FOOTPRINT ECOLOGY

Visitor Management Plan for Holme Dunes

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Footprint Contract Reference: 597
Date: 07th September 2021
Version: Final
Recommended Citation: Liley, D., Panter, C. Lake, S. & Caals, Z. (2021). Visitor Management Plan for Holme Dunes. Unpublished report by Footprint Ecology.

Foreword from Norfolk County Council and Norfolk Wildlife Trust

The term sea defence conjures images of featureless stretches of concrete walls and invasive heavy engineering. Yet coastal dune systems offer many miles of protection; defending communities, infrastructure and businesses against the impacts of climate change whilst also supporting vibrant ecosystems. Their natural flexibility provides a sustainable barrier to the sea, dissipating wave energy and soaking away excess water, but they are often squeezed into narrow bands along the coastline, starved of the sand they need to replenish themselves and eroded away by visitors.

The population in the East of England continues to show year on year growth and is expected to reach 7 million by 2041[1]. With population growth comes increasing demand for outdoor destinations - a recent study predicted a 14% increase in visitor numbers to designated sites on the North Norfolk coast by 2026, as a direct result of new housing in Norfolk[2]. Cambridge is set to deliver 33,500 new homes and 44,000 new jobs over the next 15-20 years[3] whilst London hit a new population peak of 8.9 million in 2018[4]. Norfolk's coastal regions are expected to absorb much of this growth, seeing visitor numbers increase by 9-15% between King's Lynn, North Norfolk and East Norfolk[1] A record-breaking 73 million tourists visited Norfolk and Suffolk in 2017, representing 43.4 million day-visitors and 13.5 million overnight stays across Norfolk[5]. Visitor numbers are expected to further increase over 2021-22, due to COVID-19 travel restrictions and the rise in popularity of 'stay-cations' and holidays at 'home'[6].

The recently established English Coast Path[7] responds to this demand and creates new visitor access to the landscapes of the Norfolk coastline. Part of the route passes through Holme Dunes, a 192-hectare National Nature Reserve located in North Norfolk. Increased recreational use of the dunes and growing visitor numbers need to be managed effectively to ensure their future health and resilience, securing continued protection of this low-lying area from the sea.

Led by Norfolk County Council, the ENDURE project brings together European expertise on establishing sand dunes as adaptive, living sea defences. In collaboration with Norfolk Wildlife Trust, this expertise has supported development of a new visitor management plan for Holme

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[1] https://www.statista.com/statistics/379004/east-of-england-population-forecast/
[2] Visitor Surveys at European protected sites across Norfolk during 2015 and 2016; Panter, C., Liley, D. & Lowen, S. available at http://www.norfolkbiodiversity.org/assets/Uploads/Visitor-surveys-at-European-protected-sites-across-Norfolk-during-2015-and-2016.pdf
[3] Greater Cambridge Partnership available at https://www.greatercambridge.org.uk/housing
[4] London's population over time (1931-2030); Trust for London
[5] https://www.visitnorfolk.co.uk/inspire/Norfolk-tourism-record-numbers-2018.aspx
[6] https://www.statista.com/statistics/1175666/growth-in-holiday-search-terms-uk/
[7] https://www.nationaltrail.co.uk/en_GB/trails/england-coast-path-south-east/route/

Dunes. This document identifies a need for improved cooperation and communication between stakeholders on issues such as data collection approaches and shared resources. It forms the basis for long-term stakeholder cooperation, supporting collective identification of issues and shared implementation of mitigation measures. The methodology for this plan is designed to be replicable at other 'honeypot' dune sites, providing local-level detail on pressures, risks and solutions.

This work supports development of the Norfolk and Suffolk Natural Capital Assets Evidence Compendium[8], which identifies risks to natural assets in the context of climate change and future development. Both pieces of work will contribute to development and delivery of a 25-Year Environment Plan for a greener future, setting out how NCC and stakeholders will work together to improve the environment over a generation.

We hope that the project outcomes will inspire organisations working under similar pressures to adapt some recommendations to their context. Currently, we are developing studies to determine the carrying capacity of nature sites considering future development plans and prospective increases in visitor numbers. As part of this, we are developing exciting and innovative methods for capturing visitor data that will enable us to make informed decisions about dune site management in Norfolk.

ENDURE is an Interreg Two Seas project co-financed by the European Regional Development Fund

Norfolk County Council

Norfolk Wildlife Trust

[8] The Norfolk and Suffolk Natural Capital Assets Evidence Compendium is available at http://www.nbis.org.uk/natural-capital-compendium

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Acknowledgements

This report has been commissioned by Norfolk County Council with part-funding from ENDURE, an Interreg Two Seas ERDF project. Our thanks to Alex Larter (Norfolk County Council) for overseeing the work. Our thanks also to the steering group who provided useful comment, discussion and support: Sarah Burston (Norfolk County Council); Mel Gillings (Norfolk County Council); Kevin Hart (Norfolk Wildlife Trust); Nik Khandpur (Norfolk Wildlife Trust) and Jonathan Preston (Norfolk Wildlife Trust).

We are grateful to the following for useful discussion, for sharing information and views: Ermine Amies (Broadwater Road Group), Philip Amies (Broadwater Road Group), Sophie Barker (Norfolk Ornithologists Association), Hannah Borrett (Environment Agency), Andy Brown (Natural England), Robert Burton (Holme Parish Council), Tom Bolderstone (Natural England), Bernard Devereux (Holme Parish Council), Lynn Devereux (Holme Parish Council), Martin Crown (Holme Parish Council), Kellie Fisher (Environment Agency), Kevin Hart (Norfolk Wildlife Trust), Gary Hibberd (Norfolk Wildlife Trust), Estelle Hook (Norfolk Coast Partnership), Nik Khandpur (Norfolk Wildlife Trust), Neil Lawton (County Bird Recorder), Nick Morritt (Norfolk Wildlife Trust), David Moss (Hunstanton Golf Club), Keith Miller (National Trust), Verity Pitts (Dynamic Dunescapes, Natural England), Sue Rees (Natural England) and Helen Timson (Norfolk Coast Partnership).

1. Introduction

1.1 This report is a visitor management plan for Holme Dunes, an extensive area of dunes centred around the Norfolk Wildlife Trust (NWT) nature reserve. The aim of this independent plan is to support landowner management and identify mechanisms that could support access being managed so that the coastal dune system is not compromised by increased recreation pressure. The report has been commissioned by Norfolk County Council and the production of the plan is part of ENDURE, an Interreg Two Seas Project. As such it seeks also to contribute to wider understanding and strategies for the management and protection of dune systems at other coastal sites.

1.2 The Plan covers the period 2020-2025 and in addition sets out a longer-term vision and ideas for recreation management at the site, both by NWT and other stakeholders with responsibility for the protection of the dune system. These ideas are summarised into a series of action points that will allow for collaboration and work in partnership.

1.3 The site is a National Nature Reserve (NNR) and encompasses around 188ha of dune, beach and wetland habitats (including saltmarsh, brackish and freshwater marshes) near Hunstanton, in north-west Norfolk. It is part of the Natura 2000 network of sites, reflecting its international importance for nature conservation. The reserve also lies within the Norfolk Coast Area of Outstanding Natural Beauty (AONB), one of the national landscapes and reflecting the scenic beauty of the coastline.

1.4 The North Norfolk coast is a high-profile visitor destination and is popular for recreation, drawing dog walkers, beach users, walkers, naturalists, cyclists, watersports users and others. Visitors include local residents, day trippers, national and international holiday-makers and second-home owners. Holme Dunes has two National Trails that run through the site, the Peddars Way and Norfolk Coast Path National Trail (which will be part of the England Coast Path), which increase the profile and contribute to the footfall to the area.

1.5 A challenging issue for UK nature conservation is how to respond to increasing demand for access without compromising the integrity of protected wildlife sites. Areas that are important for nature conservation are often important for a range of other services, including the provision of space for recreation for an increasing population. Visits to the natural

environment have shown a significant increase in England as a result of the increase in population and a trend to visit more (O'Neill, 2019). Such increases can be difficult to balance with the conservation management and other site functions. The surge in countryside access that has happened as a result of Covid 19 in 2020 has brought into sharp focus the importance of countryside sites for access and the challenges of managing that access.

1.6 Recreation use of the countryside can result in a range of impacts, for example disturbance, increased fire risk, contamination and damage (for general reviews see: Liley et al., 2010; Lowen et al., 2008; Ross et al., 2014; Underhill-Day, 2005).

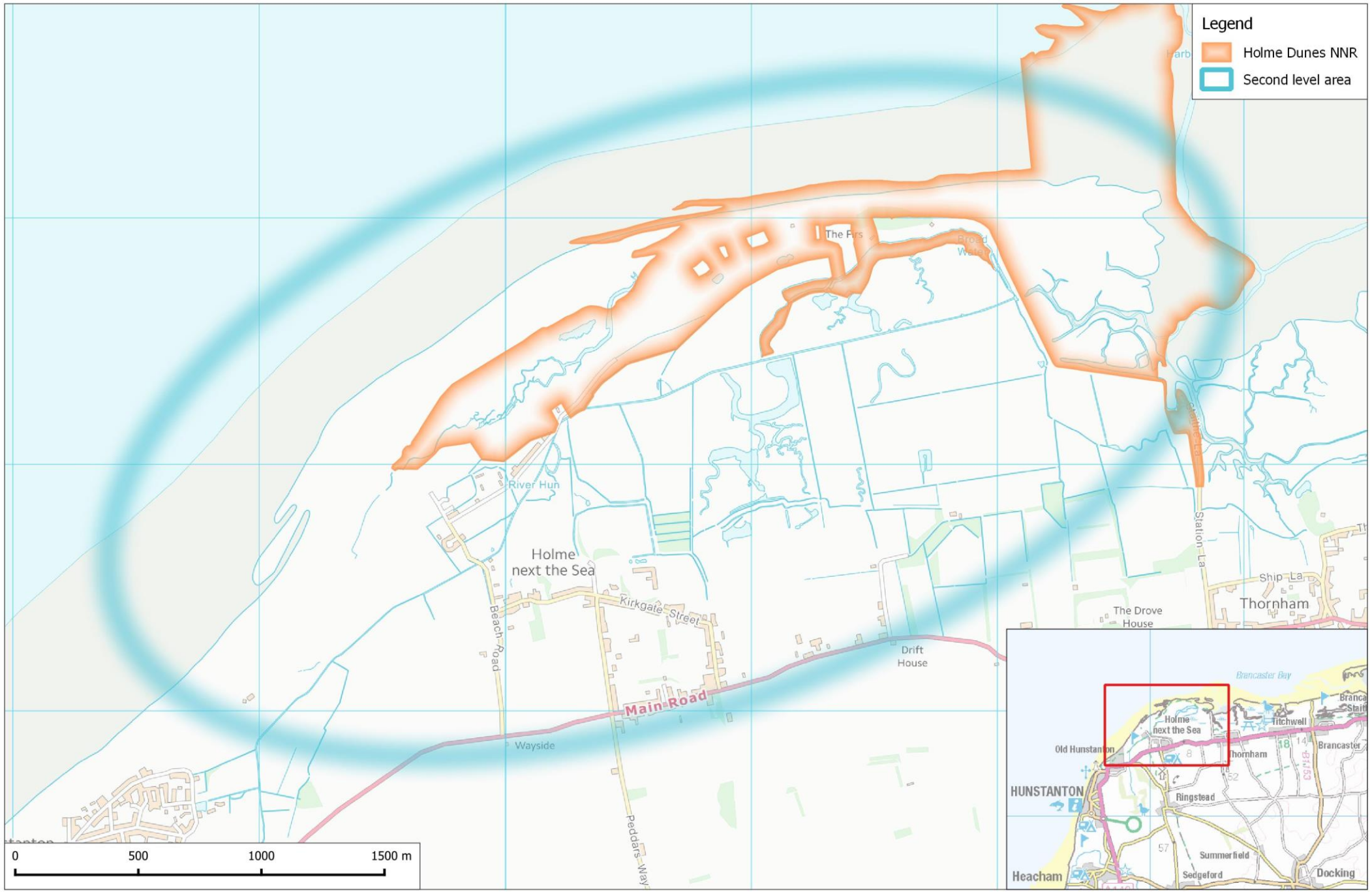
1.7 The issues are not however straightforward. It is now increasingly recognised that access to the countryside is crucial to the long term success of nature conservation projects, for example through enforcing pro-environmental behaviours and a greater respect for the world around us (Richardson et al., 2016). Access also brings wider benefits to society that include benefits to mental/physical health (Keniger et al., 2013; Lee and Maheswaran, 2011; Pretty et al., 2005) and economic benefits to local communities and more nationally (ICF GHK, 2013; ICRT, 2011; Keniger et al., 2013; The Land Trust, 2018). Nature conservation bodies are trying to encourage people to spend more time outside and government policy is also promoting countryside access in general (e.g. through enhancing coastal access).

1.8 The challenges relate not only to visitor numbers per se, but it is also important to recognise that visitor behaviour, the types of activities undertaken, travel choices and other factors will also influence the relative impacts from visitors. Climate change potentially exacerbates the issues (Coombes, 2007; Coombes & Jones, 2010), influencing both access patterns (warmer, wetter weather) and the coastal habitats (through sea-level rise and increased storminess). The dunes fulfil an important role in coastal defence, providing resilience against flooding and adaptability to sea-level rise.

1.9 At Holme Dunes there is already a conservation management plan for the NWT Reserve. While this does include recreation use, there is no comprehensive visitor management plan for the wider setting of the NWT Holme Dunes Reserve. This plan has therefore been commissioned to sit alongside the management plan and address the visitor management of the site. This plan will set out short term actions, but consider the long term vision and future for the area.

1.10 The plan addresses the core area of the NWT Reserve. Given the linear nature of the coast and varied entry points, the plan extends to a wider zone, as shown in blue on Map 1. This extends into different land ownership besides the NWT.

Map 1: Areas of focus for the visitor management plan



2. Site background

2.1 Holme Dunes is in north-west Norfolk, three miles east of Hunstanton and a mile to the north of Holme-next-Sea. Comprehensive background is provided in the site management plan and in this section we provide additional context particularly relevant to access management.

Land ownership

2.2 The plan area is predominantly owned by the NWT or leased to the Trust, however the land ownership is complex (see map A01 in the management plan for map of ownership boundaries). Of note, a 2.5 ha block east of The Firs is occupied by an independent organisation, the Norfolk Ornithologists Association (NOA) who also lease other land near the Firs and own Redwell Marsh, to the south of Broadwater Road. The saltmarsh and dune habitat north of the houses along Broadwater Road are owned by the Le Strange Estate and managed by the NWT and Mr. Lumley owns a block of the sand dunes which are leased to the NWT.

Recreation use

Surrounding population

2.3 There are around 4,654 residential properties within 5km and 9,153 residential properties within 10km[9], suggesting around 11,200 residents within 5km and 22,000 residents within 10km. However, the area is popular for second home ownership; around half of the parish housing stock is used as a second home, holiday let or empty and therefore are unoccupied for much of the year[10].

Reserve opening and charging

2.4 The NWT reserve is open daily 10am-5pm (or dusk). Parking and entry are free for members of the NWT (and entry free for children). Otherwise parking at the Firs is £5 per car for a day ticket, but currently £10 during Peak

[9] Housing figures based on 2019 postcode data held by Footprint Ecology. Number of residents extrapolated based on standard occupancy rate of 2.4.
[10] https://www.west-norfolk.gov.uk/info/20127/neighbourhood_plans/760/holme-next-the-sea_neighbourhood_plan

Season (July to August) and entry into the reserve is £4.50 (with gift aid), £4.00 standard for non-members. On busy days visitors are intercepted at a hut on at the entrance to the reserve, at other times payment is taken at the Visitor Centre at the Firs.

2.5 In addition, the NOA reserve is open daily, free to members or a £3 for a day permit.

Parking

2.6 The main parking locations are shown on Map 3 and include:

- **The Firs**: the main NWT car park, with capacity for around 90 cars (charges are taken as an entry fee/membership);
- **NOA car park:** near the Firs, with capacity for around 45 cars (charges are taken as an entry fee/membership);
- **Beach Road by the Golf Course**: owned by Old Hunstanton Golf Club and operated by a sub-let agent. A fee of £5.00 applies when there is a sign displayed at the entrance and the attendant is present (usually when the small refreshments kiosk is open). The fee is sometimes reduced during the winter months to £2.00. The capacity here is around 170 cars, but the informal nature of parking here means this is hard to accurately estimate and the NWT data suggest a maximum count of 228 (see para 2.29). There is potential for further parking roadside and there are some parking bays next to the toilets.
- **Thornham**: there is an NWT car-park for around 20 cars at the end of Staithe Lane in Thornham, space for approximately a further 25 at the end of the path on the sea wall and potential for further parking roadside.
- **The Saltings** is a small informal parking area on NWT owned land along Broadwater Road, with capacity for around 20 cars (NWT maximum count of 32 recorded in 2019).

2.7 Parking provision for the NOA and NWT are located in close proximity to each other and there is a long-standing car park sharing arrangement between these two organisations. The NOA car park is free to their members and paying visitors as is the NWT car park. The two organisations work together to share capacity, and this has allowed overflow from one to another (particularly in the busy summer period). The NOA trustees have requested that 5 marked places in the NOA car park be created to ensure space for NOA members on the busiest days.

2.8 Visitor patterns in 2020 have been exceptional across country due to the pandemic. The NWT managed parking in the summer by limited car parking capacity to just 75 vehicles at time.

Other-Infrastructure

2.9 Other infrastructure are shown on Map 3. There is a Public Right of Way (footpath) running through the northern section of the reserve following sea walls and across dunes. It forms part of the Norfolk Coast Path long distance footpath and in parts is the main coastal defence. The path variable in its surfacing and quality, ranging from unsurfaced dune, including more overgrown dune ridge (towards Old Hunstanton), boardwalk – both well maintained and a poor state – and to well surfaced (rolled chalk) through the main NWT dunes.

2.10 There are public toilets at the northern end of Beach Road, by the Beach Road car park.

2.11 At the Firs there is a visitor centre, which includes a small shop, currently open 10am–4pm. There are some tables and chairs in a small exhibition area off the shop, and leading on from that a small café. There are two separate toilets.

2.12 There are 6 hides managed by the NWT; 3 of these are on Holme Marsh, an area accessed from Holme-next-the-Sea village, in an area managed as part of an agreement with Courtyard Farms, the land owner.

2.13 The NOA has an observatory building/ringing centre with outdoor seating area/viewing area. There are 7 NOA hides, including one seawatching hide looking north out to sea. There is also an NOA hide and boardwalk on Redwell Marsh, accessed from Broadwater Road.

Interpretation and signage

2.14 There is a range of signs and interpretation panels across the area, of a range of ages and design. There are clear clusters (e.g. at the Firs and close to the Golf Course). The location of detailed interpretation boards and specific notices to dog walkers are shown on Map 2.

2.15 There is signage regarding ownership and access along Old Hunstanton Beach (Figure 1, 3). and occasional Environment Agency signs regarding protecting the sea defences throughout the area (Figure 1, 4). Large NNR boards (Figure 1, 5) are at a limited number of locations; on the Norfolk

Coast Path in from Beach Road, at the Saltings, the Firs and Thornham Old Harbour.

2.16 The NOA has interpretation boards at both entrances to their reserve (in the car park, at the main entrance near the car park and at the entrance from the Coast Path). These detail the Observatory and NOA, provide a map and indicate the area's importance for wildlife.

2.17 NWT signage is widespread throughout their area, although many signs are old and faded. There is a series of new interpretation, but this is often small and relatively discrete and scattered along the Norfolk Coast Path.

2.18 There are small signs on the roped fences (Figure 1, 6) and also signage specifically to dog walkers (Figure 1, 2) at specific locations – as shown in Map 2. There are two shelter style interpretation boards – at the Saltings and the Firs (Figure 1, 7).

2.19 Overall, there is a variety of interpretation, which includes engaging material (e.g. new smaller signs Figure 1, 6), but some is faded and clearly dated.

Figure 1: Examples of signage in the area.

Public Rights of Way

2.20 A number of public rights of way run through the area, including footpaths and restricted byways and a permissive footpath. There are also two National Trails that run through the site, the Peddars Way and Norfolk Coast Path National Trail (which will be part of the England Coast Path). The Pedders Way is open for most of its length to cyclists and horse riders, while the Norfolk Coast Path is for walkers only.

2.21 The public rights of way give clear routes through access land on along (such as in the NNR) but also along the seawall and through some parts of the marsh behind the NNR from Holme village.

Dog policy

2.22 The NWT's dog policy for the reserve is: "*Some areas of reserve in 'Open Access', but only at certain times of the year. Please observe signage on site and keep dogs under control or on a short lead to avoid disturbance to livestock and wildlife. Dogs are welcome at Holme in the outside seating area of the visitor centre but are not allowed into the café area.*"

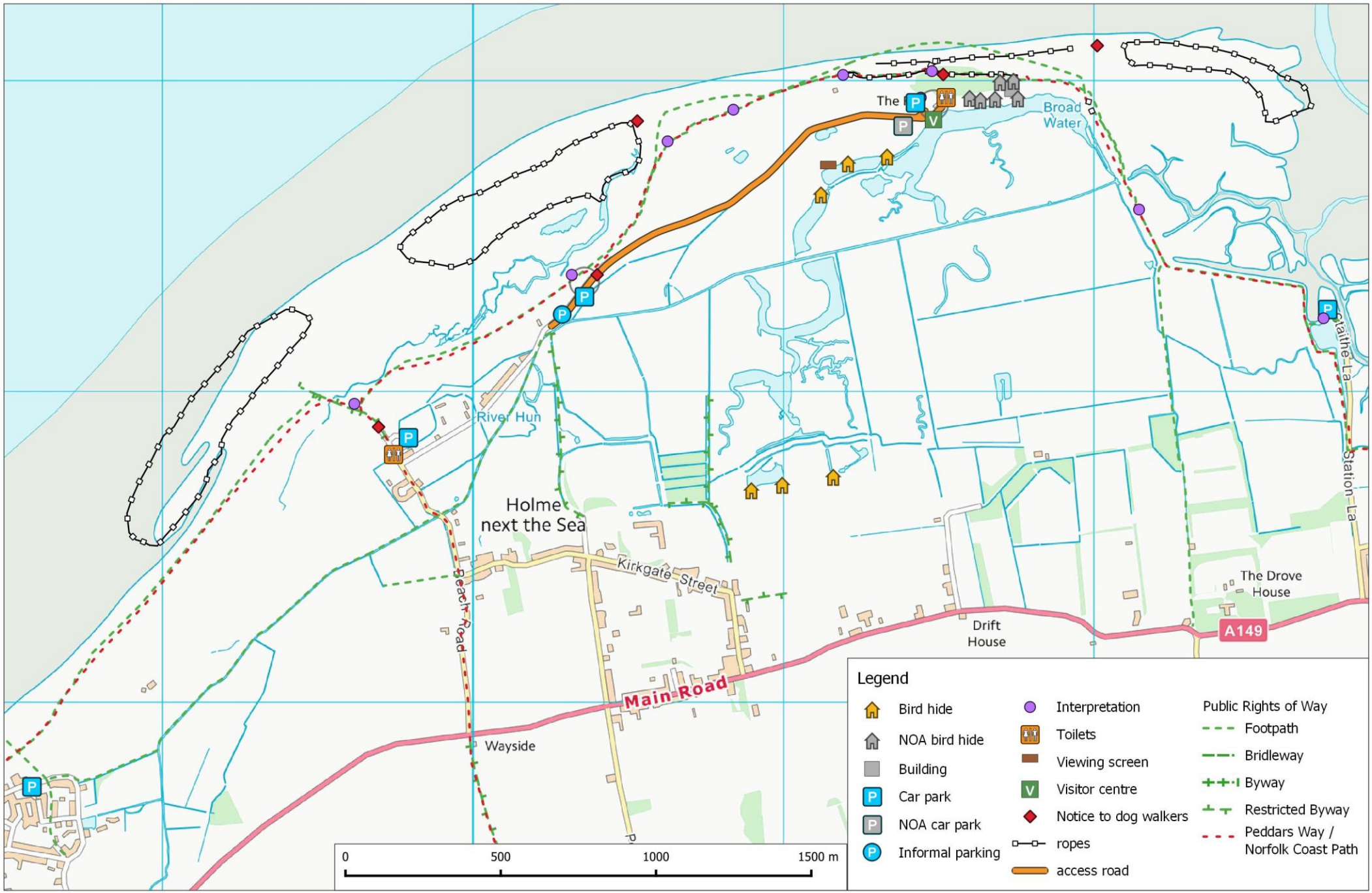
Accessibility

2.23 There are no designated disabled parking spaces in the main car park. Disabled drivers are allowed to park at the start of the path to the hides and the first hide, overlooking Broadwater is designed to accommodate all users including those using wheelchairs. There are fully accessible toilets at the end of Beach Road which include a RADAR scheme toilet.

Education

2.24 The site is used on an informal basis by school groups, numbering around 12 per annum. Most are guided by NWT Education staff. NWT offers pre-booked guided wildlife walks for schools and also offers walks, especially in the summer, for the general public.

Map 2: Infrastructure (note overlapping points are offset as concentric rings).



Visitor numbers

2.25 Estimates of visitor numbers cover a range of figures and are partly dependent on the method and which parts of the area are being considered.

2.26 A desk-based figure comes from modelled visitor numbers from an online tool developed Exeter University, ORVal, the Outdoor Recreation Valuation Tool[11]. For Holme Dunes the predicted number of visitors is 27,189 per year (26,442 of which arrive by car). However, this model often fails to account for particularly special locations which have sizeable draws. White (2012) estimated the capacity of the several internationally designated sites in Norfolk. For Holme Dunes, he suggested an estimate of 20,000 visitors in 2009 to the NWT Reserve (based on NWT data from permits issued for members & non-members) and 100,000 in 2010 for the Holme Dunes NWT beach/reserve (based on NWT data from counts and extrapolation).

2.27 Some temporal data on visitor numbers along the footpath (2014-2018) are summarised by month in Figure 2. These data show peak use in July and August with shoulder periods around Easter and September October. The pattern is reasonably similar in each year and there is an indication of a slight rise across the years.

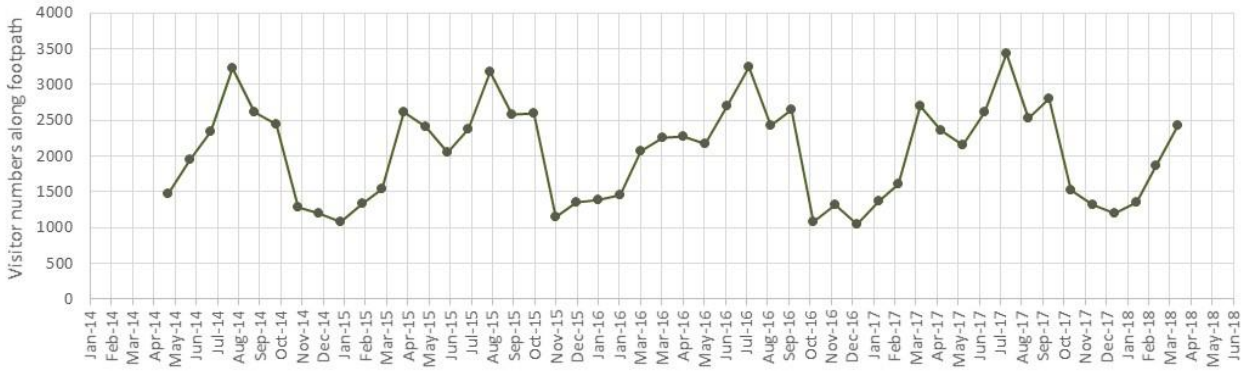


Figure 2: Monthly visitor numbers along footpath. Data provided by NWT and reflect visitor counter hits and are uncalibrated.

2.28 Data collected by vehicle counts comes from surveys undertaken by the NWT in 2019. Vehicle counts provide a reasonably robust means to estimate visitor numbers across a number of sample days. Counts were undertaken

[11] https://www.leep.exeter.ac.uk/orval/

by NWT staff on every Sunday in 2019, with the omission of four Sundays, but also the addition of counts on three Bank Holidays (the Easter Monday, the August Monday and Boxing Day, which fell on a Thursday). Counts were taken at around midday, and the counts therefore represent some of the peak times.

2.29 Counts of numbers of vehicles at each of the six parking locations showed values which ranged from several zero counts to a maximum of 228 vehicles at the Beach Road car park on the 26th August, the Bank Holiday Monday. This date was also the single date with the highest overall count of 506 vehicles across all the six parking locations. Across all parking locations combined the mean number of vehicles on a single date count was 78.2 vehicles. Excluding the three bank holidays the mean count for Sundays was 69.2 (based on 48 Sunday counts).

2.30 Table 1 shows the average number of vehicles (summed vehicles/number of counts) for each location and month, based on the data for Sundays only. This highlights the strong differences between seasons and individual parking locations.

Table 1: Averaged number of vehicles recorded on a count in each location and month during 2019. Based on the data from Sundays only. Cells are highlighted in a colour ramp from blue to red to show smallest to largest values. Thornham figures relate to the NWT car park and adjacent roadside parking. Data provided by NWT.

Parking location	J	F	M	A	M	J	J	A	S	O	N	D	All months
n	4	4	5	2	4	5	3	4	4	3	4	5	47
Firs	4.8	16.5	8.0	5.0	14.0	22.8	32.0	49.8	18.3	12.0	9.3	4.4	16.3
NOA	1.3	2.8	1.0	1.5	2.8	1.6	2.3	22.5	5.5	3.3	2.5	1.2	4.0
Saltings	2.5	4.5	2.0	1.0	2.8	4.6	4.0	11.5	4.5	2.3	2.5	1.4	3.7
Golf Course	9.0	16.8	7.6	4.0	10.3	21.0	22.3	74.3	12.5	13.3	7.8	9.4	17.6
Road	7.3	8.0	5.0	3.0	4.5	6.8	7.7	7.8	7.8	7.3	8.5	9.2	7.0
Thornham	15.0	27.0	13.8	8.5	16.3	22.4	25.0	45.3	23.5	15.7	20.3	14.0	20.8
All locations	39.8	75.5	37.4	23.0	50.5	79.2	93.3	211.0	72.0	54.0	50.8	39.6	69.5

2.31 These counts were extrapolated to give an overall estimate of visitor numbers. The extrapolation was made using daylight hours in each month and assuming that the count represented the peak access across the day. Supporting information on group size, visit duration, percentage of visitors arriving by car and the ratio of weekday to weekend visitors were extracted from visitor surveys (Panter et al., 2017)[12]. The visitor survey data provided values specifically for Holme for winter and summer and on both weekdays and weekends and the difference was averaged for the remaining months.

2.32 The extrapolation in visitor numbers from the data in Table 2 gives an estimate of around 290,000 visitors across the all the car parks and extrapolating for all other visitors not arriving by car. This is a guide a very approximate estimate only, as itis based on single counts of vehicles at a moment in time on 47 weekends in 2019 to give an estimate of all visitors, and therefore we advise considerable caution with this figure.

Table 2: Summary of extrapolation from the vehicle count values to an estimate of total visitors.

Month	Mean number of vehicles across all car parks on a single count around midday at a weekend	Approximate daylight hrs (middle of the month)	Estimated number of visitors on all weekend in 2019 by car	Estimated number of visitors on all weekdays in 2019 by car	Estimated total vistors by car	Estimate of total visitors (including non-car)
Jan	78.8	08:13	4,508	3,925	8,434	10,207
Feb	123.5	09:56	8,329	6,990	15,319	18,749
Mar	79.6	11:50	7,790	6,030	13,820	17,105
Apr	58.5	13:56	5,256	5,803	11,059	13,835
May	95.0	15:45	9,404	11,742	21,146	26,704
Jun	111.8	16:48	14,384	13,438	27,822	35,568
Jul	128.0	15:30	11,848	17,032	28,880	37,102
Aug	246.5	14:45	25,317	28,096	53,414	67,903
Sep	109.8	12:41	10,047	9,565	19,611	24,595
Oct	94.3	10:38	6,671	6,943	13,614	16,822
Nov	86.0	08:55	5,949	4,386	10,335	12,549
Dec	75.8	07:43	4,705	3,105	7,811	9,311
		Total			231,264	290,449

[12] Figures for a summer, weekday and weekend, and winter, weekday and weekend. Average duration (hrs) taken as; 1:16, 2:08, 1:14 and 1:56 respectively. Average group size for a car as; 1.88, 2.12, 1.40 and 2.30 respectively. Percentage arriving by car as; 74.3%, 67.6%, 76.9% and 83.3%. Ratio of people on weekdays to weekend was 0.50 in summer and 0.27 in winter.

2.33 In addition, in 2019 NWT deployed a vehicle counter at the gate shed in the Saltings car park which will have recorded vehicles in the Saltings, Firs and NOA car parks. The NWT estimate that the count for 2020 will be over 30,000 cars by end of year. This includes periods of reduced footfall when the car parks were closed during the coronavirus lockdown and subsequent uplifts in access following this. Extrapolated using an average group size of 2 per vehicle (60,000 visitors) and the evident higher levels of access at other locations (roughly 1.9 times greater, Table 1), would suggest around 115,000 visitors arriving by car alone.

2.34 Similarly, Holme Parish Council have installed a traffic monitor on lower Beach Road. The system and site of the monitor was approved by the Highways Authority and this counted all north-bound vehicles, travelling at speeds of more than 5mph (and can include some local residents). The data collected between 13th January and 31st October 2020, but excluding the period 5th March to 5th May, totalled approximately 229 days. During this period a total of 57,776 vehicles were recorded, equivalent to around 252 vehicles a day. Extrapolating for a group size of 2 per vehicle per would give an average of 504 visitors a day from the Beach Road, Saltings, Firs and NOA car parks. Extrapolating for all year gives a figure 183,960 visitors a year. However, this is very approximate and has significant caveats. Obviously 2020 data is highly unusual; the period includes some of the coronavirus 'lockdown' when some visitors may be deterred, but others have visitors more and overall, there has been a significant increase in visitors during the pandemic.

2.35 These different approaches provide a range of estimates and do not converge on a single clear estimate. Estimates appear to be between 100,000 to 300,000 annual visitors. Further monitoring is needed and will be a key part of the actions needed in the future.

Other visitor survey information

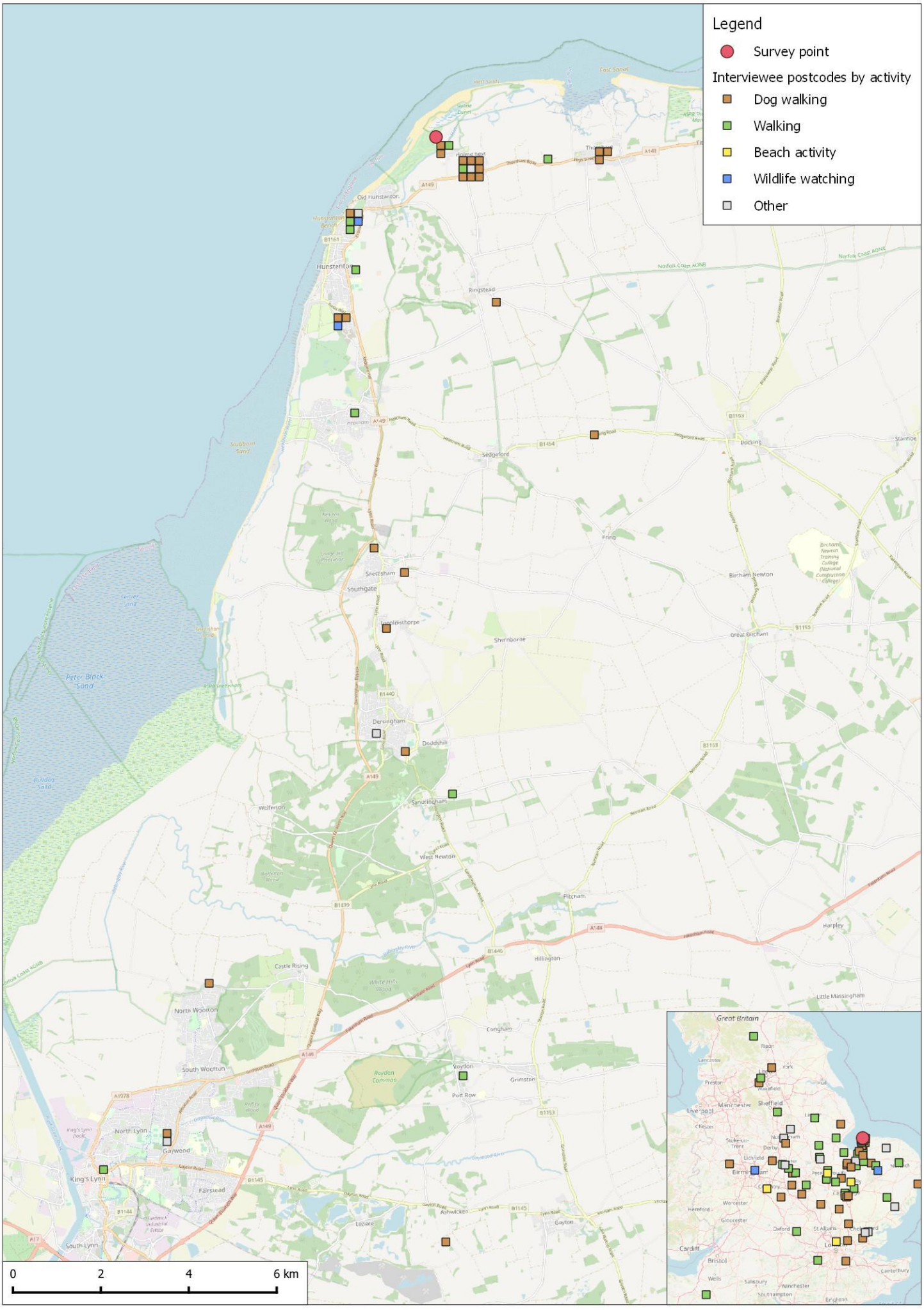
2.36 Visitor interviews and counts were undertaken at the Beach Road car park in 2016 (Panter et al., 2017). These were part of surveys across important nature conservation sites in Norfolk and the surveys predicted an overall increase in visitor numbers of 14% as a result of the scale of house building set out in the current plans for local authorities across Norfolk. The study did not try to predict the further change as a result of increased visitor numbers originating from outside Norfolk.

2.37 The surveys at Holme took place during both the summer and winter periods (the questionnaire for reference is included in Appendix 1). 72 interviews were conducted during the summer and 37 during the winter. The main activity was dog walking (44% of interviews in the summer, 43% in winter), and other activities included walking (28% summer, 24% in the winter) and beach activities (10% in the summer but none in the winter). Relatively few (7% in summer, 4% in winter) cited wildlife watching as their main activity. Most interviewees (71% in summer, 82% in the winter) had arrived by car. During the summer nearly half (47%) were visitors on holiday in the area and this compared to just 8% in the winter. Half of all interviewees at Holme lived within a 14km radius in the winter, extending to 86km during the summer (reflecting the increase in holiday makers from further afield) and the postcode data are shown in Map 3. During the summer the median route length (i.e. distance walked on the visit) was 2.35km and during the winter it was 3.05km; route data as plotted during the interviews are shown in Map 4.

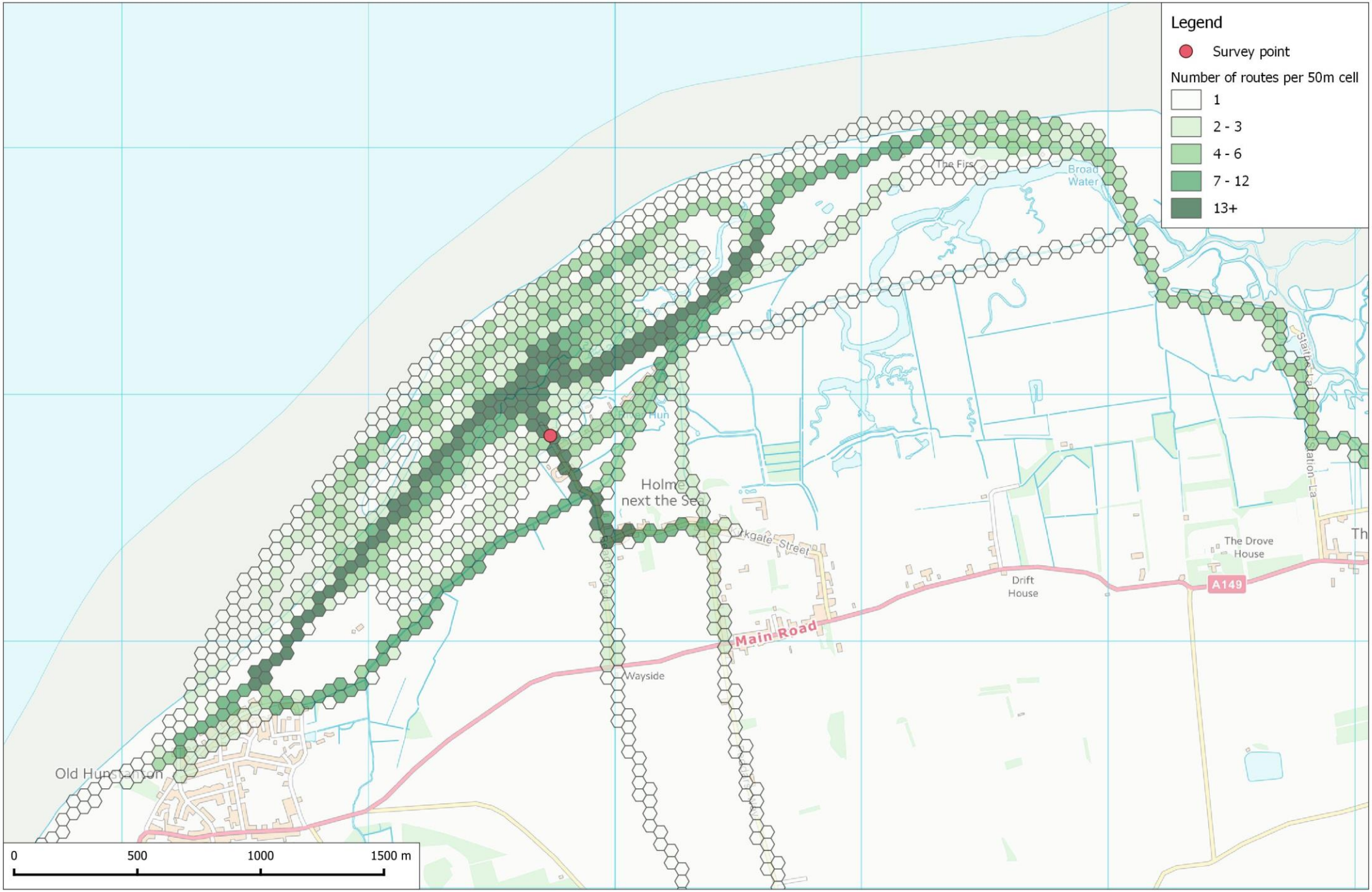
2.38 NWT undertake visitor surveys at the Firs, using a standard questionnaire and surveys run by volunteers and covering different times of year. 237 interviews were undertaken in 2018 (the most recent year available). The data indicate around a quarter of visitors are sightseeing while 68% indicated a degree of interest in wildlife. Over half (54%) had visited before/been visiting for a long time (with on average each interviewee having visited around 8 times before). The main reason for visiting the reserve was to walk (coastal), with dogs, on beach (43%) and visiting the café/refreshments (39%) was also important for many. Facilities and the visitor experience (shop and catering facilities) were all scored highly, with the toilets the only element scored less than 8/10 on average.

2.39 The NWT surveys from 2018 reveal a typical group size of 2.4 adults, 1.6 children and an average adult age of 58. The typical dwell time was 2 hours and 41% NWT members. Around a third (34%) of interviewees indicated they were Norfolk residents and 66% came from outside Norfolk. 65% of interviewees were on holiday.

Map 3: Visitor postcodes from the 2015-16 visitor surveys at Holme. Overlapping postcodes have been displaced so that all can be seen.



Map 4: Density of visitor routes from the 2015-16 visitor surveys at Holme



Site promotion

2.40 Information on visiting, recommended routes or other suggestions for recreation in the area appear on the following websites[13]:

- NWT: Reserve visiting information, details on facilities and wildlife.
- The NOA website has a visiting the obs page with information on parking, hides etc.
- Visit Norfolk: page on Holme-next-the-Sea beach (with focus on archaeological interest) and separate page on the village, with brief summary of village and coastal area; links to tourist information centre at Hunstaton.
- Explore Norfolk: extensive information on Holme beach, describing it as a hidden gem. Page directs people to park in the car park at the end of Beach Road and directs visitors across the golf course to the beach. The page states that the beach backs onto the NWT reserve and indicates dogs should be under control if that area visited. Otherwise the beach is described as "a wonderful dog friendly beach as there are no restrictions at all". The Dog friendly beaches section of the site also highlights Holme-next-the-Sea as good for dog walking with no restrictions (though it states once off the beach you would need keep your dogs under control).
- Holme-next-the-Sea village website: includes information for visiting with a map showing three circular walks.
- Great British Dog Walks: promotes the walk from Old Hunstaton to Holme Village along the beach. Highlights the Holme area as not busy.
- The beach guide: highlights Holme as a gem of a beach and never busy. Summary information on heritage etc.
- View Ranger features the route from Hunstanton to Holme Village, with a loop around the golf course. Route is described as dog and child friendly.
- The birding for all website has extensive information on the reserve and visiting, with photographs of interpretation, trails maps, descriptions of the hides etc.

[13] Websites have been found by internet searches using "visiting Holme-next-the-Sea" and following additional links or checking variations in the wording as relevant.

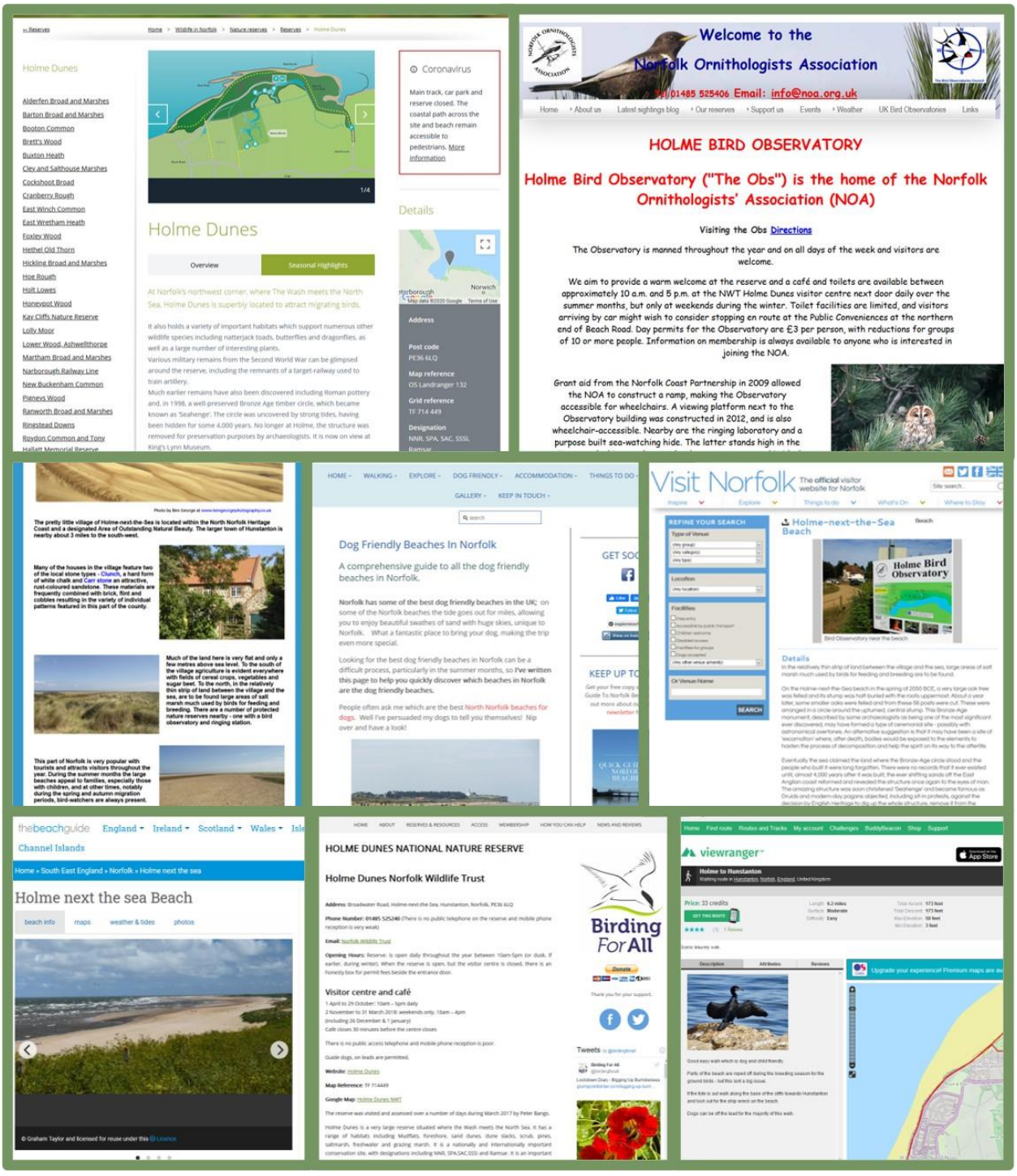


Figure 3: Home pages of the websites examined.

Table 3: Top 10 words on each of the 10 websites. Values in brackets show the frequency as a percentage of all words on each website. Word frequency counts created at https://countwordsfree.com/

	NWT	NOA	Visit Norfolk	Explore Norfolk	Dog friendly beaches section	Holme-next-the-Sea village website	Great British Dog Walk	The beach guide	View Ranger	Birding for all
1	wildlife (2.4%)	observatory (3.8%)	norfolk (1%)	beach (2%)	beach (2%)	holme-next-the-sea (1%)	holme (1.7%)	beach (4.2%)	route (5%)	with (1.1%)
2	dunes (0.8%)	holme (1.3%)	were (0.4%)	norfolk (2.6%)	friendly (2.6%)	village (0.4%)	beach (1.5%)	holme (1.9%)	my (13%)	path (1%)
3	holme (0.8%)	norfolk (1.3%)	with (0.4%)	holme (1.2%)	norfolk (2.3%)	photo (0.2%)	walk (1.2%)	beaches (2%)	create (7.5%)	there (1.1%)
4	nature (0.8%)	bird (0.6%)	about (0.4%)	beaches (1.2%)	beaches (2%)	this (0.2%)	friendly (1.9%)	this (1%)	account (1.8%)	from (0.8%)
5	reserve (1%)	weather (1.1%)	beach (0.4%)	coast (0.7%)	walk (0.7%)	visitors (0.3%)	your (1%)	next (0.8%)	from (1%)	this (0.7%)
6	norfolk (0.9%)	welcome (1.1%)	lynn (0.3%)	friendly (1.1%)	restrictions (1.9%)	with (0.2%)	norfolk (1.5%)	under (1%)	hunstanton (2.5%)	visitor (1.1%)
7	visitor (0.8%)	association (1.3%)	miles (0.4%)	golf (0.5%)	summer (0.9%)	information (0.3%)	this (0.8%)	east (0.7%)	review (1.5%)	centre (0.9%)
8	centre (0.6%)	building (0.9%)	after (0.3%)	that (0.5%)	your (0.6%)	norfolk (0.2%)	hunstanton (1.6%)	friendly (1.3%)	sign (1%)	over (0.5%)
9	from (0.4%)	from (0.5%)	king's (0.4%)	which (0.7%)	very (0.6%)	site (0.1%)	next (0.6%)	hunstanton (1.7%)	this (1%)	reserve (0.9%)
10	marshes (0.7%)	hide (0.5%)	large (0.3%)	it's (0.5%)	with (0.5%)	beach (0.1%)	down (0.5%)	licence (1.2%)	tracks (1.5%)	wheelchair (1.1%)

Figure 4: Wordcloud summarising the most recent 100 Tweets that include the words 'Holme' and 'Beach', as extracted on 3 June 2020. Larger words indicate a higher frequency. Only words mentioned at least twice are included and the words 'Holme' and 'Beach' themselves are not included. Websites used to extract, clean and present this data were: exportcomments.com, textcleanr.com, countwordsfree.com and wordclouds.com.

Nature conservation interest

Designations

2.41 The following nature conservation designations apply to all or part of the focal area (links relate to the relevant page on Natural England's designated site view):

- North Norfolk and Gibraltar Point Dunes Special Area of Conservation (SAC);
- Wash and North Norfolk Coast SAC;
- North Norfolk Coast Special Protection Area (SPA);
- North Norfolk Coast Ramsar;
- Holme Dunes National Nature Reserve (NNR);
- North Norfolk Coast Site of Special Scientific Interest (SSSI).

2.42 In addition, a proportion of the site is registered common land. NWT have a specific restriction in place for part of the commons regarding open access.

Species and habitats vulnerable to recreation

2.43 Potential nature conservation issues associated with recreation (adapted from Liley, 2008; Panter et al., 2017) include:

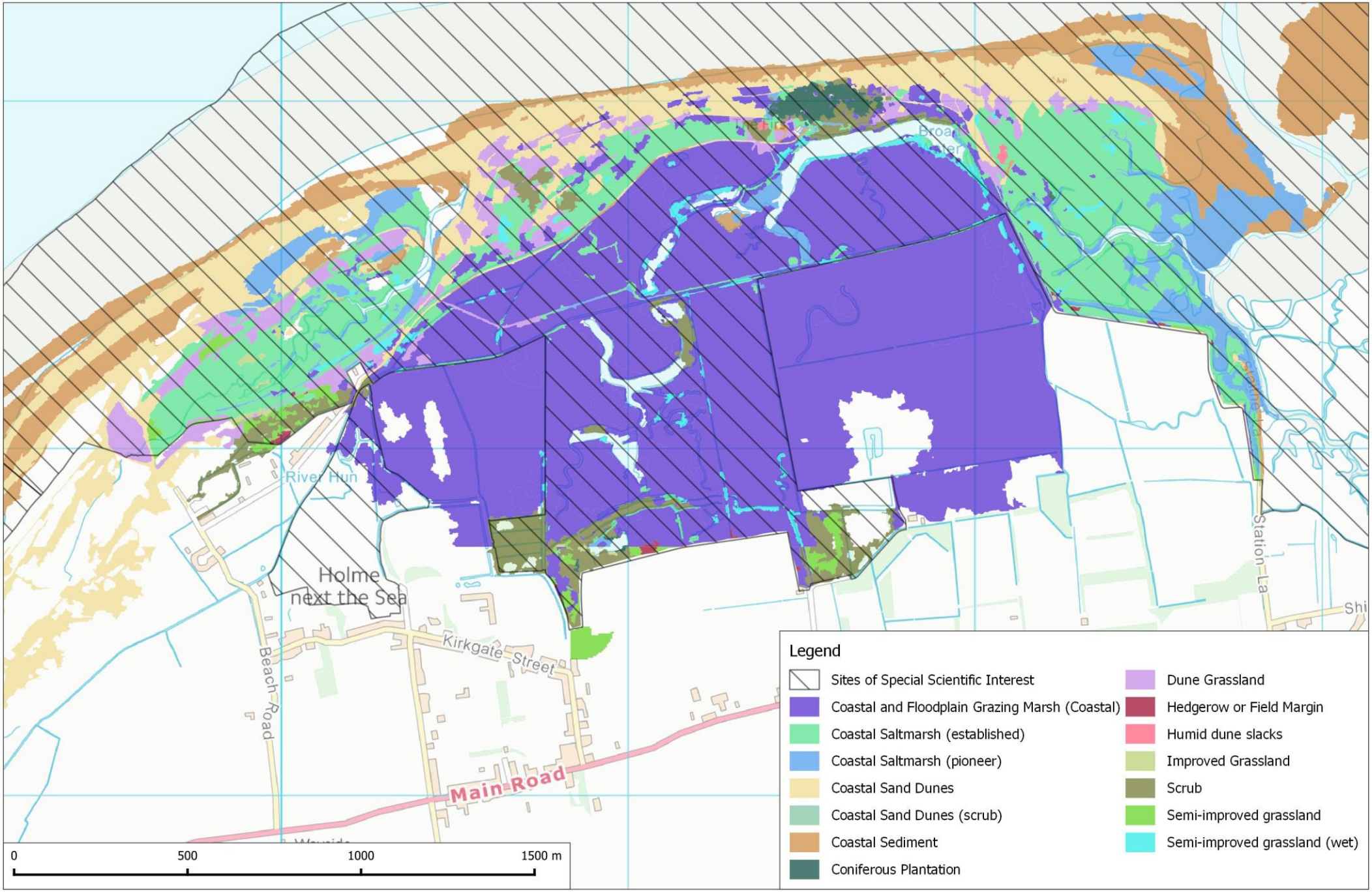
- Direct mortality to winter or breeding birds (e.g. trampling of nests/young);
- Disturbance to breeding birds (from people/dogs leading to reduced breeding success/productivity);
- Disturbance to wintering/passage birds;
- Disturbance to non-avian interest;
- Trampling (which can be beneficial, but high levels may be detrimental to the sand dune vegetation communities depending on its extent and intensity, and the existing conditions);
- Erosion (linked to vegetation loss/trampling);
- Eutrophication (e.g. from dog fouling);
- Contamination (e.g. introduction of non-native species, spread of pathogens);
- Increased fire risk;
- Issues achieving the necessary conservation management (e.g. grazing);
- Potential opposition to nature conservation management, including damage to infrastructure such as fences.

2.44 Site features that are vulnerable to recreation impacts are summarised in Table 4. Features have been identified based on a review of relevant citations and species data for the site and discussion with relevant parties. The list is intended to simply highlight those species potentially vulnerable. Spatial data, as available, are summarised in Map 5 (habitat data) and Map 6 (species). Map 6 includes approximate areas of beach that are particularly suitable for breeding birds – Little Tern, Ringed Plover and Oystercatcher.

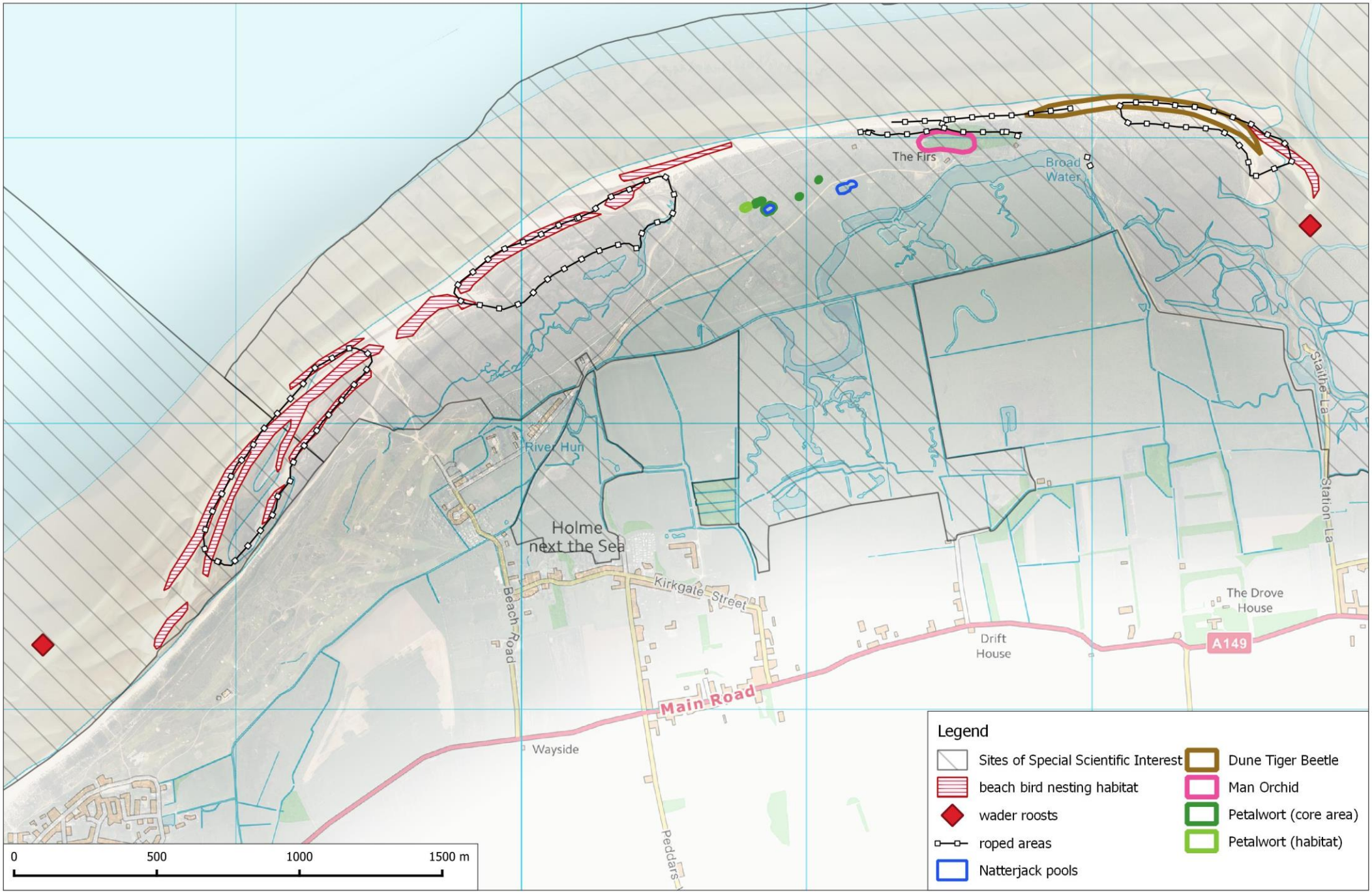
Table 4: Site features vulnerable to recreation impacts

Feature	Impact pathways					Notes
	Disturbance & direct mortality	Trampling	Eutrophication/ Contamination	Fire	Interuption to site management	
Breeding Ringed Plover	✓					Nests on open beach and edge of dunes; disturbance will influence where birds nest and breeding success (Liley and Sutherland, 2007). Current management involves temporary visitor exclosures.
Breeding Little Tern	✓					Nests on open beach; disturbance will influence where birds nest and breeding success (Ratcliffe et al., 2008; Tratalos et al., 2005). Current management involves temporary visitor exclosures.
Breeding Oystercatcher	✓					Nests on open beach; disturbance will influence where birds nest and breeding success. Current management involves temporary visitor exclosures.
Wintering waders and wildfowl	✓					Oystercatcher, Knot, Bar-tailed Godwit and a range of other waders use the intertidal areas, both for feeding and roosting (with some exceptional counts at high tides). Disturbance will result in avoidance of otherwise suitable habitat and also energetic costs. Wigeon, Pink-footed Geese, Brent Geese and other wildfowl use the grazing marsh, saltmarsh and sand/mud flats over the winter.
Petalwort		✓	✓	✓	✓	SAC interest feature, rarely recorded and few recent records.
Natterjack Toad	✓	✓	✓	✓	✓	Relatively unaffected by public access (Edgar, 2002) however risks from disturbance (people removing driftwood etc.), and contamination of breeding pools by dogs a potential issue (Groome et al., 2018);
Man Orchid		✓		✓		Small colony near pines/visitor centre.
Dune Tiger Beetle	✓	✓				Tiger beetles potentially vulnerable through disturbance and habitat modification (Arndt et al., 2005)
Dune habitats		✓	✓		✓	While some trampling and ground disturbance may be beneficial, foredune habitat particularly vulnerable to trampling damage, resulting in loss of vegetation and erosion (Lake, 2010; Lake and Liley, 2018).

Map 5: Habitat data (provided by Norfolk Biodiversity Information Service).



Map 6: Approximate locations of key species.



Heritage interest

2.45 The area has significant historic interest, with features ranging from the prehistoric up to the World Wars, but arguably some of the most important features found have been from the Bronze Age. Full interactive maps of all known features are available via the Norfolk Heritage Explorer.

Seahenge (Holme I) and Holme II

2.46 Holme dunes provides the site of a key Bronze Age feature of extreme national importance, widely referred to as "Seahenge". The timber circle dating back to around 2050 BC, comprised a central inverted oak tree stump, which was surrounded by a circle of upright split oak timbers. At the time of its construction, the timber circle is thought to have been located on a saltmarsh, but over time this developed into freshwater marsh and subsequently sea level rise has found the feature located on the intertidal off Holme Dunes. The feature became slowly exposed in the 1990s and because of the continued threat of erosion, the decision was taken to remove the entire structure to preserve the timbers in 1998. There is now a display in the King's Lynn Museum featuring timbers and the stump.

2.47 The timber circle of "Seahenge" is referred specifically to as "Holme I" – distinguishing it from a second similar timber circle "Holme II" around 100m to the east, which slowly revealed by erosion in the late 1990s and early 2000s. This second circle was thought to have been built at the same time, and places the original "Seahenge" within a what seems to be a wider landscape of importance to Bronze Age people. Both previous and continued smaller Bronze Age finds along the intertidal habitat include the discovery of others timber structures, coppiced trees, and metal tools. Holme II was buried by sand between 2005 and 2010, and is currently eroding again – it was predicted that nothing would remain by 2017 (Tyers, 2014).

2.48 While nothing remains of "Seahenge", Holme I following the excavation, parts of the second feature of Holme II may still be present and potentially a number of other features could be within the area. There was also even thought to be a third circle further off the coast, towards Beach Road in the 1980s

2.49 Considerations of these features from a visitor management perspective are important. "Seahenge" made headline news and there was a significant visitor draw and the possibility of damage to the historical feature, other

potential features, and Holme Dune's habitats and species. The Seahenge captured the public imagination and is exhibited locally. Holme II may still be visible, although mostly eroded, and the area still is known for these features and thus attracts visitors. There also still exists the potential concerns for damage to historical features, which are as yet to be discovered. Undoubtably the area continues to attract those who are interested in the heritage and examining the intertidal and dunes.

Other historic features

2.50 Other scattered Bronze Age and even Stone Age artefacts have been found within proximity of Holme I and II, including timbers, metal tools, animal bone and flint artefacts (the latter of these mostly inland, whereas others were mostly intertidal).

2.51 On the intertidal there have been a few finds from other periods of history, including Roman pottery, but primarily some notable 19/18th century shipwrecks. The other features from the post medieval period are largely related to sea defences (sea wall banks), land reclamation (ditches and banks) and further inland, evidence of this from ridge and furrow.

2.52 Holme Dunes was an important site during WWII both as coastal defence and military training. There was a complex installation here, along with the continued line of coastal defences including pillboxes, tank traps and a minefield. Many of these features were subsequently removed or demolished. But others are still present, often overgrown, within the dunes and along the coastal path. These include some of the pillboxes, concrete and brick blockhouses and occasional concrete mortar emplacement. There were also many earthworks, including trenches and banks, many appear to have been infilled, but some surviving linear banks (cleared to create flat firing ranges made for mobile target training) can be seen.

2.53 Finally, the study area is largely designated as a Heritage Coast for these important heritage features, as well as the natural beauty, and its flora and fauna (North Norfolk Heritage Coast).

2.54 It should be noted that the Heritage Coast area finishes at Beach Road, extending up the village of Holme, and the A149, and as such the vast majority of the study area is within the Heritage Coast.

Landscape

2.55 The key landscape designation for the area is its recognition as an AONB. The Norfolk Coast AONB stretches for around 90 km of coastline, which encompasses the entirety of the study area. Natural England's National Character Area profiles recognise a broadly similar stretch of the coastline as profile "77: North Norfolk Coast. There has also been a Landscape Character Assessment for the King's Lynn and West Norfolk Borough, which recognised a distinct landscape type of 'Open Coastal Marshes' for this whole open northern coastline of the local authority area (Chris Blandford Associates, 2007).

2.56 These various landscape classifications highlight the distinctiveness of the stretch of coastline in Norfolk. Holme Dunes sits within this landscape of wide-open space, which provide a sense of remoteness and tranquillity. The habitats within the area echo those throughout this area; of extensive salt marsh, shingle banks, sand dunes, brackish lagoons and reedbeds. These habitats are largely flat and open, with muted colours, allowing people to experience views of wide-open skies, uninterrupted by little in the way of visible built structures and landmarks. They provide landscapes with a sense of calm and stillness, with variety of textures and only the subtle sense of movement from occasional birds in flight. The area is sparely populated, and lack of the development emphasise the sense of tranquillity.

2.57 The documents recognise these landscape's properties are key to its thriving local tourism industry, which supports businesses and communities. However, all go on to state the potential conflicts, with heritage, biodiversity, the sense of tranquillity and the community services themselves.

Other plans and wider context

2.59 The following published documents provide important context and are therefore relevant to this plan:

2.60 There is an existing site management plan for Holme Dunes, produced by the NWT. This runs for 5 years (to 2025) and sets out the habitat management, monitoring, visitor management and other duties undertaken by the Wildlife Trust.

2.61 The Holme Neighbourhood Plan guides development in the parish and includes a set of 25 policies aimed at addressing the impacts of climate change, a declining resident population and the benefits of being a popular destination, weighed up against the very assets that attract those visitors in the first place. Policy HTNS 3 identifies a protected sites zone (42% of the Parish) where the aims include dissipating visitor pressure, reducing traffic and car parking while HTNS 4 sets out an adaptive and resilience zone where new access provision and habitat creation is anticipated. The plan (as of July 2020) had been through examination and will be official once it has been through a local referendum.

2.62 The North Norfolk Shoreline Management Plan is a high-level policy document, produced in 2010, in which the organisations that manage the shoreline set their long term plan. The SMP aims to identify the best ways to manage flood and erosion risk to people and the developed, historic and natural environment. The plan identifies the dunes at Holme for minimum intervention while the sea wall running north-south at Thornham is identified as 'hold the line', with the potential for managed realignment from 2055, meaning the key area for this plan would be intertidal.

2.63 The draft Norfolk Coast AONB five year strategy 2019-2024 sets out the duties of the Norfolk Coast Partnership and presents a vision and objectives for the management of the coast between King's Lynn and Horsey. It highlights that there were an estimated 4.5 million visits made to the AONB area in 2017. The plan sets a vision for recreation such that it "will be managed in a way that provides opportunities for all users, visitors and residents, to experience and enjoy the natural beauty of the Area without conflicting with it or with other people's enjoyment of it. Public access routes and areas, both statutory and discretionary, together with non-car forms of transport, will form an integrated network that is widely used by both local residents and visitors. Information on these, and on areas suitable for a

variety of recreational activities, will be easily and freely available to the public."

2.64 Dating back to 1995, visitor zoning maps were produced by the Norfolk Coast Project (now the Norfolk Coast Partnership) which give a strategic overview to the coast and recreation. Holme Dunes were identified at the time as under pressure from recreation and one of the areas where the aim should be to reduce visitor pressure and not promote.

2.65 The Norfolk Coast Partnership has undertaken various feasibility studies in order to apply for funding for an environmental heritage project on the River Hun, and its freshwater marshes, the 'HunStory'. The proposed work would have stretched over approx. 5 years and evidence gathering has identified potential for new access links and paths, creating for example a circular route from Old Hunstanton.

2.66 Natural England submitted proposals for the England Coast Path section between Hunstanton and Weybourne in 2018. The proposals exclude access within the vegetated dunes and the fenced bird breeding areas (1st April – 15th August).

2.67 Holme lies within King's Lynn and West Norfolk Borough. The Local Plan for the Borough is currently made up of the core strategy and a site allocations and development management policies plan. The Borough Council is currently working on a Local Plan Review. The draft Review includes policy LP24 which includes provision to enhance recreational provision away from European sites and limit recreational pressure on nearby conservation sites. Measures proposed include contribution to enhanced management of nearby nature conservation sites and a programme of publicity to raise awareness of relevant environmental sensitivities. Local authorities across Norfolk have been developing a county-wide Green Infrastructure and Recreational Impact Avoidance and Mitigation Strategy which will provide a consistent approach to mitigation for recreation impacts from new housing.

3. Issues and Opportunities

Increasing numbers of visitors

3.1 A primary cause for concern is the growing recreation pressures in the area, both specifically at Holme Dunes and the across the wider coast. This pressure comes from tourists from across much of England, but also local use. There is a trend across the AONB of increasing day visitors, with little change in overnight visits. On peak days the reserve car park can't cope with the numbers of vehicles, and this spills over to many of the other local car parks (e.g. Beach Road) which can fill to capacity. The levels of access mean congestion and irresponsible parking through the village, resulting in issues for access by local residents and importantly for emergency access. The other parking locations, such as Thornham Old Harbour, are also then well beyond capacity and Thornham can also then suffer from congestion. Often, people cannot easily be displaced to other coast localities as some sites the same issues.

3.2 The high levels of visitor access mean less space for people and can result in conflicts between user groups and mix of activities – for example, beach users, birders and dog walkers. There is also an increasing range of activities being undertaken, with novel activities, such as drones, which can be extremely harmful to ground nesting birds.

3.3 Increased visitor use also requires increased maintenance, especially the Broadwater Road and Norfolk Coast Path. The Norfolk Coast Path is located on the coastal sea defence and as increasing levels of access can result in increased erosion risk.

3.4 The opportunities associated with the high levels of access are the potential revenue that these bring to the NWT, local businesses and communities. In addition, there is the potential to engage and inspire a wide audience, including many whose primary interests do not necessarily relate to nature conservation or the environment.

Visitor behaviour

3.5 For many visitors, particularly in the busy summer periods, seeing wildlife or the nature conservation importance of Holme Dunes is of little interest to the coastal experience they are visiting for. The beach access is the key draw

for many and visitor behaviour relates to expectations of visiting the beach rather than a nature reserve.

3.6 NWT reserve staff log incidents and these data highlight of the increasing challenges for site staff in managing recreation and visitor use. The nature of this incident data is anecdotal but give a flavour of the issues seen. The number of incidents from 2019 relating to visitor access are summarised by month in Figure 5 and by type of incident in Figure 6. It can be seen that incidents peaked in May rather than August and that the majority of incidents related to dogs, for example dogs being off-lead and out of control, entering the breeding bird enclosures etc.

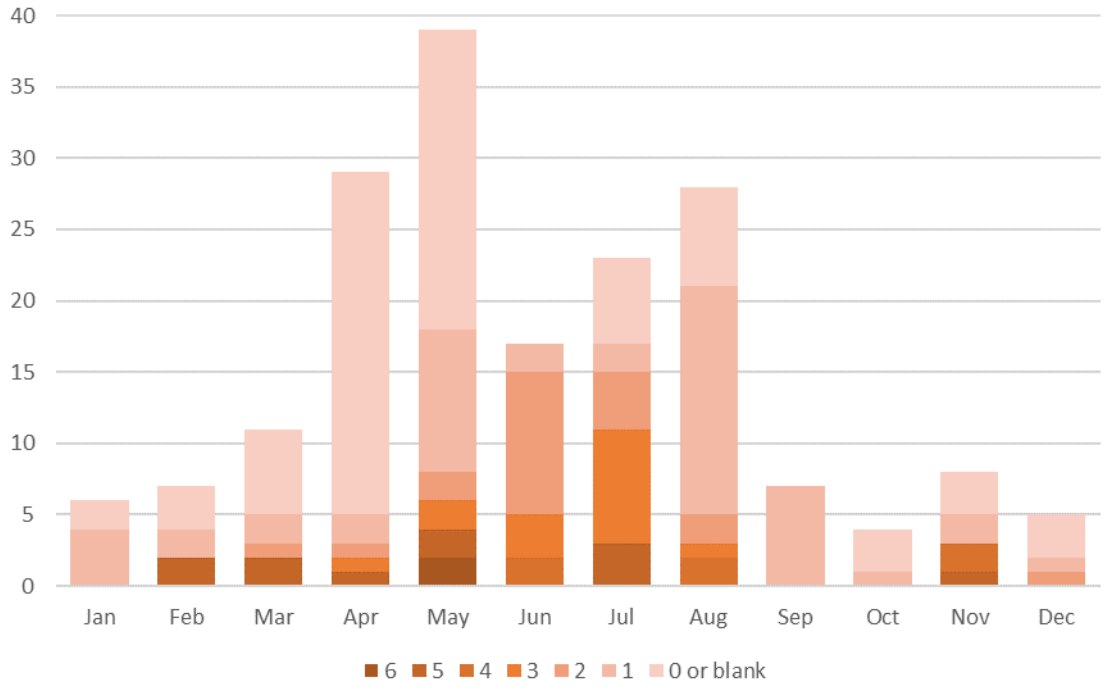


Figure 5: Number of incidents logged by NWT at Holme in 2019, by month and severity (scale 0 to 6)

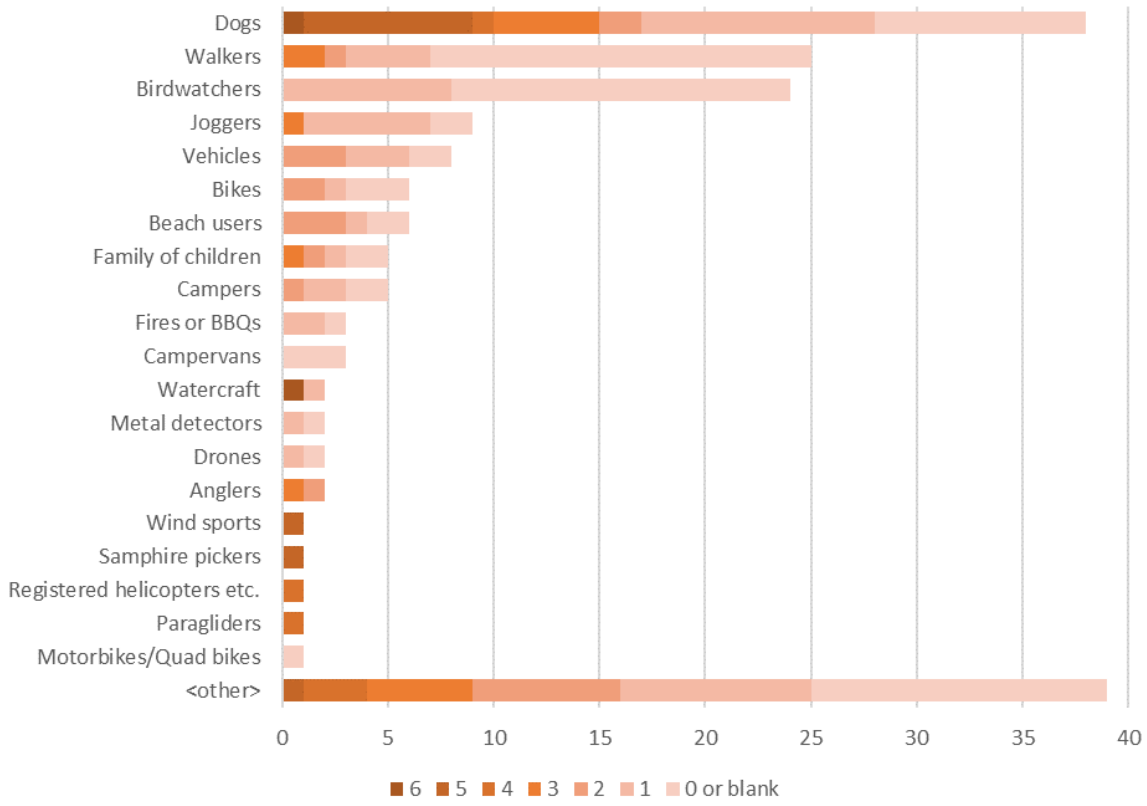


Figure 6: Number of incidents logged by NWT at Holme in 2019, by type and severity (scale 0 to 6)

Amazing wildlife

3.7 Holme Dunes is a flagship coastal reserve of international importance, with amazing wildlife spectacles. There is much to inspire visitors at all times of year. Wildlife that is likely to particularly draw and inspire visitors include:

- Passage birds in the dunes, pines and at sea;
- Huge flocks of wintering and passage waders;
- Breeding birds associated with the beach, the dunes, the grazing marsh and pools;
- Orchids and the dune flora;
- Calling Natterjacks.

3.8 However, many of these are vulnerable to disturbance and the beach has declining bird interest – both breeding and wintering populations. For example, the number of Ringed Plover pairs in 2019 was just 11 (Figure 7), less than a third of peak counts. This is a pattern across the North Norfolk coast and disturbance is one of the issues driving the decline (Liley and Sutherland, 2007). Witton (2018) compared visitor numbers in the vicinity of exclosures for beach nesting birds along the North Norfolk Coast. Her results

suggest particularly high concentrations of people at Holme compared to other parts of the coast.

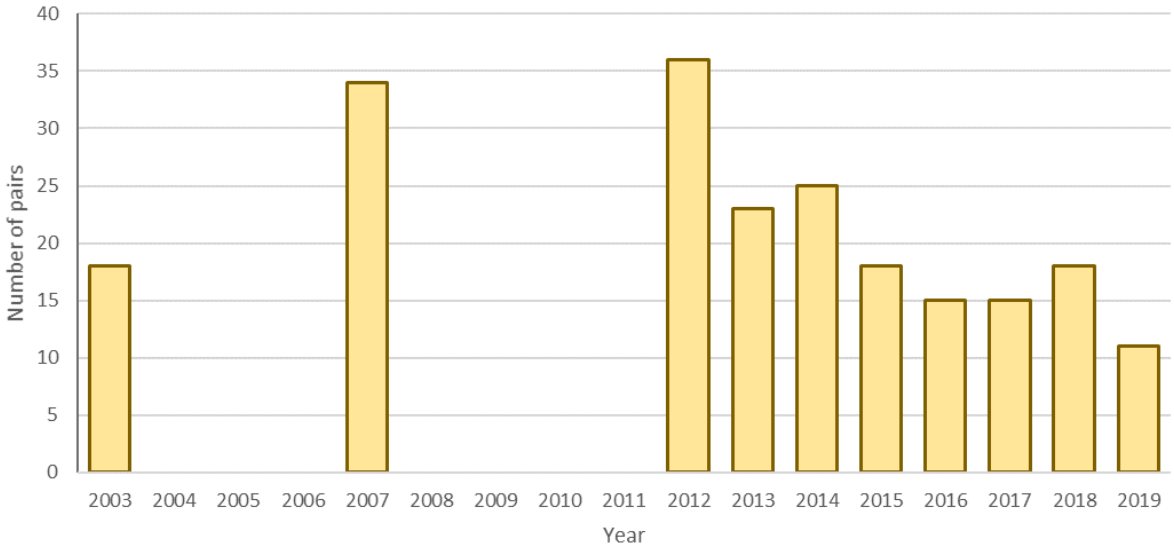


Figure 7: Numbers of Ringed Plover pairs nesting on the stretch of coast between Old Hunstanton and Thornham Channel, by year. Blanks represent no data. Data provided by Andy Brown/Neil Lawton.

3.9 The continued presence of Little Tern and Ringed Plover nesting at the site should be celebrated and a focus for conservation effort. These species have been lost from many coastal sites in southern England and there are opportunities to show these birds, discuss the ecology and the challenges they face to visitors at Holme.

3.10 Numbers of wintering waders on the beach have also declined massively over the last 20 years or so, with the decline almost entirely driven by a decrease in Knot. Causes of the decline are hard to pin-point and may involve multiple factors. Large roosting flocks do still occur at high tide and these are sometimes flushed by people. As the habitat continues to change, it may be that the roost site becomes ever closer to the beach, which may exacerbate issues.

Car-focussed visitor dynamic

3.11 Visitor numbers have been increasing and the vast majority of these are people accessing by car. With increasing numbers of people and a car-focussed visitor dynamic there are greater issues with traffic, noise, parking and air pollution. These are highlighted in the neighbourhood plan and are a

concern for local residents and the sensitive site. Traffic along Broadwater Road is an issue for the residents here. Access to the Firs by car means people driving through the reserve which also brings challenges, for example in terms of noise pollution, dust and fumes. The traffic – particularly on busy days – will influence how visitors experience the reserve (e.g. noise, a feeling of busier and more urban areas). Furthermore, the track is costly to maintain, worsened by heavy traffic in dry summer months which can cause dust clouds (especially on occasions when traffic is travelling too fast).

3.12 The Firs is difficult to reach by public transport and current traffic levels/car-focussed visitor dynamic may deter some people from arriving by bike. Broadwater Road has the potential to provide good access for disabled and less able visitors or cyclists There is opportunities to tie into a growing desire for more cycle routes in the area and greater promotion of the cycling along this coastal stretch (e.g. joining into National Cycle Network route 1).

3.13 However, the parking at the Firs does help disperse beach access away from core areas for breeding birds. Nevertheless, reducing traffic and promoting non-car access would be excellent both in terms of the immediate local effects and long-term climate challenges.

Dynamic coastline

3.14 The changing coastline, sea-level rise and increased risk of storm surges create further challenges. The dynamic coast and wild feel of the area is undoubtedly part of the appeal of the site for recreation and is fundamental in creating the range of coastal habitats for which the site is so important.

3.15 The distribution of habitat along the beach is constantly changing and this means that over time different areas are suitable for breeding birds and equally different areas will be favoured by people. The long-term flood risk poses issues for access, reserve management and local properties. There is a balance between natural erosion processes and flooding events, similarly between creating dynamic, naturally eroding and accreting dunes and protection of the coast (protecting the residents, maintaining the sea wall). The recent flooding events have been down Beach Road (point 8 in Map 7).

3.16 The heritage interest, particularly the bronze age landscape and seahenge have caught the public imagination and while inspiring to visitors in their own right, also help to convey the issues of coastal change and dynamism of the coast.

Working in partnership

3.17 The coast is owned and managed by several organisations. There is a long history of partnership working and the Norfolk Coast Partnership functions as an umbrella body for the whole coast.

3.18 At Holme there are risks of confusion for visitors as to ownership and access rights and this is likely to result in confusion as to how visitors are expected to behave. Within a relatively small area, the land is owned, leased or managed by the NWT, Norfolk Ornithologists Association, the National Trust, Hunstanton Golf Club, private landowners and the local authority.

3.19 It is important that access management is coordinated at a broad scale to ensure consistency and join-up of measures – this is pertinent both to around Holme and the wider north Norfolk Coast. Changes in one part of the coast are simply likely to deflect issues elsewhere and therefore organisations need to work together. However, there is potential for different areas (e.g. inland sites and new green infrastructure) to absorb some of the recreational use.

Target notes

3.20 Map 7 and Figure 7 in this section provide target notes highlighting locations mentioned in the text above and show where there are particular issues or opportunities that are visible on the ground, for example erosion, trampling damage or other points of interest, drawn from a site visit in July. A selection of photos from these locations are also given in Figure 8.

Table 5: Table of target notes, id locations are given in Map 7.

Map ref	Target note
1	Old Hunstanton dunes an attractive alternative to Holme Dunes – the area has facilities and a fair amount of parking. Prices at Beach Car Park ranging between £3-£5 for a car and at the Council Cliff Car Park £7 for all day in the summer.
2	Norfolk Coast Path is becoming overgrown. More often walkers use the path to the south, beside the golf course, or walk the strandline to the north on the coastal side of the dunes.
3	More general comment (although particularly noted in this area close to the Terns), signs on fencing say do not come within 30m, but text is not visible unless within very close proximity.
4	Area apparently popular for dog walking (seemingly for access to water in the creek) – however it is close to fenced area and dog incursions seen here.
5	Area apparently very popular with dog walkers, as relatively few "beach activity" groups.

Map ref	Target note
6	People heading west from here do not seem to interact too much with the roped areas, but at higher tide states this may be more of an issue.
7	NWT notices, such as one at this point (the main NWT sign for this area), are often cracked and worn.
8	Finger post and interpretation board give a context and a "entering" feel. However the notice to dog walkers is back on the gate before the golf course crossing with several other notices.
9	Shortcut path is relatively overgrown.
10	Section seemed to be mostly beach users.
11	The lower path (alternative to NCP) appears to be becoming less well used over time.
12	Interception point for vehicles.
13	Norfolk Coast Path surfacing in this area is attractive and robust, but here people depart to follow the creek edge, so erosion to the sea wall - with additional footfall from those parking at Saltings.
14	Fence follows the creek and appears to work relatively well as a natural boundary, but dogs are encouraged into water.
15	Minor path back up to Norfolk Coast Path, but little clear link between here and this path. Also NWT signs faded and cracked.
16	Main notice to dog walkers, however many at this point appeared primarily walkers/beach activity groups.
17	Single 3m x 3m roped area - this could be viewed as confusing for visitors when in the context of other signage regarding roped areas.
18	Some shortcut or possibly people getting lost in this area, but otherwise access seems very low.
19	NWT notice regarding access land is located in the site - only time this sign was noted.
20	Clear path off NCP to the coast.
21	Scattered small NWT signs within the area. These are mostly general site signs, not specific to the location and could act as interest points to encourage access in.
22	Dunes have very little access in this area.
23	Clear path off NCP to the coast.
24	Clear path off NCP to the coast.
25	Access south of Broadwater Road is limited and to members only.
26	Interpretation here at obvious viewpoint, also from this point and heading east, south of the path, the dunes are fenced. At this point the dunes to the north are fenced for a short section and this appears to work well for reducing previous footfall.
27	Fences (electric for grazing areas and rope fence along NCP) appear to be working well to reduce footfall in this area.
28	Main access to the coast. Fences are on either some, but not always respected.
29	NOA area has comparably low access.
30	Boardwalk ramp provided a robust path on this slope to prevent the potential excessive damage.
31	Path to the north into the dunes is roped off and look like it is being respected. Path to south into noa reserve is clearly fenced and marked, although the main point at which unauthorised persons access.

Map ref	Target note
32	Access appears low in these parts of the dunes, due to the relatively recent changes.
33	Roped areas at this point appear respected and difference in footfall was clearly visible either side of the fence. Looking back west incursions were becoming more noticeable.
34	Former wooden steps, now mostly eroded away.
35	Relatively new wooden steps.
36	5m section of rope running alongside the boardwalk to prevent access into the marsh/dunes.
37	NWT notice to dog walker sign on the beach - at the main access point, but not with associated fences and can be entirely missed from others accessing elsewhere.
38	Start of the boardwalk heading to the coast.
39	Crate placed in mud to provide easy access over the muddy creek.
40	Roped fencing starts at this corner - this area is less heavily used, however incursions were noted, possibly owing to greater distance from visitor centre.
41	Thornham path receives a high footfall of visitors. Path is robust, but acts as an easy path to take people to area with no formal access or paths.
42	Very few people accessing this far, however fenced areas have a quiet and therefore "unpoliced" feel.
43	Parking here was relatively busy and informal, so some uncontrolled roadside parking. Also appears a popular area for motorhomes.

Map 7: Target Notes

Figure 8: Target note photos. Number in the corner indicates the map location in Map 7 where the photo was taken. Photos taken on Monday 20th July 2020.

4. Aims for the management plan

4.1 In this section we set an overall vision for the management plan to achieve and then various objectives that relate to that vision.

Vision

4.2 The overall vision for visitor management at Holme, and therefore the aim for this plan, is:

Access will be managed so that Holme Dunes is an inspiring place to visit, offering people a chance to connect with a wild and dynamic place where nature conservation is paramount. Visitors who enjoy the special qualities of the place will be welcomed. Overall, the levels of use and distribution of people will not cause damage to the site or impact on the species present.

Visitor management objectives

4.3 The following objectives address the vision:

- Celebrate the special nature of Holme and share that with visitors;
- Actively engage with visitors to highlight the beach areas as important for nature conservation (in addition to the dunes) and ensure protection in beach areas important for birds;
- Reduce the number of cars travelling down the track to the Firs, particularly on peak days;
- Ensure close partnership working with neighbours, wider stakeholders and community, to collaborate on visitor management and seek long-term solutions for the growing pressures of recreation along the coast.

Celebrate the special nature of Holme and share that with visitors

4.4 This objective is set in recognition that visitor numbers are increasing and this is causing some challenges. As such the area should not be overly promoted (i.e. through advertising, social media etc.) and the special (and vulnerable) features need to be recognised and understood by visitors. A high proportion of visitors come to Holme for reasons other than the nature conservation interest – for dog walkers and families the open beach is a particular draw. Innovative and inspiring ways to communicate and engage these visitors will be necessary. Bespoke measures to address targeted behaviours will be necessary.

Actively engage with visitors to highlight the beach areas as important for nature conservation and ensure protection

4.5 It is clear that many people see a clear distinction between the nature reserve (hides, pools, dunes) and the beach. It is the beach where some of the particular nature conservation challenges are focussed, as it has a particular draw for visitors, is why they visit. Particular engagement, promotion and targeted work with dog walkers is necessary. It is important to note the NWT has limited influence over land management of the beach, which is owned by the Le Strange estate.

Reduce the number of cars travelling down the track to the Firs, particularly on peak days

4.6 On busy days the car park at the Firs is at capacity and high/increasing volumes of traffic along the Broadwater Road to the Firs takes vehicles through the reserve, with associated issues relating to noise and air pollution. The objective will therefore involve measures to encourage more sustainable access to the Firs, creating a wilder and less car-focussed visitor experience to the reserve. There is a difficult balancing act to achieve here as parking at the Firs does also help to diffuse access and brings revenue for the NWT.

Ensure close partnership working with neighbours, wider stakeholders and community, to collaborate on visitor management and seek long-term solutions for the growing pressures of recreation along the coast.

4.7 The coastline is linear and the whole of the northern coast is a thin strip of land that is distinctive and draws visitors from a wide area. Changes to access to the NWT reserve will have implications for the village of Holme-next-the-Sea and nearby landowners. More widely, changes in visitor use at Holme will also have consequences for other parts of the coast. Furthermore, the nature of the coast in dynamic and long term geography will not remain the same. Partnership working will relate to how the site is promoted, how visitor use might be displaced to/from other sites and where alternative access provision might be made. Solutions will need to involve neighbouring land owners and are best sought through close partnership working at a scale beyond this plan.

5. Visitor Management Actions

5.1 In this section we set out a series of visitor management actions which will lead towards achieving the vision and objectives. These primarily address actions in and around Holme Dunes, but it is important to recognise the wider context within which Holme sits and measures also need to be coordinated around the coast. These actions are not assigned to individual organisations, but will require collaborative working across a range of partners/stakeholders.

Parking

5.2 In order to reduce visitor numbers and ensure social distancing as a result of the Covid-19 pandemic, many nature reserves in the UK have instigated an advance booking system for parking. Such a system at the Firs would have considerable merit. If the parking were restricted to bookings made in advance, on-line it would:

- Provide a means to limit the number of cars per day along Broadwater Road;
- Ensure the car park at the Firs is never over-capacity;
- Spread visitor use away from peak days (bank holidays);
- Spread visitor arrivals through the day;
- Provide a direct line of communication between those visiting and the NWT, with the booking system and email allowing key messages to be conveyed.

5.3 Covid has demonstrated that such systems can work effectively and they are not overly complex to administer or set up. Tickets could be purchased on the day (by smart phone), if space is available. Tickets can still be free to members (and even a set number reserved for members), but all visitors can be required to book prior to arrival. Spaces can be allocated for blue badge holders and hourly (or half-hourly) slots set up for arrival to ensure cars do not arrive at once.

5.4 Such an approach would provide an effective means to limit numbers giving NWT a means of planning ahead for visitor use and controlling numbers. Furthermore, those using the Firs would be mostly those who have planned to visit in advance, ensuring use at the Firs is more likely to be those likely to engage with the NWT and the conservation interest.

5.5 Booking would not apply to the NOA members, although the option could be extended if appropriate and it would even be possible for the two organisations to work closely, with a single system in place. Total spaces for the NWT could be capped with the spaces and capacity flexible and adjusted over time, through the booking approach (monitoring data will inform how well it is working and whether the cap should be changed).

5.6 An advance ticket system would probably require initial staff input to ensure it works smoothly. Bookings could be checked by a staff-member at the start of the reserve, at the start of Broadwater Road. This could be used to provide a welcoming engagement point, confirm bookings or allow NOA members through. Alternatively, bookings could be managed by checking registrations in the car park. Both are labour intensive, but over time it is likely that there may be little need for constant checks or enforcement. It would be ideal to ensure vehicles that did not have a ticket were turned back before starting down Broadwater Road, and this would require some signage and potentially an initial staff presence/ engagement point outside of the NWT. This would require agreement with an adjacent land-owner or residents in order to ensure necessary shelter/welfare facilities. In addition, there will be a need to change the parking at the Saltings, which currently functions as additional/secondary parking which visitors potentially use to avoid interactions with site staff at the Firs. The Saltings could simply be a turning space allowing those without a booking to turn back.

5.7 Such a system would be likely to mean that any visitors who are more 'spur-of-the-moment' will use the car park at Beach Road. In the long-term, involvement by the NWT in this car park would provide the opportunity to coordinate parking with the Firs (e.g. directing people who can't park at the Firs), and direct engagement with visitors here. Parking capacity could then be reduced over time at the Firs which could then become a direction for those on foot (or bicycle) walking along the coast path (or Broadwater Road) from the end of Beach Road. This would lead to Broadwater Road becoming much more attractive to cyclists and the potential for cycle hire facilities and a much reduced focus on vehicle traffic.

5.8 Parking at Old Thornham Harbour can become out of control, and is likely to become worse if used as an alternative. However, formalising parking significantly would alter the remote and rural feel of this area. The NWT are installing restricter posts in the entrance to the car-park to limit motorhomes/overnight parking. In addition, a volunteer group are undertaking sympathetic work using wooden posts at edge of marsh to limit

incursion of parking vehicles which is eroding the marsh flora (*pers. comm.* Colin Venes, Thornham Parish Council). Continued, relatively low key changes here could include wooden posts to indicate parking areas and manage verge side parking.

5.9 There is concern about parking around Holme-next-the-Sea village and vehicle numbers overall. The best way to resolve these in the long term will be through the promotion of public transport and cycling links and through signage on the main road to indicate when parking is getting full. An ideal would be to add a spur to the coasthopper bus route to include the Beach Road car-park, however this may be unfeasible due to the width of the road and limited passing places. A smaller coastal shuttle service may work or, even more ambitious would be an electric bus that was able to ferry people to key locations including the Firs (operating as a 'Park and Ride' system).

5.10 For those who travel by car, ultimately a live online system, or app, that highlights parking locations, availability and directions may be effective. This could even be complimented by electronic live parking boards on the main coast road indicating where there are spaces. This would prevent visitors from turning off the main road into Holme when locations are shown as full However this would require more thought on the signage, co-ordination and development at a coast-wide scale.

5.11 Alternative parking locations and access provision will be a further means of dispersing access and ultimately there will be merit in setting parking further back from the coast. This will require coordination outside the focal area for this plan, requiring alternative accessible greenspace and displacement of visitors. As such is a long-term aspiration requiring much more further work with many partners.

Path management

5.12 Path management should utilise the Norfolk Coast Path as a key conduit for footfall. Managed and maintained by Norfolk County Council, this path is largely robust and can accommodate pressure – although maintenance is important and there is need for further work beside the Golf Course, close to the Beach Road car park and at the Saltings. Some sections of boardwalk need repair. This is to ensure these are attractive stretches for the majority of footfall, but also to reduce erosion pressures on the sea defences and the whole path should continue to be maintained to a high standard. Improvements to the path need to be appropriate, as not to encourage

activities such as cycling or horse riding, which are not permitted on the Norfolk Coast Path. Path improvements need to matched with signage.

5.13 Ideally more visitors at the Beach Road car park could be directed onto the Coast Path, rather than straight out across the golf-course. At the moment the orientation of the car park and layout means that visitor flow is naturally straight out. Formalising the path that heads east and links to the coast path and making it more prominent may help nudge visitors to walk towards the Firs.

5.14 Other public rights of way should be maintained and while key set routes are fixed, minor paths through the dunes should be dynamic, allowed to come and go over time. Dynamic paths through the dunes should be highlighted as such, with the reasons why these changes have been made, this follows principles from the Dynamic Dunescapes projects[14]. Changes would involve path closures to allow sections to rest, done with short-roped sections, as are already used at certain points (see 36, Figure 8). Novel management is encouraged in helping encourage dynamic dunes and sand trapping. The use of other brash and fallen dead wood from the site can be positive in deterring access on informal paths and helping prevent erosion, enhancing dune resilience.

Cordoned areas for breeding birds/dune habitat

5.15 The roped cordons/temporary fencing on the open beach are essential to protect the breeding birds and dune habitat. They are put out annually in the spring and the locations are challenging to fence, due to the wind and risk of storm surges. Adequate resourcing is necessary to ensure the temporary fencing is well maintained and the locations reviewed annually, maximising the extent of habitat fenced each year. Considerable effort over decades has been put in place to protect the beach nesting birds, and this is likely to be a continuing challenge with a need to increase the level of protection.

5.16 The approach to the temporary fencing needs to be mobile and adapt to the changing habitat availability used by breeding birds. Ringed Plovers settle on territory in February and the deployment of fencing may need to be relatively early in the season – particularly if periods of good weather mean

[14] https://dynamicdunescapes.co.uk/

access levels are likely to be high at these times. Additional resources may be necessary to deploy the cordons at this time of year.

5.17 Roped cordons could have a second strand, half-way up the post to create a stronger visual barrier and make it harder for people to slip inside the cordon. There is also scope for temporary electric fencing[15], and this should be considered as a means to reduce predation as well as ensuring people and dogs remain clear of the cordoned areas.

5.18 The effectiveness could also potentially be improved by intercepting people before they reach the fence. Where a dog is roaming free ahead of a walker, the dog is likely to reach the fence before the owner has seen the signs. At present the signs are relatively small and hard to read from a distance and request visitors to remain 30m from the cordon. These signs could be made larger and set back in places so that visitors are deflected before they reach the ropes. Visitors need to be aware of the fencing well in advance and this is likely to require good communication in a range of ways – via signs, interpretation, face-face contact etc.

5.19 Short sections of fencing (single strand at 30m) could help in places by creating a secondary barrier as people approach. The logistics in terms of the number of signs required and the difficulties in fixing them securely mean such approaches require adequate resources. Ultimately staff presence will be critical to ensuring these are effective (see staffing section below).

5.20 Dogs are a particular concern and have a particular impact (Gómez-Serrano, 2020). In the medium term, there should be consideration to the implementation of dog restrictions in the key areas for breeding birds. Currently the main pieces of legislation in England which may restrict dog access in public spaces are byelaws (under powers granted under the Public Health Act 1875 and the Open Spaces Act 1906) and Public Spaces Protection Orders (PSPOs) (introduced under the Anti-social Behaviour, Crime and Policing Act 2014 to repeal and replace Dog Control Orders). Local councils are responsible for making PSPOs. In addition, section 71 of the Anti-social Behaviour, Crime and Policing Act 2014 allows bodies other than local authorities to make Public Spaces Protection Orders in certain circumstances by order of the Secretary of State.

[15] See White & Hirons (2019) for detailed information on fence types and options

5.21 There are already Public Space Protection Orders (PSPOs) in place at Hunstanton to ban dogs from April to October and these could be extended to other areas. The PSPOs do not necessarily need to involve an outright ban, but could exclude dogs from particular areas, involve a requirement for dogs to be on leads or for dogs to be put on lead when the owner is requested to do so. Ignoring a PSPO can result in a £100 fixed penalty notice or a fine of up to £1,000 if the case goes to court. Where PSPOs are in place there must be signs to show where they relate to.

5.22 The implementation of restrictions is likely to incur some hostility and opposition from the dog walking community and might be difficult to enforce. It should therefore be carefully planned and resourced. It would provide a means to prioritise nature conservation over recreation access and ensure protection if the fencing and greater levels of engagement are clearly failing. Any such scheme would require collaboration and discussion between many partners if it was to extend over a large area. Monitoring data summarised in early sections highlights the particular problems with dogs on the site and further data may be useful (i.e. number of incursions by dogs etc.) to justify the implementation of any PSPO.

Signage and interpretation

5.23 The feel of the site, influenced by on site signage and to a lesser extent warden presence, should give a seasonal character to highlight the key summer period as when respect is need to for the spring/summer breeding birds, along with the seasonal, temporary fencing. Such seasonal signage is likely to be more effective for more local, year round visitors, or those visitors who have been before at other times of the year, so may not be aware of the new seasonal sensitivities. The disadvantage of seasonal signage is the additional resource requirements.

5.24 A 'gateway' to the site from Beach Road, just after golf course is suggested. This would create a sense for visitors that they were entering a special place and one important for wildlife. It would require careful design to ensure it was in keeping with the landscape, appropriate to the location etc. and would not necessarily need to involve a physical gate or arch (however see examples in Figure 9). It could involve iconic art, for example use of timbers that echo the structures of boats and Seahenge. This would be the kind of project that could be funded through an external grant/project funding. This area is not NWT owned or managed and would require neighbouring land

owner buy in and permission. The design of this would also need to still allow emergency vehicle access onto the beach.

5.25 The signage and interpretation needs to be carefully designed to consider the areas sense of wildness and remoteness, while recognising the importance that effective signage will have in directing people

5.26 Signage needs to detail who is permitted where, for example the exclusion of cyclists and horse riders from the Norfolk Coast Path, especially as this overlaps with the Peddars Way – upon which, away from the Coast Path, cyclists and horse riders are permitted. Given the increase in 'fat bikes', which allow access onto more difficult terrain, the signage needs to address where cyclists and horse riders are permitted in the area.

Figure 9: Examples of "gateways" (Knepp, Canford Park SANG and Blackwater New Forest)

5.27 When it is necessary to replace or update current interpretation boards, these could be designed so as to have 'bolt-on' sections that are switched or changed at intervals, allowing for dynamic signage without increasing the existing number of panels.

5.28 New signage is suggested at a number of locations. Firstly, signage at the creek near the golf course (intervention 3), which seems to be a point at which dog walkers congregate and close to where disturbance events can occur. A focal dune-top interpretation (intervention 17) which is large, unusual and engaging, while remaining modest in the landscape (for example a clear plastic interpretation panel – e.g. similar to in Figure 10 but a larger landscape panel), will draw visitors here (note again this is outside the area owned by NWT). This would serve to divert visitors away from the

strandline/creek edge, in close proximity to the roped areas. Such a clear interpretation could highlight features of the landscape, such as the coastline the other side of the Wash or alternatively show the landscape at the time of Seahenge to raise awareness of the changing coastline in the past, now, and into the future.

5.29 Removal of signage which is cracked and faded, which suggests sensitivities are no longer relevant, should be replaced where appropriate, resulting in a rationalisation of signage. Locations with very little visitor footfall, where signage is more likely to increase footfall, would be best not replaced (e.g. close to Natterjack pools). Signage regarding these features should be on the Norfolk Coast Path to reduce incursions into the sensitive dune areas south of Norfolk Coast Path. Finally, as signage is gradually replaced over time it would be helpful for this to be a consistent style across the wider coastline which has been agreed upon across partners. Such a joint strategy would require consistent messaging working in partnership with the AONB and other conservation site managers across the coast.

Figure 10: An example of less intrusive clear interpretation panel.
https://www.vsba.com/projects/bayshore-center-at-bivalve-oculus-sign/

Other engagement

5.30 The visitor centre at the Firs, with the café, provides a good focal point and there could be more opportunities to use this space to highlight some of the sensitivities and the wildlife spectacle. Such engagement could be relatively low-key in terms of how it is promoted (i.e. so as not to attract more visitors), and may work to encourage people to walk from the end of Beach Road or from other access points, with the Firs becoming a destination in its own right rather than a starting point. Artwork, a short film or remote camera footage (e.g. of breeding terns or breeding waders) could act as talking points for visitors, inspire and raise awareness about some of the issues. These could be things that are funded through special projects or as opportunities arise. Camera footage could also be broadcast live and shared with other partners around the coast or used at other NWT centres (e.g. Cley).

5.31 It is clear from the review of the site promotion on the web and social media that Holme is widely promoted for dog walking and other beach activities without the wildlife interest necessarily being raised. This message needs to be changed to put the wildlife interest as key. There is scope for proactive engagement on social media and on the internet to engage with visitors, particularly dog walkers and on dog walking-focussed websites. Messages should relate to the fencing on the beach (when it goes up, why it's there, presence of wardens) and nudge visitors to influence where they go, when they should bring their dog under control etc, subtly bringing in the nature conservation interest. This kind of engagement will require dedicated effort and staff time and may be best achieved at a more strategic level, covering different sites on the coast.

Staffing

5.32 Face-face engagement with visitors on the beach and around the fenced off areas is critical to protecting the breeding bird interest. There are a range of studies which highlight the importance of such a presence (e.g. Keane et al., 2008; Medeiros et al., 2007) and prior experience at Holme and on the Norfolk Coast indicates that the presence of a ranger/warden is critical. Key periods are from late February through into July (breeding birds), with further merit extending coverage through the visitor peak period and into the autumn as wintering bird numbers build. While the focus would be protecting beach-nesting birds, an additional role of a ranger could be to

watch for fires around the dunes. Such warden/ranger presence is required each year and potentially requires a minimum of 1.5 full-time equivalent posts over the April – July period, with the scope for less staff input around during February-April and after July.

5.33 Dog walkers are a key group for the face-face engagement to reach. There is likely to be a mix of dog walkers, with some first-time or occasional visitors (e.g. those on short breaks) who are not aware of the fenced off areas and others who may visit more regularly and are more local. Face-face engagement can be tailored to the different kinds of visitors. At busy locations and when there are many infrequent visitors, 'pit stops' can work well. These will involve the warden is in one place, perhaps with a gazebo and leaflets, water for dogs to drink, dog treats etc. This can provide a clear focal point and can be promoted in advance. More mobile engagement simply involves approaching visitors and can be targeted to the vicinity of the fences, allowing a means to intercept those approaching and helping them avoid the cordons. Such a mix of approaches will help maximise the reach and engagement.

5.34 Key locations for engagement are identified on Maps 8 and 9.

5.35 Staff time is expensive, yet such engagement is critical given the breeding bird interest and the number of visitors. There may be opportunities to fund a dedicated ranger post, to cover the key areas, through European Site mitigation strategies or other funding streams as has been the case in recent years. The work of other mitigation schemes and their approaches, both on-site and off-site (e.g. social media) should viewed as a model and can be adapted for Holme (see examples such as work by Bird Aware Solent[16]).

5.36 There may be roles for volunteers as 'ambassadors'[17] to supplement the roles of paid staff. This may be particularly relevant for dog walkers and can provide a means of further spreading key messages. Regular local dog walkers are well placed to set an example and talk to other dog walkers.

[16] https://www.instagram.com/bird_aware_solent/ https://twitter.com/BirdAwareSolent
[17] Examples from other areas include Morecambe Bay https://www.morecambebay.org.uk/events/natural-ambassadors-volunteers-online-introduction

Visitor monitoring

5.37 There is existing monitoring of visitor numbers through car park counts and automated counters on the coast path and incidents are logged. However, it is hard to derive an accurate estimate for overall visitor numbers, or understand the long-term trends in visitor use of the site. Future robust monitoring will be important alongside any changes to the visitor management, particularly in relation to parking changes. Monitoring should cover the whole area to understand the full picture and be a collaborative effort across all stakeholders.

5.38 Monitoring should continue to include:

- Automated counters on the Norfolk Coast Path and an equivalent counter on the main path out across the golf course from the end of Beach Road, with counters calibrated to ensure data can be adjusted to reflect visitor numbers.
- A record of car numbers across the year at each of the main car parks and along roads, this would be best done by one person driving a circuit that covers the Firs, Beach Road, Holme-next-the-Sea village and down to Thornham with this 'transect' repeated at a range of dates and times through the year and repeated annually;
- Logging traffic down Broadwater Road (possible in the long-term from the online bookings, but short term need to check for vehicles trying to park that haven't pre-booked);
- Incidents including those relating to visitors not complying with parking requirements, incursions into breeding bird areas, fires etc.

5.39 In addition, there may be merit in visitor questionnaires undertaken in a standard fashion at different entry points. This would be useful – as necessary – to establish why people choose to park at different locations and to also obtain further insight into which types of visitors (and why) are behaving in particular ways. The questionnaire in Appendix 1 provides a potential template.

5.40 These visitor data are important as the results should be used to inform visitor engagement and management. This plan sets a direction of travel that is long term and overtime some marked changes to how access is managed in the area need to be established. Monitoring data should inform these changes and highlight when interventions are required to resolve emerging issues. The counter data, parked vehicle counts and the traffic counts will highlight how changes in parking management at the Firs are

working. The data should be used to review the booking system for parking at the Firs, how many bookings are allowed etc. The counts of parked vehicles will give patterns through the year and show the extent to which use is being deflected to different parking locations. It will provide evidence to help justify the use of electronic signs at the roadside or alternative, more strategic, parking solutions.

5.41 Automated counters provide trends over time and help to illustrate how use varies between days. This can help target staffing resources and other interventions. The use of fixed counters in a set location is useful as it ensures comparable data, however there are also options for moveable counters that can be deployed to check use of different paths and to target particular areas. There is also the option for data to be accessed 'live', for example providing mobile rangers with real-time data as to the use in different areas. This could in the long-term provide a means to help reduce staffing costs and focus resources as necessary.

5.42 Incident recording will be useful to show the effectiveness of interventions and could help support the implementation of PSPOs if required.

5.43 Ecological monitoring is set out in the reserve management plan.

Table 6: Potential management plan actions (cross-referenced to maps 8 and 9). Colours reflect the different themes and the same colours are also used on Map 8. Actions relate to works required by NWT and where appropriate other stakeholders with responsibility and/or ownership of land affecting the dune system. Phasing reflects the broad timing for different actions and Map 9 shows the different actions (as Map 8), but shaded to reflect the phasing.

Map Ref	Theme	Action	Why recommended	Phasing	Comment
1	Fenced areas for breeding birds/dune habitat	Extend fencing as necessary	Maximise area for birds	Annual	Rope areas could be extended in this area to cover other suitable habitat.
1	Signage & interpretation	New signage/ interpretation board	Raising awareness	Medium term	No signage regarding nature conservation is currently noted when walking in from Old Hunstanton. An interpretation board for those heading this way from Old Hunstanton is needed.
2	Fenced areas for breeding birds/dune habitat	Set back signage to intercept visitors as they approach	Stop visitors approaching fence	Annual	Signage/interpretation at the start of entering into the roped off areas to explain the need to keep away from ropes (rather than signs on the fence posts).
3	Signage & interpretation	Notice to dog walkers here	Raising awareness	Immediate /short term	Signage/interpretation to specifically dog walkers at the focal area where dogs are accessing water and yet also are close to the sensitive birds and can have strayed from owners.
4	Path management	Coast path surfacing and maintenance	Encourage footfall back onto coast path	Medium term	Access encouraged on the Norfolk Coast Path by increasing path width (from overgrowing vegetation) and providing a sea view (by reducing scrub height) – and reducing walking along the strandline. Areas to thinning and management itself must be done sensitively of birds resident within the scrub.
5	Signage & interpretation	New signage/ interpretation "gateway"	Raising awareness	Medium term	A clear feeling of a "entrance" into the site, which would state it is a "national nature reserve" to highlight this to people. An iconic piece which clearly stresses nature importance and can be accompanied with signage. Structure would need to be in keeping with the landscape e.g. wooden structures with a similar sense of place.

Map Ref	Theme	Action	Why recommended	Phasing	Comment
6	Signage & interpretation	Remove notice to dog walkers here	Focusing messages to one point	Medium term	Remove the notice to dog walkers from this gate and instead this message can be at the pinch point. Needs to be done when replacement messages at point 5 are in place.
7	Path management	Resurface the Norfolk Coast Path	Formalise the route and reduce erosion	Medium term	Extend formalised surfacing to provide a more robust section of the Norfolk Coast Path which can accommodate footfall and lessen the erosion
8	Signage & interpretation	Engaging with visitors before Broadwater Road	Reduce traffic down Broadwater Road and control parking at Firs	Immediate /short term	NWT signage required on the road to make visitors aware of new changes before visitors turn into Broadwater Road. NWT to also investigate the feasibility and logistics of moving the 'gate' into the site in peak times with potential for staffing here.
9	Parking	NWT involvement in engagement	NWT engage with visitors on arrival	Long term	NWT explore longer term involvement in the Beach Road car park. Can help to direct flow to the Firs, along the managed coast path.
10	Path management	Open up path and surface	Formalise the route	Medium term	Formalise access along the currently overgrown path, including substantial removal of existing pathside vegetation and surfacing with rolled chalk to create an all-weather route to join up with the existing coast path and provide a route to The Firs.
11	Parking	Possibility of signage or direct engagement	To turn back vehicles before congestion is too bad and directing visitors to alternatives	Long term	When the car parks are just about to become full then signage/ a temporary staffed entrance could be here and even on main road (but requires 3 staffed locations). These options would require careful consideration and are part of larger piece of work along coast to provide means to direct visitors to the right car parks for their activity and where there is space.
12	Parking	Advance ticket system for parking at the Firs	For NWT to have control over parking numbers and	Immediate /short term	Readily available systems provide a straightforward means to establish this change (e.g. Eventbrite). Such systems have been widely deployed across the country as a result of Covid 19. System would provide means to spread visitor use over time, limit numbers and provide direct contact with all those

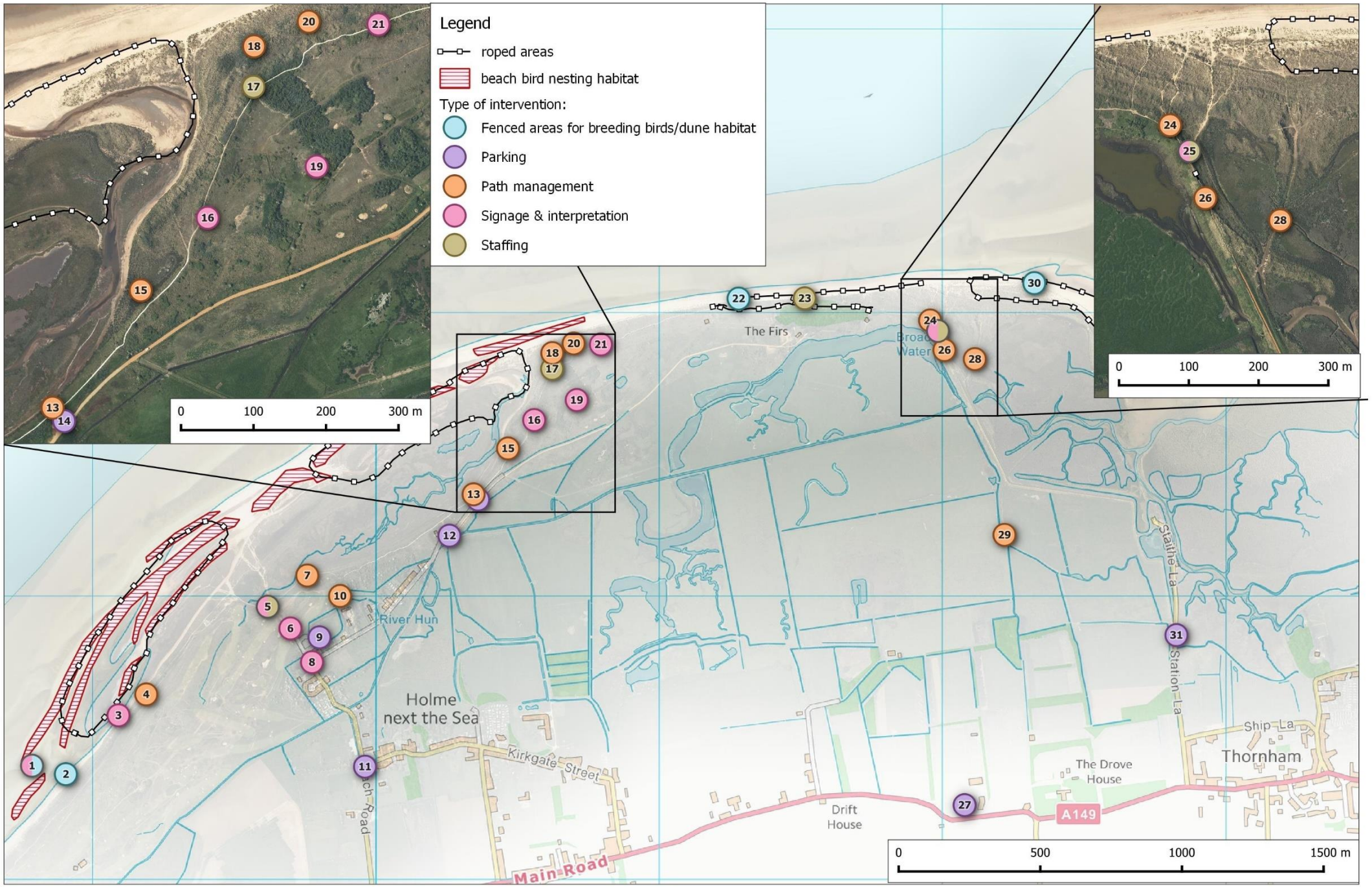
Map Ref	Theme	Action	Why recommended	Phasing	Comment
			visitor use at the Firs		arriving at the site by car. Map reference indicates potential check point but this could be removed over time and may be best relocated at start of Broadwater Road.
13	Path management	Short roped section alongside coast path	Reduce erosion to the sea defence and visitor from deviating from coast path	Annual	Visitor here can deviate from the coast path to walk along the strandline edge of the creek. This places them on a path which ultimately put them close to sensitive bird areas and leads to eroision of the sea defence. A short roped section alongside Norfolk Coast Path with interpretation as to dunes needing "to rest" to prevent damage.
14	Parking	Reduce parking and ensure turning circle	Reducing parking in core areas and setting access back	Medium term	Location currently functions as additional/secondary parking and visitors potentially use to avoid interactions with site staff at the Firs. The use as a car park means cars spread through the reserve. Could be reduced so as to provide blue badge parking only and turning space.
15	Path management	Create a more obvious alternative path back to coast path	Encourage visitors back onto the coast path	Medium term	Wide, robust and inviting path back up onto the dunes, but not overly formalised. Angled such that this allows and encourages walkers who strayed onto the dunes (at Salterns) back up onto the Norfolk Coast Path. Angled to line up with interpretation/sculpture at point 17 to invite walkers back.
17	Signage & interpretation	New interpretation/ sculpture	Act as a focal point to draw footfall	Medium term	Using high point, create a new interpretation feature or sculpture that is an unusual, attracting visitors up onto the Norfolk Coast Path rather than close proximity to the roped areas.
18	Path management	Create a more obvious alternative path to the coast	Deflect access away from roped areas, spread pressure visitor through dunes	Medium term	There are a number of informal paths from the Norfolk Coast Path down to the beach. A new, very informal path could provide an alternative from Norfolk Coast Path down to the coast at this point. This would be an alternative to visitors deviating from coast path at Salterns and walking the strandline/creek edge thus passing close to the roped areas.

Map Ref	Theme	Action	Why recommended	Phasing	Comment
19	Signage & interpretation	Remove or do not replace signs	Reduce potential access	Immediate /short term	Actively remove or no not replace worn signage in this area, as this can act as points of interest for visitors to stray from the coast path into sensitive dune habitats.
20	Path management	Short roped section alongside coast path	Spread pressure visitor through dunes	Medium term	Using short roped sections to provide temporary "closures" to a number of informal cut through paths, instigated one at a time, which head directly north from the coast path to the beach. Signage would inform this is temporary, that there are alternatives, and this is part of creating dynamic dune systems. Closed section will be moved infrequently (after a few years) for a dynamic dune system.
22	Fenced areas for breeding birds/dune habitat	Informal repairs to the sand drift fences	Help prevent excessive dune damage	Annual	Sand drift fences are not due to be maintained in the long term, but could be subject to occasional informal annual repairs as they do provide some barrier to help reduce access.
24	Path management	Install short sections of rope barriers in dunes as temporary measures	To create dynamism in path network and bare ground.	Reviewed/ checked every 3 years	Use short sections of rope will discourage people from straying off the Norfolk Coast Path and could be deployed at a limited number of points. These can be established using sturdy posts and intended to last for a few years, such that new sections can be used as new paths are created and dunes change dynamically.
25	Signage & interpretation	New signage/ interpretation board	Raising awareness	Medium term	New interpretation panel here, highlighting the area straight ahead as more sensitive may influence some decision making on areas to visit.
26	Path management	Boardwalk to be renewed.	Encourage footfall back onto coast path	Medium term	Ensure Norfolk Coast Path (maintained by NCC) is main route and works for visitors to move easily along and through the reserve. The Coast Path should work as main path, taking much of the footfall, rather than encouraging a proliferation of paths. Ideal would be to replace like for like.
27	Parking	Improve/ promote as an alternative parking location	Spreading access and setting access	Long term	Work at locations such as Drove Orchards to provide an improved and advertised alternative parking location for beach visitors. In the long term, this could be a location for visitor infrastructure to be set back from the coast (especially as areas likely to flood) - plus car access is directly from the main

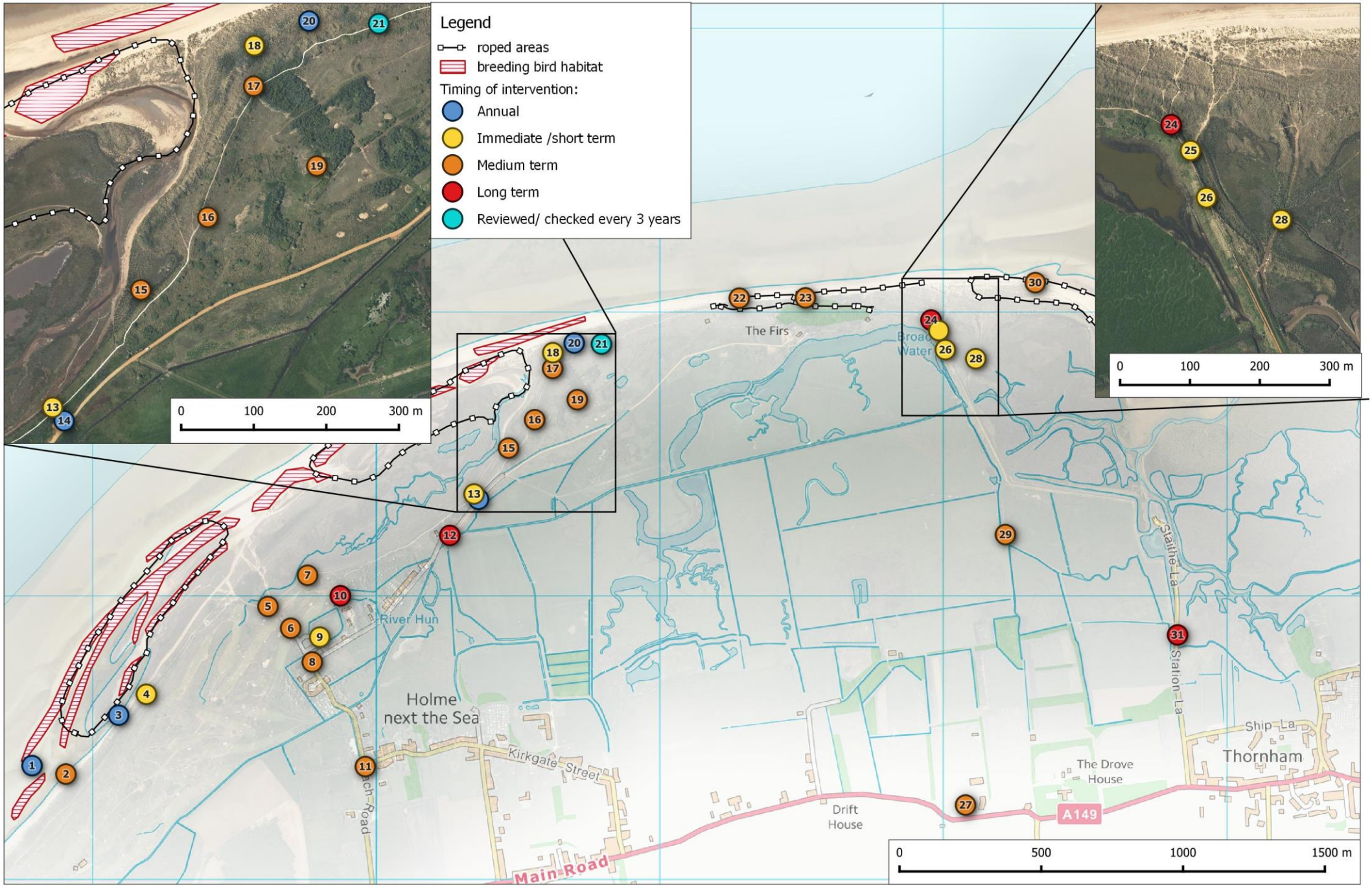
Map Ref	Theme	Action	Why recommended	Phasing	Comment
			back from the coast.		road, therefore avoiding village. Can also ensure better public transport and cycleway links. At Drove Orchards specifically more work would be need to manage parking and traffic safely.
28	Path management	Remove improvised creek crossings	Discourage access and make access harder	Immediate /short term	Potential to help reduce footfall and visitor flow towards breeding bird area
29	Path management	Improve footpath	Allow alternative access routes	Immediate /short term	Improvements to the footpath to allow access in from Drove Orchards – ties into potential for of setting access back to here and creating alternative paths to take pressures.
30	Fenced areas for breeding birds/dune habitat	Cordon off the entire area	Maximise area for birds	Medium term	Close off the end of Thornham Point subject to coastal access and common rights, signed as no access, could be a seasonal only restriction or ideally all year.
31	Parking	Formalised parking at Thornham	To ensure more efficient, safe parking.	Immediate /short term	This could be low-key, e.g. through the use of low wooden posts and a wooden height bar or squeeze stile, in local materials, in-keeping with the style of wooden jetties to ensure no detriment to the feel of the location.
5 / 23 / 17 /25	Staffing	Face-face engagement and on-site presence	Raising awareness, engagement and promoting responsible access	Medium term	Staff provision essential to 'warden' fenced areas on beach and to resolve issues on-site. Numbers on map reflect pinch points or other locations which work well for engagement. Point 5 would be a particular priority.
16 & 21	Signage & interpretation	Interpretation board regarding sensitive dune system	Raising awareness	Medium term	Signage regarding importance of dune habitat and species – currently this is mostly in the dunes themselves and can be set back to the coast path instead. Can also highlight the area is members only.

Map Ref	Theme	Action	Why recommended	Phasing	Comment
Not mapped	Parking	Explore potential for road signage	Better access management across coast	Long term	Explore potential for live electronic road signage back on the main road regarding spaces. This would need to be coast wide action with many partners
Not mapped	Fenced areas for breeding birds/dune habitat	Fenced areas reviewed and prioritised annually to ensure key areas covered	Key measure to ensure protection for nature conservation interest	Annual	Fenced areas are fundamental. Habitat will change over time and birds potentially settle from February, so balancing act to ensure protection and avoid fences being destroyed in bad weather. Options to enhance fencing with additional strand and signs/short fence sections at 30m forming secondary barrier.
Not mapped	Monitoring	Visitor counters on coast path and route from Beach Road	Recording footfall	Annual	Counters placed on the coast path between Beach Road and the Firs and then east of the Firs on the path towards Thornham and also on the main path out across the golf-course from the end of beach road, providing accurate data on visitor numbers. Counters need calibrating and regular maintenance.
Not mapped	Monitoring	Vehicle counts	Recording numbers of cars and distribution	Annual	Snapshot counts of all parking locations ideal – with multiple counts across the year covering different times of day and types of day. Alternatively could be done with automated vehicle counters. Approach needs to provide clear data on overall visitor numbers and trends.
Not mapped	Monitoring	Incident log	Recording incidents	Annual	Consistent recording allows patterns over time to be picked up and emerging issues identified. Can be used to check effectiveness of interventions.

Map 8: Interventions



Map 9 Interventions



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Appendix 1: Questionnaire used in 2015/16 visitor survey (see Panter *et al.* 2017 for details)

footprint ECOLOGY

Good morning/afternoon. I am conducting a visitor survey on behalf of a range of local councils in Norfolk. The survey is to find out more about access to the countryside in Norfolk. Can you spare me a few minutes please?

Q1 ...

- ◯ **Are you on a day trip/short visit and travelled directly from your home** ... *if no*
- ◯ **Are you on a short trip/short visit & staying away from home with friends or family** ... *if no*
- ◯ **On holiday in the area, staying away from home**
- ◯ If none of the above, **How would you describe your visit today?**

Further details

Q2 *if on holiday:* **What type of accomodation are you staying in?** *Tick closest answer. Do not prompt. Single response only.*

- ◯ Hotel/Motel
- ◯ Bed & Breakfast
- ◯ Pub/Inn/Guesthouse
- ◯ Self-catering
- ◯ Second home
- ◯ Campervan/campsite
- ◯ Home of friend/relative
- ◯ Other, please detail:

Further details

Q3 **What is the main activity you are undertaking today?** *Tick closest answer. Do not prompt. Single response only.*

- ◯ Dog walking
- ◯ Walking
- ◯ Jogging/power walking
- ◯ Outing with family
- ◯ Beach Activity (sunbathing, bucket/spade etc)
- ◯ Cycling/Mountain Biking
- ◯ Wildlife watching
- ◯ Fishing
- ◯ Enjoy scenery
- ◯ Photography
- ◯ Meet up with friends
- ◯ Swimming
- ◯ Kitesurfing/Windsurfing/Surfing/Jetski
- ◯ Canoe/kayak
- ◯ Boating (own or rented motor boat)
- ◯ Sailing
- ◯ Organised boat trip (e.g. seals)
- ◯ Other, please detail:

Further details

Q4 **How long have you spent / will you spend in the area today?** *Single response only.*

- ◯ Less than 30 minutes
- ◯ Between 30 minutes and 1 hour
- ◯ 1-2 hours
- ◯ 2-3 hours
- ◯ 3-4 hours
- ◯ 4 hours +

Q5 **Over the past year, roughly how often have you visited this site?** *Tick closest answer, single response only. Only prompt if interviewee struggles.*

- ◯ Daily
- ◯ Most days (180+ visits)
- ◯ 1 to 3 times a week (40-180 visits)
- ◯ 2 to 3 times per month (15-40 visits)
- ◯ Once a month (6-15 visits)
- ◯ Less than once a month (2-5 visits)
- ◯ Don't know
- ◯ First visit
- ◯ Other, please detail

Further details:

Q6 **Do you tend to visit this area at a certain time of day?** *Tick closest answers. Multiple answers ok.*

- ☐ Early morning (before 9am)
- ☐ Late morning (between 9am and 12)
- ☐ Early afternoon (between 12 and 2)
- ☐ Late afternoon (between 2 and 4pm)
- ☐ Evening (after 4pm)
- ☐ Varies / Don't know
- ☐ First visit

Q7 **Do you tend to visit this area more at a particular time of year for [***insert given activity***]?** *Multiple answers ok.*

- ☐ Spring (Mar-May)
- ☐ Summer (Jun-Aug)
- ☐ Autumn (Sept-Nov)
- ☐ Winter (Dec-Feb)
- ☐ Equally all year
- ☐ Don't know
- ☐ First visit

Q8 **How did you get here today?** *What form of transport did you use? Single response only.*

- ○ Car / van
- ○ On foot
- ○ Public transport
- ○ Bicycle
- ○ Other, please detail

Further details:

Now I'd like to ask you about your route today. looking at the area shown on this map, can you show me where you started your visit today, the finish point and your route please. Probe to ensure route is accurately documented. *Use **P** to indicate where the visitor parked, **E** to indicate the start point and **X** to indicate the exit. Mark the route with a line; a solid line for the actual route and a dotted line for the expected or remaining route.*

Q9 **Is / was your route today your usual route when you visit here for [***insert given activity***]?** *Tick closest answer, do not prompt. Single response only.*

- ○ Yes, normal
- ○ Much longer than normal
- ○ Much shorter than normal
- ○ Not sure / no typical visit
- ○ First visit

Q10 **What, if anything, influenced your choice of route here today?** *Tick closest answers, do not prompt. Multiple responses ok.*

- ☐ Weather
- ☐ Daylight
- ☐ Time
- ☐ Other users (avoiding crowds etc)
- ☐ Group members (eg kids, less able)
- ☐ Muddy tracks / paths
- ☐ Followed a marked trail
- ☐ Previous knowledge of area / experience
- ☐ Activity undertaken (eg presence of dog)
- ☐ Interpretation / leaflets / promotion
- ☐ Wanting to be near water
- ☐ Other, please detail

Further details:

Q11 **Why did you choose to visit here, rather than another local site?** *Tick all responses given by visitor in the 'other' column. Do not prompt, tick closest answers. Then ask* **Which single reason would you say had the most influence over your choice of site to visit today?** *Tick only one main reason. Use text box for answers that cannot be categorised and for further information.*

	Other	Main
Don't know / others in party chose	○	○
Close to home	○	○
No need to use car	○	○
Quick & easy travel route	○	○
Good / easy parking	○	○
Particular facilities	○	○
Refreshments / cafe/ pub	○	○
Choice of routes	○	○
Feels safe here	○	○
Quiet, with no traffic noise	○	○
Not many people	○	○
Scenery / variety of views	○	○
Rural feel / wild landscape	○	○
Particular wildlife interest	○	○
Habit/familiarity	○	○
Good for dog / dog enjoys it	○	○
Ability to let dog off lead	○	○
Closest place to take dog	○	○
Closest place to let dog safely off lead	○	○
Appropriate place for activity	○	○
Suitability of area in given weather conditions	○	○
Near coast / water	○	○
Other, please detail	○	○

Further details:

Please could you tell us the name of up to 3 other locations you visit most often for [*given activity*]? Please list them in order, starting with the one you visit most.

Q12 Name of **Site 1**

Q13 Name of **Site 2**

Q14 Name of **Site 3**

Q15 **Are you aware of any nature conservation designations that apply to this location?** Single response only.

- ○ Yes
- ○ No
- ○ Unsure

Q16 *If yes:* **Can you name the designation?** *Do not prompt. Multiple answers ok.*

- ☐ SSSI mentioned (or "Special Scientific Interest" type wording)
- ☐ SPA/SAC/RAMSAR mentioned
- ☐ National Park
- ☐ AONB
- ☐ General comment that important for birds
- ☐ General comment that important for habitat/non-avian interest
- ☐ None of the above mentioned

Q17 **Are you aware of any habitats or species that occur here and are vulnerable to impacts from recreation? Can you name them?** *Do not prompt. Tick groups mentioned.*

- ☐ No/none/can't name
- ☐ Breeding terns/waders on beaches (e.g. little tern, ringed plover)
- ☐ Breeding wetland birds (e.g. bittern, marsh harrier, crane, waders etc)
- ☐ Breeding heathland birds (e.g. nightjar, woodlark, stone curlew)
- ☐ Wintering waterfowl (e.g. waders, wildfowl, geese)
- ☐ Mammals (e.g. seals, otter etc)
- ☐ Invertebrates
- ☐ Plants
- ☐ Sand dune (inc dune slack, foredune, grey dune etc)
- ☐ Vegetated shingle/shingle
- ☐ Heathland (inc mire, wet heath, breck)
- ☐ Grassland (inc coastal grazing marsh, rush pasture etc)
- ☐ Woodland (including carr and wet woodland)
- ☐ Ditches
- ☐ Saline lagoon
- ☐ Fen/reedbed (inc mown fen/fen meadow here)
- ☐ Aquatic habitat (open water, river, broad etc)
- ☐ Saltmarsh
- ☐ Mudflat (or sandflat)
- ☐ Other (detail below):

Further details:

Q19 **What is your full home postcode?** *This is an important piece of information, please make every effort to record correctly.*

Q20 *If visitor is unable or refuses to give postcode:* **What is the name of the town or village where you live?**

Q21 *If visitor is on holiday ask:* **Which town / village are you staying in?**

Q22 Do you have any comments or general feedback about your visit and access to this area?

That is the end. Thank you very much indeed for your time.