



# Urban Heaths Partnership Annual Monitoring Report 2016-17

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Most of the work collecting the data is down to Rachel Pearce and Amy Gallagher (UHP, Purbeck and West Dorset Warden), but also wider UHP staff and individual borough wardens, and our thanks go to all for the data collection.

Bird data are collected by the RSPB for UHP and their own monitoring, and our thanks to Chris Dieck for supplying the bird data to us. Thanks also to Jon Corkill (Dorset Environmental Records Centre) for supplying the incident data.

# 1. Introduction

- 1.1 This report is produced for the Urban Heaths Partnership (UHP) and presents a summary of monitoring data gathered over the 2016-2017 financial year (01/04/2016-31/03/2017). This report serves as a brief summary of the data for the year, following on from a number of previous annual reports. Most recently this included the annual report for the previous year (Panter & Liley 2016) and a more significant report two years prior which detailed methodological revisions and more detailed data analysis (Panter & Liley 2015). Furthermore, an update on the whole monitoring framework was conducted earlier this year, see Panter & Liley (2017).
- 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. The designated sites are the Dorset Heathlands Special Protection Area (SPA), the Dorset Heathlands Special Area of Conservation (SAC) and the Dorset Heaths (Purbeck & Wareham) and Studland Dunes SAC. The sites are also underpinned by national level wildlife designations, as Sites of Special Scientific Interest (SSSI). 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, and wintering raptors such as merlin and hen harrier), all six species of native British reptiles and the southern damselfly. The various rare plants include the Dorset heath, for which the heaths around Poole Harbour are the British stronghold. Furthermore, there are notable rare and regionally distinct invertebrates such as the Purbeck mason wasp, ladybird spider, heath tiger beetle and heath bee-fly.
- 1.3 The heaths are fragmented (Webb 1989, 1990) and many fragments lie within or adjacent to the conurbations of Poole and Bournemouth. Within south-east Dorset 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:
- Increased numbers of pet cats and increased predation of ground-nesting birds and other wildlife
  - Increased fire risk
  - Increased levels of recreation, with the potential for disturbance impacts to ground-nesting birds; trampling and damage to the SAC interest; increased numbers of dogs on sites resulting in eutrophication from dog fouling
  - Anti-social behaviour and contamination through vandalism, fly tipping, littering and the introduction of alien plants and animals.
- 1.4 Within south-east Dorset, such impacts mean that relevant local authorities, as competent 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.

- 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. 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.
- 1.6 This report provides a summary of the data gathered in the period 2016-2017 in accordance with the monitoring areas identified in the monitoring strategy (Liley 2007) and follows on from last year's monitoring report (Panter & Liley 2016), and all other previous reports (see Sharp & Liley 2008, 2009; Fearnley & Liley 2010; Fearnley 2012, 2014a; Panter & Liley 2015)

### *Winfrith and Tadnoll monitoring*

- 1.7 This year, the report also covers monitoring for West Dorset, at the single site of Winfrith and Tadnoll Heath, a heathland site managed by the Dorset Wildlife Trust and part of the Dorset Heaths SPA. The monitoring work on this site is also undertaken by UHP, funded by West Dorset District Council, as part of mitigation work linked to new development in West Dorset.
- 1.8 In each section of the monitoring elements in this report, we include a subsection to examine in more detail this element solely at Winfrith and Tadnoll. This was previously produced as separate annual reports (see the first three years reports; Fearnley 2014b; Panter 2015, 2016), but as this year's results are shorter, these have been absorbed into this main annual report. These results feed into the annual West Dorset reporting by UHP.

## 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).

### 2016 surveying

- 2.3 Since 2015, the surveys have been conducted using a new approach based on 1km OS grid squares, as detailed within the previous UHP annual report (Panter & Liley 2015). This methodology means the data is very similar to that collected previously on the basis of sites, but allows comparison with other datasets which operate on the basis of 1km squares. A select number of core squares are surveyed by professional surveyors, while additional squares which have been highlighted as important, can be undertaken if extra capacity arises or volunteers are available.
- 2.4 Results for this 2016-17 financial year report cover just the surveys conducted in the spring of 2016. Results for 2016 from the core squares focuses on 29 sites surveyed for the species (Table 1). Surveying this year was subject to several oddities, with an apparently very short courtship period for woodlarks, poor weather during many of the nights surveying for nightjars, such that one 'good visit was conducted (Chris Dieck *pers comm.*).

### 2016 Data

- 2.5 In summary, these data show that a total of 449 Dartford warbler (territories), 40 woodlark (territories) and 320 nightjar (males) were recorded (see Table 1). The mapped distribution of the territory centres for the three species is shown in Map 1.

2.6 In comparison to the previous year's totals, as shown in Table 1, there have been very slight variations in Dartford and Nightjar numbers (Dartford 11% increase, Nightjar 10% decrease), but a more notable decrease in Woodlark numbers of 22%.

**Table 1: Number of birds recorded by species in 2016, with a value of the mean birds per site for 2015 shown for comparison.**

Bird	Number of counts (sites) 2016	Total number of birds 2016	Mean birds per site 2016	Total number of birds 2015	Mean birds per site 2015
Dartford	29	449	15.5	404	14.4
Nightjar	29	320	11.0	355	12.7
Woodlark	28	40	1.4	51	1.9

2.7 Detailed analysis of trends and differences between sites is beyond the scope of this annual report and has also been discussed in greater detail in Liley & Fearnley (2014a). However, as with last year's annual report, we have presented simple graphs to show the raw numbers of birds from the recent monitoring data in Figure 1. These graphs consider a subset of sites, which represent those with the most data for each species. It should be noted that for all three species some data gaps still occur and trend lines connect data points either side of these gaps.

2.8 The data presented in Figure 1 is only raw data, and would require more detailed examination for conclusions with confidence to be reported (e.g. exact surveying effort). However, from this we can see that for Dartford warbler only three sites of those in Figure 1 show a decrease in numbers from the previous year. Overall, numbers at many sites are now similar to those recorded before the 2010-2011 population crash.

2.9 Woodlark trends are less clear, due to the small numbers and therefore high level of variation within these, but overall the populations may be stable. The most notable reduction was at RSPB Stoborough from 3 pairs in 2015 to none in 2016. The marked decrease in Woodlark numbers is thought to be due to a very short courtship period (the first report of a singing bird was very late) and so some birds may have been missed (Chris Dieck *pers comm.*).

2.10 For nightjar, there are overall stable or increasing populations over the 7-year period examined. Although the most notable recent decrease is in nightjar numbers at Ferndown Common with only one third of the previous year's count recorded (9 males in 2015 to 3 males in 2016). Particular decreases were noted at Ham Common and Ferndown Common. The slight decrease in the total numbers of nightjars was also considered suspect, and overall likely to have been influenced by bad weather for many of the evening surveys (Chris Dieck *pers comm.*). As acknowledged by the



surveyors, whether these decreases were an artefact of surveying or genuine will remain to be seen in the 2017 data.

2.11 At the time of writing, the recording of bird species during 2017 is ongoing, and as such is not presented in this report.

### *Winfrith and Tadnoll*

2.12 Winfrith and Tadnoll is also surveyed for the three species, but with no woodlarks recorded this year. Numbers of Dartford warbler and nightjar at Winfrith and Tadnoll for this year appeared to fall within the typical bounds of those expected based on the previous four years, see Table 2.

2.13 In total, the 2016 survey recorded 15 Dartford warbler pairs and 16 male nightjars. Both these values are the same as the averaged values for the four years previous; the mean number of for Dartford warbler for the last five years was 14.5 and for nightjar 16 males. Only one pair of woodlarks have been recorded in the last five years, the species generally occurs at low numbers across the Dorset Heaths.

2.14 Nightjar and Dartford warbler appear evenly spread across the suitable parts of the site. Five nightjars were recorded on Tadnoll, and 11 on Winfrith, while for Dartford warbler 5 occur on Tadnoll and 10 on Winfrith. For both species, there were individuals recorded just outside the bounds of the site, on the other side of Gatemore Road (on Blacknoll Hill; 2 nightjar and 3 Dartford warbler)

**Table 2: Summary of annual numbers of nightjar (churring males), Dartford warblers and woodlarks (pairs) recorded at Winfrith & Tadnoll.**

Winfrith & Tadnoll survey year	Nightjar	Dartford	Woodlark
2012	12	10	0
2013	18	13	0
2014	22	17	0
2015	12	18	1
2016	16	15	0

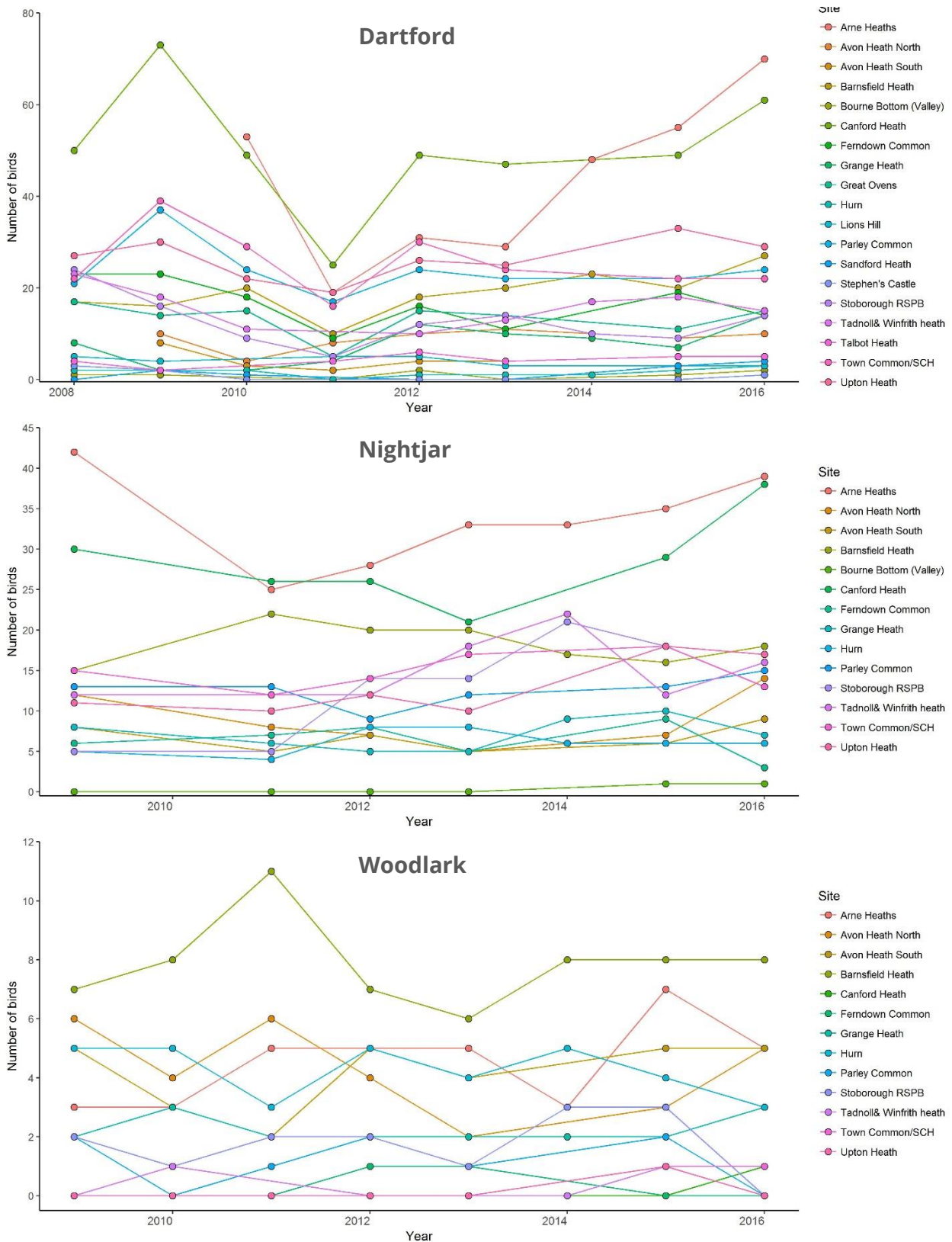
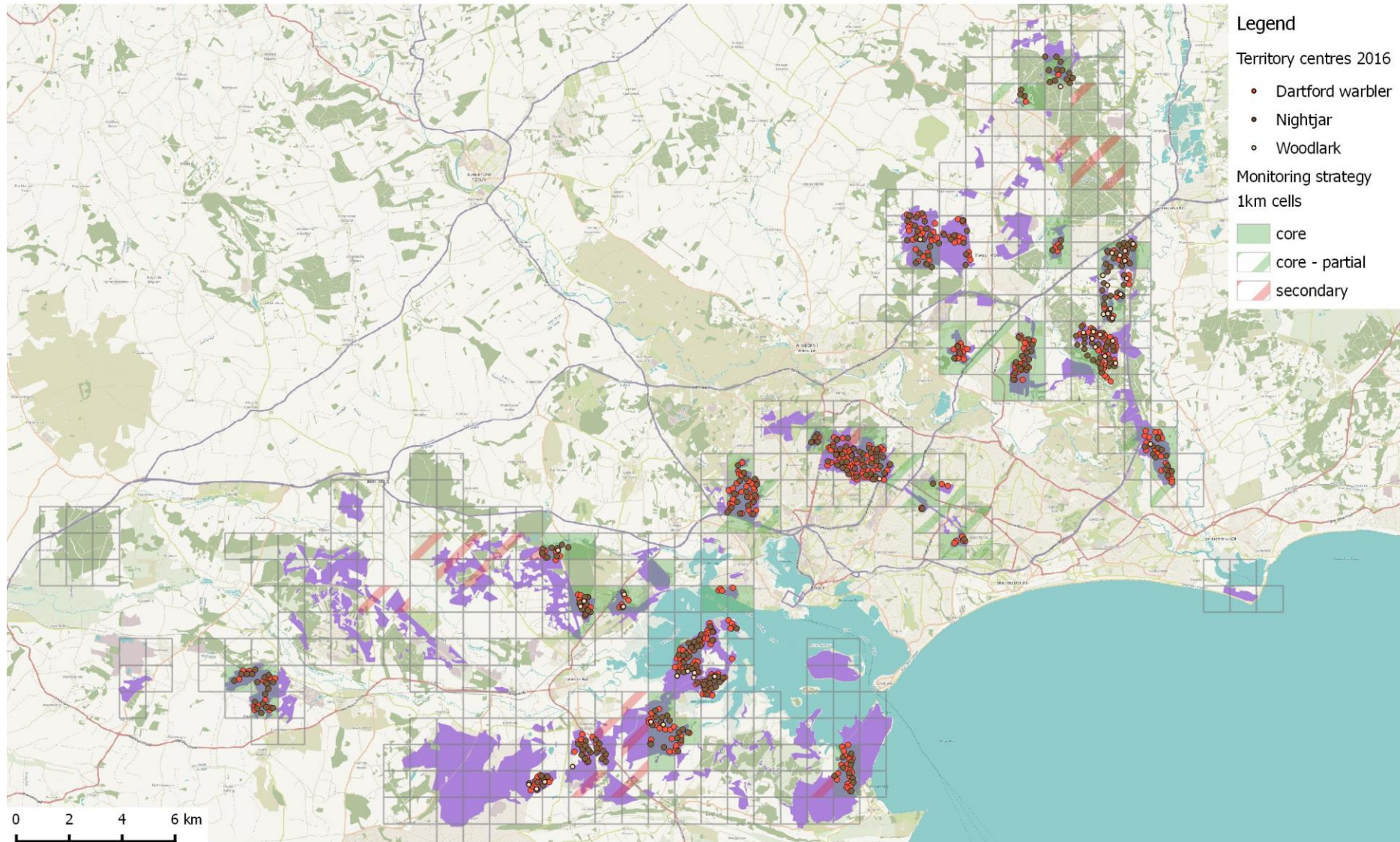


Figure 1: Number of birds recorded (by the differing standard survey methodologies) at each site. Note that the number of sites presented differs for each species due to different filters applied in order to select sites with the most data. Data gaps between years are present for all species, particularly on the figure for nightjar



Map 1: Individual territory centres from 2016 monitoring.



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## 3. Car park counts

### Introduction

- 3.1 The provision of car parking spaces at, or adjacent to, the heaths is an important factor determining the number of visitors interacting with sites. In the Dorset Heaths, visitors arriving by car make up a considerable proportion of the total visits (Clarke et al. 2006). Counts of the number of cars 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.

### *Categorisation of data*

- 3.2 Monitoring increasingly encompasses a wide range of types of sites, such as Suitable Alternative Natural Greenspaces (SANGs), Heathland Infrastructure Projects (HIPs), key visitor centres and visitor attractions.
- 3.3 The varying different types of location have been categorised in more detail this year, as opposed to a simple heathland and non-heathland division. We have approached this categorisation on the basis of how these locations may change over time, whether these changes are viewed positively or negatively and the degree to which these values are likely to vary. For example, at the most simplistic level an increase of visitors on a Heath site would be viewed negatively, while an increase of visitors at a SANG is more likely to be viewed positively. Sites where the car park includes access to other facilities (e.g. football pitches, cafés or 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 concerning. Table 3 details a summary of the different types of location which have been categorised.

**Table 3: Summary of the different types of car parking locations.**

Type of parking location	Number of car parks	Example locations
Heath (car park is only used by those visiting heaths)	135	All car parks around Canford Heath, Dewlands Common, Great Ovens
Heath & other facilities (car park provides access to heaths, but also facilities; e.g. visitor centres/cafes, football pitches, or habitats e.g. coast, support land, viewpoints)	11	Stoborough Heath car park next to Sunnyside, Ham Common car park which is also used by those accessing to the water, Avon Heath viewpoint car park, Studland Ferry Road
Heath & other facilities/Visitor attractions (locations which provide a clear visitor, particularly summer, tourist attraction)	5	RSPB Arne car park, Avon Heath visitor centre, Hengistbury Head
HIP (car park is only used by those visiting HIP)	1	Delph Woods 1
HIP & other facilities (car park provides access to heaths, but also facilities; e.g. cricket pitches, support land)	2	Delph Woods 2, Granby Road Barn
SANG (car park is only used by those visiting SANG)	4	Upton Country Park SANG, Stoborough SANG (Bog Lane), Burnbake, BytheWay Field
Visitor Attractions	2	Upton Country Park (main car park and small car park)
Total	160	

## 2016-17 surveying

3.4 The dates for surveying in the 2016-17 financial year were determined by examining target dates from the previous years. Target dates were determined from an average date based on the previous surveys. This attempts to ensure 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 are shown in Table 4.

**Table 4: The list of surveying dates for the 2016-2017 financial year. Dates for each of the 14 transects are calculated to be around a similar date, based on the average of previous surveys; except for bank holidays which are fixed. Note rows are coloured by three types of date; weekday, weekend and bank holiday.**

Annual transect number	Transect name (approximate time of year, and set type of day to survey)	Target date (Average of previous surveys, to be aimed for)	Actual date selected (choosing nearest Monday/Sunday to target date)
4	early-mid April weekend	14/04/2016	10/04/2016
5	early May bank holiday*	.*	02/05/2016*
6	late May/early June weekend	02/06/2016	29/05/2016
7	late June weekday	21/06/2016	20/06/2016
8	mid-late Aug weekend	20/08/2016	14/08/2016
9	early Sep/late Aug weekday	02/09/2016	22/08/2016
10	late Aug bank holiday*	.*	29/08/2016*
11	late Sept weekend	23/09/2016	18/09/2016
12	early-mid Nov weekday	12/11/2016	07/11/2016
13	late Nov weekend	22/11/2016	20/11/2016
14	mid Dec weekend	16/12/2016	11/12/2016
1	early Feb weekday	04/02/2017	06/02/2017
2	late Feb/early March weekday	04/03/2017	06/03/2017
3	late March weekend	24/03/2017	19/03/2017

\* bank holidays are fixed surveying dates and therefore no target date calculated based on the previous years.

3.5 Over the course of the 2016-17 financial year, a small number of car parks were added or removed. The two new car parks added were Delph Woods 1 and 2. These car parks are Heathland Infrastructure projects (HIP), but Delph Woods 2 also provides parking for the cricket ground. A single car park was removed during the year - Dunyeat's 2, following roadworks and redevelopments around the area, meaning the car park no longer exists. The distribution of the car parks surveyed (with the additions and removals) is shown in Map 2 and by location types in Map 3.

3.6 The 2016-17 car park counts generally proceeded well, but with some surveying issues. One major issue was the omission of some car parks on three separate dates (20<sup>th</sup> June 2016, 9 car parks missing; 14<sup>th</sup> August 2016, 8 car parks missing; and 11<sup>th</sup> December 2016, 9 car parks missing) which were not surveyed in Bournemouth Borough. This reduction is shown in Table 5 which details the actual number of car parks counted. While the number is relatively low, this excluded some key car parks (e.g. Hengistbury Head) and means that these transects are now no longer directly comparable to each other, nor the totals to the previous and future years. Any analysis of trends cannot be conducted simply on raw data. For a future large-scale analysis to look at trends, all data on these three survey dates may have to be discarded or an



interpolation based on the other car parks in an attempt to plug the data gap. Obviously, these are not preferred options as they greatly reduce the quality and accuracy of any results.

3.7 In addition to parking locations which were simply not counted, a small number of car parks were unable to be counted, due to being closed or inaccessible; as shown in the difference between car parks to be counted and the actual number of car parks counted in Table 5. Over the last year, a number of major roadworks have been undertaken in many areas and have affected access to some car parks, either through direct closure or road closures.

**Table 5: Details of the car park dates, surveying windows, the number of car parks to be counted and the actual number counted on each date (accounting for road/car park closures).**

Set Tranche (Tranche sequence)	Date	Survey time window	Car parks to be counted *	Actual number counted
4	10/04/2016	10-12	158	157
5	02/05/2016	2-4	158	155
6	29/05/2016	10-12	158	157
7	20/06/2016†	7-9	158	146
8	14/08/2016†	2-4	158	148
9	22/08/2016	2-4	158	155
10	29/08/2016	2-4	158	157
11	18/09/2016	10-12	158	155
12	07/11/2016	10-12	158	155
13	20/11/2016	10-12	158	154
14	11/12/2016†	10-12	158	147
1	06/02/2017	10-12	160	156
2	06/03/2017	2-4	159	157
3	19/03/2017	2-4	159	158

\*160 different locations counted but this varied over the year with the removals and additions.

† These survey dates are those which a proportion of car parks in Bournemouth Borough were missed.

## 2016-17 data

3.8 In total 11,413 cars were counted across the 2016-17 financial year, as shown in Table 6. Table 6 shows the number of cars recorded varies greatly across the year, between the different times of year and types of day. It is important to note that these values are the raw data and has not been adjusted to account for the missed car parking locations, which will have a highly significant effect on the variation.

- 3.9 The late August bank holiday was the busiest (total number of cars), with 2,025 cars recorded, and is often the observed one of the peak dates. However, the average fullness (number of cars over the number of spaces) of car parks was not greatest on this day, but was instead highest on the late May/early June weekend. The late June weekday had the fewest number of cars recorded, but was also influenced by the many missing Bournemouth parking locations, including large car parks such as Hengistbury Head, which must be accounted for when considering the total number of cars.
- 3.10 Table 6 shows the mean number of cars per car park in a basic attempt to adjust for the car park locations not surveyed. However, car parks vary in size and the omission of just a small number large car parks can radically reduce the overall total and the mean cars per car park does not reflect this. Other attempts to account for this have been made in Table 6, such as the number of cars per spaces and the mean percent fullness of car parks (based on the estimated capacity of individual parking locations).

**Table 6: Summary of the number of cars counted, the mean number of cars per car park and mean percent fullness of car parks on the 14 survey dates.**

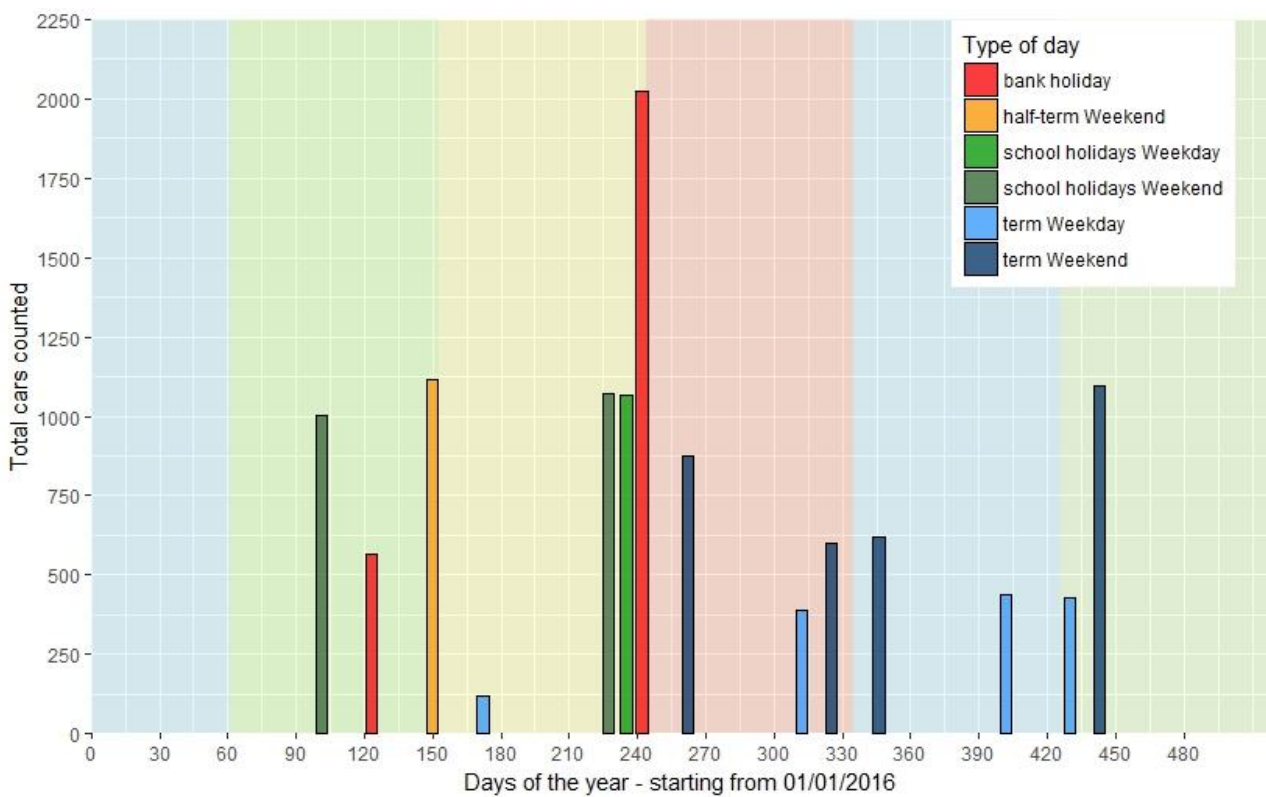
Set Tranch	Transect Name	Actual number counted	Total number of cars	Mean cars per car park	Cars per spaces	Mean percent fullness of car parks
4	early-mid April weekend	157	1005	6.4	0.29	19.0
5	early May bank holiday	155	566	3.6	0.17	15.9
6	late May/early June weekend	157	1114	7.1	0.33	23.2
7	late June weekday†	146	118	0.7	0.06	6.1
8	mid-late Aug weekend†	148	1073	6.8	0.53	16.5
9	early Sep/late Aug weekday	155	1066	6.7	0.31	14.3
10	late Aug bank holiday	157	2025	12.8	0.59	19.7
11	late Sept weekend	155	877	5.6	0.26	22.2
12	early-mid Nov weekday	155	389	2.5	0.12	12.0
13	late Nov weekend	154	601	3.8	0.18	18.7
14	mid Dec weekend†	147	619	3.9	0.30	19.3
1	early Feb weekday	156	436	2.7	0.13	15.5
2	late Feb/early March weekday	157	430	2.7	0.13	15.0



3	late March weekend	158	1094	6.9	0.32	17.7
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† These survey dates are those which a proportion of car parks in Bournemouth Borough were missed.

3.11 The combination of the type of day and season are two of the key factors in determining the number of visitors. Therefore the total number of cars in car parks across the year is visualised in Figure 2, labelled by type of day and seasons highlighted in the background (note the variability in the number of car parks counted influences these values). Winter values are often the dates with the fewest total cars counted and the clear peak of the August bank holiday can be seen. The lowest value is the late June weekday (fourth data column), on which date some key car parks were missed.



**Figure 2: The number of total cars recorded in each car park count transect over the 2016-17 financial year. Bars to show total cars are coloured by the type of day and background plot area is shaded by season. (Note: unfortunately, number of car parks counted varies between dates)**

3.12 Table 7 shows the totals counted for comparison against the typical number recorded in previous years. This comparison is highly simplistic as it does not account for differences in the number and arguably, more importantly, the capacity of different car parks. Furthermore, this also includes all the different types of car parks, such as heaths, visitor centres and SANGs.

3.13 This analysis is simplistic but shows the typical peak date from previous years is the mid-late August weekday, which was not the case in the 2016-2017 years data. This is most likely due to the variability in the August bank holiday driven by weather. Overall, the ranking of the types of day were largely similar, but shown the inherent annual variations.

**Table 7: Summary of the number of cars counted, the mean number of cars per car park and mean percent fullness of car parks on the 14 survey dates.**

Set Tranch	Transect Name	2016-17 actual number counted	2016-17 total number of cars	Previous years counts		
				Average total number of cars	number of previous counts averaged	average number of car parks included
4	early-mid April weekend	157	1005	610	5	160
5	early May bank holiday	155	566	941	5	168
6	late May/early June weekend	157	1114	555	5	167
7	late June weekday†	146	118	156	6	170
8	mid-late Aug weekend†	148	1073	1189	7	177
9	early Sep/late Aug weekday	155	1066	504	7	177
10	late Aug bank holiday	157	2025	900	6	173
11	late Sept weekend	155	877	496	7	176
12	early-mid Nov weekday	155	389	281	7	179
13	late Nov weekend	154	601	459	7	175
14	mid Dec weekend†	147	619	489	6	170
1	early Feb weekday	156	436	299	6	166
2	late Feb/early March weekday	157	430	400	6	166
3	late March weekend	158	1094	734	6	164

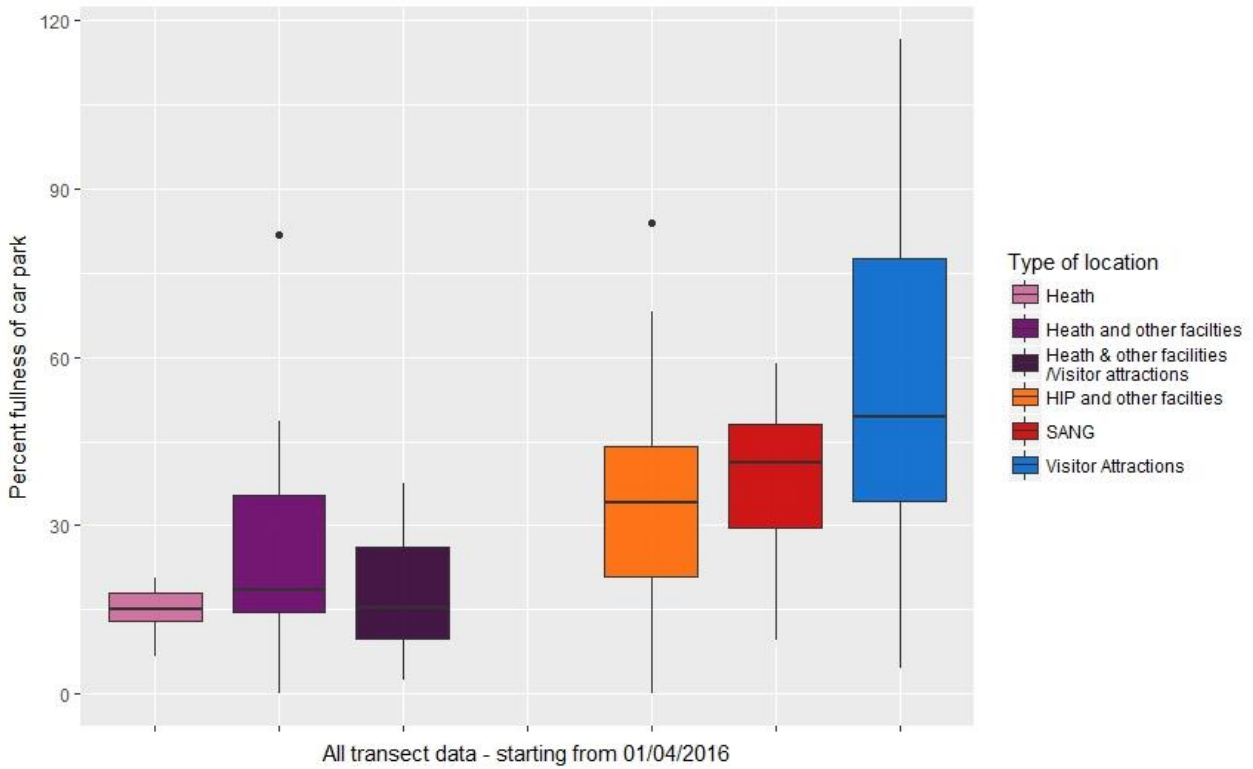
† These survey dates are those which a proportion of car parks in Bournemouth Borough were missed.

### *Differences between parking location types*

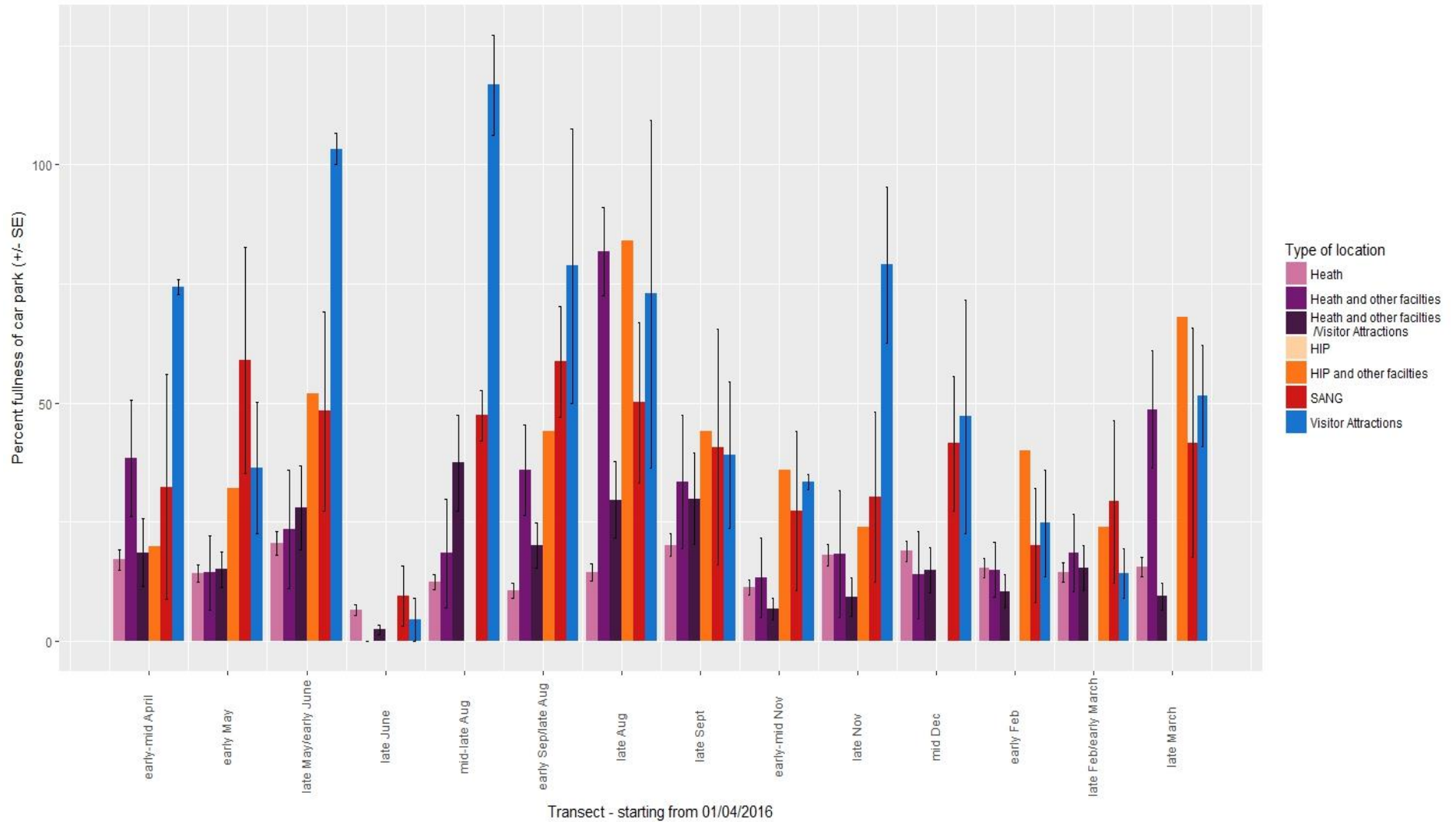
3.14 In recent years, the car park counts have encompassed more parking locations away from traditional heathland sites. The nature of these car parking locations is becoming

more diverse as sensors are absorbed in the whole monitoring strategy and more SANG or HIP sites are created. These separate categories of car park should be considered separately, as the nature of these locations are very different and while increases at some site locations are a cause for concern (e.g. heathlands), increases at other sites would be viewed positively (e.g. SANG sites). For analysis of trends these should always be examined separately.

- 3.15 As yet, we have little data for the different car parks to warrant a separation of all results (see Table 3) and detailed analysis is largely beyond the scope of this annual reporting. However, we present some brief examination of the variation in car parking between the different types of locations
- 3.16 The average percent fullness of car parks across the whole year for each type of location is shown in Figure 3 to illustrate the typical level of use expected at different location types. As discussed previously, due to the different nature of locations, there is clearly a differing baseline to be expected on sites. Heath parking locations are usually the least full, around 15% full, and there is generally steady increase in the typical fullness of parking locations for the different types. As would be expected, the largest values were for the “visitor attraction” type locations (Upton Country Park locations) where the car parks are typically just under 50% full (median value).
- 3.17 The heaths also appear to show the least variation in fullness, compared all other location types. This is explored in more detail in Figure 4 which shows the average percent fullness for these parking types, and also for each date across the financial year. This shows the variation across the year, but also how this changes for each of the individual location types. However, it should again be noted that these values are the raw data and these have not been adjusted to account for variation in survey effort.



**Figure 3: Summary of the individual car park percent fullness for all transects, across the whole financial year for the different types of car parking locations. (Heathland sites [n=135], heathland & other sites [n=11] heathland & other sites/visitor attractions [n=5], HIP & other facilities [n=2], SANG [n=4], and Visitor attractions [n=2]. Values for HIP only sites are not shown as only one site of this type).**



**Figure 4: The mean percent fullness of car parks (and SE) during each transect, shown separately for the different types of locations. (values for HIPs not shown as only one site). (Heathland sites [n=135], heathland & other sites [n=11] heathland & other sites/visitor attractions [n=5], HIP & other facilities [n=2], SANG [n=4], and Visitor attractions [n=2]. Values for HIPs not shown as only one site.)**

- 3.18 In an attempt to account for car parks which were missed on some transects, the number of vehicles was divided by the number of transects for which the car park was surveyed to provide the average number of vehicles per car park. These have been summarised by the different types of car parking locations in Table 8 and shown in Map 4.
- 3.19 Overall values at heath sites were quite small, an average of 1.5 vehicles per car park in an average transect. At heath locations which include other facilities (e.g. sports grounds, viewpoints, beaches or other habitats), the number of vehicles was slightly higher with on average 12.7 vehicles, although the highest average recorded was quite high; 72.4 vehicles at Studland along Ferry Road (see Table 8). For those locations which were categorised as “heath with other facilities and visitor attractions” the average was much greater (75 per car park) and the greatest maximum average (205 vehicles on average at Hengistbury Head). HIP and SANG sites had a similar number of average vehicles, and similar ranges to each other. The numbers at SANGs could be considered slightly low given the maximum average number recorded was just 12.2 at Upton Country Park, while the number of spaces at Upton and at BytheWay Field is 24. Visitor attraction locations, the two other Upton Country Park car parks, had the highest overall average value, of 71 cars per location on an average transect.
- 3.20 This still has limitations as vehicle numbers in a car park can be highly variable between transects, depending on the time of year, type of day and weather, and so this approach clearly has limitations.

**Table 8: The average number of vehicles per transect for each car park was calculated to account for car parks missed during some transects. The values recorded are summarised by the type of location which the car park provided access to.**

Type of location	Number of car parks surveyed	Number of vehicles per car park averaged across transects, and averaged for type	Range in vehicles per car park averaged across transects
Heath	135	1.5	0 – 17.9
Heath & other facilities	11	12.7	1.4 - 72.4
Heath & other facilities/ visitor attractions	5	74.9	24.3 - 205.4
HIP*	1	-	-
HIP & other facilities	2	6	1.4 - 10.6
SANG	4	5.5	0.4 - 12.2
Visitor Attractions	2	71.3	10.6 - 131.9
Total	160	5.6	0 - 205.4

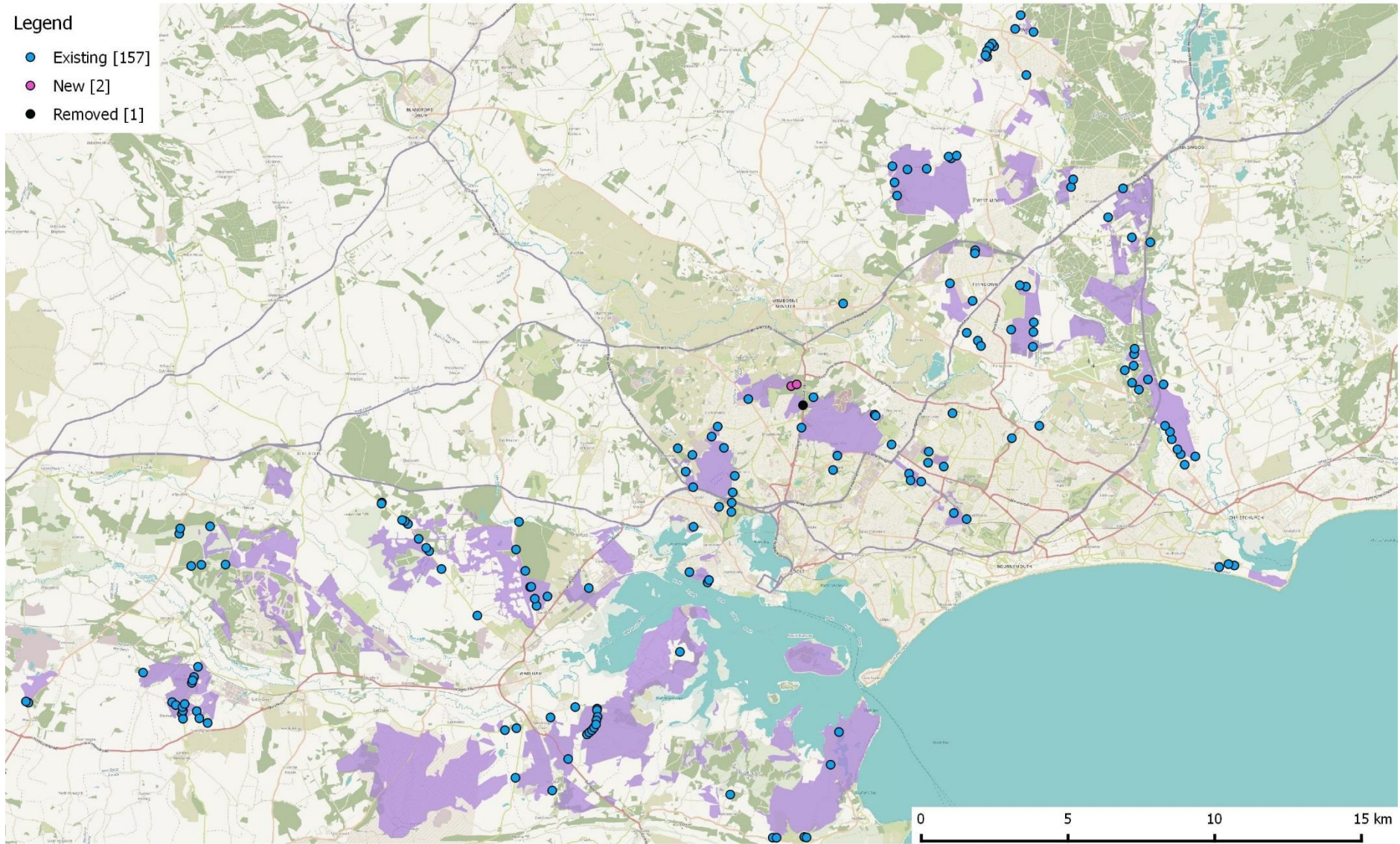
\* Only one HIP car park was surveyed and on one occasion as this was a new addition this year.



**Map 2: The location of all car parks surveyed in the 2016-2017 financial year.**

**Legend**

- Existing [157]
- New [2]
- Removed [1]



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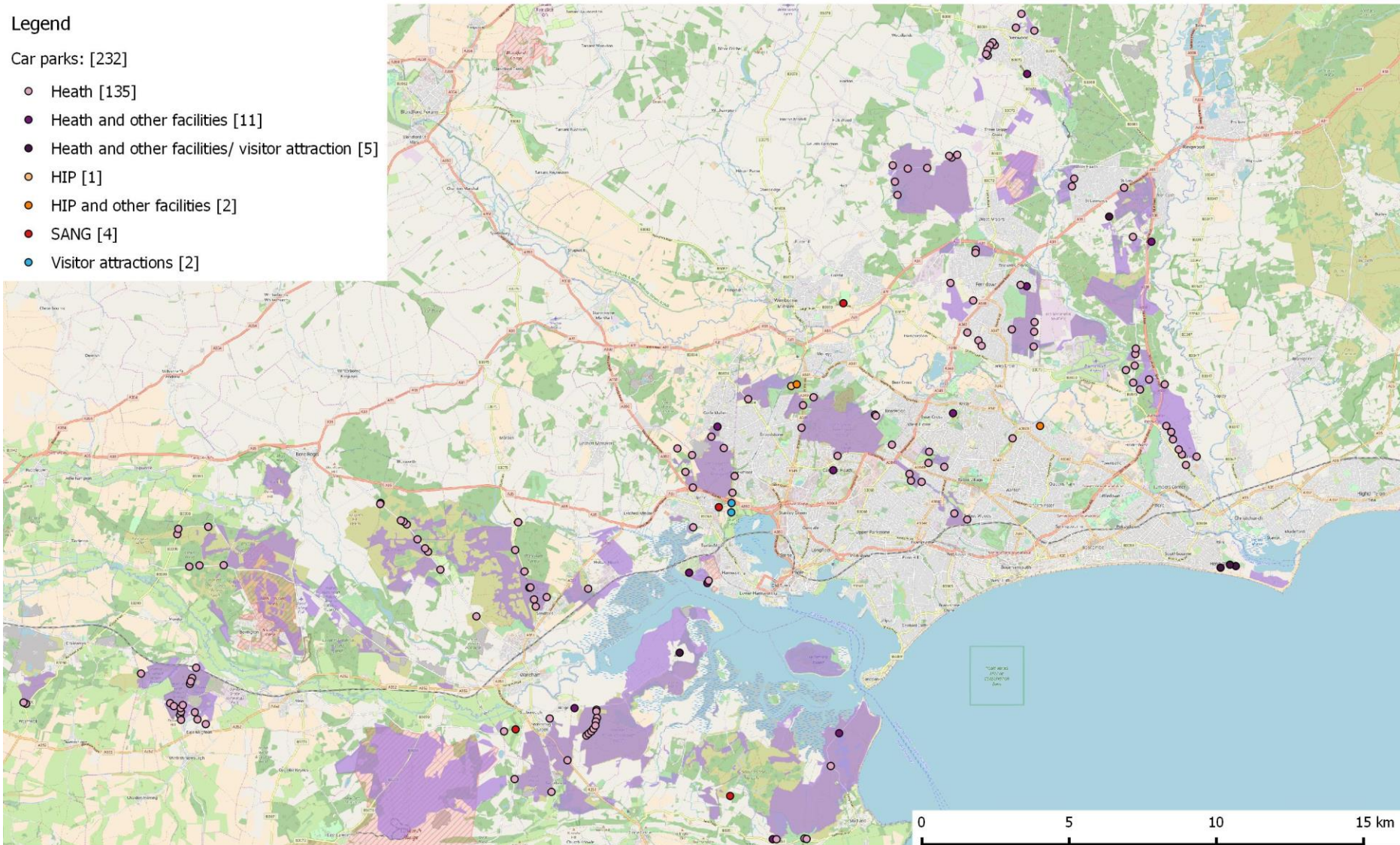


### Map 3: Types of locations included in the 2016-2017 financial year car park counts.

#### Legend

Car parks: [232]

- Heath [135]
- Heath and other facilities [11]
- Heath and other facilities/ visitor attraction [5]
- HIP [1]
- HIP and other facilities [2]
- SANG [4]
- Visitor attractions [2]



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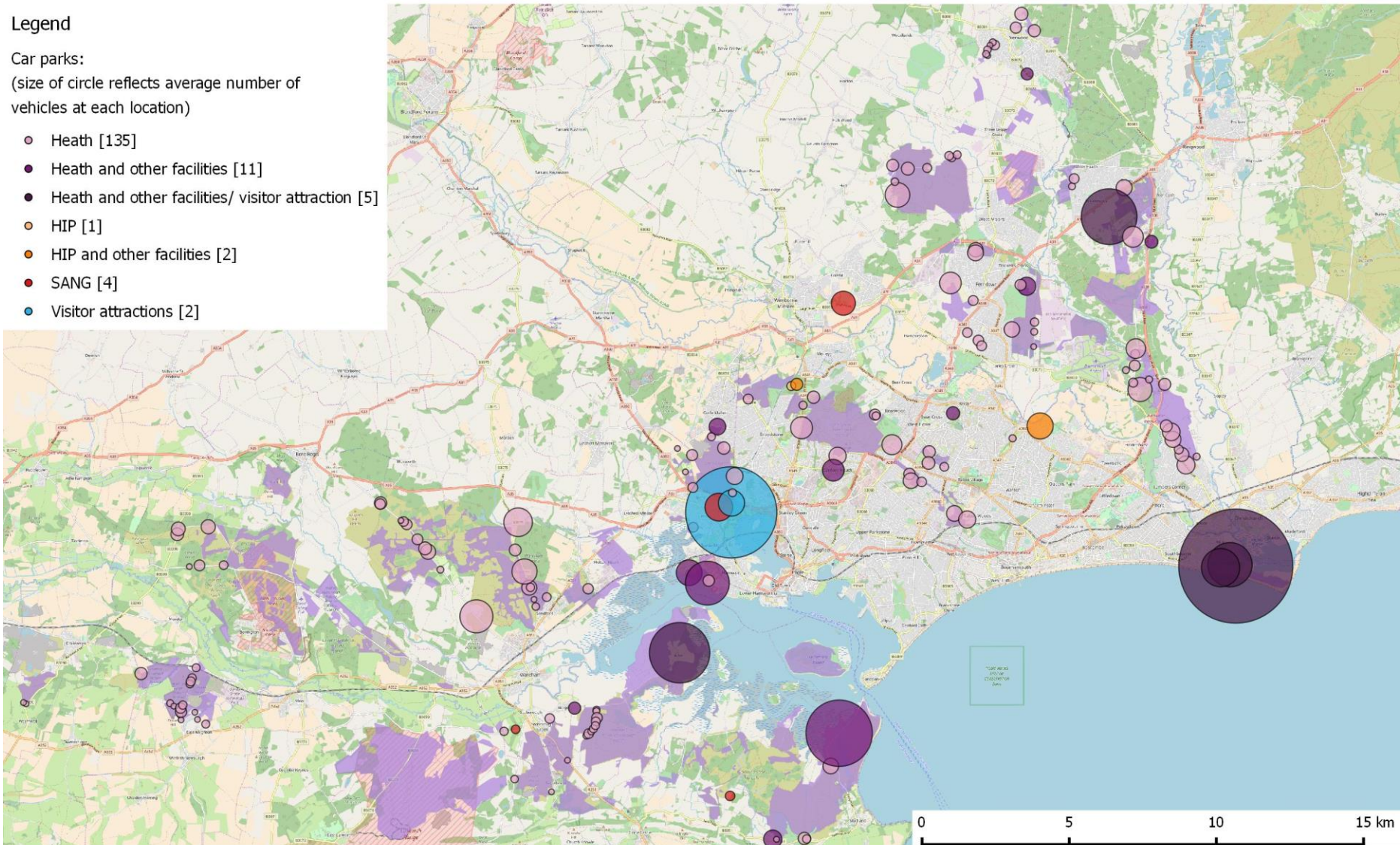


**Map 4: Averaged number of vehicles recorded at each parking location in the 2016-2017 financial year car park counts.**

**Legend**

Car parks:  
 (size of circle reflects average number of vehicles at each location)

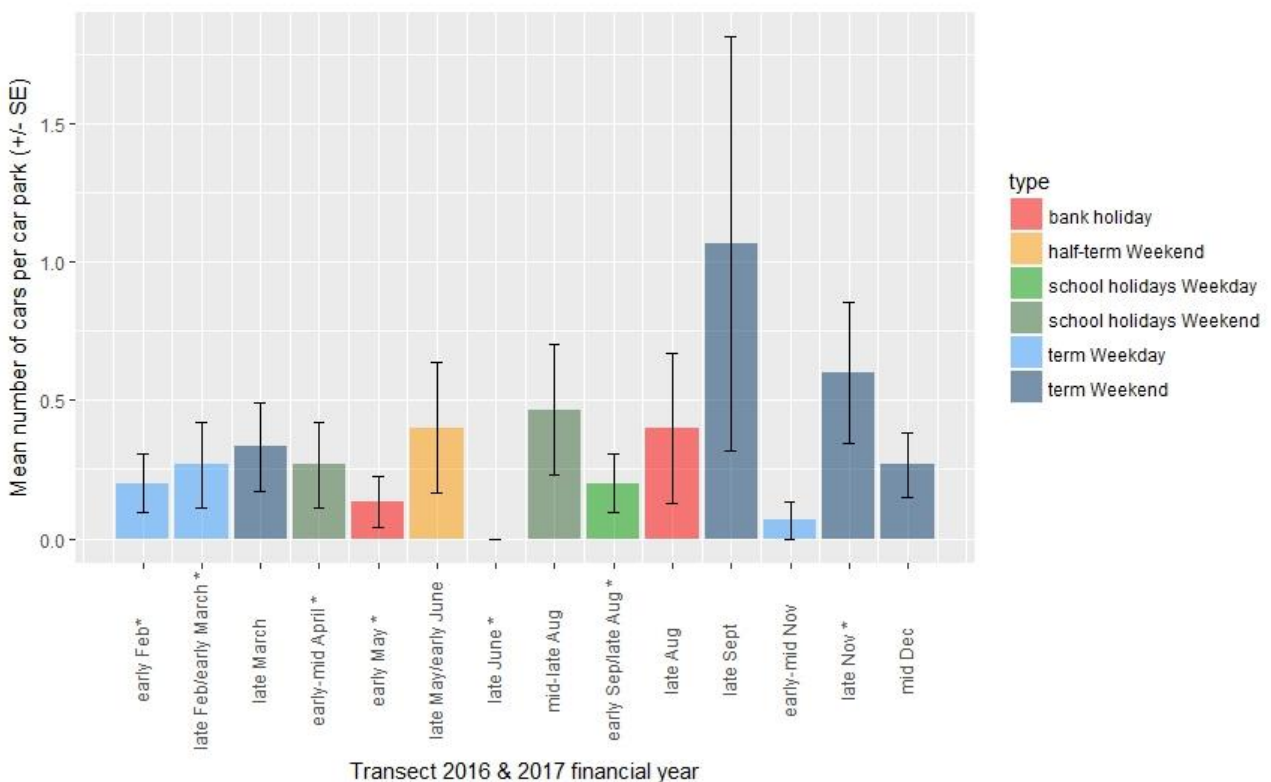
- Heath [135]
- Heath and other facilities [11]
- Heath and other facilities/ visitor attraction [5]
- HIP [1]
- HIP and other facilities [2]
- SANG [4]
- Visitor attractions [2]



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## Winfrith and Tadnoll

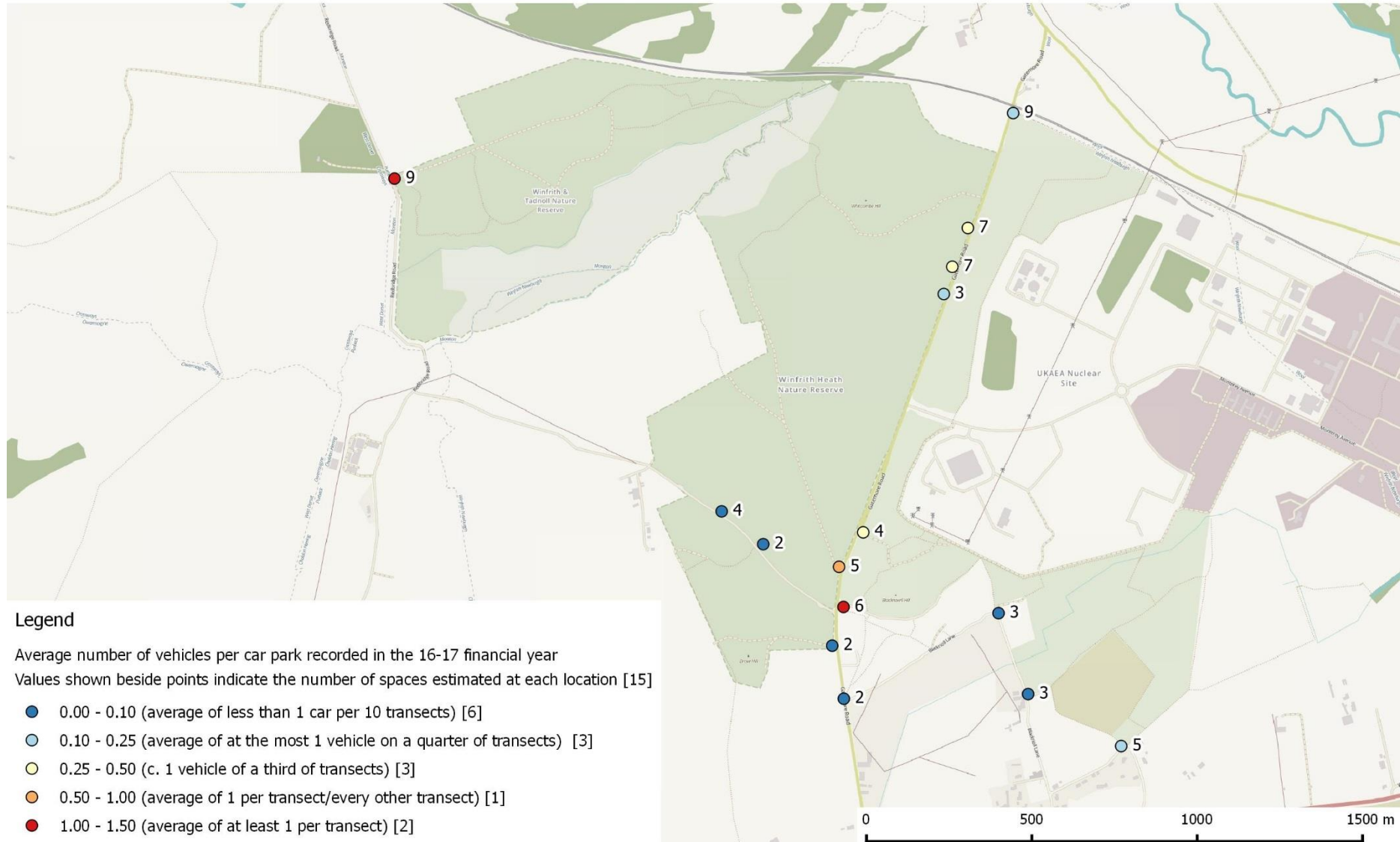
- 3.21 There are 15 car parking locations around Winfrith and Tadnoll (locations are shown in Map 5), with an estimated 77 spaces in total across these separate parking locations.
- 3.22 In total, 70 vehicles were counted across these 15 parking locations, and an average of 5 vehicles were recorded per transect. There was only one transect in which no cars were recorded (late June, see Figure 5). The maximum number of vehicles recorded in a transect was in the late September survey, where a total of 16 cars were recorded across all parking locations (an average of just over 1 per car park, see Figure 5).
- 3.23 The late September survey was the busiest date, not the August bank holiday, as observed in the full dataset (see comparison with Figure 2). But this late September date also showed the greatest variation; only three parking locations had vehicles present in, the rest were empty. Most locations were usually empty - at the most, on any survey date in the last financial year, a maximum of five of the 15 parking locations were occupied with one or more vehicles.



**Figure 5: Summary of the average number of vehicles recorded across the 15 car parking locations around Winfrith and Tadnoll on each date. Standard error bars around each average value are shown. Dates which are marked with an asterisk are those on which rainfall was recorded on the day.**



**Map 5: Typical level of use of car parks around Winfrith and Tadnoll.**



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## 4. Incident Data

### Introduction

- 4.1 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 County Council's 'Dorset Explorer' 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).

### *Categorisation of data*

- 4.2 This year the incidents of Unmanned Aerial Vehicles (UAV) /drones on sites have been categorised separately, as these have the potential to be used irresponsibly. Three incidents were recorded last year (previously categorised as other), and a further three this year. Drones have the potential to cause direct disturbance to wildlife or grazing animals (drones chasing cattle has already been recorded in incidents) and as with many other recreation pressures, the impact can be felt beyond the simple visual flushing of birds (e.g. increased stress as drones fly past). Also, there are health and safety concerns regarding the use of these around other recreational users.

### 2016-2017 data

#### *Fires*

- 4.3 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 call outs by Dorset and Wiltshire Fire and Rescue, plus reported by wardens, which includes any burnt areas, or small campfires, which will be missed in formal Fire and Rescue call out data.
- 4.4 In total 61 incidents of fire were recorded and the total area burnt amounted to approximately 10.6 ha of heathland. This was lower than the overall average (both mean and median calculations) for the previous years in terms of both the number of fires and area burnt, see Table 9 (mean values in Table 9 are greater than the medians as these are more heavily influenced by infrequent, extremely large fires, that results in overall high monthly average).

- 4.5 The highest number of fires was in May 2016, but the largest area burnt in a month was recorded in April 2016, 3.57 ha burnt. The largest fire recorded in April was the largest recorded for the whole year, on the 26th April 2016, during which a 2.5 ha of heath burnt at Ringwood Forest. This fire was closely followed in size by the second largest, 2.3 ha, at Uddens Plantation on the 15<sup>th</sup> May 2016.
- 4.6 The total area burnt in each month was usually at or below the average recorded to date for previous years and when examining each month compared to previous years (see Table 9). Also, the number of individual fires was much lower than typically recorded in previous years.
- 4.7 One limitation with the number of fires is that it uses both formally logged fires and warden observations of small campsite fires etc. Therefore, these values can be slightly influenced to the level of wardening effort, which can be variable between years. As such, the area of burn is considered a more reliable measure.
- 4.8 The distribution of fires is shown in Map 6 (and presented for individual sites, later in Table 10). The largest number of fires was recorded at Ham Common, however these were usually small in nature (e.g. campfires), the largest area burnt being 422 m<sup>2</sup>. There were also high numbers at Town Common (5 incidents), again mostly campfires, all less than 2 m<sup>2</sup> and Turbary Common (also 5 incidents); none thought to be campfires, but all deliberate (average size 533 m<sup>2</sup>).

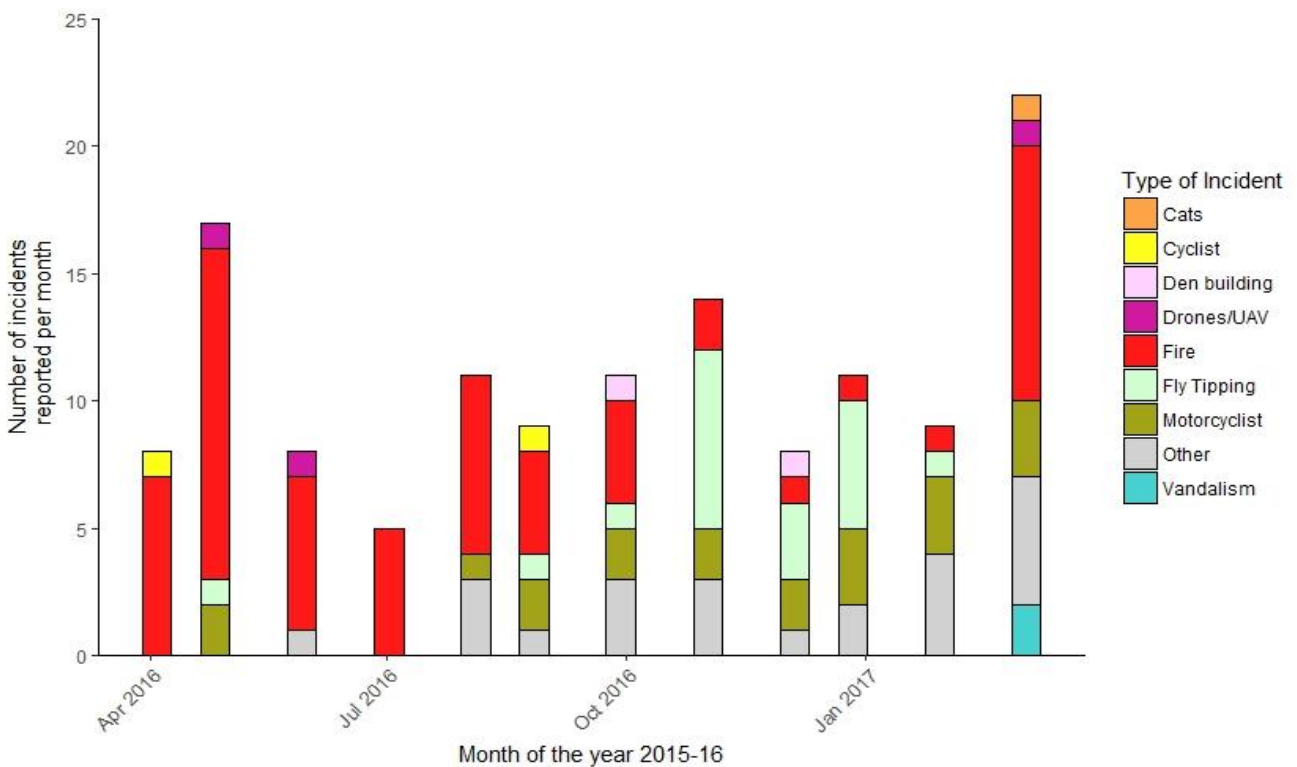
**Table 9: Summary of the total number and area of fires recorded in 2016-2017 financial year, compared with averages (mean and median) for previous years (2002-2016).**

Year	Month	Total number of fires 2016-17	Median number of fires in previous years	Mean number of fires in previous years	Area burnt (ha) 2016-17	Median area burnt (ha) in previous years	Mean area burnt (ha) in previous years
2016	4	7	18.0	18.0	3.57	1.93	8.81
	5	13	17.0	18.7	3.14	2.03	3.69
	6	6	17.0	16.5	1.37	0.22	4.47
	7	5	12.5	13.5	0.85	0.25	0.83
	8	7	12.0	14.1	0.15	0.48	0.75
	9	4	9.0	9.8	0.14	0.09	0.37
	10	4	3.5	4.0	0.88	0.01	0.15
	11	2	2.0	2.6	0.00	0.00	0.01
	12	1	2.0	2.4	0.01	0.00	0.01
2017	1	1	1	5.2	0.00	0.00	0.02
	2	1	4	5.7	0.00	0.05	0.32
	3	10	9	12.8	0.49	2.59	12.23
<b>Total</b>		<b>61</b>	<b>118.5</b>	<b>113.8</b>	<b>10.61</b>	<b>18.72</b>	<b>29.25</b>

### Other Incidents

4.9 With regards to the other non-fire incidents a total of 72 were recorded, and therefore a total of 133 recorded incidents of all types recorded across the whole financial year (as shown in Map 7). The number of these incidents are shown by month in Figure 6.

4.10 Aside from incidents of fire, motorbiking and fly-tipping were most commonly recorded (20 and 19 incidents respectively). Map 8 shows the distribution of each of these types of incidents. Incidents seem to be most common in March 2017, followed by May 2016, in part due to more incidents of fire. In the winter months, there are fewer incidents of fire, but greater incidents of other types, particularly fly tipping.



**Figure 6: The monthly total number of incidents recorded, separated by the different types of incidents.**

4.11 In the previous annual report we highlighted a stark decrease in incidents for the last half of the 2015-2016 financial year. This included a period where no more than 10 incidents a month were recorded for a six month period. It becomes clearer this was influenced by changes in wardening effort, and less a result of than genuine trends in behaviours on sites. As with all non-fire incident data the reporting of these incidents is heavily dependent on the time wardens spend on sites, which has not been accounted for in any of the reporting of these.

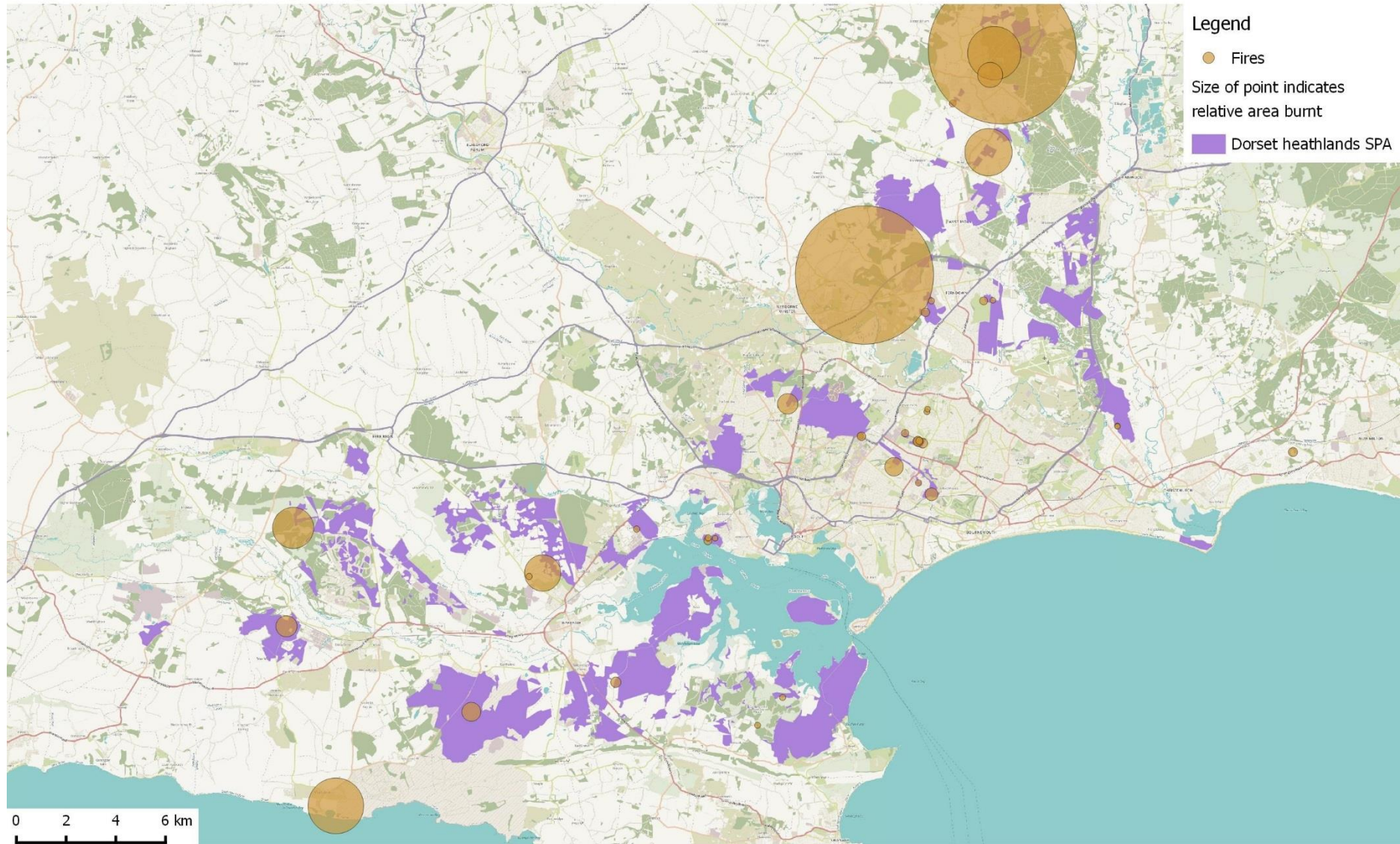
- 4.12 The number of incidents at individual sites is shown in Table 10, with sites ranked by the total number of incidents. This shows that by far the greatest number of incidents were recorded at Canford heath; just over double the number at any other individual site. This year the incidents were almost all non-fire related and seemed particularly related to motorcyclists on site.
- 4.13 Overall, non-fire incidents were greatest at Canford Heath (30) Bourne Valley (7) and Ham Common, unnamed sites, Talbot Heath and Upton Heath (5), in that order. This ranking differs slightly the from top five sites ranked for non-fire incidents in the database so far: Canford Heath (318), Upton Heath (292), Town Common (262), unnamed sites (255), Bourne Valley (217).
- 4.14 For incidents of fire to date the top five sites in previous years were; Bourne Valley (220), Canford Heath (198), Turbary Common (192), Kinson Common (186), and Ham Common (159). This year presents quite a different picture with many fewer fires at Bourne Valley, and the largest number at Ham Common.

**Table 10: Summary of the number of fires and other incidents recorded on each named site. Sites with either the top three highest number of fires or other incidents are highlighted.**

Named Site	Fires	Other incidents	Total number of incidents in 2016-17 financial year
<b>Canford Heath</b>	3	<b>30</b>	<b>33</b>
<b>Ham Common</b>	<b>11</b>	<b>5</b>	<b>16</b>
<b>(unnamed)</b>	<b>7</b>	<b>5</b>	<b>12</b>
<b>Talbot Heath</b>	3	<b>5</b>	8
<b>Bourne Valley</b>	1	<b>7</b>	8
<b>Town Common</b>	<b>5</b>	2	7
<b>Turbary Common</b>	<b>5</b>		5
<b>Upton Heath</b>		<b>5</b>	5
Hurn Forest	3	1	4
Kinson Common	2	2	4
Winfrith Heath	1	3	4
Ferndown Common	2		2
Newton Heath	2		2
Ringwood Forest	2		2
Stephens Castle	2		2
Wareham Forest	2		2
Alder Hills	1	1	2
Dewlands Common	1	1	2
Dunyeat's Hill	1	1	2
Parley Common	1	1	2
Briantspuddle	1		1
Hartland Moor	1		1
Holton and Sandford Heaths	1		1
Povington & Grange Heaths	1		1
Uddens Plantation	1		1
West Moors	1		1
Barrow Hill (Rushcombe Bottom)		1	1
Ham HCT		1	1
Holt Heath		1	1
<b>Total</b>	<b>61</b>	<b>72</b>	<b>133</b>



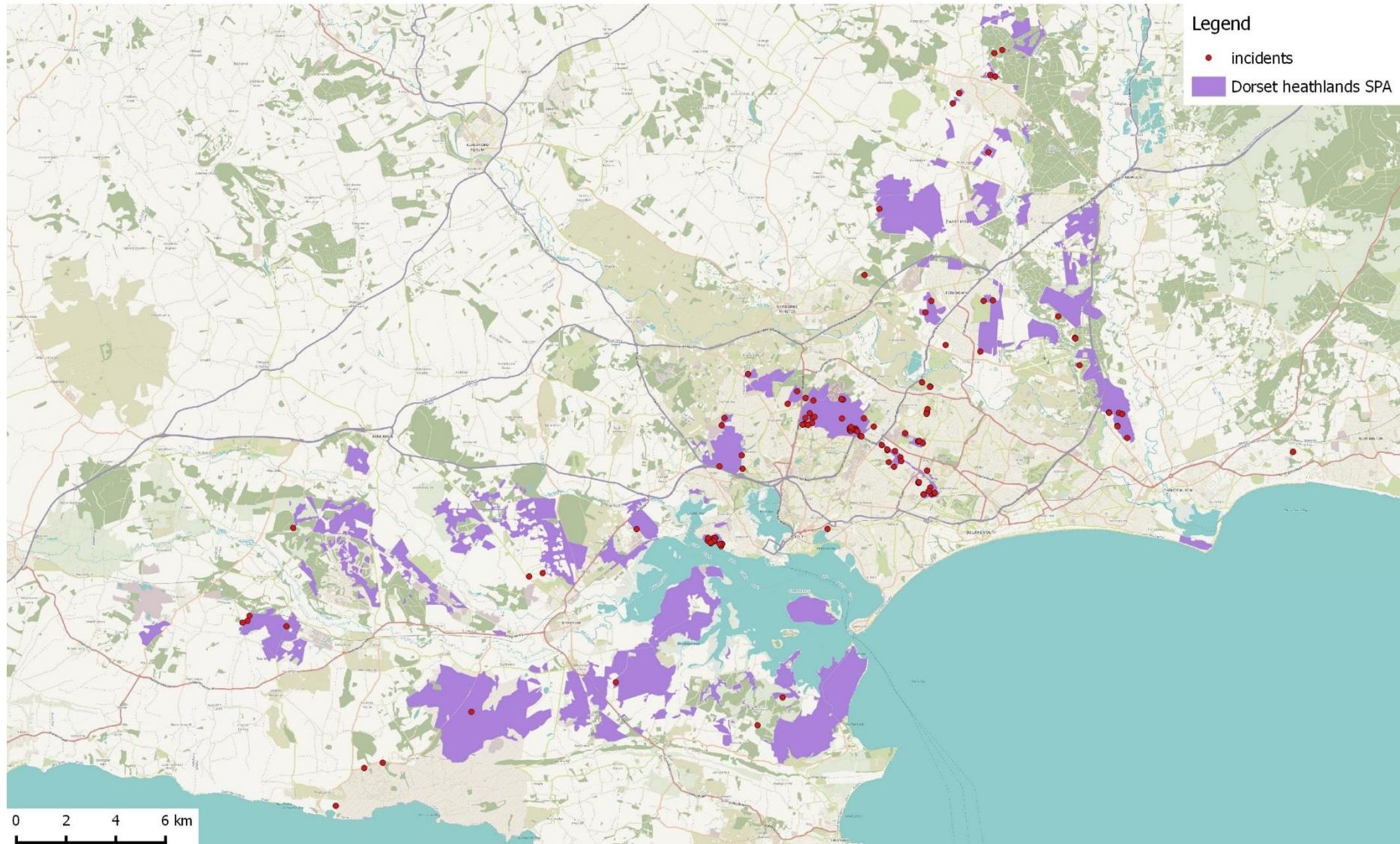
Map 6: Distribution of fires (> 1m<sup>2</sup>) recorded in 2016-17. Size of point indicates size of area burnt.



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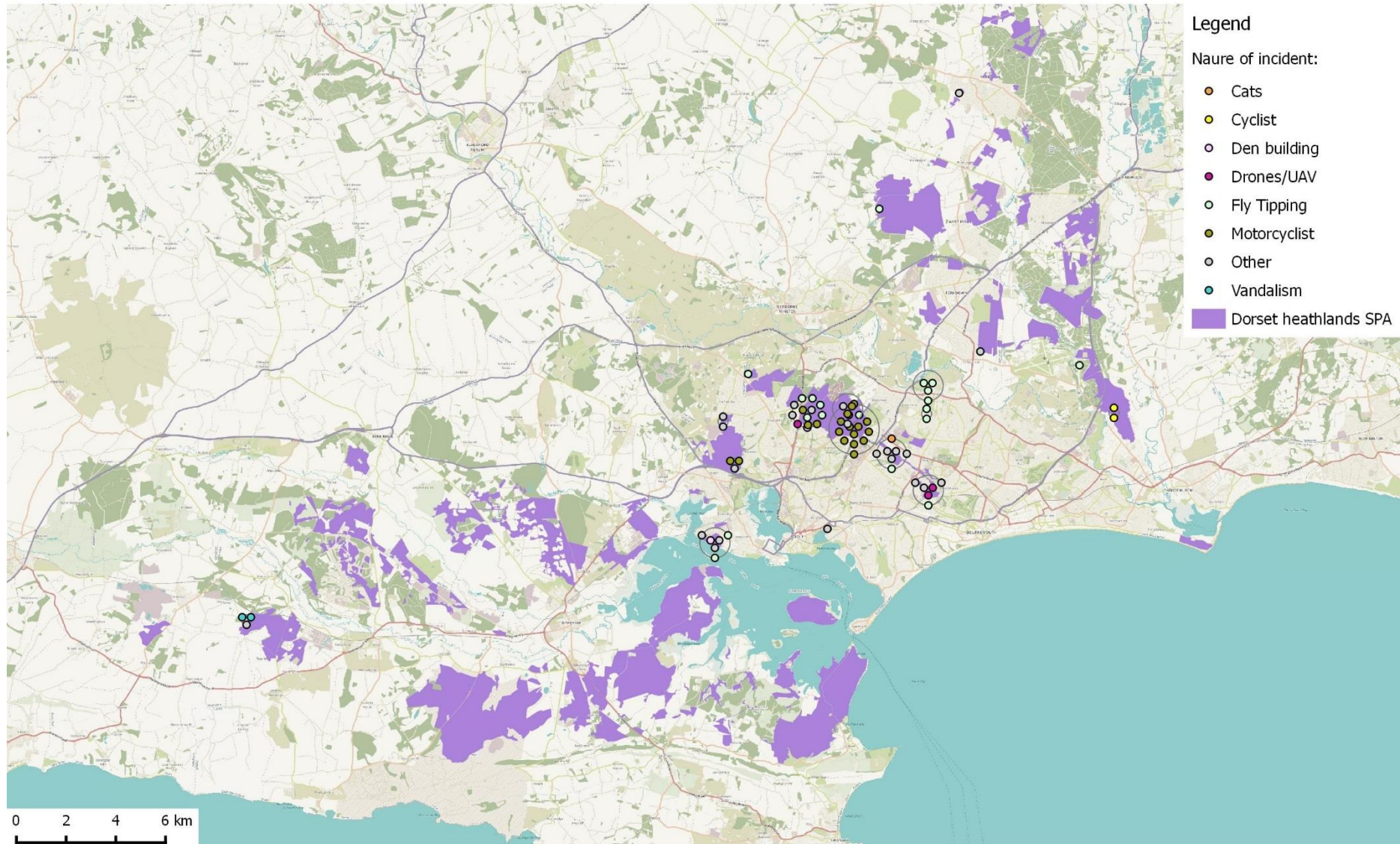
Map 7: Distribution all incidents recorded in 2016-17.



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Map 8: Distribution of non-fire incidents recorded in 2016-17.



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## Winfrith and Tadnoll

- 4.15 For Winfrith and Tadnoll, a single incident of fire was recorded on Winfrith Heath on the 17<sup>th</sup> April 2016. This fire was recorded alongside the road, started by a cardboard box full of paper (scraps of paper found by Police to be related to a robbery), with the total area burnt of just 0.27 hectares.
- 4.16 Clearly, this fire was a very unusual event, and only three fires have now been recorded at Winfrith and Tadnoll in the entire incident database (dating back to 2002). The other two fires related to a single deliberate fire on 14<sup>th</sup> July 2014 (0.25 ha), and subsequent very small hotspot reignition on the following day.
- 4.17 Regarding other incidents, only three have been reported in the 2016-2017 financial year (15/02/2017, 04/03/2017, 07/03/2017). These were; people on site with firearms reported by a member of the public, a fence cut (possibly poaching attempt – livestock escaped), and a padlock and gate damaged (with evidence of vehicles driving through).
- 4.18 This last financial year had seen more incidents on Winfrith and Tadnoll than any other year (Table 11), and with incidents being more ‘malicious’ in their nature. Previously the incidents were largely of fly tipping of garden waste. The two previous incidents of vandalism related to ‘Doggy Do’ signs being damaged and a damaged pedestrian gate; rather than attempted poaching and vehicles breaking onto site.

**Table 11: Summary of the number of incidents reported in Dorset explorer on Winfrith and Tadnoll.**

Nature of Incident	Financial year						
	2009 - 2010	2010 - 2011	2011 - 2012	2012 - 2013	2013 - 2014	2014 - 2015	2016 - 2017
Fire						2	1
Fly Tipping	2	2	1	1			
Vandalism					2		2
Other							1
Total	2	2	1	1	2	2	4

## 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 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 again 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 replacement (due to vandalism and theft), and regular (approximately every four-five months) downloading of the data from the sensor.

### *Categorisation of data*

- 5.4 As already stated for the car parking data, the nature of the different locations will greatly affect visitor use and whether 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 here for the sensors.
- 5.5 The number of sensors for each location type are given in Table 12 and shown in Map 9.

### 2016-17 surveying

- 5.6 Over the 2016-17 financial year, 73 sensors have been collecting data at some point, which is the same number as in the previous year. While the number of sensors at some locations is being reduced in line with the monitoring strategy, a number of new sensors have been installed. In addition, sensors already installed on sites, which were not maintained by UHP, have now been passed over and incorporated in the UHP monitoring. While this creates extra sensor burden, it was determined it was better to absorb these existing sensors, rather than remove these and the data be lost.

5.7 The locations of these 73 sensors are given in Map 9. Table 12 shows the sensors broken down by type of location, and Table 13 shows the management organisations. Sensors which have been absorbed into the monitoring are: four sensors at Stour Valley (HIP project; BSV1-4) and five sensors at Avon Heath CP (DAH5-9). Only one completely new sensor has been installed this financial year, at the new Bog Lane SANG (PBL1), however data is yet to have been downloaded, so data is being collected, but is not yet examined or included here.

**Table 12: The number of sensors collecting data in the 2016-17 financial year [total number =73].**

Type of site	Number of Sensors
Heath (only used by those visiting heaths)	41
Heath & other locations (provides access to heaths, but also other habitats e.g. woodlands and some other facilities)	2
Heath & other / visitor attractions (provides access to heath habitats, but other habitats or visitor attraction facilities; e.g. Moors Valley Country Park, Hengistbury Head)	8
HIP (only used by those visiting HIP)	1
HIP & other facilities (provides access to heaths, but also facilities; e.g. cricket pitches, support land)	1
HIP & heathland HIP projects which are adjacent to heathland sites (e.g. Stoborough Heath)	1
Other access types (Castleman Trailway)	2
SANG (only used by those visiting SANG)	4
Visitor Attractions (e.g. Upton Country Park, Avon Country Park main car park)	3

**Table 13: The management organisations responsible for the land each of the sensors is installed on.**

Management organisation	Number of sensors
Amphibian and Reptile Conservation (ARC)	12
Bournemouth Borough Council (BBC)	8
Borough of Poole (BoP)	19
Christchurch Borough Council (CBC)	3
Dorset County Council (DCC)	20
Dorset Wildlife Trust (DWT)	4
East Dorset District Council (EDDC)	2
Natural England (NE)	1
Purbeck District Council (PDC)	2



- 5.8 The sensor data is complex, and there a large number of factors to be accounted for, 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.
- 5.9 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 in addition calibration before values can be compared in this way with confidence.
- 5.10 This year, the separation of sensors into much smaller groups to be examined 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.

## 2016 – 2017 data

- 5.11 The monthly variation, shown in Figure 7, highlights the relatively stable use of heath sites across the year with only slight increases in summer, compared to HIP sites which show much greater use in summer than winter. For other sensor types, the data is shown, but this can present a misleading picture due to the low sample sizes considered for the single year, patchiness of data, and addition/removal of sensors to the database (see n values in figure legends for sample sizes).
- 5.12 The raw values have also been used to compare the ratio of weekday to weekend day values at each of the different sensor location types in Table 14. While sample sizes for some sensor types are still low, the examination of multiple weekday / weekend day types resolves much of these issues, providing us with greater confidence in the data. The weekday and weekend day ratio was normally at a similar level to each other across the different types of locations. Some exceptions to this are the sites which are heathland and other facilities, and sites which are mostly visitor attractions (e.g. Upton Country Park).



Figure 7: The monthly number of passes recorded on average at sensors, shown for heathland sites [n=30], heathland & other sites [n=5], heathland & other sites/visitor attractions [n=2], HIP sites [n=4], HIP & other sites [n=1], HIP & heathland [n=1], SANG [3], and Visitor attractions [n=2].



**Table 14: Comparison of raw values of passes per day, calculated as an average for the two types of day; weekday and weekend day. These values are used to compare weekday to weekend day ratios.**

	Heathland	Heathland & Other	HIP	HIP & Other	HIP (& heathland)	Heathland & Other/Visitor	SANG	Other	Visitor attractions
Number of sensors	30	5	4	1	1	2	3	2	2
<b>Raw average daily values (passes per day)</b>									
Weekday	435	7	35	10	95	163	108	75	55
Weekend	407	15	50	11	75	208	147	115	86
<b>Weekday: Weekend Ratio</b>									
Ratio	52:48	32:68	41:59	47:53	56:44	44:56	42:58	40:60	39:61

5.13 Finally, we have also used the sensor data to examine differences in patterns of use over the day. The limitations with this will be accounting for differences when sensors which were added / removed, or malfunction in a particular season as used and the length of daylight hours differed across the seasons. Nevertheless, the results in Figure 8 shows most sites have the same double bell-shaped curve of access patterns across the day (a bimodal distribution). Peaks are usually at 9:00-10:00 and again around 15:00-16:00, however this does differ slightly across the different types of locations. The heathland sites show the most distinct peak, and the peaks are also further apart than many of the other types of locations.

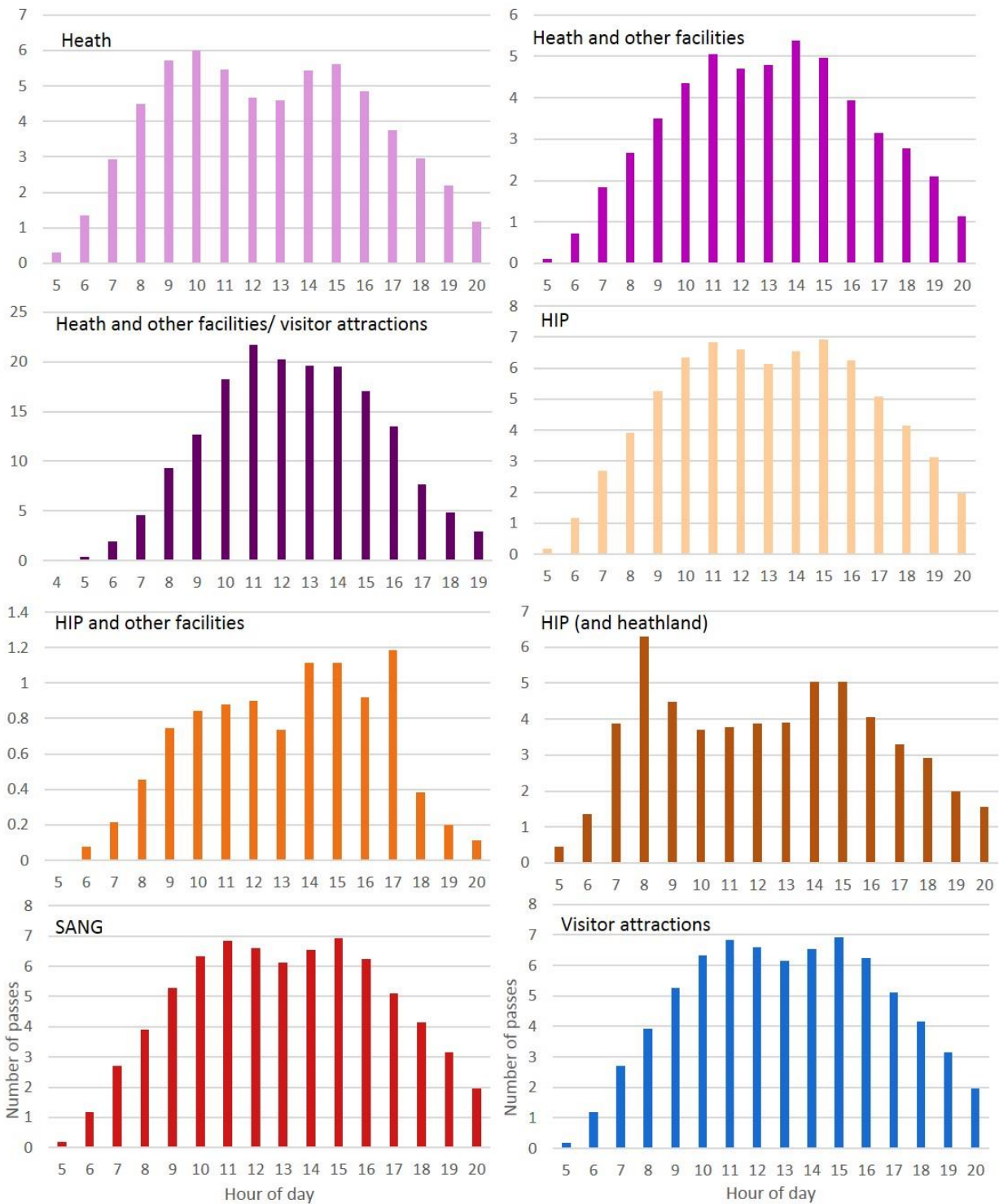


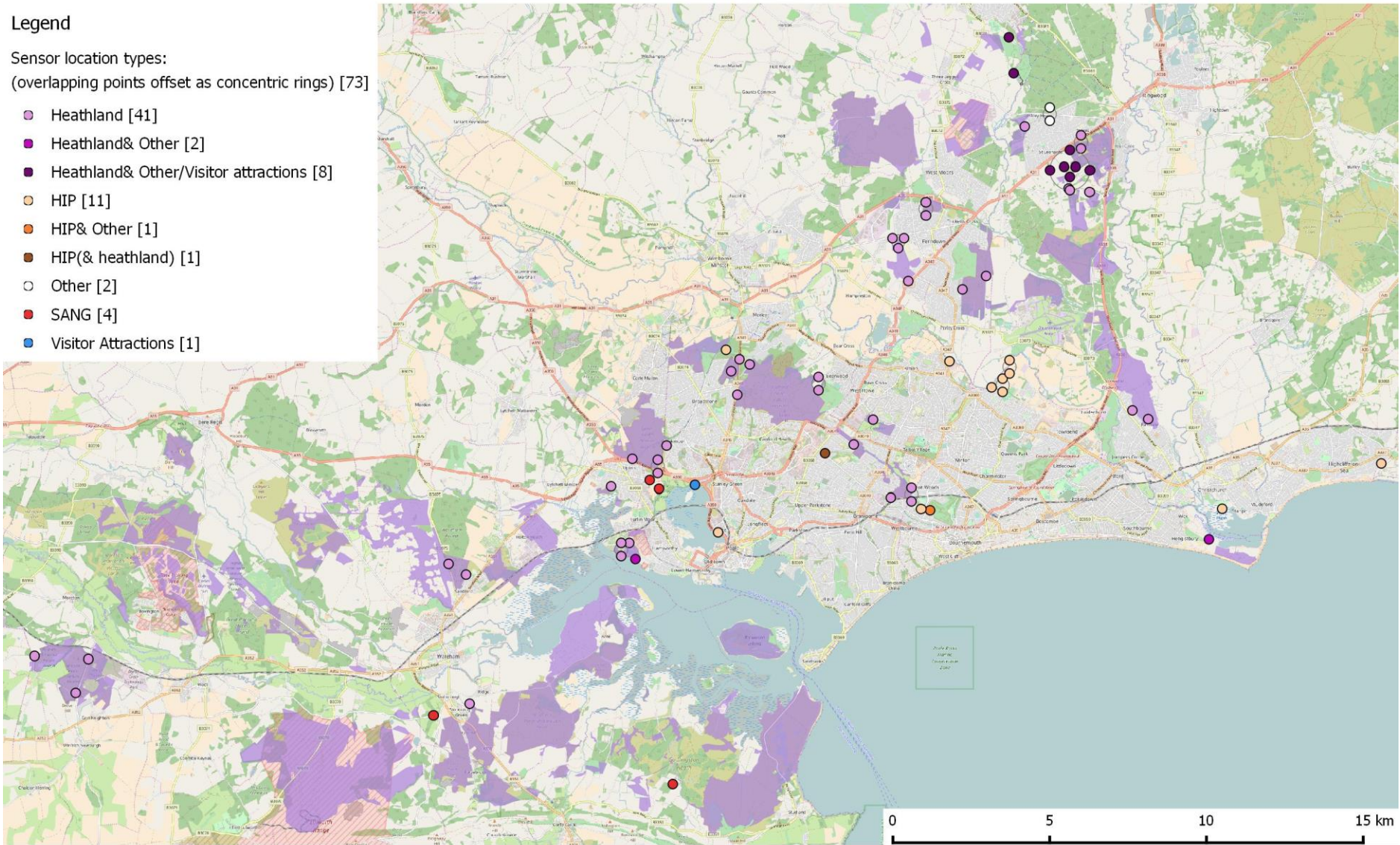
Figure 8: Average number of passes recorded across the day for each sensor location shown for heathland sites [n=30], heathland & other sites [n=5] heathland & other sites/visitor attractions [n=2], HIP sites [n=4], HIP & other sites [n=1], HIP & heathland [n=1], SANG [3], and Visitor attractions [n=2].

**Map 9: The location of the 73 sensors, shown by sensor location type.**

**Legend**

Sensor location types:  
(overlapping points offset as concentric rings) [73]

- Heathland [41]
- Heathland& Other [2]
- Heathland& Other/Visitor attractions [8]
- HIP [11]
- HIP& Other [1]
- HIP(& heathland) [1]
- Other [2]
- SANG [4]
- Visitor Attractions [1]



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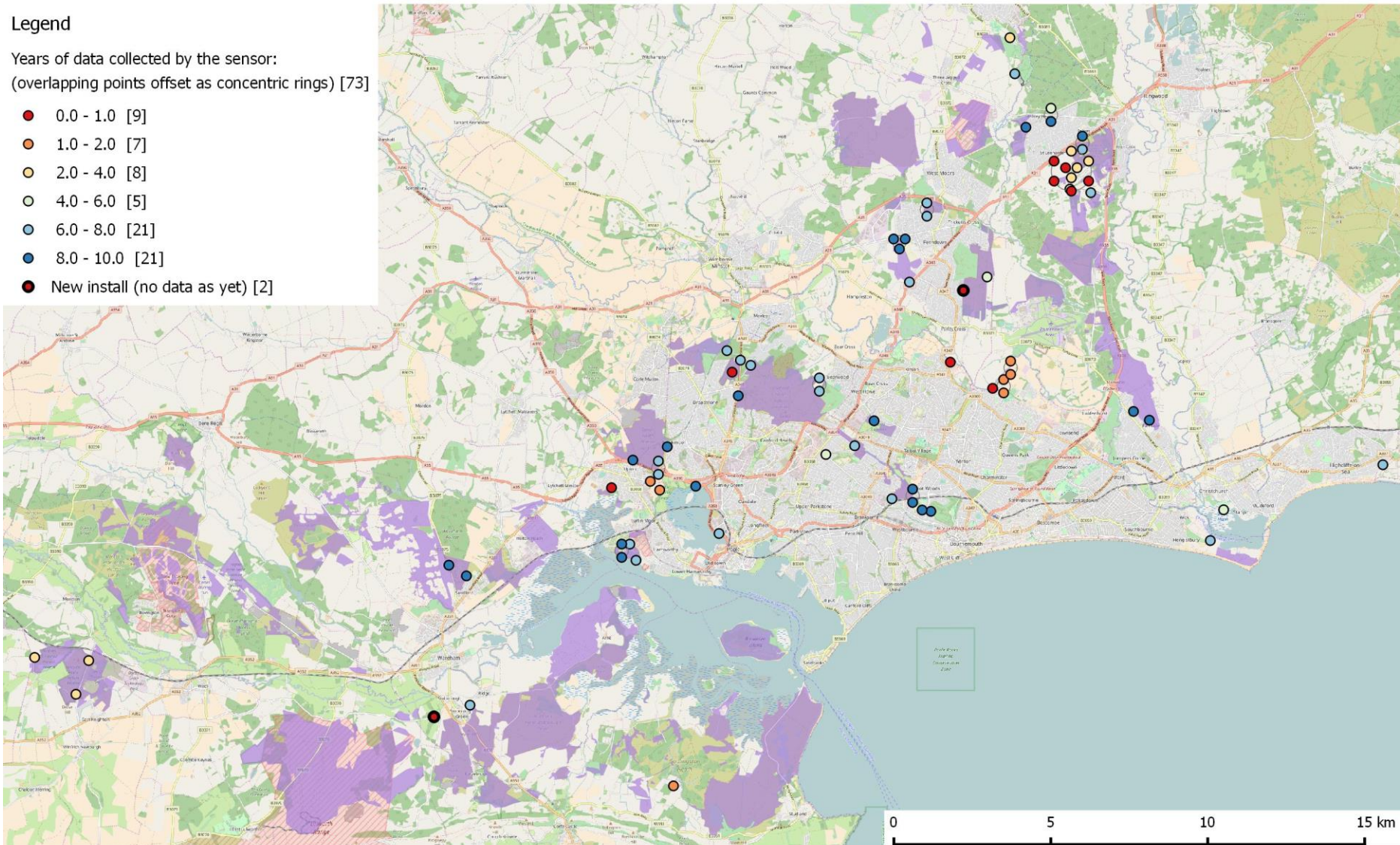


**Map 10: The location of the 73 sensors, locations which have been collecting data in the last financial year or installed this year.**

**Legend**

Years of data collected by the sensor:  
(overlapping points offset as concentric rings) [73]

- 0.0 - 1.0 [9]
- 1.0 - 2.0 [7]
- 2.0 - 4.0 [8]
- 4.0 - 6.0 [5]
- 6.0 - 8.0 [21]
- 8.0 - 10.0 [21]
- New install (no data as yet) [2]

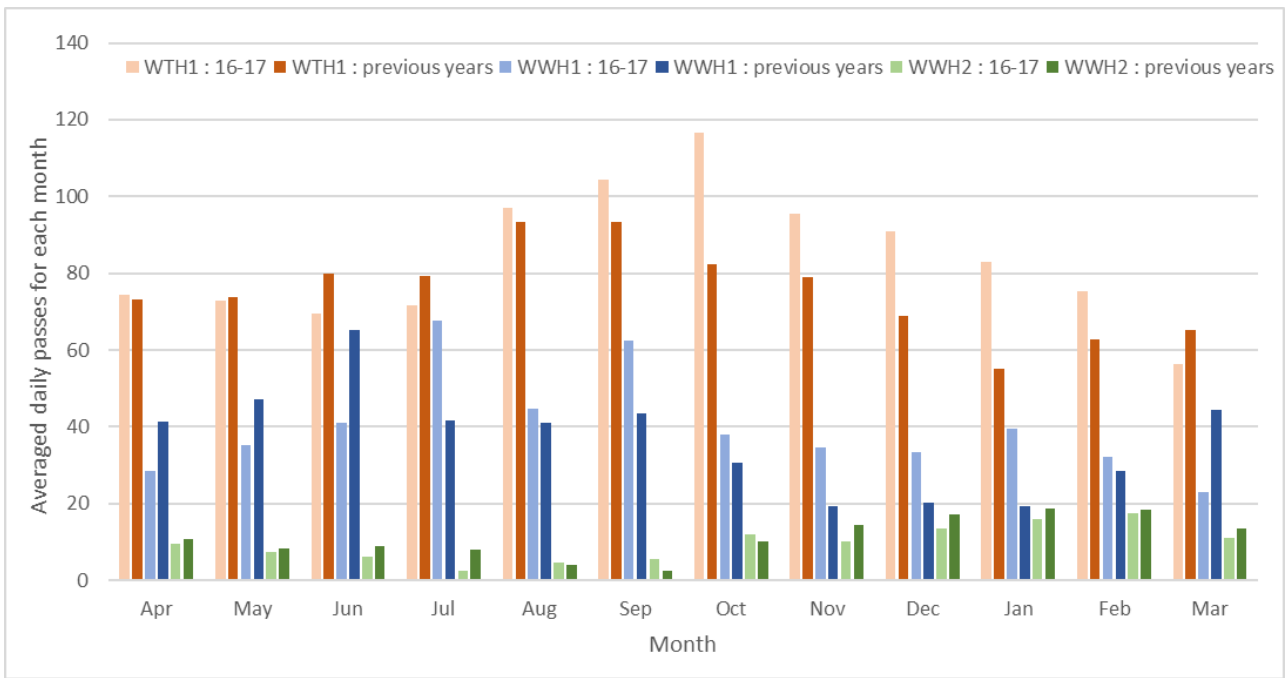


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## *Winfrith and Tadnoll*

- 5.14 At Winfrith and Tadnoll the three sensors which cover the main access points onto the site have been working well the last financial year, with no data removed due to any obvious recording errors in the sensors (e.g. anomalous very large or very small values, by eye). Sensor values were filtered by removing whole days values for download dates and for any obvious errors (of which there were none). It should again be noted that raw values of the numbers of passes are being presented and that these will not necessarily be equal to the number of people due to how the individual sensors record people.
- 5.15 Sensor values (hourly) number of passes were summed for each day and an average daily value calculated. Average daily values are shown for each sensor in the last financial year in Figure 9. Peaks of use varied across the season and differently at each different sensor location. Sensor WTH1 in the 2016-17 financial year peaks in October, while WWH1 peaks in July. In comparison to the trend from previous years data (2014-15 and 2015-16), these differ quite markedly with peaks in June for both sensors WTH1 and WWH1. Numbers of passes recorded at WWH2 is consistently much lower than the other two sensors, and this year's data follows the same pattern of generally greater use in winter than summer.
- 5.16 Figure 9 indicates use in the 2016-17 financial year has often been higher than the previous two years. As such the annual total were extracted and presented as averaged daily values in Table 15. Table 15 shows the number of passes in the 2016-17 financial year has been greater compared to either 2014-15, and 2015-2016 at sensors WTH1 and WWH1. However, there were fewer passes recorded at WWH2 in 2016-17 compared to the previous two years.





**Figure 9: Averaged daily number of passes shown for each month separately by sensor locations and comparing the 2016-2017 financial year values to the previous three financial years data pooled.**

**Table 15: Averaged daily number of passes recorded for the three financial years which sensors have been in place for the full year.**

Financial year	WTH1	WWH1	WWH2
2014-15	77.3	35.4	11.2
2015-16	73.4	36.3	11.1
2016-17	84	40.1	9.7

## 6. Other data

### Calendar data

- 6.1 A continuing record of relevant information which may be important for factors affecting visitor behaviour is recorded and maintained by Footprint Ecology. This data is maintained as a complete calendar, such that it can easily be related to daily information, such as sensors, or for a chosen date such as car park or visitor surveys.
- 6.2 Current information recorded is weather data and school term times. Weather data is obtained from a weather recording station at Bournemouth airport (EGHH<sup>1</sup>), with available data from 2008. For school term times, these are sourced from Dorset County Council website and are used to detail on every day of the year the term time, half term and school holidays. The calendar is also used to record weekend, weekend and bank holidays so these can be analysed separately.

### Visitor data

- 6.3 Visitors 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 focuses on SANGs, which are usually required to have visitor monitoring. The current timetable for surveying is set out in Table 16, 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.
- 6.4 In the 2016/2017 financial year fact to face interviews by UHP staff were conducted at Bog Lane (Wareham) in late March to early April 2017. This was after the completion of the works and site opening to be the public, but before the formal public opening (24<sup>th</sup> June 2016). Results of the visitor survey are produced in a separate report by UHP.
- 6.5 Visitor surveys in the next financial year will aim to include:
- Survey of the newly opened Upton Country Park SANG phase 2 (opened to the public spring 2017), and possibly coinciding with the repeat surveys due at the Phase 1 area.
  - BytheWay SANG, second round (which was delayed due to improvements on site)
  - Woolslope SANG, third round (could also be the following financial year)
  - Stanpit Recreation Ground, second round (could also be the following financial year)

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<sup>1</sup> <https://www.wunderground.com/history/airport/EGHH>

6.6 It is important to state that these are targets and will be depending 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 16: Details of completed and future planned surveys at existing or soon to be completed SANGs and HIPs which have required visitor survey monitoring.**

	Year from opening	Potterne (HIP)	Woolslope (SANG)	BytheWay (SANG)	Stanpit Recreation Ground (HIP)	Upton Country Park P1 (SANG)	Upton Country Park P2 (SANG)	Bog Lane (SANG)
Pre-works (if existing access)	-1	<b>2010</b>	<b>2012/13</b>		<b>2015</b>			
On opening (post works)	0	<b>2011</b>	<b>2013/14</b>	<b>2012/13</b>	<b>2016</b>	<b>Aug 2015</b>	2018	<b>2017</b>
Second Round	2-3	<b>2012</b>	<b>2015-17</b>	<i>2015/16</i>	2018/19	Aug 2018	2020/21	2019/20
Third Round	5	<i>2015</i>	2018/19	2017/18	2021	2020	2023	2022

\*completed surveys are shown in bold. Those which are completed but did not fit with suggested timings are highlighted in italics.

## 8. Recommendations

8.1 Recommendations for the latest monitoring protocol were listed in a recent review earlier this year (Panter & Liley 2017). However, based on the data collated and analysed here we highlight a small number of further recommendations. These are all concerned with the car park counts:

1. The key recommendation is to ensure all car parks are surveyed. Missing locations greatly reduces the usefulness of the data, not only for that day, but across the whole year, and all other car parks. The data gap this year in car park counts has presented a serious analysis issue for the data which will need to be accounted for in any large analysis of the full dataset.
2. We recommend that annually the number of car parking spaces is reviewed, as this year some car parks over 100% fullness have been noted (e.g. where number counted exceeds the estimated capacity). This auditing could be conducted as part of the transect counts, or conducted on an ad-hoc basis over the year.
3. This year we also recommend that an annual recording form include the recording of details of the car park more generally, such as surfacing, charges, height bars, signage, dog poo bins etc.. Analysis of car parks is best done when we are able to categorise by the different types of car parks. Furthermore, this will also allow a record of any changes over time in car park design, infrastructure or charges to be maintained. This form can also be used to record car parks added to the survey.
4. A further change would be to add columns to more explicitly record when a car park was missed. This would differentiate missed counts from occasions when a car park was closed or inaccessible (e.g. due to a road closure), or there was a zero count. This information is usually stated, but it would be better to explicitly recorded this in a set manner.

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## 10. Appendix

**Table 17: List of all 160 car park locations recorded in car park counts by the location type.**

Car Park Name	Type
Arne 1	Heath & other facilities/ visitor attractions
Avon Heath 1	Heath
Avon Heath 2	Heath & other facilities/ visitor attractions
Avon Heath 3	Heath
Avon Heath 4	Heath & other facilities
Bourne Bottom 5	Heath
Bourne Bottom 6	Heath
Bourne Bottom 8	Heath
Bryantspuddle 1	Heath
Bryantspuddle 2	Heath
Bryantspuddle 3	Heath
Bryantspuddle 4	Heath
Bryantspuddle 6	Heath
Burnbake SANG 1	SANG
Bytheway Field 1	SANG
Canford Heath 1	Heath
Canford Heath 2	Heath
Canford Heath 3	Heath
Canford Heath 3a	Heath
Canford Heath 4	Heath
Canford Heath 6	Heath
Corfe Hills 4	Heath
Creech Heath 2	Heath
Creech Heath 3	Heath
Delph Woods 1	HIP
Delph Woods 2	HIP & other facilities
Dewlands Common 1	Heath
Dewlands Common 2	Heath
Dewlands Common 3	Heath
Dewlands Common 4	Heath
Dewlands Common 5	Heath
Dewlands Common 6	Heath
Dunyeat's 2	Heath
East Holme 1	Heath
Ferndown Common 2	Heath
Ferndown Common 3	Heath
Godlingston 1	Heath & other facilities
Godlingston 2	Heath

Car Park Name	Type
Godlingston 3	Heath
Godlingston 4	Heath
Granby Road Barn 1	HIP & other facilities
Great Ovens 1	Heath
Great Ovens 2	Heath
Great Ovens 3	Heath
Great Ovens 4	Heath
Great Ovens 5	Heath
Ham Common 1	Heath & other facilities
Ham Common 2	Heath & other facilities
Ham Common 3	Heath
Haymoor Bottom 2a	Heath & other facilities
Hengistbury Head 1	Heath & other facilities/ visitor attractions
Hengistbury Head 1a	Heath & other facilities/ visitor attractions
Hengistbury Head 2	Heath & other facilities/ visitor attractions
Holt Heath 1	Heath
Holt Heath 10	Heath
Holt Heath 2	Heath
Holt Heath 3	Heath
Holt Heath 4	Heath
Holt Heath 5	Heath
Holt Heath 6	Heath
Holt Heath 9	Heath
Kinson Common 1	Heath & other facilities
Lions Hill 1	Heath
Lions Hill 2	Heath
Lytchett East 1	Heath
Parley Common 10	Heath
Parley Common 11	Heath
Parley Common 6	Heath & other facilities
Parley Common 6a	Heath
Parley Common 8	Heath
Parley Common 9	Heath
Poor Common 1	Heath
Poor Common 2	Heath
Poor Common 3	Heath
Potterne Hill 1	Heath & other facilities
Ramsdown/SopleyCommon/Troublefield 1	Heath
Ramsdown/SopleyCommon/Troublefield 3	Heath
Ramsdown/SopleyCommon/Troublefield 4	Heath
Ramsdown/SopleyCommon/Troublefield 5	Heath

Car Park Name	Type
Ramsdown/SopleyCommon/Troublefield 6	Heath
Ramsdown/SopleyCommon/Troublefield 7	Heath
Ramsdown/SopleyCommon/Troublefield 8	Heath
Redhill Common 1	Heath
Sandford Heath 3	Heath
Slop Bog 2	Heath
Slop Bog 3	Heath
Stephens Castle 1	Heath
Stephens Castle 2	Heath
Stephens Castle 3	Heath
Stoborough Heath 1	Heath & other facilities
Stoborough Heath 10	Heath
Stoborough Heath 11	Heath
Stoborough Heath 12	Heath
Stoborough Heath 2	Heath
Stoborough Heath 3	Heath
Stoborough Heath 4	Heath
Stoborough Heath 5	Heath
Stoborough Heath 6	Heath
Stoborough Heath 7	Heath
Stoborough Heath 8	Heath
Stoborough Heath 9	Heath
Stoborough SANG 1	SANG
Studland 1	Heath
Studland 2	Heath & other facilities
Talbot Heath 1	Heath
Talbot Heath 4	Heath
Town Common & St Catherine's Hill 1	Heath
Town Common & St Catherine's Hill 2	Heath
Town Common & St Catherine's Hill 4	Heath
Town Common & St Catherine's Hill 5	Heath
Town Common & St Catherine's Hill 6	Heath
Town Common & St Catherine's Hill 7	Heath
Town Common & St Catherine's Hill 8	Heath
Town Common & St Catherine's Hill 9	Heath
Turbary Common 2	Heath
Turbary Common 5	Heath
Turbary Common 6	Heath
Turnerspudde Heath 1	Heath
Upton Country Park main 2	Visitor attractions
Upton Country Park SANG 1	SANG



Car Park Name	Type
Upton Country Park small 1	Visitor attractions
Upton Heath 1	Heath & other facilities
Upton Heath 10	Heath
Upton Heath 11	Heath
Upton Heath 2	Heath
Upton Heath 4	Heath
Upton Heath 5	Heath
Upton Heath 6	Heath
Upton Heath 8	Heath
Upton Heath 9	Heath
Wareham East 1	Heath
Wareham East 2	Heath
Wareham East 3	Heath
Wareham West 1	Heath
Wareham West 10	Heath
Wareham West 11	Heath
Wareham West 2	Heath
Wareham West 3	Heath
Wareham West 4	Heath
Wareham West 5	Heath
Wareham West 6	Heath
Wareham West 8	Heath
Wareham West 9	Heath
Warmwell 1	Heath
Warmwell 2	Heath
Winfrith and Tadnoll Heaths 1	Heath
Winfrith and Tadnoll Heaths 10	Heath
Winfrith and Tadnoll Heaths 11	Heath
Winfrith and Tadnoll Heaths 12	Heath
Winfrith and Tadnoll Heaths 13	Heath
Winfrith and Tadnoll Heaths 14	Heath
Winfrith and Tadnoll Heaths 15	Heath
Winfrith and Tadnoll Heaths 2	Heath
Winfrith and Tadnoll Heaths 3	Heath
Winfrith and Tadnoll Heaths 4	Heath
Winfrith and Tadnoll Heaths 5	Heath
Winfrith and Tadnoll Heaths 6	Heath
Winfrith and Tadnoll Heaths 7	Heath
Winfrith and Tadnoll Heaths 8	Heath
Winfrith and Tadnoll Heaths 9	Heath

**Table 18: List of the current 73 sensors, shown by site and location type**

Sensor	Site	Location type
ADH1	Dunyeats	Heathland
BHH1	Hengistbury Head	Heathland& Other
BMP1	Meyrick Park	HIP& Other
BPH1	Pugs Hole	HIP
BSV2	Stour Valley	HIP
BSV3	Stour Valley	HIP
BTC1	Turbary Common	Heathland
CCB1A	Chewton Bunny	HIP
CSCH1	St Catherines Hill	Heathland
CSP1	Stanpit	HIP
DAH1A	Avon Heath Country Park Birch Rd	Heathland
DAH2	Avon Heath Country Park	Heathland
DAH3A	Avon Heath Country Park Boundary Lane	Heathland
DAH4	Avon Heath Country Park	Heathland
DAH6	Avon Heath CP block	Heathland& Other/Visitor attractions
DAH7	Avon Heath CP car	Heathland& Other/Visitor attractions
DAH8	Avon heath CP - playpark	Visitor attractions
DAH9	Avon heath CP - visitor centre	Heathland& Other/Visitor attractions
DCTWHRX1	Castleman Trailway Horton Rd	Other
DCTWHRX2	Castleman Trailway Horton Rd	Other
DLH1CTW	Castleman Trailway/Lions Hill (central)	Heathland
DSB1A	Slop Bog (Grazing Unit)	Heathland
DSB2	Slop Bog (Redwood Drive)	Heathland
DUH1	Upton Heath	Heathland
DUH2	Upton Heath	Heathland
EMVBR13	Moors Valley CP	Heathland& Other/Visitor attractions
EMVPPA	Moors Valley CP	Heathland& Other/Visitor attractions
HDH1A	Dunyeats Hill	Heathland
HFC2A	Ferndown Common	Heathland
HFC3	Ferndown Common	Heathland
HFC4	Ferndown Common	Heathland
HFC5	Ferndown Common	Heathland
HGO1	Great Ovens	Heathland
HGO2	Great Ovens	Heathland
HL1A	Lytchett	Heathland
HPC1A	Parley	Heathland
HPC3A	Parley Common	Heathland
HTC1	Town Common	Heathland
NSH5	Stoborough Heath	Heathland
PBV2	Bourne Valley	Heathland

Sensor	Site	Location type
PBV3	Bourne Valley	HIP(& heathland)
PCA1	Canford Heath	Heathland
PCA4	Canford Heath	Heathland
PCA5	Canford Heath	Heathland
PCA6A	Canford Heath	Heathland
PDW1	Delph Woods	HIP
PHC1	Ham Common	Heathland& Other
PHC3	Ham Common	Heathland
PHC4	Ham Common	Heathland
PHC5	Ham Common	Heathland
PHO1	Holes Bay	HIP
PLW1	Upton Heath Longmeadow Lane	Heathland
PTH3	Talbot Heath	Heathland
PTH5	Talbot Heath	Heathland
PTH6	Talbot Heath	Heathland
PUP1	Upton Country Park	Visitor Attractions
PUS1	UCP SANG (woods)	SANG
PUS2	UCP SANG (pony d)	SANG
RB1	Burnbake Campsite SANG	SANG
WTH1	Tadnoll Heath	Heathland
WUH1	Upton Heath	Heathland
WWH1	Winfrith Heath	Heathland
WWH2	Winfrith Heath	Heathland
PBL1	Bog Lane	SANG
DAH5	Avon Heath CP	Heathland
DAH6	Avon Heath CP block	Heathland& Other/Visitor attractions
DAH7	Avon Heath CP car	Heathland& Other/Visitor attractions
DAH8	Avon heath CP - playpark	Visitor attractions
DAH9	Avon heath CP - visitor centre	Heathland& Other/Visitor attractions
BSV1	Stour Valley	HIP
BSV2	Stour Valley	HIP
BSV3	Stour Valley	HIP
BSV4	Stour Valley	HIP

**Table 19: Full data report of all sensors which have been deployed in monitoring history.**

Site code	First-data	Last-data	Data coverage (years)	Months since last data	Total filtered days of data
ADH1	23/06/2016	10/05/2017	0.9	2.5	319
BHH1	16/06/2008	10/05/2016	7.9	14.7	2634
BHH2	07/08/2009	02/01/2014	4.4	43.3	1480
BHH3	07/08/2009	09/09/2015	6.1	22.8	1947
BKC1	28/10/2008	20/10/2009	1	94.5	356
BMM1	10/02/2010	17/02/2010	0	90.5	6
BMM2	10/02/2010	25/09/2012	2.6	58.8	459
BMP1	12/02/2009	26/03/2017	8.1	4	2847
BMP2	14/08/2009	19/05/2011	1.8	75.3	640
BPH1	12/02/2009	26/03/2017	8.1	4	2356
BSV1	26/01/2015	08/10/2015	0.7	21.9	67
BSV2	26/01/2015	03/04/2016	1.2	15.9	431
BSV3	26/01/2015	02/04/2016	1.2	16	430
BSV4	27/01/2015	04/04/2015	0.2	28.1	340
BTC1	27/10/2008	11/05/2017	8.5	2.5	2778
CABMX1	18/12/2007	16/02/2009	1.2	102.7	425
CABMX2	18/12/2007	14/10/2011	3.8	70.4	1262
CBCCG1	13/11/2009	23/06/2011	1.6	74.1	464
CCB1	15/03/2009	23/06/2011	2.3	74.1	309
CCB1A	26/01/2011	16/04/2017	6.2	3.3	1572
CSCH1	01/04/2008	08/05/2017	9.1	2.6	3210
CSCH2	04/06/2008	17/01/2011	2.6	79.4	727
CSP1	21/05/2012	11/10/2016	4.4	9.6	1434
CSS1	19/10/2011	30/10/2012	1	57.6	375
DAH1	24/06/2008	01/04/2011	2.8	76.9	910
DAH1A	03/02/2011	25/05/2017	6.3	2	2285
DAH2	31/03/2009	25/05/2017	8.2	2	2910
DAH3	17/09/2008	10/08/2010	1.9	84.7	690
DAH3A	08/11/2010	20/04/2016	5.5	15.4	1974
DAH4	28/05/2009	11/11/2016	7.5	8.5	2581
DAH5	30/04/2012	06/04/2013	0.9	52.4	290
DAH6	04/02/2015	06/04/2017	2.2	3.7	701
DAH7	04/02/2015	06/04/2017	2.2	3.7	788
DAH8	22/12/2016	06/04/2017	0.3	3.7	104
DAH9	22/12/2016	06/04/2017	0.3	3.7	104
DCTW1SH	21/10/2008	23/06/2009	0.7	98.5	244
DCTWHRX1	24/10/2008	14/04/2017	8.5	3.4	2720
DCTWHRX2	04/06/2012	27/03/2017	4.8	4	1304
DCTWHRX3	31/03/2009	18/03/2012	3	65.2	1075

Site code	First-data	Last-data	Data coverage (years)	Months since last data	Total filtered days of data
DCTWLHX1	24/10/2008	03/02/2011	2.3	78.8	427
DCTWLHX2	31/03/2009	26/04/2014	5.1	39.5	1727
DCTWLHX3	31/03/2009	26/04/2014	5.1	39.5	1510
DCV1	04/11/2010	29/06/2011	0.6	73.9	236
DLH1CTW	25/06/2008	27/03/2017	8.8	4	2852
DS1	13/02/2009	18/05/2009	0.3	99.7	93
DSB1	31/03/2009	22/06/2009	0.2	98.5	82
DSB1A	25/08/2010	27/03/2017	6.6	4	1899
DSB2	31/03/2009	09/06/2016	7.2	13.7	2607
DTWHRX2A	23/11/2010	17/04/2013	2.4	52	788
DUH1	12/03/2009	10/01/2017	7.8	6.5	2777
DUH2	06/04/2009	21/03/2017	8	4.2	2507
EMVBR13	11/08/2010	24/05/2017	6.8	2.1	2327
EMVPP	11/08/2010	01/09/2011	1.1	71.8	351
EMVPPA	14/12/2013	24/05/2017	3.4	2.1	1116
HDH1	22/08/2007	21/10/2007	0.2	118.8	59
HDH1A	29/07/2009	14/04/2016	6.7	15.6	1596
HFC1	12/03/2008	09/04/2011	3.1	76.6	945
HFC2	12/03/2008	12/11/2009	1.7	93.7	606
HFC2A	30/01/2011	20/03/2017	6.1	4.2	2224
HFC3	07/03/2008	09/04/2017	9.1	3.6	3302
HFC4	12/03/2008	09/04/2017	9.1	3.6	3297
HFC5	12/03/2008	23/05/2016	8.2	14.3	2832
HGO1	16/03/2008	25/05/2017	9.2	2	2751
HGO2	22/07/2008	10/05/2017	8.8	2.5	3165
HL1	06/03/2008	26/06/2015	7.3	25.3	2590
HL1A	26/07/2016	03/05/2017	0.8	2.8	278
HPC1	07/03/2008	15/05/2017	9.2	2.4	2679
HPC2	12/03/2008	06/11/2010	2.7	81.8	845
HPC2A	21/11/2010	24/10/2013	2.9	45.7	814
HPC3	07/03/2008	07/10/2011	3.6	70.6	1201
HPC3A	06/01/2012	09/04/2017	5.3	3.6	1730
HPC4	07/03/2008	05/07/2011	3.3	73.7	1211
HTC1	14/03/2008	08/05/2017	9.2	2.6	2901
HTC2	14/03/2008	04/11/2008	0.6	106.2	234
NSH1	08/09/2009	29/01/2016	6.4	18.1	1825
NSH2	08/09/2009	06/11/2013	4.2	45.2	1509
NSH3	08/09/2009	25/02/2015	5.5	29.4	1893
NSH4	08/09/2009	16/12/2015	6.3	19.6	2187
NSH5	08/09/2009	29/04/2017	7.6	2.9	2130



Site code	First-data	Last-data	Data coverage (years)	Months since last data	Total filtered days of data
NSH6	08/10/2009	14/10/2014	5	33.8	1302
PBH1	12/10/2011	05/01/2016	4.2	18.9	956
PBV1	22/07/2009	11/07/2012	3	61.3	588
PBV2	19/08/2009	11/05/2017	7.7	2.5	2804
PBV3	12/04/2011	26/03/2017	6	4	2161
PCA1	28/01/2008	27/04/2017	9.3	3	2777
PCA2	25/09/2008	03/01/2013	4.3	55.5	1279
PCA3	04/02/2008	06/02/2013	5	54.3	1691
PCA4	09/09/2009	09/05/2017	7.7	2.6	2663
PCA5	02/09/2009	09/05/2017	7.7	2.6	2352
PCA6	29/09/2008	15/12/2008	0.2	104.8	76
PCA6A	29/07/2009	27/04/2017	7.8	3	2736
PCA7	13/05/2008	11/02/2010	1.8	90.7	547
PCA7A	23/01/2011	31/07/2014	3.5	36.3	1159
PCH1	14/03/2008	06/03/2011	3	77.8	993
PDW1	04/11/2010	27/04/2017	6.5	3	2349
PHB1	02/06/2009	27/09/2012	3.3	58.7	761
PHC1	13/08/2009	04/05/2017	7.7	2.7	2553
PHC3	18/05/2009	03/04/2017	7.9	3.8	2440
PHC4	14/10/2008	20/03/2017	8.4	4.2	2728
PHC5	15/10/2008	20/03/2017	8.4	4.2	2974
PHO1	08/04/2009	20/03/2017	8	4.2	2371
PLW1	12/03/2009	03/05/2017	8.1	2.8	2920
PTH1	25/09/2008	13/05/2014	5.6	39	1294
PTH2	01/07/2009	16/07/2015	6	24.7	1824
PTH3	01/07/2009	11/05/2017	7.9	2.5	2773
PTH4	12/03/2009	10/01/2013	3.8	55.2	1391
PTH5	12/03/2009	11/05/2017	8.2	2.5	2532
PTH6	12/03/2009	11/05/2017	8.2	2.5	2965
PUP1	08/04/2009	05/05/2017	8.1	2.7	2558
PUP2	04/08/2008	01/08/2014	6	36.3	1907
PUP3	04/08/2008	20/10/2015	7.2	21.5	2458
PUS1	05/08/2015	05/05/2017	1.8	2.7	461
PUS2	05/08/2015	03/05/2017	1.7	2.8	632
RB1	01/06/2015	25/05/2017	2	2	730
WTH1	21/01/2014	30/05/2017	3.4	1.9	1217
WUH1	10/12/2007	21/04/2017	9.4	3.2	3183
WWH1	21/01/2014	30/05/2017	3.4	1.9	1217
WWH2	21/01/2014	28/05/2017	3.4	1.9	1216