FOOTPRINT ECOLOGY

UHP Annual Monitoring Report April 2020-December 2021

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Bird data

Woodlark:
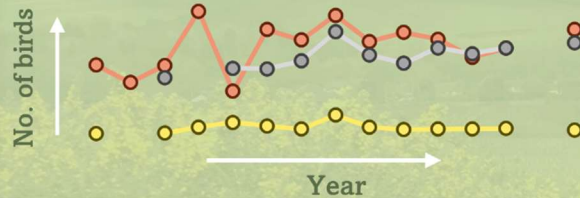⇑ 20% on last 3 years (24 pairs; 15 sites)
Stoborough & Hydes, ⇓ 0.3 pairs on 3 years

Dartford Warbler: ⇑ 13% on last 3 years (461 pairs; 27 sites)
Stoborough RSPB & Grange ⇓ 6/3 pairs on 3 years

Nightjar: ⇑ 9% on last 3 years (421 territories; 28 sites)
Arne, Holt Heath & Verwood ⇓ 4/3 territories on 3 years

SANG/HIP Sites

7 New SANGs; 110 ha. 80% increase. Key sites; Stourview, Ringwood Road.
Total SANGs: 17, 240 ha.
0 new HIPs.
Total HIP: 4, 60 ha.

Fires

203 fires in total. 93 in 2021.
8 >1 ha. Wareham Forest, May 2020, largest ever. Area burnt 6x higher in 2020, x0.8 lower in 2021 than average.
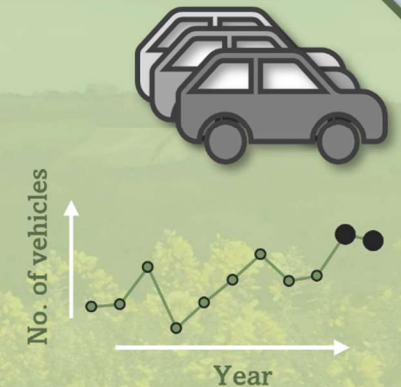

Vehicle Counts

2020 & 2021 highest mean count to date – 766 and 756
c. 28% ⇑ in vehicles on heaths compared to long term average
Highest count was late May/ Early June weekend - 1,463 vehicles on heaths.
3 new car parks (SANG/ HIPs). 3 transects cancelled (covid/staff shortage)

People Counters

56 counters – large effect of covid visible.

Average across all sensors ⇑ 69% post covid. Similar between heathland and SANG.

No clear pattern as to types of locations with increases

Housing

262,903 dwellings within the 5km buffer
2,689 new, equates to ⇑ 1% Mostly at new developments.

Data on warden time and engagement, including Dorset Dogs heathland engagement will be summarised in the future reporting.

Contents

Acknowledgements

1. Introduction

1.1   This report is produced for the Urban Heaths Partnership (UHP) and is the first in a series of annual reports for the next 5 years. Previous annual monitoring reports have been conducted by Footprint Ecology and reported on a financial year basis (e.g. 1st April 2019 to 31st March 2020). They were becoming increasingly lengthy documents, and monitoring did not cover some important monitoring aspects. Following a large scale review of the UHP mitigation (Panter et al., 2022), this reporting has now evolved to cover a calendar year, produce reports as quickly as possible so that data can be used in the coming season, and changed to cover data such as warden time, housing change and SANG/HIP data, that was previously omitted.

The Dorset heaths

1.2   Dorset holds some 7,500 ha of heathland (see Rose et al., 2000), and much of this is designated as being of European importance (see Map 1). The designated sites are the Dorset Heathlands Special Protection Area (SPA), the Dorset Heaths Special Area of Conservation (SAC) and the Dorset Heaths (Purbeck & Wareham) and Studland Dunes SAC. The designations at the international and national levels reflect the conservation importance of the sites, which hold internationally important bird species (breeding Nightjar, Woodlark and Dartford Warbler), all native reptiles, various rare plants and notable rare and regionally distinct invertebrates.

1.3   The Dorset heaths are fragmented (Webb, 1989, 1990) and many fragments lie within the increasingly urban landscape adjacent to the conurbations of Poole and Bournemouth. Within the local councils of Dorset and BCP there is continual, increasing pressure for more growth and new housing. Increased development can have a range of impacts on heathland and these are well documented (for reviews see Haskins 2000; Underhill-Day 2005; Liley et al. 2006). Such impacts include numbers of pet cats and increased predation of wildlife, increased fire risk, disturbance impacts, eutrophication from dog fouling, anti-social behaviour, contamination, fly tipping, and the introduction of alien plants and animals.

Strategic Access Monitoring and Mitigation

1.4   These impacts mean that the Dorset and BCP local authorities are unable to rule out adverse effects on integrity for the relevant European heathland sites as a result of the in-combination effects of new development. However, avoidance or mitigation measures are possible, and these have been established strategically

across the relevant local authorities since 2006, and enshrined in relevant strategic planning policy. Measures include additional infrastructure, both off-site and on-site, and a range of mitigation focused projects. One of the key physical mechanisms is the provision of new greenspaces (Suitable Alternative Natural Greenspaces, SANGs) or more general improvements of existing recreational areas or supporting land (Heathland Infrastructure Projects, HIPs).

1.5   The ongoing updates to the monitoring strategy (see Liley 2007; and revisions by Fearnley & Liley 2014; Panter & Liley 2015, 2017) set out the monitoring elements necessary to coincide with the mitigation. The strategy recognised that both the species present and recreational use of the heathlands must be monitored to evaluate the levels of recreational use and distribution of the vulnerable species. With a baseline established, it should be possible to check the effectiveness of measures to mitigate for or avoid additional urban pressures on European Sites.

1.6   Monitoring acts as an early warning and allows mitigation measures to be adjusted as necessary to reflect changes in access patterns, types of use and changes in the distribution and abundance of key species. It is important to note that strategies include monitoring of mitigation sites (e.g. non-heathland), as well as heathland.

Covid-19 context

1.7   The period that this report covers (April 2020 to December 2021) coincided with severe restrictions on travel and activities which were implemented to prevent the spread of coronavirus (Covid-19). These measures are summarised in Figure 1. They started with the first national lockdown in March 2020, when people were told to stay at home unless going out for very limited purposes, which included daily exercise.

1.8   Between May and July 2020, restrictions were gradually eased, and households were allowed to travel to visit parks or beaches. Over the autumn and winter of 2020/21, restrictions varied between local tier-based regulations or nationwide lockdowns. Over the spring of 2021, restrictions were gradually lifted, and people could once again travel to other parts of the country and meet friends and family.

1.9   As an adaptive response to the visitor management challenges posed by Covid, UHP ran an online survey to understand the changes and how best to manage these. The results of this are written up in the 2020 Dorset Open Spaces Report and briefly referred to in this report.

23/03/2020 START OF THE FIRST NATIONWIDE LOCKDOWN.

01/06/2020 UP TO SIX PEOPLE CAN MEET OUTDOORS.

04/07/2020 TWO HOUSEHOLDS CAN MEET INDOORS. HOTELS AND CAMPSITES RE-OPEN.

05/11/2020 START OF SECOND NATIONAL LOCKDOWN. EXERCISE ALLOWED IN LOCAL AREA ONLY.

05/01/2021 START OF THIRD NATIONAL LOCKDOWN. EXERCISE ALLOWED ONCE A DAY IN YOUR LOCAL AREA.

29/03/2021 SIX PEOPLE OR TWO HOUSEHOLDS CAN MEET OUTDOORS. TRAVEL OUTSIDE LOCAL AREA ALLOWED.

17/05/2021 UP TO 30 CAN MEET OUTDOORS. ALL ACCOMMODATION CAN RE-OPEN.

19/07/2021 ALL LEGAL RESTRICTIONS LIFTED IN ENGLAND

1 Mar · 1 Apr · 1 May · 1 Jun · 1 Jul · 1 Aug · 1 Sep · 1 Oct · 1 Nov · 1 Dec · 1 Jan · 1 Feb · 1 Mar · 1 Apr · 1 May · 1 Jun · 1 Jul · 1 Aug

13/05/2020 UNLIMITED OUTDOOR EXERCISE AND RECREATION ALLOWED. TWO PEOPLE CAN MEET OUTDOORS.

25/07/2020 INDOOR LEISURE FACILITIES RE-OPEN.

14/10/2020 START OF THE 3-TIER SYSTEM. DORSET IN TIER 1 (MEDIUM).

02/12/2020 RETURN TO THE TIER SYSTEM. DORSET IN TIER 2 (HIGH).

31/12/2020 DORSET MOVED INTO TIER 3 (VERY HIGH).

08/03/2021 TWO PEOPLE CAN MEET OUTDOORS.

12/04/2021 OVERNIGHT STAYS ALLOWED IN SELF-CONTAINED ACCOMMODATION.

Figure 1: Summary of coronavirus (Covid-19) restrictions that affected travel and outdoor recreation between March 2020 and July 2021, when restrictions were lifted.

Map 1: Component SSSIs of the Dorset Heathlands SAC/SPA and labelled site names, as used in report.
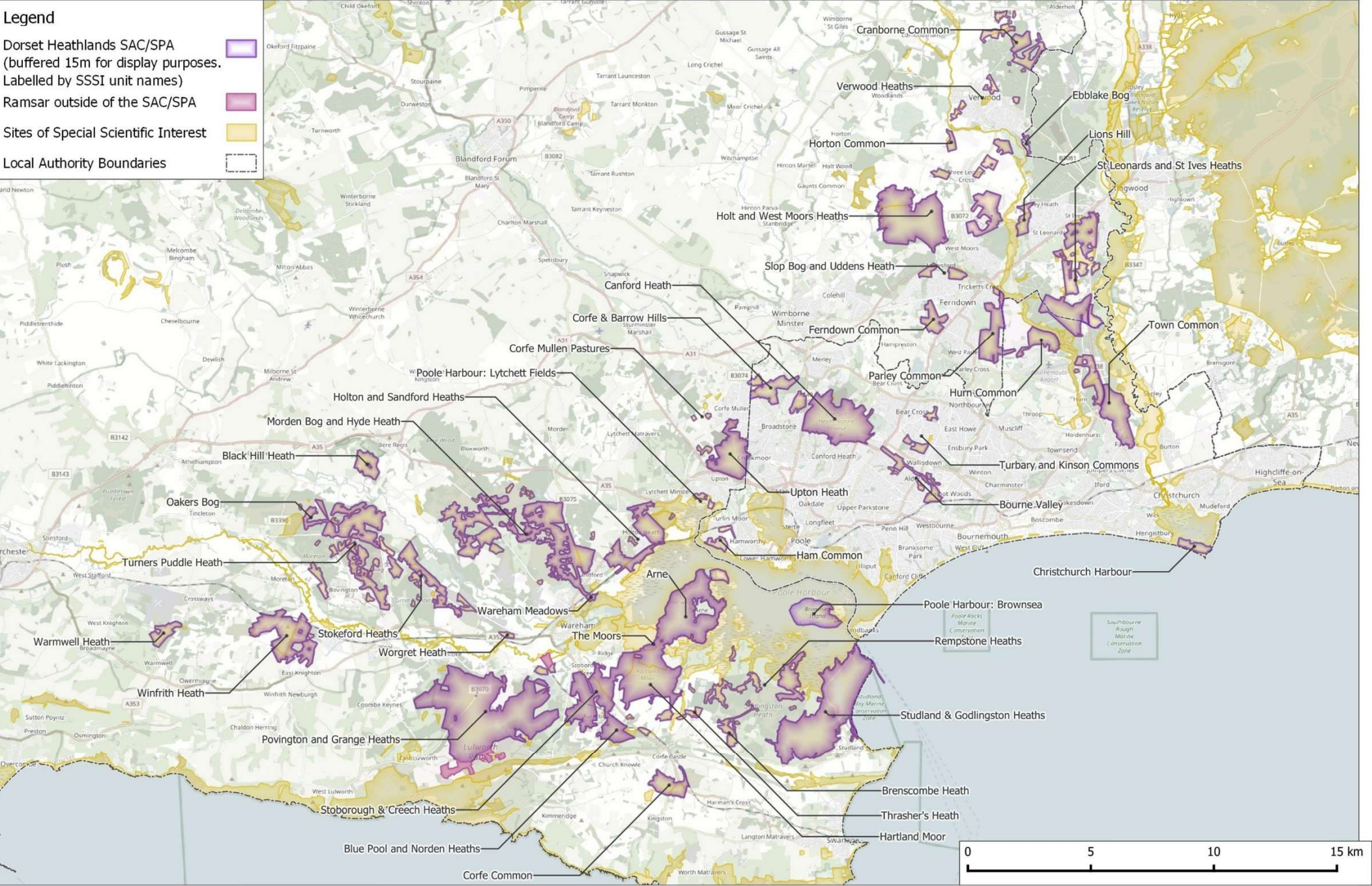
Legend

Dorset Heathlands SAC/SPA (buffered 15m for display purposes. Labelled by SSSI unit names)

Ramsar outside of the SAC/SPA

Sites of Special Scientific Interest

Local Authority Boundaries

2.   Bird monitoring

Introduction

2.1   Three breeding bird species are interest features of the Dorset Heathlands SPA: Nightjar *Caprimulgus europaeus*, Woodlark *Lullula arborea* and Dartford Warbler *Sylvia undata*. Changes in the distribution and relative abundance of these species are good indicators of the biological status of the heaths, and the three species are vulnerable to impacts from recreation and fire.

2.2   The ongoing recording of the numbers and distribution of these three species across sites is an important part of monitoring. Surveying has been undertaken by the RSPB, commissioned through the UHP, and focussed primarily on the urban heaths. A summary and review of trends in the three species in Dorset since the early 1990s is provided in Liley & Fearnley (2014). It is important to note the counts indicate territories, but that these are determined with different survey methodologies as appropriate for the different species (e.g. night-time surveys of churring males for Nightjar).

Results

2.3   Results presented in this report covering April 2020-December 2021 include just one year of bird data, for the 2021 season. Surveys were not permitted during 2020 due to the coronavirus restrictions. Results for 2021 from the core squares focuses on 31 sites surveyed for the species (Table 1). For all species the number and composition of the individual sites differed to previous years, with fewer sites than previously typically surveyed, particularly for Woodlark. Mean birds per site was higher for Dartford Warbler and Nightjar, but lower for Woodlark. However, this obviously depends which sites were not surveyed, as shown by later data.

2.4   To examine this in more detail we consider only the individual sites with comparable data between the current years data and an average number for the site. Our short-term average considers the previous 3 years data 2019, 2018 and 2017, while the long term average considers all UHP data, of which the number of years for each species was variable[1].

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[1] for Woodlark 2006 to 2019, omitting 2007 and 2008; for Dartford Warbler 2006 to 2019, omitting 2007 and Nightjar 2009 to 2019, omitting 2010.

Table 1: Summary of the number of birds (i.e. pairs for Dartford Warbler/Woodlark and territories for Nightjar), by species, recorded in 2021, with a value of the mean birds per site for 2019 and the previous 3 years shown for comparison.

	Woodlark	Dartford	Nightjar
Number of counts 2021	29	29	30
Total number of birds 2021	39	461	421
Mean birds per site 2021	**1.3**	**15.9**	**14.0**
Number of counts 2019	31	31	31
Total number of birds 2019	49	409	411
Mean birds per site 2019	**1.6**	**13.2**	**13.3**
Number of counts previous 3 years	31	31	31
Total number of birds previous 3 years	47	409	402
Mean birds per site previous 3 years	**1.5**	**13.2**	**13.0**

Table 2: Comparison of 2021 data to short term average from the previous 3 years data using values for each site.

	Woodlark	Dartford Warbler	Nightjar
n	15	27	28
mean % change compared to previous 3 years	37%	13%	21%
median % change compared to previous 3 years	20%	7%	9%
range in % change compared to previous 3 years	-25% to 200%	-44% to 74%	-25% to 200%

Table 3: Comparison of 2021 data to long term average (all previous year's data) using values for each site.

	Woodlark	Dartford Warbler	Nightjar
n	17	29	29
mean % change compared to all previous years	119%	8%	28%
median % change compared to all previous years	25%	5%	17%
range in % change compared to all previous years	-47% to 1000%	-39% to 82%	-29% to 170%

Table 4: Sites with the greatest increase and reduction for each bird species. Values are the difference between the values in 2021 and the 'short term average' (the previous 3 years of data). Blue indicates an increase and red indicates a decrease (maximum 3 sites shown).

Woodlark	Dartford Warbler	Nightjar
Top 3		
Avon Heath South **+ 3.7**	Canford Heath **+19.0**	Canford Heath **+12.7**
Holt Heath/ Whitesheet **+ 1.7**	Holt Heath/ Whitesheet **+18.0**	Stoborough RSPB **+9.3**
Upton Heath **+ 0.7**	Upton Heath **+16.7**	Town Common/SCH **+8.7**
Bottom 3		
Parley Common **- 0.3**	Arne Heaths **- 2.3**	Holt Heath/ Whitesheet **- 2.7**
Hyde's Heath **-0.67**	Grange Heath **- 3.3**	Verwood Forest/ Cranborne Common square **- 2.7**
Stoborough RSPB **-0.67**	Stoborough RSPB **- 6.3**	Arne Heaths **– 4.0**

2.5   The results presented in above tables and in Figure 2 below suggest for each species:

Woodlark:

- Woodlark are always the most variable of the three Annex I breeding bird species, due to the low numbers.
- Overall mean **birds per site was lower**, down from 1.6 to 1.3. However numbers on a subset of 15 **comparable sites was up around 20%** compared to the short term average**.**
- There were quite a few sites with increases, notably at Avon Heath South, Holt Heath/ Whitesheet and Upton Heath. Compared to the short term average for the last 3 previous years there were fewer pairs recorded at Parley Common, Hyde's Heath and Stoborough RSPB.

Dartford Warbler:

- Dartford Warbler are also quite variable, influenced particularly by harsh winter weather conditions (i.e. 2014 cold winter and 2018 'Beast from the East') – see Figure 2.
- Overall mean **birds per site was higher**, up from 13.2 to 15.9. The number of pairs recorded on a subset of 27 **comparable sites was up around 13%** compared to the short term average. The increase in the short term was possibly recovery from the 2018 fall in numbers, as there is **0% change compared to the long term average.**
- There had been some substantial increases at a small number of sites compared to the short term average. Three sites had **increases of more than 10 pairs: Canford Heath, Holt Heath/ Whitesheet and Upton Heath** in 2021 compared to the average of the previous 3 years (this

equated to between a 30% to 60% increase at these individual sites). Numbers compared to the short term average had **fallen at Arne Heaths, Grange Heath and Stoborough RSPB** (the latter two being a reduction of 35% and 44% respectively compared to the previous 3 years).

Nightjar:

- The number of territories from recorded churring males is often the most stable of the 3 species and also shows general continued upward trends.
- Overall mean **birds per site was higher**, up from 13.3 to 14.0. The number of territories recorded on a subset of 28 **comparable sites was up around 9%** compared to the short term average. Increases were consistent with the long term average with a **17% increase compared to all previous years data.**
- At individual sites the **top 3 increases were at Canford Heath, Stoborough RSPB and Town Common/SCH,** compared to the short term average number of territories (increases of around a third to two-thirds). Compared to all previous years the largest increase has been at Canford Heath with an increase of 22 territories in 2021 compared to all previous years data (67%). The **largest reduction compared to the short term average was Arne Heaths**, with 4 fewer territories than the average for the previous 3 years. While **Hyde's Heath and Turbary Common showed a 25% reduction** compared to the long term average.
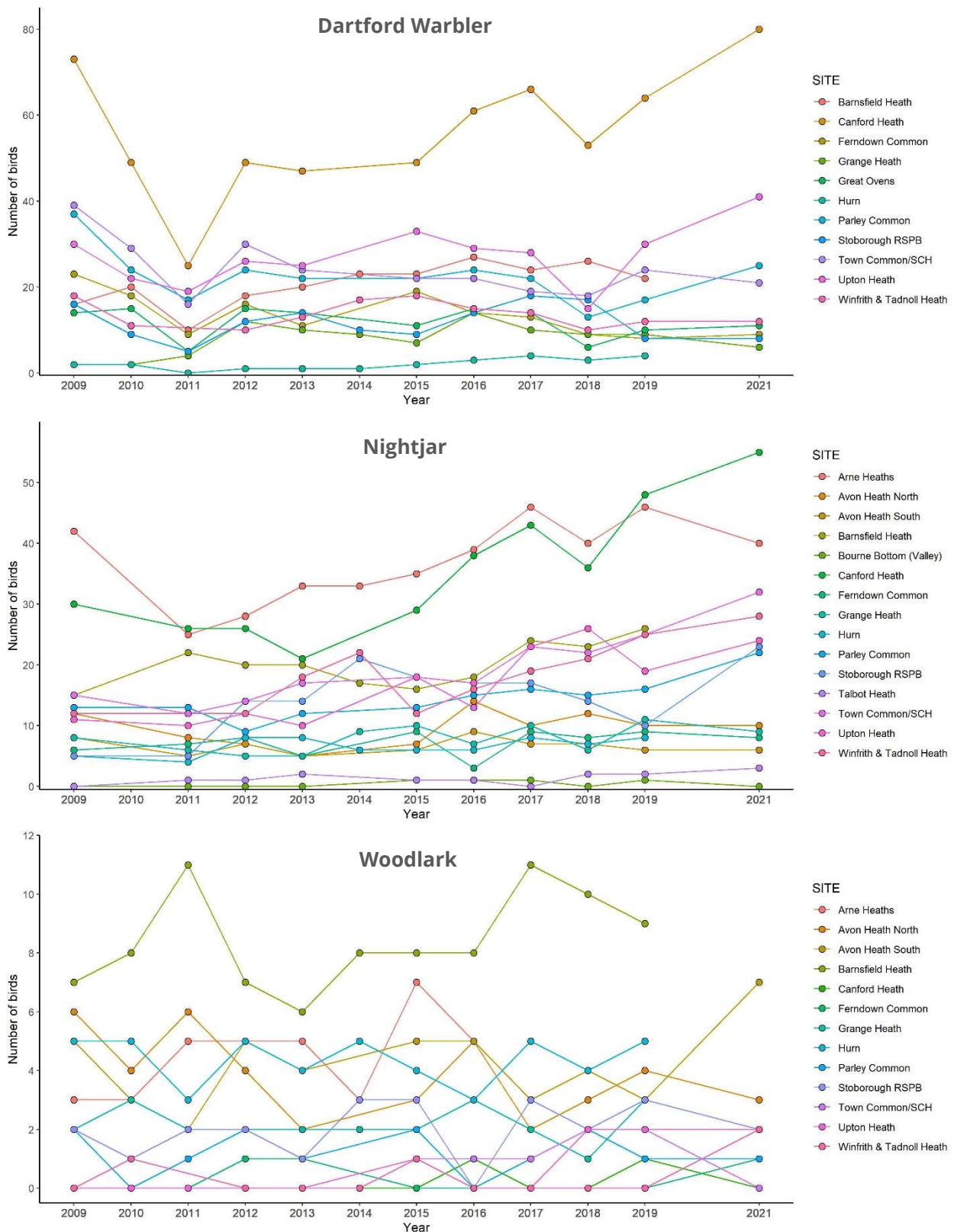
Figure 2: Number of birds recorded (by the differing standard survey methodologies) at each site (or 1km squares which represent a subset of sites). Note that the number of sites presented differs for each species due to different filters applied in order to select sites with the most data (Dartford>=10 years, Nightjar>=7, Woodlark>=9). Data gaps between years are present for all species.

Map 2: Individual territory centres from 2021 monitoring.

Legend

2021 territories
- Dartford Warbler
- Nightjar
- Woodlark

1km bird grid
- core
- core - partial
- secondary
- Dorset Heathlands SPA
- Local authority boundaries

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Contains map data © OpenStreetMap contributors. Terms: www.openstreetmap.org/copyright.
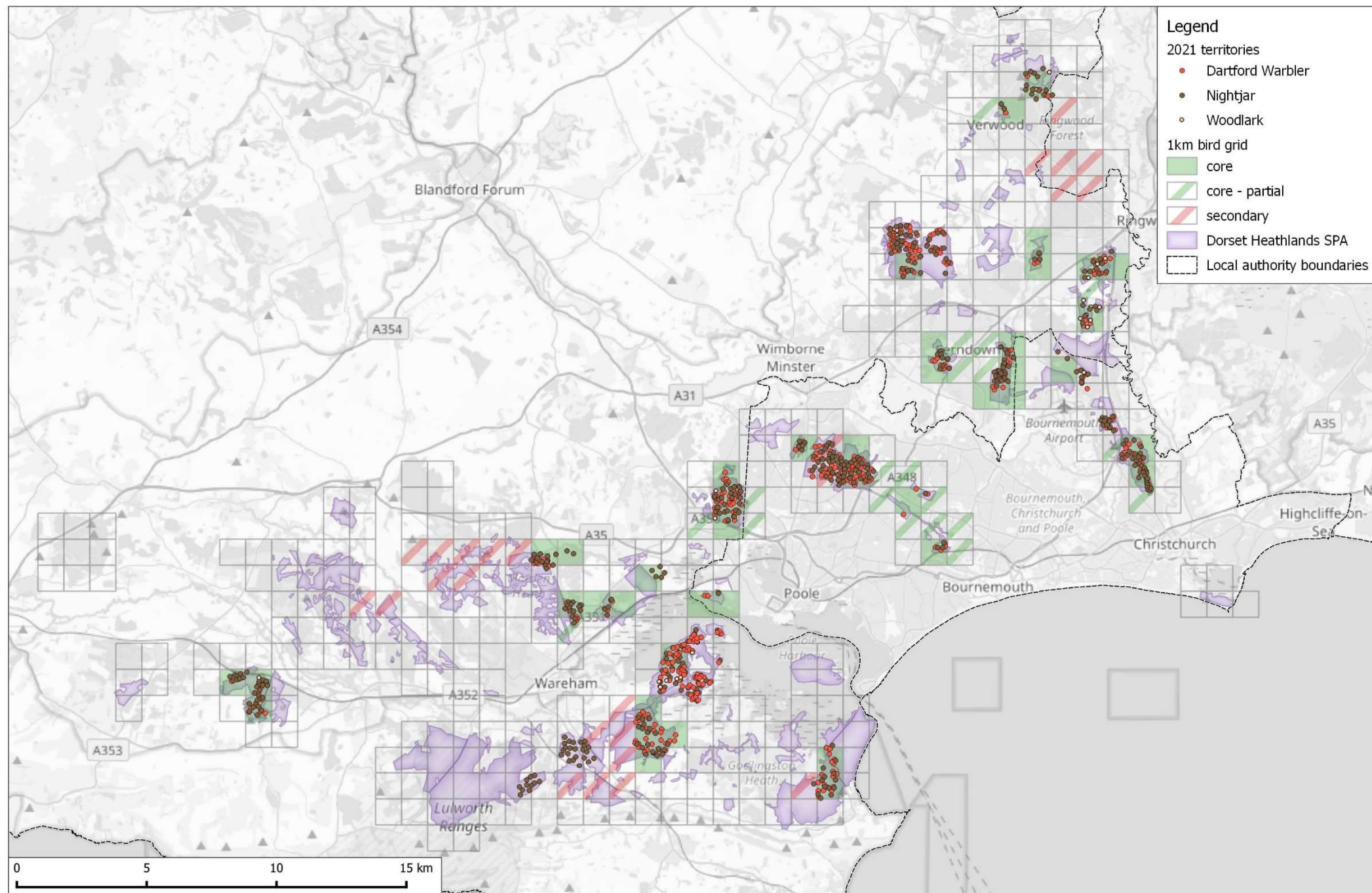
3.   SANG and HIP site provision

3.1   This section updates the number of mitigation sites - both SANG and HIP sites which have become 'live' during the period. This highlights sites which have opened during the period for sites which had no previous access, or for sites which did already have access at the time that improvements were implemented.

3.2   In the period April 2020 to December 2021 there were no new HIP sites, but a large number of new SANG sites. A total of 7 new SANG sites were opened in the period, although most of these were in 2020 due to the impact of Covid. New SANG sites were the following:

- Ringwood Road (2020, 44.7 ha) – Verwood, Forestry site, leading to Ringwood Forest.
- St Leonards Hospital (2021, 24.9 ha) – St Leonards, south of A31
- Stourview P1 East (2021, 16.8 ha) – Wimborne, north of the river Stour
- Stourview P2 West (2021, 3.8 ha) - Wimborne, north of the river Stour (immediately adjacent to P1)
- Northbrook (2021, 6.4 ha) – Swanage, between Swanage, New Swanage and Ulwell.
- Cuthbury allotments (2021, 3.9 ha) – west of Wimborne, along the river Stour
- Dogdean (2021, 10.3 ha) – north of Wimborne (between Wimborne and Furzehill).
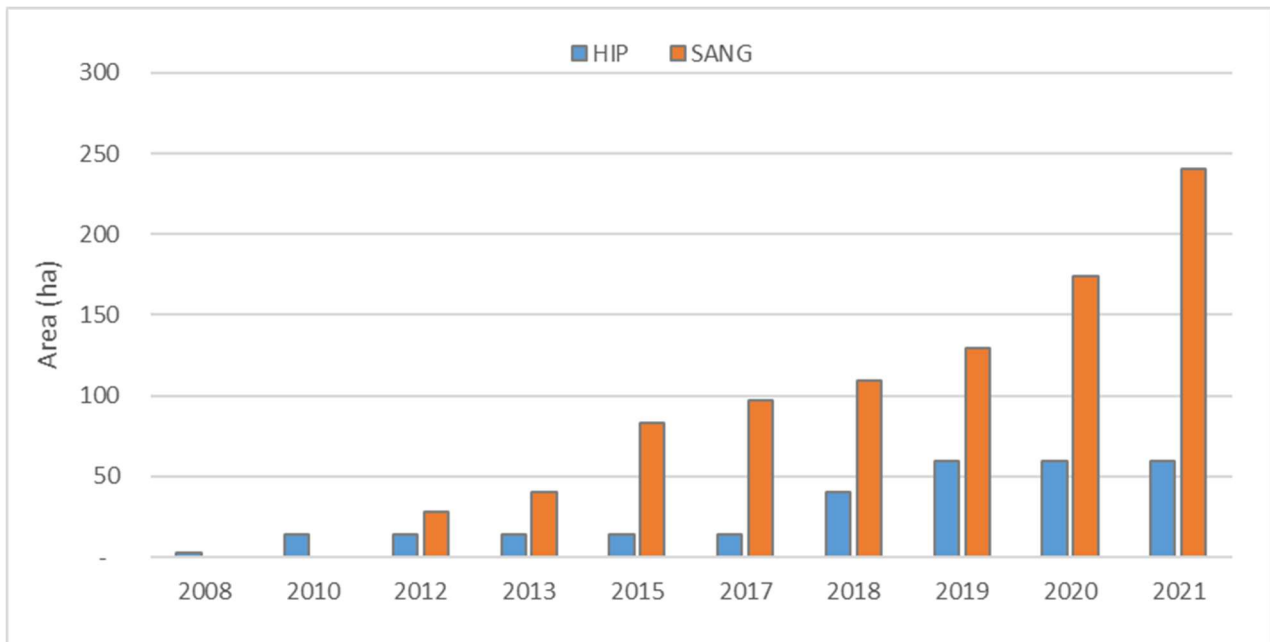
Figure 3: The combined area of all SANG and HIP sites shown over time. (Note 4 without a year of opening).

3.3   These new sites opened in the period, roughly doubling the area of SANG since 2019 when there were 10 sites, totalling 130 ha, to 17 sites totalling 240 ha at the end of 2021 – see Figure 3. The full list of HIPs, 6 discrete sites, plus the above 17 SANG sites are listed in Appendix (Table 17). The distribution of SANG and HIP provision at the end of the reporting period (December 2021) is shown in Map 3.

Visitor data

3.4   Visitor surveys are conducted occasionally in UHP monitoring, as a way of recording both visitor numbers and visitor behaviours, attitudes and thoughts on sites. Current visitor surveys focus on SANGs, which are usually required to have visitor monitoring. The current timetable for surveying is set out in Table 5, although it should be noted these are not rigid dates and can shift depending on availability of resources, works at sites, or new sites/developments in the wider area.

3.5   In the period April 2020 to December 2021 face-to-face interviews were often delayed due to the pandemic. However UHP staff conducted interviews over 64 hrs at the following sites:

- Bernards Mead
- Corfe Barrows SANG
- Meridians HIP
- Cherry Tree HIP

3.6   Visitor surveys in the next calendar year will aim to include a number of sites as detailed in Table 5. It is important to state that these are targets and will be dependent on UHP staffing, and other priorities. There is no formally required visitor surveying at HIP sites, and these are only conducted for interest, and timings are therefore considered more flexible.

Table 5: Details of completed and future planned surveys at existing or soon to be completed SANGs and HIPs which have visitor survey monitoring. The timing is a requirement of some SANGs, and is not fixed, but forms a useful suggested framework for other sites. Completed surveys are shown in bold, but note many surveys were delayed due to the coronavirus pandemic.

	Pre-works (if existing access)	On opening (post works)	Second Round	Third Round
Year from opening	-1	0	2-3	5-10
Potterne (HIP)	**2010**	**2011**	**2012**	**2015**
Woolslope (SANG)	**2012/13**	**2013/14**	**2015-17**	**2018/19**
BytheWay (SANG)		**2012/13**	**2015/16**	**2017/18**
Stanpit Recreation Ground (HIP)	**2015**	**2016**	**2018/19**	**2021**
Upton Country Park P1 (SANG)		**2015**	**2018**	2022
Upton Country Park P2 (SANG)		**2018**	2022	2024
Upton Country Park P3/4 (SANG)		**2021**	2024	2026
Bog Lane (SANG)		**2017**	2022	2027
Frenches Farm (SANG)		**2018**	2022	2028

Canford Park (SANG)		**2019**	2022	2024
Two Rivers Meet SANG		**2019**	2022	2024
Iford Meadows & Playing Field HIP		**2019**	2023	2029
Stourview (Leigh Road) SANG	**2018**	**2020**	2023	2028
Holmwood SANG		**2021**	2024-26	2031
Dogdean SANG		**2020**	2025-27	2032
Edmonsham Road SANG		**2020**	2025	2030
Cherry Tree SANG		**2021**	2024	2026
The Meridians HIP		**2021**	2024	2026
Corfe Mullen Barrow Hill SANG		**2021**	2026	2031
Cuthbury Rivers Edge SANG		**2021**	2023-26	2031

2020 Dorset Open Spaces Report

3.7   During the coronavirus pandemic the Urban Heaths Partnership were proactive in trying to understand changes in access. Following lockdown, an online survey was launched to seek the views of the public in regards to their use of Dorset's open spaces. The survey was live between the 22nd April and 6th May 2020, and there were a total of 339 responses.

3.8   Full details of the study are available separately, but key findings were the greater use of urban heaths (e.g. Canford and Upton Heath), and changes in visit frequency with more people visiting sites daily and discovering new local greenspaces.

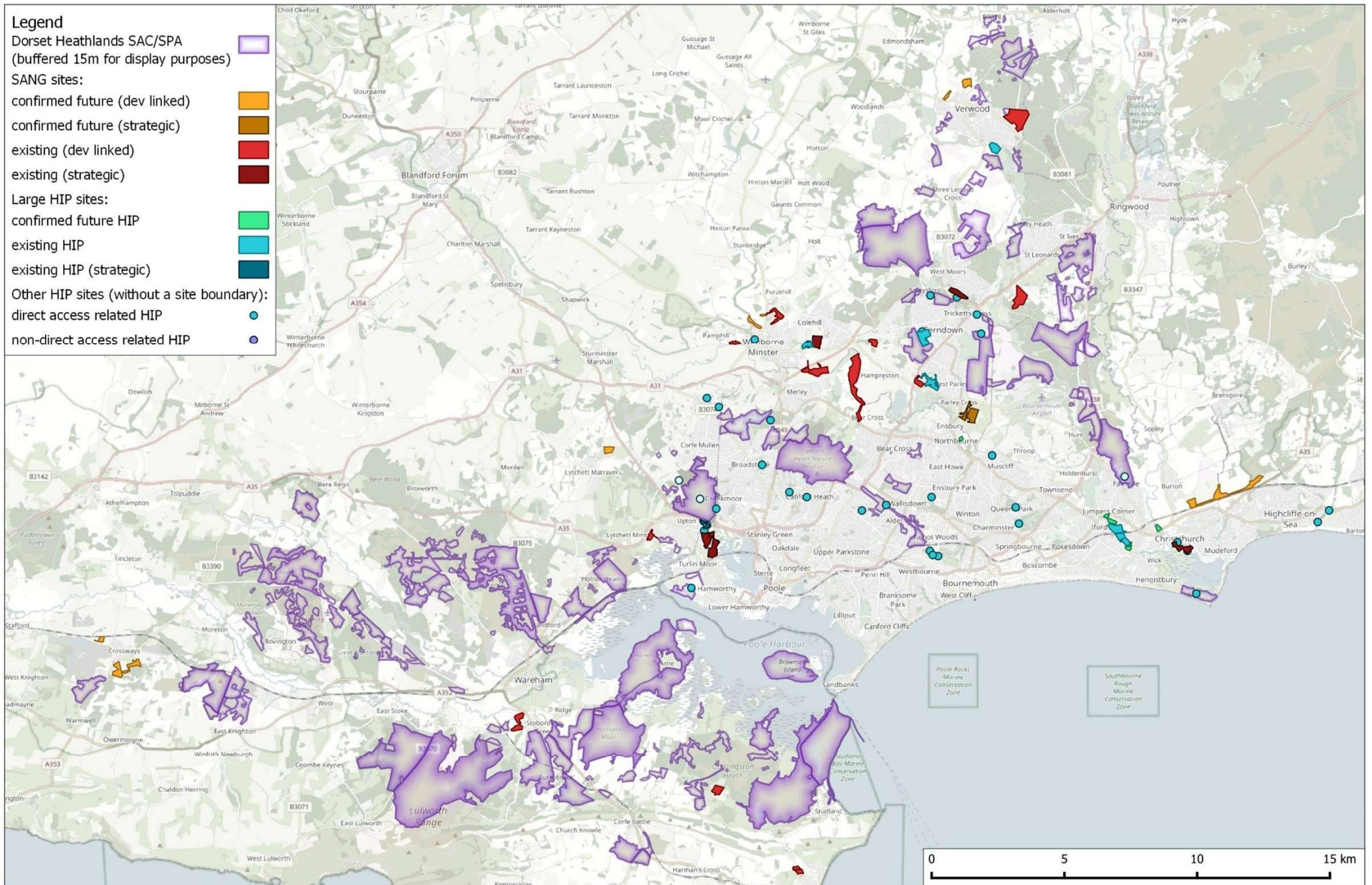**Table 6: Key summary metrics for SANG surveyed, compared to the Dorset Heaths visitor survey in 2019.**

	Date of survey	Year relative to 'opening'	n	% arriving by car	% visiting daily (or more freq.)	% dog walking	% member of Dorset Dogs	Mean group size*	Number of dogs per person (entering)*	Median route length (km)	Median linear distance from home postcode to survey point	75th percentile (Q3) linear distance from home postcode to survey point
DORSET HEATHS	**Summer '19**	**n/a**	**946**	**52%**	**30%**	**74%**	**6%**	**1.53**	**0.63**	**2.3**		
Bernards Mead	Spring '22		61	21%	44%	85%	2%	1.5	0.6	-	-	-
Corfe Barrows SANG	Autumn '21	-1	22	9%	68%	86%	0%	1.3	0.6	-	-	-
Meridians HIP	Autumn '21	0	14	21%	50%	57%	0%	1.5	0.5	-	-	-
Cherry Tree HIP	Spring '21	0	40	65%	23%	75%	8%	1.6	0.6	-	-	-
Canford SANG	Summer '19	0	62	87%	15%	87%	15%	1.73	0.9	2.3	2.2	3.8
Iford HIP	Autumn '19	0	70	50%	50%	83%	7%	1.39	0.7	-	0.8	1.3
Riversmeet & Stanpit	Summer '19	0 (/5)		55%	52%	91%		1.33	0.64	2	1	2.8
Upton Country Park -P1	Summer '18	2/3	127	79%	26%	88%	13%	1.88	1.08		2.9	4.6
Frenches Farm	Spring '18	0	44	36%	43%	98%	9%	1.37	0.86	1	0.8	1.5
South of Leigh Road East	Autumn '18	-1	22	45%	23%	55%	9%	1.55	0.53	2.9	3.4	6.1
Upton Country Park -P2	Spring '18	1	101	55%	30%	69%	8%	1.67	0.44		2	4.8
Bytheway	Winter '17/18	5	68	62%	23%	72%	-	5.16	1.33		1.2	1.9
Upton Woods	Summer '18	10	-	-	-	-	-	1.5	0.44			
Bog Lane	Spring '17	0	12	75%	17%	83%	8	1.27	0.84	1.1	5.1	11.6
Stanpit	Winter '16	2/3	53	51%	32%	66%	-	n/a	0.52		0.9	2.1

	Date of survey	Year relative to 'opening'	n	% arriving by car	% visiting daily (or more freq.)	% dog walking	% member of Dorset Dogs	Mean group size*	Number of dogs per person (entering)*	Median route length (km)	Median linear distance from home postcode to survey point	75th percentile (Q3) linear distance from home postcode to survey point
Upton Country Park -P1	Summer '15	1	133	68%	33%	77%	8%	2.34	0.45	2.6	3.4	6.1
Woolslope	Winter '13/14	0	14	7%	64%	64%	-	2.21	0.81		0.4	0.4
Bytheway	Winter '12/13	0	28	18%	32%	79%	-	-	-		0.6	1.1
Woolslope	Winter '12/13	-1	13	15%	-	-	-	-	-		0.3	0.6
Potterne Park	Summer '12	2/3	80	68%	-	-	-	-	-			
Stanpit	Autumn '12	-1	11	64%	-	-	-	-	-		1.1	79.9

* from tally counts

Map 3: Distribution of SANG and selected HIP sites.

Legend

Dorset Heathlands SAC/SPA
(buffered 15m for display purposes)

SANG sites:

confirmed future (dev linked)

confirmed future (strategic)

existing (dev linked)

existing (strategic)

Large HIP sites:

confirmed future HIP

existing HIP

existing HIP (strategic)

Other HIP sites (without a site boundary):

direct access related HIP

non-direct access related HIP

0   5   10   15 km

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4.   Coordinated vehicle counts

Introduction

4.1   The provision of parking spaces at, or adjacent to, the heaths is an important factor determining the number of visitors interacting with sites. In the 2019 Dorset Heaths visitor survey, over half of the interviewees had arrived by car (Panter & Caals, 2020a).

4.2   Counts of the number of vehicles parked at access points to the heath can be conducted quickly to provide a good indication of the number of visitors at a site. Meaningful counts require a co-ordinated approach, using a set methodology and surveying period.

4.3   The survey aims to cover almost all heathland parking access points, plus a number of other key parking locations at other types of sites such as SANGs, HIPs, key visitor centres and visitor attractions. However, it is important to note that the latter are not exhaustive, and these are included only if they are considered of high importance, or do not add considerably to the length of time for the driven transect.

Categorisation of locations

4.4   Monitoring increasingly encompasses the range of types of sites, such as SANGs, as well as the protected sites themselves. As such, the parking locations are categorised to reflect this wide variety.

4.5   This categorisation is based on how these locations may change over time, the type of site, and the degree to which these values are likely to vary. For example, at the simplest level by categorising sites as heaths or SANG we can determine whether changes are different on the two types of sites. Sites where the car park includes access to other facilities (e.g. football pitches, cafés or other habitats), rather than just a heath or SANG, are likely to be more variable (e.g. due to events) and changes in access can relate to changes in these facilities and are therefore less of a concern. Table 7 details a summary of the different types of categories used.

4.6   Three locations were added to the vehicle counts between April 2020 and December 2021, increasing the number of locations from 162 to 165, and increasing the total parking capacity from 3,744 spaces to 3,834 spaces. The additional locations were as follows:
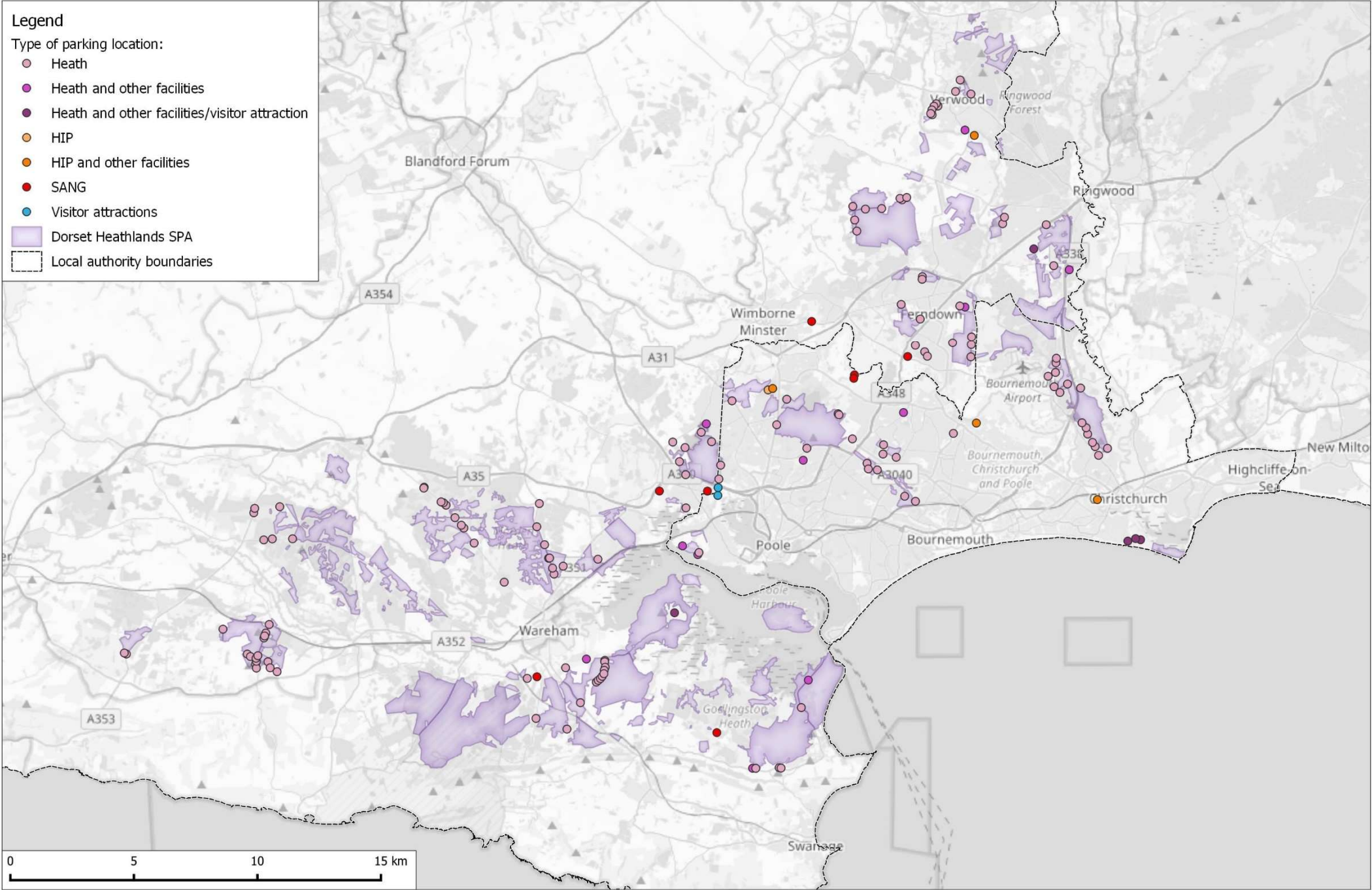
- Canford SANG overflow, added from 31/08/2020
- Iford Playing Fields, added from 09/11/2020
- Holmwood SANG, added from 22/11/2020

4.7   The distribution of all the parking locations which were surveyed is shown by location type in Map 4 and summarised in Table 7.

Table 7: Summary of the different types of parking locations counted between April 2020 and December 2021.

Type of parking location	Number of parking locations	Example locations
Heath (parking is only used by those visiting heaths)	134	All car parks around Canford Heath, Dewlands Common, Great Ovens
Heath & other facilities (parking provides access to heaths, but also facilities, e.g. visitor centres/cafes, football pitches, or other habitats e.g. coast, support land, viewpoints)	11	Stoborough Heath car park at Sunnyside (providing access onto the grassland as well as the heath), Ham Common car park which is also used by those accessing Poole Harbour, Avon Heath viewpoint car park, Studland Ferry Road
Heath & other facilities/Visitor attractions (locations which provide a clear visitor or tourist attraction, particularly in summer)	5	RSPB Arne car park, Avon Heath visitor centre, Hengistbury Head
HIP (parking is only used by those visiting HIP)	1	Delph Woods 1
HIP & other facilities (parking provides access to HIP, but also facilities, e.g. cricket pitches, support land)	4	Delph Woods 2, Granby Road Barn, Potterne Park
SANG (parking is only used by those visiting SANG)	8	Upton Country Park SANG, Bog Lane SANG, Burnbake
Visitor attractions	2	Upton Country Park (main car park and small car park)
Total	**165**	

Map 4: Distribution of all parking locations counted between April 2020 and December 2021.

Legend

Type of parking location:
- ● Heath
- ● Heath and other facilities
- ● Heath and other facilities/visitor attraction
- ● HIP
- ● HIP and other facilities
- ● SANG
- ● Visitor attractions
- ▨ Dorset Heathlands SPA
- ⌐ Local authority boundaries

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Survey dates

4.8   Target dates for the vehicle counts are calculated by examining the dates used in previous years. This attempts to ensure that dates continue to fall roughly within the same named transect window (e.g. early-mid April), while also remaining on the set type of day (i.e. weekday/weekday), and do not subtly shift year on year. The dates selected for transects between April 2020 and December 2021 are shown in Table 8.

Table 8: Target and actual dates for vehicle counts from April 2020 to December 2021. Rows are coloured by whether the date is a weekday, weekend or bank holiday.

Annual transect number	Time of year and day	Start time	Target date	Actual date
4	Early-mid April weekend	10:00	12/04/2020	Cancelled
5	Early May bank holiday*	14:00	08/05/2020	Cancelled
6	Late May/early June weekend	10:00	31/05/2020	31/05/2020
7	Late June weekday	07:00	22/06/2020	22/06/2020
8	Mid-late Aug weekend	14:00	16/08/2020	23/08/2020
9	Early Sep/late Aug weekday	14:00	31/08/2020	07/09/2020
10	Summer bank holiday*	14:00	31/08/2020	31/08/2020
11	Late Sept weekend	10:00	20/09/2020	20/09/2020
12	Early-mid Nov weekday	10:00	09/11/2020	09/11/2020
13	Late Nov weekend	10:00	22/11/2020	22/11/2020
14	Mid Dec weekend	10:00	13/12/2020	06/12/2020
1	Early Feb weekday	10:00	08/02/2021	08/02/2021
2	Late Feb/early March weekday	14:00	08/03/2021	01/03/2021
3	Late March weekend	14:00	21/03/2021	21/03/2021
4	Early-mid April weekend	10:00	11/04/2021	11/04/2021
5	Early May bank holiday*	14:00	03/05/2021	03/05/2021
6	Late May/early June weekend	10:00	06/06/2021	13/06/2021
7	Late June weekday	07:00	21/06/2021	21/06/2021
8	Mid-late Aug weekend	14:00	22/08/2021	22/08/2021
9	Early Sep/late Aug weekday	14:00	30/08/2021	06/09/2021
10	Summer bank holiday*	14:00	30/08/2021	30/08/2021
11	Late Sept weekend	10:00	26/09/2021	03/10/2021
12	Early-mid Nov weekday	10:00	15/11/2021	15/11/2021
13	Late Nov weekend	10:00	21/11/2021	Cancelled
14	Mid Dec weekend	10:00	19/12/2021	12/12/2021

*Target dates for the bank holiday dates are fixed, rather than calculated.

4.9   Out of 25 planned counts, 22 of them were completed. The first two counts of the 2020/21 financial year did not go ahead due to the national Covid-19 lockdown. The count on 21st November 2021 did not take place due to staff shortages.

Results

4.10   Excluding the three cancelled counts, 93% of the parking locations were visited on each occasion. The only exceptions were the Bournemouth locations which were not counted on 22nd November 2020, Holmwood SANG (one of the new locations) which was not counted on three occasions, and RSPB Arne for which no data was received.

4.11   Only two dates had rain for most of the transect, these were on 21st June 2021 and 12th December 2021.

4.12   In total, 24,954 parked vehicles were counted between April 2020 and December 2021, as shown in Table 9. The mean number of parked vehicles on each transect was 1,134 although totals varied considerably between dates. In addition, 437 vehicles with bike racks were counted, averaging 20 on each date.

4.13   The percentage of parking spaces that were occupied on any given date varied between 5% and 53%, with an average of 31%.

4.14   The mean number of vehicles counted at each parking location in this period is shown in Map 5.

Differences between dates

4.15   The highest vehicle count during this period was on Sunday 23rd August 2020, when 1,935 vehicles were counted. This represents 53% of the total number of spaces available, although 26 out of the 162 parking locations were at or over capacity on this date.

4.16   The next highest counts were on Sunday 13th June 2021 (1,895 vehicles) and on Sunday 21st March 2021 (1,741 vehicles).

4.17   The lowest count was on Monday 21st June 2021, when only 170 parked vehicles were counted. This was a weekday in term time with rain throughout the transect.

4.18   Figure 4 shows the number of parked vehicles on each date coloured by the type of day e.g. bank holiday, term time weekday. This indicates that the highest counts tended to be those which took place at weekends or during school holidays (either at May half-term or the summer holidays). Counts that took place on weekdays during term-time were generally the lowest. The August bank holidays both had high counts but the early May bank holiday in 2021 was below average at 669 vehicles.

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Table 9: Summary of the results from each of the vehicle counts from April 2020 to December 2021. The highest three vehicle and bicycle counts are highlighted in red, and the lowest three in blue. The '% rain' column indicates the proportion of parking locations that were visited within 30 minutes of it raining. The total capacity (number of parking spaces) varies by date since it only includes parking locations that were actually visited.

| Date	Total locations	Counted	Not recorded	Closed/ inaccessible	% rain	Total vehicles	Total vehciles with bike racks	Total capacity	% spaces occupied
Sun 19/04/2020	162	0	162	-	-	-	-	-	-
Fri 08/05/2020	162	0	162	-	-	-	-	-	-
Sun 31/05/2020	162	161	1	0	0%	1,658	**57**	3,676	45%
Mon 22/06/2020	162	161	1	1	15%	**277**	**3**	3,676	8%
Sun 23/08/2020	162	161	1	0	0%	**1,935**	35	3,676	53%
Mon 31/08/2020	163	162	1	0	0%	1,592	38	3,726	43%
Mon 07/09/2020	163	162	1	0	5%	820	12	3,726	22%
Sun 20/09/2020	163	162	1	0	0%	1,465	36	3,726	39%
Mon 09/11/2020	164	163	1	1	22%	724	8	3,761	19%
Sun 22/11/2020	165	154	11	0	2%	975	11	2,367	41%
Sun 06/12/2020	165	163	2	1	0%	1,595	20	3,761	42%
Mon 08/02/2021	165	164	1	0	17%	**586**	8	3,766	16%
Mon 01/03/2021	165	164	1	1	0%	868	8	3,766	23%
Sun 21/03/2021	165	163	2	0	0%	**1,741**	**46**	3,761	46%
Sun 11/04/2021	165	163	2	0	0%	1,471	21	3,761	39%
Mon 03/05/2021	165	164	1	0	2%	669	14	3,766	18%
Sun 13/06/2021	165	164	1	0	0%	**1,895**	17	3,766	50%
Mon 21/06/2021	165	164	1	2	100%	**170**	**2**	3,766	5%
Sun 22/08/2021	165	164	1	0	0%	1,539	**39**	3,766	41%
Mon 30/08/2021	165	164	1	0	0%	1,504	20	3,766	40%
Mon 06/09/2021	165	164	1	0	0%	920	19	3,766	24%
Sun 03/10/2021	165	164	1	1	0%	978	11	3,766	26%
Mon 15/11/2021	165	164	1	1	0%	610	**2**	3,766	16%
Sun 21/11/2021	165	0	165	-	-	-	-	-	-
Sun 12/12/2021	165	164	1	0	93%	962	10	3,766	26%

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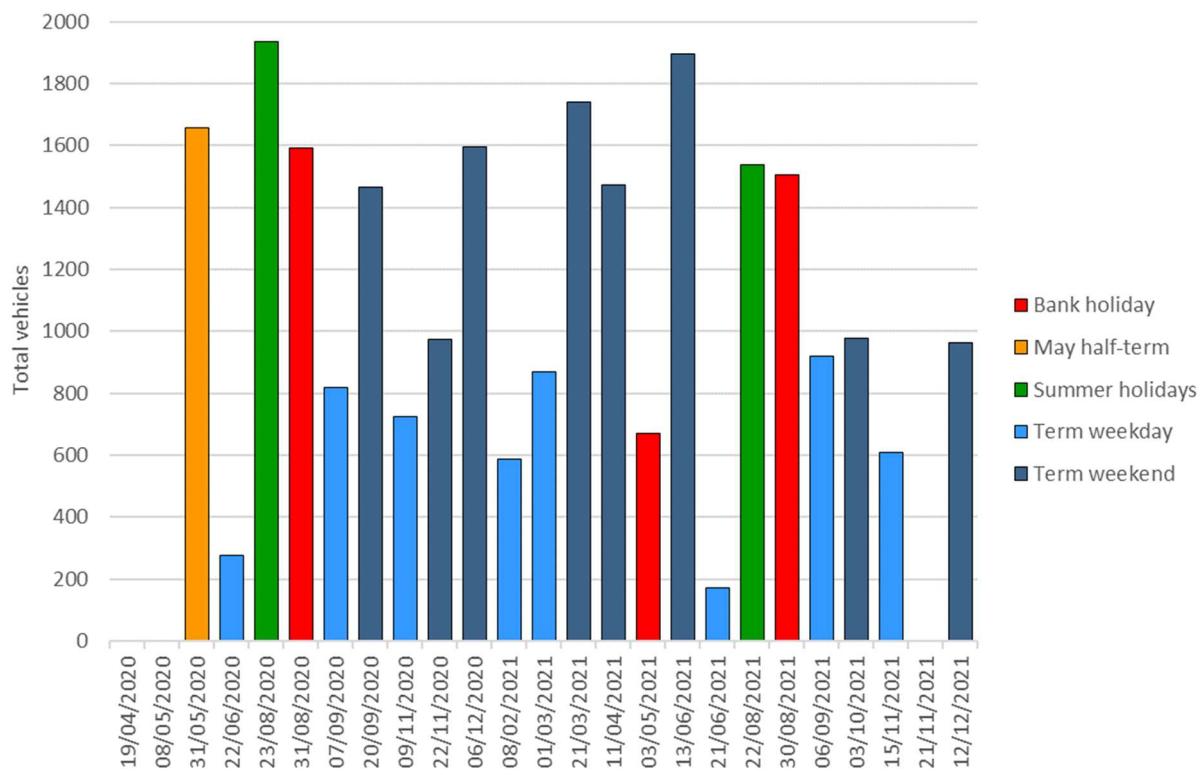
Figure 4: Total number of parked vehicles counted on each date, coloured by the type of day.

Differences between location types

4.19   A breakdown of vehicle totals for each of the location categories is shown in Figure 5, indicating that the dates that had the highest totals were generally due to higher counts at locations that were heaths with other facilities or visitor attractions. There was comparatively less variation between different dates at the SANG and HIP locations (Figure 6).
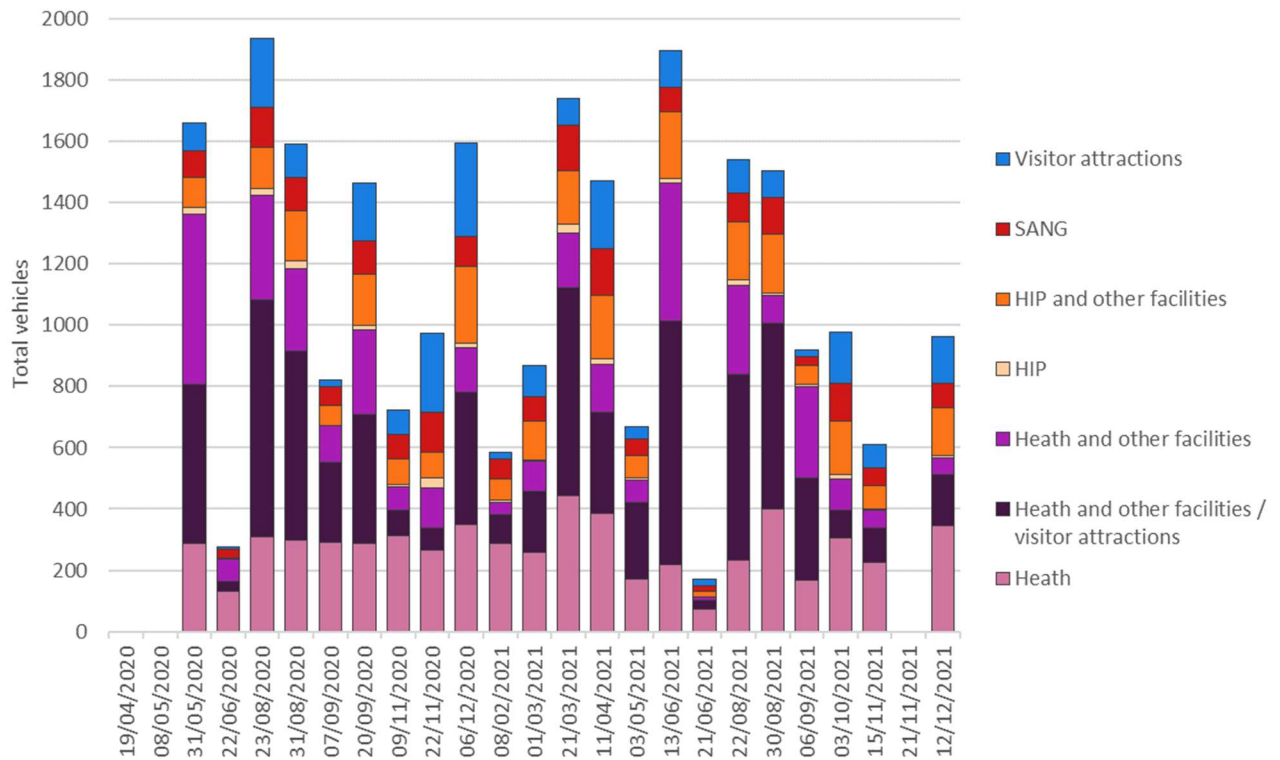
Figure 5: Total number of parked vehicles counted on each date, split by location type.
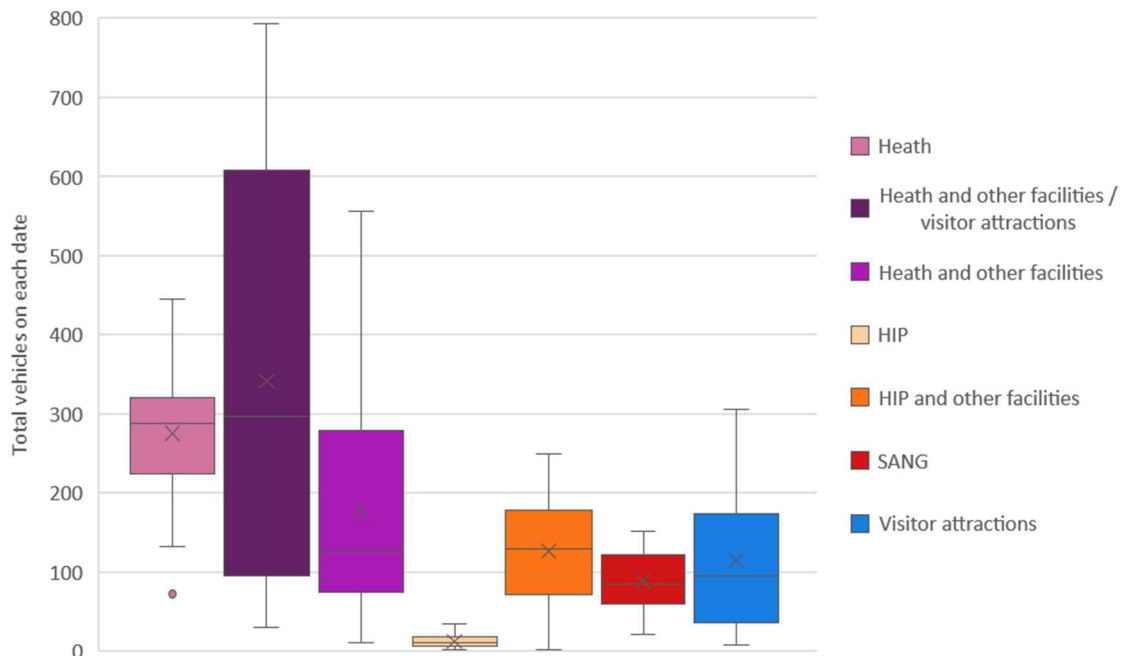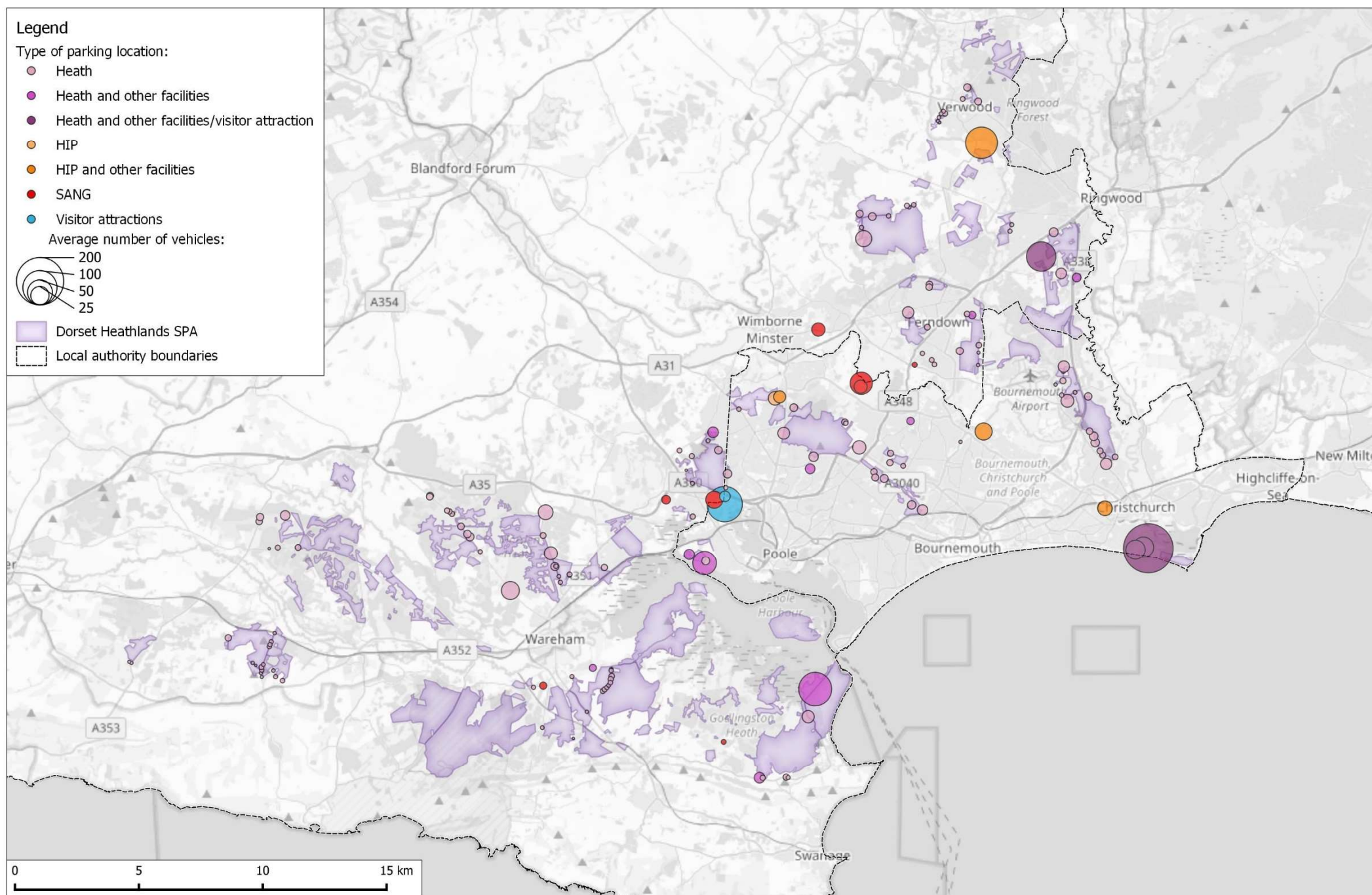

Figure 6: Box plot showing the total number of vehicles on each date by location type. Horizontal lines show the median value, crosses indicate the mean, boxes show the interquartile range and the dots are outliers.

Map 5: Parking locations coloured by type and sized to indicate the average number of vehicles recorded per transect between April 2020 and December 2021.

Legend

Type of parking location:
- Heath
- Heath and other facilities
- Heath and other facilities/visitor attraction
- HIP
- HIP and other facilities
- SANG
- Visitor attractions

Average number of vehicles:
- 200
- 100
- 50
- 25

Dorset Heathlands SPA

Local authority boundaries

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Comparison with previous years

Annual figures

4.20   Since 2011, the vehicle counts have followed a standardised method, allowing a comparison between years. Over this period, there have been some changes to the list of parking locations included in the counts. The majority of these relate to new parking provision associated with SANGs and HIPs since 2015, as they have become established. Changes to the list of heathland parking locations have generally been very minor e.g. the removal of a layby on Gravel Hill adjacent to Dunyeats Heath.

4.21   The mean number of vehicles per transect is summarised by calendar year (2011 to 2021) in Figure 7 and Table 10. Whilst the number of vehicles counted on individual dates fluctuates, the mean number of vehicles counted in each calendar year appears to have steadily increased over this 10-year period. This is the case for both parking locations close to the heaths (including those where there are other facilities or attractions) and for other parking locations (HIPs, SANGs and visitor attractions). For both types of location, the mean number of vehicles per transect was highest in 2020, followed by 2021. The mean number of vehicles in heaths in these two years (756), is a 26% increase on the long term mean from all previous years (599)
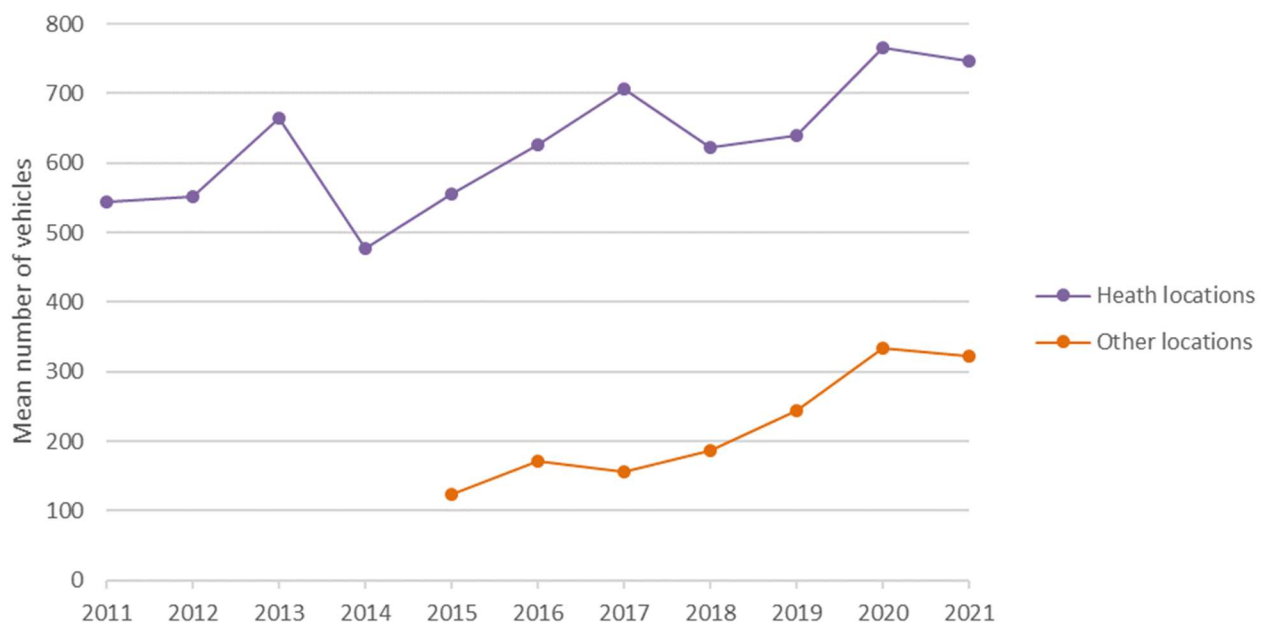

Figure 7: Mean number of vehicles counted on each transect, by calendar year, for heath locations (including those with other facilities or visitor attractions) and other locations, which includes HIPs, SANGs and visitor attractions. The number of locations varies year on year, and therefore a mean is presented, but in 2021, the number of heath location was 134 and other locations 31.

Table 10: Summary of the mean vehicle count for each calendar year, for heath locations (including those with other facilities or visitor attractions) and other locations, which includes HIPs, SANGs and visitor attractions.

Vehicle counts	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Number of transects	14	15	14	14	14	14	14	14	14	11	13
Mean vehicles per transect: Heath locations	544	551	665	478	556	627	706	622	639	766	747
Mean vehicles per transect: Other locations	-	-	-	-	123	171	157	186	244	335	323

Individual dates

4.22   Figure 8 and Table 11 summarise the number of vehicles counted on each transect in 2021 and the combined averages per transect for 2011-2020. This enables a comparison between recent data and previous years at different points through the year.

4.23   Overall, the counts in 2021 followed a similar trend to previous years. However, the 2021 counts at heath locations had more pronounced peaks on transects 3 (weekend in late March) and 6 (weekend in late May or early June). Indeed, these were the two highest counts in 2021, whereas in previous years transects 8 (weekend in mid-late August) and 10 (late August bank holiday) have typically had the highest counts. The 2021 counts at other locations (HIPs, SANGs and visitor attractions) were also higher than average in the spring, especially transects 2-4 and 6.

Figure 8: Number of vehicles counted on each transect at heath locations (including those with other facilities or visitor attractions) and other locations, which includes HIPs, SANGs and visitor attractions. Figures for 2011-2020 are the mean number of vehicles.

Table 11: Comparison of 2021 vehicle counts with the average (mean) values from 2011-2020 by transect. 'Heath locations' includes those with other facilities or visitor attractions. 'Other locations' includes HIPs, SANGs and visitor attractions. The top three values in each column are highlighted in red and the bottom three in blue.

Transect	No. of vehicles, heath locations: 2021	Mean no. of vehicles, heath locations: 2011-2020	No. of vehicles, other locations: 2021	Mean no. of vehicles, other locations: 2011-2020
1 - early Feb weekday	422	292	164	102
2 - late Feb/early March weekday	556	331	312	96
3 - late March weekend	1301	796	440	154
4 - early-mid April weekend	872	636	599	199
5 - early May bank holiday	495	928	174	244
6 - late May/early June weekend	1463	706	432	225
7 - late June weekday	113	167	57	43
8 - mid-late Aug weekend	1130	1072	409	307
9 - early Sep/late Aug weekday	800	637	120	152
10 - late Aug bank holiday	1097	1159	407	328

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Transect	No. of vehicles, heath locations: 2021	Mean no. of vehicles, heath locations: 2011-2020	No. of vehicles, other locations: 2021	Mean no. of vehicles, other locations: 2011-2020
11 - late Sep weekend	499	551	**479**	193
12 - early-mid Nov weekday	**397**	**306**	213	145
13 - late Nov weekend	-	529	-	277
14 - mid Dec weekend	567	513	395	**306**

Future counts

4.24   Data collected from the vehicle counts is proving very useful for monitoring long-term trends in visitor patterns, so efforts should be made to ensure that future counts are as complete and consistent as possible.

4.25   The list of parking locations included in the counts should be reviewed regularly to confirm that it is accurate and that any changes in parking (for example at new SANGs) are promptly recorded. Other information relating to the parking locations could also be reviewed, for example checking the capacity estimates of each location.

5.   Sensor data

Introduction

5.1   Automated counters represent an effective way to gather large, long-term datasets. They can be used to remotely monitor subtle access patterns at a range of sites, including increasing use at SANG or HIP sites. The counters are usually in the form of buried pressure slabs or invisible beams located on the access points to sites. The resulting count data provides a good approximation of the number of people passing and directly accessing sites.

5.2   Such long-term monitoring data collected by sensors is key to detecting gradual changes in visitor pressures. The monitoring strategy recommended that on heathland sites, sensors need to be in place for consistent long-term data, while on mitigation project sites (e.g. SANGs, HIPs) sensors should be installed to establish a baseline in visitor counts prior to any site improvements. Over time these can be left in situ, or removed but reinstalled at a later date, or removed and supplemented with infrequent on-site visitor counts to determine any changes in access patterns.

5.3   Sensors require a proportion of UHP time for regular upkeep. This includes regular checks, any repairs or replacements (due to vandalism and theft), and regular (approximately every four/five months) downloading of the data from sensors.

5.4   Since 2007 a total of 137 sensors have been placed on the SPA or at SANG/HIP sites (including replacements at slightly different locations). Sensors have been installed and some subsequently removed over this period, but the total data amounts to 808 years of recording.

Categorisation of data

5.5   As already stated for the car parking data, the nature of the different locations will greatly affect visitor use and whether any changes in access are viewed as a cause for concern or not. The same categorisation of locations as applied for car park count data, has been applied to the sensor data.

5.6   The number of sensors for each location type are given in Table 12 and shown in Map 9.
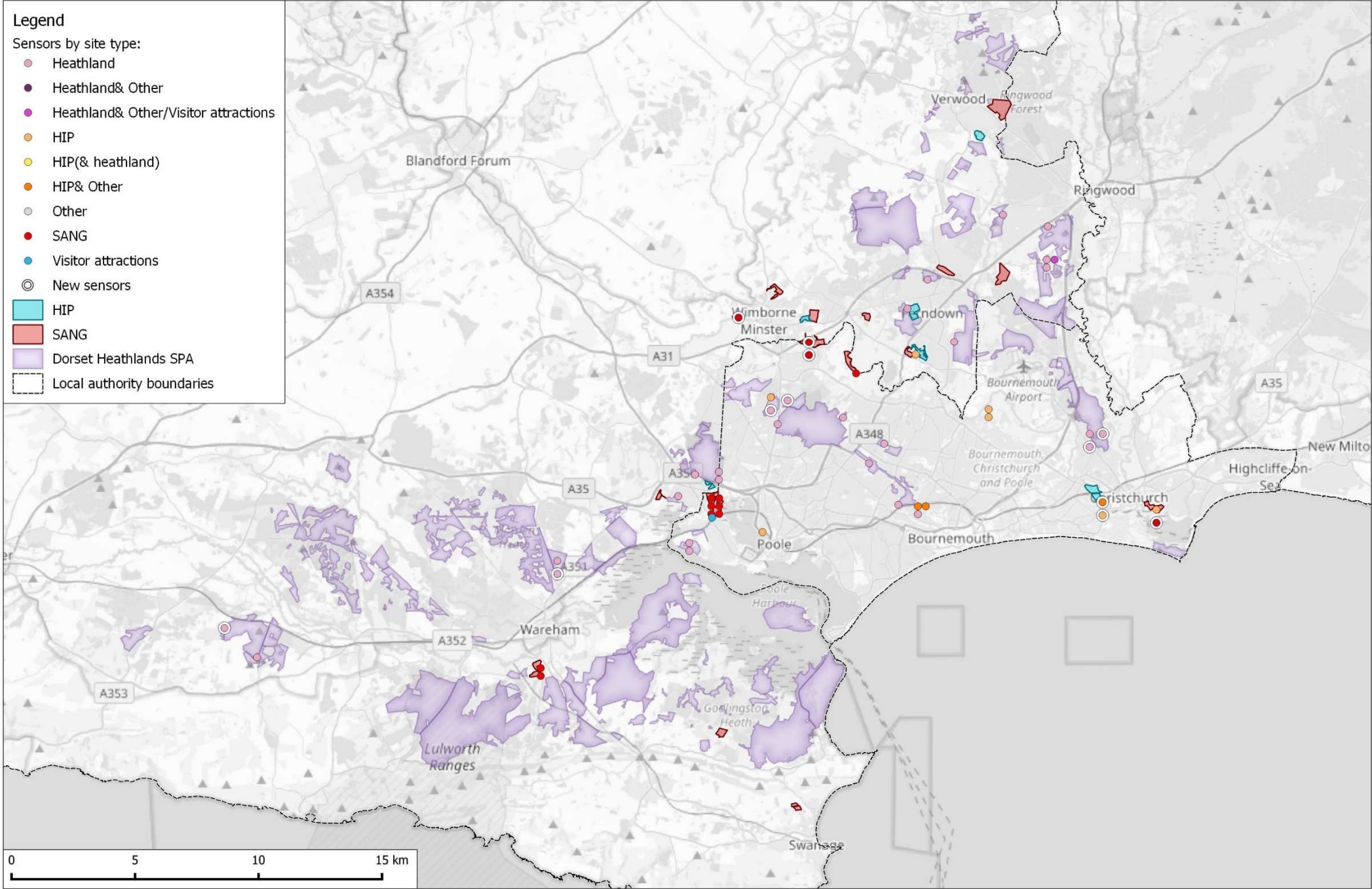
April 2020-December 2021 data

5.7 Over the period April 2020 to December 2021, 56 sensors have been collecting data at some point, roughly around the target level of sensors for maintaining in the long term. The locations of these sensors are given in Map 6.

5.8 A large number of new sensors were installed in the period, due to a relatively low number of new installs prior to this, plus a large number of new SANG/HIP sites, and new re-installs following reviewing of sensors. A list of 16 new sensors in given below:

- CRM1a; reposition of a sensor at the 2 Riversmeet SANG, Christchurch (08/07/2020).
- BIM1; new sensor at new HIP site Iford Meadows, Christchurch (22/07/2020).
- BIM2; new sensor at new HIP site Iford Meadows, Christchurch (22/07/2020).
- EER1; new sensor at new SANG, Edmondsham Road, Verwood (26/07/2020).
- WLR1; new sensor at new SANG, Stourview, Wimborne (16/09/2020).
- WLR2; new sensor at new SANG, Stourview, Wimborne (16/09/2020).
- ADH1a; reposition of sensor at Dunyeats, Bournemouth (12/05/2021).
- CMH1; new sensor at new HIP site Merdians, (28/07/2021).
- WCS1; new sensor at new SANG, Cuthbury Allotments, Wimborne (14/08/2021).
- WTH1a; reposition of sensor at Tadnoll Heath, Bournemouth (01/09/2021).
- HGO2a; reposition of sensor at Great Ovens, Wareham (07/10/2021).
- CSCH1a; reposition of sensor at St Catherines Hill, Christchurch (17/11/2021).
- HTC1a; reposition of sensor at Town Common, Christchurch (17/11/2021).
- PCA6b; reposition of sensor at Canford Heath, Bournemouth (30/11/2021).
- BHH4; new sensor at new SANG, Hengistbury Head, Bournemouth (01/12/2021).
- BCT1; new sensor at new HIP, Cherry Tree, Bournemouth (08/12/2021).

Table 12: The number of sensors collecting data in the current period [56] and in the entire dataset to date [153].

Type of site	Number of sensors in current period	Number of sensors to date
Heath (only used by those visiting heaths)	28	72
Heath & other locations (provides access to heaths, but also other habitats e.g. woodlands and some other facilities e.g. schools)	2	2
Heath & other / visitor attractions* (provides access to heath habitats, but other habitats or visitor attraction facilities; e.g. Moors Valley Country Park)	0	7
HIP (only used by those visiting HIP – may be accessing other greenspaces e.g. Stour Valley. Includes sites that were not named as 'HIP')	7	19
HIP & other facilities (people not using the site or non-related activity) (could provide access to heath/SSSI, but also facilities e.g. cricket pitches, support land)	3	5
HIP & heathland* HIP projects which are adjacent to heathland sites (e.g. Stoborough Heath)	0	6
Other access types (Castleman Trailway)	1	17
SANG (only used by those visiting SANG)	14	18
Visitor Attractions (e.g. Upton Country Park, Avon Country Park main car park – may include commuters)	1	6

*no sensors currently in these categories, but these were present in previous years.

Map 6: Location of sensors collecting data in the period examined shown by the type of site. The location of new sensors are highlighted.

Legend

Sensors by site type:
- Heathland
- Heathland& Other
- Heathland& Other/Visitor attractions
- HIP
- HIP(& heathland)
- HIP& Other
- Other
- SANG
- Visitor attractions
- New sensors
- HIP
- SANG
- Dorset Heathlands SPA
- Local authority boundaries

5.9   The sensor data is complex, and there are a large number of factors to be accounted for, but primarily the number of sensors in use as sensors are installed/removed, and the patchiness of data as sensors malfunction. In the data presented here, we have conducted preliminary cleaning to remove data which is clearly incorrect. This removes extremely large values, but is not a complete examination of values, as this would require significantly more time than is set aside for annual reporting. It is envisaged robust cleaning would examine the whole dataset to conduct automated checking to remove anomalies which are outside usual ranges or patterns.

5.10   Furthermore, values between sensor types are not directly compared. The raw averages shown depend on the number and composition of different types of locations, and types of sensor. All values would require stricter data cleaning and calibration before values can be compared in this way with confidence.

5.11   This year, the separation of sensors into much smaller groups means the effect of the addition and removal of sensors is magnified. As such presenting certain results using solely cleaned data for the year is often not meaningful due to data gaps. This was particularly notable in the examination of monthly sensor values, which show large variations. Robust examination would require greater data cleaning and averaging or interpolation based on using the previous year's data.

April 2020 to December 2021 results

5.12   The period examined after the simple cleaning process provides a total of 5,628,343 passes from 56 sensors. The sensor data, of all datasets presented in this report, are the most difficult to present simply and accurately. The data require more detailed processing (for example incorporating calibration results to give number of people rather than raw passes) before robust results are produced, but a simple overview of average monthly number of raw passes is presented by each location in Map 9.

5.13   Variation over the period is shown in Figure 9 and indicates the changes over the period from April 2020 through to December 2021. This can be seen to change markedly, largely due to the changing government restrictions on access over time. The sensors are one of the few datasets that were able to continue over the Covid lockdowns and therefore provide an interesting record of events.

5.14   All site types showed a peak in access in May, coinciding with when unlimited outdoor recreation was permitted, except for the visitor attractions which showed the opposite due to closures of these types of sites. Heathland sites recorded around a 90% increase in access in this month relative to the average pre-covid,

while for HIP sites this was a just over 300% and around 50% for SANG sites (Figure 9).

5.15   However, monthly patterns, while interesting, can provide a misleading picture and should be viewed with some caution, due to the low sample sizes considered for the single year, patchiness of data, and addition/removal of sensors to the database.
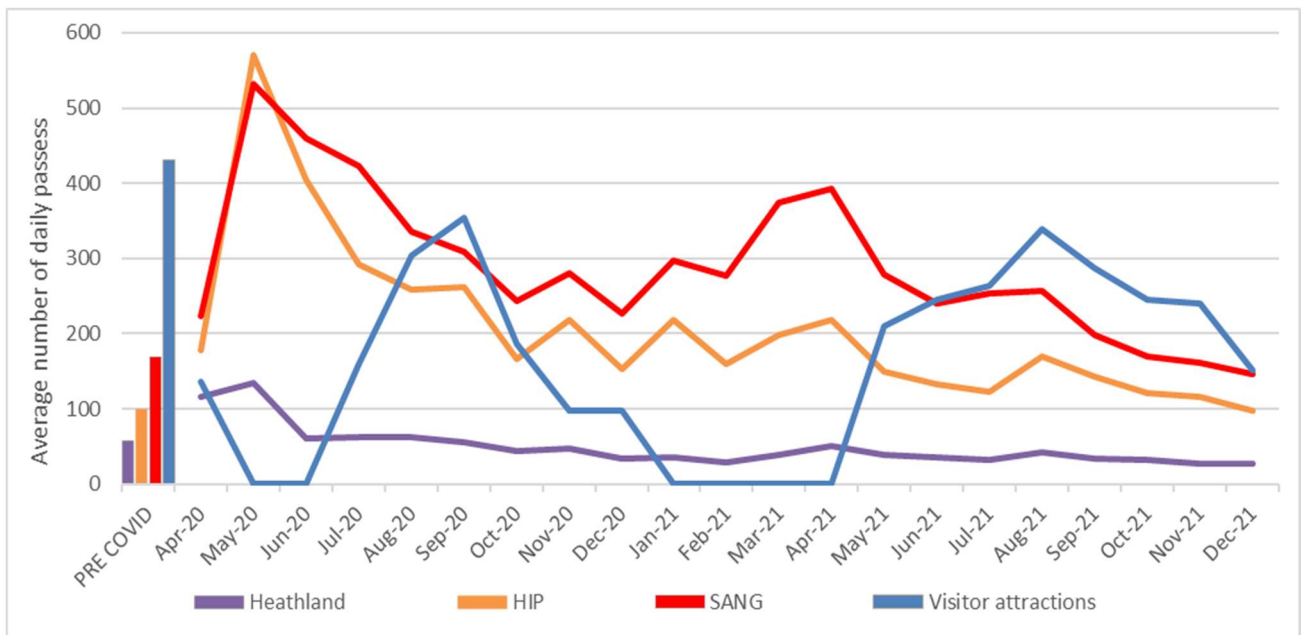

Figure 9: The monthly average number of passes recorded at sensor types, shown heathland sites [n=28], HIP sites [7], and HIP & other sites [3] SANG [14], and Visitor attractions [1].

5.16   A number of sensors, with reasonable data over the period and in a preceding few years, were examined in more detail as shown in Figure 10 and Figure 11. Three heathland sensors (Ham Common, Talbot and Upton), and one HIP (Pugs Hole) are shown in Figure 10. Most of these sensors show a peak in access in April/May/June as people utilised greenspace during the pandemic. Although some sensors do not show this pattern, such as Upton, this may be due to the different user groups, with more commuters included in the sensor count and therefore less elevated values.

5.17   Figure 11 shows the access at two SANG sites Canford Park and Upton Country Park. These sites show large peaks and more noticeably continued high levels following the peak – which is not as noticeable in the heathland sensors. The extent to which this is due to steady increases in access at SANG sites which have recently opened or increases in access more generally in a 'new normal' remain to be seen.
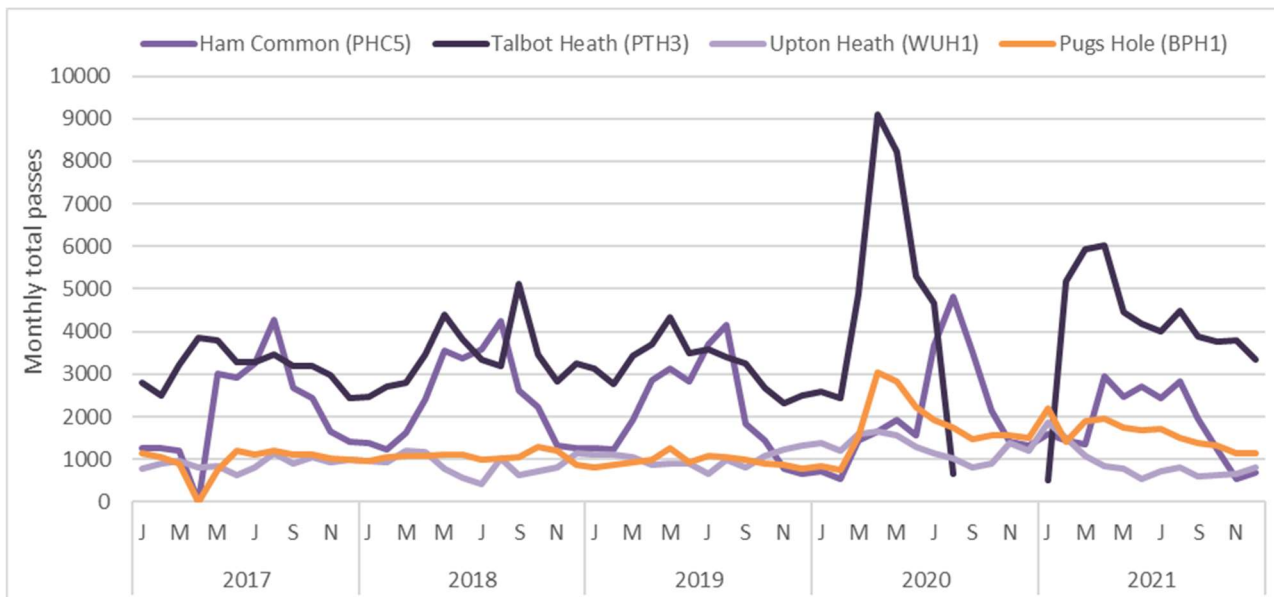
Figure 10: Monthly number of passes recorded at 3 Heathland and 1 HIP sensor.
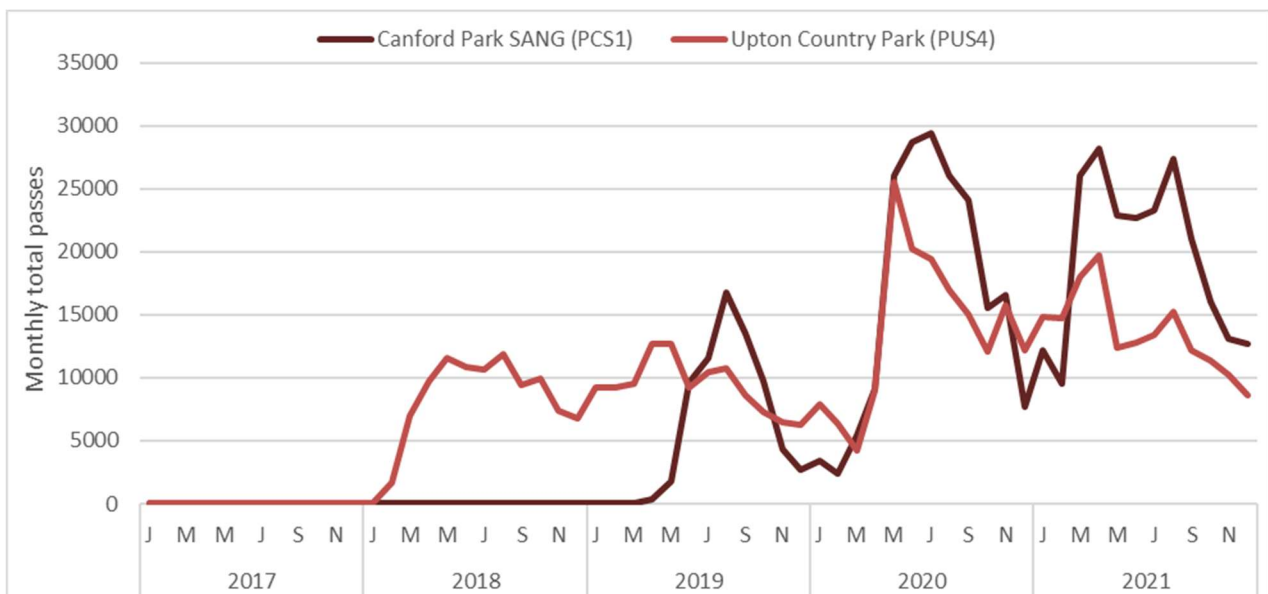

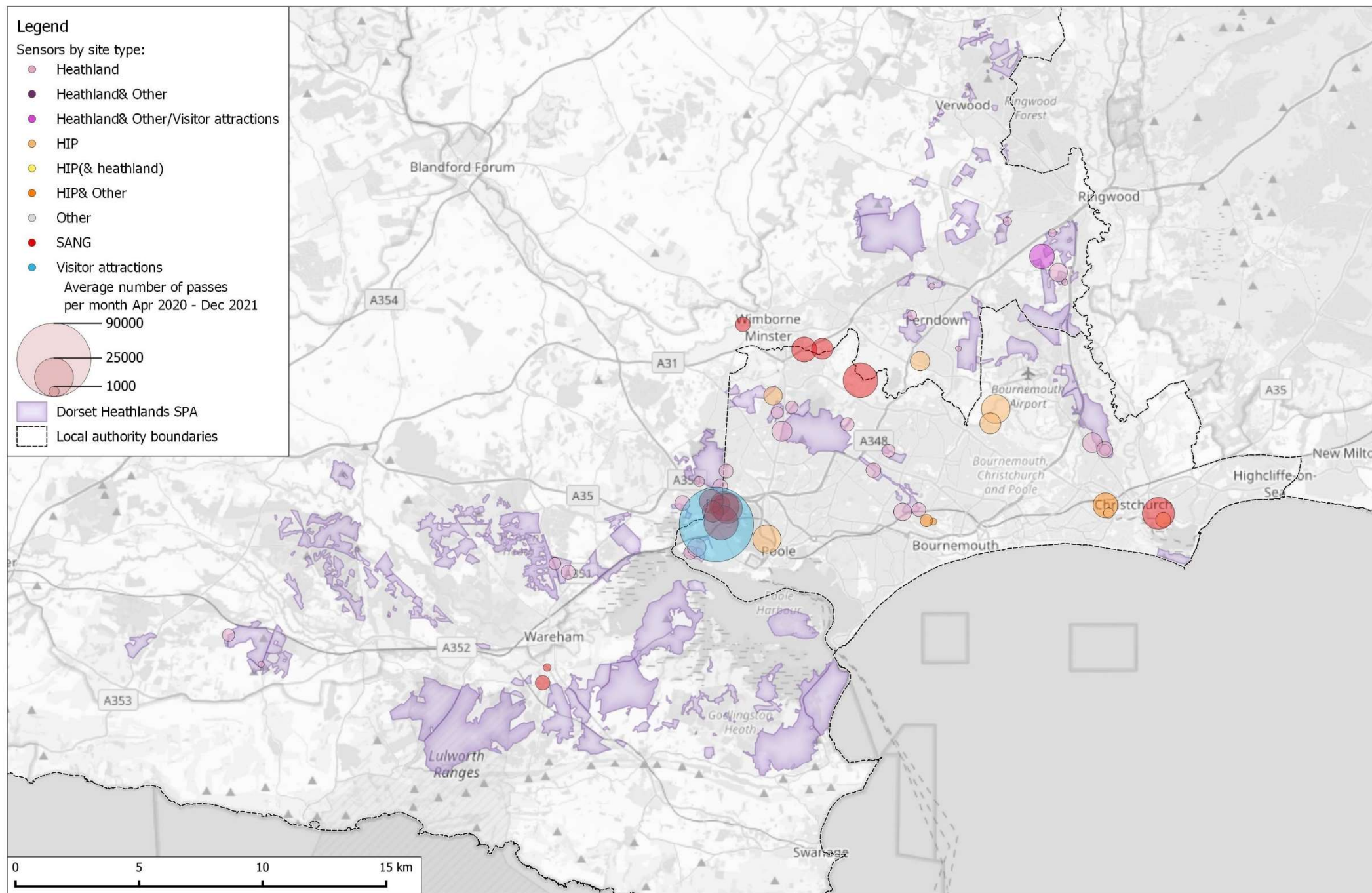**Figure 11: Monthly number of passes recorded at 2 SANG sensors.**

5.18   Map 7 summarises the data geographically by each sensor to show the typical levels of access recorded across the area at these specific locations. Map 8 is used to illustrate the changes in access that have been seen between all data collected before the period examined here (pre-April 2020) and the data from April 2020 to December 2021 to calculate the percentage change in access typically seen.

5.19   Across all 41 sensors where it was possible to examine the percentage change in access, the overall average was a 69% increase in passes between an average from all data prior to April 2020, and an average from all data between April 2020 and

December 2021. By site type the smallest change was on the heathland sites (22 sensors) with an 44% average increase. Interestingly a similar average increase was recorded at SANG sites (9 sensors, 45%). Amongst individual sensors this could vary greatly, with some sensors only recording a few months with very high counts in the period examined, compared to generally low counts over a very long period prior to April 2020, meaning an extremely high percentage increase. Maximum change in access is shown in Table 13 and individual locations summarised in Map 10. These suggest a very mixed picture across urban and rural areas, large and small sites.
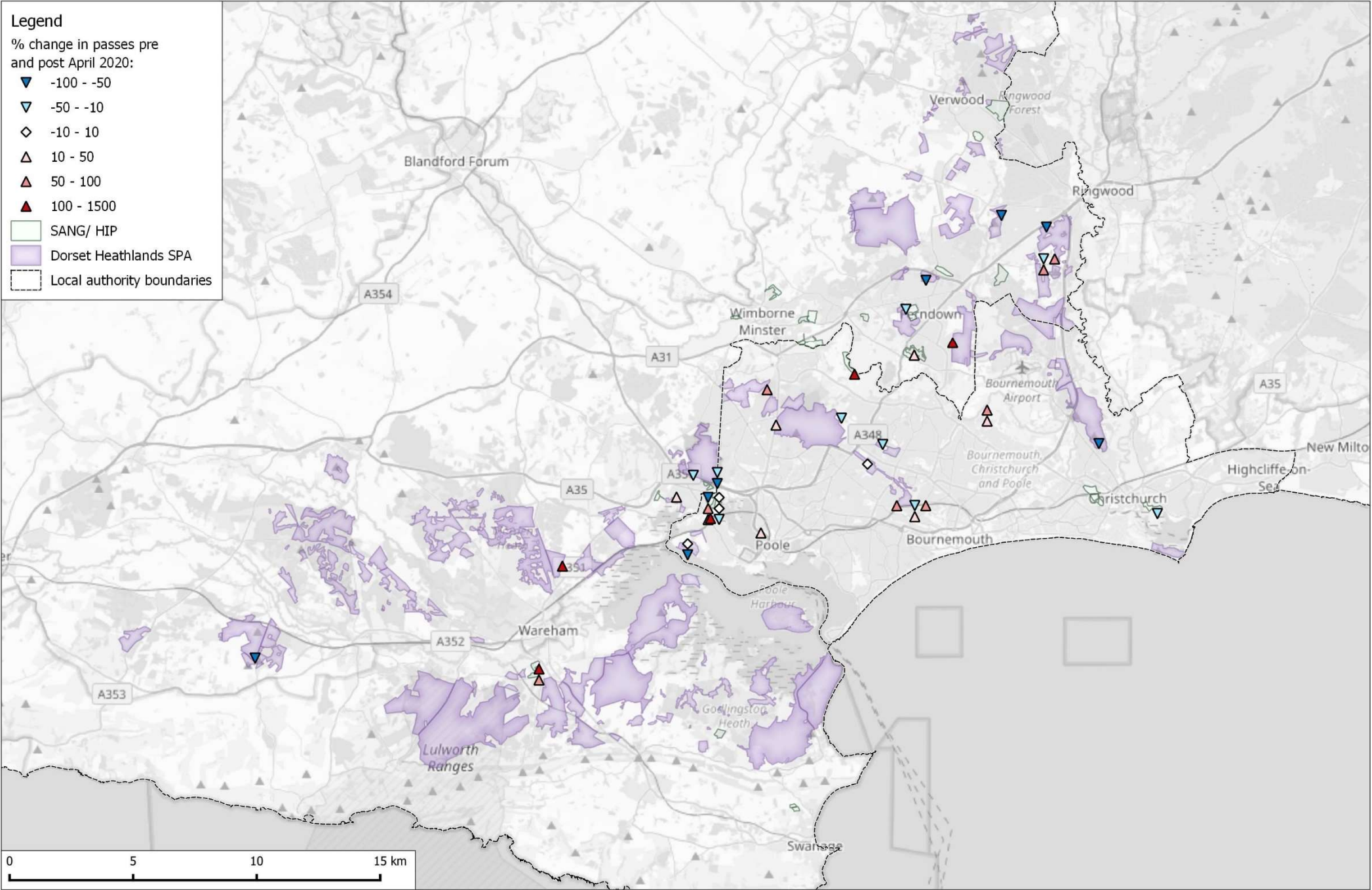
Table 13: Summary of % change in access for each sensor, averaged by the site type.

Site type	n	Average % change in passes	Minimum % change in passes	Maximum % change in passes
Heathland	22	44%	-92%	1291%
Heathland& Other/Visitor attractions	1	80%	80%	80%
HIP	6	35%	-30%	90%
HIP& Other	2	17%	-49%	83%
SANG	9	45%	-57%	192%
Visitor attractions	1	1121%	1121%	1121%
Total	**41**	**69%**	**-92%**	**1291%**

Map 7: Location of sensors, with markers sized by the average number of passes per month in the period April 2020 to December 2021.

Legend

Sensors by site type:

- Heathland
- Heathland& Other
- Heathland& Other/Visitor attractions
- HIP
- HIP(& heathland)
- HIP& Other
- Other
- SANG
- Visitor attractions

Average number of passes
per month Apr 2020 - Dec 2021

- 90000
- 25000
- 1000

Dorset Heathlands SPA

Local authority boundaries

Map 8: Sensor locations categorised by the percentage change in access from all data pre April 2020 and all data post April 2020.

Legend

% change in passes pre
and post April 2020:

▼ -100 - -50

▽ -50 - -10

◇ -10 - 10

△ 10 - 50

▲ 50 - 100

▲ 100 - 1500

SANG/ HIP

Dorset Heathlands SPA

Local authority boundaries

0   5   10   15 km

6. Incident data

Introduction

6.1   The Urban Heaths Partnership coordinates the reporting and recording of any illegal, antisocial or potentially destructive activities which will impact on the heaths. These 'incidents' are recorded by the individual local authority mitigation officers (formerly UHP wardens) or other individuals from the partnership organisations on the Dorset / BCP (Bournemouth Christchurch and Poole) Council's 'Dorset Explorer' mapping system. Incidents cover a range of activities including: fires, motorcycles / off-roading, fly tipping (including green waste), cyclists (off designated paths), horse-riders (off bridleways etc.), vandalism, abandoned vehicles, antisocial behaviours and a wide range of other incidents (e.g. harassment, wildlife crime, firearms, catapults, dens/camping).

6.2   Incidents relating to fires on the heath are considered the most robust of all the incident data. The importance of such events means these are much more reliably recorded. The recording of fires is based upon the logged callouts by Dorset and Wiltshire Fire and Rescue, with additional reporting by wardens, which covers any other burnt areas or small campfires, which are otherwise missed in formal Fire and Rescue callout data. As such it is important to state that continued efforts by partners are needed to record these robustly.

Fires

6.3   In total, there were 203 incidents of fire recorded between April 2020 and December 2021, of which 93 were in 2021. The majority of fire incidents only affected a small area, with two thirds of them (139 incidents, 68%) covering an area of less than 10m^2 each. However, there were also several significantly large fires during this time period, with 8 of them over 1 ha.

6.4   The most serious fire in this period started in Wareham Forest on 18th May 2020, during the first coronavirus lockdown. Dry conditions and strong winds caused it to spread quickly, with smoke observed as far away as Bournemouth and Wimborne. Fifty fire stations were deployed from across Dorset, Wiltshire and Hampshire, and a major incident was declared which remained in place for the following eight weeks whilst hotspots and reignitions were dealt with. In total, approximately 188 ha of forest and lowland heathland was burnt in the area around Sugar Hill, Bloxworth Heath and Woolsbarrow Fort. An investigation found remains of a campfire with 11 disposable barbecues at the scene of the fire, and it was

concluded that the fire's cause was 'accidental due to social activity within the forest'[2].

Figure 12: Wareham Forest, 19th May 2020.

6.5   Other notable fires within this period were at Boveridge Heath in Ringwood Forest on 3rd May 2021 and at White Sheet Plantation near Wimborne on 5th April 2021. The Boveridge Heath fire affected 12.7 ha of heathland and forestry plantation and involved significant attendance by both Dorset & Wiltshire and Hampshire Fire & Rescue Services. The fire at White Sheet Plantation was in an area of clearfell with Molinia, Heather remnants, Gorse and occasional Pine, and extended to 8.3 ha.

6.6   The distribution of fire incidents is shown in Map 9 The site with the most fires recorded in this period was Canford Heath, which had 39 fire incidents and a total burnt area of almost 2,500m^2. Other sites with large numbers of fires were Ham Common (25), Alder Hills (16) and Bourne Valley (11).

6.7   The months that had particularly high numbers of fires recorded were May to August 2020 and April 2021 (Figure 13).

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[2] https://www.dwfire.org.uk/safety/heath-fires-and-countryside-safety/wareham-forest-fire-stats/
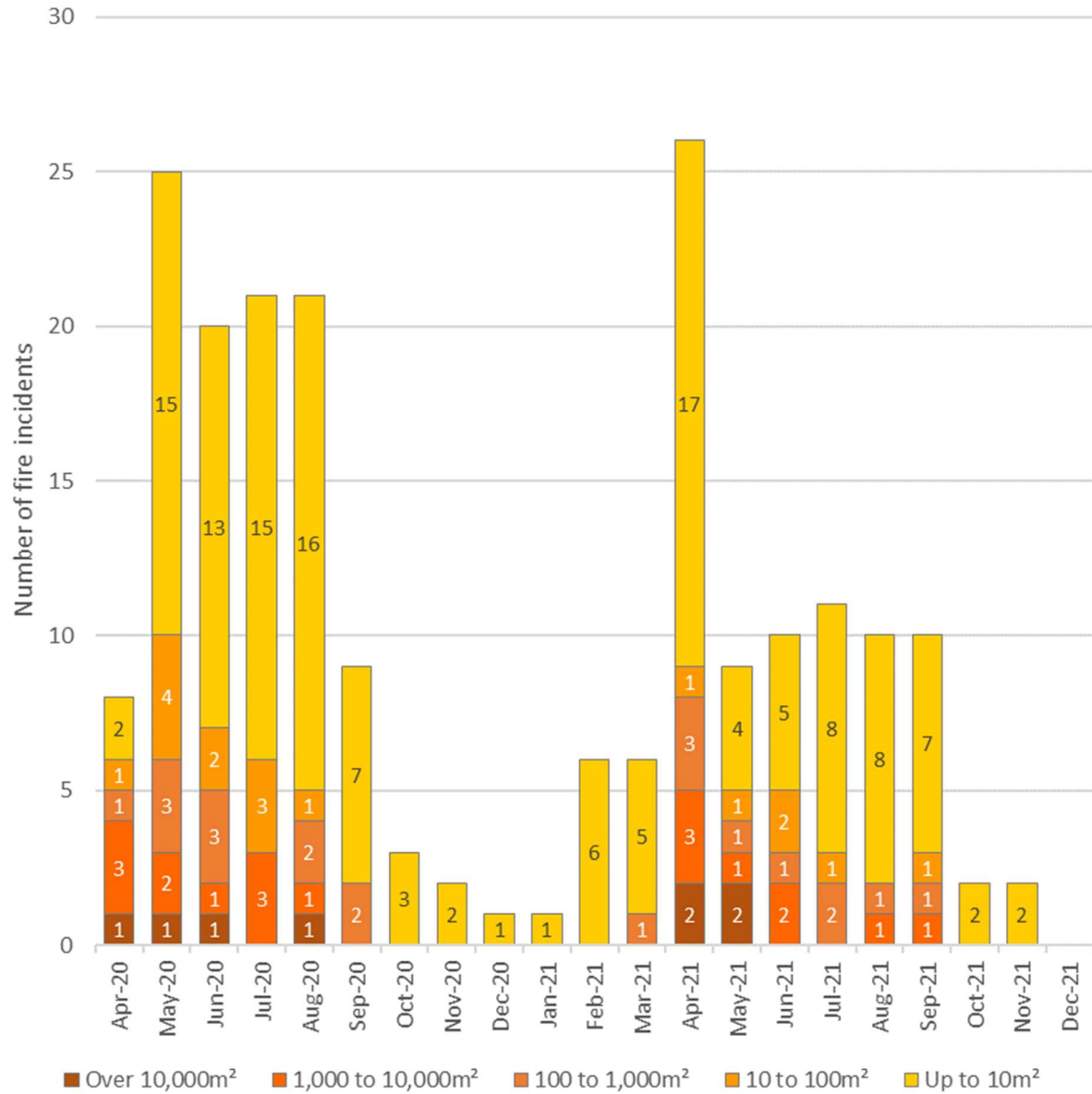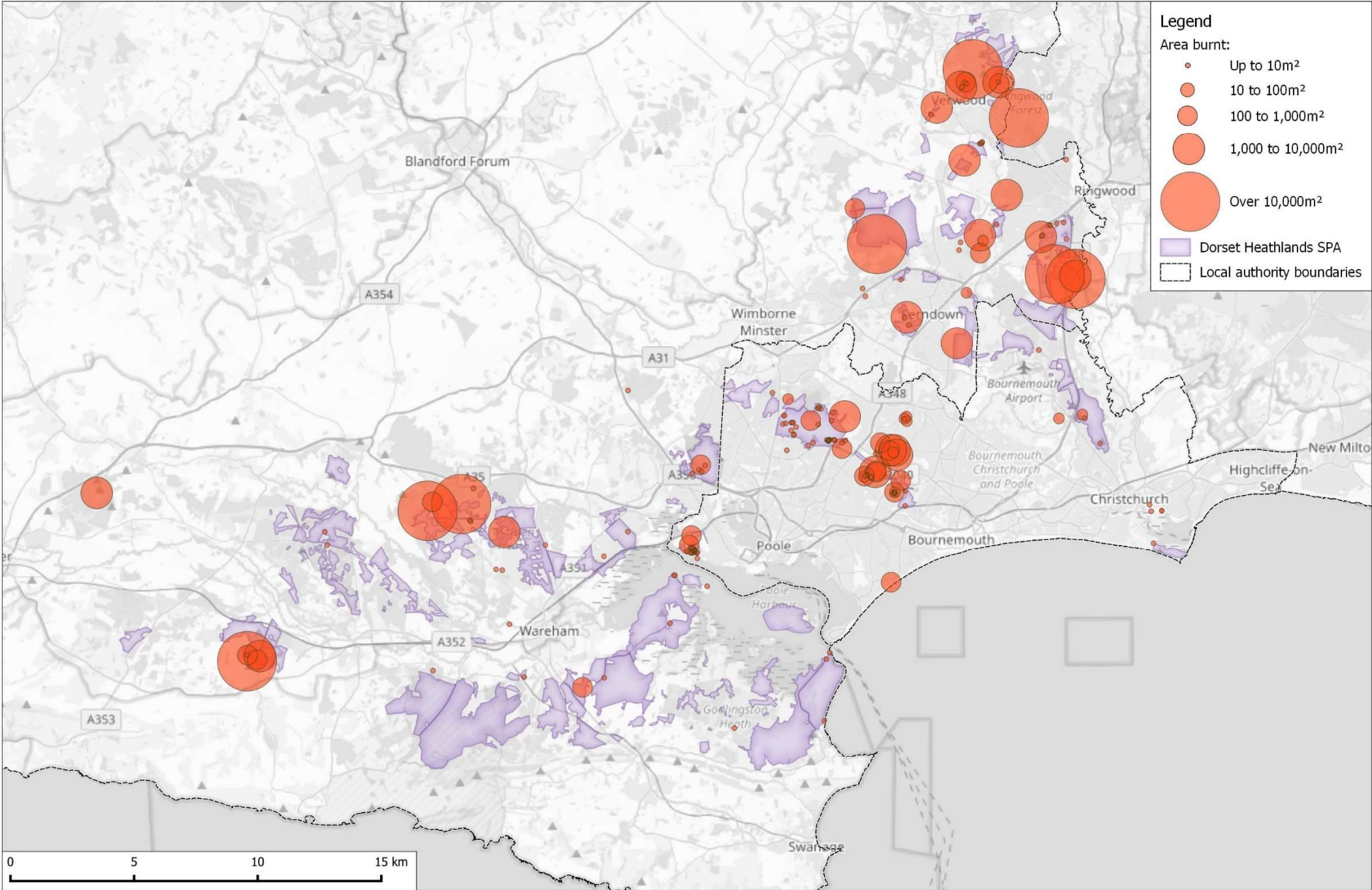
Figure 13: Number of fire incidents logged per month, by the area burnt.

Map 9: Distribution of fire incidents recorded between April 2020 and December 2021, categorised by the size of the area burnt.

Legend

Area burnt:

- Up to 10m²
- 10 to 100m²
- 100 to 1,000m²
- 1,000 to 10,000m²
- Over 10,000m²

Dorset Heathlands SPA

Local authority boundaries

Blandford Forum

Verwood

Ringwood Forest

Ringwood

Wimborne Minster

Ferndown

Bournemouth Airport

New Milto

Highcliffe-on-Sea

Poole

Bournemouth Christchurch and Poole

Christchurch

Wareham

Poole Harbour

Godlingston Heath

Swanage

A354

A31

A35

A348

A391

A352

A353

0   5   10   15 km

Other incidents

6.8 In addition to these fires, 193 other incidents were recorded during the period from April 2020 to December 2021, with 138 of these taking place in 2021.

6.9 The most common incident type was motorcyclists on the heaths, which accounted for 66 incidents within this period. The next most common incident type was fly tipping (29 incidents) followed by dens (19 incidents). Many of the incidents recorded as 'dens' also had large amounts of litter associated with them, and sometimes evidence of fire pits.

6.10 The 31 incidents that have been grouped as 'other' included activities such as vandalism (7), littering (5), ramp building (3), camping (3) and fireworks/sky lanterns (3). The distribution of each type of incident is shown in Map 10.

6.11 As always, the number of incidents recorded at each site will depend on several factors, and it is quite possible that incidents occurred at sites other that those listed, which were either not observed or not recorded. The recording of incidents during this period is particularly difficult to interpret as on the ground warden time was limited due to the covid restrictions.

6.12 Months that had the highest number of incidents recorded were August to November 2021, largely due to the number of motorcycle incidents (Figure 14).
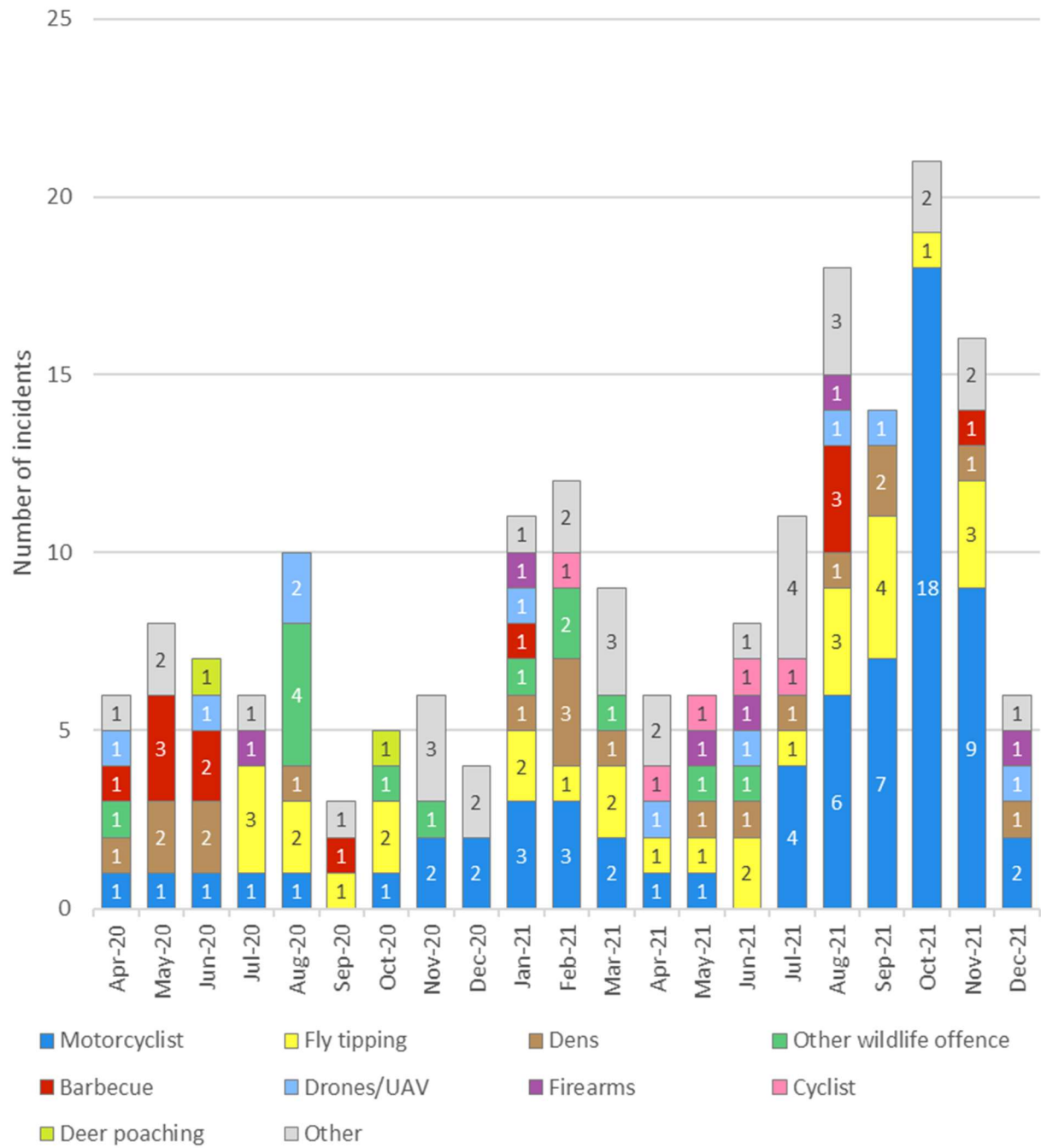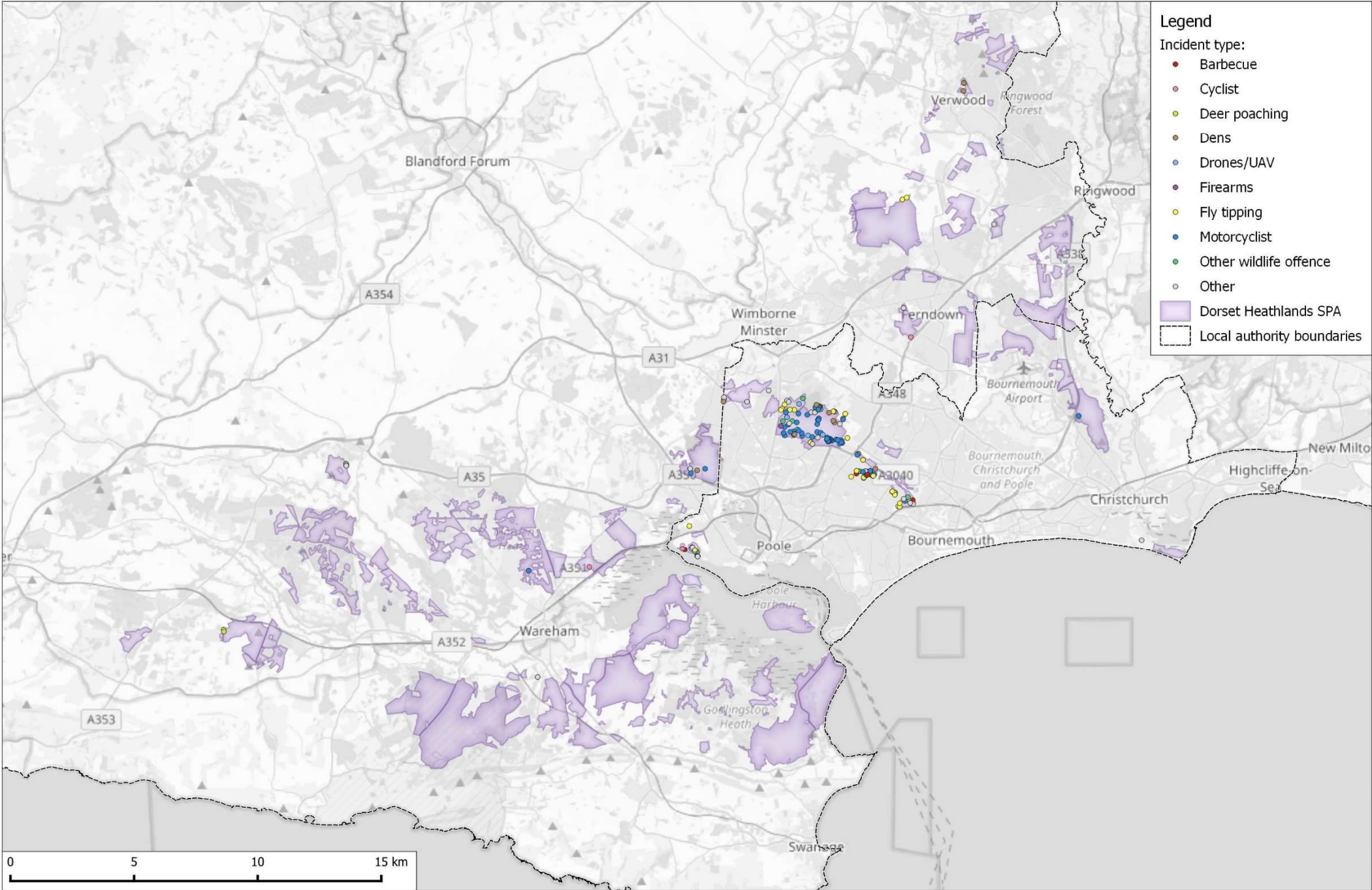
Figure 14: The number of incidents recorded each month, by incident type.

Map 10: Distribution of incidents (excluding fires) recorded between April 2020 and December 2021.

Legend

Incident type:
- Barbecue
- Cyclist
- Deer poaching
- Dens
- Drones/UAV
- Firearms
- Fly tipping
- Motorcyclist
- Other wildlife offence
- Other
- Dorset Heathlands SPA
- Local authority boundaries

Comparison with previous years

6.13   Table 14 compares the number and scale of incidents between calendar years. This shows that in 2021, the number of non-fire incidents recorded (193) was the highest it had been for several years.

6.14   The Wareham Forest fire in May 2020, covering 188ha, was the largest heathland fire ever recorded on Dorset Explorer. The next largest fire was at Upton Heath in April 2002, which was 60ha. As a result, the total area burnt in 2020 was 204.6 ha, which is several times greater than any previous year on record.

6.15   The long-term average annual area burnt is estimated at 31 ha. The area burnt in 2020 was 6 times higher than the long-term average, while the area burnt in 2021 was 0.8 times the long-term average.

6.16   Data from Table 14 is also summarised in Figure 15. Examination of the number of fires over time suggests a decline, but is influenced by variable numbers of very small fires (i.e. campsites and BBQs around 1 to 2 m^2). Within all other individual categories of fire in Table 14 there is an apparent decline over time, except for in the very largest fires.

Table 14: Summary of the number of fires, area of fires and number of non-fire incidents that have been recorded in each calendar year.

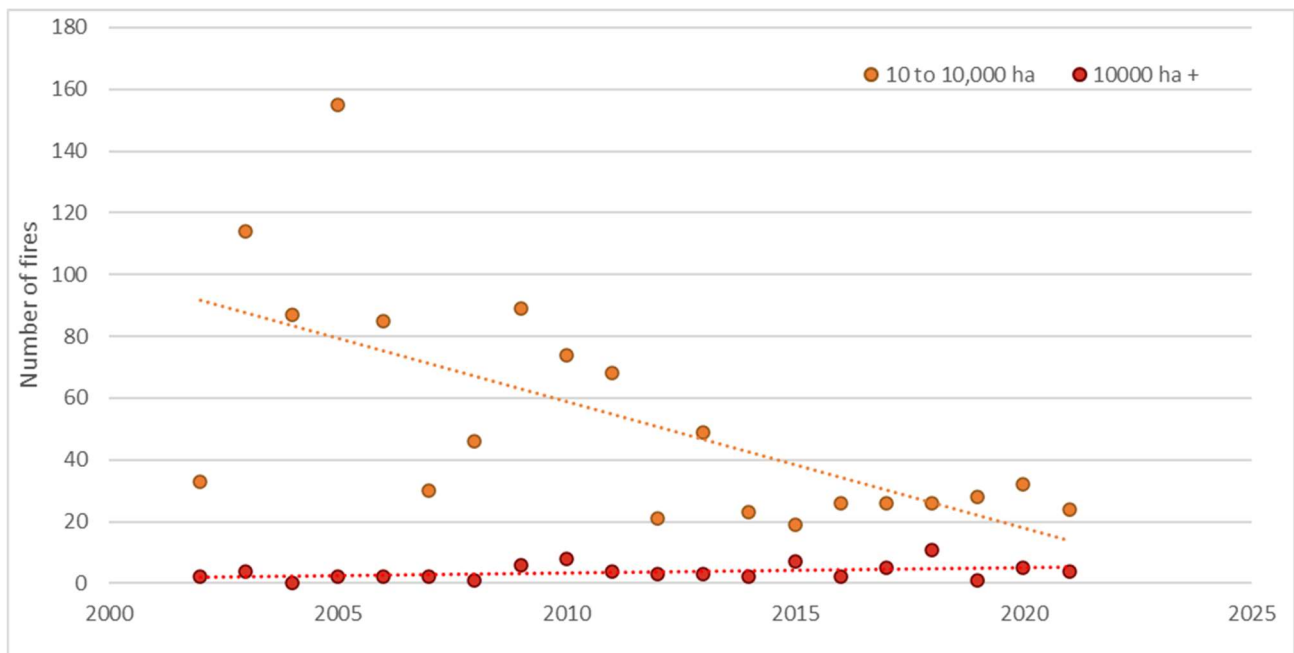| Year	Number of fires, by size					Total number of fires	Total area burnt (ha)	Number of non-fire incidents
	Up to 10m^2	10m^2 to 100m^2	100m^2 to 1,000 m^2	1,000 m^2 to 10,000 m^2	Over 10,000 m^2			
2021	65	6	10	8	4	93	26.5	193
2020	78	11	11	10	5	115	204.6	70
2019	46	10	13	5	1	75	18.1	82
2018	76	6	12	8	11	113	59.2	51
2017	41	3	16	7	5	72	21.8	89
2016	25	2	14	10	2	53	10.1	51
2015	31	2	7	10	7	57	87.7	97
2014	78	4	12	4	2	100	8.9	115
2013	59	15	21	13	3	111	12.8	161

Figure 15: Number of fires over time separated into small to medium fires and very large fires.

6.17   Since the Wareham Forest fire in 2020, action has been stepped up to prevent further wildfires and to raise awareness amongst the general public. This has included the Operation Heathland campaign[3] and Litter Free Dorset's call for local businesses to stop selling disposable barbecues[4]. In 2021, Dorset Council banned disposable barbecues and campfires from high fire risk areas across Dorset, which includes the heathlands. The pattern of fewer ignitions, but more larger fires is mirrored in national and international data trends (pers. comm. Andy Elliot; Wildfire Training and Consultancy).

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[3] https://www.dorsetheaths.org.uk/operation-heathland-campaign/
[4] https://www.litterfreedorset.co.uk/projects-campaigns/disposable-bbqs/
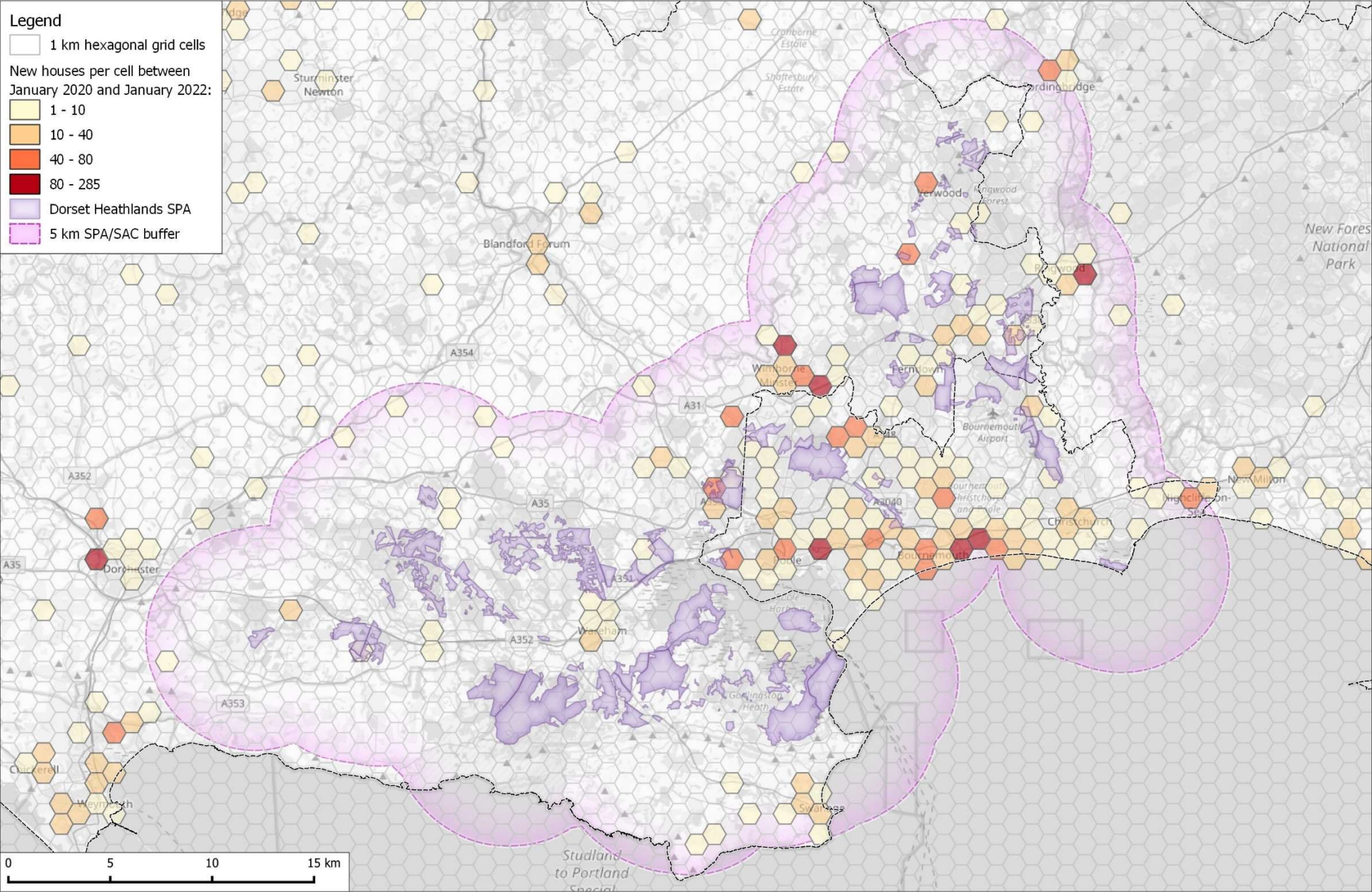
7.   Housing data

7.1   There had been an additional 2,689 dwellings registered in our residential postcode database within 5km of the SPA/SAC boundary. This equates to a 1.0% increase, with a total estimated 262,903 residential properties within 5km[5].

7.2   Key increases in dwellings over the period are scattered across the area, but particular concentrations are around East Cliff and Boscombe area where there was up to 285, and 97 new dwellings in two cells here (a 10% and 2% increase). In Poole, the largest increase of 135 new dwellings was in the area around Parkstone (7% increase). A large amount of development had taken place around Wimborne Minster, with large new developments to the southeast and north, with increases of 188 dwellings (75%) in the cell to north and 89 new dwellings (207%) to the southeast.

7.3   In Dorchester, there were 107 new dwellings at Poundbury (12% increase), although this is outside the 5km zone of influence of the Dorset Heaths. Outside of Dorset county, but within the 5km zone of influence, there was an increase of 92 dwellings (7%) in Ringwood.

7.4   This section could also include the locations of individual developments completed within the period to more specifically target new housing and residents. However, this would require the provision of more detailed GIS data from both Local Authorities.

Table 15: Summary of the annual estimated number of dwellings within a 5km buffer of the Dorset heaths SPA/SAC. Note based on postcode data and infrequent shifting of postcodes locations means figures are approximate.

Year	Number of dwellings
2012	248,733
2013	249,777
2014	250,322
2015	251,448
2016	253,509
2017	254,699
2018	256,851
2019	258,573
2020	260,214
2021	261,998

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[5] Note figures are less than was stated in the 2020 review document due to examination of data on a grid cell basis to allow better comparison with previous years.

Map 11: Housing growth between January 2020 and January 2022.

Legend

☐ 1 km hexagonal grid cells

New houses per cell between
January 2020 and January 2022:
- 1 - 10
- 10 - 40
- 40 - 80
- 80 - 285

Dorset Heathlands SPA

5 km SPA/SAC buffer

0   5   10   15 km

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Contains map data © OpenStreetMap contributors. Terms: www.openstreetmap.org/copyright.

8.   Wardening and engagement

8.1   Data on wardening time was previously recorded when the Urban Heaths Partnership was set up but was dropped due to the time required. This is now to be recorded by individual wardens, such that hours on each site are recorded and potentially interactions with the public logged. This section will develop over the course of the next few years and eventually provide a summary of time on sites, which can be adapted in response to changes in access, potential pressures from new houses or other concerns for the following year.

8.2   A section of reporting will also cover the engagement with the public as part of all aspects of the mitigation including wardening, education, Dorset Dogs work, social media and public events. During the period, the coronavirus pandemic had a significant impact on the ability all mitigation approaches to engage with people. However it provided new opportunities for engaging with people via social media, which was limited prior to the pandemic, but obviously became a principal means of engaging with people in the pandemic and beyond. The pandemic forced more online work, including a review of the UHP website, which was launched December 2020.

9.   Recommendations

9.1   The data collected in this period is unusual: it covers the peak of the coronavirus pandemic, several associated lockdowns and part of the long associated tail-off as government restrictions were relaxed and "normality" resumed. However, the long-term extent to which "normality" resumes and the same base line is observed, or a new baseline in access patterns has been set, is open to question.

9.2   Most of the access data presented in this report shows large increases in access, and this reflects national trends in the popularity of outdoor recreation, exacerbated since the Covid pandemic. The MENE (Monitor of Engagement with the Natural Environment) survey found that the proportion of adults spending leisure time outdoors at least once a week increased from 54% in 2009/10 to 65% in 2018/19 (O'Neill, 2019). Following on from this, the People and Nature Survey found that between April 2020 and March 2021, 42% of respondents said that they had increased the time they spent outside since the start of coronavirus restrictions, and 43% of respondents reported that visiting local green and natural spaces had been more important to their wellbeing since the pandemic (Natural England, 2022). The extent to which these patterns are observed in the long term is currently open to debate but will be answered in future monitoring reports.

9.3   There are several ongoing recommendations from the previous year's report (Panter & Caals, 2020b), our recent review of the mitigation approach (Panter et al., 2022) and some outstanding long-term advice from the latest monitoring protocol (see Panter & Liley, 2017).

9.4   The following are ongoing action points, which have been highlighted again from the data presented in this report:

1) It is important to ensure all car parks are surveyed. Any data gaps greatly reduce the usefulness of the data, not only for that day, but across the whole year, and all other car parks. Locations which are missed need to be explictly stated, so these are not taken as zero counts.

2) Car parking locations are currently being audited and boundaries explicitly mapped. This is still ongoing as it is not that quick an exercise, but can be conducted infrequently to monitor long-term changes in spaces, facilities, charging etc. This would ideally be for a moment in time (e.g. completed in a single year), such that it is a snapshot in time, rather than an ongoing exercise. Collating this data for the first time is a longer exercise, but future audits should be simply updating the information and so should be completed in a short time frame (e.g. completed in a year), and become quicker. This should remain a priority as an

understanding of charges and manipulating car parks and facilities is an important way to manage access.

3) A second round of the data calibrations has not yet been examined and should be conducted to ensure data quality (presently these have not been used in detailed analysis of sensor data, due to insufficient calibrations for some sensors and a lack of calibrations for new sensors).

4) Consideration should be given to vantage point counts, that would provide direct observation data on visitor behaviours. This has always been an option, but is costly in terms of staff time for the data yielded. However, the mointoring of more subtler on-site behavioural changes is becoming of greater importance (e.g. dogs on lead or dog fouling). The observations can be used to test the success of specific interventions, idenitfy emerging trends/patterns of use and help target warden time and effort.

5) Overall continued partnership working with regards to monitoring of fires and incidents, car park counts, maintaining and notifying UHP of sensor issues and new mitigation measures and SANG projects.

9.5   Throughout this report it has been stated that detailed analysis of trends is beyond the scope of the annual reporting (in particular with reference to car park counts and sensor data). Most data within this report are the raw data values and do not account for some limited annual variations in methodology (number of parking locations, types of sensors, calibration of sensors etc).

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Dorset, England, between 1987 and 1996. *Biological Conservation*, *93*(1), 117–125.

Appendix

Table 16: Summary of numbers of Dartford Warbler, Nightjar and Woodlark recorded in 2021 from sites (or the 1km squares which represent a subset of sites). Values in brackets show the increase or decrease from the current number compared to the average for the 3 years prior.

| Site	Woodlark	Dartford Warbler	Nightjar
Arne Heaths	2 (-1.8)	60 (+11.7)	60 (+3.3)
Avon Heath North	3 (-0.9)	11 (+3.1)	11 (+0.6)
Avon Heath South	7 (+3.2)	4 (-1.1)	4 (-0.7)
Blacknoll	0 (-)	2 (-0.8)	2 (+0.3)
Bourne Bottom (Valley)	0 (-)	1 (-0.3)	1 (-)
Canford Heath	0 (-)	80 (+25.3)	80 (+22)
Dunyeats Hill	0 (-)	5 (-0.4)	5 (+0.7)
Ferndown Common	1 (+0.6)	9 (-5.5)	9 (+0.9)
Grange Heath	2 (-0.2)	6 (-2.2)	6 (+1.3)
Great Ovens	1 (+0.1)	11 (-0.8)	11 (+3.4)
Ham Common	0 (-)	3 (+0.4)	3 (+0)
Holt Heath/ Whitesheet	4 (+1.7)	63 (+7.6)	63 (+6.6)
Hurn Forest	1 (+0.8)	6 (-1)	6 (-2.6)
Hyde's Heath	4 (-0.7)	5 (+0)	5 (-0.7)
Lions Hill	0 (-)	3 (-0.6)	3 (-0.3)
Parley Common	1 (-0.2)	25 (+3.1)	25 (+8.4)
Sandford Heath	2 (+0.6)	3 (+0.7)	3 (+1.3)
Slepe Heath/ Hartland moor squares	1 (-0.2)	32 (+9.6)	32 (+0)
Sopley& Troublefield	0 (-)	9 (+1.3)	9 (-)
Stephens Castle	0 (-)	1 (+0.1)	1 (+0)
Stoborough RSPB	2 (+0)	8 (-5.2)	8 (+9.5)
Studland/ Godlingston Heath squares	0 (-)	18 (+1.6)	18 (+0.8)
Talbot Heath	0 (-)	4 (-0.5)	4 (+1.9)
Town Common/SCH	0 (-)	21 (-2.9)	21 (+14.3)
Turbary Common	0 (-)	2 (-0.5)	2 (-0.4)
Upton Heath	2 (+1.5)	41 (+15.1)	41 (+7.8)
Verwood Forest/ Cranborne Common square	2 (+0.4)	4 (+1.8)	4 (-1.8)
Wareham Forest/ Morden Bog squares	2 (+0.8)	12 (+5.2)	12 (+2.8)
Winfrith & Tadnoll Heath	2 (+1.8)	12 (-2.8)	12 (+10.6)
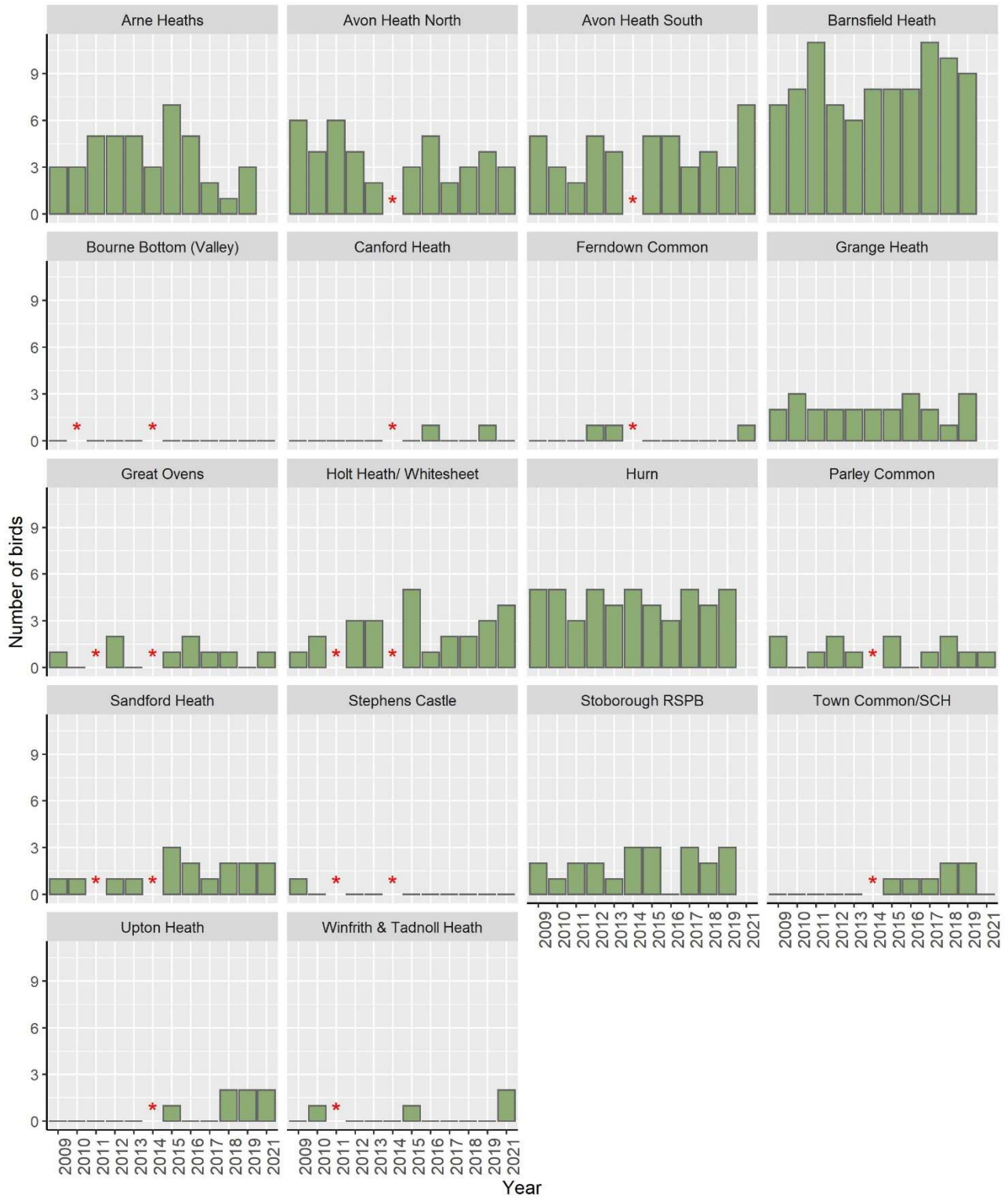
Figure 16: The number of Woodlark recorded at each site (or the 1km squares which represent a subset of sites) from the annual monitoring data. Sites shown are those with =>11 years of count data.
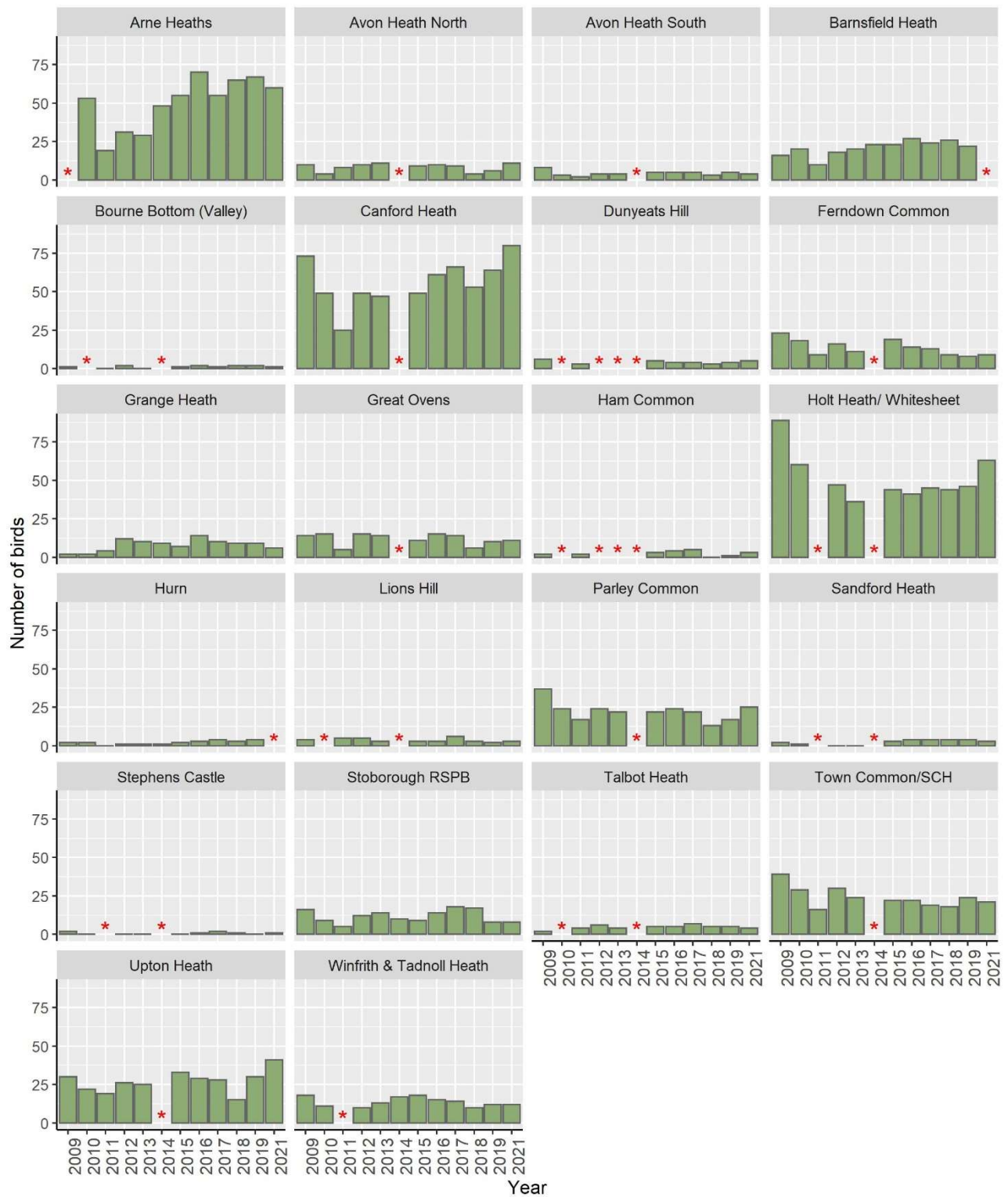
Figure 17: The number of Dartford Warbler recorded at each site (or the 1km squares which represent a subset of sites) from the annual monitoring data. Sites shown are those with =>10 years of count data.
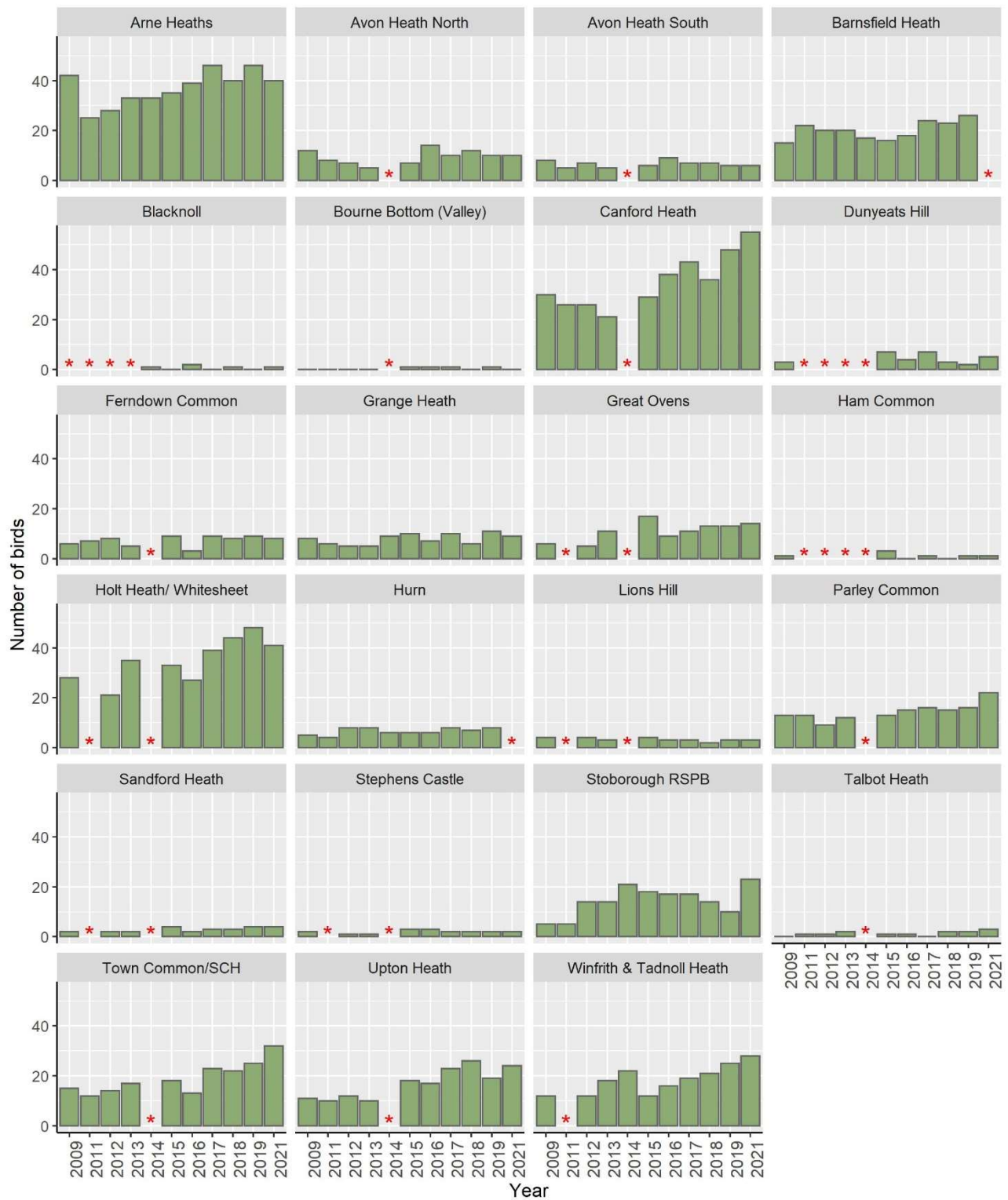
Figure 18: The number of Nightjar recorded at each site (or the 1km squares which represent a subset of sites) from the annual monitoring data. Sites shown are those with =>7 years of count data. Note missing values for 2010 across all sites.

Table 17: List of 'live' SANG and HIP sites at the end of December 2021.

	Area (ha)
HIP	**81.8**
Iford Meadows	26.2
King George's Charity Field	19.9
Leigh Common	6.6
Poor Common	15.3
Potterne Park	11.1
Upton Wood	2.7
SANG	**249.5**
Bog Lane	14.1
Burnbake	10.0
BytheWay	14.7
Canford Park P1	20.5
Cuthbury allotments	3.9
Dogdean East	10.3
Frenches Farm	4.8
Holmwood House SANG	6.9
Northbrook	6.4
Ringwood Road	44.7
Riversmeet & Stanpit	13.4
St Leonards Hospital	24.9
Stapehill Abbey	6.6
Stourview P1 East	16.8
Stourview P2 West	3.8
Upton Country Park	33.6
Upton Farm	2.5
Woolslope	11.6