BTO RESEARCH REPORT 789

Assessment of non-breeding Hen Harrier records in relation to Special Protection Areas in England: insights from the Hen Harrier Winter Roost Survey and BirdTrack

Anthony Wetherhill and Mark Wilson

BTO Birds Science People

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1. Introduction

Hen Harriers (*Circus cyaneus*) are highly mobile raptors that exhibit distinct wintering behaviour, often forming communal roosts in open landscapes such as moorlands, coastal marshes, and lowland heaths. During the non-breeding season, they range widely in search of suitable foraging grounds, preying on small mammals and birds. In contrast to their territorial breeding behaviour, wintering Hen Harriers may gather in loose groups at traditional roost sites, where they seek shelter from harsh weather and reduce predation risk through collective vigilance.

In England, roosting typically occurs in areas with dense vegetation, such as reedbeds, rush pastures, or heather moorland, which provide both concealment and protection from the elements. Birds generally arrive at the roost around dusk and depart at dawn, with timing influenced by weather conditions and daylight length. Males, females, and juveniles often use the same roosts, though they may occupy slightly different areas within them. Estimates of the number of non-breeding Hen Harriers in England based on data from systematic surveys in the 1980s and 1990s give a broad range of approximately 200 to 700 individuals (Dobson et al. 2011).

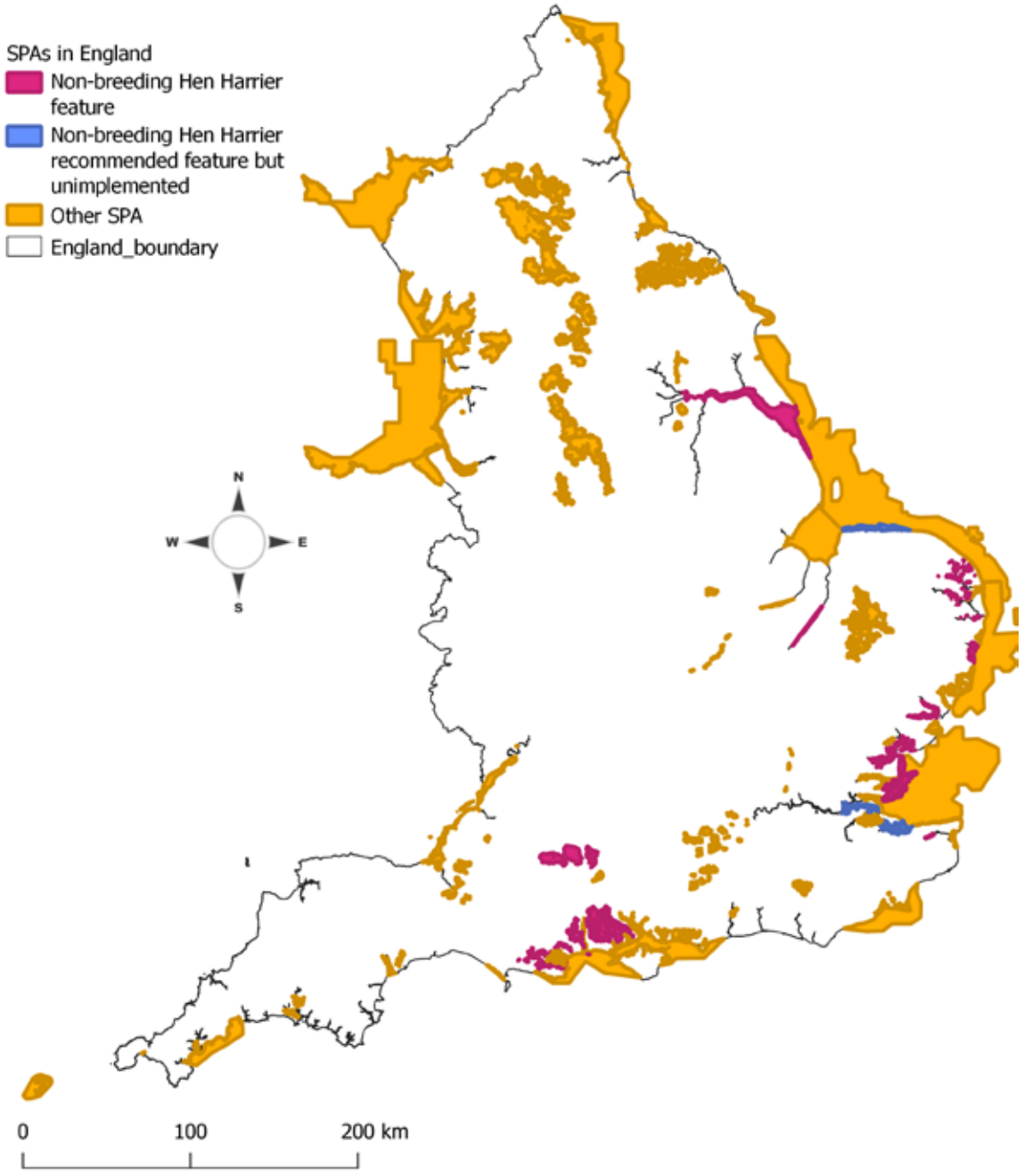
Hen Harriers are listed under Section 41 of the Natural Environment and Rural Communities Act 2006 (Species of principal importance for conserving biodiversity in England) and are currently classified as Red on the UK Birds of Conservation Concern list due to historic and ongoing persecution, particularly on their upland breeding grounds. As communal roosting makes them more conspicuous, concerns persist that these sites are particularly vulnerable to persecution and habitat loss.

There are currently 13 Special Protection Areas (SPAs) in England where non-breeding Hen Harrier is a classified feature (Table 1). These SPAs are primarily coastal or estuarine sites in the east and south of the country (Figure 1). Three further coastal and estuarine sites (North Norfolk Coast, Thames Estuary and Marshes and The Swale) have been recommended for classification. Only two SPAs in England are classified for breeding Hen Harriers: the Forest of Bowland and the North Pennines. In contrast, the other UK SPAs for Hen Harrier comprise 12 sites (10 in Scotland and two in Wales) for breeding Hen Harriers and just four (all in Scotland) for non-breeding Hen Harriers.

Table 1: Special Protection Areas classified for non-breeding Hen Harrier in England, showing year of classification and the number of individual Hen Harriers recorded in the review year (Stroud et al. 2016).

Special Protection Area	Year of classification	Assessment of UK SPA suite in the 2000s (number of individuals)
Blackwater Estuary	1995	4
Broadland	1994	22
Colne Estuary	1994	4
Dengie	1994	5
Dorset Heathlands	1998	20
Foulness	1996	6
Humber Estuary	2007	20
Minsmere-Walberswick	1992	15
New Forest	1993	15
North Norfolk Coast	–	16
Ouse Washes	1993	12
Salisbury Plain	1993	14
Stodmarsh	1993	9
Stour & Orwell Estuaries	1994	10
Thames Estuary & Marshes	–	7
The Swale	–	23

Figure 1: Map showing the locations of all SPAs in England in yellow, with those classified for non-breeding Hen Harrier in magenta, and those with a currently unimplemented recommendation for classification for non-breeding Hen Harrier in cyan.



Hen Harriers are terrestrial birds and do not utilise marine environments (though will forage and roost on islands when migrating). As such several primarily marine SPAs located in English waters have been excluded from further consideration in this report. These are:

- Coquet Island
- Falmouth Bay to St Austell Bay
- Greater Wash
- Isles of Scilly
- Liverpool Bay

- Morecombe Bay and Duddon Estuary
- Northumberland Marine
- Outer Thames Estuary
- Portsmouth Harbour
- Solent and Dorset Coast
- Solway Firth

There are two main sources of data where information on Hen Harrier distribution in winter can be obtained: the Hen Harrier Winter Roost Survey, which is a dedicated survey focusing on traditional roost locations in England, and BirdTrack, which is a general repository for records submitted by members of the public.

Appraisal of existing data

Hen Harrier Winter Roost Survey

The Hen Harrier Winter Roost Survey (HHWRS) was initiated in 1982 by Donald Watson and Roger Clake in order to gather data on important roost sites for Hen Harriers in the UK and further afield in Europe. At present the survey is administered by BTO Scotland for England and Wales, while RSPB oversees efforts in Scotland and the Isle of Man.

Volunteers are asked to count Hen Harriers settling into or emerging from traditional roost sites. The counts are made on designated days throughout the winter months of October to March inclusive. Volunteers are encouraged to count on the designated core count day but counts within three days either side of the core count date are also accepted (and acknowledged as such). Counts start before sunrise and go on until all birds have left, or else start about an hour before sunset and go on until it is too dark to see. Arrival or departure and settling or emerging times are recorded where possible, and birds are recorded as 'brown' (immature males and females, or adult females) or 'grey' (adult or 2+ year males). Survey time, wind direction, wind force, cloud cover, precipitation and visibility are also recorded, as well as approximate distance to the roost from the observer. Other recorded information includes any other raptor species observed at the site (e.g. Merlin (*Falco columbarius*), Short-eared Owl (*Asio flammeus*) and Marsh Harrier (*C. aeruginosus)* and any possible sources of disturbance. Non-roosting Hen Harriers are also recorded where they are simply flying through the site or where it is not possible to determine if the bird roosted or not.

Since 2006, a total of 59 sites have been surveyed at least once over the survey period. During the period 2019–2024, 32 of these sites were still being actively surveyed by volunteers. Sites become vacant when volunteers retire and are not replaced, or when Hen Harriers are not recorded there for a period of several years (volunteers decide on what period that should be depending on how long they are willing to persist with null counts of Hen Harrier).

A copy of the survey field sheet and the notes to volunteer recorders are included in Appendix 1. Figure 2 shows the locations of HHWRS sites that returned positive results for Hen Harrier between 2019 and 2024.

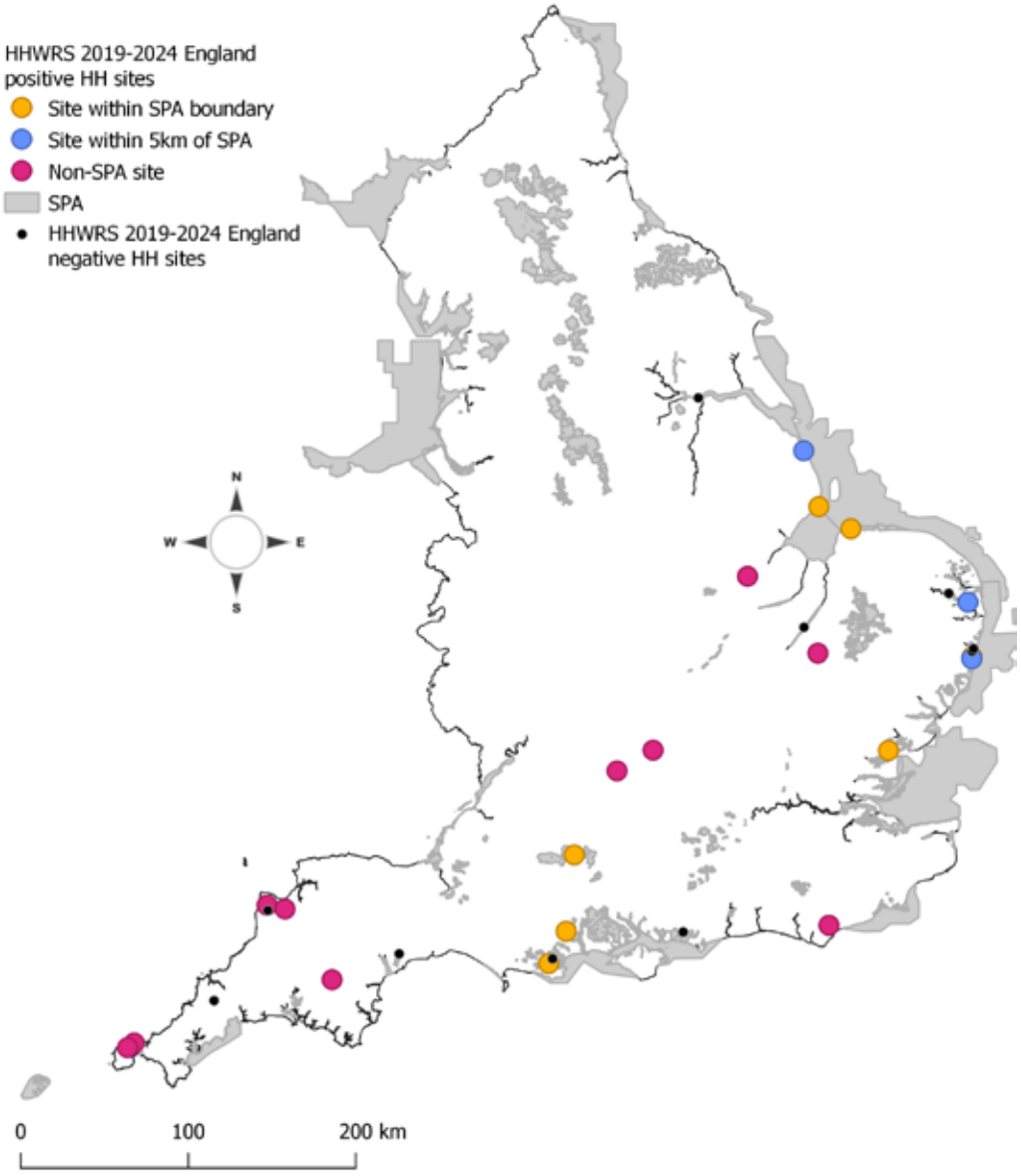
Data were returned for 30 sites in England over the five survey seasons from October 2019 to March 2024. Of these 30 sites, 20 recorded Hen Harrier as either present or confirmed roosting (Minsmere and Dunwich Heath are only 1 km distance apart, so appear as one location in Figure 2). Results for each site are shown for each season that surveys were carried out there in Appendix 2

Five of these sites are within the current boundaries of a SPA in England that is classified for non-breeding Hen Harrier. These are: North Norfolk Coast SPA, Blackwater Estuary, Salisbury Plain, and the Dorset Heathlands (two sub-sites). One HHWRS site is within the boundary of an existing SPA which is not classified for non-breeding Hen Harrier: Gibraltar Point SPA.

Three HHWRS sites are within 5 km of the current boundary of an SPA in England which is classified for non-wintering Hen Harriers. SPAs with a HHWRS site within 5 km are: Minsmere–Walberswick, Broadland and the Humber Estuary.

There are two SPAs that are classified for breeding Hen Harrier. None of the HHWRS sites where Hen Harriers were recorded are within the boundary or within 5 km of either of the two SPAs classified for breeding Hen Harriers in England (North Pennines SPA and Forest of Bowland SPA). Historically, however, sites at each location were observed as part of the HHWRS.

Figure 2: Locations of HHWRS sites from 2019 to 2024 in England where Hen Harriers were recorded.



BirdTrack records

BirdTrack is an online bird recording system developed and managed by the British Trust for Ornithology (BTO) in partnership with the RSPB, BirdWatch Ireland, the Scottish Ornithologists' Club, and the Welsh Ornithological Society. It is designed for birdwatchers to log their observations of birds and some other taxa and contribute data for research and conservation.

The system allows users to submit records of birds they see during their birdwatching activities, including casual observations and complete lists. Along with other systematic surveys, BirdTrack contributes to information on species distribution, migration timing, and long-term population trends.

Figure 3 shows the distribution of all records submitted via BirdTrack for all bird species in the winter months of 2019 to 2014. This gives an indication of the coverage achieved, with the rough inference being that the 10-km squares with the highest number of BirdTrack submissions equate to the areas where recorders are most active. Hen Harrier records submitted via BirdTrack in the months October to March inclusive, starting from

1 October 2019 and ending with 25 February 2025 are also shown in the adjacent map. In total there were 19,160 records of Hen Harrier received over the period of interest, 5,326 (28%) of which were from complete lists. Not all of these records include a count of individuals, but assuming a minimum of one individual bird per record, the minimum total count across all lists over the period of interest was 23,963.

BirdTrack records show that Hen Harriers are much more frequently recorded in coastal sites, particularly in the east of England, including the Humber Estuary, The Wash, North Norfolk Coast, and the Thames Estuary. These areas, along with parts of East Anglia and Dorset, have the highest overall submission rates for BirdTrack during the winter months. However, this higher coverage also means that Hen Harriers recorded in these locations may reflect recorder effort rather than true abundance. Conversely, inland areas such as upland regions in northern England, parts of the Midlands, and certain areas in the south-west, have relatively sparse BirdTrack coverage in winter. In these areas, the absence of Hen Harrier records may be due to low observer effort rather than a genuine lack of birds.

A comparison of BirdTrack records with HHWRS sites and SPAs suggests some notable patterns. In high-coverage coastal areas, such as North Norfolk and the Thames Estuary, Hen Harrier records are frequent and align well with known roosting locations and SPA boundaries. In the Dee Estuary and Ribble & Alt Estuaries, BirdTrack records indicate notable Hen Harrier presence, despite these areas not currently being classified as SPAs for non-breeding Hen Harrier nor being covered by the HHWRS.

Inland, areas such as Salisbury Plain and the Breckland region receive relatively high BirdTrack coverage, yet Hen Harrier records remain sparse, potentially reflecting actual distribution rather than observer bias. In contrast, upland sites in the Pennines, Bowland, and parts of south-west England – where wintering Hen Harriers are known to occur based on historical HHWRS data from before 2019 – have comparatively low BirdTrack submission rates, making it difficult to assess population trends solely from this dataset. This discrepancy highlights the need for targeted survey effort in areas where BirdTrack data are insufficient, particularly in regions where historic roosts are no longer monitored or where aggregations have been recorded in the past but do not appear in recent BirdTrack submissions.

Collation and mapping of known roost sites in relations to the SPA network in England

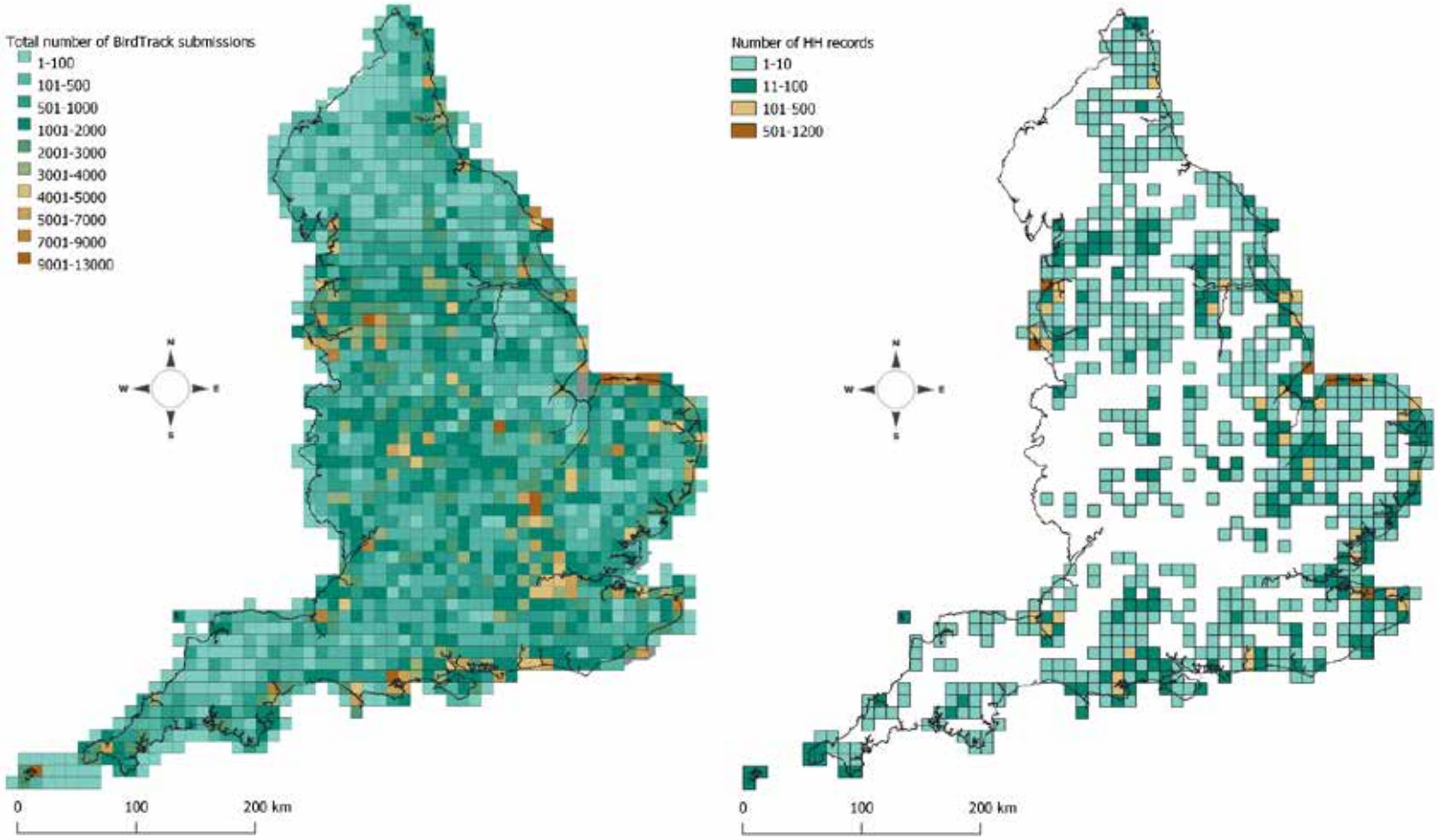
Appendix 3 shows maps of each SPA in England (excluding those previously mentioned as marine) with the total number of Hen Harrier records submitted in each 1-km square during the months October to March inclusive from October 2019 to March 2024, within the boundaries of the SPAs and within a 5 km buffer.

SPAs that are not currently classified for non-breeding Hen Harrier, but where significant numbers of Hen Harrier (defined as having at least one 1-km square that has over 100 records of Hen Harrier in the SPA or within a 5 km buffer) are:

- Northumberland Coast (specifically at Widdrington)
- Gibraltar Point
- The Wash
- Great Yarmouth North Denes
- Foulness
- Medway Estuary and Marshes
- Nene Washes
- Dee Estuary
- Ribble & Alt Estuaries

In particular, the Dee Estuary had a higher number of high-count squares than any other SPA, followed by the Ribble & Alt Estuaries.

Figure 3: Distribution of all records submitted to BirdTrack in the months October to March inclusive from 2019 to 2024 (left) and Hen Harrier only for the same period (right).



Discussion

The results of the HHWRS over the period of interest are somewhat limited, reflecting the overall decline in survey coverage since its inception in the 1980s and 1990s. Initially, the HHWRS provided an assessment of non-breeding Hen Harrier distribution across England and Wales that covered approximately 160 sites, which was thought to cover 80% of all English roost sites (Clarke & Watson 1990), but the number of sites surveyed annually has decreased significantly. During the period of interest for this report, only around 20 sites were monitored each year, and a very low proportion of these were located within or near SPAs classified for non-breeding Hen Harriers. At the time of writing, preliminary data for the 2024–2025 winter season have been returned for just 10 sites.

Although historical HHWRS data (i.e. pre-2006) exist for additional sites, some of which may correspond to SPAs and their associated buffer zones, these are not all readily accessible for detailed analysis. Further work would be required to digitise and standardise historical data before they could be brought into consideration. This might facilitate a better understanding of long-term trends and spatial patterns in Hen Harrier wintering distribution across England; though fluctuations in the spatial distribution of monitoring effort would have to be considered.

BirdTrack records submitted during the period of interest provide additional and useful insights into the areas used by wintering Hen Harriers in England. These data suggest that certain areas, particularly in lowland coastal regions, accrue more Hen Harrier records than the majority of inland and upland locations. This aligns with existing knowledge about the wintering habitat preferences of this species, with favoured habitat types including estuaries, reedbeds, and salt marshes. However, caution is required when interpreting these results, as the spatial distribution of BirdTrack records is decidedly uneven. While high concentrations of records are likely to provide a reliable indication of areas used by Hen Harriers, an absence or paucity of records has to be more carefully interpreted in the context of measures of BirdTrack survey effort, such as the number of complete list surveys submitted within the same area. In areas where lots of BirdTrack surveys have been done during the autumn and winter but no Hen Harriers recorded, it is likely that usage by non-breeding Hen Harriers is minimal. However, where there has been little BirdTrack survey effort, an absence of Hen Harrier records does not mean much. Such an area could be genuinely lacking in wintering Hen Harriers; but it could also, equally, support significant numbers of this species. Given the attraction of many wetland sites for the birding community responsible for the majority of BirdTrack recording, as well as the inherent attraction of known concentrations of Hen Harriers to some members of this community, there is likely to be an element of observer bias in these opportunistic citizen science data. Additional survey effort to complement the understanding afforded by combining HHWRS outputs with the distribution of BirdTrack records would be most beneficial if it was a) targeted primarily at areas not already covered by one of these two survey types and b) structured so that survey findings could be relied on as being representative of the wider area.

There is a particular need to enhance survey effort in and around SPAs, to improve understanding of the distribution and habitat use of non-breeding Hen Harriers in England, and to evaluate whether there is a need for site protection to be extended to more areas. Additionally, and more broadly, we need to improve understanding of Hen Harrier wintering ecology to ensure that management of key wintering sites, as well as of the wider landscape, meets the conservation needs of this species.

Recommendations

Review and revitalisation of the HHWRS: Evaluate and, if necessary, redesign the methodology for this survey, and recruit new volunteers by engaging with local audiences. These are likely to include Raptor Study Groups and bird clubs, but at least in some areas it may be useful to recruit participants from the wider local community – both in terms of increasing available survey effort, but also to make more people feel more connected with and invested in conserving Hen Harriers. Provide training and collaborate with land managers (such as RSPB) in key roost locations.

Exploration of additional data sources: Investigate the potential for data from the Wetland Bird Survey (WeBS), Raptor Study Group monitoring, and remote tracking studies to complement the understanding that can be gleaned from HHWRS records and BirdTrack data. Digitised data from the HHWRS are only available for 2006 to the present. Additional paper records extend back as far as the late 1980s and may provide further insights into historical roost sites. However, digitising and standardising these records would require further work.

Targeted surveys for non-classified SPAs: Conduct more intensive monitoring in and around SPAs that are not currently classified for non-breeding Hen Harriers but where Hen Harrier activity appears to be relatively high. Among such sites, Gibraltar Point should be a high priority for further monitoring.

Prioritisation of key survey sites: The Dee Estuary and Ribble & Alt Estuaries should be prioritised for survey efforts, as neither site is currently classified for non-breeding Hen Harrier despite high recorded presence. Historically, the Dee Estuary was previously covered by volunteers for the HHWRS and although it has not been surveyed in recent years, returned positive results from 2013 to 2016.

References

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Appendix 1

Hen Harrier Winter Roost Survey – Field recording form 2024 – 2025

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Site name:		**Observer name:**	
Grid reference:		**Observer email:**	

Visit date:	**Weather**					
Start time:	**Wind force**	**Wind direction**	**Cloud**	**Temp.**	**Precip.**	**Visibility**
End time:	*Beaufort scale*	*N, NE, E, SE, S, SW, W, NW*	*Oktas/Eighths*	*Hot (20°C+), Warm (11-19°C, Mild (6-10°C), Cool (1-5°C), Cold (0- -5°C), Very cold (>-5°C)*	*Rain/hail/snow or dry Light/heavy Intermittent/continuous*	*Poor Good Excellent*
Distance of observer from roost (m):						

Roosting Hen Harriers				**Non roosting Hen Harrier**				**Marsh Harrier**	
Brown		**Grey**		**Brown**		**Grey**			
Total:		Total:		Total:		Total:		Total:	
First arrival (pm) or departure time (am)		***First arrival*** (pm) or departure time (am)		**Other raptor/owl species:**					
Last arrival (pm) or departure time (am)		***Last arrival*** (pm) or departure time (am)							
First settling (pm) or rising time (am)		***First settling*** (pm) or rising time (am)		**Disturbance notes:**					
Last settling (pm) or rising time (am)		***Last settling*** (pm) or rising time (am)							

Hen Harrier Winter Roost Survey – Notes for observers

Do please obtain permission if access to your chosen observation point is private, and take care that you do not end up on dangerous terrain before or after dark. **Advice on Health & Safety, Access, Risks, etc can now be found on the BTO website (**https://www.bto.org/how-you-can-help/take-part-project/health-safety) where there is a comprehensive page dealing with these issues and more.

Adherence to the co-ordinated dates is very important, but if you are unable to do a watch on the correct date, please do one as close to it as possible. **Nil counts <u>are</u> important especially with harriers now disappearing from many sites.**

Counting
We ask that you keep at a good distance from the settling area and avoid drawing attention to the birds. In many circumstances, total accuracy as to the number of harriers roosting is not possible. Please make the best estimate you can. Do of course beware of double counting birds flying in and out of view, settling and then rising again, etc. Frequent checking of the number of birds in the air, with a sweep of the binoculars, may in some circumstances be a good guide.

Morning Watches
A 'morning after' the co-ordinated watch date is perfectly acceptable, but you must be on station at first light and know the exact roosting area if birds are not to be missed leaving.

First Winter Males
These brown males can be distinguished by their small size, but only for sure if other harriers are present for comparison. They must, however, be recorded as 'brown' in the count columns, etc. If you are confident of their identity, though, please make a note on the sheet. All older males should be recorded as 'grey', even if they have substantial amounts of brown in their plumage. Notes on particularly brown-backed males (2nd-3rd winter) are needed.

Arrivals and Settling
We define these as:
- first arriving in the vicinity of the site
- landing at a presumed roosting place and not immediately rising again

Please record the times of the first and last birds arriving/settling.

Site & Weather Information
If you could give as much information on the weather and viewing conditions during your count session this would be useful. Columns are provided for wind force, wind direction, cloud, precipitation, temperature and visibility. The amount of time spent on site is also required.
There is a space for recording any human disturbance. This can include dog walkers, wildfowlers, foxes or other predators and any change to the site (e.g. mowing, fire, reed cutting, etc.). Please specify the type of disturbance if any. **Please let us know about any serious threat to a roost.**

Marsh Harriers and other raptors
Marsh Harriers have been given their own column in the forms. Counts of this species would be appreciated. Counts and observations of other raptor and owl species can also be recorded in notes column.

Comments
We leave behavioural notes etc. to your discretion. Notes on patterns of arrival, birds with full crops, local movement of the roost, displacements of settled birds by others, etc are useful. You may also like to think about establishing usual directions of approach/departure to see if this indicates where harriers spend the day.

Thank you for your participation.

Appendix 1

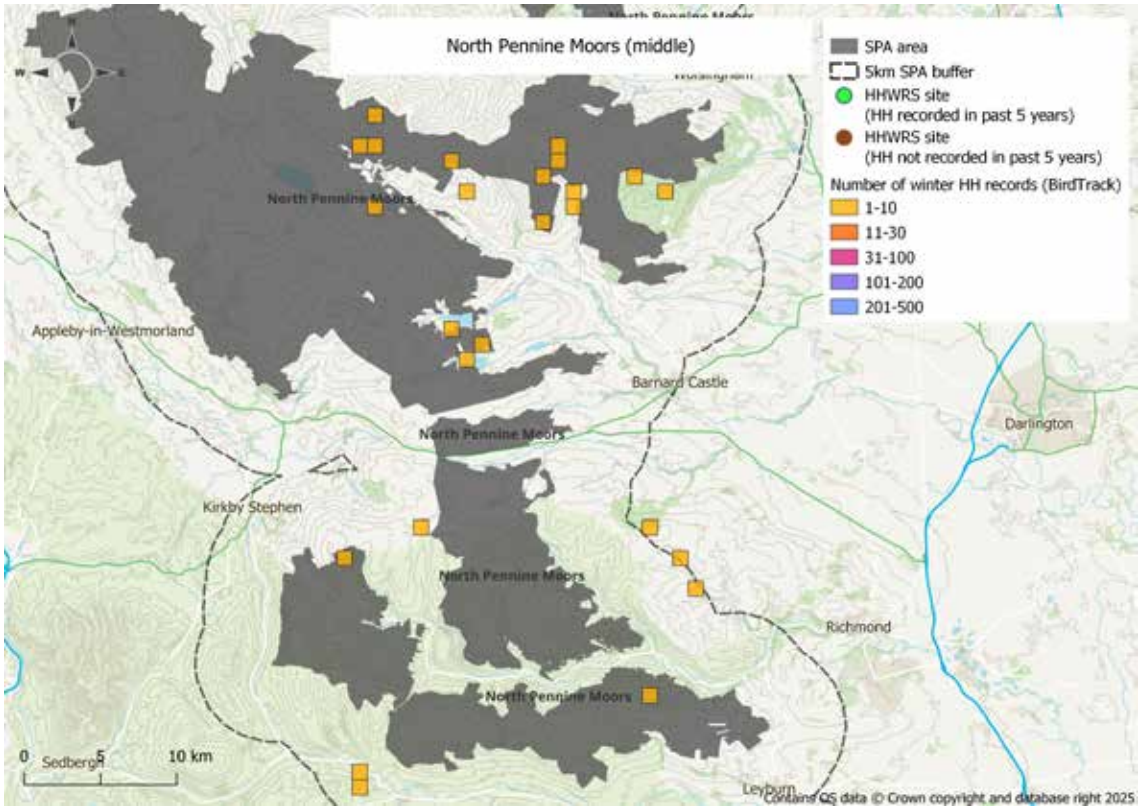
Results of the Hen Harrier Winter Roost Survey from 2019 to 2024

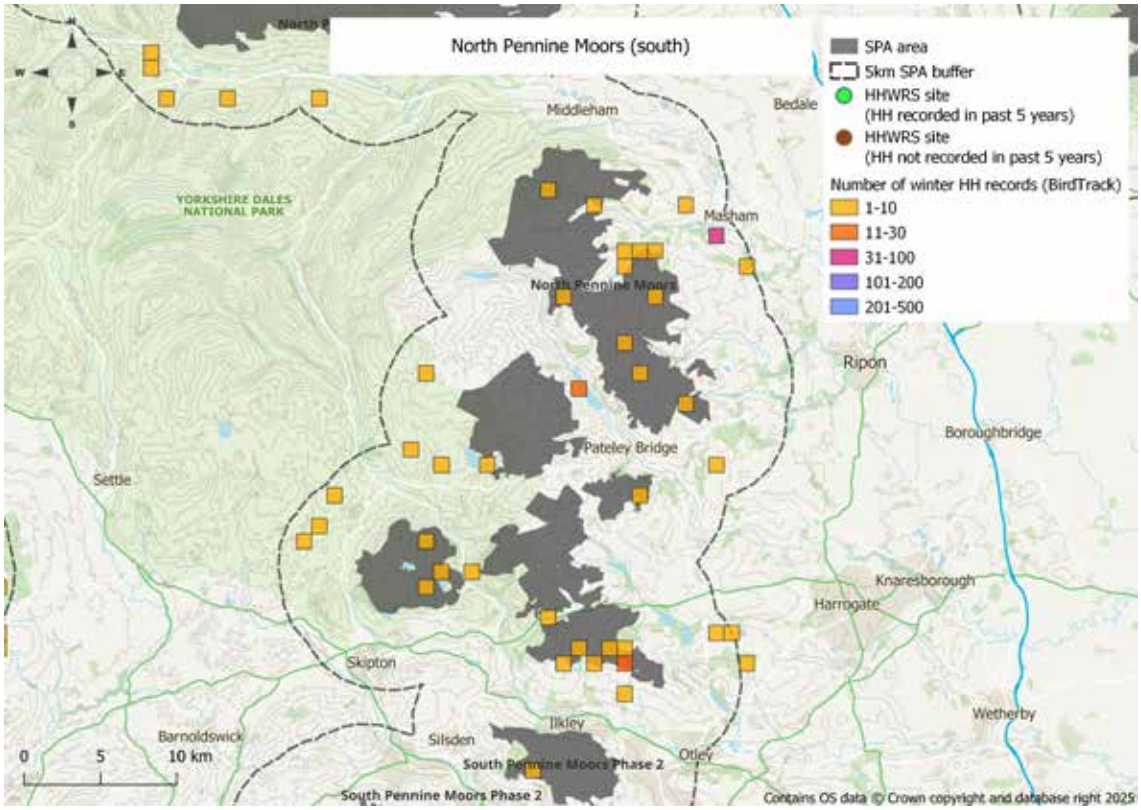
Site name	Visit date	Harriers recorded	Total brown roosting	Total grey roosting	Brown non-roosting	Grey non-roosting	Within SPA Boundary	Within 5 km of SPA
Amalveor Downs, Cornwall	2019–2020	Y	0	1	1	1		
	2022–2023	Y	1	0	0	0		
	2023–2024	N	0	0	0	0		
Baston Fen, Lincolnshire	2019–2020	Y	18	0	2	0		
	2022–2023	N	0	0	0	0		
	2023–2024	N	0	0	0	0		
Belton Marsh, Norfolk	2019–2020	N	0	0	0	0		Broadland
	2022–2023	Y	2	4	2	0		
	2023–2024	Y	0	1	0	1		
Bursdon Moor, Devon	2020–2021	Y	2	5	2	1		
	2022–2023	N	0	0	1	0		
Chimney Meadows NNR, Oxfordshire	2020–2021	Y	2	0	1	0		
	2021–2022	Y	0	1	0	0		
	2022–2023	N	0	0	0	0		
Common Moor, Devon	2020–2021	Y	1	0	0	0		
	2022–2023	Y	4	0	0	0		
Dingle Marshes, Suffolk	2021–2022	N	0	0	0	0		
	2022–2023	N	0	0	0	0		
	2023–2024	N	0	0	0	0		
Gibraltar Point NNR, Lincolnshire	2020–2021	Y	3	3	0	1	Gibraltar Point	
	2021–2022	Y	1	2	0	1		
	2022–2023	Y	1	3	0	0		
Hartland Moor, Dorset	2023–2024	Y	3	5	3	1		

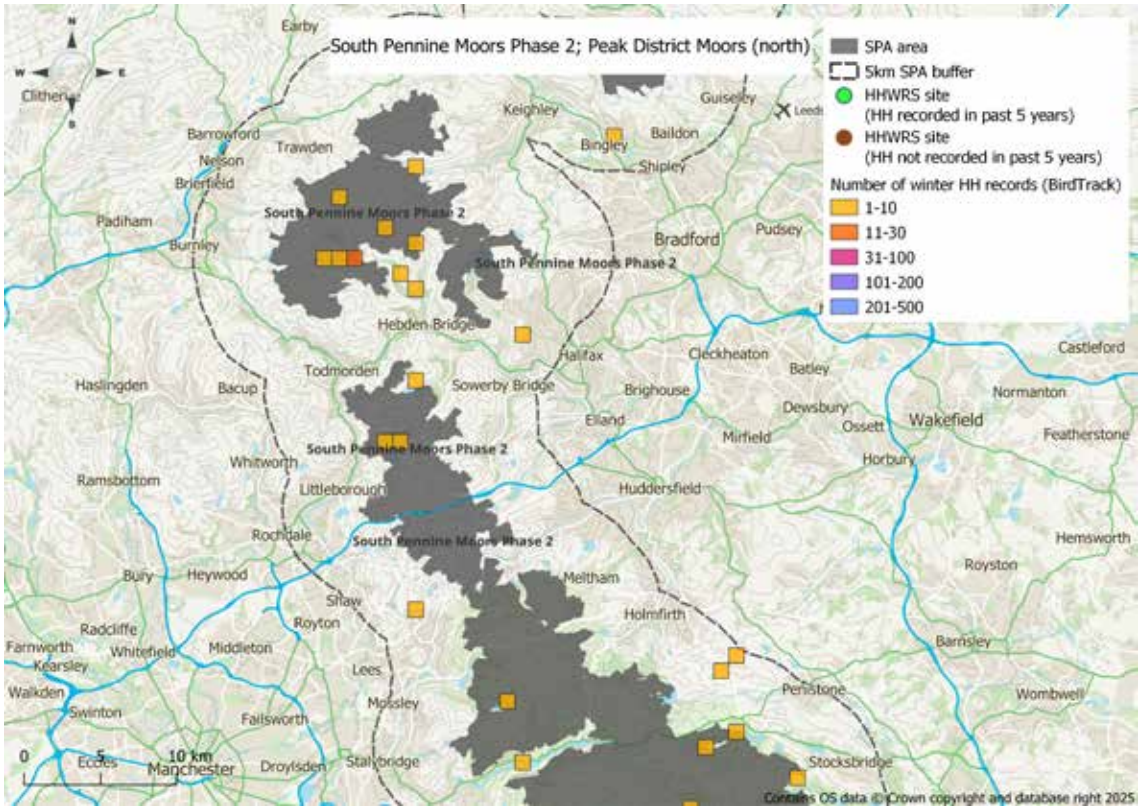
Site name	Visit date	Harriers recorded	Total brown roosting	Total grey roosting	Brown non-roosting	Grey non-roosting	Within SPA Boundary	Within 5 km of SPA
Holt Heath, Dorset	2021–2022	Y	4	4	0	0	Dorset Heathlands	
	2022–2023	Y	4	5	0	0		
	2023–2024	Y	6	9	0	0		
Horse Eye Level, Sussex	2022–2023	Y	8	0	0	0		
	2023–2024	Y	4	0	0	0		
Laughter Tor, Devon	2020–2021	Y	1	5	0	0		
	2023–2024	Y	6	24	1	0		
Mên-an-Tol, Cornwall	2021–2022	Y	1	0	1	1		
	2022–2023	Y	1	1	2	0		
	2023–2024	Y	0	1	1	1		
NT Dunwich Heath, Suffolk	2022–2023	N	0	0	0	0		
	2023–2024	Y	2	0	1	2		
NT Wicken Fen NNR, Cambridgeshire	2023–2024	Y	5	8	0	0		
RSPB Arne, Dorset – Arne Hill	2020–2021	N	0	0	1	0	Dorset Heathlands	
	2021–2022	N	0	0	0	0		
	2023–2024	N	0	0	0	0		
RSPB Arne, Dorset – Arne Moor	2021–2022	N	0	0	3	0	Dorset Heathlands	
	2023–2024	N	0	0	0	0		
RSPB Arne, Dorset – Coombe Viewpoint	2021–2022	N	0	0	0	0	Dorset Heathlands	
	2021–2022	N	0	0	0	0		
RSPB Aylesbeare Common, Devon	2019–2020	N	0	0	0	0		
	2023–2024	N	0	0	0	0		
RSPB Blacktoft Sands, Yorkshire	2021–2022	N	0	0	0	1		
	2023–2024	N	0	0	1	2		
RSPB Minsmere, Suffolk	2021–2022	N	0	0	0	0		Minsmere–Walberswick
	2023–2024	Y	3	0	1	0		

RSPB Old Hall Marshes, Essex	2019–2020	Y	0	1	0	0	Blackwater Estuary	
	2020–2021	N	0	0	0	0		
	2021–2022	Y	1	2	0	0		
	2022–2023	Y	1	0	1	1		
	2023–2024	Y	2	1	0	0		
RSPB Otmoor, Oxfordshire	2021–2022	Y	4	0	0	0		
RSPB Ouse Fen, Huntingdonshire	2022–2023	N	0	0	0	0		
RSPB Strumpshaw Fen, Norfolk	2022–2023	N	0	0	0	0		
	2023–2024	N	0	0	0	0		
RSPB Titchwell Marsh, Norfolk	2019–2020	Y	4	0	0	0	North Norfolk Coast	
	2020–2021	Y	4	0	0	1		
	2022–2023	Y	0	2	2	0		
	2023–2024	Y	3	0	0	0		
Salisbury Plain, Wiltshire – Larkhill Range	2022–2023	N	0	0	0	0	Salisbury Plain	
	2022–2023	Y	0	1	1	0		
Saltfleetby-Theddlethorpe Dunes NNR, Lincolnshire	2021–2022	Y	4	7	0	0		Humber Estuary
	2022–2023	Y	10	2	1	1		
	2023–2024	Y	13	5	0	0		
Thorney Deep, West Sussex	2023–2024	N	0	0	0	0		
Tregonetha Downs, Cornwall	2023–2024	N	0	0	0	0		
Westwood Marshes, Suffolk	2020–2021	N	0	0	0	0		
Woolley & Meddon Moor, Cornwall	2022–2023	N	0	0	0	0		

Appendix 3: Maps of BirdTrack winter Hen Harrier records within 5 km of SPA boundaries.






South Pennine Moors Phase 2; Peak District Moors (north)
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
South Pennine Moors Phase 2
Earby
Clitheroe
Keighley
Guiseley
Baildon
Bingley
Shipley
Barrowford
Nelson
Trawden
Brierfield
Padiham
Burnley
Bradford
Pudsey
Hebden Bridge
Halifax
Cleckheaton
Castleford
Todmorden
Batley
Haslingden
Bacup
Sowerby Bridge
Brighouse
Normanton
Dewsbury
Eland
Ossett
Wakefield
Mirfield
Featherstone
Whitworth
Horbury
Ramsbottom
Littleborough
Huddersfield
Rochdale
Hemsworth
Royston
Bury
Heywood
Meltham
Shaw
Holmfirth
Radcliffe
Royton
Farnworth
Whitefield
Middleton
Barnsley
Kearsley
Lees
Penistone
Walkden
Mossley
Wombwell
Swinton
Failsworth
0
5
10 km
Eccles
Manchester
Droylsden
Stalybridge
Stocksbridge
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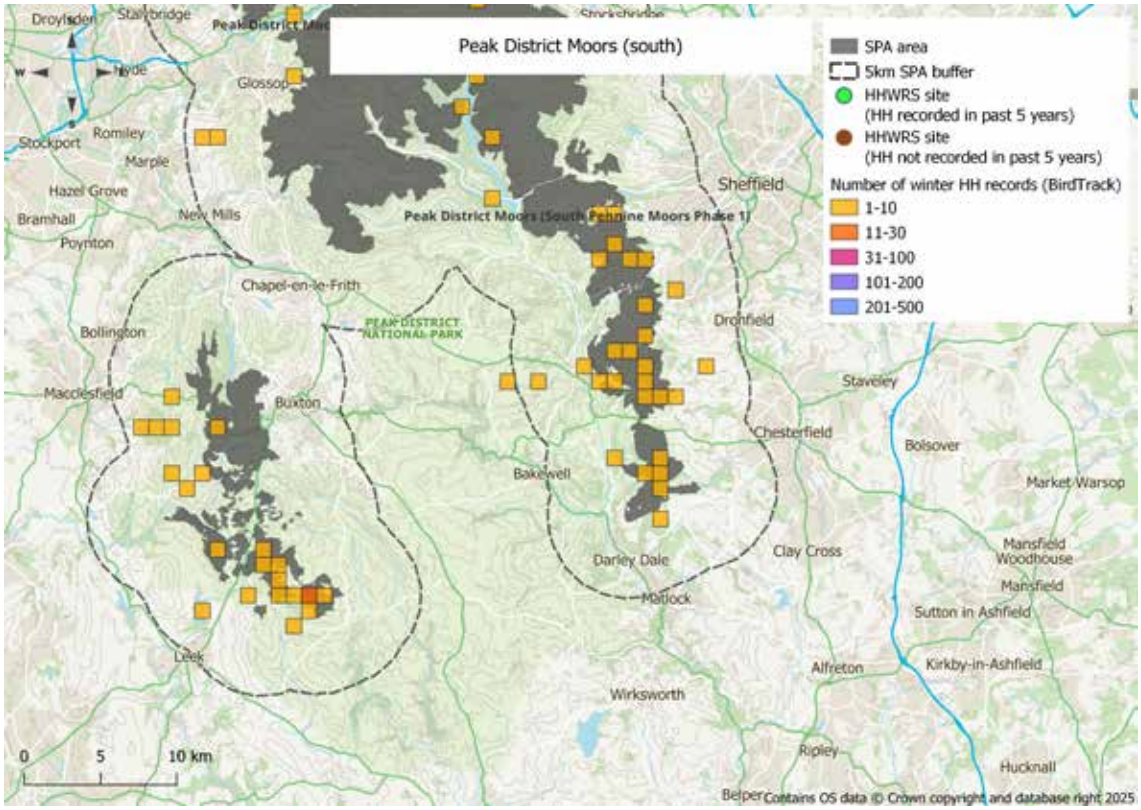
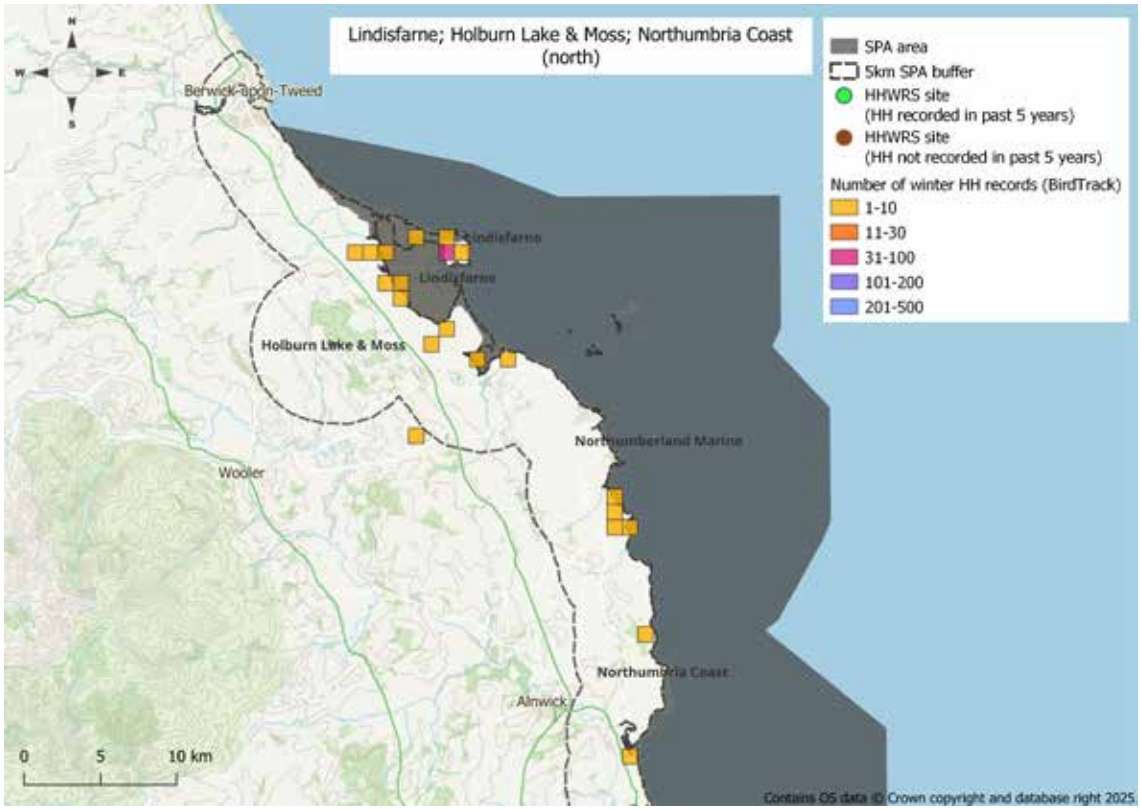

Peak District Moors (south)
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Peak District Moors (South Pennine Moors Phase 1)
Droylsden
Stalybridge
Glossop
Hyde
Stockport
Romiley
Marple
Hazel Grove
Bramhall
New Mills
Poynton
Sheffield
Chapel-en-le-Frith
PEAK DISTRICT NATIONAL PARK
Bollington
Dronfield
Staveley
Macclesfield
Buxton
Chesterfield
Bolsover
Bakewell
Market Warsop
Darley Dale
Clay Cross
Mansfield Woodhouse
Matlock
Mansfield
Sutton in Ashfield
Leek
Alfreton
Kirkby-in-Ashfield
Wirksworth
Ripley
Hucknall
Belper
0
5
10 km
Contains OS data © Crown copyright and database right 2025


Lindisfarne; Holburn Lake & Moss; Northumbria Coast (north)
SPA area
5km SPA buffer
HHWRS site (HH recorded in past 5 years)
HHWRS site (HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Berwick-upon-Tweed
Lindisfarne
Holburn Lake & Moss
Northumberland Marine
Wooler
Northumbria Coast
Alnwick
0 5 10 km
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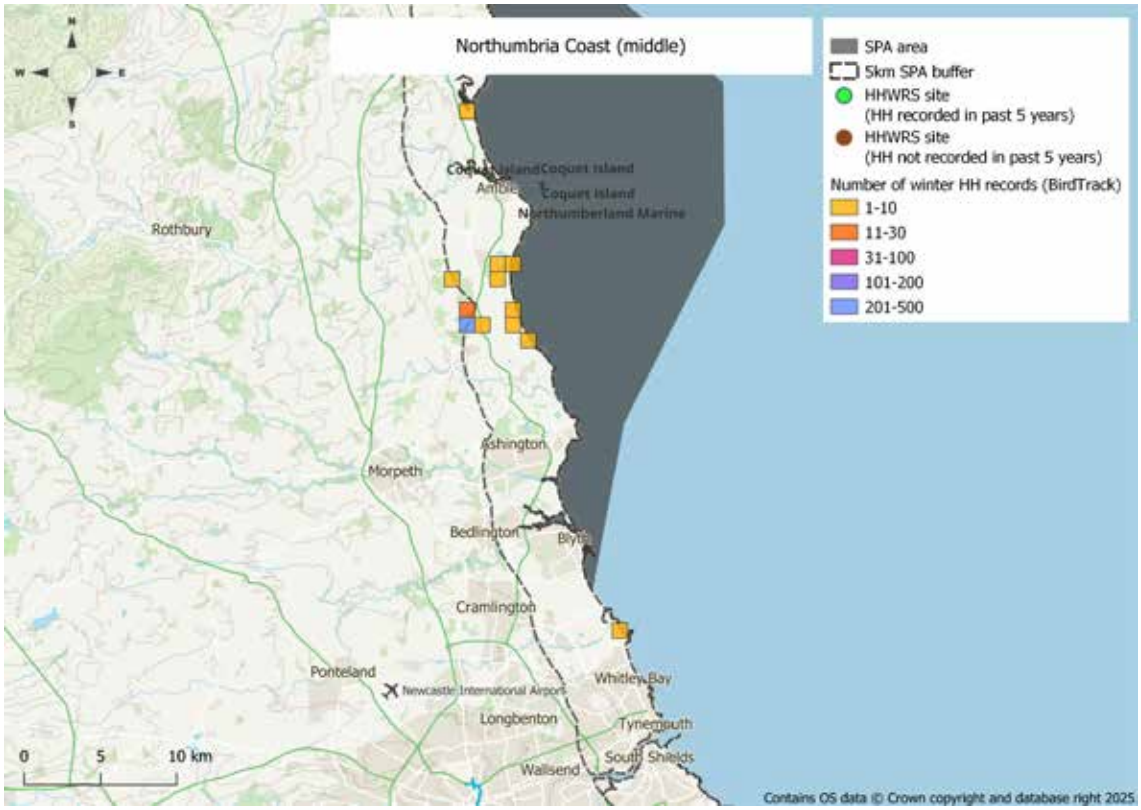
Northumbria Coast (middle)
SPA area
5km SPA buffer
HHWRS site (HH recorded in past 5 years)
HHWRS site (HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Coquet Island
Northumberland Marine
Rothbury
Morpeth
Bedlington
Cramlington
Ponteland
Newcastle International Airport
Whitley Bay
Longbenton
Tynemouth
South Shields
Wallsend
0 5 10 km
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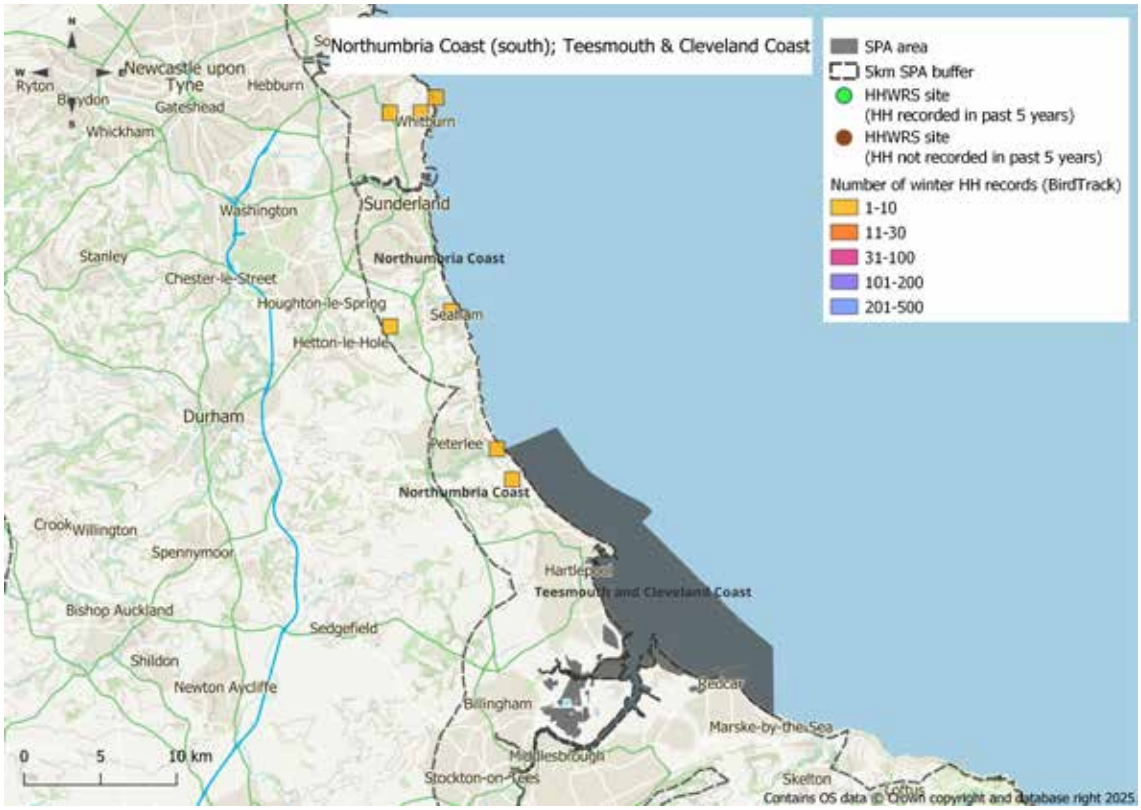
Northumbria Coast (south); Teesmouth & Cleveland Coast
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Newcastle upon Tyne
Ryton
Blaydon
Gateshead
Hebburn
Whickham
Washington
Sunderland
Stanley
Chester-le-Street
Houghton-le-Spring
Seaham
Hetton-le-Hole
Durham
Peterlee
Crook
Willington
Spennymoor
Bishop Auckland
Sedgefield
Shildon
Newton Aycliffe
Billingham
Redcar
Marske-by-the-Sea
Middlesbrough
Stockton-on-Tees
Skelton
Loftus
0
5
10 km
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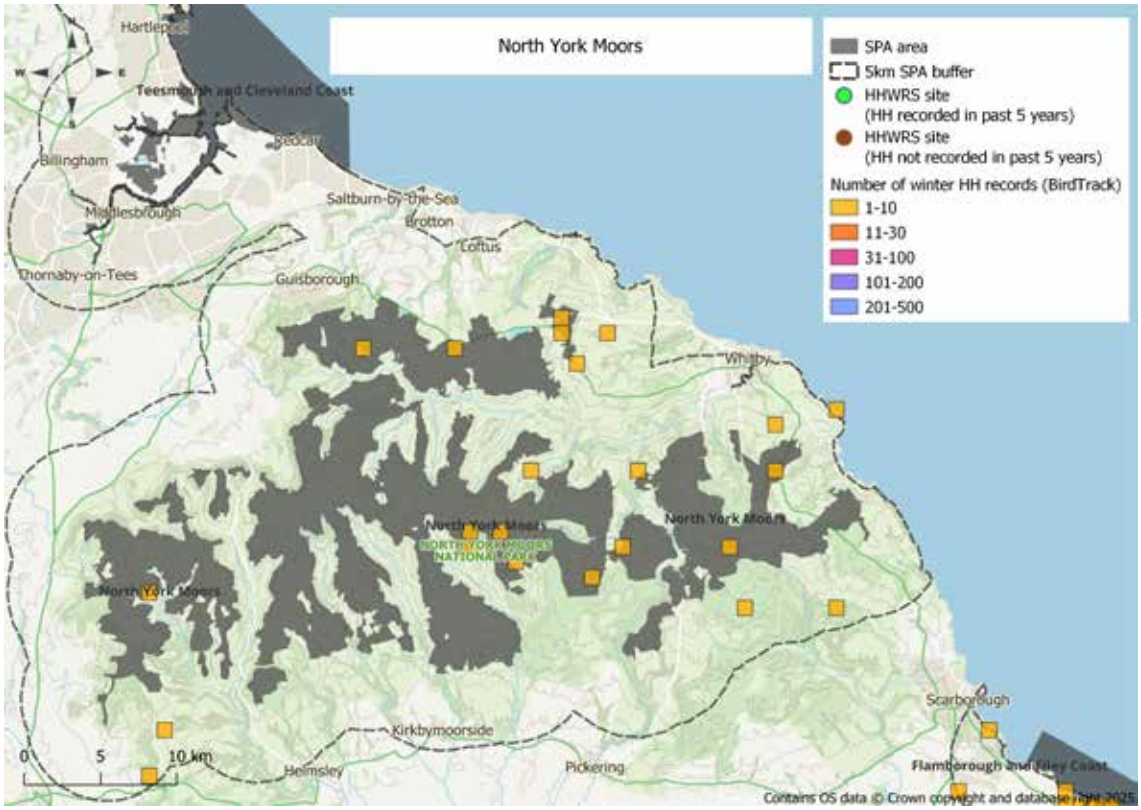
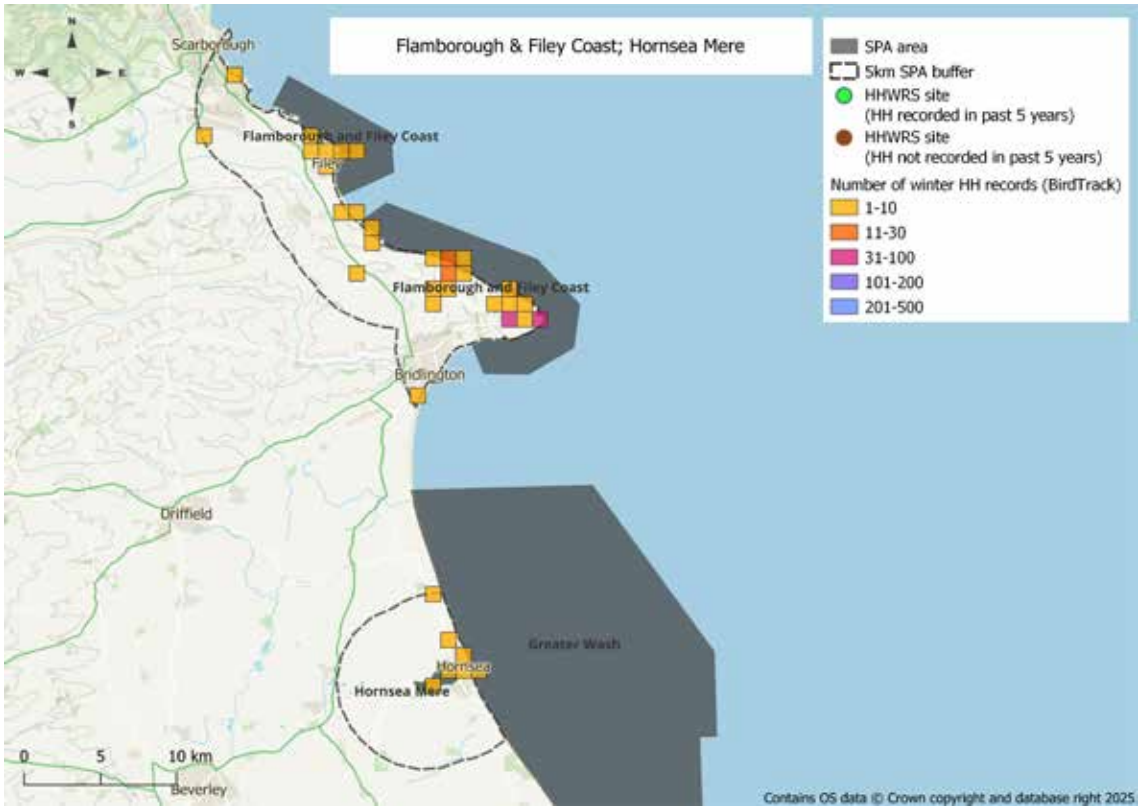
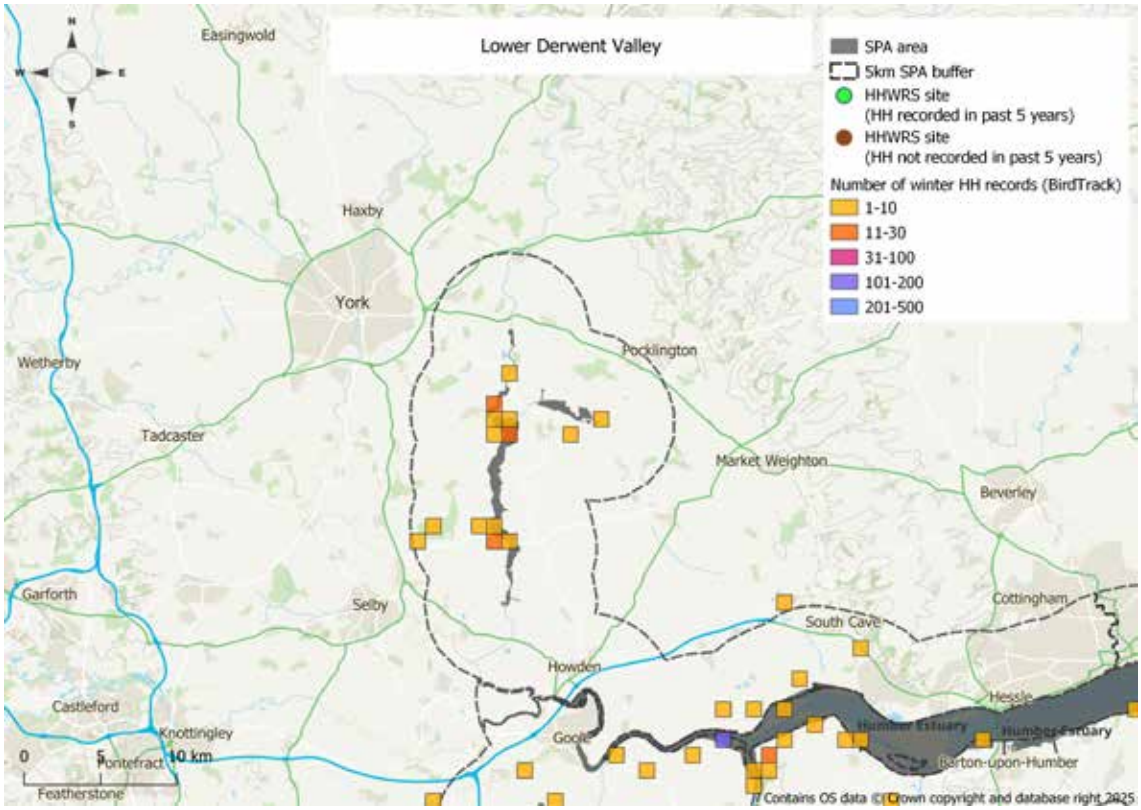
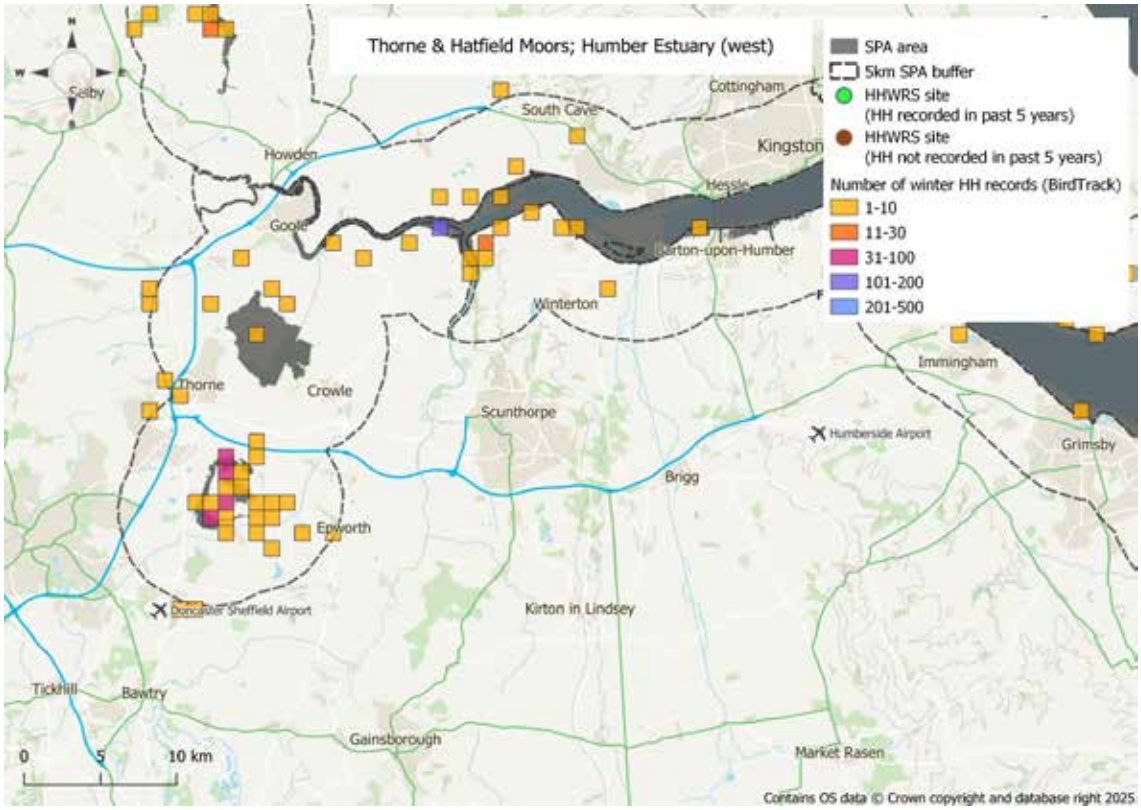

North York Moors
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Billingham
Redcar
Saltburn-by-the-Sea
Brotton
Loftus
Middlesbrough
Thornaby-on-Tees
Guisborough
Whitby
Scarborough
Kirkbymoorside
Helmsley
Pickering
Flamborough and Filey Coast
0
5
10 km
Contains OS data © Crown copyright and database right 2025


Flamborough & Filey Coast; Hornsea Mere
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Scarborough
Flamborough and Filey Coast
Filey
Flamborough and Filey Coast
Bridlington
Driffield
Greater Wash
Hornsea
Hornsea Mere
0
5
10 km
Beverley
Contains OS data © Crown copyright and database right 2025


Lower Derwent Valley
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Easingwold
Haxby
York
Wetherby
Tadcaster
Pocklington
Market Weighton
Beverley
Garforth
Selby
Cottingham
South Cave
Howden
Castleford
Knottingley
Goole
Hessle
Barton-upon-Humber
Pontefract
Featherstone
0
5
10 km
Contains OS data © Crown copyright and database right 2025


Thorne & Hatfield Moors; Humber Estuary (west)
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Selby
Howden
Goole
South Cave
Cottingham
Kingston
Hessle
Winterton
Thorne
Crowle
Scunthorpe
Immingham
Humberside Airport
Grimsby
Brigg
Epworth
Kirton in Lindsey
Ticklhill
Bawtry
Gainsborough
Market Rasen
0
5
10 km
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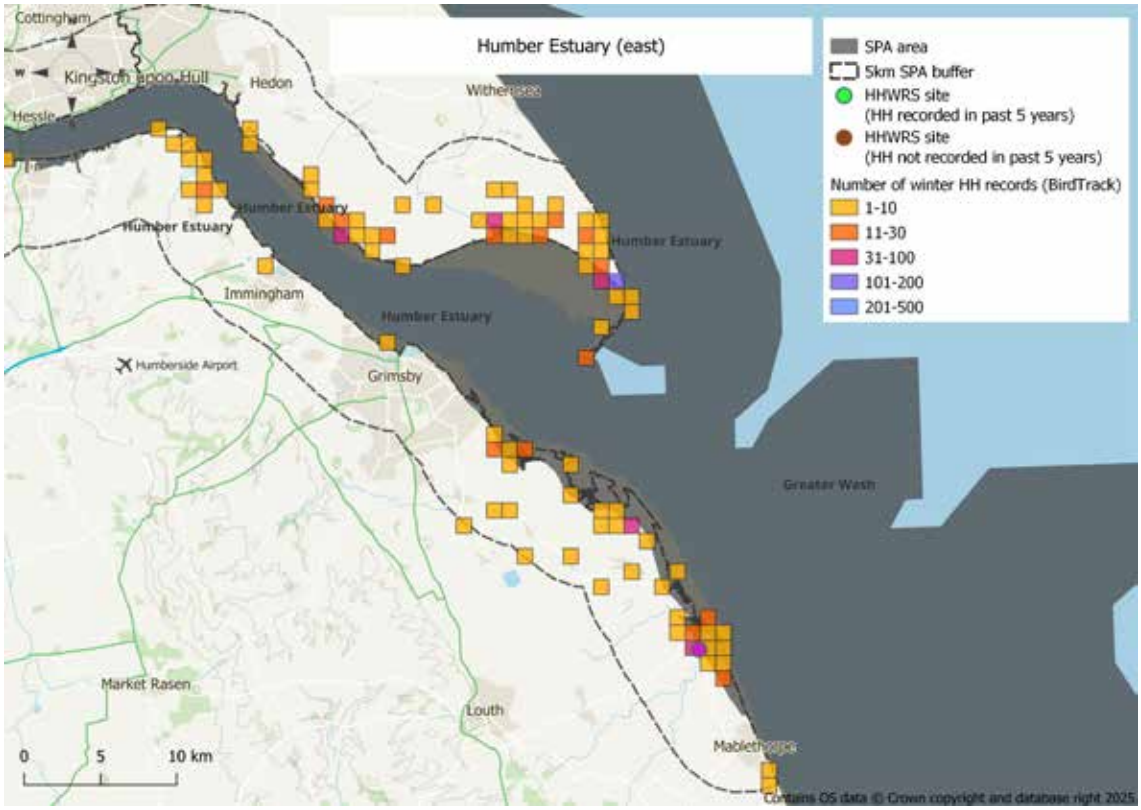
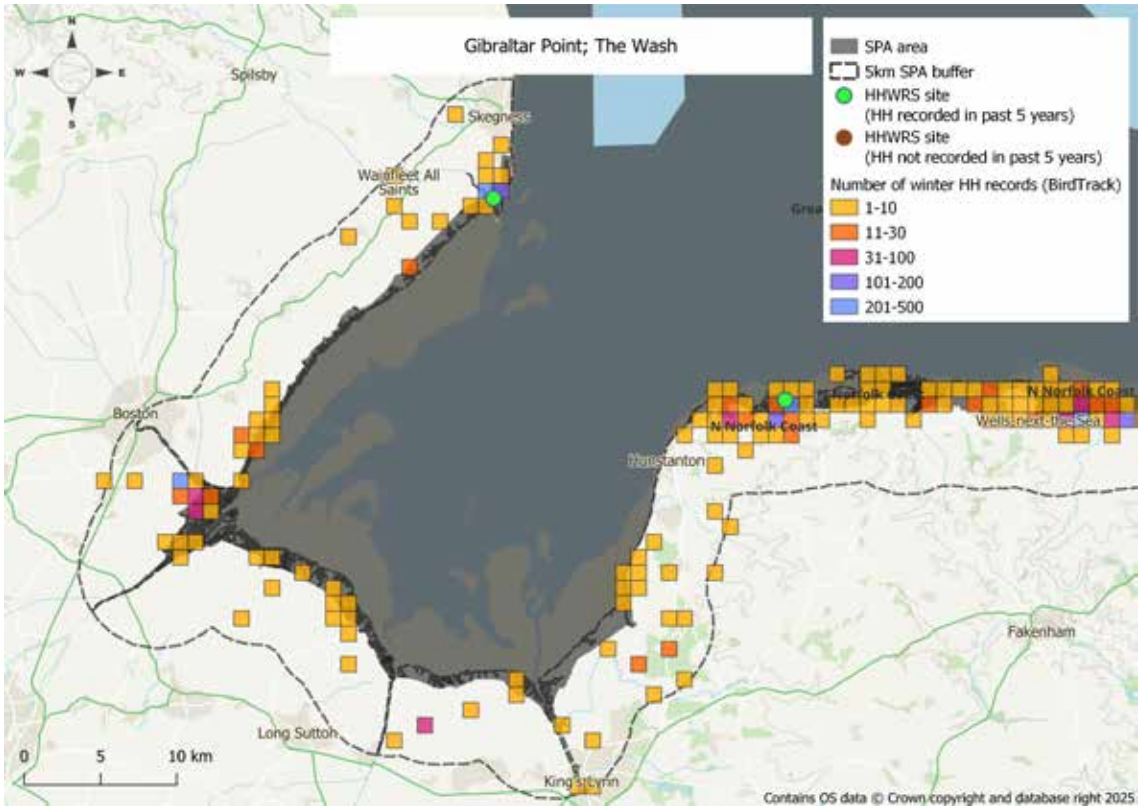

Humber Estuary (east)
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Cottingham
Hedon
Hessle
Humber Estuary
Immingham
Humberside Airport
Grimsby
Greater Wash
Market Rasen
Louth
0
5
10 km
Contains OS data © Crown copyright and database right 2025


Gibraltar Point; The Wash
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Skegness
Boston
Long Sutton
Fakenham
N Norfolk Coast
Hunstanton
Wells-next-the-Sea
0
5
10 km
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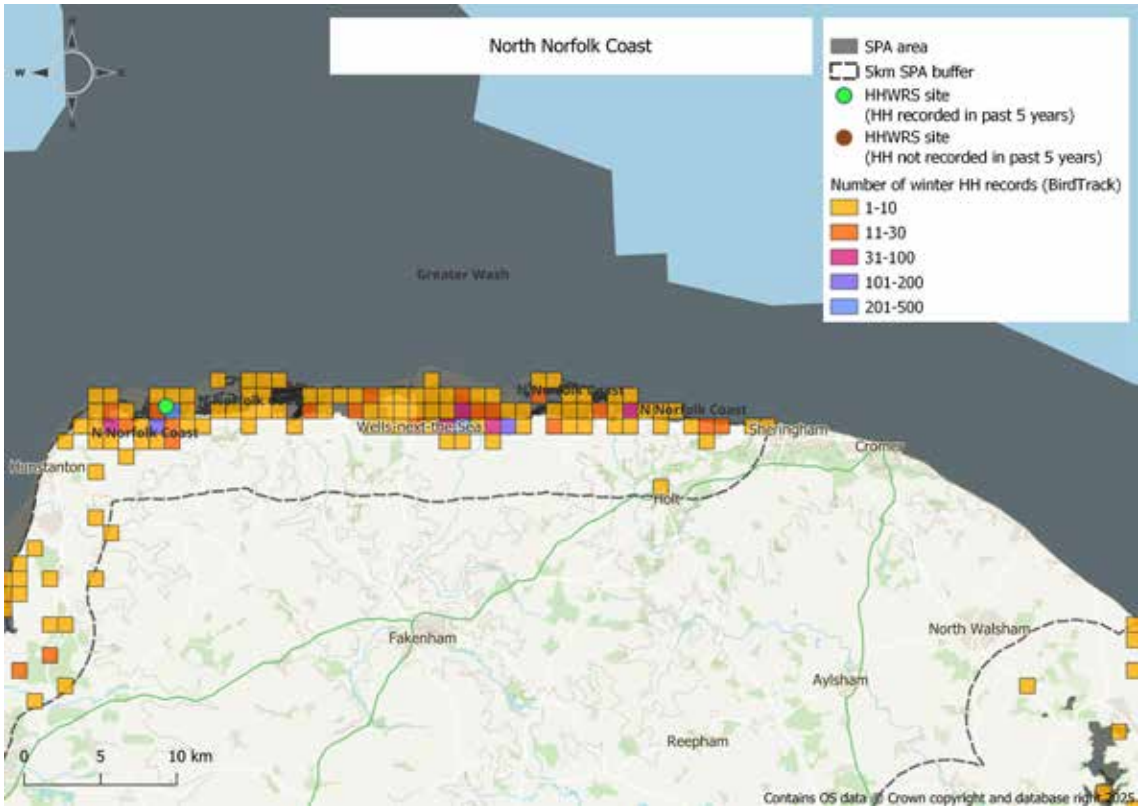
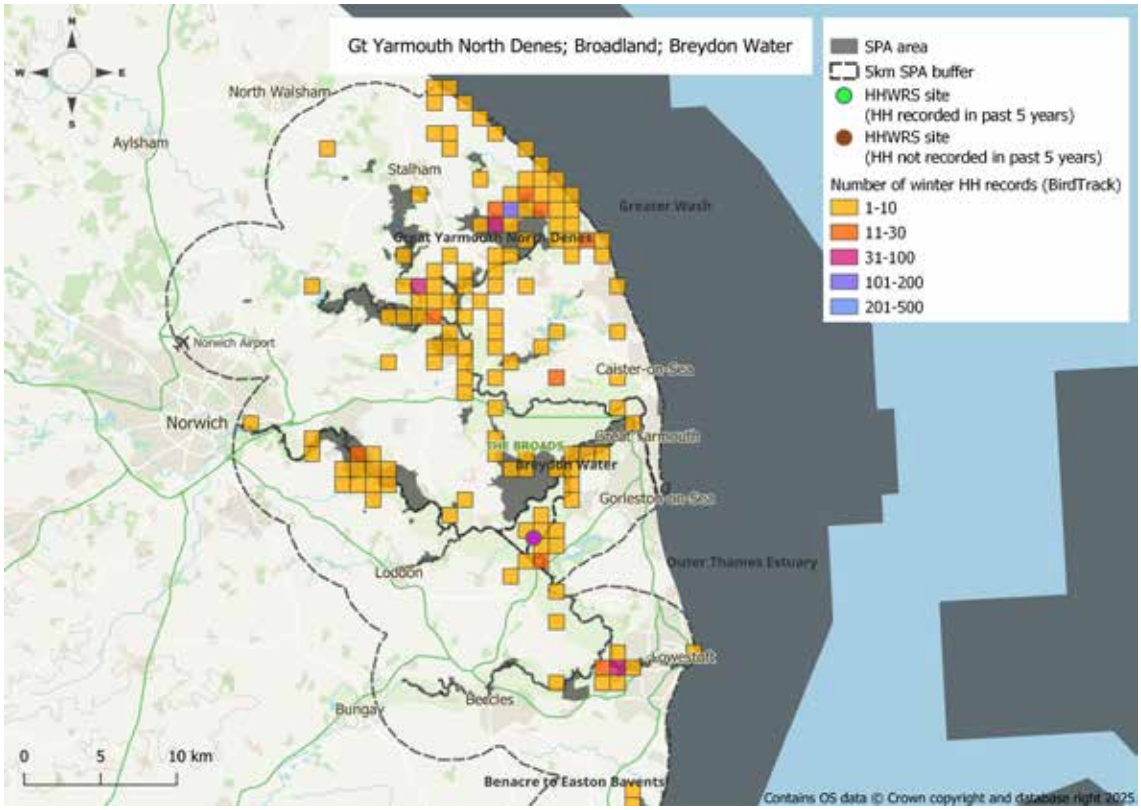

North Norfolk Coast
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Greater Wash
N Norfolk Coast
Hunstanton
Wells-next-the-Sea
Sheringham
Cromer
Holt
Fakenham
North Walsham
Aylsham
Reepham
0
5
10 km
Contains OS data © Crown copyright and database right 2025


Gt Yarmouth North Denes; Broadland; Breydon Water
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
North Walsham
Aylsham
Stalham
Greater Wash
Great Yarmouth North Denes
Norwich Airport
Norwich
Caister-on-Sea
Great Yarmouth
THE BROADS
Breydon Water
Gorleston-on-Sea
Outer Thames Estuary
Lodden
Lowestoft
Beccles
Bungay
0
5
10 km
Benacre to Easton Bavents
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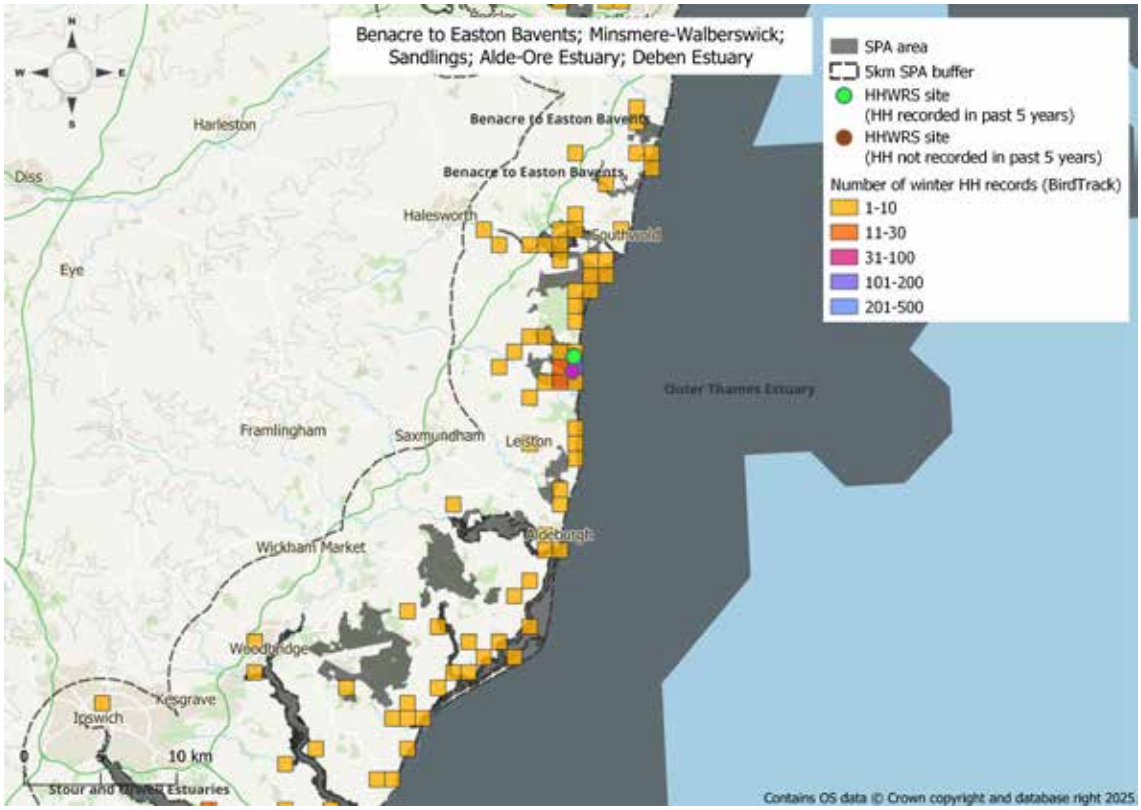
Benacre to Easton Bavents; Minsmere-Walberswick; Sandlings; Alde-Ore Estuary; Deben Estuary
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Harleston
Diss
Benacre to Easton Bavents
Benacre to Easton Bavents
Halesworth
Southwold
Eye
Outer Thames Estuary
Framlingham
Saxmundham
Leiston
Aldeburgh
Wickham Market
Woodbridge
Kesgrave
Ipswich
0
10 km
Stour and Orwell Estuaries
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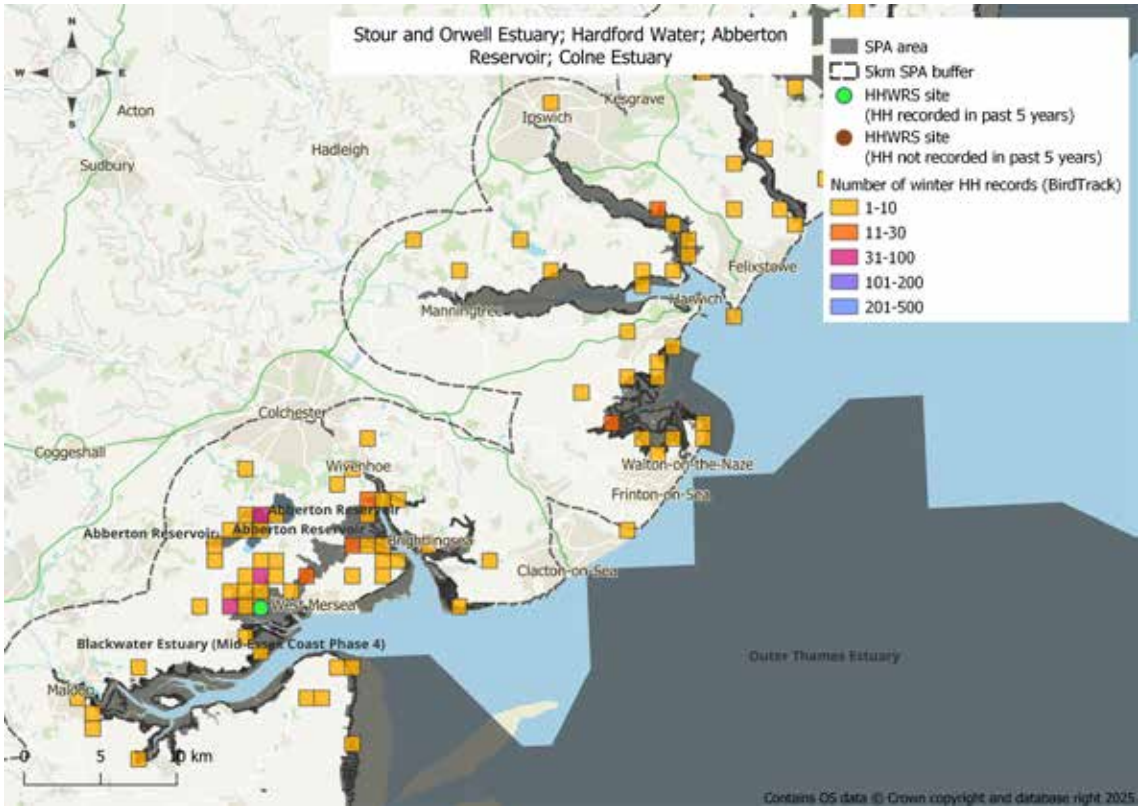
Stour and Orwell Estuary; Hardford Water; Abberton Reservoir; Colne Estuary
SPA area
5km SPA buffer
HHWRS site (HH recorded in past 5 years)
HHWRS site (HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Acton
Sudbury
Hadleigh
Ipswich
Kesgrave
Felixstowe
Harwich
Manningtree
Colchester
Coggeshall
Wivenhoe
Walton-on-the-Naze
Frinton-on-Sea
Abberton Reservoir
Clacton-on-Sea
West Mersea
Blackwater Estuary (Mid-Essex Coast Phase 4)
Outer Thames Estuary
Maldon
0 5 10 km
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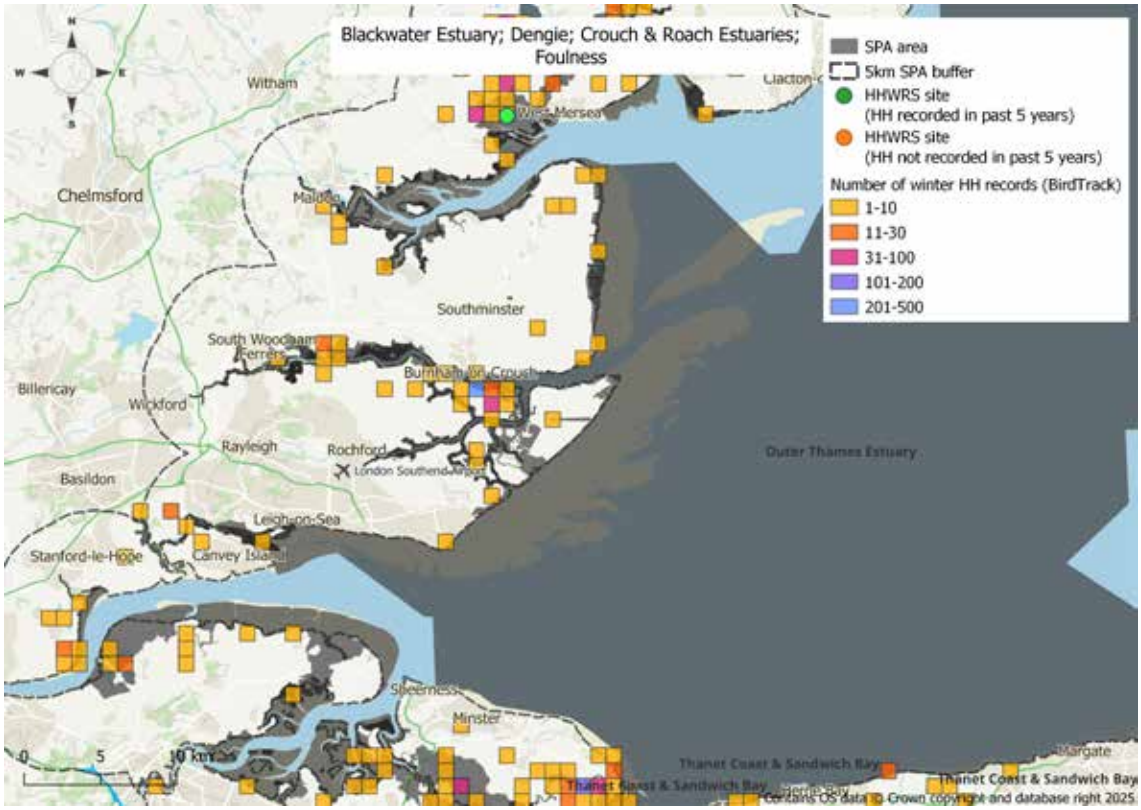
Blackwater Estuary; Dengie; Crouch & Roach Estuaries; Foulness
SPA area
5km SPA buffer
HHWRS site (HH recorded in past 5 years)
HHWRS site (HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Witham
Chelmsford
Maldon
West Mersea
Southminster
South Woodham Ferrers
Burnham-on-Crouch
Billericay
Wickford
Rayleigh
Rochford
Basildon
Leigh-on-Sea
Stanford-le-Hope
Canvey Island
Sheerness
Minster
Outer Thames Estuary
Thanet Coast & Sandwich Bay
Margate
0 5 10 km
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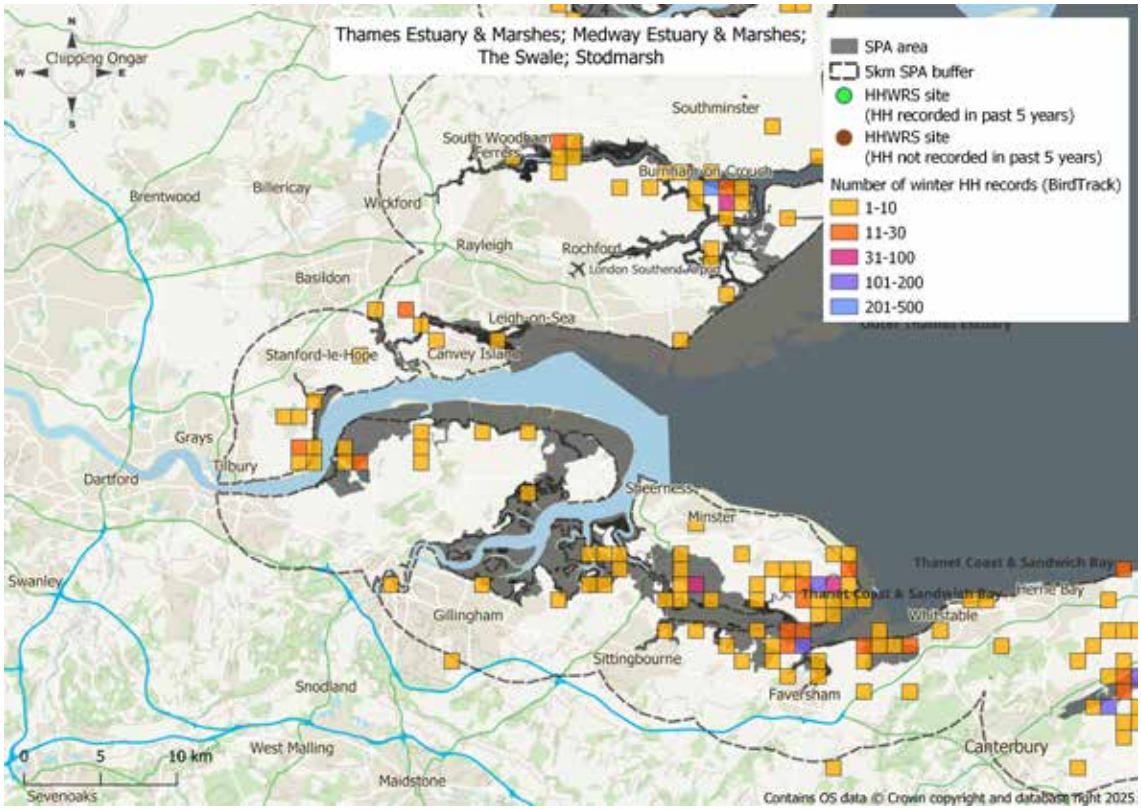
Thames Estuary & Marshes; Medway Estuary & Marshes; The Swale; Stodmarsh
SPA area
5km SPA buffer
HHWRS site (HH recorded in past 5 years)
HHWRS site (HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Clipping Ongar
Brentwood
Billericay
Wickford
Southminster
South Woodham Ferrers
Burnham-on-Crouch
Rayleigh
Rochford
London Southend Airport
Basildon
Leigh-on-Sea
Stanford-le-Hope
Canvey Island
Grays
Tilbury
Dartford
Sheerness
Minster
Thanet Coast & Sandwich Bay
Swanley
Gillingham
Whitstable
Sittingbourne
Faversham
Snodland
Canterbury
West Malling
Maidstone
Sevenoaks
0 5 10 km
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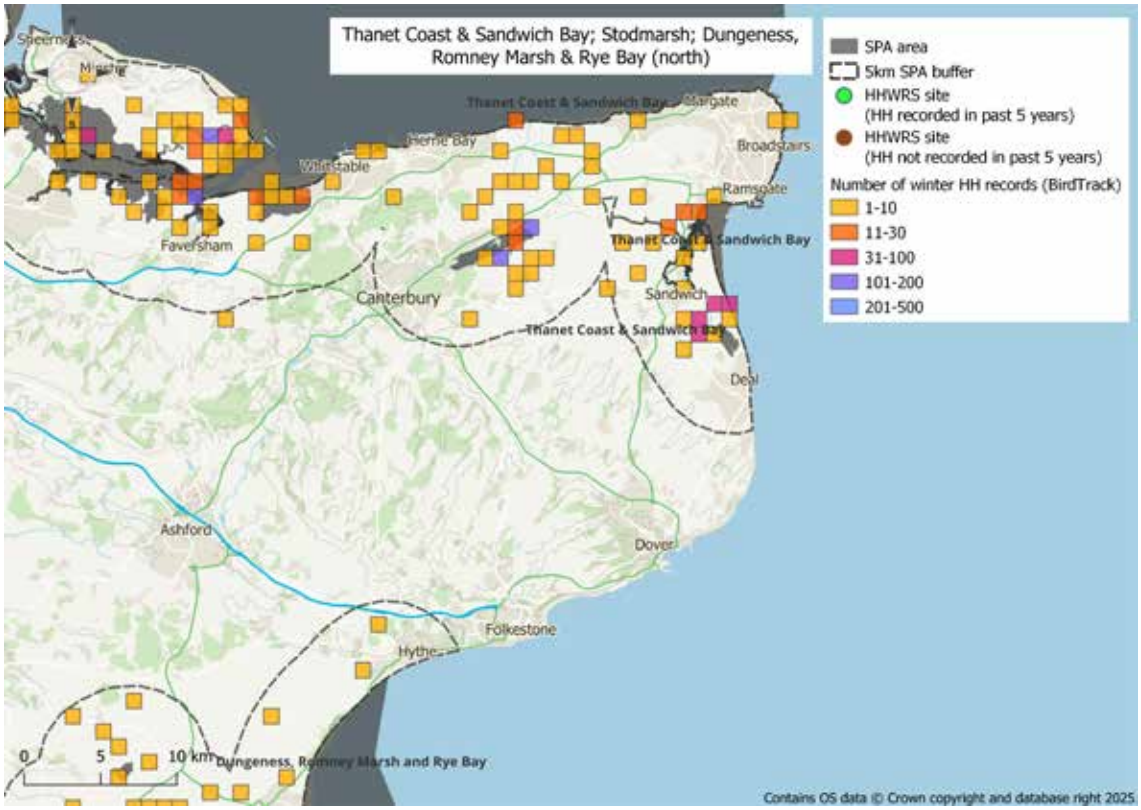
Thanet Coast & Sandwich Bay; Stodmarsh; Dungeness, Romney Marsh & Rye Bay (north)
SPA area
5km SPA buffer
HHWRS site (HH recorded in past 5 years)
HHWRS site (HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Sheerness
Minster
Thanet Coast & Sandwich Bay
Margate
Herne Bay
Broadstairs
Whitstable
Ramsgate
Faversham
Canterbury
Sandwich
Deal
Ashford
Dover
Folkestone
Hythe
0 5 10 km
Dungeness, Romney Marsh and Rye Bay
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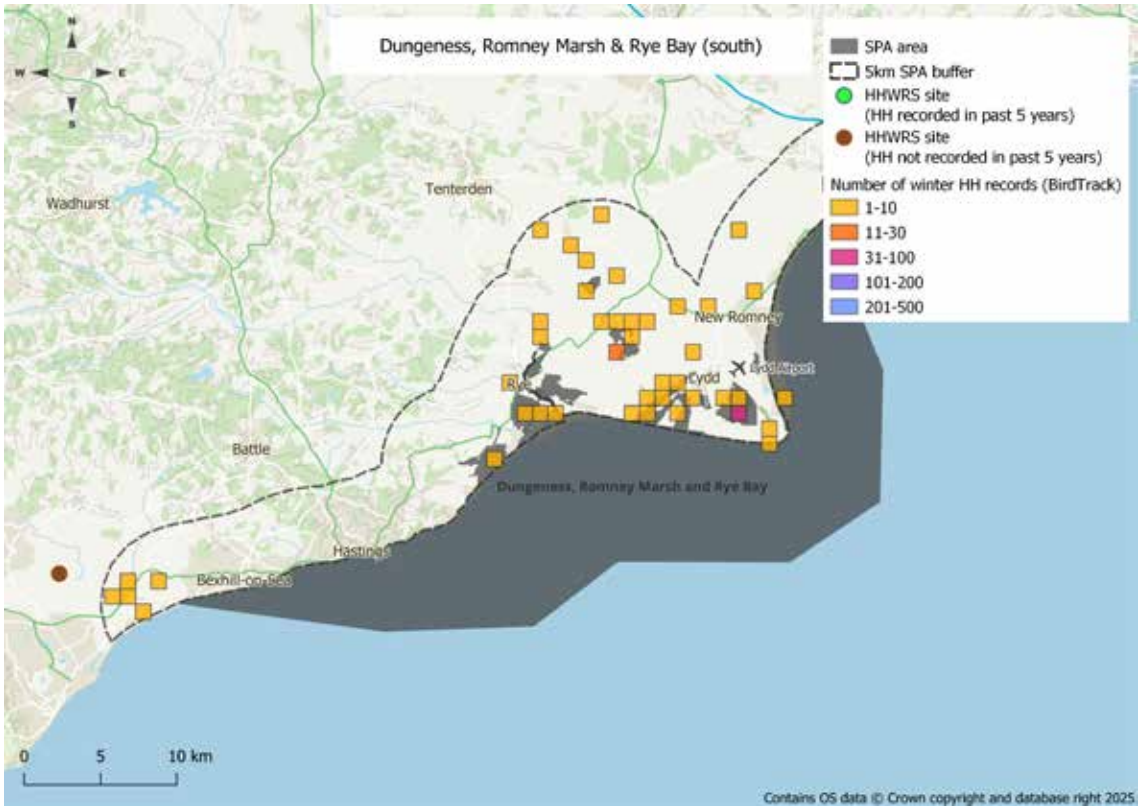
Dungeness, Romney Marsh & Rye Bay (south)
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Wadhurst
Tenterden
New Romney
Rye
Cyod
Battle
Dungeness, Romney Marsh and Rye Bay
Hastings
Bexhill-on-Sea
0
5
10 km
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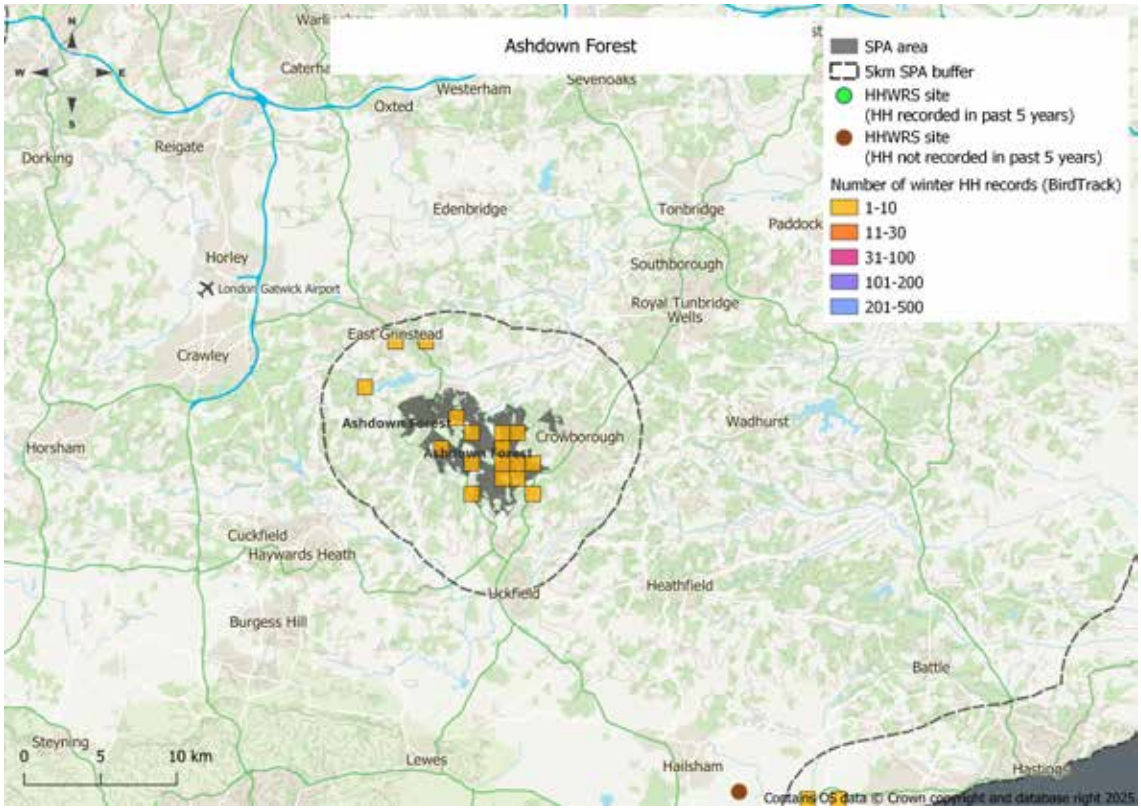
Ashdown Forest
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Dorking
Reigate
Oxted
Westerham
Sevenoaks
Edenbridge
Tonbridge
Paddock
Horley
London Gatwick Airport
Southborough
Royal Tunbridge Wells
East Grinstead
Crawley
Ashdown Forest
Crowborough
Wadhurst
Horsham
Cuckfield
Haywards Heath
Uckfield
Heathfield
Burgess Hill
Battle
Steyning
Lewes
Hailsham
0
5
10 km
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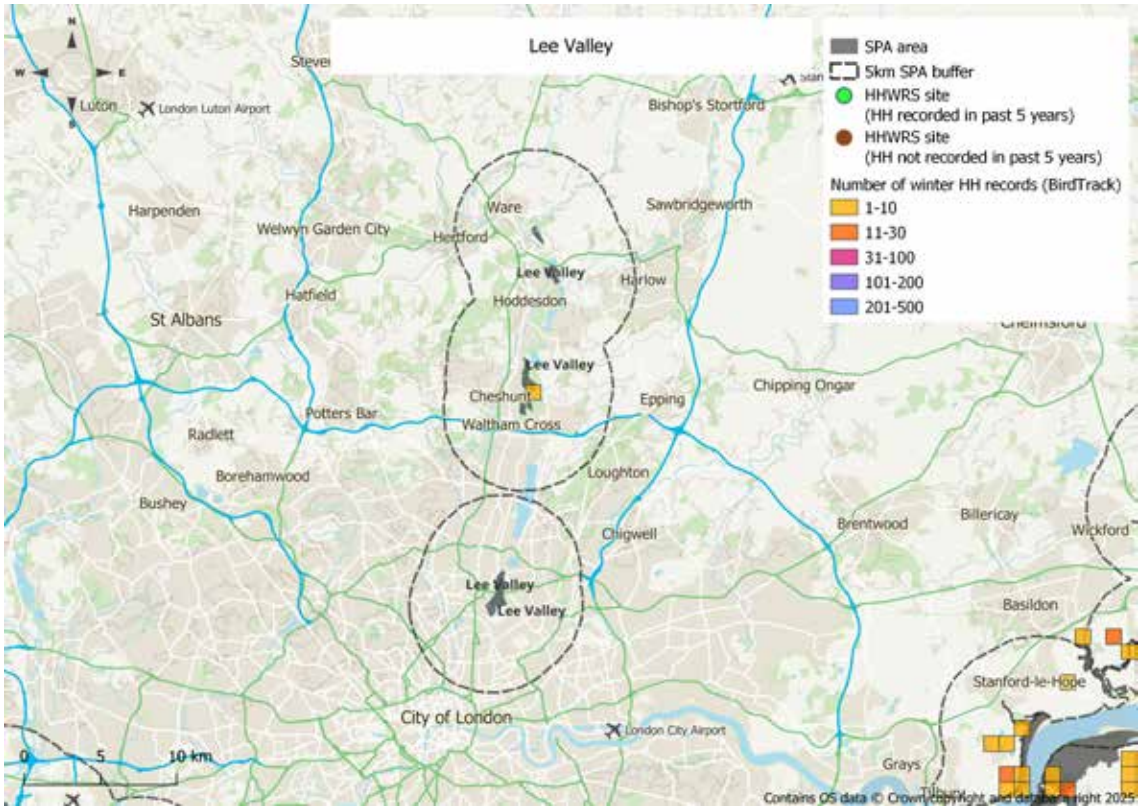
Lee Valley
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Luton
London Luton Airport
Stevenage
Bishop's Stortford
Harpenden
Welwyn Garden City
Ware
Hertford
Sawbridgeworth
Hatfield
Harlow
Hoddesdon
St Albans
Cheshunt
Epping
Chipping Ongar
Potters Bar
Waltham Cross
Radlett
Loughton
Borehamwood
Bushey
Chigwell
Brentwood
Billericay
Wickford
Basildon
Stanford-le-Hope
City of London
London City Airport
Grays
0
5
10 km
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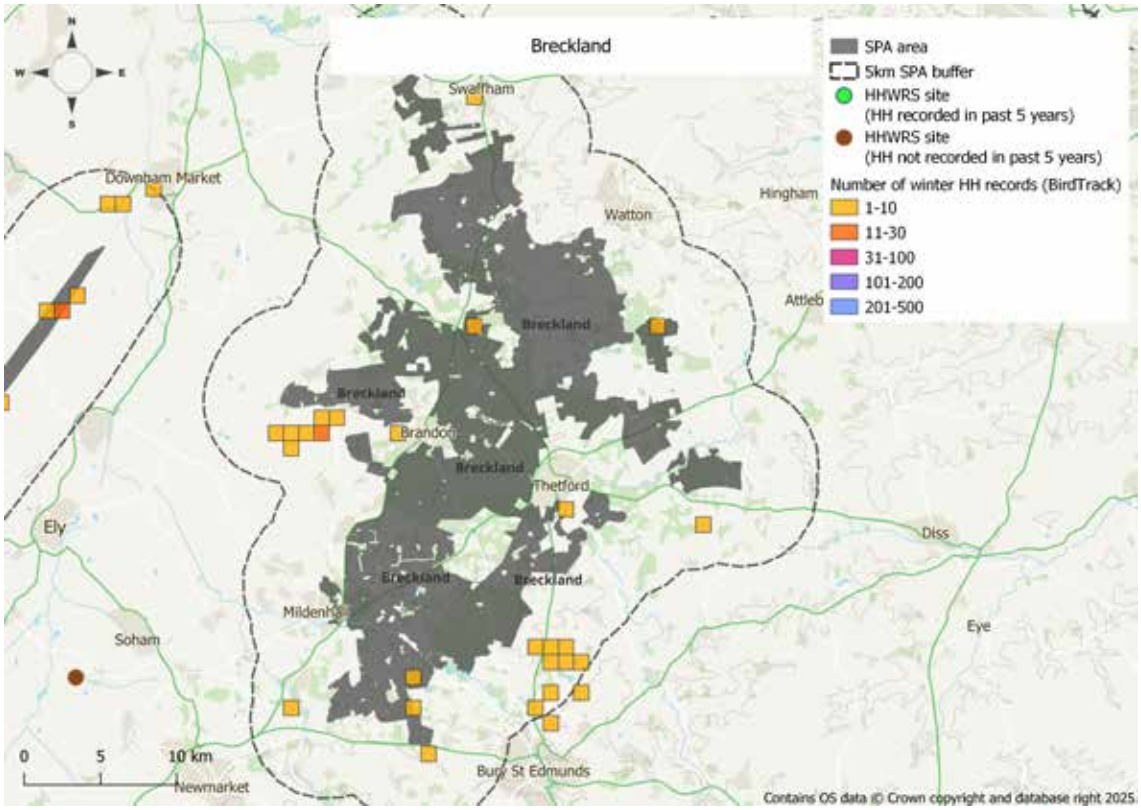
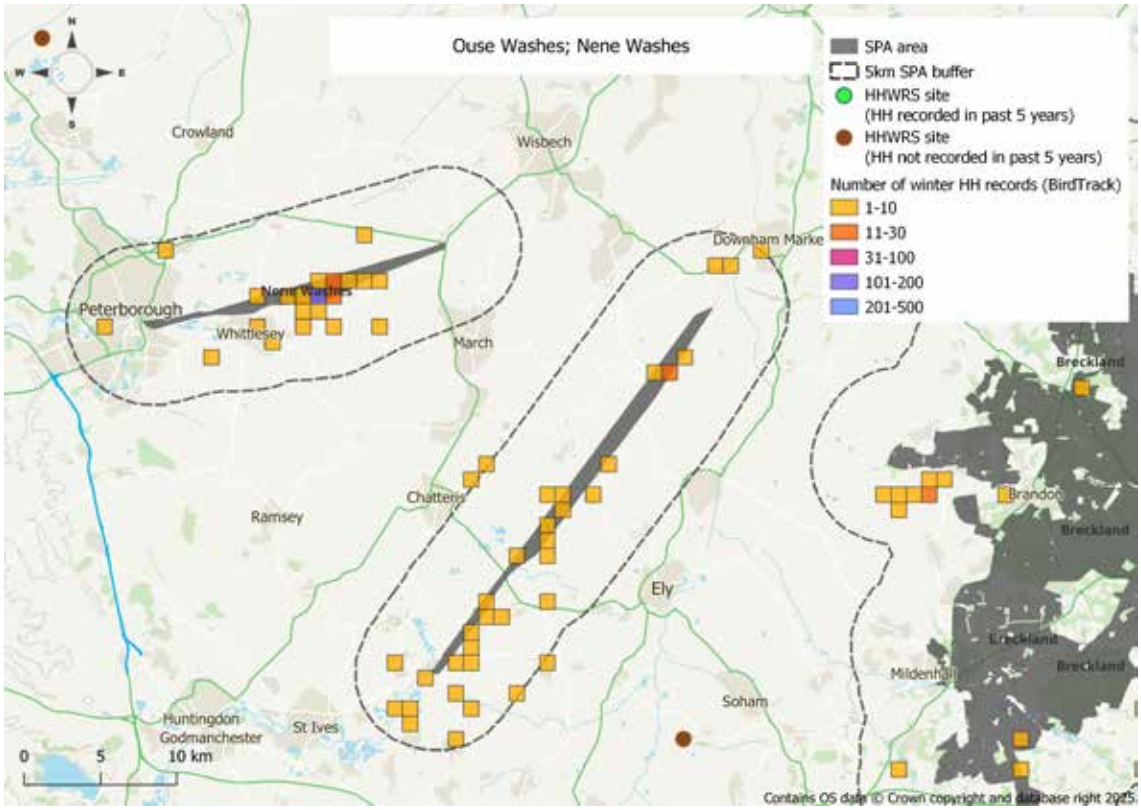

Breckland
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Swaffham
Downham Market
Watton
Hingham
Attleb
Brandon
Thetford
Ely
Diss
Mildenhall
Soham
Eye
Bury St Edmunds
Newmarket
0
5
10 km
Contains OS data © Crown copyright and database right 2025


Ouse Washes; Nene Washes
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Crowland
Wisbech
Downham Market
Peterborough
Nene Washes
Whittlesey
March
Ramsey
Chatteris
Ely
Soham
Huntingdon
Godmanchester
St Ives
Brandon
Mildenhall
0
5
10 km
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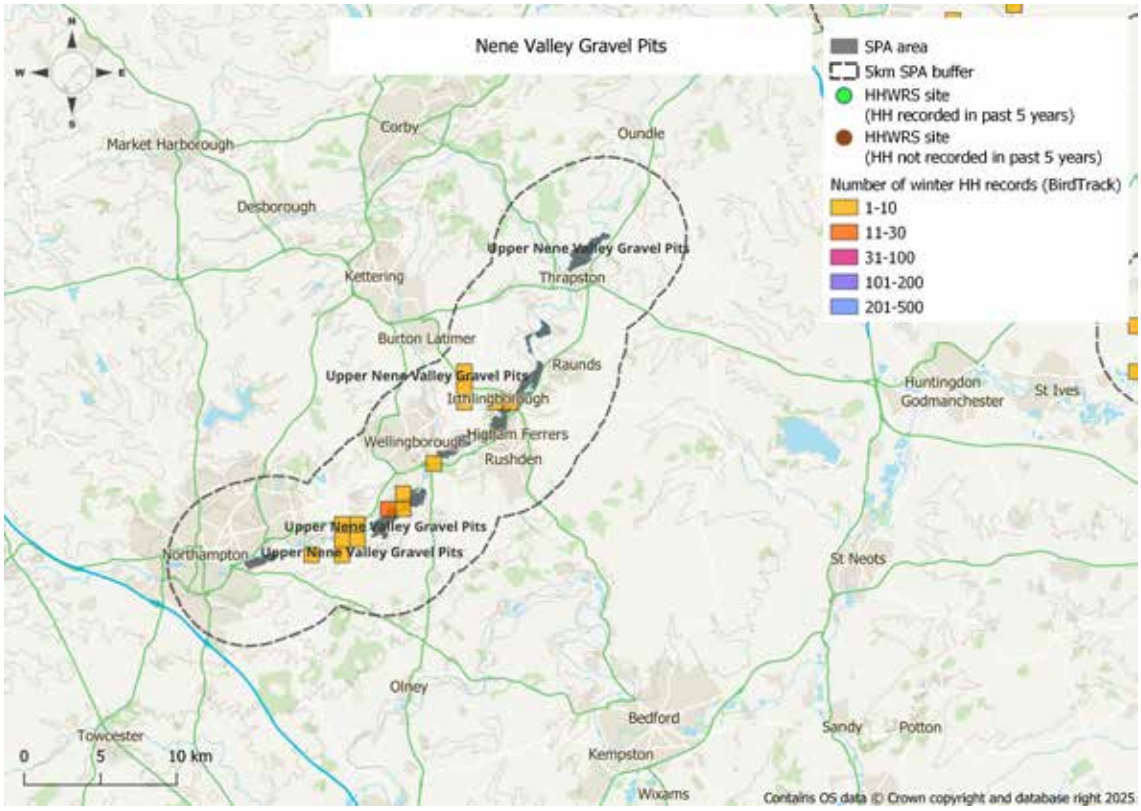
Nene Valley Gravel Pits
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Market Harborough
Corby
Oundle
Desborough
Kettering
Thrapston
Upper Nene Valley Gravel Pits
Burton Latimer
Raunds
Irthlingborough
Higham Ferrers
Wellingborough
Rushden
Northampton
Huntingdon
Godmanchester
St Ives
St Neots
Olney
Towcester
Bedford
Sandy
Potton
Kempston
Wixams
0
5
10 km
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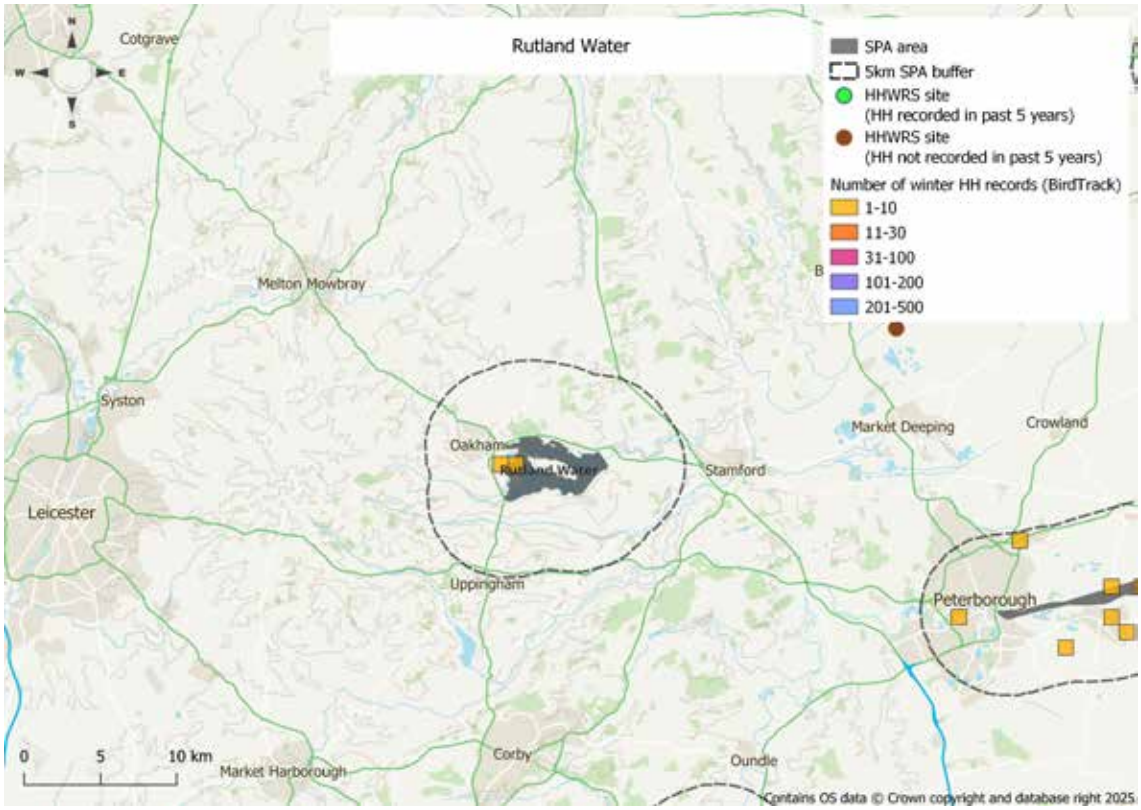
Rutland Water
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Cotgrave
Melton Mowbray
Syston
Leicester
Oakham
Rutland Water
Stamford
Market Deeping
Crowland
Uppingham
Peterborough
Corby
Oundle
Market Harborough
0
5
10 km
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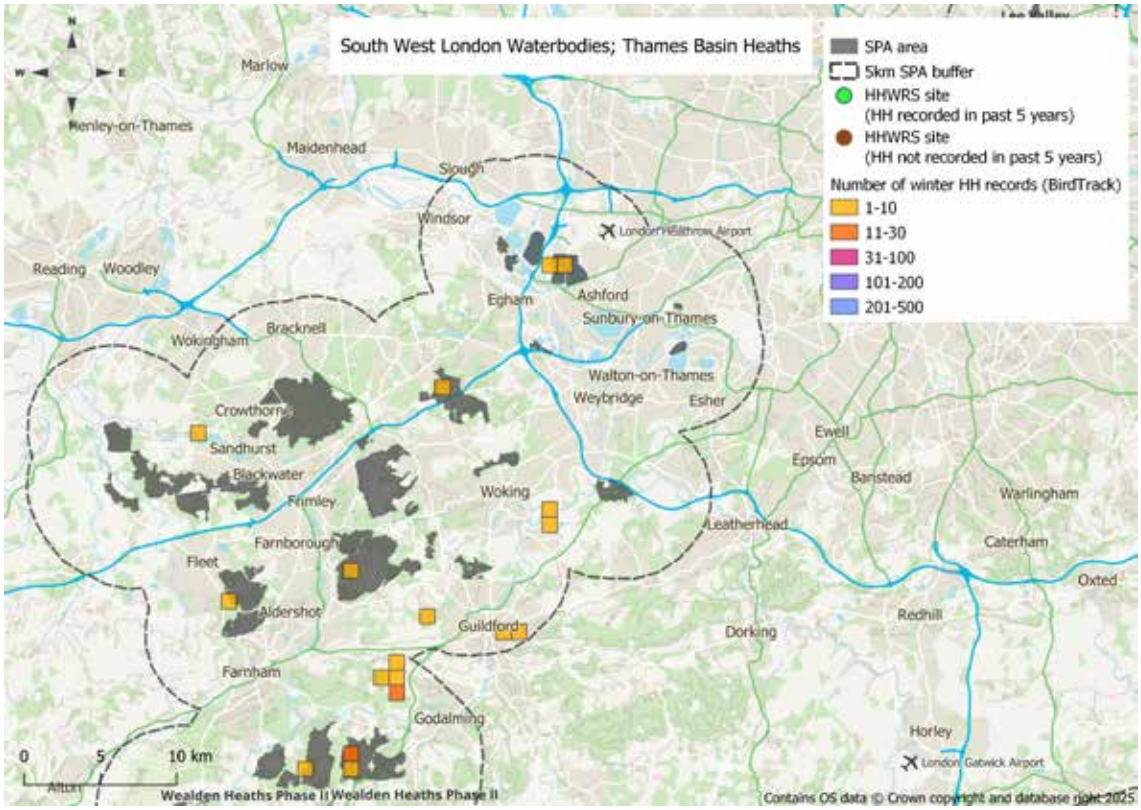
South West London Waterbodies; Thames Basin Heaths
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Marlow
Henley-on-Thames
Maidenhead
Slough
Windsor
London Heathrow Airport
Reading
Woodley
Egham
Ashford
Sunbury-on-Thames
Wokingham
Bracknell
Walton-on-Thames
Weybridge
Esher
Crowthorne
Sandhurst
Blackwater
Ewell
Epsom
Banstead
Woking
Warlingham
Frimley
Leatherhead
Farnborough
Caterham
Fleet
Oxted
Aldershot
Redhill
Guildford
Dorking
Farnham
Godalming
Horley
London Gatwick Airport
0
5
10 km
Wealden Heaths Phase II
Wealden Heaths Phase II
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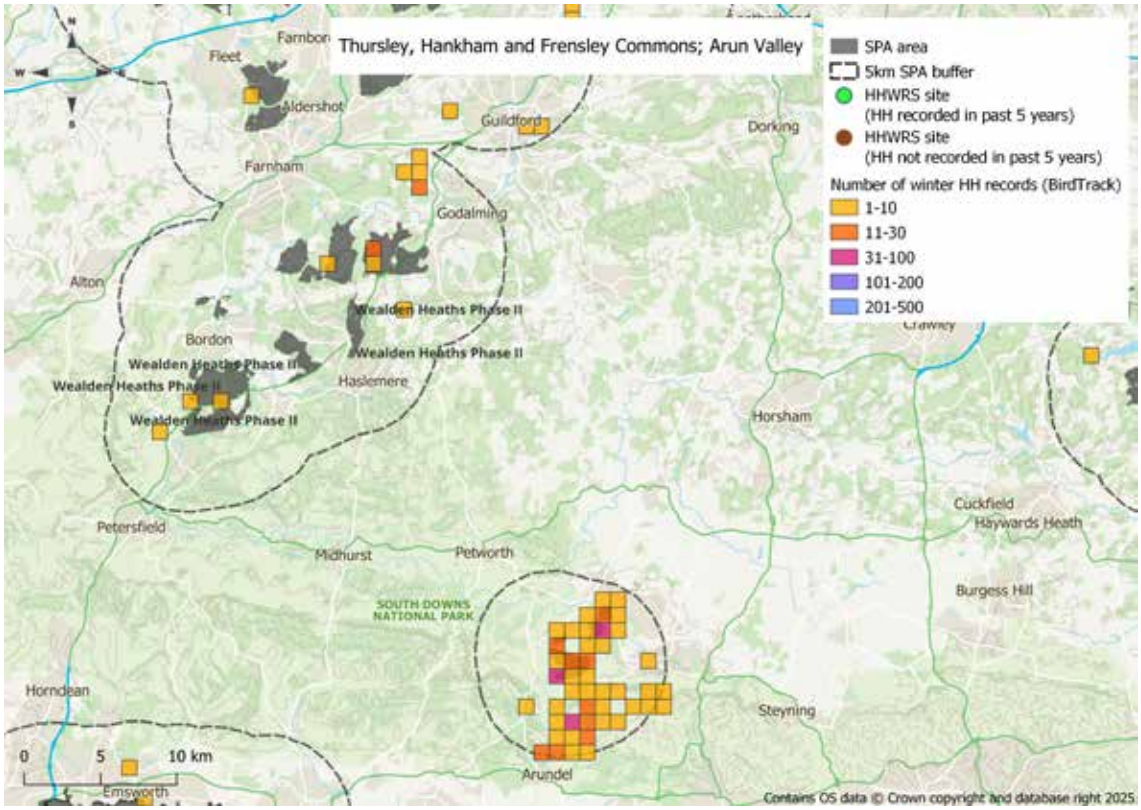
Thursley, Hankham and Frensley Commons; Arun Valley
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Farnborough
Fleet
Aldershot
Guildford
Dorking
Farnham
Godalming
Alton
Wealden Heaths Phase II
Bordon
Haslemere
Horsham
Petersfield
Midhurst
Petworth
Cuckfield
Haywards Heath
Burgess Hill
SOUTH DOWNS NATIONAL PARK
Horndean
Steyning
Arundel
0 5 10 km
Emsworth
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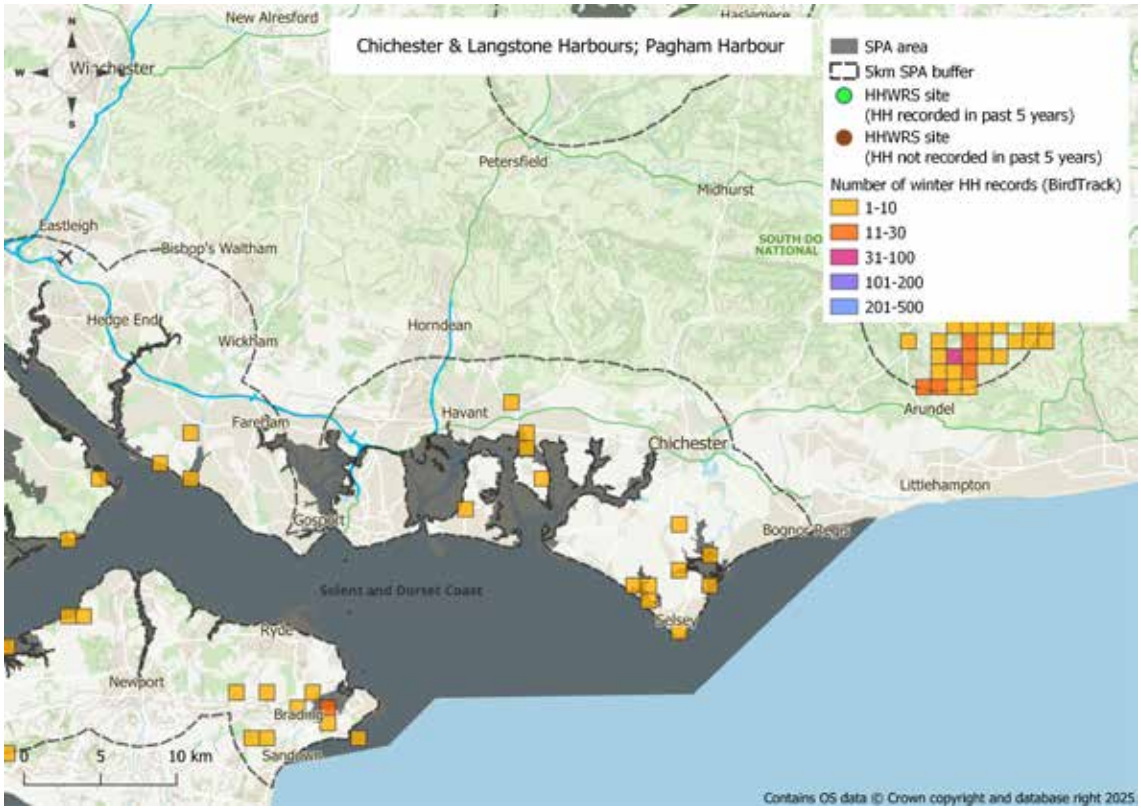
Chichester & Langstone Harbours; Pagham Harbour
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
New Alresford
Winchester
Petersfield
Midhurst
Eastleigh
Bishop's Waltham
Hedge End
Wickham
Horndean
Fareham
Havant
Chichester
Arundel
Littlehampton
Gosport
Bognor Regis
Solent and Dorset Coast
Selsey
Ryde
Newport
Bradin
Sandown
0 5 10 km
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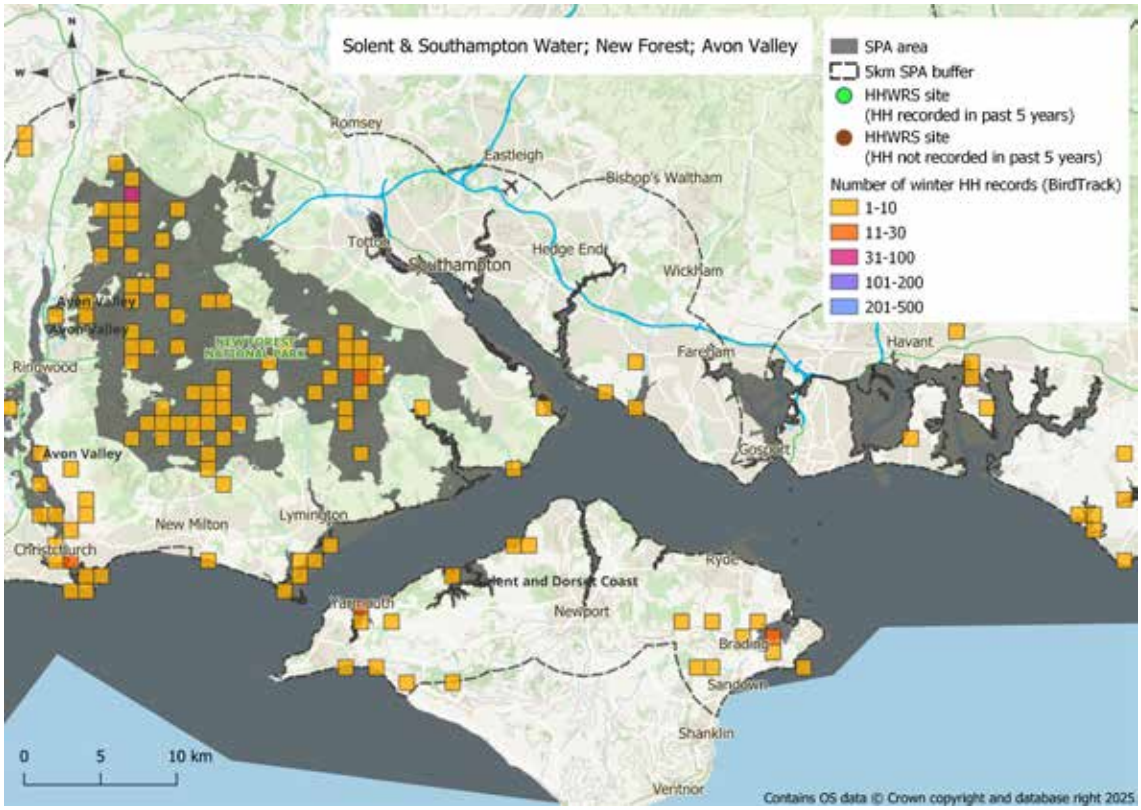
Solent & Southampton Water; New Forest; Avon Valley
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Romsey
Eastleigh
Bishop's Waltham
Totton
Southampton
Hedge End
Wickham
Fareham
Havant
Gosport
Ringwood
Avon Valley
New Milton
Lymington
Christchurch
Ryde
Newport
Sandown
Shanklin
Ventnor
0
5
10 km
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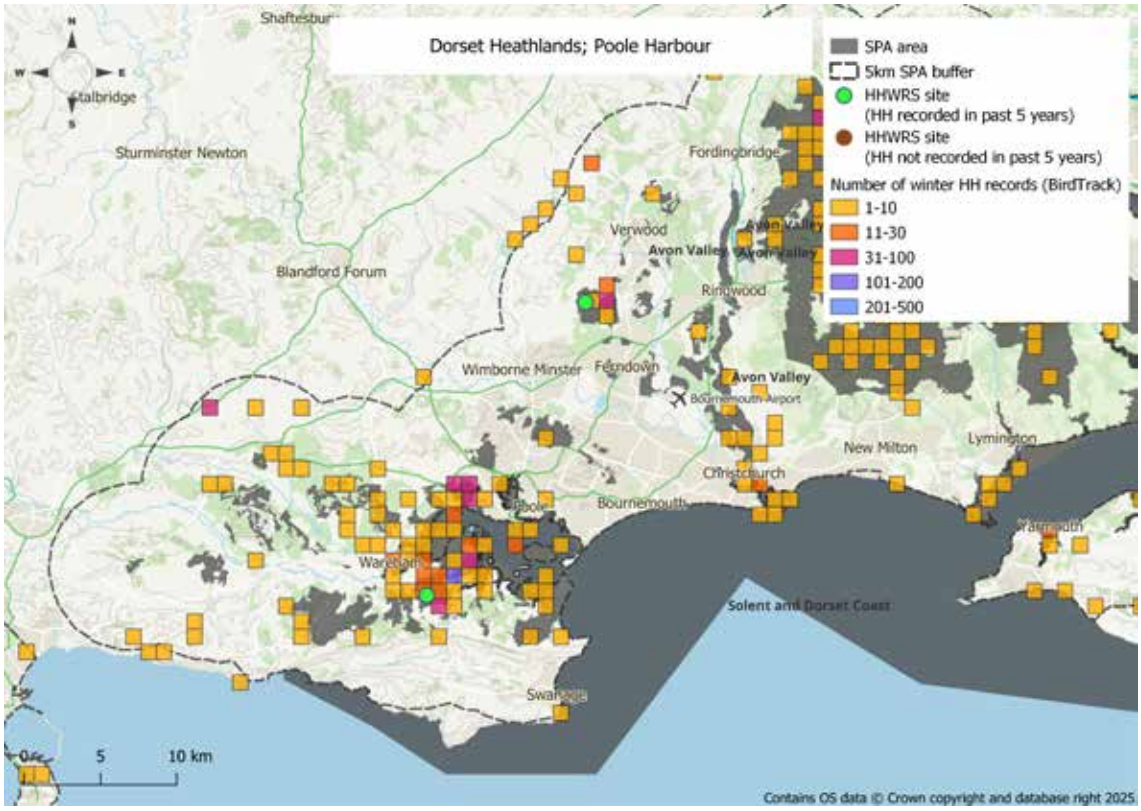
Dorset Heathlands; Poole Harbour
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Shaftesbury
Sturminster Newton
Fordingbridge
Verwood
Avon Valley
Blandford Forum
Ringwood
Wimborne Minster
Ferndown
Bournemouth Airport
New Milton
Lymington
Christchurch
Bournemouth
Wareham
Solent and Dorset Coast
0
5
10 km
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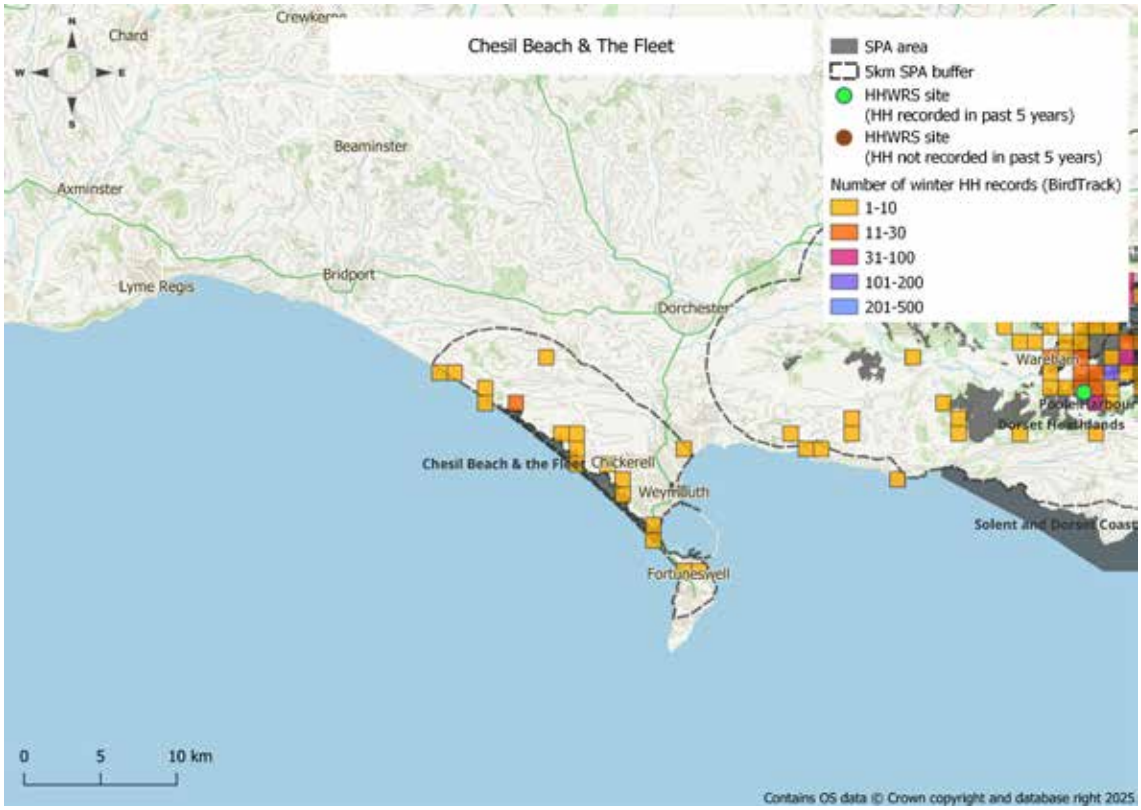
Chesil Beach & The Fleet
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Chard
Beaminster
Axminster
Lyme Regis
Bridport
Dorchester
Wareham
Chesil Beach & the Fleet
Chickerell
Weymouth
Fortuneswell
Solent and Dorset Coast
0
5
10 km
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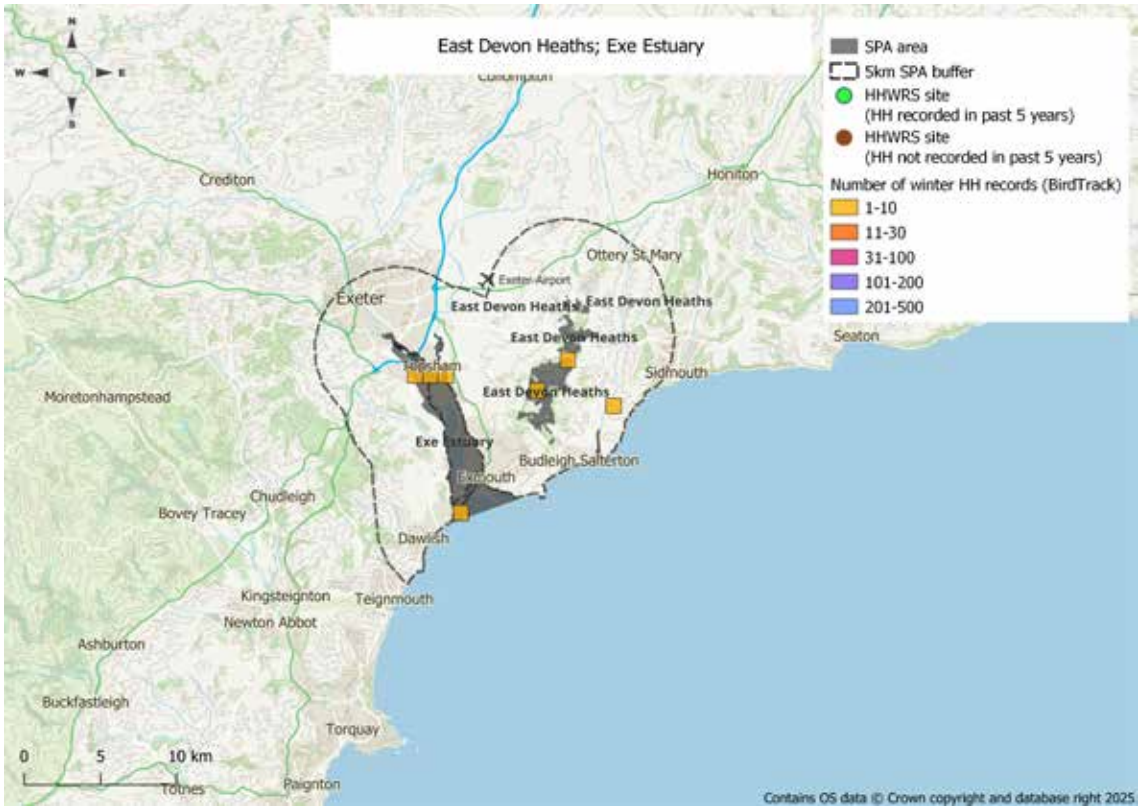
East Devon Heaths; Exe Estuary
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Crediton
Honiton
Ottery St Mary
Exeter
Exeter Airport
East Devon Heaths
Seaton
Sidmouth
Moretonhampstead
Exe Estuary
Budleigh Salterton
Chudleigh
Bovey Tracey
Dawlish
Kingsteignton
Teignmouth
Newton Abbot
Ashburton
Buckfastleigh
Torquay
Totnes
Paignton
0
5
10 km
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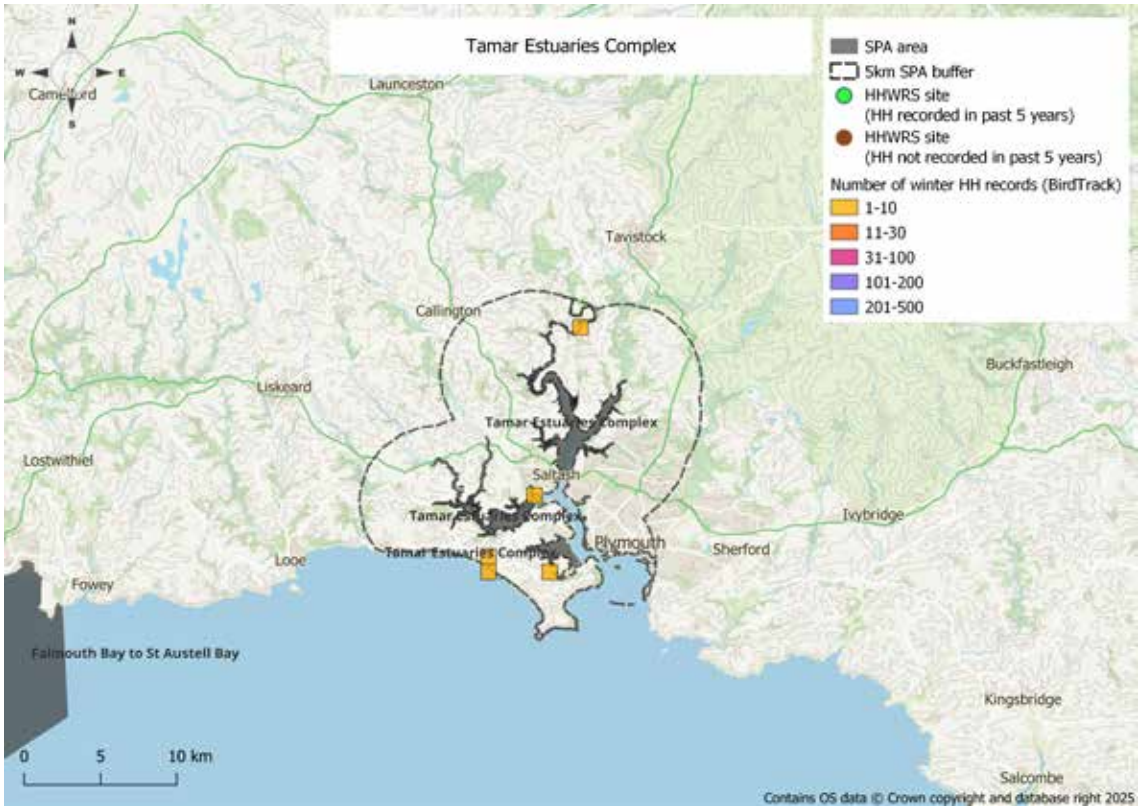
Tamar Estuaries Complex
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Launceston
Tavistock
Callington
Liskeard
Buckfastleigh
Lostwithiel
Saltash
Ivybridge
Plymouth
Sherford
Looe
Fowey
Falmouth Bay to St Austell Bay
Kingsbridge
Salcombe
0
5
10 km
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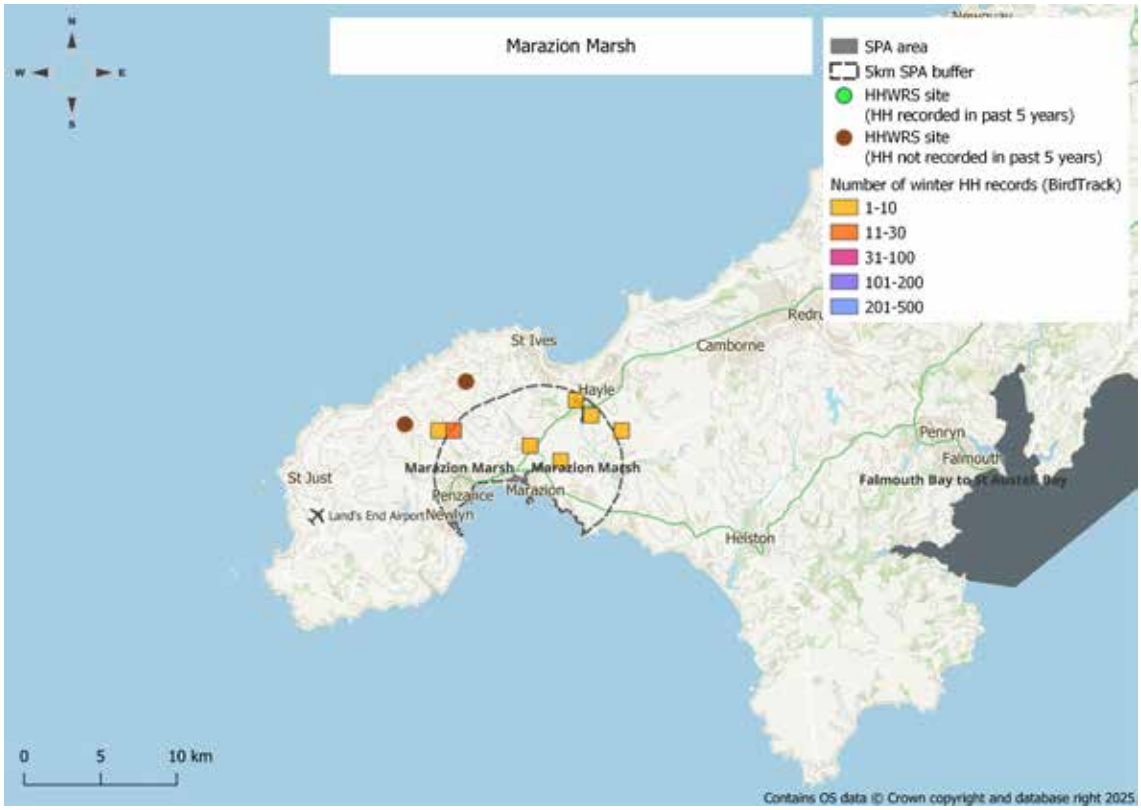
Marazion Marsh
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
St Ives
Camborne
Hayle
Penryn
Falmouth
Falmouth Bay to St Austell Bay
St Just
Marazion Marsh
Marazion Marsh
Penzance
Marazion
Land's End Airport
Newlyn
Helston
0
5
10 km
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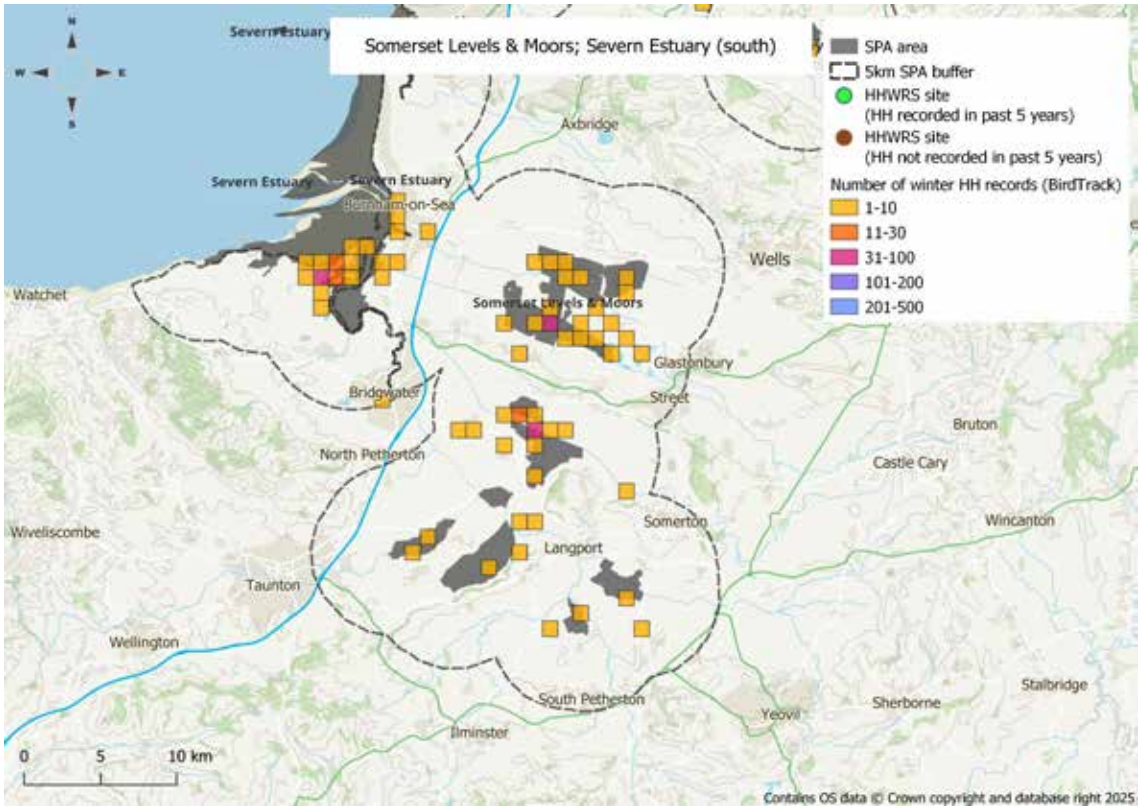
Somerset Levels & Moors; Severn Estuary (south)
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Severn Estuary
Axbridge
Severn Estuary
Severn Estuary
Burnham-on-Sea
Wells
Watchet
Somerset Levels & Moors
Glastonbury
Bridgwater
Street
Bruton
North Petherton
Castle Cary
Somerton
Wincanton
Wiveliscombe
Langport
Taunton
Wellington
South Petherton
Stalbridge
Yeovil
Sherborne
Ilminster
0
5
10 km
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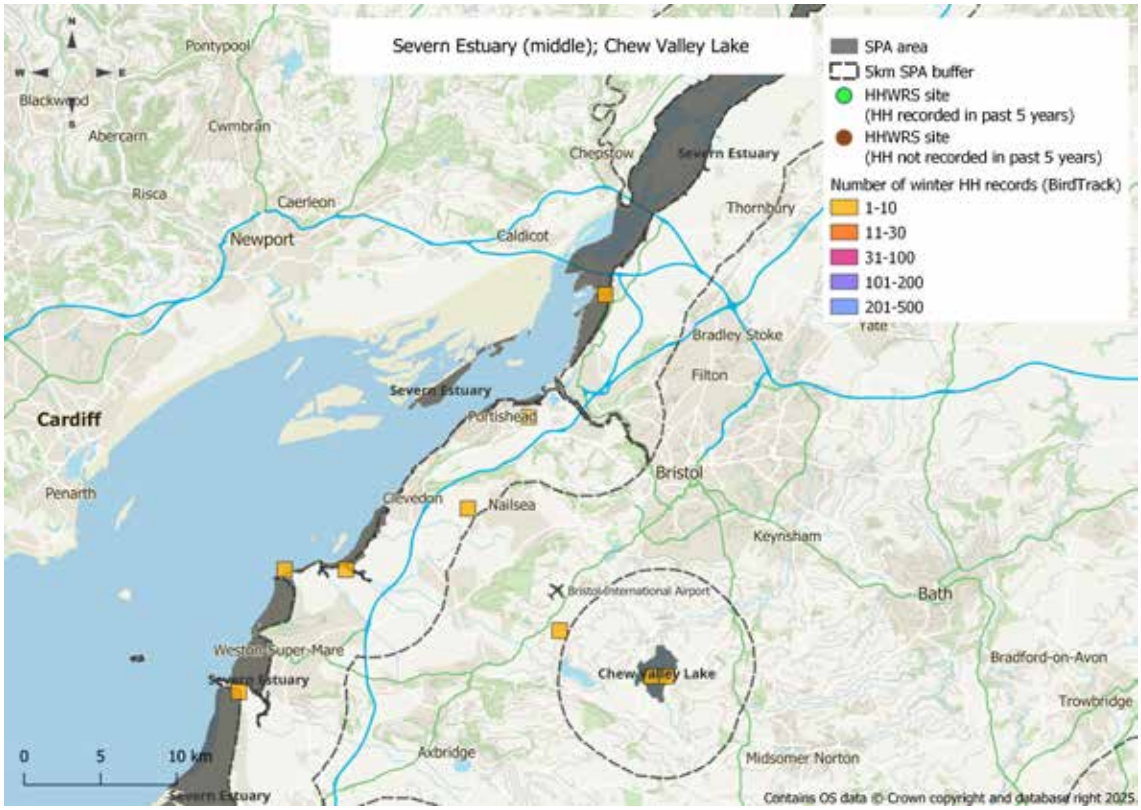
Severn Estuary (middle); Chew Valley Lake
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Pontypool
Blackwood
Abercarn
Cwmbrân
Chepstow
Severn Estuary
Risca
Caerleon
Thornbury
Newport
Caldicot
Bradley Stoke
Filton
Severn Estuary
Cardiff
Portishead
Bristol
Penarth
Clevedon
Nailsea
Keynsham
Bristol International Airport
Bath
Weston-super-Mare
Severn Estuary
Chew Valley Lake
Bradford-on-Avon
Trowbridge
0
5
10 km
Axbridge
Midsomer Norton
Severn Estuary
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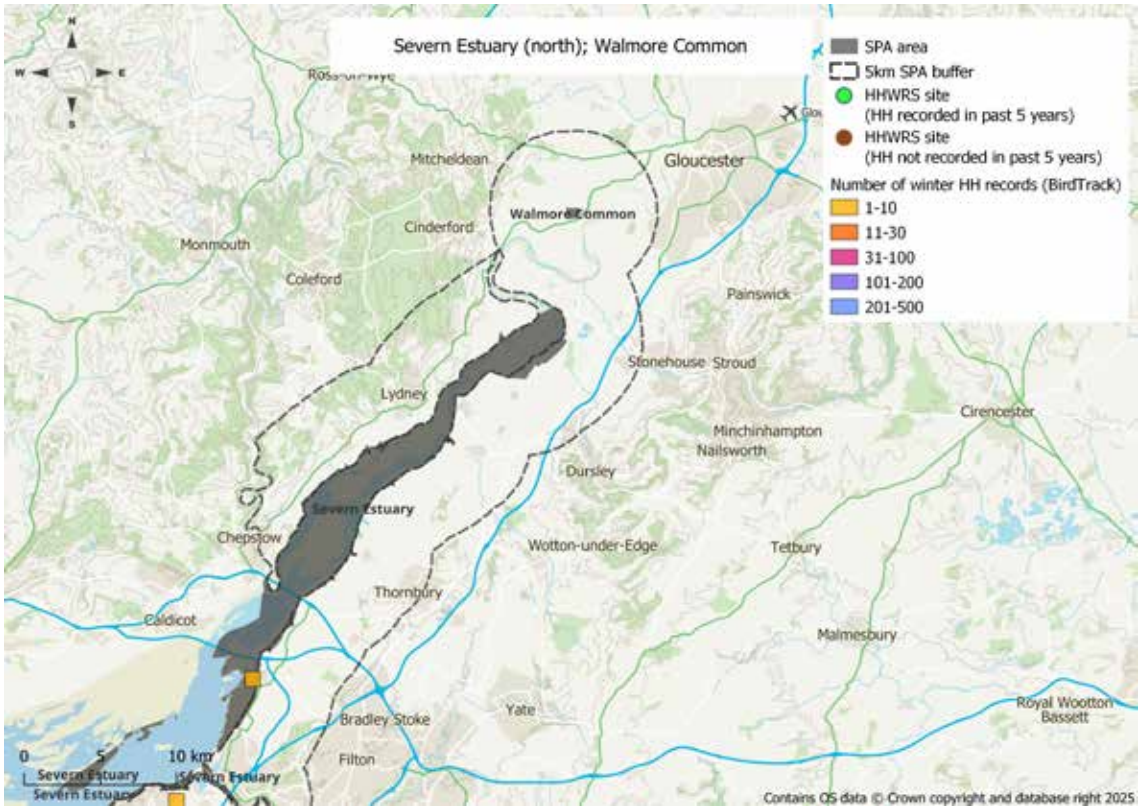
Severn Estuary (north); Walmore Common
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Mitcheldean
Gloucester
Walmore Common
Cinderford
Monmouth
Coleford
Painswick
Stonehouse
Stroud
Lydney
Cirencester
Minchinhampton
Nailsworth
Dursley
Severn Estuary
Chepstow
Wotton-under-Edge
Tetbury
Thornbury
Caldicot
Malmesbury
Bradley Stoke
Yate
Royal Wootton Bassett
Filton
0
5
10 km
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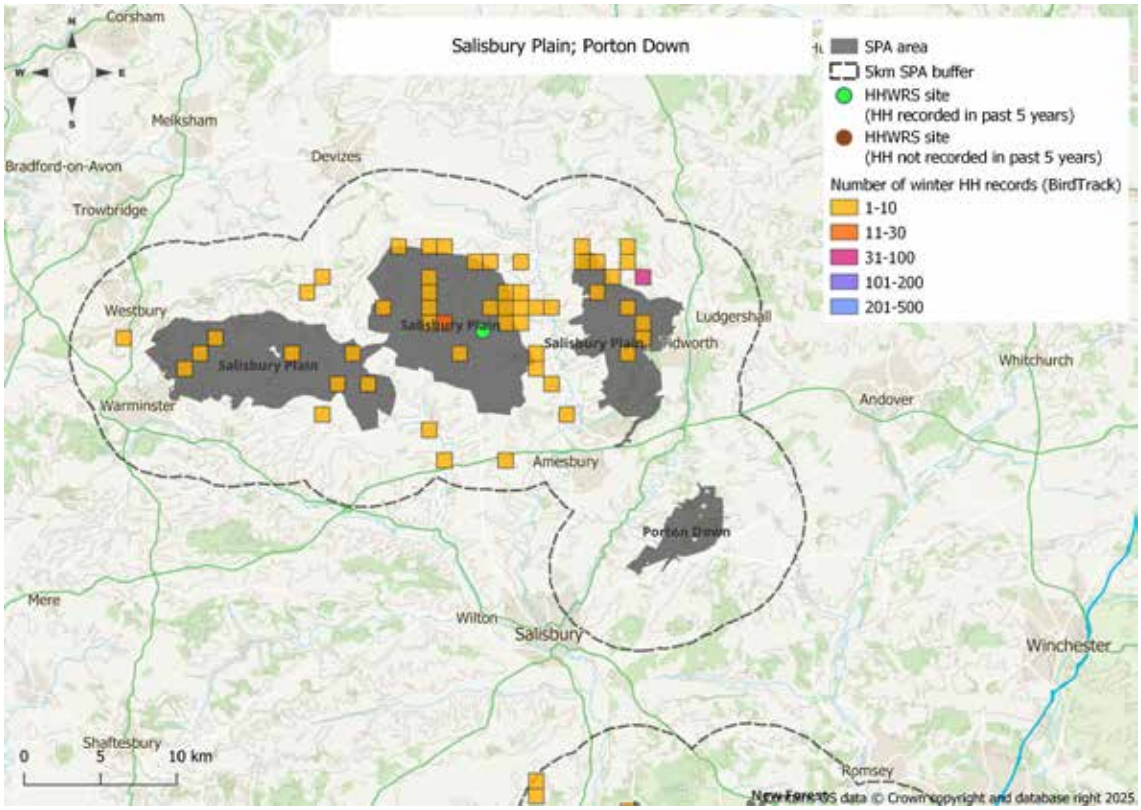
Salisbury Plain; Porton Down
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Corsham
Melksham
Bradford-on-Avon
Devizes
Trowbridge
Westbury
Salisbury Plain
Ludgershall
Whitchurch
Andover
Warminster
Amesbury
Porton Down
Mere
Wilton
Salisbury
Winchester
Shaftesbury
Romsey
0
5
10 km
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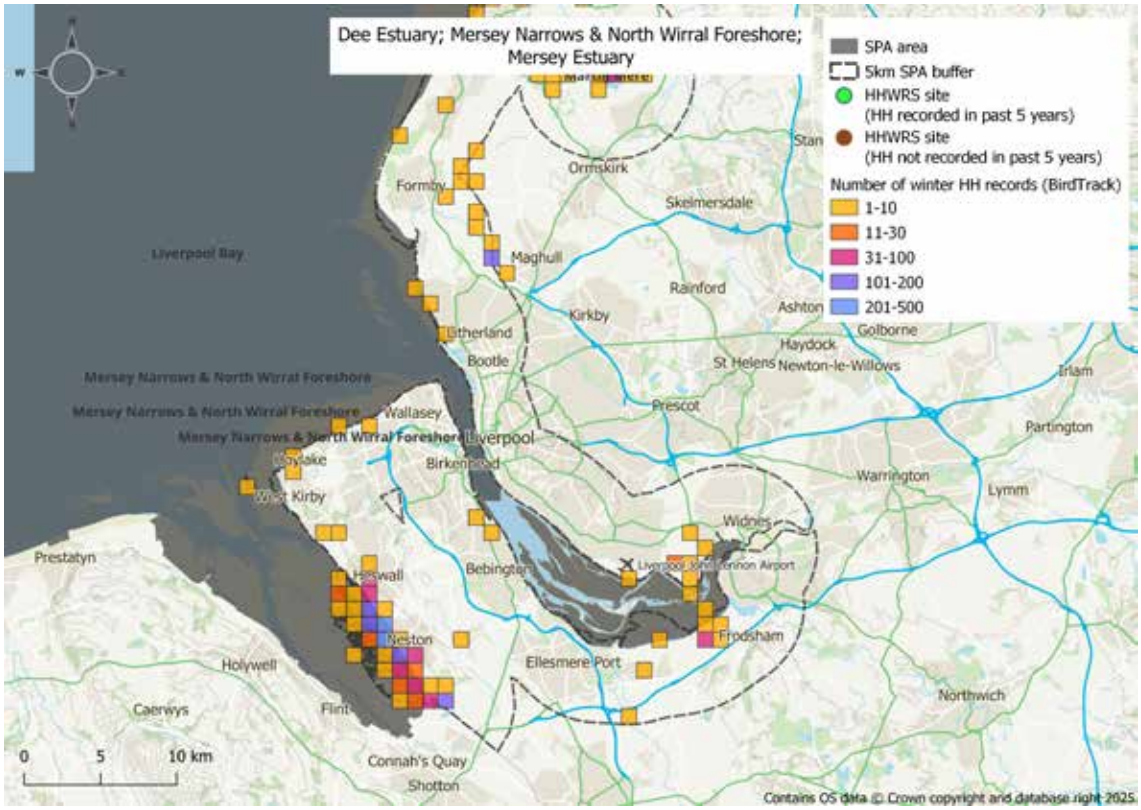
Dee Estuary; Mersey Narrows & North Wirral Foreshore; Mersey Estuary
SPA area
5km SPA buffer
HHWRS site (HH recorded in past 5 years)
HHWRS site (HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Liverpool Bay
Mersey Narrows & North Wirral Foreshore
Formby
Ormskirk
Skelmersdale
Maghull
Rainford
Kirkby
Litherland
Bootle
Ashton
Golborne
Haydock
St Helens
Newton-le-Willows
Irlam
Prescot
Partington
Wallasey
Liverpool
Birkenhead
Warrington
Lymm
Widnes
Prestatyn
Bebington
Liverpool John Lennon Airport
Neston
Frodsham
Ellesmere Port
Holywell
Caerwys
Flint
Northwich
Connah's Quay
Shotton
0 5 10 km
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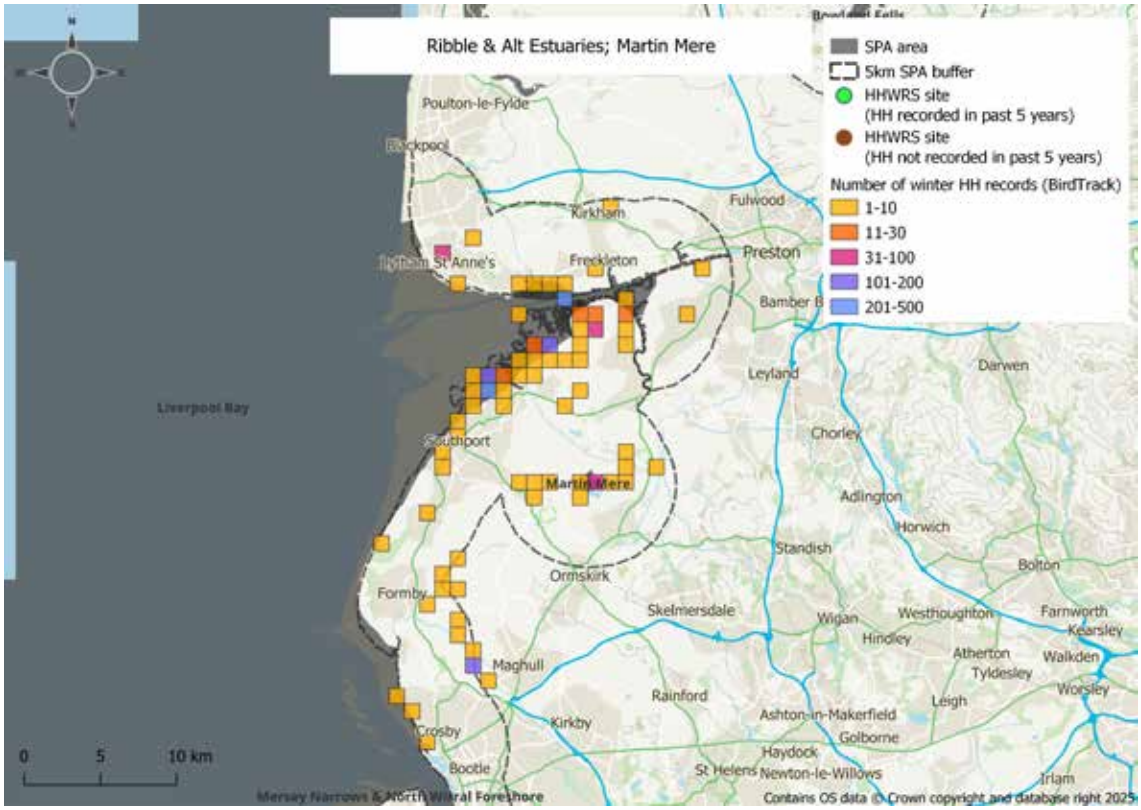
Ribble & Alt Estuaries; Martin Mere
SPA area
5km SPA buffer
HHWRS site (HH recorded in past 5 years)
HHWRS site (HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Poulton-le-Fylde
Blackpool
Fulwood
Kirkham
Preston
Freckleton
Liverpool Bay
Leyland
Darwen
Chorley
Southport
Martin Mere
Adlington
Horwich
Standish
Bolton
Ormskirk
Formby
Skelmersdale
Wigan
Westhoughton
Farnworth
Kearsley
Hindley
Atherton
Walkden
Tyldesley
Maghull
Rainford
Leigh
Worsley
Crosby
Kirkby
Ashton-in-Makerfield
Golborne
Haydock
Bootle
St Helens
Newton-le-Willows
Irlam
0 5 10 km
Mersey Narrows & North Wirral Foreshore
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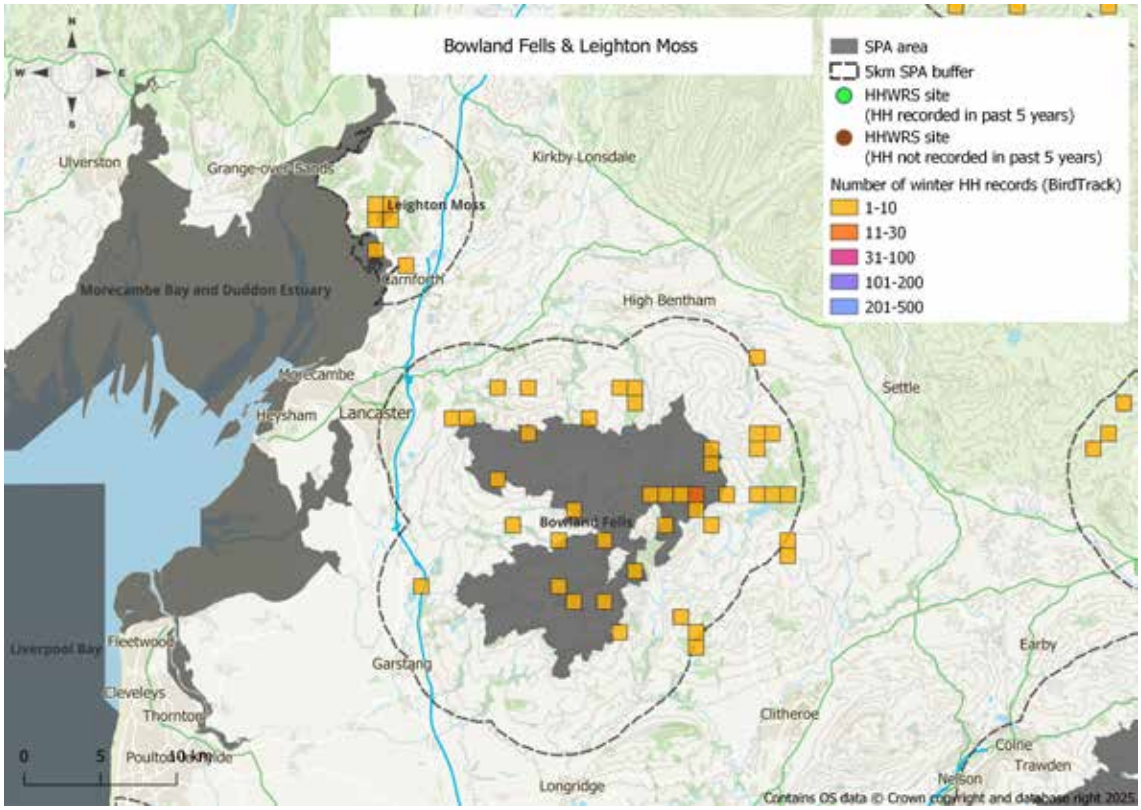
Bowland Fells & Leighton Moss
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Ulverston
Grange-over-Sands
Kirkby Lonsdale
Leighton Moss
Morecambe Bay and Duddon Estuary
Carnforth
High Bentham
Morecambe
Heysham
Lancaster
Settle
Bowland Fells
Liverpool Bay
Fleetwood
Garstang
Cleveleys
Thornton
Earby
Clitheroe
Colne
Trawden
Nelson
Longridge
0
5
10 km
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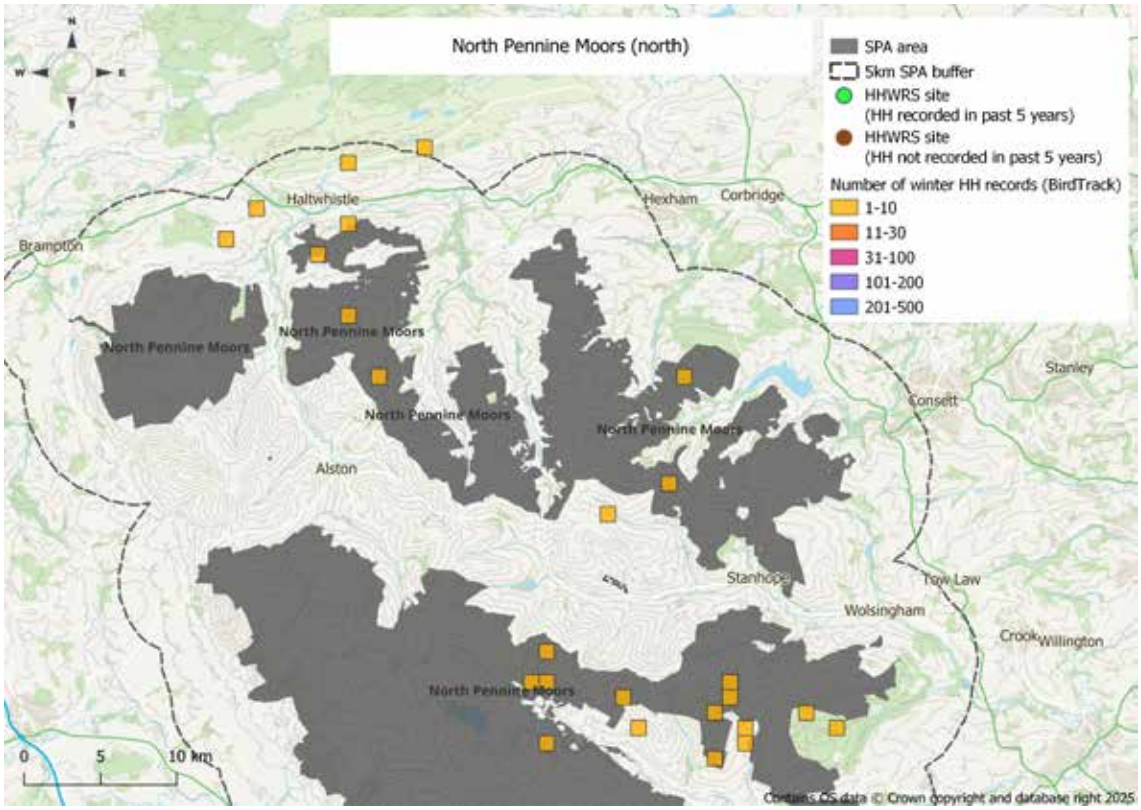
North Pennine Moors (north)
SPA area
5km SPA buffer
HHWRS site
(HH recorded in past 5 years)
HHWRS site
(HH not recorded in past 5 years)
Number of winter HH records (BirdTrack)
1-10
11-30
31-100
101-200
201-500
Haltwhistle
Hexham
Corbridge
Brampton
North Pennine Moors
Stanley
Consett
Alston
Stanhope
Tow Law
Wolsingham
Crook
Willington
0
5
10 km
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Assessment of non-breeding Hen Harrier records in relation to Special Protection Areas in England: insights from the Hen Harrier Winter Roost Survey and BirdTrack

This study uses Hen Harrier records from the Hen Harrier Winter Roost Survey and BirdTrack to explore the distribution of wintering Hen Harriers in relation to the distribution of Special Protection Areas. There is a particular need to enhance survey effort in and around SPAs, to improve our understanding of the distribution and habitat use of non-breeding Hen Harriers in England, and to evaluate whether there is a need for site protection to be extended to more areas.

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