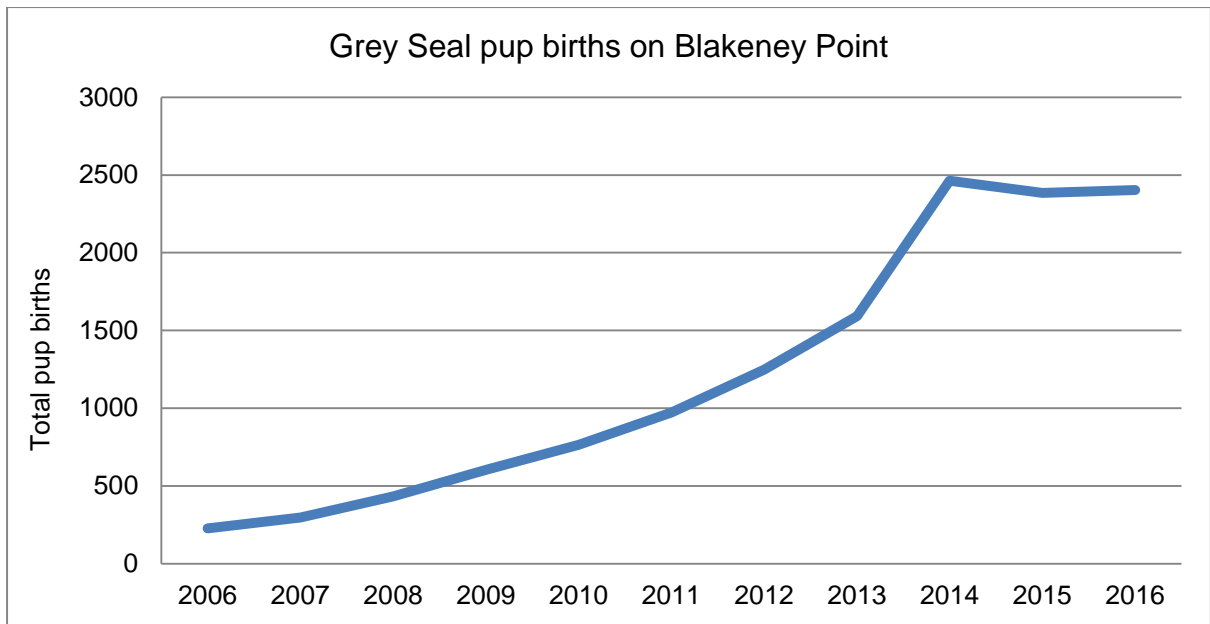


Figure 2: Total Grey Seal pup births 2006/7 – 2016/17



Figure 3: Grey Seal pup in the sand dunes on Blakeney Point (A. Tegala)

Appendix 8: Other mammal records

Grey Squirrel *Sciurus vulgaris*

On Blakeney Point, a long-dead carcass was found washed up on Yankee Ridge on 1st November [TG006462].

Wood Mouse *Apodemus sylvaticus*

There were regular sightings across the dunes on Blakeney Point throughout the year, where they breed.

Rabbit *Orctolagus cuniculus*

There were numerous sightings of a single rabbit on Blakeney Point, in the vicinity of the Lifeboat House, between April and July [TF9945].

Brown Hare *Lepus europaeus*

Residents were seen regularly throughout the year on Blakeney Point, with a peak count of six together on 9th June; just a fraction of the total population. Numerous leverets were observed in the dunes throughout the summer. There were regular sightings on Blakeney Freshes, with two leverets observed in the north-western fields.

Hedgehog *Erinaceus europaeus*

There were two sightings on Friary Hills in late August [TG0344].

Water Vole *Arvicola amphibius*

They are thought to be resident on Blakeney Freshes, where activity was evident, particularly on the sluices.

Otter *Lutra lutra*

Regular activity was noted on the cart track sluice on Blakeney Freshes, captured by trail camera. Prints were found on Blakeney Point on 24th May [TF9946].

Muntjac *Muntiacus reevesi*

There were regular sightings on Blakeney Freshes, often on the east side near Marsh Lane. Regular sightings were made on Chapel Island and Blakeney Point in May, with two washing up dead on the tideline of the beach colony area.

Red Deer *Cervus elaphus*

An adult was flushed from the Plantation on Blakeney Point on 20th June [TF9946].

Harbour Porpoise *Phocena phocena*

A long-dead adult washed up on Blakeney Point on 13th January [TF9946]. This was the only record of the species in 2016.

Domestic Cat

One was observed in the dunes on Far Point on 22nd October [TF9845]. It was caught in a live trap on 26th October and taken to the Glaven Veterinary Practice. The cat was traced back to Baconsthorpe, although it is not known how it ended up on the end of Blakeney Point.

Appendix 9: Butterfly transect data

Blakeney Point

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	Total
Date (of week commencing)	Apr	Apr	Apr	Apr	Apr	May	May	May	May	Jun	Jun	Jun	Jun	Jul	Jul	Jul	Jul	Jul	Aug	Aug	Aug	Aug	Sep	Sep	Sep	Sep	
	1	8	15	22	29	6	13	20	27	3	10	17	24	1	8	15	22	29	5	12	19	26	2	9	16	23	
Large White	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Small White	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	3	1	1	0	15
Green-veined White	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Small Copper	0	1	0	2	2	5	3	0	1	0	0	0	0	0	2	2	0	2	0	0	0	0	1	2	1	2	26
Brown Argus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Common Blue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	3
Red Admiral	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Painted Lady	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	3	0	1	0	0	0	0	7
Small Tortoiseshell	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	6	2	4	1	0	16
Peacock	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
Dark Green Fritillary	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
Grayling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6	0	17	17	3	5	3	0	0	0	0	53
Gatekeeper	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	9	2	0	0	0	0	0	0	0	16
Meadow Brown	0	0	0	0	0	0	0	0	0	0	0	3	1	2	3	0	5	1	0	0	0	0	0	0	0	0	15
Ringlet	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	2	2	6	3	0	1	1	0	0	3	1	8	16	0	35	23	8	14	16	7	7	3	3	160

In addition to the 15 species observed on transect counts; Brown Argus and Essex Skipper were also recorded.

Blakeney National Nature Reserve Breeding Bird Report 2016

Blakeney Freshes and Friary Hills

Week	10	11	12	13	14	15	16	17	18	19	20	21	Total
Date (of week commencing)	Jun	Jun	Jun	Jun	Jul	Jul	Jul	Jul	Jul	Aug	Aug	Aug	
	3	10	17	24	1	8	15	22	29	5	12	19	
Small Skipper	0	0	0	2	3	8	23	?	?	2	0	0	38
Essex Skipper	0	0	0	0	0	2	4	?	?	14	1	0	21
Small/Essex Skipper	0	0	0	0	0	0	0	?	?	32	0	0	32
Large Skipper	0	0	0	0	1	0	24	?	?	4	0	0	29
Large White	0	0	0	0	0	2	27	?	?	21	8	2	60
Small White	1	1	0	1	0	1	14	?	?	2	2	6	28
Green-veined White	0	0	0	0	0	2	7	?	?	0	1	0	10
Orange Tip	1	1	0	0	0	0	0	?	?	0	0	0	2
Small Copper	0	0	0	0	0	0	0	?	?	0	1	0	1
Common Blue	0	0	0	0	0	0	2	?	?	5	3	0	10
Holly Blue	1	1	0	1	0	0	0	?	?	0	0	0	3
Red Admiral	2	2	0	0	0	0	0	?	?	1	0	0	5
Painted Lady	3	3	0	3	2	0	0	?	?	0	1	1	13
Small Tortoiseshell	0	0	0	1	0	1	4	?	?	0	0	0	6
Peacock	0	0	0	0	0	0	0	?	?	1	1	0	2
Speckled Wood	0	0	0	1	1	0	1	?	?	1	0	1	5
Wall Brown	0	0	0	0	0	0	0	?	?	0	1	0	1
Gatekeeper	0	0	0	0	0	15	15	?	?	33	3	0	66
Meadow Brown	0	0	0	1	5	42	31	?	?	10	6	0	95
Ringlet	0	0	0	0	1	26	19	?	?	6	0	0	52
Total	8	8	0	10	13	99	171	?	?	132	28	10	479

In addition to the 20 species observed on transect counts; Green Hairstreak was also recorded on Friary Hills.

Appendix 10: Other wildlife records

Amphibians:

Common Lizard

An individual was observed on Blakeney Freshes on 17th June. This is the first record since before the December 2013 tidal surge.

Invertebrates:

Wasp Spider *Argiope bruennichi*

An individual was recorded on a web at Gramborough Hill on 30th July [TG085441] (see figure 4).

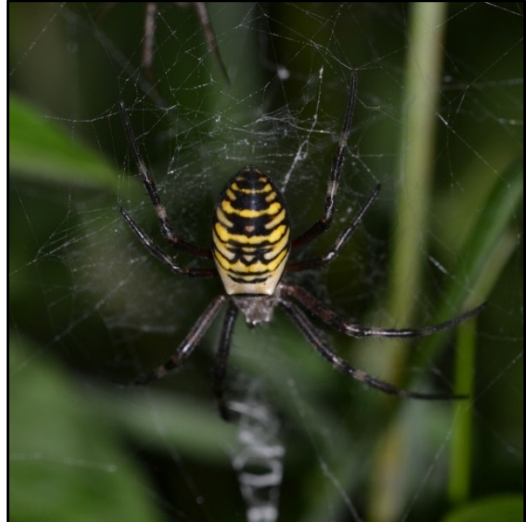


Figure 4: Wasp Spider (M. Goddard)

Sea aster mining bee *Colletes halophilus*

Sightings were made on saltmarsh at Morston in August [TG004447]. On saltmarsh at Blakeney, approximately 100 burrows were observed west of the Freshes [TG027448].

Plants of note:

Common Broomrape *Orobanche minor*

Approximately 30 spikes were observed south of the coast path at Blakeney on 14th June [TG0244] (see figure 5). This was the second record of the species on the property, the first being by the coast path on the western edge of Stiffkey Marsh in 2006 [TF956438].

Bee Orchid *Ophrys apifera*

Approximately 40 spikes were observed south of the coast path at Blakeney on 13th June [TG024440] (see figure 6).



Left (Figure 5): Common Broomrape; Right (Figure 6): Bee Orchid (M. Goddard)

Pyramidal Orchid *Anacamptis pyramidalis*

Three spikes were observed in the dunes south of New Glaux Low on 27th June [TG0033146309] (see figure 7). The same numbers of spikes were observed in the same location in 2015 and also 2013.

Southern Marsh Orchid *Dactylorhiza praetermissa*

Approximately ten spikes were observed in the dunes south of Great Sandy Low on 26th June [TG0002446310] (see figure 8). This is an increase on the two spikes observed in the same location in 2015. A dead spike was discovered in the dunes south of New Glaux Low on 19th July [TG0035846387]. This is the first record in this location.



Left (Figure 7): Pyramidal Orchid; Right (Figure 8): Southern Marsh Orchid (A. Tegala)

Japanese Rose *Rosa rugosa*

Two spikes were uprooted on Blakeney Point on 5th July. They were located at the eastern end of Glaux Low [TG0017846332], where they have appeared almost annually since at least 2011.