



National
Trust

Blakeney National Nature Reserve Breeding Bird Report 2015



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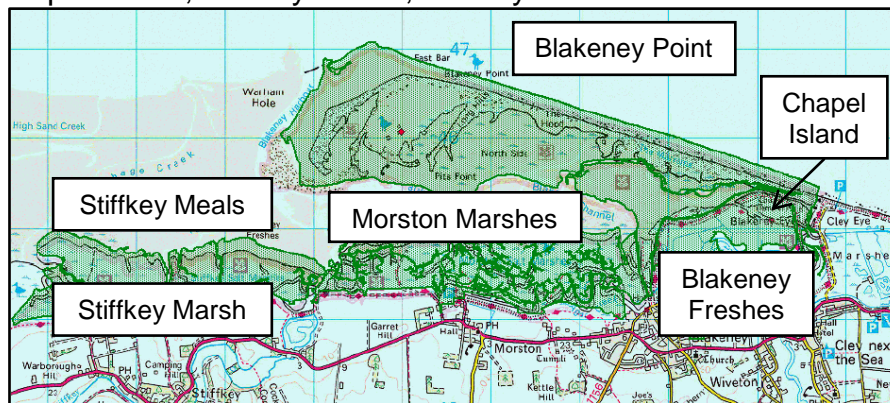
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Introduction

Location and context

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

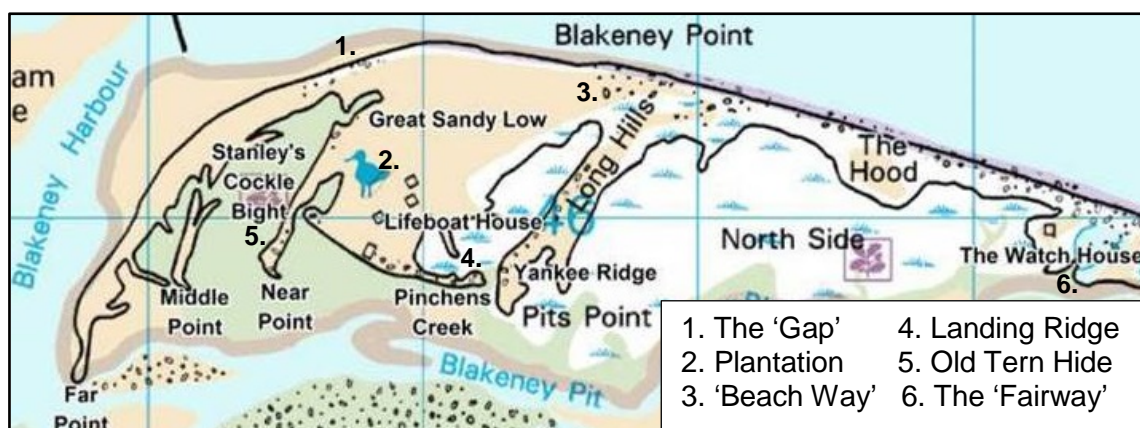


Blakeney National Nature Reserve showing National Trust ownership

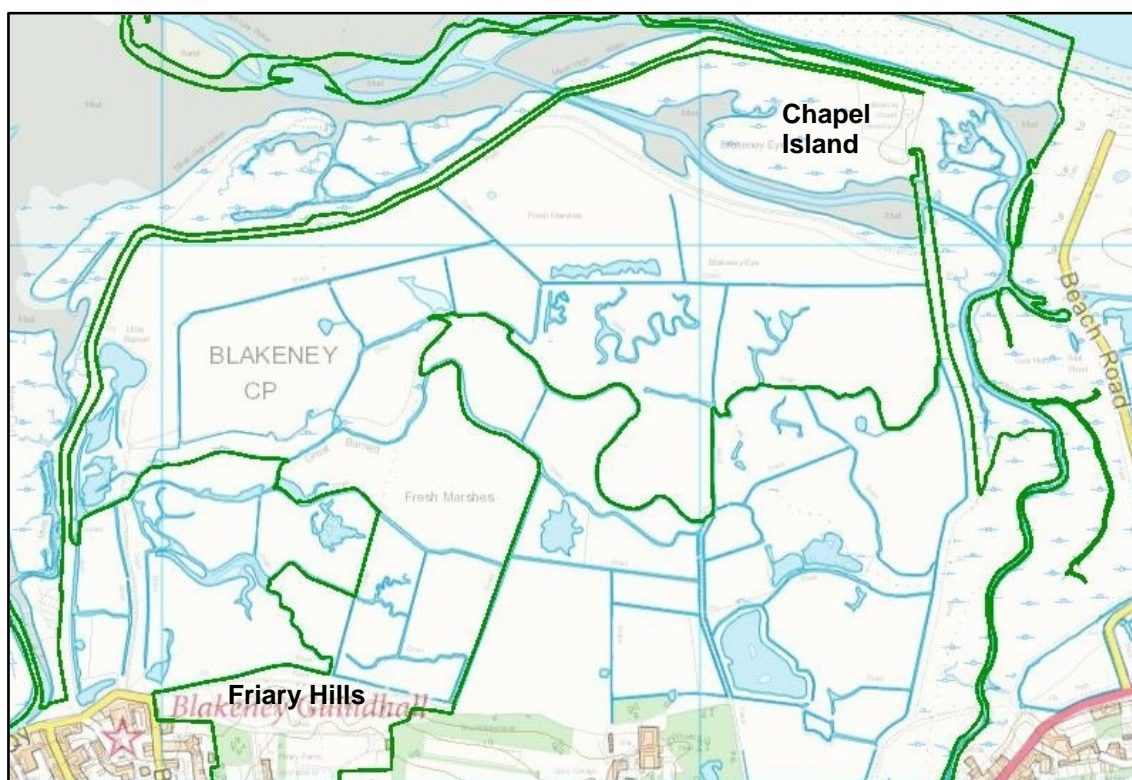
Blakeney Point is a four-mile shingle spit with an expanse of sand dunes at the western end. The spit encloses Blakeney Harbour, to the south of which lie Morston Marshes, an expanse of saltmarsh. Stiffkey Meals are located to the west, a ridge of sand on the northern edge of Stiffkey Marsh. To the east 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.



Blakeney Point, Morston Marshes and Blakeney Freshes



Blakeney Point



Blakeney Freshes and Chapel Island

Methodology

Breeding bird surveys were undertaken on Blakeney Point, Blakeney Freshes, Chapel Island and Stiffkey Meals. 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 waders, early morning visits were made in 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 Sandwich Terns and Black-headed Gulls, a nest count was undertaken in late May, marking individual nests to gain an accurate figure. For other terns, sitting birds were counted, and nest counts conducted where possible. Weekly visits were made in June and July to monitor young of all species.

Due to daily ranger and volunteer presence on the Point, nest recording for the British Trust for Ornithology (BTO) scheme was possible for a number of species.

Summary

The 2015 breeding bird season brought mixed success for terns. Little Terns nested late with the lowest number breeding since 2006, but went on to experience the highest productivity since 2011. Sandwich Terns experienced the lowest number of breeding pairs since 2006 and lowest productivity since 2000. However, the Norfolk population as a whole had a productive year, with 76% of pairs breeding on Scolt Head Island and experiencing high fledging success. The highest number of Common Terns since 2006 bred, although only a single juvenile fledged.

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 four young. The usual Barn Owl pair fledged two young.

Bittern sightings were made throughout the breeding season and occasional booming was heard, but breeding is thought unlikely.

Some 38 Avocet pairs bred. However, high breeding numbers did not translate into good fledging success. Lapwings showed a similar fate. Redshank had a good year, with 68 pairs thought to have experienced good hatching. A pair of Little Ringed Plovers successfully fledged four young. A total of 17 Ringed Plover pairs bred, fledging 12 young.

Four pairs of Mediterranean Gulls fledged five young.



Mediterranean Gull (I. Ward)

Three Bearded Tit territories were recorded, with two pairs both fledging broods of four. Two pairs of Cetti's Warbler are thought to have bred, although no young were seen. Common passerine species bred in higher numbers than the previous year, with a notable increase in Skylarks, Meadow Pipits, Linnets and Reed Buntings.

Table of breeding birds

Species	Methodology	Blakeney Point	Blakeney Freshes	Chapel Island	Stiffkey Meals	Total
Bittern	Territories	0	1	0	0	1
Mute Swan	Nesting pairs	0	5	0	0	5
Greylag Goose	Minimum pairs	0	4	0	1	5
Canada Goose	Minimum pairs	0	5	0	0	5
Shelduck	Minimum pairs	59	17	3	0	79
Gadwall	Minimum pairs	5	2	0	0	7
Shoveler	Minimum pairs	1	2	1	0	4
Mallard	Minimum pairs	6	11	0	1	18
Pochard	Minimum pairs	0	3	0	0	3
Tufted Duck	Minimum pairs	0	2	0	0	2
Marsh Harrier	Nesting pairs	0	3	0	0	3
Red-legged Partridge	Territories	0	2	0	0	2
Grey Partridge	Territories	5	0	0	0	5
Pheasant	Territories	3	3	0	0	6
Water Rail	Territories	0	1	0	0	1
Moorhen	Minimum pairs	0	3	0	0	3
Coot	Minimum pairs	0	10	0	0	10
Avocet	Nesting pairs	16	20	1	1	38
Oystercatcher	Territories	79	7	1	12	99
Lapwing	Territories	0	35	0	2	37
Little Ringed Plover	Nesting pairs	0	1	0	0	1
Ringed Plover	Territories	13	0	0	4	17
Redshank	Territories	17	15	3	29	64
Black-headed Gull	Nesting pairs	2104	10	0	75	2189
Mediterranean Gull	Nesting pairs	4	0	0	0	4
Lesser Black-backed Gull	Territories	1	0	0	0	1
Herring Gull	Nesting pairs	6	0	0	6	12
Little Tern	Nesting pairs	52	0	0	2	54
Sandwich Tern	Nesting pairs	1113	0	0	0	1113
Common Tern	Nesting pairs	128	0	0	1	129
Arctic Tern	Nesting pairs	4	0	0	0	4
Wood Pigeon	Nesting pairs	1	0	0	0	1
Barn Owl	Nesting pairs	0	1	0	0	1
Skylark	Territories	49	24	4	25	102
Barn Swallow	Nesting pairs	1	0	0	0	1
Meadow Pipit	Territories	138	15	2	13	168
Pied Wagtail	Nesting pairs	3	0	0	1	4
Wren	Territories	9	0	0	0	9
Dunnock	Territories	14	0	0	0	14
Sedge Warbler	Territories	0	21	1	0	22
Cetti's Warbler	Territories	0	2	0	0	2
Reed Warbler	Territories	0	23	0	0	23
Bearded Tit	Territories	0	3	0	0	3
Starling	Territories	1	0	0	0	1
Linnet	Territories	89	1	3	2	95
Reed Bunting	Territories	38	16	2	3	59

Systematic List

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

Territories: 1
Fledged young: 0

On Blakeney Freshes, faint booming was heard on the 2nd of April and daily from the 25th when a possible second bird was noted close to the booming male in the Great Barnett reedbed. No young were seen and breeding is thought to be unlikely.

Mute Swan *Cygnus olor* (Green List)

Nesting pairs: 5
Fledged young: 4

Five nests were found on Blakeney Freshes. The outcome is unknown for two nests, one was predated, one fledged three young and one fledged a single young.

Greylag Goose *Anser anser* (Amber List)

Minimum pairs: 5
Fledged young: 15+

A maximum count of 42 adults was made on Blakeney Freshes on the 9th of April, a large proportion of which were non-breeding birds. A minimum of 15 young fledged. At Stiffkey, four adults were seen in July, but no juveniles.

Canada Goose *Branta Canadensis* (Naturalised)

Maximum pairs: 5
Fledged young: 1

A maximum count of 14 adults was made on Blakeney Freshes. Two broods were noted. Later in the season, only one juvenile was noted.

Shelduck *Tadorna tadorna* (Amber List)

Minimum pairs: 79
Young seen: 71

An early morning count of birds in breeding areas was conducted on the 1st of May.

Location	Pairs
Blakeney Point	59
Blakeney Freshes	17
Chapel Island	3
Total	79

Nine broods were noted, many of which were seen in the Glaven and therefore thought to have hatched on the Freshes or Chapel Island. It is unknown how many of these young went on to fledging.

Date	Location	Young seen	Age of young
08/06/2015	Old Glaven channel	3	
10/06/2015	Old Glaven channel	7	
30/06/2015	New Glaven channel	19	7-10 days
03/07/2015	Old Glaven channel	9	1-2 days
17/07/2015	Harbour near Silver Dawn	7	2-3 days
17/07/2015	Old Glaven channel	18	3-4 and 7-10 days
17/07/2015	Glaven east of Freshes	2	Small
05/08/2015	Harbour near Far Point	6	Well-grown
Total		71	

Gadwall *Anas strepera* (Amber List)

Minimum pairs: 7
Fledged young: 2 broods

An estimated five pairs nested on Blakeney Point. No broods were seen on the Point, in the Old Glaven channel or harbour. On Blakeney Freshes, two broods were noted.

Shoveler *Anas clypeata* (Amber List)

Minimum pairs: 4
Fledged young: 2 broods

A nest containing nine eggs was found on the Chapel Island on the 11th of May, although the outcome is unknown. A male was seen in the vicinity of the Marrams in April, it is thought a pair probably nested in this area, although no nest was found and no young seen. On Blakeney Freshes, two broods were seen.

Mallard *Anas platyrhynchos* (Amber List)

Minimum pairs: 17
Fledged young: 22+

An early pair nested on Far Point, with the first egg laid around the 11th of March. This nest was predated. A total of five pairs nested on the Point, with a single brood of eight ducklings recorded on the tip of Far Point on the 3rd of July. A female Domestic Mallard was also found on Far Point, incubating a clutch of nine infertile eggs. Some 11 broods were recorded on Blakeney Freshes throughout the season, including a brood led from behind the National Trust office on Friary Hills. The first brood on the Freshes was seen on the 9th of April. A minimum total of 14 fledged from the Freshes. A pair was recorded at Stiffkey Meals, although no young were observed.



A Mallard leads her ducklings past a nesting Arctic Tern

Pochard *Aythya farina* (Red List)

Possible pairs: 3
Fledged young: 0

Seven adult birds were present on Blakeney Freshes from late April; three males and four females. No broods were seen. Breeding is thought to be unlikely.

Tufted Duck *Aythya fuligula* (Amber List)

Minimum pairs: 2
Fledged young: 2 broods

Two broods were recorded on Blakeney Freshes.

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

Nesting pairs: 3
Fledged young: 4
Productivity: 1.3

Two females, in association with a single male, nested in the Great Barnett reedbed. A further pair was seen taking nesting material into the Wiveton reedbed. It is thought that the same two males and three females have bred on Blakeney Freshes for the last seven years. A total of four young fledged from the two Great Barnett nests. These were first seen in flight on the 4th of July.

Red-legged Partridge *Alectoris rufa* (Naturalised)

Territories: 2
Fledged young: 0

Two pairs were noted on the Freshes early in the season. No young were seen.

Grey Partridge *Perdix perdix* (Red List)

Territories: 5
Fledged young: 22

Five territories were identified on Blakeney Point; all thought to successful hatch a brood. A total 22 juveniles are thought to have fledged from three coveys.

Pheasant *Phasianus colchicus* (Naturalised)

Territories: 6
Fledged young: 12

A male held a territory on the shingle west of the Hood from the 29th of January onwards. It was observed fighting with another male on the 13th of April. A total of three males held territories on Blakeney Point, each fledging a brood four young. One brood was still present in the dunes, with both parents, on the 2nd of October. On Blakeney Freshes, three males held territories, but no young were seen.

Water Rail *Rallus aquaticus* (Green List)

Territories: 1
Fledged young: 0

On the 14th of April, displaying was recorded near the Great Barnett reedbed on Blakeney Freshes. It is unknown if breeding occurred. No young were seen.



Water Rail displaying

Moorhen *Gallinula chloropus* (Green List)

Minimum pairs: 3
Fledged young: 2 broods

A minimum of three pairs were recorded on Blakeney Freshes, with two broods noted.

Coot *Fulica atra* (Green List)

Minimum pairs: 10
Fledged young: 8 broods

A minimum of ten pairs were recorded on the Freshes, with eight broods noted.

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

Nesting pairs: 38
Fledged young: 2
Productivity: 0.05

A pair was first seen on the shingle ridge at Blakeney Point on the 23rd of April. The first egg was laid on the 25th of April and the first chicks hatched on the 22nd of May. A total of 16 pairs nested on the first mile stretch west from the Cley end. Some 13 broods were seen, many of them led across Beach Road to Cley Eye field. Observations of chicks on Cley Eye field revealed that none survived many days before being predated. The only fully fledged juveniles seen were two in the Old Glaven channel on the 14th of August, thought to have hatched from a late nest on Blakeney Freshes. A total of 20 nests were recorded on the Freshes, with 16 pairs leading broods over the sea wall on to the saltmarsh without subsequent sightings. At Stiffkey Meals on the 17th of July, a pair with four juveniles was observed. It is thought a pair also bred on the Chapel Island, although no young were seen.



Avocet leading chicks eastwards across Beach Road (R. Porter)

Oystercatcher *Haematopus ostralegus* (Amber List)

Territories: 99
Fledged young: 30
Productivity: 0.3

The first scrape was found on Blakeney Point on the 6th of April and the first egg on the 7th of May. A total of 79 pairs were recorded. First chicks were seen on the 5th of June. A total of 51 nests were monitored, of which two were known to be re-lays.

Outcome	Nests monitored
Eggs predated	17
Eggs abandoned	2
Eggs hatched	24
Outcome unknown	8

Although 47% of monitored nests successfully hatched, several chicks did not make it to fledging stage. The main predators of both eggs and chicks were Herring and Common Gulls. No nests fledged young in the vicinity of the main tern and gull colony. However an estimated 30 young fledged, which represents the highest productivity in three years.

A total of seven pairs nested on Blakeney Freshes, including one on an island. It is thought that none fledged. A maximum of 12 pairs were recorded at Stiffkey, with fledging unknown. On the Chapel Island, one pair was noted, with fledging unknown.

Lapwing *Vanellus vanellus* (Red List)

Territories: 37
 Fledged young: 4+
 Productivity: 0.1

A peak count of 35 pairs was made on Blakeney Freshes on the 2nd of May. Predation by Grey Heron and other avian predators was noted. Just four fledged juveniles were recorded, on the 1st of July. Additional young may have been led onto the saltmarsh unobserved. At Stiffkey, two pairs were persistently present in an area of thick vegetation, although breeding was not proven.

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

Territories: 1
 Fledged young: 4
 Productivity: 4.0

A pair was first observed on Blakeney Freshes on the 20th of April. A nest was found on the 2nd of May, with four chicks present by the 25th. All young fledged. A second clutch of four eggs was laid close to the original nest site. The second nest was thought to have been washed out by heavy rain on the 17th of July. Soon after, all birds had left the site. On two occasions, a possible third adult was seen on the Freshes, but there was no evidence of a second pair.

Ringed Plover *Charadrius hiaticula* (Red List)

Territories: 17
 Fledged young: 12
 Productivity: 0.7

Birds displayed territorial behaviour on the Point from February. The first nest was discovered in the Watch House enclosure on the 19th of April. A total of six pairs bred on the main shingle ridge and seven on the headland. Adult broken wing display on the 5th of June indicated first chicks on the main ridge. Two large juveniles were seen on the beach near the Watch House on the 30th of June. At least 11 nesting attempts were made on the headland (four of which were relays), with the first chicks seen on the 10th of July. A total of ten juveniles fledged from four broods on the Point.

Four pairs bred on Stiffkey Meals, with a brood of two observed. It is possible more chicks fledged, but were not observed. A total of 14 nests were monitored on the

Point. Three were located inside the Watch House enclosure, one of which was predated and two hatched. Of the 11 nests monitored on the headland, three hatched, two were flooded and six predated (of which three were predated at the egg stage by Common Gulls).

Redshank *Tringa totanus* (Amber List)

Territories: 64

Fledged young: Many

A total of 17 pairs are thought to have bred on the Point. The first chicks hatched on the 20th of May. Of nine nests found, one was predated and all others hatched, including a clutch of five on Middle Point; meaning a minimum of 32 eggs are known to have hatched. Outcomes of the other eight breeding pairs are unknown but probably fared well as indicated by several adults alarm calling in June. Flying juveniles were seen on Far Point on the 17th of July. Two pairs nested close together, by the Old Tern Hide. One nest was re-used: three eggs were laid between the 17th and 19th of June, but had been abandoned by the 24th.

A peak of 15 pairs was counted on the Freshes on the 2nd of May. Most nests were located in the fields north of the reedbed. Two nests near the coast path appeared unaffected by dog-walkers. There were several instances of parents leading young over the sea wall on to the saltmarsh. Numbers fledged are thus unknown, but thought to be good. On Stiffkey Meals a total of 29 territories were recorded and three on the Chapel Island, bringing the National Nature Reserve total to 64 breeding pairs.

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

Nesting pairs: 2189

Fledged young: 23

Productivity: 0.01

Birds were present on Blakeney Point from the 10th of March. First eggs were laid on the 19th of April. A nest count was conducted on the 17th of May, revealing a minimum of ten four-egg clutches. In June, birds also nested on the tip of Far Point (see Appendix 2) and on the shingle ridge in the Watch House enclosure.

Colony	Nests	Fledged young
Blakeney Point	2,104	20
Blakeney Freshes	10	0
Stiffkey Meals	75	3
Total	2189	23

A brood of three newly-hatched young were seen in the Watch House enclosure on the 3rd of July but were found dead on the 12th. Approximately 20 fledged young were seen on the saltmarsh by the main Far Point colony in late June. All nests in the beach colony were predated by Common Gulls and large gulls were thought to predate all nests on the tip.

On Blakeney Freshes, ten pairs nested on the new islands. All were predated within 24 hours by an unknown predator, possibly a Marsh Harrier or Herring Gull. On Stiffkey Meals, after several years of absence, an estimated 75 pairs nested in three separate groups. Young were seen in early June and three flying juveniles were noted in July. All sites were vacated by the 17th of July. There was no evidence of fox predation, but Herring Gull predation was a strong possibility.

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

Nesting pairs: 4
Fledged young: 5
Productivity: 1.25

Birds were first recorded in the Blakeney Point colony on the 3rd of April. Four pairs were present on the 17th. All four nested amongst the Black-headed Gulls (see *Appendix 2*). Five fledged juveniles were seen on the edge of the colony in late June.

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

Territories: 1
Fledged young: 0

A pair was first seen in the main colony on the 3rd of April. They were present throughout the breeding season until July. The dune southwest of the colony was a favoured location and a bird was often seen sat there. It is possible the pair did not breed or that eggs were laid but predated by nearby breeding Herring Gulls, as was the case in 2013.

Herring Gull *Larus argentatus* (Red List)

Nesting pairs: 12
Fledged young: 1
Productivity: 0.08

The first pair was seen on Far Point on the 23rd of April, where four pairs went on to nest. Eggs were pricked or removed, under licence from Natural England, between the 16th of May and 6th of June. A sixth pair nested on the tip of Middle Point (see *Appendix 2*), these eggs were pricked on the 23rd of May and were incubated for several days afterwards before being abandoned. Up to four birds were seen daily on Pelvetia Marsh from late May to mid-June, but no nests were found. One of the nests on Far Point was found to contain a stunted egg.



Stunted Herring Gull egg on Far Point (S. Johnson)

Far Point became a roost for Herring Gulls in July. On the 11th of July, 60 birds were present. On the 16th, a juvenile was seen amongst them, presumed to have hatched from a nest at Stiffkey. Six pairs bred at Stiffkey, with one young fledging in July. It is possible some pairs that failed on the Point re-laid at Stiffkey.

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

Nesting pairs: 54
Fledged young: 33
Productivity: 0.61

The first birds were seen on passage on the 24th of April. Displaying was first witnessed in the beach colony on the 1st of May, with scraping observed on the 13th. The first nest was found on the 25th of May on the tip of Far Point. On the 27th of May, 16 birds were seen on the ground in the Hood enclosure and 61 in the beach colony with one probable nest. Birds regularly showed interest east of the Watch House enclosure in late May and so was extended eastwards on the 30th. Observations at the Watch House and beach colonies in May, indicated that prey availability was sufficient to stimulate courtship but not abundant enough to sustain successful breeding. At the start of June, food availability increased and birds began nesting in earnest. It is possible nesting was suspended for five to six days. In the latter half of June, feeding frequency increased significantly as food availability appeared to no longer be a limiting factor.

By the 15th of June, there were five nests in the beach colony. All nests failed by the 30th, suffering disturbance and egg predation by Common Gulls and Oystercatchers and adult predation by a Hobby. The beach colony was abandoned by the 4th of July. Ten nests were counted on the tip of Far Point on the 12th of June, including one egg in a scrape with an Arctic Tern egg. The eggs were incubated solely by a pair of Arctic Terns, which both hatched on the 9th of July. Trail camera footage revealed the Little Tern chick was fed and brooded by the Arctic Terns along with their own chick. Both chicks were predated, probably by a large gull, later the same day.



A pair of Arctic Terns brooding a Little Tern chick on Far Point

An estimated total 16 nesting attempts were made on the Tip of Far Point. These included two three-egg clutches, found on the 21st of June, these were the only three-egg clutches found on the reserve throughout the season, the mean clutch size was 1.81. The first chick was seen on the 29th of June. However, no chicks fledged, probably due to predation of eggs and small chicks by Common and Herring Gulls. All nests had gone by the 16th of July.

Two nests, each containing two eggs, were found at Stiffkey Meals on the 16th of June; however these had gone by the 10th of July. Adults were seen on the foreshore in latter half of July, thought to be failed breeders.

Although seven birds were present at the Hood colony on the 9th of June, this dropped to one on the 10th and none were seen from the 11th onwards. It is thought birds were detracted by an abundance of Yellow Horned-poppy and probably moved east to the Watch House colony. A nest count at the Watch House colony on the 30th of June recorded 17 nests: five in the eastern extension and 12 in the main colony. This included a brood of two chicks. An additional two later nests were found on the 12th of July: one in the eastern extension and the other in the main colony. Chick provisioning was good, with some supplied so well that food was rejected. The first flying juvenile was observed at the Watch House on the 17th of July. Two nests were abandoned and it is thought that all other 17 hatched. There appeared to be three main waves of fledging: nine fledged young were seen outside the colony on the 23rd of July, another five on the 26th and another six on the 29th. On the 4th of August an almost fledged chick was seen in the colony, presumably from one of the later nests.

Decoys were put out in the Gap colony in June. Two birds were seen in the colony on the 17th of June, with two nests found on the 18th. This rose to nine incubating birds by the 24th and a total of ten nests were counted on the 30th. The first chicks were seen on the 11th of July. On the 17th of July, one clutch was found to be deserted but it is thought that the other nine all hatched. Ten fledged young were seen on the beach by the colony on the 5th of August along with two almost fledged chicks in the colony.

Colony	Total nesting attempts	Peak nest count	Young fledged	Productivity
Watch House	19	17	21	1.1
Gap	10	10	12	1.2
Beach	7	5	0	0
Tip of Far Point	16	10	0	0
Total	52	42	33	0.63
Stiffkey Meals	2	2	0	0
NNR total	54	44	33	0.61

Sandwich Tern *Sterna sandvicensis* (Amber List)

Nesting pairs: 1113

Fledged young: 8

Productivity: 0.01

The first bird was seen on the 27th of March. Evening roost counts on Blakeney Point in the first half of April showed colony build-up.

Date	Roost count
03/04/2015	94
06/04/2015	280
10/04/2015	600
13/04/2015	1050

Birds nested densely on the shingle around the very edge of the *Suaeda*, seemingly choosing not to spread out further. A nest count was conducted on the 23rd of May

and recorded 799 nests. By the 6th of June there were approximately 100 chicks in this main colony. Late arrivals appeared on the tip of Far Point in the second week of June with an estimated 300 birds present by the 12th and 29 nests. A full count was conducted on the 21st, recording 314 nests:

Location	Nesting pairs	Fledged young
Main colony	799	8
Tip of Far Point	314	0
Total	1113	8

Also on the 21st of June, an estimated 50 dead chicks were observed in the main colony, appearing to have died from starvation and probably also suffering from heavy rain and thunder storms the previous night. It was also noted that approximately 100+ nests were still at the egg stage. The next inspection of the colony was conducted on the 29th of July, revealing an estimated 200+ starved chicks of various ages, most of them dead in their scrapes. All chicks in the colony had died, with just eight juveniles on the marsh nearby. The first full flight was witnessed on the 13th of July. All later nests on the tip of Far Point had failed by the 3rd of July. Egg predation by Common Gull was observed on the 29th of June.

Common Tern *Sterna hirundo* (Amber List)

Nesting pairs: 129
Fledged young: 1
Productivity: 0.01

The first birds were seen on the 20th of April. By the 10th of May, 18 pairs had settled on the tip of Far Point with 47 nests found on the 25th. On the 1st of June, 14 adults were observed on the ground in the beach colony. A Mediterranean Gull was seen taking an egg from the beach colony on the 2nd of June. On the 3rd, a Common Tern was observed sitting briefly on a Little Tern nest in the beach colony. A total of three nests were found in this colony on the 6th, all of which were predated and then deserted. By the 12th of June, 125 pairs had nested on the tip of Far Point, with eight broods of day-old or hatching chicks observed. On the 29th, no chicks were present, probably as a consequence of gull predation. However, a single flying juvenile was seen on Far Point around this time; the only bird to fledge. Four birds were still sat on the 24th of July, but abandoned within a week. Failed breeders were noted transiently at Stiffkey, where one pair also made an unsuccessful nesting attempt.

Colony	Nests	Fledged young
Far Point	125	1
Beach	3	0
Stiffkey	1	0
Total	129	1

Arctic Tern *Sterna paradisaea* (Amber List)

Nesting pairs: 4
Fledged young: 0

Two nests were discovered on the tip of Far Point on the 25th of May. A third pair was observed at the beach colony on the 1st of June. On the 10th of June, a nest was found on the end of Middle Point. This nest had been either flooded or predated by the 18th.

On the 12th of June, a shared nest containing one Arctic and one Little Tern egg was discovered. It was incubated solely by a pair of Arctic Terns, which hatched both chicks on the 9th of July. Approximately four hours after hatching, the Arctic Tern chick disappeared, probably predated by a large gull. No other young were seen.

Wood Pigeon *Columba palumbus* (Green List)

Nesting pairs: 1
Fledged young: 0

A pair made two nesting attempts on the Point. Eggs were found to be infertile.

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

Nesting pairs: 1
Fledged young: 2
Productivity: 2.0

A pair used the nest box by Marsh Lane on the Freshes. Prey was seen being taken into the box, with two young seen. On the 21st of July, a juvenile was recorded flying over the flight pond, towards the box. Both are thought to have successfully fledged.

Skylark *Alauda arvensis* (Red List)

Territories: 102
Fledged young: 25+

Breeding bird surveys in April and May recorded 49 territories on the Point, 24 on the Freshes, four on the Chapel Island and 25 at Stiffkey Meals:

Location	Territories
Blakeney Freshes	24
Chapel Island	4
Cley to Hood	6
Long Hills/ Yankee Ridge	5
Main Dunes	29
Landing Ridge	2
Near Point	1
Far Point/ Middle Point	6
Stiffkey Meals	25
Total	102

The first chicks were seen, in a nest, on the 28th of April and fledged by the 30th of May. On the 3rd of August, 15 juveniles were seen between Cley and the Hood. An estimated minimum of 10 from the main dunes makes a total of 25+ fledged young from Blakeney Point. Fledging figures are unknown for the Freshes and Stiffkey.

Barn Swallow *Hirundo rustica* (Amber List)

Nesting pairs: 1
Fledged young: 3
Productivity: 3.0

Nest-building was first observed on the 2nd of May in the Old Tern Hide on the Point. By the 23rd, the eggs had been thrown out, possibly by another male. A second nest was built inside the hide; five eggs had been laid by the 4th of June, but were cold by the 9th. A third attempt was made re-using the first nest. Four chicks fledged on the 28th of July, but one was later found dead. There were no other nesting attempts anywhere on the reserve.

Meadow Pipit *Anthus pratensis* (Amber List)

Territories: 168

Fledged young: Many

Breeding bird surveys in May recorded singing males.

Location	Territories
Blakeney Freshes	15
Chapel Island	2
Marrams	11
Fairway	5
Watch House	5
Hood	7
Long Hills/ Yankee Ridge	22
Main Dunes	41
Landing Ridge	8
Near Point	11
Far Point/ Middle Point	28
Stiffkey Meals	13
Total	168

The first nest was found on the 1st of May and first fledged young seen on the 29th. Of ten nests monitored, one was predated in early May and the other nine were thought to have hatched successfully. Many pairs fledged two broods, with a notable number of newly fledged young in the main dunes around the 17th of July. A late nest, containing two small young, was noted on the 13th of August. No surveys were undertaken on the Freshes, but casual observations saw good numbers of juveniles. Two pairs were seen feeding young at Stiffkey Meals in early June, with several fledged juveniles present in July when there were several larger flocks.

Pied Wagtail *Motacilla alba yarrellii* (Amber List)

Nesting pairs: 4

Fledged young: 11

Productivity: 2.75

Four pairs were recorded across the reserve, two of which nested on boats in Blakeney Harbour. A pair was recorded east of Stiffkey Freshes Creek. A pair was present on the Point from the 25th of March, once again utilising the nest box on the shed and fledging a brood of six juveniles in late May. A further six fledged juveniles, from nests in the harbour, were noted on the Point.

Wren *Troglodytes troglodytes* (Green List)

Territories: 9

Fledged young: 4+

Singing males were heard from early April on the Point. Breeding bird surveys in May recorded a total of nine singing males.

Location	Territories	Broods
Marrams	2	
Fairway	2	
Watch House	1	1
Hood	1	
Long Hills/ Yankee Ridge	2	1+
Main Dunes	1	1
Total	9	3+

A juvenile was seen in the garden on the 7th of August. Broods were also noted at the Watch House and Long Hills.

Dunnock *Prunella modularis* (Amber List)

Territories: 14

Fledged young: 2+

Nine territories were identified between Cley and the Hood on the 4th of April. Five singing males on the headland in May took the total to 14.

Location	Territories
Marrams	2
Fairway	1
Watch House	4
Hood	2
Long Hills/ Yankee Ridge	2
Main Dunes	1
Landing Ridge	1
Near Point	1
Total	14

Chicks were observed being fed, outside of the nest, near the Watch House on the 11th of May and also at the Marrams on the 14th.

Sedge Warbler *Acrocephalus schoenobaenus* (Green List)

Territories: 22

Fledged young: unknown

A survey undertaken on Blakeney Freshes on the 13th of May, recorded 21 territories. Around the same time, a territory was also identified on the Chapel Island.

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

Territories: 2

Fledged young: 0

Two singing males were noted along the bottom of Friary Hills throughout the season. One was heard into September. A pair was seen together, but no young were seen. Breeding is unconfirmed.

Reed Warbler *Acrocephalus scirpaceus* (Green List)

Territories: 23

Fledged young: unknown

A survey undertaken on the Freshes on the 14th of May, recorded 23 territories.

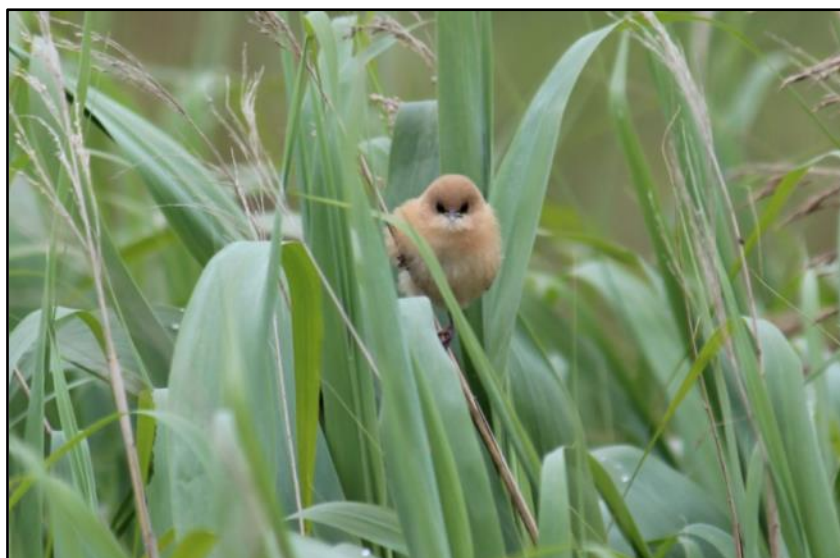
Bearded Tit *Panurus biarmicus* (Amber List) (Schedule 1)

Territories: 3

Fledged young: 8+

Productivity: 2.67

Three territories were noted on Blakeney Freshes. A nest near the cart track fledged four young and a nest near the Great Barnett also fledged four. A third nest was presumed in the reedbed, but no young were seen.



Juvenile Bearded Tit (G. Baldock)

Starling *Sturnus vulgaris* (Red List)

Territories: 1

Fledged young: 0

A bird was seen near the Lifeboat House from the 28th of March. It was observed flying out of, or off the top of, a Swift box on the look-out tower on the 26th of April. A pair were observed calling around the Lifeboat House on the 3rd of May. A bird was observed sat on the roof of a Swift box on the 4th and 11th of May. One or two birds were seen near the Lifeboat House regularly throughout the breeding season, with an adult flying from the roof early on the 9th of August. Breeding was not proven.

Linnet *Carduelis cannabina* (Red List)

Territories: 95

Fledged young: Many

Breeding bird surveys in May recorded singing males across the reserve.

Location	Territories
Blakeney Freshes	1
Chapel Island	2
Cley to Hood	12
Long Hills/ Yankee Ridge	16
Main Dunes	31
Landing Ridge	8
Near Point	9
Far Point/ Middle Point	13
Stiffkey Meals	2
Total	94

Four nests were monitored. Three successfully fledged young and one, in a *Suaeda* bush by Near Point, was flooded in late May. Many pairs fledged second broods. Breeding on the Freshes is unknown but it is likely at least one pair bred. Two territories were identified at Stiffkey Meals, with juveniles seen in July although it is unclear where these particular birds had bred.

Reed Bunting *Emberiza schoeniclus* (Amber List)

Territories: 59

Fledged young: Some

Breeding bird surveys recorded singing males across the reserve.

Location	Territories
Blakeney Freshes	11
Blakeney Saltmarsh	5
Chapel Island	2
Cley to Hood	20
Long Hills/ Yankee Ridge	12
Main Dunes	3
Landing Ridge	1
Near Point	2
Stiffkey Meals	3
Total	59

Surveys of Blakeney Freshes also revealed pairs nesting along the edge of the sea wall and on the saltmarsh. A pair was seen feeding young at Stiffkey Meals in early June, with fledged juveniles seen west of the Freshes creek in July.

Nest recording

Nests were monitored for the BTO Nest Recording scheme, contributing towards national trends. A total of 227 nests of 24 species were recorded.

Species	Nest records
Shoveler	1
Gadwall	2
Mallard	5
Grey Partridge	4
Pheasant	3
Marsh Harrier	1
Oystercatcher	51
Avocet	15
Little Ringed Plover	2
Ringed Plover	15
Redshank	10
Black-headed Gull	6
Herring Gull	5
Little Tern	54
Common Tern	128
Arctic Tern	2
Wood Pigeon	2
Skylark	1
Barn Swallow	3
Meadow Pipit	10
Pied Wagtail	1
Bearded Tit	2
Linnet	4
Total	227

Comments and observations

Little Tern breeding behaviour

Predation and disturbance by large gulls and Oystercatchers created a significant issue at the beach colony and on the tip of Far Point, where Common and Herring Gulls are present throughout the breeding season, attracted by the large Sandwich Tern colony. Both of these colonies failed as a consequence, whereas the Gap and Watch House colonies appeared to be far enough away. Prey availability – mostly Herring – in July appeared to lead to good chick survival at these two colonies.

The number of breeding pairs present in 2015 was significantly below the five-year average. This was experienced at all Norfolk colonies, with food availability early in the season believed to be the major influence. A total of 134 young fledged from 401 pairs across the county (productivity: 0.33). Blakeney Point was the second most productive site, after Eccles, contributing approximately 13% of pairs and 25% of young fledged. The only other Norfolk site to fledge any young was Scolt Head Island, which fledged 11 young from 80 pairs (productivity: 0.14).

Sandwich Tern breeding behaviour

For the first time since 2006, more birds nested on Scolt Head Island: 76% of the Norfolk population. Scolt Head fledged an estimated 3200 young, bringing the Norfolk productivity to 0.68. In late June and early July, an abundance of Sandwich Terns were observed fishing well northwest of Scolt Head and commuting back and forth to the colony, whereas Blakeney birds were struggling to catch prey and often making long foraging journeys that were largely unproductive. This, combined with the discovery of starved young, suggests the main reason larger numbers nested at Scolt Head was linked to food. It was noted that nesting began a week earlier there. Blakeney Point has become heavily vegetated – by *Suaeda* mostly – in contrast to Scolt Head, where the breeding site is significantly more open. There is also a chance fox disturbance in 2014 put birds off returning to Blakeney, but food is thought to be the main factor, followed by vegetation cover. With only eight live juveniles present by early July, colour-ringing was not possible on Blakeney Point.

Location	Pairs	Young fledged	Productivity
Blakeney Point	1113	8	0.01
Scolt Head Island	3550	3200	0.9
Total	4663	3208	0.68

Predation

Unlike in 2014, no evidence of fox predation was observed on Blakeney Point. A fox-free season was ensured by removing resident Red Foxes between January and March, which involved ten weeks of daily baiting and 40 hours of night work. Brown Rats were also controlled during this period, with 10 hours spent looking for holes and treating with aluminium phosphide. In addition, mark 4 springer traps were used on both Blakeney Point and Freshes to trap rats during the breeding bird season.

As in the previous year, a Hobby was observed preying on adult Little Terns on multiple occasions. A Sparrowhawk was also observed taking a Redshank, but was

not thought to be a repeat visitor. Use of a trail camera in the beach colony secured evidence of an Oystercatcher predated Little Tern eggs, which was observed on two separate days in June. Several cases of Little Tern egg predation by Oystercatchers was witnessed at Scott Head Island.

As usual, gulls represented the most frequent predators of eggs and small chicks. Throughout June, Common Gull disturbance to terns and waders was a daily occurrence. Egg predation by Common Gull and Mediterranean Gull was observed.

Date	Predator	Prey
19/04/2015	Sparrowhawk	Redshank: adult
01/06/2015	Common Gull	Oystercatcher: egg
02/06/2015	Mediterranean Gull	Common Tern: egg
04/06/2015	Common Gull	Little Tern: egg
15/06/2015	Common Gull	Oystercatcher: chick
15/06/2015	Hobby	Little Tern: adult
16/06/2015	Oystercatcher	Little Tern: egg
18/06/2015	Oystercatcher	Little Tern: egg
27/06/2015	Hobby	Little Tern: adult
29/06/2015	Common Gull	Sandwich Tern: egg
21/07/2015	Hobby	Little Tern: adult

Herring Gull disturbance to terns and waders was also witnessed. Nests close to the main tern colony were destroyed, however failed and non-breeding birds remaining in the area throughout the breeding season. Limited available time for observation and poor success with trail cameras meant that no evidence of Herring Gull predation was secured. However, the disappearance of all Common and Little Tern chicks and late-nesting Sandwich Tern eggs on the tip of Far Point can confidently be attributed to predation by a mixture of Common, Herring and probably also Mediterranean Gulls.

Human disturbance

A total of 39 human disturbances to breeding birds were recorded throughout the breeding season.

Date	Location	Type	Disturbance caused
13/03/2015	Far Point	UAV	Disturbed Black-headed Gulls
05/04/2015	Headland	Helicopter	Disturbed Shelduck and wading birds
05/04/2015	Far Point	Paraglider	Disturbed Sandwich Terns and gulls
06/04/2015	Far Point	Walkers	Disturbed Sandwich Terns and gulls
07/04/2015	Headland	Dog	Disturbed passerines
10/04/2015	Headland	Walkers	Disturbed wading birds
17/04/2015	Far Point	Walkers	Disturbed Sandwich Terns and gulls
21/04/2015	Far Point	Plane	Disturbed Sandwich Terns and gulls
30/04/2015	Marrams	Photographer	Disturbed Avocets
02/05/2015	Harbour	Kite surfer	Disturbed terns and gulls
04/05/2015	Marrams	Dog	Disturbed Avocets
24/05/2015	Marrams	Dog	Disturbed Avocets
25/05/2015	Watch House	Plane	Disturbed Little Terns
30/05/2015	Headland	Plane	Disturbed terns, gulls and wading birds
06/06/2015	Headland	Dog	Disturbed wading birds
10/06/2015	Far Point	Boat	Disturbed terns and gulls
12/06/2015	Far Point	Cyclist	Disturbed terns and gulls
13/06/2015	Marrams	Dog	Disturbed wading birds
14/06/2015	Watch House	Birdwatchers	Disturbed Oystercatchers

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23/06/2015	Marrams	Walkers	Disturbed Avocets
24/06/2015	Headland	Plane	Disturbed Shelduck and wading birds
27/06/2015	Far Point	Kayak	Disturbed terns and gulls
27/06/2015	Headland	Para-motor	Disturbed terns and gulls
27/06/2015	Harbour	Helicopter	Disturbed wading birds
27/06/2015	Headland	Plane	Disturbed terns and gulls
27/06/2015	Headland	Para-motor	Disturbed terns and gulls
30/06/2015	Headland	Dog	Disturbed Oystercatchers
01/07/2015	Watch House	Dog	Disturbed Little Terns
03/07/2015	Far Point	Plane	Disturbed terns and gulls
04/07/2015	Headland	Kite	Disturbed Little Terns
04/07/2015	Headland	Walkers	Disturbed Oystercatchers
07/07/2015	Marrams	Walkers	Disturbed Avocets
16/07/2015	Watch House	Plane	Disturbed Little Terns
18/07/2015	Headland	Dog	Disturbed Oystercatchers
18/07/2015	Far Point	Plane	Disturbed terns and gulls
19/07/2015	Headland	Walkers	Disturbed Ringed Plovers
22/07/2015	Headland	Dog	Disturbed Oystercatchers
25/07/2015	Marrams	Dog	Disturbed Oystercatchers
11/08/2015	Headland	Para-motor	Disturbed wading birds

Some 49% of incidents involved disturbance to Schedule 1 species with 13 cases of disturbance to Little Terns and five to Avocets. The most frequent causes were dogs, walkers and planes; however water-based disturbances can be the most prolonged due to difficulty in quickly accessing Far Point at high tide.

Type of disturbance	Number of incidents
Dog	10
Walkers	7
Photographer	1
Birdwatchers	1
Cyclist	1
Kite	1
Land-based total	21
Plane	7
Para-motor	3
Unmanned aerial vehicle (UAV)	1
Helicopter	1
Paraglider	1
Air-based total	13
Boat	1
Kayak	1
Kite surfer	1
Water-based total	3

Staff and volunteers were able to actively prevent 28 potential disturbances.

Date	Location	Type	Level of disturbance
07/04/2015	Marrams	Dog	Prevented by ranger presence
10/04/2015	Watch House	Dog	Prevented by ranger presence
13/04/2015	Watch House	Dog	Prevented by ranger presence
18/04/2015	Far Point	Walkers	Prevented by ranger presence
25/04/2015	Watch House	Dog	Prevented by ranger presence
04/05/2015	Far Point	Walkers	Prevented by ranger presence
17/05/2015	Watch House	Dog	Prevented by volunteer presence
23/05/2015	Watch House	Dog	Prevented by volunteer presence

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23/05/2015	Watch House	Dog	Prevented by volunteer presence
26/05/2015	Watch House	Dog	Prevented by volunteer presence
07/06/2015	Headland	Dog	Prevented by ranger presence
10/06/2015	Marrams	School	Prevented by ranger presence
18/06/2015	Watch House	Dog	Prevented by volunteer presence
27/06/2015	Far Point	Dog	Prevented by ranger presence
04/07/2015	Marrams	Photographer	Prevented by ranger presence
04/07/2015	Blakeney Freshes	UAV	Prevented by ranger presence
12/07/2015	Watch House	Dog	Prevented by volunteer presence
12/07/2015	Watch House	Dog	Prevented by volunteer presence
18/07/2015	Watch House	Dog	Prevented by volunteer presence
22/07/2015	Headland	Dog	Prevented by ranger presence
23/07/2015	Headland	Dog	Prevented by ranger presence
29/07/2015	Headland	Dog	Prevented by ranger presence
30/07/2015	Headland	Dog	Prevented by ranger presence
31/07/2015	Headland	Dog	Prevented by ranger presence
01/08/2015	Headland	Dog	Prevented by ranger presence
01/08/2015	Watch House	Dog	Prevented by volunteer presence
01/08/2015	Far Point	Dog	Prevented by ranger presence
01/08/2015	Far Point	Kite	Prevented by ranger presence

A total of 28 potential dog disturbances were prevented, compared to 10 incidents. This highlights how effective an increased presence at the Watch House and Landing Ridge has been. Human disturbance to Little Terns was reduced at the Watch House by erecting an electric fence. Although the fence was not actually electrified, it successfully deterred walkers from entering the enclosure as they have done in previous years.

Habitat management

Working closely with the grazer on Blakeney Freshes, cattle were moved onto fields with the least breeding activity to minimize trampling of nests. Saltmarsh plants still colonise low areas on all northern fields as a consequence of the December 2013 tidal flood event. Thistles appeared scarce but started to appear in areas on most fields, particularly on slubbings from ditching works. Topping was undertaken three times due to plants re-flowering. With manual labour not available to uproot Ragwort (12 of hours of staff time was spent pulling), it was decided to top some fields, keeping cattle off topped fields for a specified period of time afterwards.

Over the 2014-15 winter period, works were undertaken on the Freshes to re-profile the main ditch, installing sluices and replacing culverts.

A solar pump was deployed on the scrapes in the northern fields. This helped to provide habitat for breeding birds, including the successful breeding of Little Ringed Plover.

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 eight years. As usual they managed to fledge young. The usual pair of Barn Owls nested in the box near Marsh Lane and successfully fledged two young.

Avocets are steadily increasing across the reserve. On Blakeney Point, there has been a fourth consecutive year of gradual increase in breeding pairs. Blakeney Freshes had the highest number of pairs since 2007. A brood was also seen at Stiffkey for the first time. Despite several sightings of hatched young, only two are known to have fledged, indicating the impact of avian predation.

Presumably the same pair of Little Ring Plovers bred successfully for a second year on one of the northern fields of the Freshes that were flooded and topped with shingle in December 2013. Little Ringed Plovers had previously bred on the Chapel Island for two years following the River Glaven realignment. Pairs of Ringed Plover showed a small increase, reaching the highest since 2012, with reasonable productivity: 0.77. It seems unlikely the species will ever be as common as in the previous century. Redshank, however, reached the highest number of pairs since the 1970s on Blakeney Point and most pairs hatched young on both the Point and Freshes, although how many survived to fledging is hard to know due to chicks being led onto saltmarsh soon after hatching.

Although Oystercatcher productivity on Blakeney Point was low, at approximately 0.38, this was significantly higher than the previous two years. The number of breeding pairs is showing a steady decrease, however, at possibly the lowest since 1964. This appears to be linked to poor young survival, as a consequence of predation by gulls, with the population made up mostly of ageing pairs. No young fledged from Blakeney Freshes.

Lapwing pairs on the Freshes appear to have been relatively stable for the last 12 years. As usual, fledging counts were low, with predation noted. However, with chicks led quickly off the Freshes onto the saltmarsh, keeping track of young is always challenging and may have been underestimated.

The 2015 season highlighted how crucial prey availability is for Little Terns. Poor feeding early on led to delayed nesting and the lowest number of breeding pairs since 1981. Prey availability for Sandwich Terns also seemed to be poor and led to poor chick survival with the majority of the Norfolk population breeding on Scolt Head Island closer to an abundance of prey. Although Blakeney Point experienced the lowest productivity since 2000, the overall Norfolk productivity was the highest since 2007. An abundance of Herring from late June throughout July enabled Little Terns to fledge several young, enabling the highest productivity in four years: 0.63. Unlike in previous years, the majority of Little Terns did not nest in the beach colony, which meant that no nests were flooded by big tides. Use of decoys to attract prospecting birds to an area of higher beach to the east proved successful.

Like Sandwich Terns, Black-headed Gulls in the main colony fledged very few young, with possibly the worst productivity in nearly 35 years. The usually productive

Middle Point colony was completely absent, more than likely as a consequence of complete failure the previous year due to fox predation. Mediterranean Gulls nesting amongst the Black-headed Gulls fared much better; productivity was 1.25. After breeding pairs steadily increased from 2008-2013, numbers have steadily decreased since. This is unexpected as the Norfolk population appears to be growing.

For the first time in many years, Stiffkey supported breeding gulls, with both Black-headed and Herring gulls fledging young. It is possible that future establishment of Black-headed Gulls could attract Sandwich Terns again. However, the Stiffkey Herring Gulls are believed to predate on terns and waders across the reserve.

Although Common Terns bred in the highest numbers since 2006, productivity was just 0.01. This seemed to relate to their nesting location, on the edge of the main Sandwich Tern and Black-headed Gull colony. It appears that this large colony attracts Common and Herring Gulls, which probably accounted for the failure of most Common and also Arctic Terns.

After a decrease in productivity in 2014, Grey Partridges fared better with five pairs successfully fledging a brood each. Feeding is thought to have been better and predation less of an issue. Pheasants have shown a marked increase, with first breeding confirmed in 2012 and a single pair the following two years, in 2015 this increased to three pairs all hatching a brood. In the previous three years, only small chicks were seen, but 2015 saw regularly sightings of a brood of four large young in the autumn. Although unconfirmed, it is possible a Water Rail bred on Blakeney Freshes. The last record of breeding was in 2002; however under-recording in recent years is likely as birds were thought to be present throughout this period.

The main breeding passerines on Blakeney Point had an excellent year, probably due to good feeding, absence of predation and minimal disturbance. The highest number of Skylarks since 2006 bred, the highest number of Linnets since 1967 and the highest ever number of both Meadow Pipits and Reed Buntings bred. Numbers of these species appeared stable at Blakeney Freshes and apparently higher than usual at Stiffkey, with almost twice as many Skylark pairs. Bearded Tits fared well on the Freshes, with the highest pairs and productivity since 2012, seeming to have made a comeback following previous cold winters. Cetti's Warblers returned to two pairs after just one last year, although no young were seen.

Acknowledgements

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Appendix 1: Historical breeding bird data

Blakeney Point

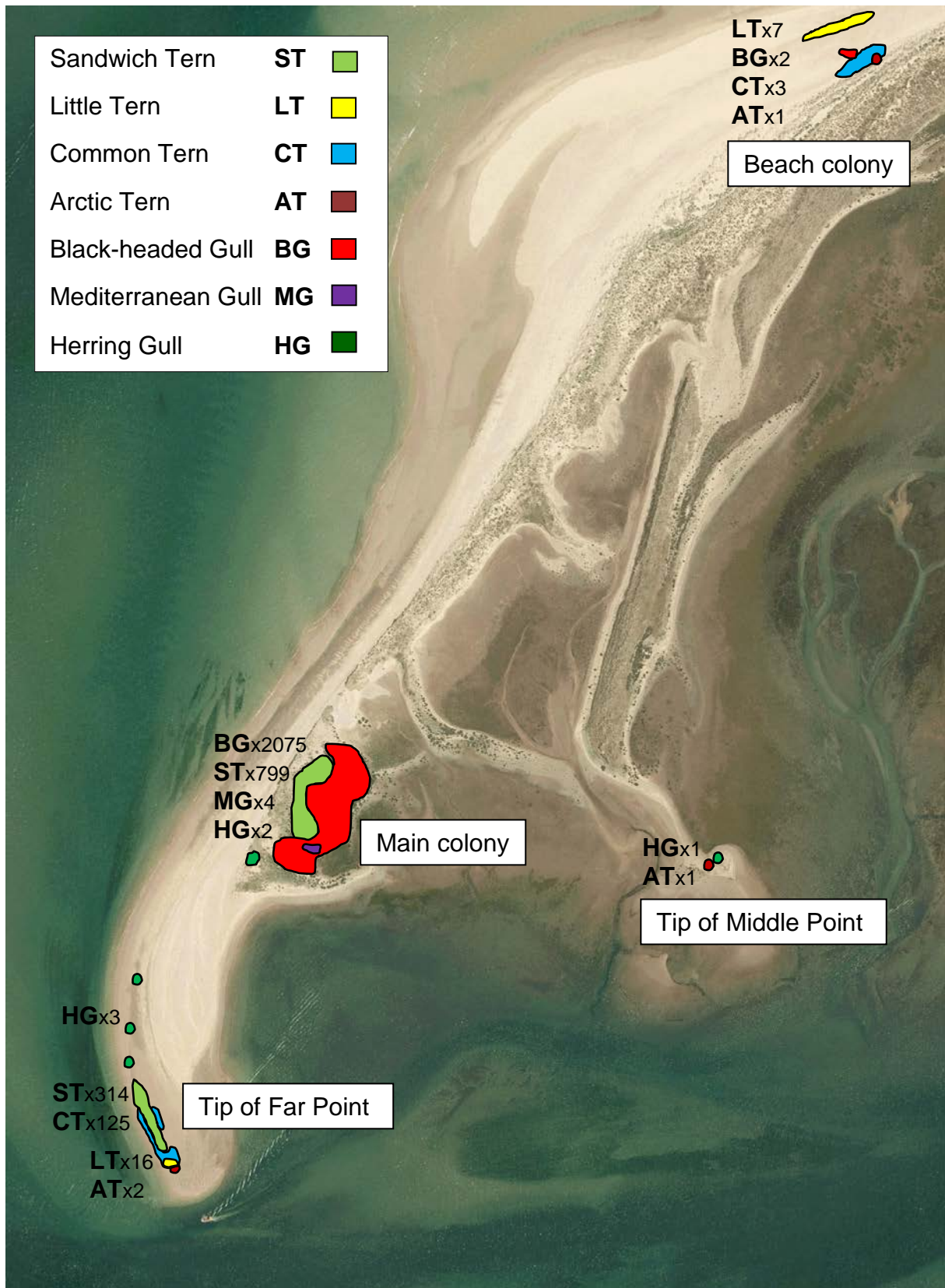
Species	Number of breeding pairs									
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Greylag Goose	3	1	1	1	0	1	0	0	0	0
Shelduck	24	25	30	41	35	44	50	65	68	59
Gadwall	3	0	4	5	1+	2	3	4	5	5
Shoveler	1	0	0	1	0	0	0	1	1	1
Mallard	4	3	2	2	3	0	5	5	4	6
Red-legged Partridge	1	1	1	1	1	0	1	0	1	0
Grey Partridge	0	0	1	3	3	3	5	9	7	5
Pheasant	0	0	0	0	0	0	1	1	1	3
Oystercatcher	130	142	124	135	118	110	103	102	85	79
Avocet	0	0	0	0	0	0	9	12	13	16
Ringed Plover	12	14	13	13	15	17	14	12	11	14
Redshank	7	5	5	14	13	14	15	15	16	17
Black-headed Gull	1000	1800	1250	1900	1800	1807	2000	2200	2419	2104
Mediterranean Gull	1	3	3	5	5	10	12	15	8	4
Herring Gull	8	3	0	0	0	0	3	12	3	6
Lesser Black-b. Gull	0	0	0	0	0	0	0	1	1?	1?
Little Tern	56	68	101	86	70	150	139	121	110	52
Sandwich Tern	950	1800	2400	3100	2500	3562	3575	4120	2859	1113
Common Tern	135	118	103	81	75	92	67	48	87	130
Arctic Tern	10	12	17	9	9	7	7	5	4	4
Stock Dove	1	1	1	1	1	1	1	0	0	0
Wood Pigeon	2	2	4	2	2	1	1	2	1	1
Skylark	67	48	36	39	43	32	35	33	39	49
Barn Swallow	5	6	5	3	4	7	5	3	2	1
Meadow Pipit	84	88	107	109	111	102	110	100	102	128
Pied Wagtail	1	1	3	1	1	0	1	1	1	1
Wren	4	8	4	11	15	15	9	8	4	9
Dunnock	9	8	8	9	10	6	11	10	11	14
Starling	0	0	0	0	0	0	0	0	0	1?
Linnet	22	26	22	17	30	20+	30	40	45	89
Reed Bunting	31	22	22	26	21	16	22	16	27	38

Blakeney Freshes

Species	Number of breeding pairs									
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Bittern	1	0	0	0	1?	0	1?	0	0	1?
Mute Swan	1	3	4	4	3		7	5	5	5
Greylag Goose	?	9	6	10	6		4	5	5	4
Canada Goose	3	1	2	2	2		3	3	5	2
Shelduck	?	2	1	0	7		20	1+	11	17
Gadwall	4	3	4	2	4		5	7	2	2
Shoveler	5	4	4	4	4		2+	8	3	2+
Mallard	8	9	8	30	25		23	27	20	11+
Pochard	0	1	1	3	3		3	2	3	4
Tufted Duck	0	1	1	7	7		11	11	7	5
Marsh Harrier	2	2	3	3	3	3	3	3	3	3
Red-legged Partridge	2	1	2	2	1		1	1	1	2
Grey Partridge	3	4	0	0	1		1?	2	1	0
Pheasant	3	1	?	5	3		9	11	3	3
Water Rail	0	0	0	0	0	0	0	0	0	1?
Moorhen	7	8	11	10	8		9	8	6	3+
Coot	14	17	16	14	10+		10+	10+	10	10+
Oystercatcher	14	20	19	9	14		16	16	10	7
Avocet	39	33	14	7	12		9	9	15	17
Little Ringed Plover	0	0	0	0	0	0	0	0	1	1
Lapwing	32	42	39	45	45		37	32	32	35
Redshank	3+	20	21	19	18		23	22	15	15
Black-headed Gull	13	8	8	10	10	0	0	0	12	10
Barn Owl	1?	1	1	1	1?	1?	1?	1	1	1
Skylark	40	50	22	27	24		20+	20+	20+	24
Meadow Pipit	10	13	14	19	18		15+	15+	15+	15+
Sedge Warbler	36	38	51	65	55		30+	35+	35+	21
Cetti's Warbler	2	4	7	4	2		3	2	1	2
Reed Warbler	40	31	19	36	48		30+	30+	30+	23
Bearded Tit	3	1+	4	4	4		3	1	2	3
Reed Bunting	6	7	8	9	7	7	7	7	7	11

Note that data from 2011 has been lost.

Appendix 2: Map of 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 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. This land was surveyed for breeding birds in May.

Species	Pairs/ territories	Fledged young
Mallard	1	
Avocet	2	0
Ringed Plover	1	2
Skylark	2	
Sand Martin	16+	
Meadow Pipit	2	
Linnet	2	

Subsequent visits were made in June, revealing that the Avocets did not go on to breed, however two juvenile Ringed Plover chicks were seen.

Appendix 4: Disturbance to seals

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

Date	Location	Type	Estimated number of seals disturbed
15/04/2015	Far Point	Walkers	Pushed c. 20 Grey Seals into water
16/04/2015	Far Point	Photographer	Pushed c. 50 Grey Seals into water
30/05/2015	West Sands	Walkers	Pushed c. 400 seals into water
27/06/2015	Far Point	Kayak	Pushed c. 50 Grey Seals into water
15/07/2015	West Sands	Dog	Pushed c. 200 seals into water
18/07/2015	West Sands	Dog	Pushed c. 400 seals into water
02/08/2015	West Sands	Dog	Pushed c. 300 seals into water
02/08/2015	West Sands	Walkers	Pushed c. 400 seals into water
21/08/2015	Far Point	Walkers	Pushed c. 50 Common Seals into water
01/09/2015	Far Point	Walkers	Pushed c. 50 Common Seals into water
26/09/2015	West Sands	Boat	Pushed c. 200 seals into water
27/09/2015	West Sands	Dog	Pushed c. 300 seals into water
06/12/2015	Beach Way	Walker	Pushed c. 3 cows into water
09/12/2015	Beach Way	Photographer	Pushed c. 10 cows into water
31/12/2015	Beach Way	Photographer	Pushed c. 5 cows into water

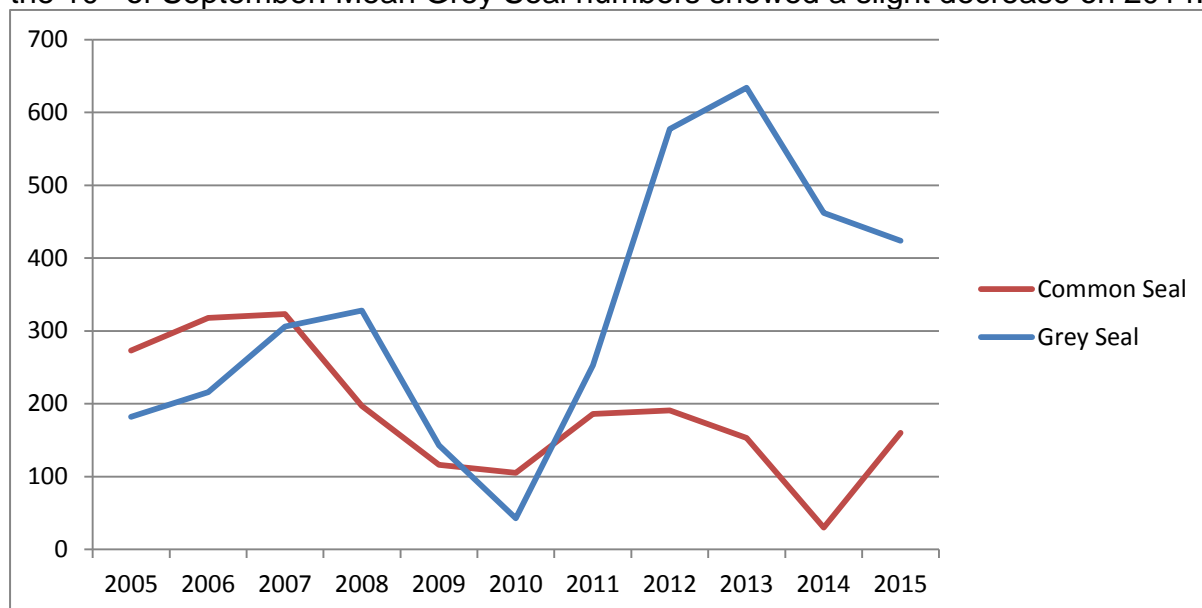
A total of 15 incidents were observed with varying numbers of seals disturbed. Thanks to increased volunteer presence, there were just three cases of visitors amongst pups during the breeding season. The largest numbers of seals were disturbed by dogs off leads on the West Sands, accessed either on foot from Stiffkey at low tide or by boat from Blakeney Harbour at high tide. The West Sands are owned by Natural England.

Appendix 5: 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	Common Seal	Grey Seal	Total
16/03/2015	2	109	111
05/04/2015	6	385	391
15/04/2015	5	373	378
01/05/2015	9	331	340
22/05/2015	5	261	266
01/06/2015	26	510	536
17/06/2015	153	434	587
01/07/2015	108	266	374
12/07/2015	123	647	770
05/08/2015	412	519	931
17/08/2015	431	78	509
19/08/2015	279	436	715
20/08/2015	386	670	1056
02/09/2015	320	448	768
10/09/2015	245	523	768
15/09/2015	157	766	923
29/09/2015	108	306	414
08/10/2015	102	572	674
Mean (Apr-Sep)	160	424	584

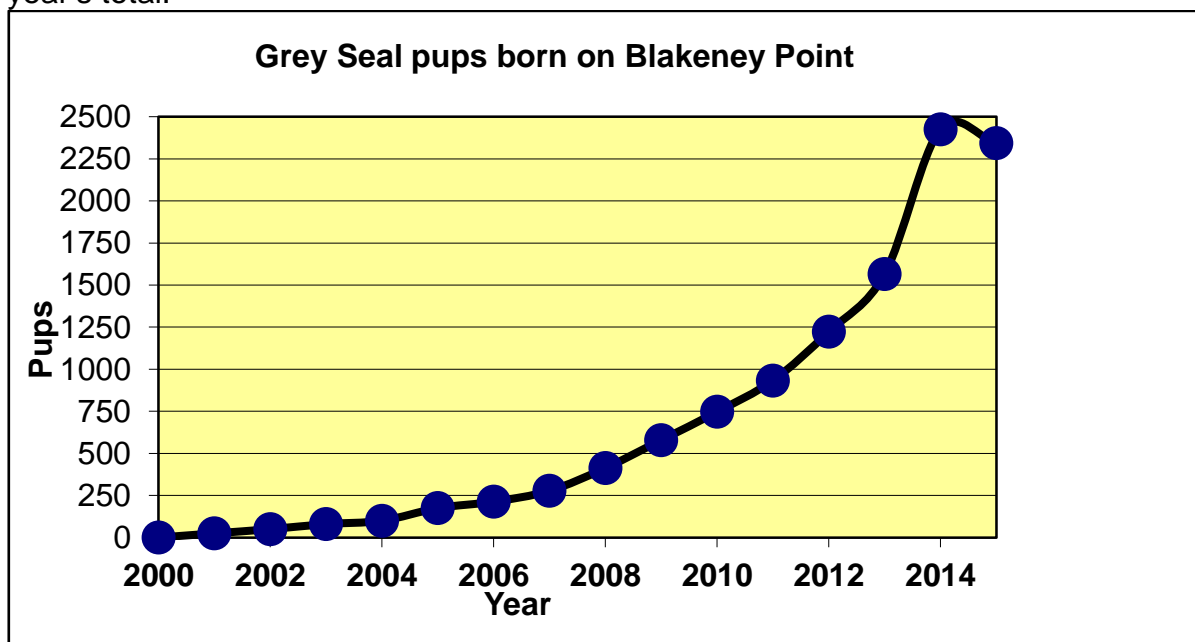
Mean Common Seal numbers were much closer to the 2008-13 average of 158 following a year of lower counts in 2014. A peak count of 29 juveniles was made on the 10th of September. Mean Grey Seal numbers showed a slight decrease on 2014.



Mean annual low tide seal counts 2005-15

Appendix 6: Grey Seal pup counts

The winter 2015/16 Grey Seal pupping season did not show an increase on the previous year's total for the first time in 15 years. The rookery spread further east than in previous years, with approximately ten pups born between the Long Hills and the Hood. A pup was also born on Yankee Ridge, one in New Glaux Low and approximately ten in Great Sandy Low, showing a slight spread southwards further into the main dunes. However, the total number of pups born was 3% below last year's total.



Live pups were counted approximately weekly throughout November. In December, new-born pups were counted approximately every three days and added to the previous total. Just one pup was born in January.

Date	Estimated total pup count
01/11/2015	1
02/11/2015	3
09/11/2015	64
11/11/2015	149
17/11/2015	421
19/11/2015	573
25/11/2015	1,028
30/11/2015	1,269
04/12/2015	1,658
07/12/2015	1,803
10/12/2015	2,025
14/12/2015	2,252
16/12/2015	2,275
21/12/2015	2,314
24/12/2015	2,322
31/12/2015	2,342
04/01/2016	2,343
Total	2,343

This gave a total of 2,343, of which two were taken to the RSPCA animal rescue centre at East Winch. A total of 39 dead pups were counted, these were not included in the total figure.

Blakeney Point remained the largest rookery on England's east coast, having overtaken The Farne Islands and Donna Nook for a second year.

Rookery	Estimated total pup count
St. Abb's Head, Berwickshire	927
The Farne Islands, Northumberland	1,876
Coquet Island, Northumberland	5
Donna Nook, Lincolnshire	1,889
Blakeney Point, Norfolk	2,343
Horsey, Norfolk	1,018
Thames Estuary, Essex	2
Total	7,134

The below table shows historical Blakeney Point records.

Date	Estimated total pup count	Notes
1988	2	First record of Grey Seal pups at Blakeney
1989-1996	?	Occasional pups seen, but not every year
1997	3+	Observed on Far Point 10/01/1998
1998	?	No data available
1999	5+	Observed on Far Point 10/12/1999
2000	?	No data available
2001	c.25	First record of a defined rookery, Far Point
2002	c.50	
2003	c.80	
2004	c.100	
2005	c.175	
2006	c.200	Plus 13 dead
2007	c.290+	278 counted 20/12/2007, some pups weaned
2008	413	Plus c.20 dead
2009	579	Plus 24 dead
2010/11	747	Plus approximately 50 dead
2011/12	933	Plus 40+ dead
2012/13	1,223	Plus 25+ dead
2013/14	1,566	Plus c.35 dead
2014/15	2,426	Plus 34 dead
2015/16	2,343	Plus 39 dead

Appendix 7: 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	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	
Small Skipper	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Brimstone	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	0	1
Large White	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5	0	12	0	2	0	0	1	0	0	0	0	22
Small White	0	0	0	0	0	0	0	0	0	1	0	0	2	0	5	0	0	2	0	0	0	1	0	0	0	0	11
Small Copper	0	0	0	0	1	0	4	0	0	0	0	0	1	0	1	1	0	0	1	1	1	0	0	0	0	2	13
Red Admiral	0	0	0	0	0	0	0	0	0	0	1	0	6	3	1	0	0	0	0	0	0	1	0	0	0	1	13
Painted Lady	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	2	0	0	0	0	0	0	0	0	5
Small Tortoiseshell	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	0	0	1	0	0	0	0	0	0	2	8
Peacock	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	2	0	0	0	0	0	0	5
Dark Green Fritillary	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2
Grayling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	3	2	5	1	0	0	0	0	15
Gatekeeper	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5	6	2	3	2	2	0	0	0	0	0	22
Meadow Brown	0	0	0	0	0	0	0	0	0	0	0	0	3	1	1	1	0	0	0	0	1	0	0	0	0	0	7
Total (Summary)	1	0	0	0	2	0	4	0	0	1	2	0	13	8	17	10	22	8	12	7	9	4	0	0	0	5	125

This table shows data collected on weekly butterfly transects on Blakeney Point. In addition to the 13 species recorded, other species observed on the Point in 2015 were several Green-veined Whites and Common Blues, a few Essex Skippers and one Wall.

Blakeney Freshes and Friary Hills

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	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	
Sm Skipper	0	0	0	0	0	0	0	0	0	0	0	1	1	1	33	38	24	10	5	0	3	0	0	0	0	0	86
Brimstone	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
L White	0	0	0	0	0	1	1	2	2	2	2	1	0	0	0	6	8	10	5	0	7	3	2	3	4	2	36
Sm White	0	0	0	3	0	1	2	3	4	3	1	1	1	1	7	28	17	5	4	3	4	6	15	8	0	0	78
Orange Tip	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Green Hair.	0	0	0	0	1	1	2	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Sm Copper	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	2	4	4	3	0	0	0	0	0	0	8
Br Argus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	5	3	2	1	0	0	0	0	0	0	10
Com Blue	0	0	0	0	0	1	3	4	5	3	0	1	1	1	0	0	1	2	2	2	8	0	5	3	0	0	24
Holly Blue	0	0	0	1	2	2	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	4
Red Admiral	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	3
Painted L	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2
Sm Tort	1	3	1	3	0	0	0	0	0	0	0	0	0	1	1	0	1	2	1	0	0	2	0	0	0	0	14
Peacock	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	7
Comma	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3
Sp. Wood	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	1	1	0	0	3
Wall Brown	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
Gatekeeper	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	25	15	5	4	3	4	0	0	0	0	0	43
M Brown	0	0	0	0	0	0	0	0	0	1	2	7	11	14	26	15	8	0	0	0	0	0	0	0	0	0	68
Ringlet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	8	4	0	0	0	0	0	0	0	0	0	21
Total (Summary)	1	3	4	11	4	0	0	0	14	0	7	0	14	19	89	127	0	42	0	13	27	14	24	0	4	0	417

This table shows data collected on the first year of weekly butterfly transects on Blakeney Freshes and Friary Hills.