



# Analysis and presentation of IPF monitoring and projects to inform the Heathland DPD



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# footprint ECOLOGY

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## Summary

A range of measures, implemented through the Joint Dorset Heathlands Interim Planning Framework (IPF), has now been established as mitigation for new housing development within 5km of the Dorset Heaths. These measures – such as enhanced access facilities away from the heaths, or management measures on the heaths – are designed to reduce the impacts of increased recreational pressure and other urban impacts on the designated European sites.

Following the inception of an IPF monitoring strategy in 2007, a number of monitoring initiatives have been established. These include a network of automated visitor counters, car park counts, a programme of visitor questionnaires, incident reporting and monitoring of the three annex 1 breeding bird species. This report presents an overview of the results of these initiatives and a snapshot of the results at this stage in context with a review of relevant recently published literature. The report has been commissioned in order to provide information to inform the emerging Joint Dorset Heathland Development Plan Document (DPD), which will succeed the IPF.

Annex I bird numbers have been increasing but there have been fluctuations. The impact of the recent cold winter 2009/2010 in particular may have had an impact for Dartford warblers within England as a whole. Detailed studies in Dorset have confirmed impacts of recreation on nightjar, woodlark and Dartford warbler, indicating that disturbance and urban development is currently having an impact. Studies elsewhere in the UK have shown different results in the impacts of access on the Annex I bird species. This would suggest that the impacts of disturbance are therefore site specific, indicating that mitigation measures should be tailored and site specific too. There is also more recent information on cat predation, indicating for Dartford warblers in particular, that cat predation may be a particularly serious issue on some sites.

The need for strategic mitigation and standard approaches to avoidance (such as exclusion zones around SPAs) has been accepted elsewhere, for example at the Thames Basin Heaths SPA and there is therefore precedence to support the strategic approach in Dorset. We give examples within the report. The use of a 400m exclusion zone for residential development around heathland sites has been widely adopted around the Thames Basin Heaths SPA and the Breckland SPA, and in both cases the approach has been widely tested at examination etc.

Data from other sites outside Dorset has revealed people travelling considerable distances to reach heaths – often over 5km. Data from the Dorset Household Survey indicated that different sites have a different ‘draw’. Across all sites the number of people visiting on foot was roughly the same as the number of people arriving by car – raising the importance of providing local and targeted mitigation measures. Within the DPD it would therefore seem sensible to assess mitigation and management measures at a local level– i.e. heath-by-heath scale.

The 400m boundary is a solution based on the need to limit impacts to the heaths caused by urban effects. This boundary is evidence based and considers the distance travelled by people to visit/access the heaths and other urban effects including a likely increase in access and increased cat predation. The evidence on cat roaming distances remains patchy and is conflicting, although existing literature suggests that they can travel distances greater than 400m. New information is however emerging using GPS units placed on the collars of pet cats. One such study, albeit based on tracking data from New Zealand, suggests that an exclusion zone of 1.2km (around the outside of protected sites) is necessary in urban areas to prevent pet cats from accessing the sites. In rural areas the distance doubled to 2.4km

In Dorset several capital projects have been funded which have improved accessibility to areas of non-heathland adjacent and near to heathlands. On most there were already relatively low levels of public access

but there appeared to be significant opportunity to increase levels by making the sites more attractive. Through the monitoring undertaken we have established that these sites are now well used, but we are not yet able to present conclusive results which demonstrate that the increased use had a commensurate reduction in heathland visits. We describe the complexities in producing these results.

One such project at Dunyeats Heath, involved closing an adjacent layby on a busy road while improving the car park and footpaths at nearby Delph Woods to cater for visitors from the heath. Since project completion the number of cars in Delph Woods car park has increased.

On another project, works were undertaken at Long Meadow Woods to intercept casual walkers from adjacent Upton Heath. The dense understory of vegetation was cleared, the streams were dredged, the Roman road resurfaced and ponds created. After the works were completed a 12% increase in visitor numbers (in comparison to the adjacent areas) was noted. At these particular project sites and several others we know that the number of visitors to the project area has increased but further monitoring is necessary to establish how these projects have influenced the number of visits made to the heaths.

The provision of alternative sites ('SANGs') to intercept and deflect people who would otherwise visit the heaths is an intuitive solution to the problems associated with increased access to the heaths. However, information collected through the monitoring exercise has not yet been able to definitively prove that this is the case. It is therefore important to continue to provide a range of mitigation measures besides SANGs and examine their effectiveness. Some studies of dog walkers have highlighted the benefits and needs of good communication and direct involvement with the dog walking community. Consistent signage and communication to all users may be important.

The various types of activity occurring on heathlands which are of concern and require targeted mitigation include dog walking, off road cycling, den building and unstructured play opportunities. Mitigation measures need to be designed to improve site provision and make open spaces more naturalistic and multifunctional while providing opportunities in which to undertake these and other activities. This approach also ties in to a Green Infrastructure Strategy which covers South East Dorset.

The issues relating to access, people's behaviour in the countryside, the effect of new development and the implications for the nature conservation of European sites are very complex and it may take several years of monitoring to fully understand the effect of both development and mitigation. Monitoring is therefore essential to underpin and check the approaches used.

## CHAPTER BY CHAPTER SUMMARY

### Chapter 2 – Literature review: relevant results from recent publications and on-going studies

- SANGs will need to be large and contain an extensive path network. They should provide extensive tracts of semi-natural or relatively wild-feeling habitat and have good access and parking facilities.
- SANGs will need to target dog walkers, and it will be necessary to simultaneously implement measures on the heaths (such as ensuring dogs on leads) in parallel with provision of alternative sites.
- The effectiveness of SANGs has not been fully demonstrated and there is therefore a need to carefully monitor their effectiveness, understand their functions and ensure that they are just one element in a package of heathland mitigation measures.
- Disturbance and urban development is already having an adverse effect on the European sites.
- Evidence from disturbance studies of Annex I bird species indicates different impacts in different parts of the country, suggesting that disturbance impacts may be site specific and appear to relate to the levels of access per se on different sites. This would lend support to the use of visitor numbers as a key measure of success and a target for monitoring .
- Retaining or promoting dense gorse patches may be an effective on-site measure to reduce disturbance impacts. However this needs to be balanced against fuel loading for fire fighting.
- A number of different local authorities around the UK have now adopted a 400m development exclusion zone around heathland sites and this has become widely accepted.
- Recent studies on cat ranging behaviour indicates that they will roam considerably further than 400m, especially in rural areas. The 400m exclusion zone is therefore unlikely to be entirely effective at preventing increased cat predation as a result of new development.
- More detailed information on where dogs off lead and where cats roam on heathlands would be valuable to identify the scale of impact and highlight means of managing the impacts.

### Chapter 3 – Monitoring results: Strategic monitoring

#### Bird distribution across sites

- The national survey data show the three Annex 1 species have increased, and that the Dorset Heaths continue to support a relatively large proportion of the national population of each species.
- More frequent and continual monitoring of a sample of sites is essential to supplement the national surveys as actual bird numbers are subject to considerable annual variation and therefore, it is integral to the monitoring programme that the annual bird surveys are continued.
- Many additional factors are known to heavily influence the bird numbers over time and only with continual annual monitoring can we further our understanding into what factors drive the observed local and regional fluctuations and how these relate to bird numbers nationally. Only when we understand what drives these variations can we progress to consider the influence of other external factors (disturbance) on bird numbers.
- Analysis of bird trends is required and should compare data between sites and groups of sites. At this stage of the monitoring programme, only inferences at an individual site level can be made between visitor pressure and disturbance to birds.
- It is anticipated that Dartford warbler numbers will be lower this year than last due to the particularly cold winters of 2009/2010 and 2010/2011.

#### Impacts to structure / habitat of site

##### Fire

- Recent evidence continues to show that there are more heathland fires on the urban heathlands than the rural heathlands.
- There has been at least a 68% reduction in the annual number of heathland fires since the start of

the LIFE project (number of fires recorded in 2002 – 2010 when compared to 1990-1998) and may therefore show the effectiveness of measures such as the education programmes and warden's presence.

- Although the number of fires is decreasing, they cause major ecological damage and pose a real threat to the integrity of the Dorset heathlands. Fires cannot be resolved in the same way as potential conflicts between visitor pressure and wildlife as a single event can be particularly devastating. The results are potentially therefore encouraging and lend support for the measures instigated to date.

#### **Visitor behaviour: Direct observation of visitor behaviour and counts of visitors**

- The Open Access Land monitoring is a powerful data set which will allow comparisons between visitor patterns to the Dorset Heathlands with other nationally and internationally important UK sites.

#### **Household survey**

- The household survey provides support to the idea of targeting elements of the DPD to particular sites/areas/heathland blocks. Mitigation measures will need to be tailored to particular locations and circumstances.
- SANGs provision needs to target visitors on foot as well as car visitors, given the high proportion of visitors on foot recorded in the household survey
- The survey highlights that the heaths disproportionately attract dog walkers. SANGs will need to be large and targeted to attract dog walkers who otherwise visit heaths. Quality seems to be important – with SANGs only likely to be effective if able to offer a real alternative to the attractive, extensive and open feel of many of the heaths.

#### **Visitor counts on the heaths and alternative sites**

- Installation of remote sensors should occur at future capital project locations (ideally 6 months to a year) before a project starts to establish the existing level of visits.
- It will be necessary to ensure UHP has the capacity to maintain any newly installed sensors before sensor purchase and installation.
- It will be necessary to define the length of time sensors should remain in-situ following alternative greenspace enhancements (at least 5 years recommended).
- It is necessary to derive a method to convert sensor counts to an index of visitation. At present the data simply show the number of 'hits' for each sensor, and group size etc. may vary between sensor locations.
- Over the long term it will be ideal to gradually map visitor routes from observations and interviews at sites to assist with the interpretation of sensor data.
- There are gaps in the existing sensor network. The ideal in the medium term will be to work towards the installation of remote sensors across all Dorset heathlands blocks at the most heavily used access points and revisit the distribution of remote sensors across sites. At present only two semi-rural sites have sensors installed.
- Direct baseline monitoring where there are current housing allocations or anticipated development will be necessary.
- Keep under review new monitoring methods such as the use of sensors to monitoring visitors on bicycles and horse riders.

#### **Simultaneous car park counts**

- The Dorset household survey showed that 50% of visitors to the heaths arrive by car and 50% by foot. The coordinated car park counts provide an indication of the spatial distribution of 50% of the visitors to the Dorset heathlands.
- In the long term changing car parking facilities could be used as a tool to redistribute or redirect people across sites. However long term data are required to exactly understand the implications of manipulating car parking facilities and how this could be achieved.
- The car parking locations on the rural heaths are concentrated around certain access locations

whereas on the urban heaths car parking is more diffuse. This would suggest that redistributing car park spaces is likely to be more effective in rural locations, where parking options are more concentrated and limited.

- It is important to ensure that the simultaneous car park counts continue over Bank Holidays, weekdays and weekends. Five years worth of data will be required to confidently identify baseline visitation and any seasonal, weekly and daily trends.

#### **Casual car park counts**

- The number of cars recorded through the casual counts has revealed distinct seasonal patterns.
- With long term data it should be possible to identify the car parks which are most heavily and regularly used.

#### **Chapter 4 – Consideration of the monitoring strategy itself**

- Setting up and establishing a coordinated monitoring programme has taken longer and more resources than anticipated. A baseline data set for coordinated monitoring has been established.
- Monitoring is critically important, and the results of the monitoring will be necessary to refine mitigation measures, determine the success of mitigation and identify where additional measures are required. Given the scale of the project and the volume of data collected it is necessary to make sure the data collection and handling is streamlined so that it is efficient, up to date and analysis can be conducted. We therefore recommend:
  - Existing bird data are reviewed as a priority.
  - Breeding success of nightjars is undertaken as a research project.
  - Perceptions survey is deemed a lower priority than other elements of the monitoring strategy and should be conducted near the end of the IPF period.
  - A strategic data collection and handling role is created. This could either be subcontracted to an external body or a dedicated monitoring post created within the partnership.
  - New housing records are submitted to DERC by all local authority partners and stored centrally.
  - Descriptions of all project work carried out as part of the IPF should be stored centrally in a standardised fashion, and details of past and future projects are recorded in a consistent format and submitted to DERC.
  - Dissemination of results to a wider audience.
  - At present the data gathered is comprehensive and all encompassing and should gradually move to a more tailored and selective monitoring programme.
  - Core sites for long term monitoring data should be identified.
  - It is anticipated that five years of monitoring data will be required to detect statistically significant trends although general visitation patterns should start to emerge after three years.
  - Monitoring of sensitive wildlife species should be extended to cover other Annex listed species for which a pilot project needs to be funded.

#### **Chapter 5 – Capital projects**

- SANGs with access points directly onto heathland could actually increase the footfall on heathland if the improvements to the alternative space bring new visitors to the area. Adequate visitor monitoring needs to be undertaken to ensure the project will either shorten or deflect visitor routes on the heathland.
- Promotion of new alternative spaces should be targeted at existing local users, especially dog walkers and not general residents so as not to encourage a higher proportion of dog ownership amongst residents.
- The mitigation projects with complimentary feedback from visitors have been those which have engaged with the community at the early stages of the project and encompassed the needs of the community in the design and improvements to the existing site.
- Baseline visitation data must be gathered by installing sensor counters on mitigation at project inception.



- The future provision of alternative greenspaces should be multifunctional and endeavour to link with existing resources to cater for dog walkers, walkers, joggers and cyclists who prefer to take longer routes.
- The household survey data could be used to identify the areas where high densities of people regularly make visits to sensitive areas, especially to dog walk. Identifying sites suitable for use as alternative greenspaces should be prioritised as should improvement works to existing greenspace areas.
- Mid to Long term project monitoring should be included for all future projects.

#### **Chapter 6 – Overall mitigation project conclusions and recommendations**

- Tighter protocols on monitoring are necessary to ensure consistency and rigor.
- All monitoring should be centrally managed.
- Data storage should be managed and maintained by a single partner.
- Data collection for capital projects should place as much emphasis on monitoring visitor behaviour at mitigation and heathland site before completion as monitoring post project completions.
- Capital projects monitoring should be tailored to suit the project. It may not always be appropriate to conduct extensive visitor surveys.
- Partners to consider what user type each project hopes to target and from where and provide estimates of the number of visitors it would hope to deflect. This would show understanding of current visitation patterns.
- There is a need to identify where the monitoring should continue in the mid to long term and when the monitoring programme should look to move from comprehensive to selective. The progressive results of the monitoring programme should be used to inform these decisions. Of critical importance will be the differences between visit patterns and sensitive wildlife distribution on the rural and urban heaths.
- Traditionally countryside staff have not engaged with dog walkers or off road cyclists from a positive point of view and a proactive educational approach should be developed with local visitor groups to help them gain a better understand of why they are being asked to modify their behaviour.
- To date only passive measures have been used to deflect visitors from the heaths and no active measures have been taken to encourage visitors to use SANGs. Byelaws could be brought forward (such as the requirement to keep all dogs on leads; or to close permissive bridleways at sensitive times of the year) to widen their countryside visits to less sensitive areas. Should these be implemented, comprehensive monitoring should be undertaken to evaluate their effectiveness in comparison and in combination with passive measures.
- The use of access management could also prove another useful tool to deflect visitors to alternative sites to limit footfall on the heaths.
- Exploring how and when to implement active and access management measures to discourage visitors from the heaths at sensitive times of the year should be trialled and comprehensively monitored at sites with a good provision of alternative recreational areas nearby. The ability of these techniques and the SANGs to absorb the behaviour most likely to cause disturbance to sensitive species can be evaluated.

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# 1. Introduction

## Overview

- 1.1 This report has been commissioned to inform the production of the Joint Heathland Development Plan Document (DPD) which will set out how the heathlands of south-east Dorset will be protected from development and urban pressures in the period 2011-2026. The DPD will be adopted by all relevant local authorities within the sub-region.
- 1.2 The Dorset Heaths comprise a series of fragments of heathland that stretch from Warmwell in the west across to the River Avon and the Dorset/Hampshire border. In the east, many of the heaths are rural in character within an agricultural or forestry setting. However, many are also much more urban, sitting in very close proximity to the conurbations of Poole and Bournemouth. The heaths form a large number of individual SSSIs (43), which in turn are components of wider European and international designations that include SPA, SAC and Ramsar. The majority of emerging residential development will come from new housing in the form of small scale applications, with a small number of larger proposals. The larger proposals will be expected to provide their own mitigation measures. The existing mitigation projects and approaches outlined in the DPD will provide larger proposals with a scope and context of required measures. The key issue for the DPD to address is how to ensure the protection of these sites from the in-combination effects of small scale urban developments.
- 1.3 Development pressure across the sub-region is currently reflecting national trends but is likely to be high, and in order to ensure protection to the European sites from development it is recognised that strategic measures are necessary to prevent adverse effects on the European Sites. An Interim Planning Framework (IPF), established in 2007, has been facilitating these measures. Alongside the IPF an impressive level of monitoring has been taking place, following a monitoring strategy produced in 2007 and aimed at recording the effectiveness of the measures in place. Now that the IPF draws to a close, to be superseded by the Heathland DPD, it is an opportune time to review the monitoring to date and set out and consider relevant implications for the the DPD.

## Context and Urban issues and the Dorset Heaths

- 1.4 The impact of urban development on the conservation of heathlands in Dorset has long been recognised as a conservation issue. There are of course strong links between the presence of the heaths and the presence of people in the landscape. We know much about the context and vegetation history of the Dorset Heaths through work by Haskins and others (Haskins 1978; Cox & Hearn 1990), who have shown that the heaths developed from open woodland (of oak and hazel) in which heather was a significant component. The precise cause of the ecological change is not known but was related to the agricultural activities during the Bronze Age. From the Bronze Age to the 18th century there was little else but heathland in the core area of the Poole Basin. Heaths provided some rough grazing and fuel from turf as well as other needs and these activities helped to maintain the heath in an open, largely treeless, condition. Wareham, Christchurch and Poole would have been the only significant settlements, and these were on the edge of the heath. This pattern of low intensity use began to change in the late 18th century, with extensive reclamation of heathland for agriculture and the establishment of commercial forestry plantations (Nicholson 1997). Gradual loss of heathland continued through the 19th century with the spread of the town of Bournemouth, yet the extensive open heath (epitomised by Hardy) was still present.

Progressive heathland loss continued in the 20th century; the formation of the Forestry Commission led to another phase of tree planting, urban growth accelerated and after the last war, so too did agricultural reclamation. Estimates of the loss of the Dorset Heaths suggest that 15% of the original extent of the heaths remains (Webb 1980; Webb & Haskins 1980).

1.5 The Dorset Heaths have been the subject of an extensive volume of research and monitoring, and some of this has focused on the effects of urban development. Much conservation effort in recent years has focused on managing heathland sites and preventing further impacts from urban effects. Key publications and other milestones relating to urban issues on the Dorset Heaths are summarised in Box 1.

1.6 We highlight the various reviews of urban effects on the Dorset Heaths (Haskins 2000; Underhill-Day 2005; Liley, Clarke, Underhill-Day, et al. 2006b). These reviews and the large body of previous work provide the foundation for this report and are not repeated here. Given that the last reviews were however published in 2006, there is scope to review what has happened or been published since 2006.

### **Box 1: Milestones and key publications relating to Dorset Heaths and urban impacts**

Classic study by N. Moore highlights the fragmentation and direct loss of heathland (Moore 1962).

Work by CEH highlights impacts of fragmentation and the first heathland survey of Dorset takes place (Webb 1980, 1990; Webb & Haskins 1980; Webb & Vermaat 1990).

1989: Borough of Poole grants itself permission to build on part of Canford Heath, following failure of the SoS to call in a planning application following appeal by the then NCC. This is the last development on a heathland SSSI in Dorset (see Schiemann 1991).

Comparison of old flora records with present day highlights impacts from lack of grazing and cessation of traditional management practices (Byfield, Cox, & Pearman 1995).

On-the-spot appraisal of The Dorset Heaths by the Council of Europe under The Bern Convention: DeMolinaar report to the Council of Europe highlights the urban impacts on the Dorset Heaths (De Molinaar 1998).

Review of heath fires highlights that incidence of heath fires is related to housing, with more fires on urban heaths (Kirby & Tantram 1999).

Paper in British Wildlife provides a review of urban effects on the Dorset Heaths (Haskins 2000).

2001: Development at Holton Heath, involving 1350 houses, rejected at public inquiry due to urban impacts on adjacent heathland.

2001: The Urban Heath LIFE project was established following an award of £1.2 million by the EU LIFE to help combat urban pressures on the Heaths

Analysis showing number of nightjars on heathland sites is related to the number of houses surrounding each site (Liley & Clarke 2002, 2003).

Nightjar fieldwork shows breeding success lower on urban sites and close to footpaths (Murison 2002).

First systematic visitor survey across the Dorset Heaths is undertaken in 2005 (Clarke et al. 2006).

Review of urban effects on heathlands commissioned by English Nature (Underhill-day 2005).

Evidence report commissioned to inform appropriate assessment, includes modelling of future visitor numbers on the Dorset Heaths. Analysis shows that visitor numbers on heaths is linked to the number of houses around heaths (Liley, Clarke, Underhill-Day, et al. 2006).

Models of visitor distribution within heaths used to explore nightjar distributions within heaths. Shows that nightjar territories located in areas with lower visitor numbers (Liley, Clarke, Mallord, et al. 2006).

Woodlark PhD demonstrates that consequence of disturbance for woodlarks on the Dorset heaths (Mallord 2005; Mallord et al. 2006)

PhD study on Dartford warblers highlights high incidence of cat predation and reduced breeding success as a result of disturbance (Murison 2007).

2006: Interim Planning Framework (IPF) established, setting a development exclusion zone for new housing at 400m from the heaths and developer contributions (for new development 400m-5km from the heaths) used to fund mitigation measures. Various initiatives implemented around the heaths.

2006: Dorset Household Survey provides further information on recreational use and patterns of access.

2009: IPF extended to 2011



## The IPF Monitoring Strategy

1.8 The IPF monitoring strategy (Liley 2007) sets out the monitoring elements necessary to coincide the with IPF. The strategy recognised that both the species present and recreational use of the heathlands must be monitored to evaluate the current rates of visitation and distribution of the vulnerable species. With a baseline established, it should be possible to test the effectiveness of measures to mitigate for, or avoid additional urban pressures on European Sites as a result of an increase in housing in south-east Dorset(Liley 2007). Monitoring fell under the following broad areas:-

- Conservation interest : biological recording to show status of interest features
- Impacts to structure / habitat of site
- Visitor Behaviour
- Visitor numbers on heathland and non heathland sites
- Housing distribution in the vicinity of the heaths

1.9 While much of the strategy was focussed on strategic monitoring, it was also recognised that individual projects were required to undertake location specific monitoring relating directly to the project. This monitoring often fell within several of the monitoring recommendations outlined in the strategy (for example, project monitoring could include the installation of automatic counters, car park counts, visitor counts and visitor interviews).

## Structure of this report

1.10 Three sets of information are therefore useful and available to inform the DPD:

- The existing publications and evidence base, most of which has been reviewed elsewhere but can be updated, focusing on the period post-2006.
- Results of strategic monitoring conducted to date across the Dorset Heaths.
- Results from project specific monitoring relating to mitigation projects conducted within the IPF.

1.11 The report has the following sections:

- Literature review (drawing on key publications since the last reviews in 2006)
- Monitoring Data (where we present and summarise strategic monitoring data collected to date)
- Review of the Monitoring Strategy (in which we consider the implications for future monitoring)
- Monitoring of Capital Projects (which sets out project specific monitoring, considered in context with the details of the projects themselves)

1.12 Within this report there are boxed summaries and recommendations at the end of each section to highlight key results and implications for the DPD. A series of appendices provides more detail and additional material, such as raw monitoring data.

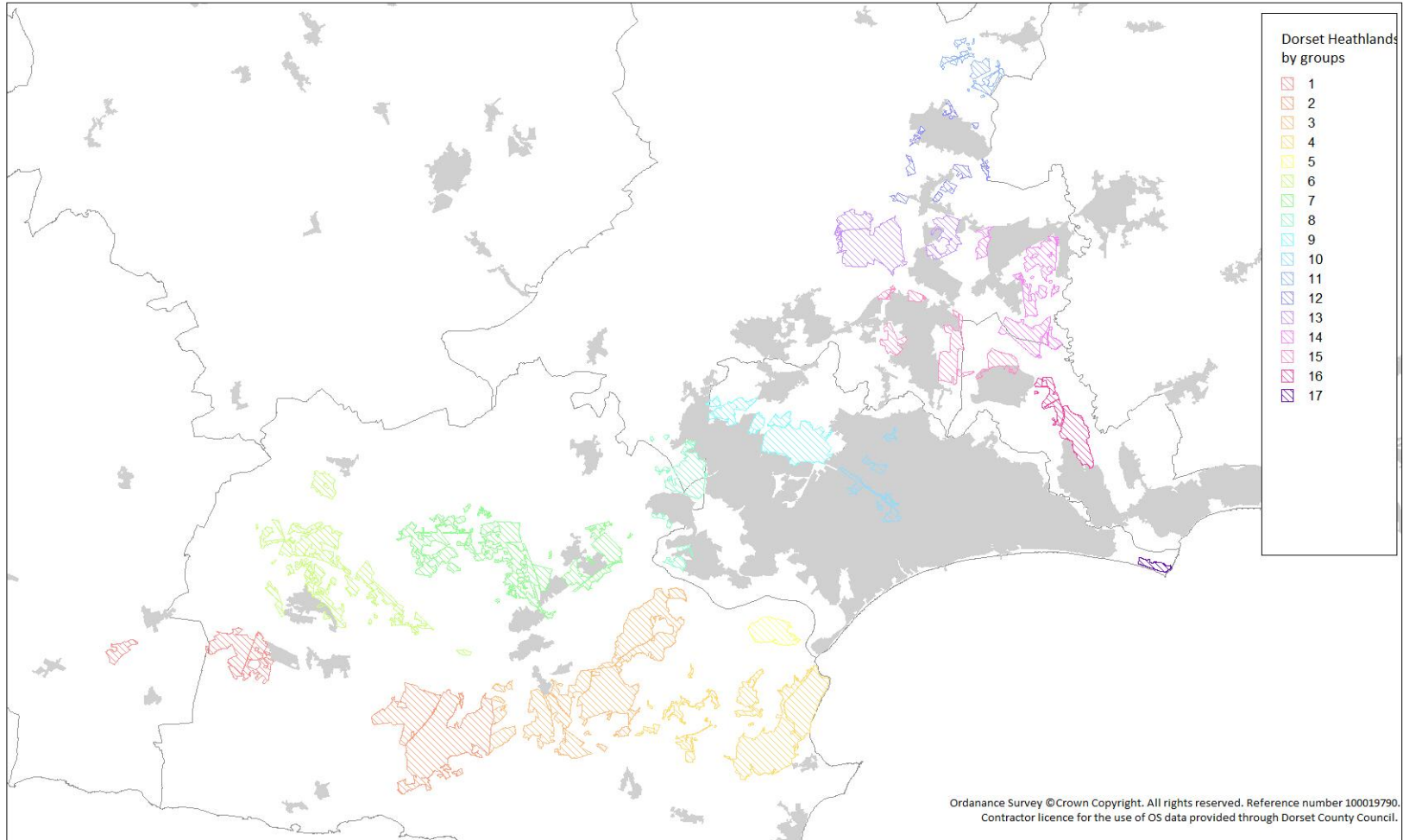
## Heathland Blocks

- 1.13 Throughout the report, and in particular in the Appendices, we consider data at a local level, and rather than focus on individual heaths we refer to heathland 'blocks'. This grouping into blocks was suggested by Natural England and groups similar heaths (in terms of degree of urbanisation, species present etc). There are 17 different blocks (Map 1); these are listed in Table 1 which identifies all SSSI's within each block and will include designated locations which are not specifically referred to in this report.

**Table 1: Comprehensive overview of the SSSI's contained within each heathland block.**

Heathland Block	SSSI Name	SSSI Name	SSSI Name	SSSI Name	SSSI Name	SSSI Name	SSSI Name	SSSI Name	SSSI Name
1	Winfrith Heath	Warmwell Heath							
2	Povington & Grange Heaths	Purbeck Ridge (West)							
3	The Moors	Arne	Poole Harbour	Hartland Moor	Blue Pool & Norden Heaths	Povington & Grange Heaths	Corfe Meadows	Stoborough & Creech Heaths	River Frome
4	Studland & Godlingston	Rempstone Heaths	Thrasher's Heath	Poole Harbour	Corfe Meadows	Brenscombe Heath			
5	Poole harbour								
6	Stokeford Heaths	Turners Puddle Heath	Oakers Bog	Worgret Heath	Black Hill Heath				
7	Morden Bog & Hyde Heath	Holton & Sandford	Wareham Meadows	Poole Harbour					
8	Upton Heath	Ham Common	Poole Harbour	Corfe Mullen Pastures					
9	Corfe & Barrow Hills	Canford Heath							
10	Turbary & Kinson Commons	Bourne Valley							
11	Cranborne Common								
12	Holt & West Moors Heaths	Ebblake Bog	Verwood Heaths	Horton Common					
13	Holt & West Moors Heaths								
14	St Leonards & St Ives Heaths	Lions Hill	Moors River System						
15	Parley Common	Slop Bog & Uddens Heath	Ferndown Common	Moors River System	Hurn Common				
16	Town Common	Moors River System	Avon Valley (Bickton-Christchurch)						
17	Christchurch Harbour								

**Map 1: Local level grouping of the Dorset Heathlands into heathland blocks.**



## 2. Literature Review: Relevant Results from Recent Publications and On-going Studies

- 2.1 In this section we provide an overview of key publications and other material relevant to the emerging DPD. We focus on material published post 2006. A useful summary of relevant information, research reports and planning decisions relating to the Dorset Heaths is available on the Natural England website<sup>1</sup>.

### Heaths and Visitor Access

- 2.2 Since the Dorset Heaths visitor survey a number of other visitor surveys have taken place, specifically aimed at understanding the links between development and recreation. Many of the key heathland areas within southern England, the Brecks (Dolman, Lake, & Bertoneclj 2008), the Wealden Heaths (UE Associates 2009a), the Thames Basin Heaths (Liley, Jackson, & Underhill-Day 2006), Ashdown Forest (UE Associates 2009b), and the New Forest (Tourism South East Research Services & Geoff Broom Associates 2005) now have detailed, tailored visitor studies, often following the methods used in the Dorset work that took place in 2005. A review of heathland visitor surveys is provided by Underhill-Day & Liley (2007).
- 2.3 These studies all reinforce the results of the visitor work in Dorset, highlighting use of sites by local residents and often a high proportion of dog walkers. Differences between sites/studies are probably a reflection of site attributes (relative attractiveness of sites, facilities etc.), the relative availability of other places to visit and the spatial distribution of housing. A notable feature is the distance travelled to different sites, with work in the New Forest (Tourism South East Research Services & Geoff Broom Associates 2005) and Ashdown (UE Associates 2009b) highlighting people travelling considerable distances to reach these particular places. While local people often visit sites regularly for short periods – such as the daily dog walk – some heaths, such as within the New Forest and at Ashdown, also draw people for longer day-trips and even staying tourists. Such visitors behave differently from regular visitors and are drawn to the sites for different reasons. Visitors coming for a day-trip may come from a wide geographic area (essentially meaning that any development in this a wider area may have consequences for access levels). Management issues on such sites, when there is a range of different types of visitor, become potentially more complex (Sharp, Lowen, & Liley 2008).
- 2.4 Natural England commissioned Footprint Ecology to undertake visitor monitoring at Sunnyside in 2009 (Sharp 2010). Sunnyside was opened to public access in 2002 and is a network of small pasture fields contiguous with Stoborough Heath NNR. The visitor monitoring was aimed at exploring the extent to which the site was functioning to reduce visitor use on the heath, as visitors can walk on either heath or the grass fields or across both habitats. The visitor survey was conducted over five days and 60 interviews were carried out. The majority of visitors had come alone, on foot, were walking a dog and stayed for less than one hour. Sunnyside was thought to be a good place to go because it was close to home and was attractive. Most visitors said they either went on both Sunnyside and Stoborough Heath or varied their route to include either one or both areas. Around one in ten visitors stated that they solely visited Sunnyside and not the heath. Of those visitors who had been visiting

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<sup>1</sup> [http://www.naturalengland.org.uk/regions/south\\_west/ourwork/heathlands/default.aspx](http://www.naturalengland.org.uk/regions/south_west/ourwork/heathlands/default.aspx)

Sunnyside since the site was opened to public access, the majority were already visitors to Stoborough Heath. Mapping of the path network showed that there were 4.5 km of paths on Sunnyside and 9.1 km of paths on Stoborough Heath, consequently Sunnyside has increased the path network in the area by about 50%. The mean distance walked for all visitors interviewed during the survey was 2.2km; the longest circular route possible entirely within Sunnyside was 1.7 km, while for Stoborough Heath routes in excess of 8 km are possible with only a small amount of doubling-back near the entrance. These data suggest that creating new green space directly contiguous with heathland blocks can serve to reduce visitor numbers on the heath, but also suggests that in such circumstances many visitors will still continue to use the heath. Also of relevance is the large size of extensive path networks necessary to match the recreation opportunities provided by heathland sites.

- 2.5 There have also been some relevant publications and work on dog walkers (e.g. Edwards & Knight 2006; Barlow & Hart 2008). These have highlighted how dog walkers select sites, choosing sites where the owners perceive that the dog is safe and will have fun. The ability to let the dog off the lead is crucial. Barlow & Hart discuss management implications and highlight the need for clear signage and messages about where dog walkers can go, how they should behave and the need for management bodies to engage with the dog walking community.
- 2.6 The MENE (Monitor of Engagement with the Natural Environment; The national survey on people and the natural environment) survey was commissioned by Natural England to understand how people use, enjoy and are motivated to protect the natural environment and also to provide data that monitors change in use and enjoyment of the natural environment over time at a range of different spatial scales and key groups. The survey has revealed that for the English adult population an average of 69 visits per year are made to the natural environment (TNS Research International Travel & Tourism 2010). There are some issues with the direct comparison of the MENE survey data with previous work but following a calibration exercise with the 2005 England Leisure Visits Survey (ELVS) there has been an estimated 7% increase in volume of visits to the natural environment between 2005 and 2009-10 (TNS Research International Travel & Tourism 2010). This increased number of visits to the natural environment is expected to continue and illustrates the importance of implementing and monitoring effective mitigation measures to ensure there no increase in footfall to heathlands.
- 2.7 We are not able to fully address how those within the 8-16 year old age category use the heaths. Children do not complete questionnaires or respond well when approached by on-site wardens the response of a parent to a questionnaire on behalf of their children may not be wholly representative of their true behaviour patterns. We do know that children play in out door space, create ramps and rails for off road biking, make dens and climb trees etc. We also know that children find the wildness feel of the heathlands exciting, enjoy the informal nature of the area, making ramps and dens in and from the sandy substrate (which is easy to manipulate) and like the fact that they will not always been seen doing it.
- 2.8 Broadly speaking, damage to the heaths from children is either caused by fire(s) or is relatively localised small scale damage from off road biking, ramp and rail creation and den building. Future design of SANGs should incorporate how children use the heaths and the features and qualities of the heaths which to them are attractive. The provision of an informal area of sandy ground which is not overlooked with a few scattered trees where children can create dens, ramps and rails as part of a SANG may well provide a suitable

alternative play area. However, we acknowledge there is an evidence gap to support our current understanding of what children need in terms of the natural environment, how frequently children use different types of outdoor space, for what purposes and why. We recognise children use the heaths and that SANGs need to be multifunctional and coordinated in how they provide for the activities of children.

### **Heathland Birds, Recreational Disturbance and other issues**

2.9 Since 2006 a number of important new studies has been published. These include:

- PhD studies on disturbance to woodlark (J. Mallord) and Dartford warbler (G. Murison) which have taken place in Dorset
- National surveys have taken place for woodlark and Dartford warbler
- Work at Ashdown Forest SPA has looked at the distribution of Annex I birds in relation to visitor numbers
- Detailed monitoring of woodlark and nightjar nests has taken place in Breckland, involving nest cameras

The detail and implications of these studies are discussed below.

2.10 In Dorset two PhD studies (on woodlark and Dartford warbler) have been completed. John Mallord's work on woodlarks has resulted in a number of papers (Mallord, Dolman, Brown, & Sutherland 2007c; Mallord, Dolman, Brown, & Sutherland 2007b; Mallord, Dolman, Brown, & Sutherland 2007a; Mallord, Dolman, Brown, & Sutherland 2007d; Mallord et al. 2008) and has shown that disturbance does effect population size for woodlarks. Mallord showed that birds tended to avoid areas with high disturbance, with low densities of birds occurring in areas of high visitor pressure. However, in these areas the birds bred more successfully, with the suggestion that breeding success is density-dependent; at high densities there is more competition between pairs for food so the chicks were under-weight and nests failed due to chicks starving. Giselle Murison's PhD, on Dartford warblers, recorded birds at high densities across the Dorset Heaths but showed that, in heather dominated territories, birds bred less successfully in areas of high disturbance (above 13 events per hour) (Murison et al. 2007). In such territories birds nested later in the season and as a consequence raised fewer chicks. These impacts of disturbance were not found to be significant in gorse dominated territories, suggesting that gorse may deter visitors (and their dogs) and/or act as a screen between the birds and people. Murison's work also showed impacts of fire for Dartford warblers and on one site at least, recorded a very high incidence of cat predation of chicks.

2.11 In 2006 national surveys took place for both Dartford warbler and woodlark (the last nightjar survey being in 2004). These national surveys result in a complete picture of the number and distribution of the species across the UK. In Dorset all sites are surveyed in a given year. The woodlark survey estimated a total of 3064 territories in the UK (Conway et al. 2009), an increase of 88% since the last survey in 1997, while the range of occupied 10 km squares had increased by 46%. In Dorset the survey estimated 257 territories, some 8% of the total. The Dartford warbler survey results (Wotton et al. 2009) estimated the UK population at 3,214 territories, which represents an increase of 70% since the last survey in 1994. The population estimates may represent a high for recent years as anecdotal information suggests that the succession of cold winters, including a particularly severe cold snap in 2009/10 may have

severely knocked back numbers in some parts of the UK. The national survey results highlight the importance of the Dorset Heaths for this species – the SPA was estimated to hold 821 territories, a quarter (25%) of the UK total. A useful overview of the status of woodlark and nightjar, based on national survey data, is provided by Langston *et al.* (2007), highlighting the role of habitat management and forestry operations in driving population change for these species. The most recent review of Birds of Conservation Concern (Eaton *et al.* 2009) has resulted in both woodlark and Dartford warbler being switched from red to amber listing, while nightjar has remained red listed.

- 2.12 A study on the Dorset and Thames Basin Heaths used visitor predictions and numbers of houses around the heaths to explore possible reasons for those sites that held particularly low numbers of nightjars (Clarke, Liley, & Sharp 2008). Different models were compared using housing or visitor pressure as the predictor variables. The results indicated that, in the absence of development/visitors the Dorset and Thames Basin Heaths would support around 14% more nightjars. The following Dorset sites were identified as having particularly low numbers of nightjars (i.e. at least 20% reduction) compared with those expected from their size and area of heathland vegetation: Talbot Heath, Bourne Valley, Hengistbury Head, Slop Bog & Uddens, Corfe Hills Golf Course, Canford Heath, Upton Heath and Parley
- 2.13 Using visitor data for Ashdown Forest to develop a spatial model of visitor pressure (similar to that generated in previous studies in Dorset and the Thames Basin Heaths) Clarke *et al.* (2010) found no evidence that the distribution of Annex I bird territories showed any pattern in relation to access levels. Comparison with other SPAs in southern England suggested that the number of Annex I birds at Ashdown Forest was low, given the size of the site. The density of visitors was also lower than other areas such as the Thames Basin Heaths.
- 2.14 Extensive work has taken place in the Brecks to look at woodlark and nightjar breeding success in relation to access and predator distributions. This work has been funded by Breckland Council as part of the evidence base to support the Habitats Regulations Assessment for their LDF. Dolman (2010) found no relationship between levels of fox or crow activity and levels of recreational activity, or proximity to car parks, or amount of urban settlement in surrounding buffers, indicating that recreational activity and development are unlikely to increase the activity of these potential predator species. Monitoring of nests by miniature digital nest cameras showed that both woodlark and nightjar were exposed to a wide range of nest predators, including fox, kestrel, adder, hedgehog, badger and stoat. For both woodlark and nightjar there was no evidence of disturbance affecting breeding success. For example nightjar nests were only predated by mammalian predators, with no predation by crow or any other diurnal avian predator (the hypothesis being that disturbance leaves nest vulnerable to predation from diurnal nest predators) responsible for the 13 predation events where the predator was identified. There was no evidence that rates of flushing of incubating female nightjar were higher close to paths, nightjar did not nest further from paths in patches with greater levels of recreational activity, and no instances of flushing by dogs were observed in over 2000 hours of diurnal footage from 22 nests. While these results provide a marked contrast to the Dorset studies, the context is very different. Thetford Forest, where the work took place, is commercial forestry. The Forest is very extensive (some 18,000 ha) and surrounded by relatively low levels of housing (51,000 houses within 5km, compared to 239,000 houses for Dorset and 303,000 houses for the Thames Basin



Heaths<sup>2</sup>). Additional interesting comparison comes from Suffolk, where there is anecdotal evidence of carrion crow predation of woodlark nests from one site with high numbers of visitors (Tomlinson & Button 2009).

- 2.15 The Dolman study makes no attempt to explore settlement patterns in relation to visitor numbers, though it does indicate that most woodlark nests were in relatively quiet parts of the Forest. Also of particular interest was the fact that two (i.e. 4%) of the 47 woodlark nest predation events captured on camera for woodlark nests involved domestic pets. One nest was predated by a domestic cat; this nest was within 80m of an isolated house located within the forest, and within 40m of the boundary of the property. The other event involved a dog. Other anecdotal instances of dog predation of Annex I birds include a report by the Birklands Ringing Group (2005) who describe an instance where an incubating female woodlark was seen to be predated by a dog.

### Mitigation and Avoidance Measures: The Thames Basin Heaths

- 2.16 The Thames Basin Heaths provide many parallels with the Dorset Heaths. The Thames Basin Heaths SPA is designated for the presence of nightjar, woodlark and Dartford warbler and is broadly similar in size to the Dorset Heaths. The individual heaths are fragmented and are subject to heavy visitor pressure, are surrounded by an existing high level of housing and there is considerable pressure for new development. A comparison of the characteristics of the Dorset Heaths and Thames Basin Heaths SPAs is provided in various sources (Liley, Clarke, Mallord, et al. 2006a; Sharp, Lowen, et al. 2008). Key differences are that the Dorset Heaths are also designated SAC, Ramsar and SPA's and contain more, smaller fragments of heathland; the Thames Basin Heaths SPA includes extensive blocks of conifer plantation and most of the Thames Basin Heaths SPA is also within an SAC.
- 2.17 The Thames Basin Delivery Plan was heavily scrutinised in the Examination in Public for the South-east Plan, which took place in 2006. The Inspector's report (Burley 2007), which was advisory only, raised a number of key points:
- The report was critical of the Draft Delivery Plan proposed by the then English Nature; the Inspector's criticisms included the disproportionate blanket inclusion of all housing development within 5km of the SPA, excessive requirements for SANGs and failure to give sufficient weight to other avoidance and mitigation measures.
  - Burley concluded that a significant scale of additional housing within 5km of the SPA would be likely to have a significant adverse effect on the SPA and therefore a strategic avoidance and mitigation strategy was necessary.
  - He recommended that the strategy should only cover larger developments of more than 10 houses within 5 kilometres of the SPA or smaller developments of less than 10 houses within 1 kilometre of sensitive areas of the SPA. Developments of over 50 houses within 5-7 kilometres of the SPA should be individually assessed.

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<sup>2</sup> See Liley *et al.* (2008a) for details of these figures

- Three zones were suggested: 400m, 1 km and 5km, with the 1km and 5km zones defined by travel distance and measured to the edge of the SPA. The 400m zone should be defined by linear measurement but should take into account any permanent barriers to the movement of cats
- Burley suggested a specific level of green space provision, such that SANGs should be provided at 8ha per 1000 new residents and the detailed provisions for the size, quantity and distribution of SANGs be deleted and replaced with more general guidance. Burley was critical of too much reliance on SANGs and highlighted that access management and habitat management were also important.
- Burley's report highlighted the lack of evidence that SANGs would function effectively and the importance of monitoring the effectiveness of the strategy: "There is as yet little quantifiable evidence that the provision of SANGs, together with other measures, will be sufficient to mitigate the impact on the SPA".

2.18 Subsequent to Burley's report, various bodies were critical of his recommendations and there was further refining of the ideas and approach for strategic mitigation. In particular there was criticism of the attempt to create a breakpoint between developments of differing sizes. Natural England received a formal legal opinion (Drabble QC and Machin, 21st March 2007) that allowing less than 10 dwellings to go ahead in the Thames Basin Heaths Delivery Strategy would not be compliant with the Habitats Regulations, would be unworkable and inherently unfair. The opinion raises the problem of larger developments being divided and broken down into many small ones in order "to get under the radar" and states:

2.19 "We have explained above that we do not consider the Inspector's approach to "in combination effects" to be lawful. If he is right that the ecological evidence does not provide a sufficient objective basis for excluding significant effect in the case of large developments more than 1 km away from sensitive areas, it is not possible to see why the same conclusion should not be reached in the case of a large number of small projects. A competent authority that proceeded on the basis that the conclusion should be different would in our view be acting unlawfully"

2.20 The Thames Basin Delivery Framework (Thames Basin Heaths Joint Strategic Partnership Board 2009) was published in 2009 and sets out the recommendations on measures to enable development to take place without a significant effect on the SPA as a whole. By contrast to Dorset, where the local authorities will adopt a joint DPD, in the Thames Basin it is hoped each local authority will prepare, or has prepared its own individual planning document. There are a larger number of local authorities (some 13) and each of these will refer to the Delivery Framework in the preparation of local or joint mini-plans, DPDs and/or SPDs. Key elements within the Framework are:

- There are two zones: 0-400m (no development) and 400m – 5km (mitigation required through developer contributions), measured 'as the crow flies'. Large developments beyond the 5km boundary will require individual appropriate assessment.
- The Framework addresses residential (use Class C3) and staff residential (Use Class C1 and C2A) development

- Avoidance measures and mitigation involve a three pronged approach: SANGs provision, access management and habitat management
- SANGs should be provided by individual local authorities or by groups of local authorities. SANGs can be created through the enhancement of existing sites or the provision of new sites, with 8ha per 1000 residents (calculated using 2.4 residents per household) the required area. SANGs are recommended to be of at least 2ha in size, and located within a wider open space or network of spaces (although smaller spaces may form part of a wider SANG network). A range of types and sizes of SANG should be provided, offering a range of experiences, including large sites. Guidelines for catchments for different sizes of site are given, for example a SANG of 2-12ha will have a catchment of 2km. Developments of less than 10 dwellings do not need to be within a specified distance of SANG provided that a sufficient quantity and quality of SANG land to cater for the consequent increase in population is identified and available in that district or agreed in an adjoining district, and functional in advance of completion
- Access management should be provided by existing landowners and managers with the funding (for perpetuity) provided through developer contributions. The access management should be coordinated strategically, by Natural England working with local authority and land managers, in line with an overarching strategy for access management on the SPA and SANGs. The management should focus on soft measures (as opposed to closures and restrictions) and should include a consistent SPA/SANG message.
- Monitoring should take place strategically and address: i) Habitat condition and birds ii) The provision of SANGs and delivery of dwellings iii) Access Management iv) Visitor Surveys.

2.21 Guidance for the design and selection of SANGs in the Thames Basin Heaths has been produced by Natural England and an updated version of this guidance is provided in Appendix 1: Site Quality Checklist for SANGS (Based on Natural England guidance for the Thames Basin Heaths, modified by Footprint Ecology in 2009). The selection of SANGs in the Thames Basin Heaths to date has largely involved the enhancement of existing sites, and there has been some variation in how sites are chosen and to what extent each site can contribute towards the 8ha per 1000 people standard. For example some local authorities have chosen to use a higher area figure than the 8ha (for example Bracknell has chosen 12ha) and different authorities have chosen different approaches to working out the current and potential capacity of individual sites.

### **Mitigation and Avoidance Measures: Other Sites**

2.22 South-east Dorset and the Thames Basin Heaths are not the only area where development control zones have been put in place to avoid impacts of development on heathland sites or zones within which developers provide funding for mitigation works. Breckland District has established a zone of 1500m around those parts of the Breckland SPA that support stone curlews (an interest feature of the SPA), based on research that has shown that stone curlews occur at lower densities within 1500m of housing (Sharp, Clarke, et al. 2008). Within this zone development is largely excluded and can only take place if it fulfils particular criteria. The stone curlews occur primarily on arable land and in some places occur outside the SPA boundary, therefore a second zone sets out those areas of the District that are within

1500m of nesting stone curlew and fall outside the first 1500m zone. Within this second zone, development needs to provide mitigation specifically targeted towards stone curlews. A third zone – at 400m – has also been established around those parts of the SPA that support nightjar and woodlark. This is a no development zone and has been established for the same reasons as in Dorset and the Thames Basin Heaths. The Breckland Core Strategy was subject to various criticisms from developers (promoting sites within the 1500m zone) but has been formally adopted following a public inquiry. The relevance to south-east Dorset is the precedence of zones based on distance from the SPA including the use of the 400m zone.

- 2.23 In Devon, as part of standing advice to Natural England, David Tyldesley & Associates have provided a useful summary of the regulatory framework associated with impacts of recreation to European sites (Tyldesley 2010). This sets out the difference between impacts that can be associated with a plan or project (and therefore require appropriate assessment and consideration of mitigation and avoidance measures), and impacts that cannot reasonably be associated with a plan or project. The latter should be addressed either through ‘necessary conservation measures’ as required by Article 6(1) or ‘appropriate steps’ as required by Article 6(2) of the Habitats Directive.
- 2.24 Tyldesley highlights how on sites such as the Thames Basin Heaths, walking and dog walking were identified as the main recreational pressures of concern. Dog ownership is known to be associated with a relatively high proportion of households, and the visitor survey data was used to directly inform the zone of influence, making a link between development and increased disturbance. Some other more specialist activities may be less common amongst a typical household, and he uses the example of kite surfing. In such cases it could be argued that it is unreasonable to apply a strategic approach to all development within a zone of influence if “regular” kite-surfing was considered to be an activity associated with say 0.1% of households. Essentially Tyldesley’s recommendations support the need for a detailed understanding of the actual impacts from recreation/development, and clear links between these impacts and new development.

### Cat Behaviour

- 2.25 Information on ranging behaviour of domestic cats and the use of semi-natural habitats by domestic cats remains relatively limited but there have been some important papers published since 2006 and cat behaviour and predation warrants a dedicated section within this report.
- 2.26 On-going PhD work by Vicky Simms at Sheffield University is looking at cat densities and the impacts of cats in urban environments. Details on the research are on the University website<sup>3</sup> and there are conflicting results (Sims et al. 2008). Taking the availability of green space into account, Simms found negative relationships between cat densities and the number of bird species breeding in urban 1 km × 1 km squares. However Simms also reports some (albeit weak) positive relationships between cat density and bird densities, i.e. indicating that higher densities of birds also occur in areas with high densities of cats. Another piece of work from Sheffield (Beckerman, Boots, & Gaston 2007) has modelled bird fecundity and other factors and shown that it is possible for cats to have a marked impact on

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<sup>3</sup> <http://www.shef.ac.uk/aps/apsrtp/sims-victoria/research-project.html>

bird population sizes, even if the reported levels of predation are low. At Reading University another on-going research project<sup>4</sup> has been using GPS devices to track cats, but again as yet no results have been published.

2.27

In a study of cats on the Banks Peninsula, a relatively rural peninsula to the west of Christchurch, NZ. Hansen (2010) used GPS devices to record home ranges and travel distances. From a sample of eight cats, the maximum distance any single cat was recorded travelling from its home was 301m (the second largest distance was 300m). Another study using GPS collars on pet cats in urban New Zealand (van Heezik et al. 2010) found that although cats penetrated adjacent vegetation fragments they did not catch more birds and showed a preference for gardens, suggesting that predation pressure may be reduced where semi-natural vegetation occurs. Cat home range size was constrained by cat density while the number of birds caught was dependent on the density of available prey. Van Heezik *et al.* compared estimates of the number of birds killed by cats at a city scale with the population size of the same species within the city. For six species of bird the number caught was either more than total urban population size estimates or close to lower confidence intervals, leading the authors to suggest that the urban populations for some species could be acting as sinks with source populations located on the city fringe. A study in Bristol (UK) by Baker et al. (2005) also compared cat predation rates to total population size and suggested that *“the predation rates estimated in this study would suggest that cats were likely to have been a major cause of mortality for some species of birds.”* Dunnock, robin and wren were the species highlighted, and for these species at least the impact was such that the populations would be dependent on net immigration from other areas to persist.

2.28

In Australia, concerns about the impacts of cats have led to councils imposing mitigation measures such as cat-confinement zones and areas designated as no-cat zones, but there is apparently little or no research to underpin the size of these zones and no monitoring to test their effectiveness (van Heezik 2010). The only publication that sets out to determine how large a cat exclusion zone should be around sites is Metsers *et al.* (2010) who used GPS tracking data from 38 different cats to look at maximum distances travelled. The results of the study indicate that zones need to be 2.4km in rural areas and around half that distance in urban-fringe locations.

#### Implications for the DPD:

- SANGs will need to be large and contain an extensive path network. They should provide extensive tracts of semi-natural or relatively wild-feeling habitat and have good access and parking facilities.
- SANGs will need to target dog walkers, and it will be necessary to simultaneously implement measures on the heaths (such as ensuring dogs on leads) in parallel with provision of alternative sites.
- The effectiveness of SANGs has not been fully demonstrated and there is therefore a need to carefully monitor their effectiveness, understand their functions and ensure that they are just one element in a package of heathland mitigation measures.
- Disturbance and urban development is already having an adverse effect on the European sites.
- Evidence from disturbance studies of Annex I bird species indicates different impacts in different parts of the country, suggesting that disturbance impacts may be site specific and appear to relate to the levels of access per se on different sites. This would lend support to the use of visitor numbers as a key measure of success and a target for monitoring.
- Retaining or promoting dense gorse patches may be an effective on-site measure to reduce disturbance impacts. However this needs to be balanced against fuel loading for fire fighting.
- A number of different local authorities around the UK have now adopted a 400m development exclusion zone around heathland sites and this has become widely accepted.
- Recent studies on cat ranging behaviour indicates that they will roam considerably further than 400m, especially in rural areas. The 400m exclusion zone is therefore unlikely to be entirely

### **3. Monitoring Results: Strategic Monitoring**

#### **Introduction**

- 3.1 A Monitoring Strategy for the Dorset Heaths was set out by Liley in 2007. This section of the report provides a snapshot of the results and level of monitoring that have been achieved.
- 3.2 A summary of the Monitoring Strategy and the work achieved to date is given in Table 2. The rest of this section considers the results so far (the rows highlighted in grey within Table 2 are those for which data is available) and in particular we focus on any implications for the DPD.

**Table 2: Summary of recommendations from the monitoring strategy made by (Liley 2007) with updates showing which elements have taken place. Rows in grey highlight the data considered in the rest of this section.**

	Title	Description	Current status
1	Bird distribution across sites	Nightjar, woodlark, and Dartford warbler territories mapped across all sites every 5 years and across a selection of sites annually	National surveys: -Nightjar 2004 and 2010 -Woodlark 2006 -Dartford warbler 2006 Surveys on selection of sites: -Nightjar 2008 and 2009 -Woodlark s 2009 and 2010 -Dartford Warbler 2008, 2009 and 2010
2	Nightjar breeding success	Nest monitoring on a small sample of sites, including use of cameras to record extent to which birds are flushed	Not commissioned.
3	Review of existing bird data	Collation of bird counts for all sites between 1991-2001 with the aim of producing key trends for key species over time	Not commissioned.
4	Fire recording	All fire incidences recorded and mapped across all sites. Fires above a certain threshold mapped as polygons to give exact distribution of burns	All heathland fires are now recorded on a central database 'Dorset Explorer' which is managed and maintained by DERC.
5	Fixed point monitoring of paths	Photographs, measurements or path width, compaction and counts of dog faeces at fixed points along paths. Locations stratified to include locations near access points and away from access points	Not commissioned.

6	Direct observations of visitor behaviour and counts of visitors	Questionnaires and counts. Conducted using a set methodology (set time periods etc.) and following a standard protocol. At a sample of access points and within the heaths themselves and at alternative sites	Linked in with individual capital projects but was not conducted systematically between sites.  The Natural England access questionnaire gathered visitor information from the open access heaths.
7	Household Survey	Interview a sample of residents across S-E Dorset to determine which sites (heath and non heath) they visit/have visited in a particular time period	Completed.
8	Visitor counts on heaths and alternative sites	Visitor monitoring established through automated counters across sites, including non heathland sites. Counters set up with the intension of delivery data on visitor numbers over an extended time period	Currently 89 remote sensors in situ across the Dorset Heaths and alternative green spaces.
9	Simultaneous car park counts	Simultaneous counts of cars in a selection of car –parks conducted at set times / dates to facilitate comparison between sites and year	17 simultaneous car park counts have been carried out recording vehicles in 215 locations.
10	Perceptions survey	Repeat of Atlantic Consultants surveys. This is a low priority compared to the other recommendations	Not commissioned.
11	Database of new housing	All new housing recorded in a systematic fashion	Each local authority maintains records of housing.
12	Database management for work within projects	Database set up to record all project work conducted within the IPF showing locations, timing and detailing actual works	Each partner keeps records of works conducted for monitoring projects.
13	Data collection	One organisation or consultant to take overall responsibility for collating data, training project staff, checking and filling in any gaps and reporting annually.	Data has been regularly submitted to Footprint Ecology by some partners.



14	Steering group	Steering group to meet approximately annually to ensure monitoring is taking place to appropriate standards and is approximately covering the projects and project sites	On going.
15	Short write ups	Monitoring data from individual projects documented in short, stand-alone documents, potentially in a form that can be published as conservation evidence in case studies.	Included in this report where data have been made available.
16	Detailed analysis in peer reviewed journals and internal reports	Monitoring data from different projects and different areas combined to produce clear, accurate and well publicised reports	Scheduled towards end of project.
17	Regular conferences workshops and events	Results of monitoring and on-going monitoring presented to local and national audiences, with the aim of maintaining enthusiasm within project staff, highlighting importance of the work and sharing results	On going.

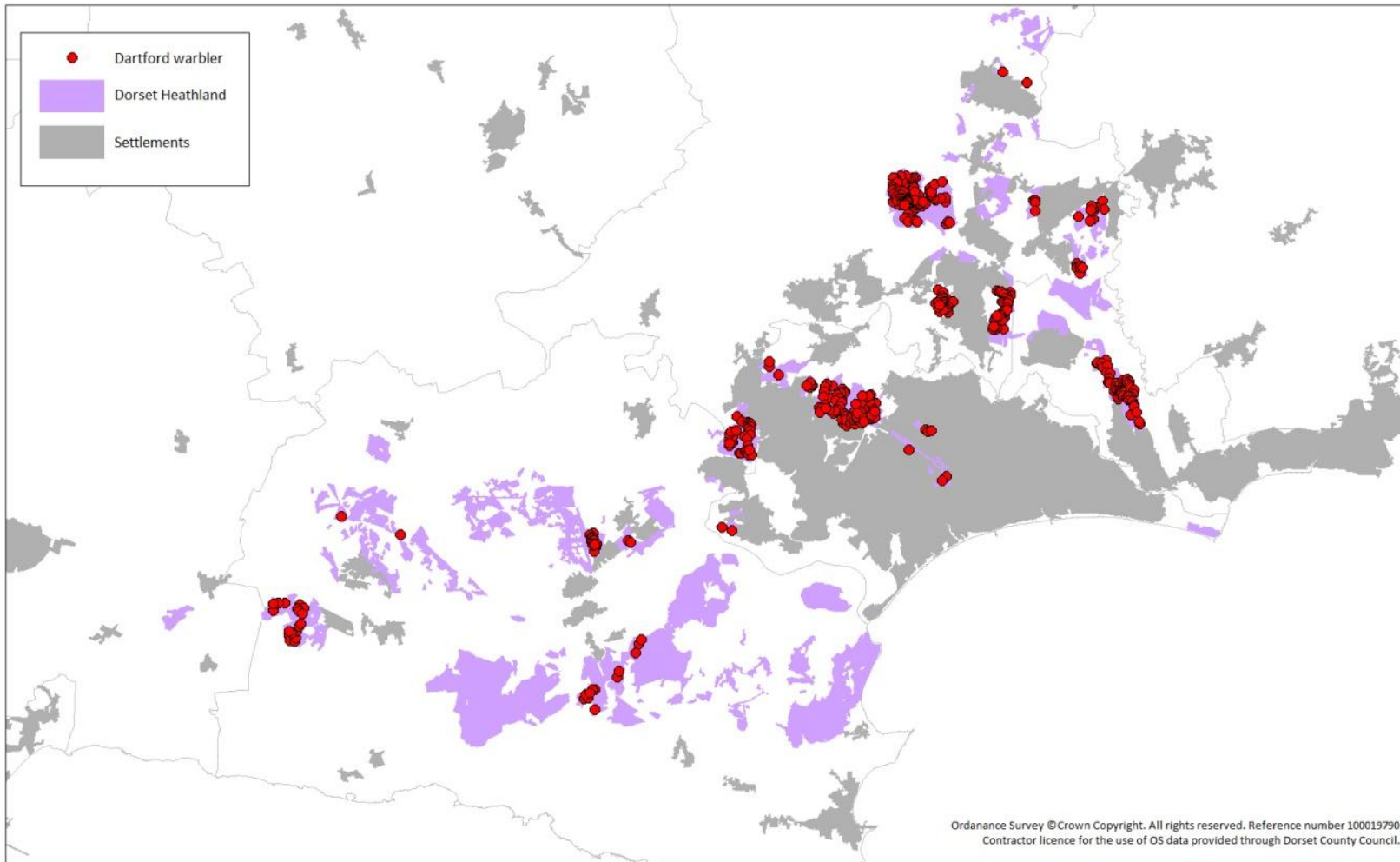
### Bird distribution across sites

- 3.3 The monitoring strategy recommended mapping the territories of nightjar, woodlark and Dartford warbler across all sites every five years; and that a suite of sites should be monitored annually on sites where visitor levels were most likely to change (Liley 2007). From this it should be possible to determine change in numbers and distribution of the birds on sites, and allowing comparison between rural and urban sites and in relation to visitor pressure (Liley 2007).
- 3.4 National surveys for relevant species took place in 2004 (nightjar) and 2006 (woodlark and Dartford warbler). In these years all sites within the Dorset Heaths were surveyed. Additional monitoring has taken place on a selection of sites and has been undertaken by the RSPB, funded through the IPF. These sites are listed in Appendix 2. Nightjar and Dartford warbler were surveyed in 2008 and 2009. Woodlarks were surveyed in 2009. All selected sites were surveyed for woodlark and Dartford warbler in 2010 and in 2010 Natural England also funded a survey of all SSSIs in England for nightjars (the data for this is as yet not available). There is some concern regarding the validity of the 2008 nightjar data as the weather conditions during the survey period were highly unfavourable and it is possible that not all individuals present were recorded.
- 3.5 In 2009 all three annex 1 species were monitored under the IPF and their distributions are shown in maps 2, 3 and 4. Caution should be expressed when interpreting these maps as not all sites were surveyed so a lack of a presence record does not necessarily represent absence if the site was unsurveyed (please refer to appendix 2 for site survey list).
- 3.6 All monitoring has involved a standard methodology with three visits to map territories for the diurnal species and two additional night time visits for nightjar surveys (RSPB 2007) (Conway et al. 2007).
- 3.7 A brief comparison of the most recent national surveys per species shows that the number of territories within the Dorset has increased since the previous national survey and is well above the totals given in the SPA review<sup>5</sup> (Table 3). The national surveys occur roughly every ten years.

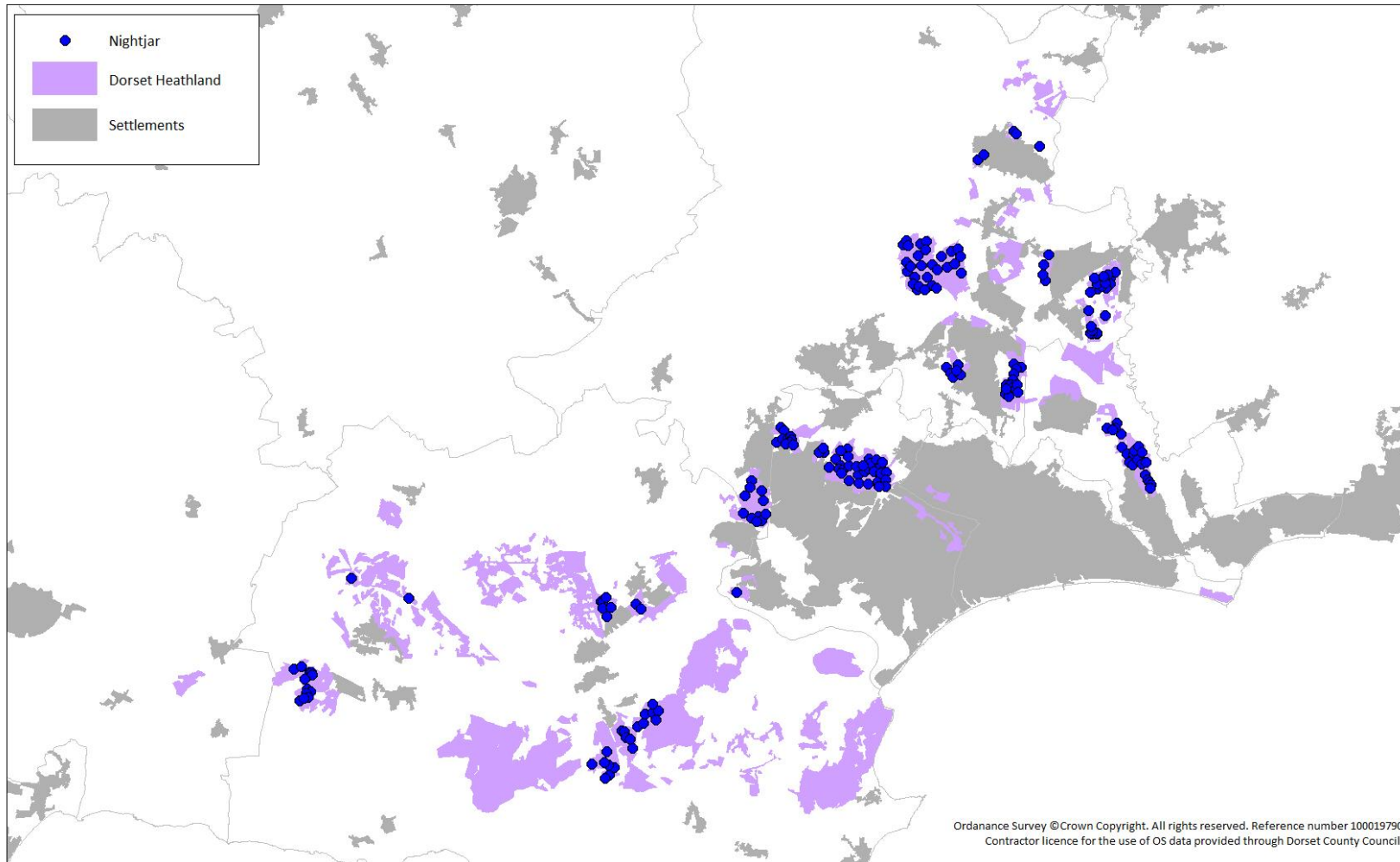
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<sup>5</sup> <http://www.jncc.gov.uk/default.aspx?page=2030>

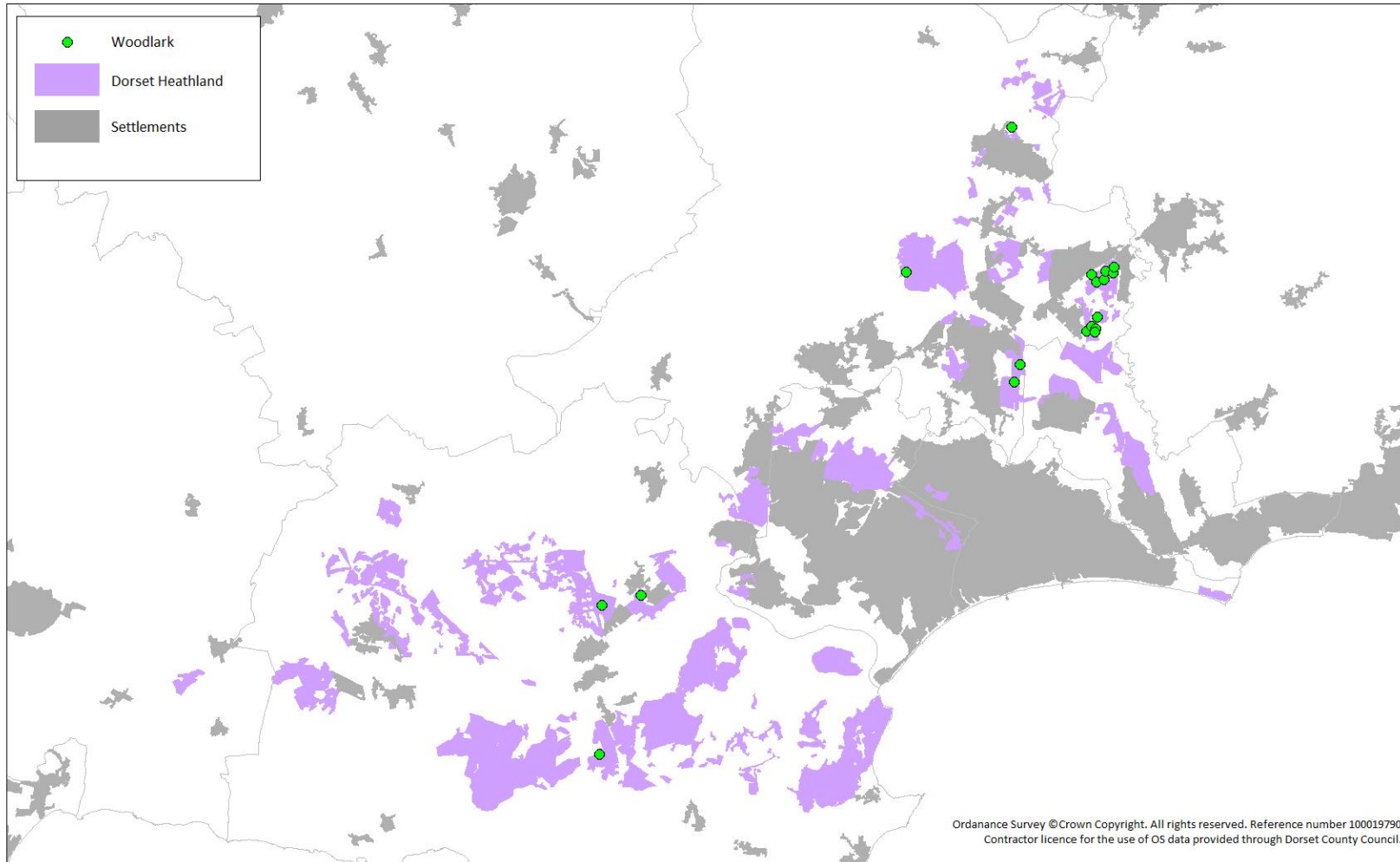
**Map 2: The distribution of Dartford warbler territories across the Dorset Heathlands in 2009.**



**Map 3: The distribution of nightjar territories across the Dorset Heathlands in 2009.**



**Map 4: The distribution of woodlark territories across the Dorset Heathlands in 2009.**



**Table 3. Comparison of the numbers of nightjar, woodlark and Dartford warbler territories on the Dorset Heathlands SPA.**

Species	Number of territories (SPA review )	National survey in mid 1990s		National Survey in mid 2000s		% change between two national surveys
		Number of territories (year)	Proportion of UK pop in Dorset	Number of territories (year)	Proportion of UK pop in Dorset	
Nightjar	386	536 (1992)	17	751 (2004)	18	140
Woodlark	60	106 (1997)	6.5	257 (2006)	9	142
Dartford warbler	418	639 (1994)	38	821 (2006)	27	128

3.8 The ten yearly data are too far apart to confidently determine the extent of urban impacts and disturbance on the Annex 1 species. The national surveys do provide a complete snapshot of all sites and give a national context, they are therefore critically important. Data for individual heathland blocks are summarised in Appendix 3, which gives results for recent surveys as well as the national surveys. Direct comparison of the data outside the national surveys is difficult as the interim surveys do not necessarily survey the entirety of each block.

3.9 It would be useful to present trends and analysis on a site by site or block by block basis with the birds; however the level of data extraction and checking required to do this is beyond the scope of this report. In fact this is one the recommendations within the original monitoring strategy and it requires a dedicated piece of analysis.

3.10 To illustrate the value of annual monitoring data the density of nightjars, woodlarks and Dartford warblers present on two sites within the Dorset Heathlands SPA have been extracted. The data used are a combination of the survey results from the IPF monitoring, the national survey data and results from annual surveys conducted by the RSPB heathland team, summarised in Liley, Richardson, & Davis (2003). The site chosen for comparison are Great Ovens and Parley Common. These were chosen as these had a good coverage of bird data over time. Parley Common is the more urban of the two sites with nearly 4 times as many houses (4787) within 400m of the heathland in comparison to 1218 within 400m of Great Ovens.

3.11 The densities of Dartford warbler on Parley Common appear much lower than those on Great Ovens (Figure 1 and Figure 2). For the three species the highest densities recorded at Great Ovens are consistently greater than the highest densities recorded at Parley. The particularly interesting point is the variation between years on each site. While the national surveys give a snapshot and show an overall increase over c.10 years, in fact looking at specific sites it is clear that numbers do actually fluctuate quite markedly between years.

3.12 The bird data shows that all three Annex I bird species have increased over time. We know that the number of bird territories recorded annually is subject to fluctuation but as yet we are unsure as to what causes this variation and how much of it can be attributed to natural variation, environmental conditions, habitat management or disturbance. The interval

between the national surveys has seen a period of favourable weather conditions for the three species and considerable level of habitat management, both of which will have a positive influence on bird numbers.

### Recommendations

3.13 We strongly recommend analysis of data for nightjar, woodlark and Dartford warbler from 1991 to date across the Dorset Heathlands, deriving trends over time for groups of sites (rural versus urban) and ideally looking at the impact of weather and habitat management. It should be possible to quantify the extent to which bird populations fluctuate annually and in turn this would greatly improve strength of any analysis of the bird data collected under the IPF. We would also suggest that the results from this analysis are used to evaluate the current sampling methodology and improve efficiency.

3.14 We would also suggest that the bird surveys for all three species across all the sites listed in Appendix 2 are carried out annually until funding is secured to analyse the existing bird data.

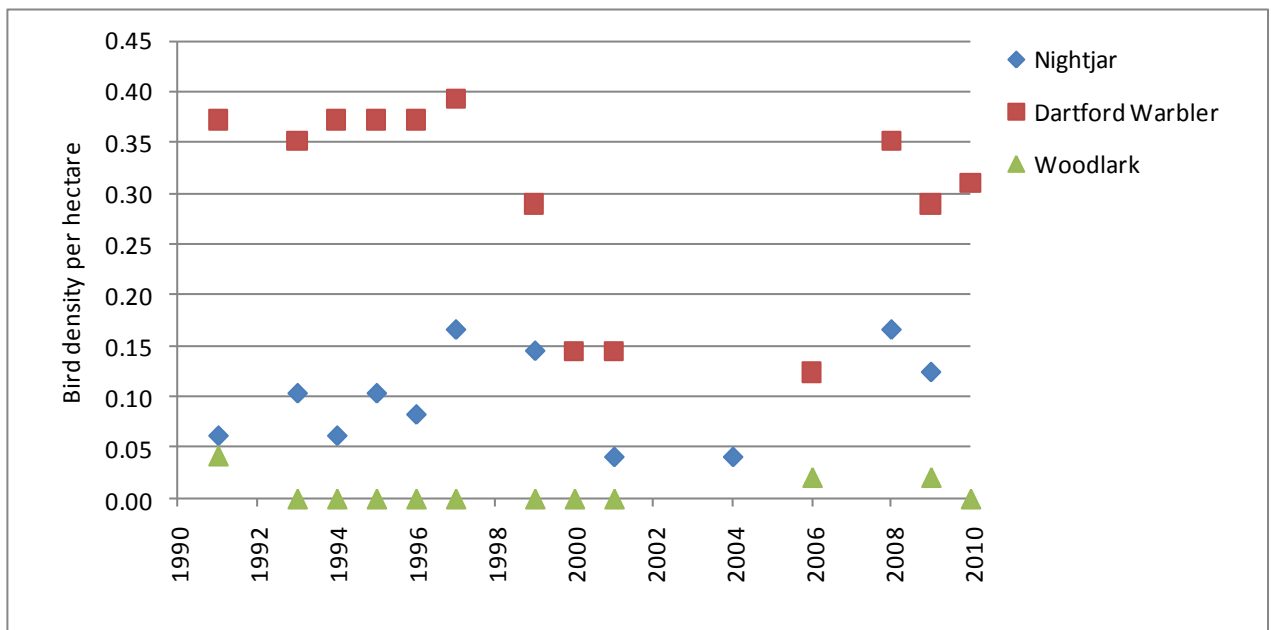


Figure 1. The densities of the Annex 1 bird species at Great Ovens. There are 1218 houses within 400m of the heathland.

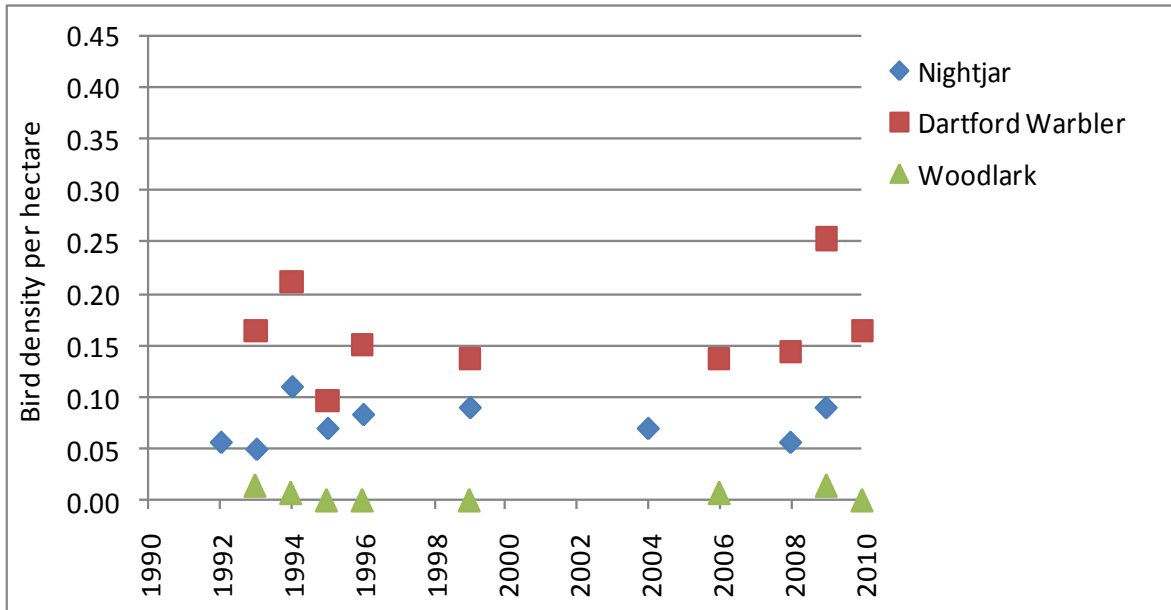


Figure 2: The densities of the Annex 1 bird species at Parley Common. There are 4787 houses within 400m of the heathland.

#### Implications for the DPD:

- The national survey data show the three Annex 1 species have increased, and that the Dorset Heaths continue to support a relatively large proportion of the national population of each species.
- More frequent and continual monitoring of a sample of sites is essential to supplement the national surveys as actual bird numbers are subject to considerable annual variation and therefore, it is integral to the monitoring programme that the annual bird surveys are continued.
- Many additional factors are known to heavily influence the bird numbers over time and only with continual annual monitoring can we further our understanding into what factors drive the observed local and regional fluctuations and how these relate to bird numbers nationally. Only when we understand what drives these variations can we progress to consider the influence of other external factors (disturbance) on bird numbers.
- Analysis of bird trends is required and should compare data between sites and groups of sites. At this stage of the monitoring programme, only inferences at an individual site level can be made between visitor pressure and disturbance to birds.
- It is anticipated that Dartford warbler numbers will be lower this year than last due to the particularly cold winters of 2009/2010 and 2010/2011.



## Impacts on structure / habitat of site.

### Incident Recording

- 3.15 Identified incidents, such as fires, motorcycles, fly tipping, vandalism etc. occurring on heaths within the partnership have been recorded for a number of years on a central database. In 2008 the way the incident data were managed was changed to enable wardens and partnership practitioners to record on a map the details of illegal or potentially destructive activities occurring on the Dorset Heaths. Dorset Explorer is used to map and record all this information.
- 3.16 The consistency of recording instances other than fire and fly tipping (for which evidence is left) between wardens and partners has been identified as a problem by the UHP. Drawing conclusions on whether instances of these events have increased or decreased as a result of the LIFE project would not be wise. However, the protocol for incident recording is currently being reviewed.
- 3.17 There is a great deal of annual variation in the number of fires from the incidents recorded on the Dorset Heaths using 'Dorset Explorer' (Table 4). It can be seen from the shading that for most types of events the highest levels of incidence occurred in the earlier years within the decade (Table 4). In order to determine whether there has been a real decline requires an understanding of the recording consistency between years.

**Table 4: The number of incidents on Dorset Explorer to 31.07.10. The incidents are those recorded and entered onto the database by the UHP wardens and partners. Years with the highest two counts for each row are highlighted in grey.**

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Number of Fires	107	452	158	204	156	61	104	175	117
Area Burned (ha)	65	32	4	24	54	6	6	19	40
Fly Tipping	34	40	9	26	10	42	41	20	17
Motorcyclists	66	107	51	127	29	52	65	49	13
Cyclists	24	38	18	10	11	11	7	6	6
Horse Riders	11	4	1	5	1	7	3	1	2
Number of incidents	242	641	237	372	207	173	220	251	155

- 3.18 Fire is a particularly important impact as it the damage from fires can be very severe. Fires are also perhaps the best recorded incident type. We therefore focus on fires within the rest of this section.

### Fires: overview of results so far

- 3.19 The annual number of fires in Table 4 are records all fire incidents recorded by the UHP some of which may not have occurred on heathlands while the number of fires in Table 5 reflect solely those fires which occurred on the specific areas of heathlands within in block. No obvious relationship was found between the area of heathland burn area and year (Table 4

and Figure 4), and between the number of fires each year and the area burned. For example, in 2003 the median area of heathland burned was low (Figure 3) yet 2003 saw the highest number of heath fires (Figure 4); and Table 5 shows that although there was a high number of fires, they were all small. This unpredictable nature of fire events was also noted by (Rose & Clarke 2005) and Kirby & Tantram (1999) and also suggests that other factors such as recent weather conditions prior to and during the fire may well be associated to the area of each burn and the number of annual fires.

3.20

A statistically significant correlation (Pearson's correlation,  $r_p = 0.83$  and  $P < 0.01$ ) was found between the annual total number of fires (including domestic, commercial, accidental and deliberate) in Dorset and the annual number of fires on the Dorset Heathlands (Figure 4) for all years. When the 2003 data are excluded (high number of fires) the relationship is no longer significant but this may be due to the small sample size. However as Figure 4 shows the annual number of heathland fires mirrors the trend of the total numbers of fires reported in Dorset.

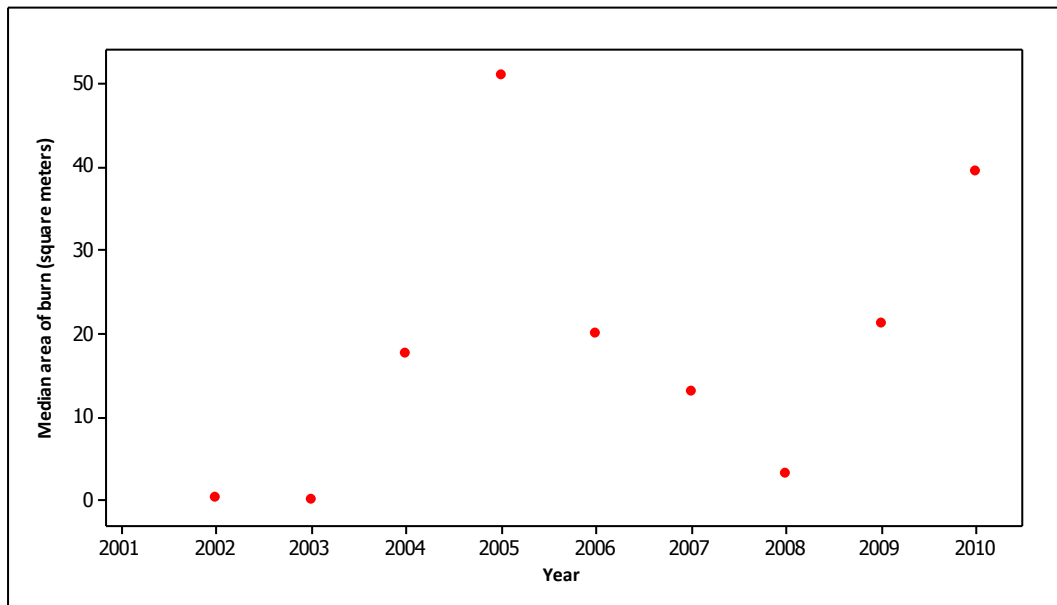
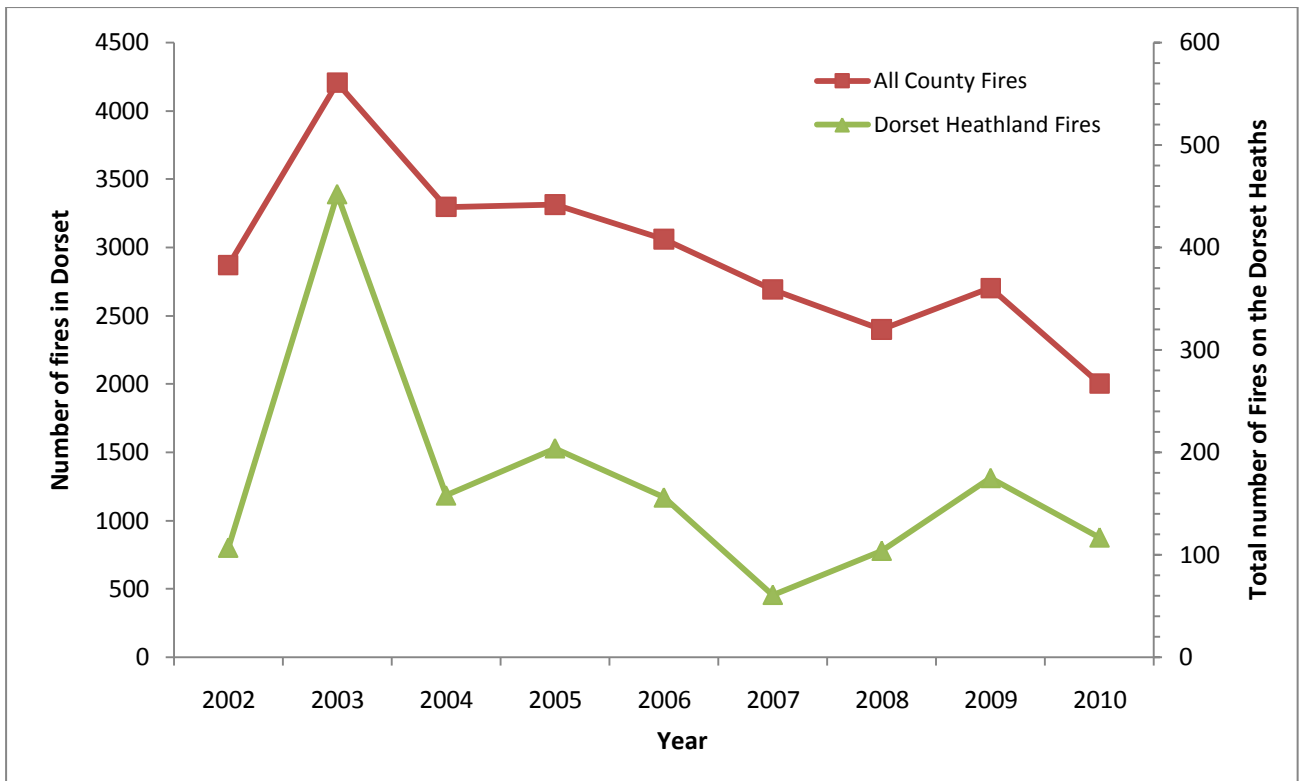


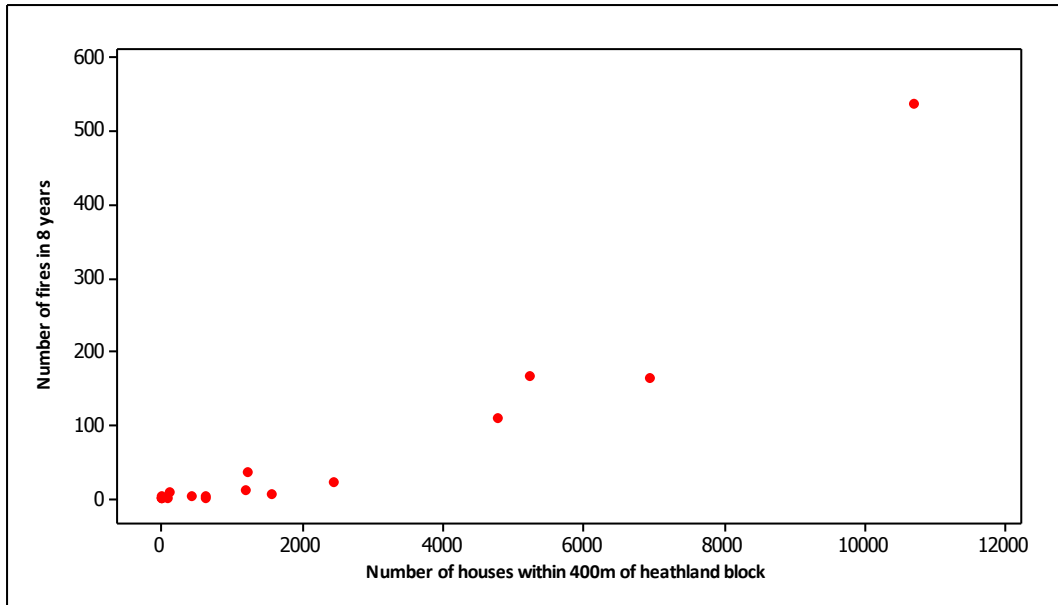
Figure 3: The median area of heathland burned per year in square metres.



**Figure 4: The total number of annual fires recorded in Dorset and the total number of annual fires on the Dorset heaths. The left y axis is scaled to all fires and the right the fires on the Dorset heaths (Dorset Explorer Data).**

3.21 The number of fires and area of heathland lost to fires was also considered per heathland block (Table 5). The initial result is that over the 8 year period between 2002 – 2010, 1066 fires occurred; a 68% reduction when compared with the 3333 fires recorded between 1990 and 1998. The other striking result is that the number of fires between the different heathland blocks varies greatly. This variation has been linked to housing (Kirby & Tantram (1999) and Table 5 also includes the number of houses present within 400m of each heathland block. The greatest number of fires occur on heathland blocks 8, 9, 10 & 15 which all have higher levels of housing within 400m than the other blocks of heathland.

3.22 There is statistically significant relationship (Spearman’s rank correlation  $r_s=0.93$ ,  $n=16$  and  $P<0.0001$ ) between the number of houses within 400m of each heathland block and the number of fires recorded on each block over the 8 year period (Figure 7). Map 3 illustrates these data in relation to settlements and local boundaries and it is the urban heaths which have the most fires. When directly compared to the predicted changes in visitor numbers to heathland sites resulting from housing allocations (Liley, Clarke, Underhill-Day, et al. 2006b) there is a striking similarity – not only are the urban heaths those with the most fires but also those where the highest levels of visitor pressure were predicted in line with housing allocations.



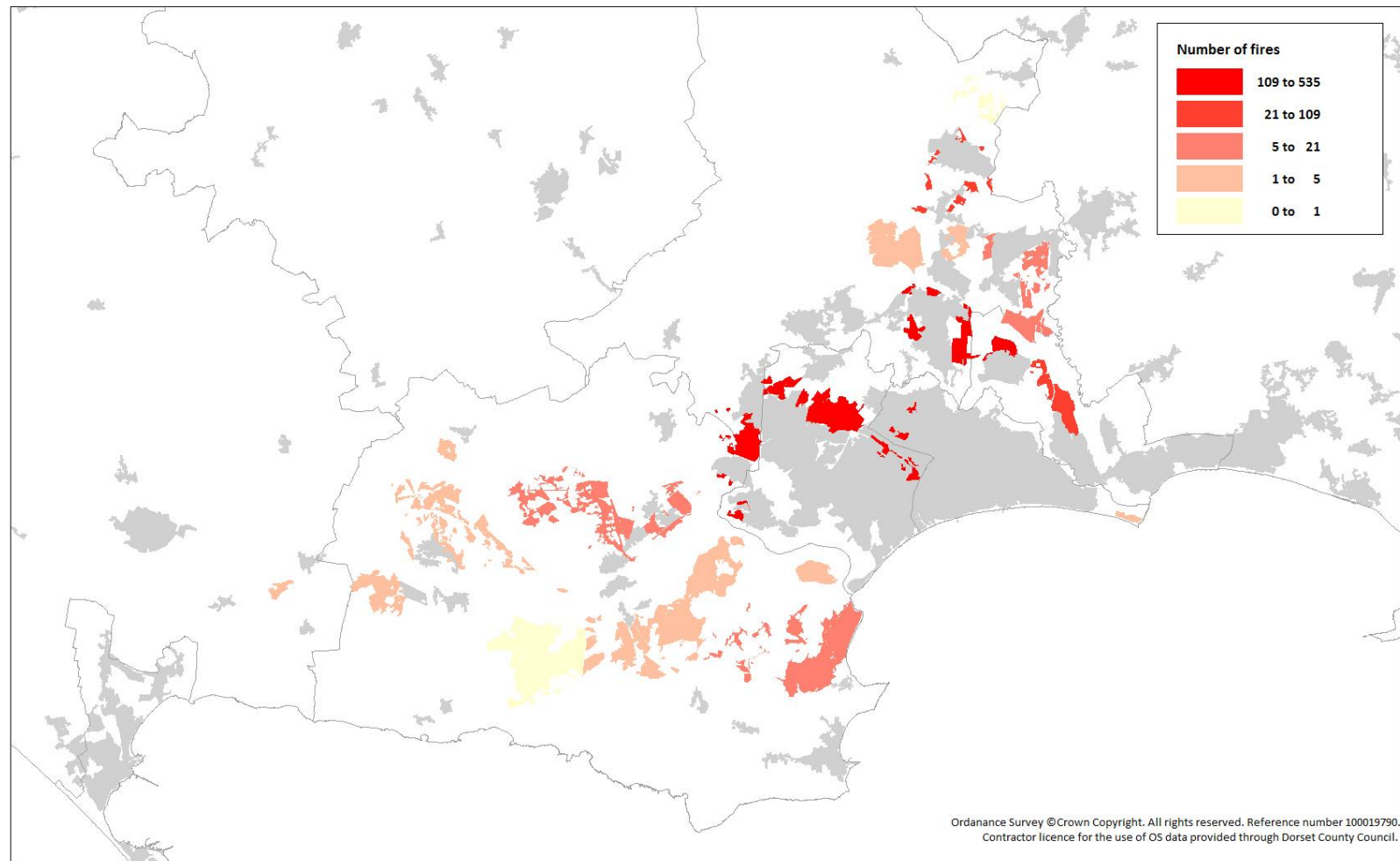
**Figure 5: The number of houses within 400m against the number of fires recorded within each heathland block between 2002 and 2010.**

3.23 Kirby & Tantram (1999) found that heath fires could occur at any time of the year but were most frequent between April and August, at weekends, during school holidays and in the afternoon and early evening at the sites within or near to conurbations. Figure 8 (automated sensor data counts by month) shows that during 2009 higher number of counts were recorded between April and August. Figure 9 also shows that higher numbers of visitor passes are recorded over the weekend and Figure 10 shows higher sensor counts between 14:00 and 17:00. It appears that the times when fires are most likely to occur are the times of the day, week and year when visitor pressure on the heaths appear to be greatest.

**Table 5: The number of fires and area burned annually within each block of heathlands from 2002 to 2010 compiled from incident log in Dorset Explorer.**

	2002																		From 2002 – 31.07.2010		
	2003		2004		2005		2006		2007		2008		2009		2010		Total fire number	Total area burned (ha)	Number of Houses with 400m of heathland block		
Heathland Block	Fires	Area (ha)	Fires	Area (ha)	Fires	Area (ha)	Fires	Area (ha)	Fires	Area (ha)	Fires	Area (ha)	Fires	Area (ha)	Fires	Area (ha)					
1	0	0.00	0	0.00	0	0.00	0	0.00	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.00	104
2	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	20
3	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.02	1	0.00	1	1.75	3	1.77	448
4	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.00	0	0.00	4	0.00	4	17.11	9	17.11	124
5	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	3	0.78	0	0.00	3	0.78	12
6	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.01	2	8.12	3	8.13	639
7	0	0.00	2	0.00	0	0.00	1	15.89	1	0.00	3	3.49	0	0.00	0	0.00	5	0.44	12	19.82	1218
8	19	60.45	28	15.81	21	1.28	12	0.34	17	17.83	14	0.00	23	1.93	18	0.06	10	1.46	162	99.15	6966
9	14	4.08	45	5.51	14	0.48	16	1.53	15	30.39	5	0.03	20	1.13	29	6.14	7	0.03	165	49.31	5253
10	41	0.18	124	2.64	70	1.59	111	3.25	64	2.40	14	0.95	26	0.75	51	9.50	34	0.93	535	22.20	10700
11	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	26
12	3	0.04	9	2.69	0	0.00	1	0.00	2	0.00	0	0.00	1	0.00	1	0.35	4	0.94	21	4.02	2462
13	0	0.00	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.00	644
14	0	0.00	2	0.00	0	0.00	0	0.00	1	0.00	0	0.00	0	0.00	0	0.00	2	3.93	5	3.93	1564
15	13	0.04	21	4.03	13	0.45	10	0.97	28	2.38	6	0.09	5	0.51	9	1.03	5	0.09	110	9.60	4787
16	7	0.03	6	0.03	3	0.02	5	0.00	1	0.00	5	1.08	2	0.00	1	0.00	5	0.00	35	1.15	1245
17	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.02	0	0.00	1	0.02	0
<b>Total</b>	<b>97</b>	<b>64.82</b>	<b>238</b>	<b>30.71</b>	<b>121</b>	<b>3.81</b>	<b>156</b>	<b>21.97</b>	<b>130</b>	<b>52.99</b>	<b>48</b>	<b>5.64</b>	<b>78</b>	<b>4.34</b>	<b>119</b>	<b>17.89</b>	<b>79</b>	<b>34.80</b>	<b>1066</b>	<b>236.98</b>	<b>36212</b>

**Map 5: The number of fires per heathland block between 01.04.2002 and 31.10.2010. Also shown are settlements.**



**Implications for the DPD:**

- Recent evidence continues to show that there are more heathland fires on the urban heathlands than the rural heathlands.
- There has been at least a 68% reduction in the number of heathland fires since the start of the LIFE project (number of fires recorded in 2002 – 2010 when compared to 1990-1998) and may therefore show the effectiveness of measures such as the education programmes and warden's presence.
- Although the number of fires are decreasing they cause major ecological damage and pose a real threat to the integrity of the Dorset heathlands. Fires cannot be resolved in the same way as potential conflicts between visitor pressure and wildlife as a single event can be particularly devastating. The results are potentially therefore encouraging and lend support for the measures instigated to date.

### Visitor Behaviour: Direct Observation of Visitor Behaviour and Counts of Visitors

- 3.24 The strategy recommended undertaking visitor surveys and counts across the SPA and on non-heathland sites using a set methodology and standard protocol. The Countryside and Rights of Way Act 2000 created a right of public access to areas mapped as Open Access Land in and was monitored by Natural England using a national open access monitoring survey. This survey was used to gather visitor information across a range of national sites on the level and pattern of recreational use of Open Access Land.
- 3.25 The UHP conducted visitor surveys using the open access monitoring survey in 2007 and 2008 at selected heathlands in the SPA. Canford Heath and Morden Bog NNR were also surveyed in 2006. It is anticipated the visitor information can be analysed annually and at a site specific and regional level. Comparisons should also be drawn between visitor patterns on the Dorset heathlands and national visitor patterns. Although data collected in 2006 and 2008 have yet to be verified before analysis can start.
- 3.26 In addition to the Natural England surveys, visitor surveys were also conducted as part of the monitoring from the majority of the capital projects. Summaries and results of these projects can be found in appendix 3.
- 3.27 The 2007 survey results show that most visitors on the majority of sites were local and over 45 years old. 'Local, attractive scenery' and 'quiet/remote' were the most popular responses as to why visitors visited a particular site. Over 50% of interviewed visitors were dog walking. The most popular reason dog walkers provided as to why it was good to bring a dog to the site (heath) was because the dog did not need to be on a lead (Sharp & Liley 2008).

### Recommendations

- 3.28 Collate the 2006, 2007 and 2008 data and compare the information gathered from the Dorset Heathland sites within the national data. This will help us place heathland visiting patterns in context with national visiting patterns.
- 3.29 Analysing these data will also reveal whether the collected data are a useful tool to detect changes in visitor patterns and if so whether the monitoring should be regularly repeated to detect and respond to any change in visitor patterns.

#### Implications for the DPD:

- The Open Access Land monitoring is a powerful data set which will allow comparisons between visitor patterns to the Dorset Heathlands with other nationally and internationally important UK sites.



## Household survey

- 3.30 A postal survey to 5000 households in Dorset was commissioned by Borough of Poole in 2007. The survey aimed to provide further information on access patterns to heaths, looking strategically across the heaths and placing access to the heaths in context with other types of site such as the coast and greenspace. Two reports have been produced, setting out the results (Liley, Sharp, & Clarke 2008b) and then using the data to model visitor access patterns in relation to greenspace availability and the distribution of heaths (Clarke, Sharp, & Liley 2008).
- 3.31 The response rate to the postal survey was 33% and on average those households make 166 annual visits to greenspaces each year, which equates to 9 million visits to heathlands by residents of SE Dorset. Two thirds of respondents listed a heathland site within the SPA as one they visit regularly and those who did regularly visit the heathlands lived near to them. Key findings included:
- Heaths are larger sites than other green space sites in the area and tend to have a lower density of visitors than other kinds of sites (greenspace, coast etc.)
  - The heathland sites account for 23% of the visits made to the countryside and particularly attract dog walkers.
  - The distance people travel to the heaths varies considerably between sites with some urban heaths attracting people from very limited catchment areas and other areas attracting visitors from further afield.
  - About half of all visitors to heaths arrive by foot.
  - People travel furthest (from their homes) to visit coastal sites. Compared to other non-coastal sites, people travel further to heathland sites, indicating that heathlands do have a particular niche, in terms of the access and recreational opportunities they provide.
  - People living in locations with extensive areas of other (i.e. non-coastal or heathland) greenspace sites do not visit heaths any less than those living in areas with relatively little other greenspace.
- 3.32 Heaths are clearly popular sites to visit, attracting many regular visitors, and drawing people from relatively large distances. While not as large a draw as coastal sites, they often attract people from further away than do parks and other types of sites. This could imply that heaths have a particular attraction, not necessarily provided by other types of sites. Heaths account for a particularly large proportion of accessible green space within SE Dorset, and in particular all the large sites that people can visit are heaths. In that sense heaths may be fulfilling a particular role for south-east Dorset residents by providing large areas of green space with a wild feel and few restrictions on access. Regular visitors to heaths gave the ability to do a range of walks, to let dogs off leads, the presence of wildlife and the freedom to roam as important factors attracting them. Nearly a third of regular visitors to heaths (28%) indicated that 'too many other people' was a factor that deterred them from visiting other particular sites.

## Recommendations

- 3.33 Alternative sites, if intended to attract people away from heaths, should have free parking with plenty of available spaces, the sites should feel safe, have relatively low densities of visitors, and dogs should be allowed off leads. A range of paths / routes is likely to be important as it the length and networks of paths to cater for circular and longer routes. We also suggest that alternative sites are able to provide a path network capable of offering a minimum route distance based on the average route length of potential target users. Attractive scenery and views appear to be of less importance to regular heath visitors, and this may mean that alternative sites do not necessarily need to be in scenic locations. Access management measures on the heaths themselves may be successful in deterring visitors who might therefore choose other sites:- Charging for parking, limiting the number of parking spaces and ensuring dogs are kept on leads during critical times of the year may be measures that persuade potential visitors to go to alternative sites. While there may be considerable repercussions and public opposition to changing parking charges or availability of parking, such measures are relatively straightforward to put in place.
- 3.34 It is clear that some types of site do attract people away from the heaths, coast and the number of greenspaces surrounding a postcode. It is suggested that quality of greenspace is important over quantity.
- 3.35 The increase in effectiveness of SANGs could be improved by measures to encourage people off the heaths police (e.g. though the enforcement of dogs on leads) but will require the staff time to adequately enforce and police.
- 3.36 It is likely that new sites will need to be different from the existing network of greenspace sites, and designed and carefully targeted so as to provide suitable alternatives to heaths.
- 3.37 The Household survey of SE Dorset (Clarke, Sharp, & Liley 2008; Liley, Sharp, & Clarke 2008b) estimated just under 9 million visits to heaths per year by residents in the SE Dorset sub region

### Implications for DPD:

- The household survey provides support to the idea of targeting elements of the DPD to particular sites/areas/heathland blocks. Mitigation measures will need to be tailored to particular locations and circumstances.
- SANGs provision needs to target visitors on foot as well as car visitors, given the high proportion of visitors on foot recorded in the household survey
- The survey highlights that the heaths disproportionately attract dog walkers. SANGs will need to be large and targeted to attract dog walkers who otherwise visit heaths. Quality seems to be important – with SANGs only likely to be effective if able to offer a real alternative to the attractive, extensive and open feel of many of the heaths.

### Visitor counts on the heaths and alternative sites

- 3.38 The IPF and has to date provided the funding to install approximately 55 automated visitor counters the remaining 30 where funded by AMGS. The automated counters have been installed at access points to the heathlands, on the heathlands and in project locations where improvement works have been also been funded by the IPF.
- 3.39 At present there are 72 automatic counters in place across a range of Dorset’s heathlands and alternative areas of greenspace (Table 6 and Map 5) and Appendix 3 details the number of counters on each heathland block. Six different types of sensors are used in the Dorset heathlands sensor network (see appendix 4 for sensor descriptions). To date the network consists of one acoustic, one inductive loop, seven large slabs, ten long range pyros, 21 pyros and 45 sensors are normal sized slabs. Each sensor has been calibrated by the UHP to ensure recording accuracy between sensors of the same type and between results from sensors of different types (see appendix 5 for calibration details).

**Table 6 Number of automated visitor counters on heathland and SANGs, currently in place, by management organisation.**

Management organisation	Currently in place	Removed Damaged/Stolen	Total
Bournemouth Borough Council	8	3	11
Christchurch Borough Council	4	1	5
Dorset County Council	15	3	18
Amphibian and Reptile Conservation Trust	14	2	16
Natural England	6	0	6
Dorset Wildlife Trust	1	0	1
Borough of Poole Council	24	4	28
Total	72	13	85

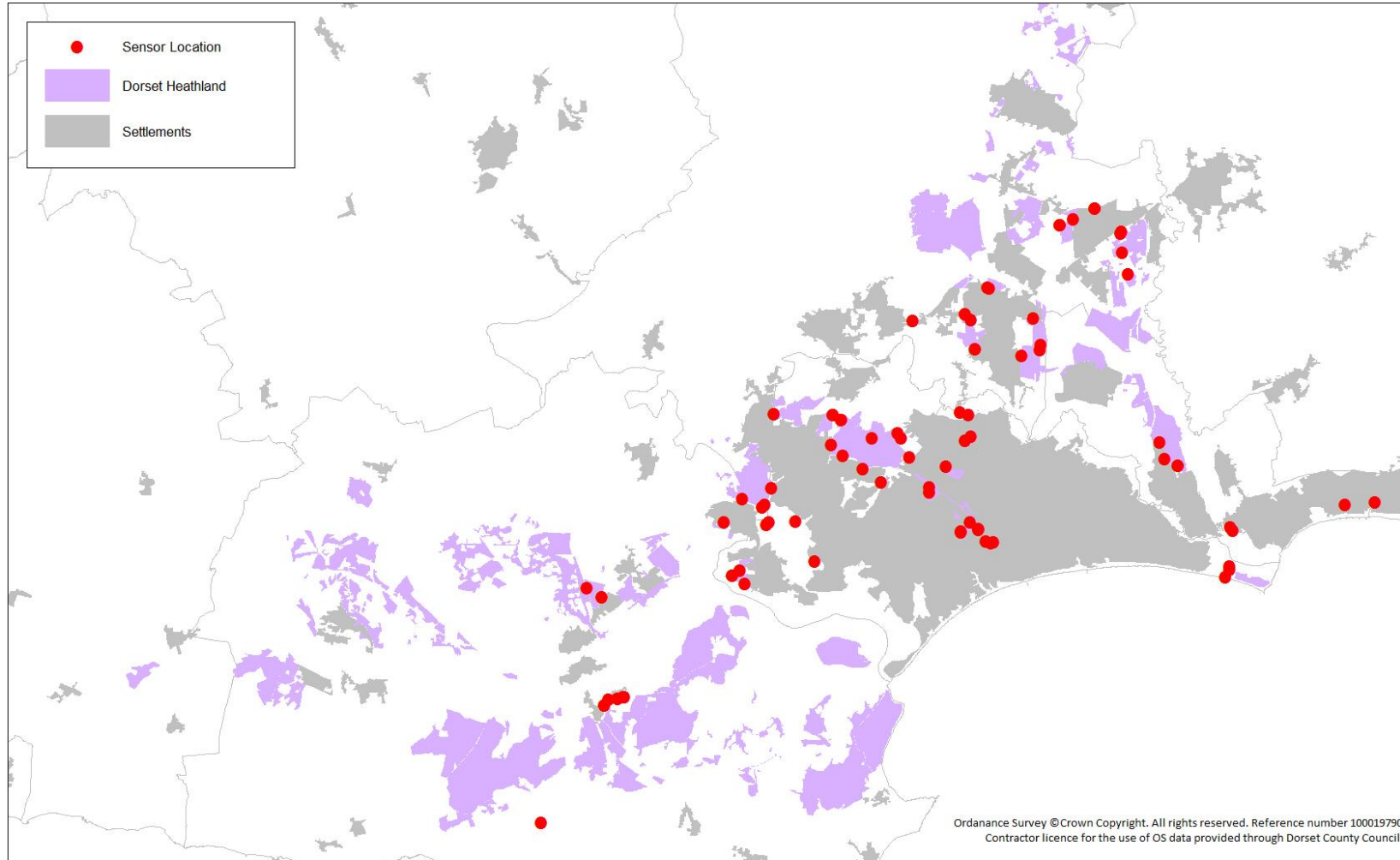
- 3.40 The analysis of the remote sensor data is complex. The downloaded data are screened and cleaned by the consultants who manage the database. Only when the data records are downloaded is it possible to identify whether there are any obvious problems with the in situ kit. As the downloads are performed once every three months, these problems can remain undetected for some time. As such, data gaps have occurred where the sensors have not been recording because of low battery, damaged wiring or repair and these issues can only be detected when the memory cubes are changed or the data downloaded. This again adds complexity to analyses as zero records within the database do not mean zero visitors; it could also be reflective of faulty kit.
- 3.41 The data can only be screened when passed to the consultants who manage the database. The data are compared to the historical records on the central database and any irregularities or unusual trends identified. These irregularities are then brought to the attention of the partners and investigated. Only when the cause of the irregularities is identified are the data corrected, deemed unusable or cleaned and then added to the central database.
- 3.42 Data cleaning consists of visiting the irregularities, (which generally consist of isolated high peaks) and editing or deleting the counts on the source files, if there is no other explanation (such as an event) as to why such high numbers occurred. These can be caused by people lingering in front/on the sensor or, in the case of heat sensitive sensors, sunlight hitting the sensor. A recent example which illustrates how simply misinterpretation of the data can

occur relates to a sensor which regularly logged between 11 and 40 visitors passes a day (over 3 months) but dropped to less than 5 passes a day over a two month period. On investigation the cause of reduced visitor counts was not that visitor use of the site had decreased, but that a new path had formed which did not pass over the sensor.

3.43

All of the pad sensors (those which are pressure sensitive) were calibrated between February 2009 and June 2010. Some sensors required adjustment as they were not accurately recording. The historical count data for the adjusted sensors were multiplied by the error margin of the sensor to ensure the readings before and after calibration were directly comparable (see appendix 5 for calibration details).

**Map 6: The current locations of remote sensors counters funded by the IPF.**



- 3.44 At present the sensor data reflects the number of passes over or through the equipment. At some locations visitors will enter and leave the site by the same access point giving a double reading for their visit while at other locations the visitor may enter and leave the site through different locations. The count values are not fully representative of the number of people using each site but rather the number of passes through each sensor. Sensors could also be purchased to count visitors on bicycles and horses to identify the proportion of people undertaking these activities on bridle/cycle paths.

#### General summaries of the sensor data

- 3.45 Figure 6 to Figure 10 represent the average hourly counts of visitor passes across all sensors between the start of 2008 and the end of June 2010. Data will only exist for sensors from their installation date until the last download, which is not consistent between sensors. The data will also contain omissions where data were not recorded because of faulty kit. The data presented provide an indication of scale and breadth of data which has been collected as a result of the IPF funding and will be the lowest possible values (as data gaps appear as 0). The results presented in these figures should not be interpreted as visitation rates. Higher average counts will be observed at later dates because of the increased number of active sensors
- 3.46 Figure 6 shows the average number of visitor passes per hour across all sensors per year. The value for 2010 is lower than would be expected as only data to the end of June are included. There is clearly a seasonal visitation pattern and average number of visitor passes per hour increased through 2008 with season (a result of the installation of new sensors) (Figure 7). The third quarter of 2009 had the highest number of hourly passes indicating that summer visitation is higher than at other times of the year; and the average number of visitor passes drops for the first quarter of 2009 and 2010 in the coldest months of the year.
- 3.47 Figure 8 shows the average number of hourly passes increases steadily through 2008 which is attributable to the installation of new sensors. The peak observed in April 2009 also reflects an increase in sensor data from 7 sensors which were installed on 31<sup>st</sup> March 2009.
- 3.48 It appears that Sunday is the day when the most activity is recorded on sites, with Wednesdays and Tuesdays the days with the least activity (Figure 9). The number of passes through the sensors starts to increase from 6am and reaches a peak between 3pm and 4pm after which there is a steady drop in the average number passes as the evening progresses (Figure 10). There is a consistent level of night time passes through the sensors illustrating that the heaths are visited at night.

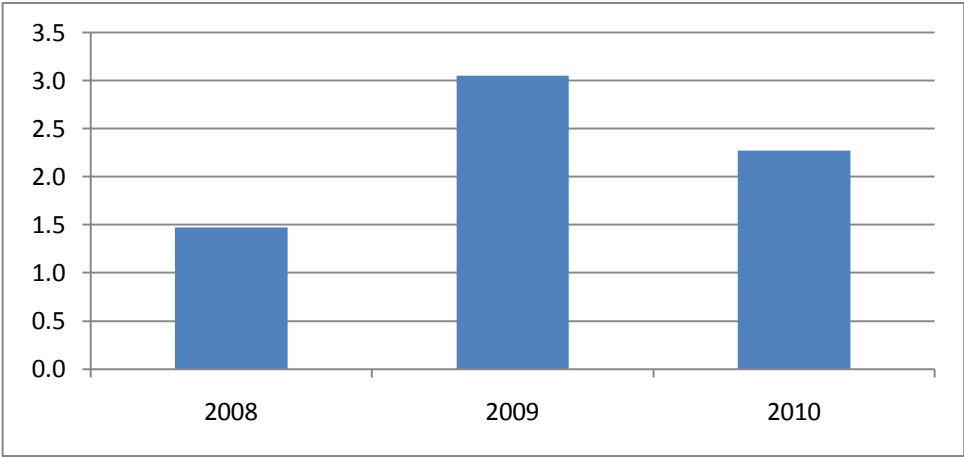


Figure 6: The average number of visitor passes per hour across all sensors per year.

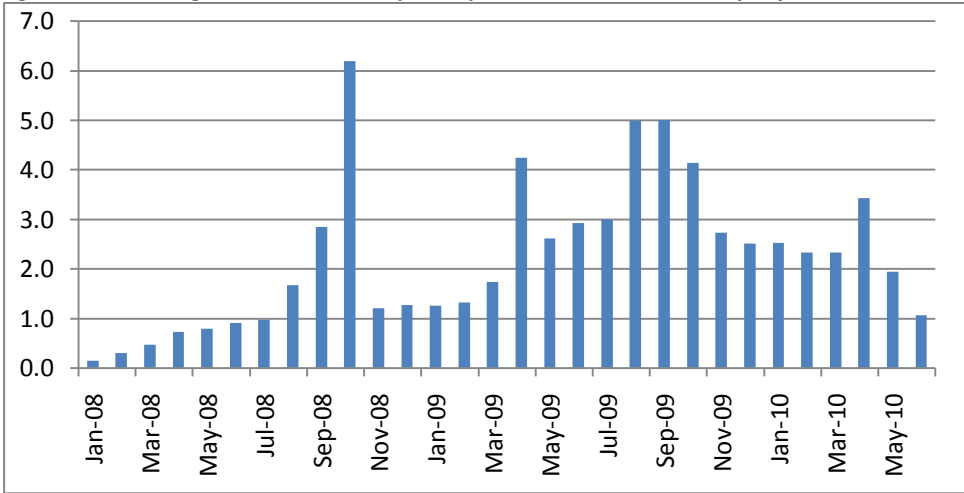


Figure 7: The average number of visitor passes per hour across all sensors per quarter.

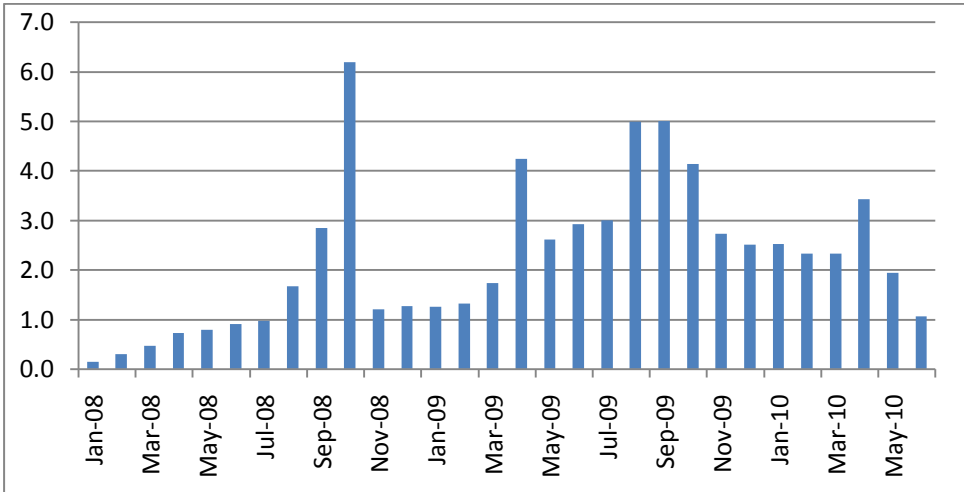


Figure 8: The average number of visitor passes per hour across all sensors per month

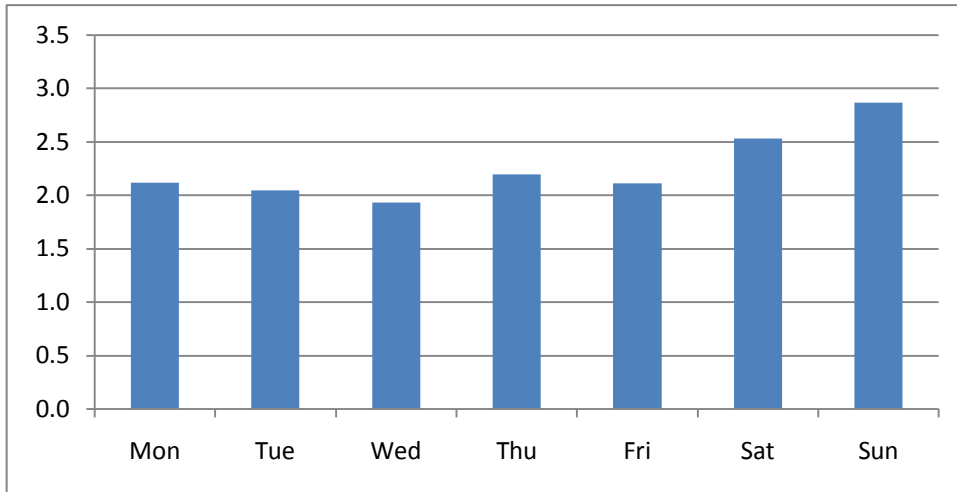


Figure 9: The average number of visitor passes per hour across all sensors per weekday.

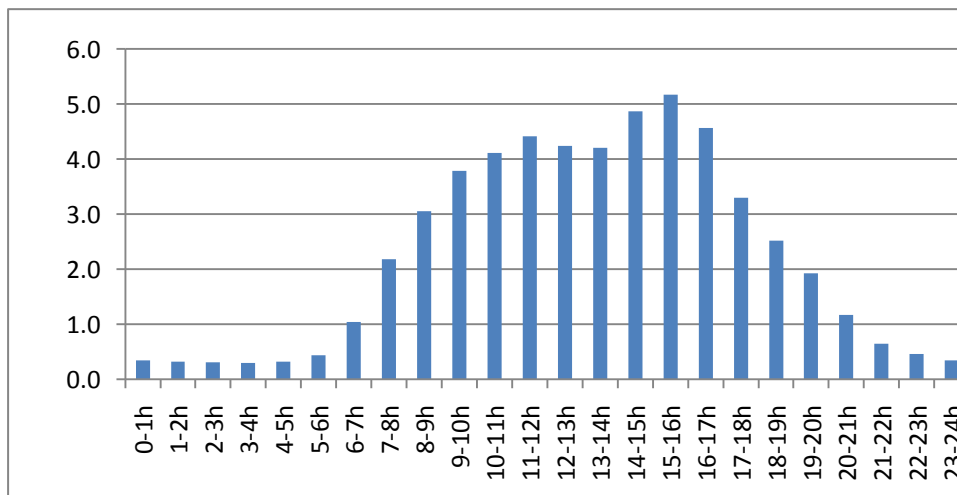


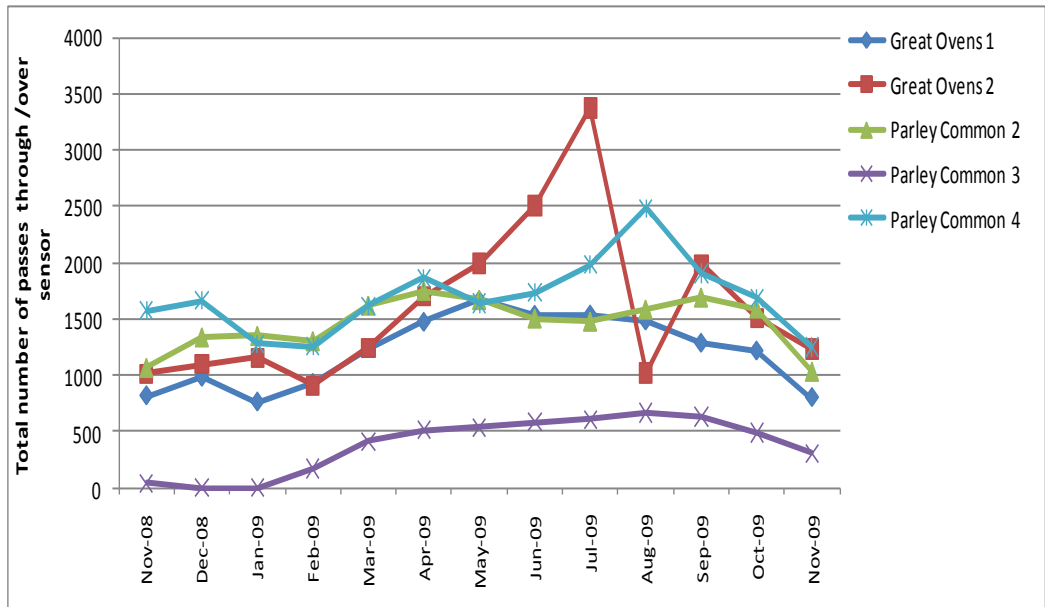
Figure 10: The average number of visitor passes per hour across all sensors

#### Site comparisons of sensor data

3.49 The sensor data from the same two sites considered in Figure 1 and Figure 2 (Great Ovens and Parley) are presented in Figure 11. This shows that Great Ovens has a higher number of passes through the sensors (and one could infer from this a higher visitation rate) than Parley Common, yet Figure 1 and Figure 2 show that more birds territories have been recorded at Great Ovens than at Parley Common.

3.50 Parley Common has 17 different access points onto the heathland and two (Parley Common 2 and 3) are up a dirt track away from main housing settlements. The sensor data at Lone Pine Drive is not included as it is not continuous. The remaining sensor, (Parley Common 4) is located just south of Tricketts Cross settlement. Parley Common 4 – the sensor adjacent to the housing has recorded the highest number of passes and Parley 3 the lowest. This is perhaps because people need to travel further along the dirt track to access the heath.





**Figure 11: Total number of passes through different sensors at Great Ovens and Parley Common by month**

- 3.51 Sensor 1 at Great Ovens is situated at the access from Sandford and the second sensor at the access point to the heath adjacent to the car park on the B3076. The sensor counts for Great Ovens 1 are relatively consistent with the seasonal patterns noted in Figure 7 and Figure 8 and this point would mainly be accessed by local residents on foot. Sensor 2 at Great Ovens is adjacent to two car parks with a combined parking capacity of 9 spaces. Visitors using this access point generally arrived by car, which could explain the peak of observation during the summer as visitor will generally drive to make a visit in good weather. Higher levels of passes could possibly be caused by the redirection of visitors to Wareham Forest during forestry operations.
- 3.52 This example illustrates the complexity of analysing and interpreting visitor passes through sensors located at two different sites. It is possible to detect general trends from the sensor counts across the sensor network by pooling all the data together, but to really investigate whether visitor numbers are increasing, decreasing, or remaining constant over the heathlands and SANGs, analysis and interpretation must only be undertaken on a site by site basis.
- 3.53 With this in mind, it is crucial that the sensors are located at the most heavily used access points to reflect the true usage of the site and the data are screened, verified and cleaned before any analysis is undertaken.

#### Implications for the DPD:

- Installation of remote sensors should occur at future capital project locations (ideally 6 months to a year) before a project starts, to establish the existing level of visits.
- It will be necessary to ensure UHP have the capacity to maintain any newly installed sensors before sensor purchase and installation.
- It will be necessary to define length of time sensors should remain in-situ following alternative greenspace enhancements (recommended at least 5 years).
- It is necessary to derive a method to convert sensor counts to an index of visitation. At present the data simply shows the number of 'hits' for each sensor, and group size, visitor behaviour etc. may vary between sensor locations.
- Over the long term it would be ideal to gradually map visitor routes from observations and interviews at sites to assist with the interpretation of sensor data.
- There are gaps in the existing sensor network. The ideal in the medium term will be to work towards the installation of remote sensors across all Dorset Heathlands blocks at the most heavily used access points and revisit the distribution of remote sensors across sites. At present only two semi-rural sites have sensors installed.
- Direct baseline monitoring where there are current housing allocations or anticipated development, will also be necessary.
- Keep under review new monitoring methods such as the use of sensors to monitoring visitors on bicycles and horse riders.

#### Simultaneous car park counts

- 3.54 Car park counts provide a quick and easy way to gauge the use of sites. While it is not a substitute for visitor numbers, it provides a simple way of monitoring car visitors to sites. An indication to car visitor distribution is captured when car park counts are coordinated and numbers of vehicles parked within a defined region are recorded.
- 3.55 The co-ordinated car park counts were conducted by the UHP wardens and involved counting vehicles in 215 car parks near heathland access points. The car parks were a mixture of formal car parking places and laybys. The first count in 2008 was completed within an hour and required the efforts of 14 staff. The remaining 16 counts were completed over 2 hours by the efforts of 6 staff. The co-ordinated counts have been scheduled to encompass a range of visitor preferences and have taken place at weekends and weekdays and spaced across early and mid mornings, afternoons and evenings. Bank Holidays counts have also been taken. As of autumn 2010 the number of cars with bike racks will also be noted.
- 3.56 The coordinated car park counts are part of the long term monitoring programme and at least five years worth of data are required before visitor trends can confidently be identified. In 2008 a single co-ordinated count was undertaken, in 2009 ten co-ordinated counts took place and six have taken place in 2010 (with a further four scheduled).

3.57 The lowest number of cars recorded on the survey was 135 (Monday in September) and the largest 1269 (August Bank Holiday Monday), with an average number of 473 cars per counts. Consistently more cars were recorded on bank holiday counts than non bank holiday counts. Map 7 shows the average number of cars recorded in each car park over all counts and shows that more cars are present surrounding the urban heaths in comparison to the rural heaths. Hengistbury Head and the Upton Car Parks had the highest average car park counts.

#### Recommendations

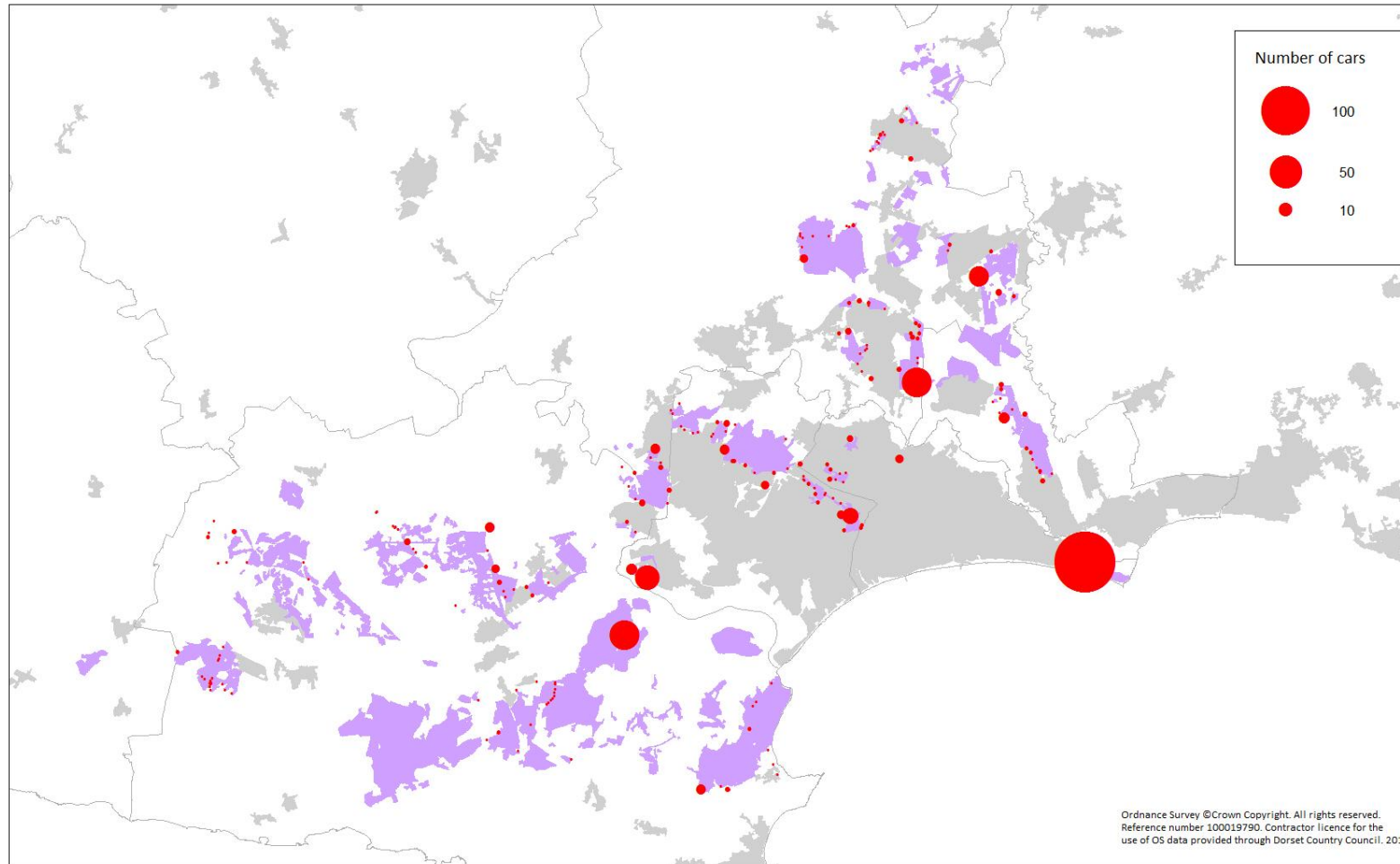
3.58 Continue with simultaneous car park counts over Bank Holidays, weekdays and weekends. Five years' worth of data will be required to confidently identify baseline visitation and any seasonal, weekly and daily trends.

3.59 Extend the window when counts are conducted to include counts between January and May.

#### Implications for the DPD:

- The Dorset household survey showed that 50% of visitors to the heaths arrive by car and 50% on foot. The coordinated car park counts provide an indication of the spatial distribution of 50% of the visitors to the Dorset heathlands.
- In the long term changing car parking facilities could be used as a tool to redistribute or redirect people across sites. However long term data are required to exactly understand the implications of manipulating car parking facilities and how this could be achieved.
- The car parking locations on the rural heaths are concentrated around certain access locations whereas on the urban heaths car parking is more diffuse. This would suggest that redistributing car park spaces is likely to be more effective in rural locations, where parking options are more concentrated and limited.
- It is important to ensure that the simultaneous car park counts continue over Bank Holidays, weekdays and weekends. Five years' worth of data will be required to confidently identify baseline visitation and any seasonal, weekly and daily trends.

**Map 7: Graduated map of the mean number of cars recorded in each car park during the co-ordinated car park counts. Also shown are settlements and the Dorset Heathlands.**



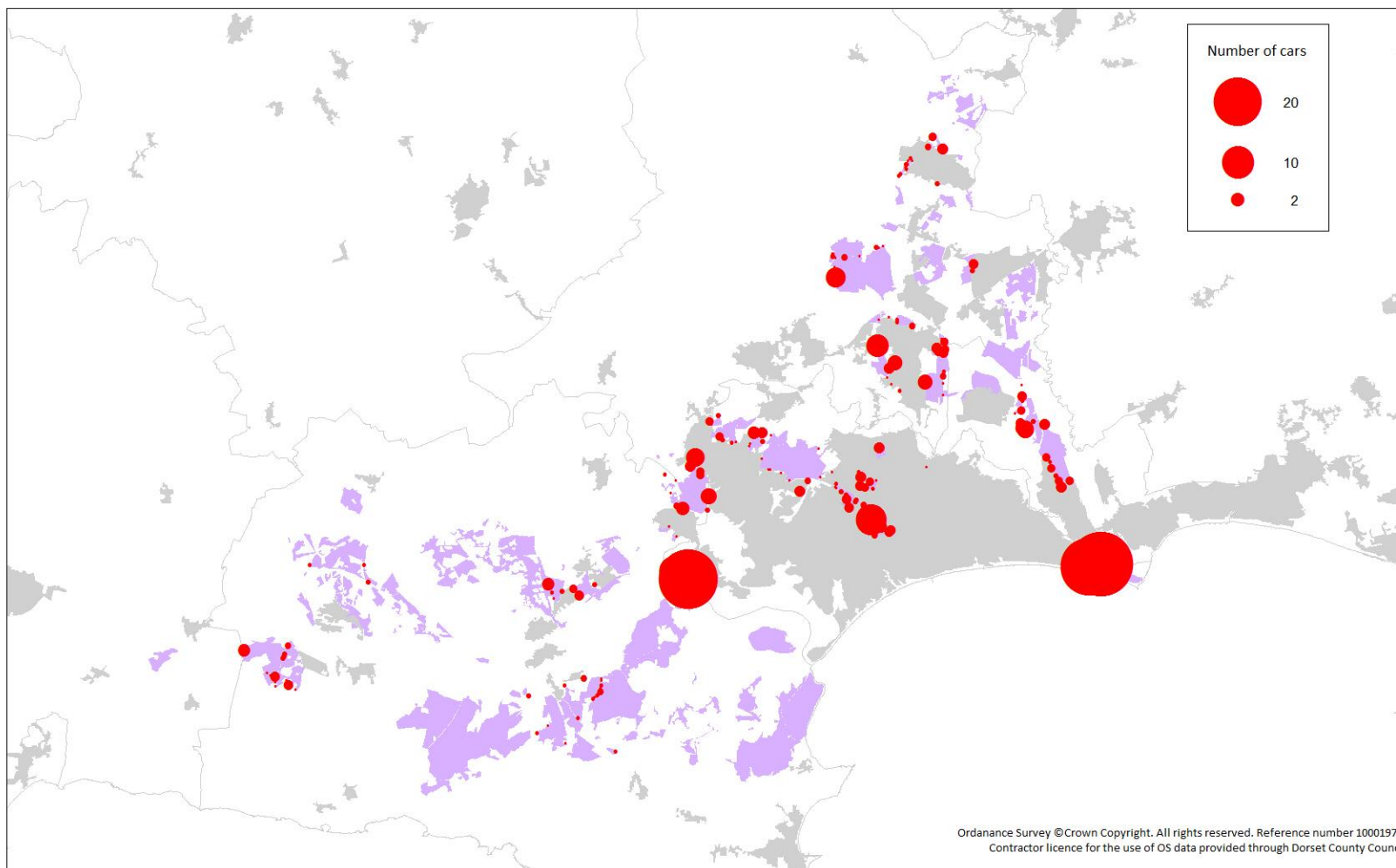
### Casual car park counts

- 3.60 Counts of vehicles in car parks adjacent to or near heathlands give an indication of car visitation to these areas. Although no substitute for absolute visitor numbers, these can be used to identify those heaths with high and low numbers of car visitors.
- 3.61 UHP wardens started ad hoc casual counts of the number of vehicles in parking areas adjacent to or near heathland access points and as such there is no standard methodology behind the counts.
- 3.62 To date 3524 car park counts have been undertaken recording 10,811 parked vehicles. Table 7 shows a summary of the number of counts and total number of vehicles recorded per year.
- 3.63 The number of casual car park counts differs by year (Table 7). The ad hoc vehicle counts have the potential to become a powerful data set but as the counts are only in their second full year the data set is still in its infancy. Despite this, some trends are starting to emerge from the counts. Map 8 shows the average number of cars recorded per car park between July 2008 and August 2010 and, as would be expected, the areas with the highest number of cars (Upton and Hengistbury Head) are those areas with the largest car park capacity. Figure 12 shows some seasonal variation with peaks in April and August (which coincide with school holidays), and a lower average number of cars over the winter months (November – February) in comparison with other times of the year.

**Table 7: Summary of the casual counts recorded per year between July 2008 and August 2010.**

Year	Number of Counts	Number of vehicles	Average number of cars per car park
2008	942	3377	3.6
2009	1587	5825	3.7
2010	995	1609	1.6
<b>Totals</b>	<b>3524</b>	<b>10811</b>	<b>3.0</b>

**Map 8: Average number of cars recorded in car parks in each car park from 3 years of casual count data. Also shown are settlements and the Dorset Heathlands.**



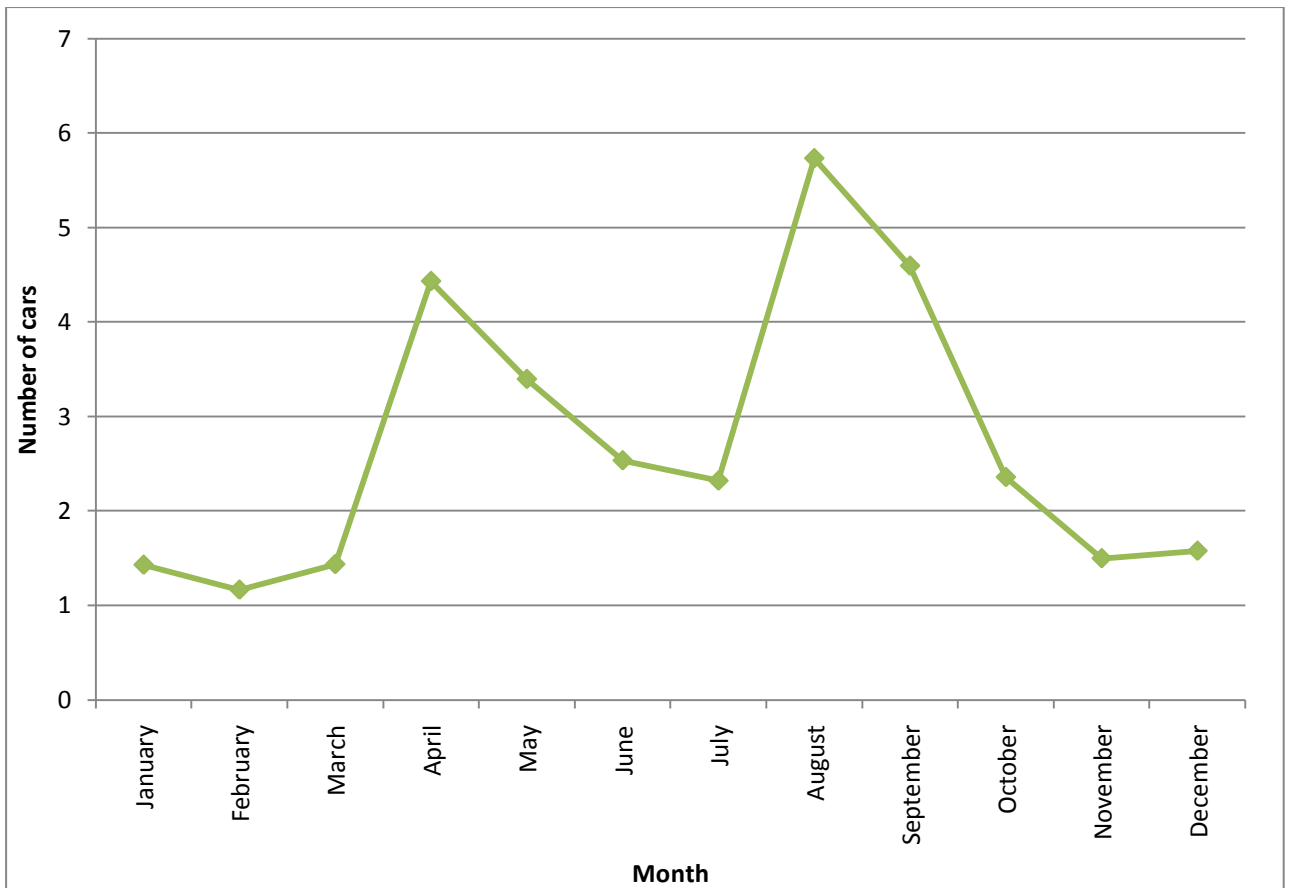


Figure 12: The mean number of cars recorded across all car parks between 2008 and 2010 from casual car park counts

**Recommendations**

3.64 Supplement the causal car park count data with car with bike racks.

**Implication for the DPD:**

The number of cars recorded through the causal counts has revealed distinct seasonal patterns.

With long term data it should be possible to identify the car parks which are most heavily and regularly used.

## 4. Consideration of the Monitoring Strategy itself

### Current issues with monitoring

#### Data gathering

- 4.1 The IPF monitoring strategy required partners to collect visitor data across the heaths with a focus at the site of mitigation projects and the targeted area of the European sites where impacts may occur. Time and thought were spent deciding how to direct and co-ordinate efforts to ensure partner organisations were collecting similar data in a systematic fashion which would allow collective analysis. Flow charts detailing the roles and responsibilities of all partners can be found in appendix 4. However, the diversity of the mitigation projects, staff changeovers and limited resources have meant it has been difficult to achieve this level of consistency and co-ordination. The implications are that the scale of monitoring required is difficult to achieve when it is not actively and centrally managed.

#### Equipment set up and resource implications of monitoring

- 4.2 In a similar vein, complications were also encountered with the installation, maintenance and calibration of the in situ visitor counters and also data downloads, acquisition of files and analysis of the count data from visitor sensors. In short the installation, creation, active management/maintenance and regular download of the count data were, at project conception, not estimated to be time consuming. In reality, maintaining the network of 85 sensors and managing the frequent download of data has required significantly more staff time from all partners than was initially perceived. The original monitoring strategy had suggested 30-50 automated counters. Conducting visitor interviews is also a time consuming exercise and to keep consistency between project monitoring it was envisaged that surveys and counts could be conducted to a specific structure. It became apparent, given schedules of partners and wardens, that this would prove problematic.

#### Data Handling

- 4.3 As is expected from different organisations the data were received in different formats ranging from paper copies of survey sheets, excel files and files created on (now) unsupported and obsolete software packages, sometimes two or three years after collection. Prior to any analysis of the data, it needs to be checked and cleaned where appropriate (in all cases, further information was required from each partner) and only once this has been conducted the analysis can start. Central management and coordination of data handling is recommended.

### Implications – current status

- 4.4 Analysis from the visitor counters (sensors) and the capital projects has revealed the true complexities of initiating a long term monitoring programme in collaboration with several organisations. In truth, many of the difficulties encountered during the adoption and implementation of recommendations from the monitoring strategy were reflective of the complexity of setting up a long term, consistent monitoring programme with several partner organisations, different land/site owners and managers across sites with different characteristics and different pressures.



## Elements of the strategy that have not taken place

- 4.5 Of the eight recommendations within the monitoring strategy (Table 2) made to monitor, count and survey visitors and species, five of these are in progress and one has been completed and all those concerned with recording and disseminating information are ongoing. Elements that to date have not taken place are briefly considered below.

### Nightjar breeding success

- 4.6 This has not been commissioned yet due to financial constraints. The national and IPF bird counts represent a snapshot of the number of territories from either visual or audio observations. Although the surveys provide a good indication of the numbers of birds on the heaths they do not evaluate breeding success and recruitment to the populations. This is important – for example the Dartford warbler surveys have indicated high densities on sites, yet detailed work on breeding success has shown that there is high turnover and low productivity on urban/disturbed sites (Murison 2007), and as such negative impacts on the population. Detailed work on breeding success is therefore a necessary component of monitoring. Nightjars were originally identified as a good focus in the Monitoring Strategy as the results would be expected potentially to be a good indicator of the success of on-site access management measures such as ensuring dogs are kept on leads.
- 4.7 We consider this monitoring to perhaps be of lesser priority compared to the visitor data and other monitoring elements, and the work is perhaps best funded as a dedicated research programme or similar. In other parts of the UK detailed and highly intensive nightjar nest monitoring studies have been funded by local authorities to provide the evidence for their LDFs, so the precedent does exist.

### Review of existing bird records

- 4.8 This was not commissioned due to financial constraints. The review of existing bird data would collate and analyse trends in nightjar, woodlark and Dartford warbler numbers across the Dorset heaths from 1991 to present. Existing data are held by the RSPB and other organisations. The review would identify the extent to which bird numbers fluctuate between years at a site and SPA level. The results of the review would enable comparison between the bird numbers on rural and urban heathlands and be used to identify the most effective survey protocol for future IPF bird surveys.
- 4.9 The need for this review is high

### Fixed point monitoring of paths

- 4.10 The monitoring strategy suggested that basic features of paths were recorded at fixed locations. The recommended monitoring involved path width, adjacent vegetation properties, microtopography, erosion, compaction and dog fouling, with the recommendation that the monitoring was repeated every three years and ideally linked to visitor data (e.g. automated counters). The recommendations were designed to determine the scale of impact on SAC interest features and the impact of trampling and fouling on habitat structure. This monitoring is potentially complex and labour intensive.
- 4.11 The priority of this monitoring is moderate.

#### Perceptions survey (not commissioned)

- 4.12 Part repeat of Atlantic Consultants surveys to determine whether awareness of heathland issues and their importance have changed over time. The repeat survey should mirror the relevant questions and methodology in the original survey and capture and map the postcode location of those interviewed.
- 4.13 This is a low priority compared to the other recommendations and should be conducted near the end of the IPF period.

#### Housing distribution and allocation

- 4.14 The strategy recommended that all new housing be recorded in a systematic fashion so that the data on how numbers of houses have changed over time can be related to other data. All developments are recorded and maintained within and by each local authority, but to date these have not yet been collated into a single dataset.

#### Database of management work within projects

- 4.15 Database set up to record all project work conducted within the IPF, showing locations, timing and detailing overall actual works. Each partner maintains records of project works but they are not yet stored centrally.

#### Presentation and distribution of monitoring results

- 4.16 The monitoring strategy recommended that monitoring data from different projects and different areas was combined to produce clear, accurate and well publicised results in peer reviewed journals and internal reports. In addition it was recommended that results of monitoring should be presented to local and regional audiences, with the aim of maintaining enthusiasm within project staff, highlighting importance of the work and sharing results. There have been various internal reports and summaries of the data to date and presentations at various meetings. Given the importance of the monitoring, the level of national interest and the wide interest in the mitigation measures, wider dissemination and data sharing would be beneficial.

#### Other considerations and future direction

- 4.17 The IPF monitoring strategy identified the first steps needed to start a comprehensive monitoring programme on the Dorset Heaths. Monitoring is essential to demonstrate the extent to which funded projects have encouraged responsible behaviour on the heaths and how less sensitive sites have absorbed any increase in levels of activity.
- 4.18 It took far longer than partners anticipated to coordinate the installation of the sensor network and streamline the collection and entry of fire records, visitor data and car park counts. The difficulties involved in the set up of the monitoring programme have been overcome and all partners have a good understanding of their role and responsibilities within the monitoring programme and the value and importance of the data they collect. The monitoring programme is progressing well.

#### Tailoring the monitoring

- 4.19 The monitoring programme set out to capture an all-encompassing, broad and comprehensive baseline set of data which has been successfully achieved. The comprehensive monitoring currently in place is demanding on resources. In particular the

management and maintenance of the sensor network and specific capital project monitoring require a significant amount of resources.

- 4.20 Not all of the monitoring data collected has been suitable for analysis or informative, but is indicative of the nature of developing a large scale monitoring scheme where as much data are collected as possible in the early stages and the scheme is refined according to the results. The next step is to decide how to refine the monitoring and where to dedicate future effort in the transition from a comprehensive to selective monitoring programme.
- 4.21 At present resources are approaching capacity and the management and maintenance of the sensor network is particularly time consuming. Effort within this aspect of the programme should be directed into the collection of high quality, reliable data from a range of selected sites (heaths and project sites), rather than risk poorer quality data from a higher number of sensors over a broader range sites. We suggest a sub-set of the Dorset Heathlands are selected as core sites for long term monitoring within the sensor network. These sites should be a combination of urban and rural heathlands and areas where the bird surveys are undertaken.
- 4.22 It is crucial to ensure consistent monitoring continues on both the rural and the urban heaths as this is the data that will be used to make inferences as to how increased levels of visitation and visitor behaviour impact on the sensitive wildlife species of the SPA.
- 4.23 The monitoring associated with each capital project (chapter 1) is also labour intensive and on occasions has not proved informative which suggests that perhaps only selected capital projects should be monitored comprehensively..

#### Progression of the monitoring

- 4.24 The findings in this document will be used to inform the DPD as to how the monitoring programme will evolve over the next twenty years and the partners should now consider how long each aspect of monitoring scheme should be in place. It has only been within the past year that all aspects of the monitoring programme have come together and so it is not yet possible to identify any statistically significant relationships between visitor pressure, the heaths and SANGs, but a baseline has now been established.
- 4.25 For most aspects of the monitoring programme it is anticipated at least five years' worth of monitoring data will be needed to detect any statistically significant trends in visitor pressure to the heaths, but general visitation patterns should start to emerge after three years. In the interim it is important regularly to review the monitoring results and use these to steer future decision making.

#### Future additions

- 4.26 The annex 1 birds are currently the only wildlife species monitored within the programme. It would also be valuable to extend the monitoring to cover the distribution of other European Protected Species found on the Dorset Heaths especially the Annex V reptile species *Coronella austriaca* (smooth snake) and *Lacerta agilis* (sand lizard).

### **Implications for DPD:**

Monitoring is critically important, and the results of the monitoring will be necessary to refine mitigation measures, determine the success of mitigation and identify where additional measures are required. Given the scale of the project and the volume of data collected it is necessary to make sure the data collection and handling is streamlined so that it is efficient, up to date and analysis can be conducted. We therefore recommend:

- Existing bird data are reviewed as a priority.
- Breeding success of nightjars is undertaken as a research project.
- Perceptions survey is deemed a lower priority than other elements of the monitoring strategy and should be conducted near the end of the IPF period.
- A strategic data collection and handling role is created. This could either be subcontracted to an external body or a dedicated monitoring post created within the partnership.
- New housing records are submitted to DERC by all local authority partners and stored centrally.
- All project work carried out as part of the IPF should be stored centrally.
- Descriptions of all project work carried out as part of the IPF should be stored centrally in a standardised fashion, and details of past and future projects should be recorded in a consistent format and submitted to DERC.
- Dissemination of results to a wider audience.
- A baseline data set for coordinated monitoring has been established.
- At present the data gathered is comprehensive and all encompassing and should gradually move to a more tailor and selective monitoring programme.
- Core sites for long term monitoring data should be identified.
- It is anticipated that five years of monitoring data will be required to detect statistically significant trends although general visitation patterns should start to emerge after three years.
- Monitoring of sensitive wildlife species should be extended to cover other Annex listed species for which a pilot project needs to be funded.

## 5. Capital Projects

### Introduction

- The IPF was set up to mitigate against any adverse impacts of increased housing on the SPA. The IPF funds, as well as covering overheads of the Urban Heaths Partnership and the implementation of the IPF monitoring strategy, have also been used to support projects to deflect visitors from using the heaths.
- The partners submitted project proposals specifying how each project would mitigate the impacts of increased visitation to the heathlands. The projects funded were diverse and ranged from the installation of a BMX park, to closure of a layby adjacent to a heath combined with major car parking improvements at a nearby woodland, to site improvement works for currently undermanaged areas of green space.
- Each funded project was required to conduct visitor monitoring before and after works completion to determine whether the project had the intended impact. Table 8 presents a summary of each of these projects. Some IPF projects have not yet been completed and so are listed in Table 9 while for other projects, monitoring was inappropriate (i.e. for the installation of fire hydrants) and these projects are summarised in Table 10.

A review of each project follows the tables and detailed methods and results of the project specific monitoring can be found in Appendix 8.

## Summary of the completed capital projects

**Table 8: Summaries of the completed capital projects with monitoring**

Lead Partner	Project	Description	Aim	Monitoring
Borough of Poole	Delph Woods Start: 30.05.07 Completed: 31.03.08	Improvements to main car park and paths at Delph Woods. Realignment of roadside fence and gate to restrict access to Dunyeats North.	To deflect use from the heath into the woodland.	17 car park counts before project completion and 19 after. One sensor installed at main access point with reliable data from 22.08.2007 – 21.10.2007. Sensor data from 29.07.2009 – to date. Issue with current sensor location as path has moved.
Borough of Poole	Broadstone Heath Start: 26.09.07 Completed: 22.05.08	All weather path created to encourage dog walkers to use this area rather than more vulnerable sites.	To deflect dog walkers from Dunyeats and Canford Heaths	32 people counts were made over 12 days giving 8 hours of observations.
Borough of Poole	Longmeadow Woods (phase one) Start: 29.02.08 Main improvement works completed: 01.05.09 Resurfacing of Roman Road: 01.09.09 Final detail complete: 01.12.09	Improvements to Longmeadow Woods and the removal of dense undergrowth and creation of path network.	To deflect visitors from adjacent Upton Heath	9 visitor counts were conducted before the works in October 2007 across the site. People using the woods and other adjacent open spaces were recorded. Following works completion 5 surveys were conducted in 2009 using an identical method to those in 2007. 37 visitor interviews were carried out during June and July 2009 after the main improvements works. Remote sensor installed at Longmeadow Woods on 12.03.2009 with continuous and reliable data to date. Also two sensors installed at access points to Upton Heath near to Longmeadow Woods on 12.03.2009 and 06.04.2009 both with continuous and reliable data.
Borough of Poole	Longfleet Drive Start 29.02.08 Complete: March	Removal of dense undergrowth and provision of paths to provide an alternative green space close to Canford	To deflect visitors from Canford Heath	Prior to the project start counts of users at all access points on 30.09.2007 between 10am – 11am. 40 visitor interview questionnaires completed in June

	2009 (majority of work completed by October 2008)	Heath		2009. On project completion, counts of all users at access points over 1 or 2 hour periods on 02.05.09, 03.05.09, 04.05.09, 07.05.09, 08.05.09 & 11.05.09. Two remote sensors were installed - sensor PCA3 was installed on 04.02.2008 and has continuous and reliable data until 20.10.2009 and PCA2 was installed on 25.09.2008 and has continuous and reliable data to date.
Borough of Poole	Scott Road Start: 29.02.08 Complete: 06.08.08	Contribution towards multi use play area to attract young people away from the adjacent heathland	To attract young people from adjacent Bourne Bottom heaths.	Counts of play area users 21 counts in April 2008, 5 in May 2008, 7 in June 2008, 6 in July 2008, 1 in August 2008, 2 in September 2008, 1 in February 2009, 1 in March 2009, 1 in August 2009 and 2 in September 2009. Two remote sensors were installed at Bourne Valley one 8.10.2009 and the other 19.08.09. The first sensor recorded data until the end of 2009 and is currently not recording. The second has been recording reliable and continuous data since installation.
East Dorset District Council	Poor Common Start: 30.05.07 Completed: 31.03.08	Removal of undergrowth and creation of path network in wooded open space. Organisation of events to raise awareness of site.	To attract dog walkers from Parley and Ferndown Common	Reliable sensor data from March 2008 to date for Ferndown Common and from March 2008 to date for Parley Common. Pre project surveys (ad hoc) Informal contact with local users and residents Post project visitor surveys
East Dorset District Council	Potterne Park Start: 26.09.07 Complete: 06.05.10	Creation of new access routes and improvement of existing paths and Bridleways (approximately 3km in total).	To attract users from Verwood heaths while providing an alternative sustainable recreation	Pre project user survey (ad hoc) Post project user surveys and horse counts. Informal contact with local users and residents.

		Installation of new bridge and landscaping.	space. To provide a route for horse riders to allow them to safely access sustainable horse riding areas in Ringwood Forest	
Christchurch Borough Council	Stony Lane BMX  Start: 30.05.07 Completed: 23.10.09	Creation of a BMX track and skate park	To deflect BMX users and mountain bike activities from the sensitive area of St. Catherine's Hill and to provide a pedestrian walkway around the area.	13 counts of arena users were carried out between November 2008 and December 2008. 200 visitor surveys conducted on St. Catherine's Hill between 22.10.07 and 08.08.08. 2 remote sensors were installed in December 2007. 1 sensor has reliable data from 18.12.07 until 16.02.09 and the other has continual and reliable data from 18.12.07 to date.
Purbeck District Council	Upton Heath Estate and Woods. Phase two. Start date: 29.02.08	Improving access and encouraging use of Upton Woods (underused) with vegetation management, new paths and trails (phase two).	To deflect users from Upton Heath	Remote sensors installed at access points to Upton Heath near 12.03.2009 and 06.04.2009 both with continuous and reliable data. Another remote sensor installed 10.12.07 with reliable data for December 2007 and January 2008 and from August 2008 to date. Three sensors also in situ at Upton Country Park. Two with reliable and continuous data from 4.08.08 to date and the third with reliable data from 8.4.09 to 1.12.09. Visitor surveys and people counts were conducted in July and August 2008 and people counts again in August 2009.



## Details of the completed capital projects

- 5.1 Each completed capital project is summarised with the results from the monitoring data. Full descriptions and analyses of each project are in appendix 8.

### Delph Woods – Block 9

- 5.2 This mitigation project was aimed at deflecting use from the area of heath at Dunyeats to Delph Woods. At Delph Woods, the main car park and footpath quality were improved to encourage visitors (especially dog walkers) to use the woodland area. Also to reduce pressure at Dunyeats Heaths a regularly used lay-by adjacent to the heath was closed.
- 5.3 The car park data shows that no cars were recorded following the closure of the lay-by and that the mean number of cars recorded in the main car park Delph Woods increased from 3.1 (prior to the works) to 5.7 after project completion.



Figure 13: Access drive to car park at Delph Woods before project works



Figure 14: Access drive at Delph Woods after project completion

Partner: Borough of Poole

Funded: £20,650

### Broadstone heath – Block 9

- 5.4 An all weather dog walking route was created to deflect dog walkers from Dunyeats and Canford Heaths. Twelve days of monitoring were conducted at Broadstone Heath between 14.09.2007 and 25.09.2007 between 06:00 and 19:30. The number of people using the path was recorded on 32 occasions and during the monitoring 165 people and 126 dogs were recorded.
- 5.5 The monitoring has revealed the importance of this site for dog walkers as 68% of visitors were dog walking and only 27% of visitors were walking without dogs. The average number of dogs per dog walking visitor was 1.13 with 10% of dogs on a lead and the remaining 90% of dogs were off lead. A small percentage of visitors were observed cycling (4%) and jogging (1%).
- 5.6 The monitoring data showed that the north section was the most heavily used with 59% of groups exclusively using this area and only 9% of all recorded visitors walking the entire path circuit. The site has the highest number of visitors in the morning between 08:30am and 09:30am.

Partner: Borough of Poole  
Funded: £22,200



Figure 15: Broadstone Heath before the works



Figure 16: Broadstone Heath after completion of the all weather dog walking route

#### Longfleet Drive – Block 9

- 5.7 The dense understory of rhododendron was removed at Longfleet Drive to create new paths and restore existing routes to attract users from Canford Heath. Longfleet Drive is a wooded area with a public pathway leading to Canford Heath which divides two housing settlements.
- 5.8 Car park counts at Culliford Crescent (3 in 2008 and 5 in 2009) show that the mean number of cars parked at Culliford Crescent (an access point to Canford Heath) has decreased from 3 in 2008 to 1 in 2009 after the project was completed.

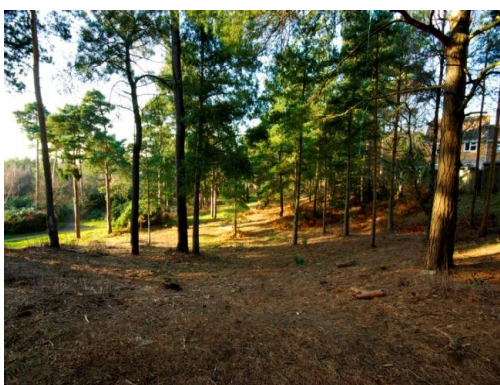


Figure 17: Longfleet Drive before the project works



Figure 18: Longfleet Drive after project completion

- 5.9 Visitor surveys after project completion showed that 98% of the interviewed visitors lived locally and virtually all of the visitors used the site weekly. Nearly one in 10 (9%) of the interviewed visitors had started visiting the site since the works were completed. A third of

visitors interviewed (33%) confirmed they now visit the site more frequently in the last two years and half of these advised it was because they got a dog.

- 5.10 The visitor surveys identify that the majority of site users (at least those who were interviewed) were local residents who access the interview location by foot. The site is heavily used by dog walkers and most people who use the area do so at least weekly. The visitor surveys were completed shortly after the works to the site.
- 5.11 However the monitoring work was unable to establish whether the projects works had actually reduced the number of visits to the heathlands.

Partner: Borough of Poole  
Funded £39,530

#### Longmeadow Woods – Block 8

- 5.12 Improvements were made to this woodland site to deflect walkers from adjacent Upton Heath. The dense understory of rhododendron and laurel was removed. The streams running through the site were dredged and some ponds were created. The Roman Road, which also runs through the site was also resurfaced. A dog ‘playground and exercise area’ was created with poles, jumps and a tunnel.
- 5.13 The people counts show that the percentage of people observed using Longmeadow Woods in comparison to the adjacent areas has increased by 12% following the improvement works to the site. The visitor surveys revealed that this site is well used by local residents and dog walkers. Six interviewees had started visiting the site within the past two years. One had started visiting because of a new dog and the other two because of the works but neither of these interviewees mentioned they also visited or had visited Upton Heath.
- 5.14 Longmeadow Woods is visited by people who also visit a variety of other sites which include country parks, forests, heathlands, woods and recreational grounds. It is not clear from the results of the visitor survey how usage of the site has or could have deflected users from the more sensitive sites in particular the areas of adjacent heath. This is possibly because of the questionnaire design and because the surveys were conducted almost immediately after works completion. A photographic diary of the work is included in appendix 9.



**Figure 19: Longmeadow Woods before the project works.**



**Figure 20: Same location as Figure 19, Longmeadow Woods after project completion.**



**Figure 21: Longmeadow Woods – dog agility area.**

Partner: Borough of Poole

Funded £35,500

#### Scott Road – Block 10

- 5.15 A multiuse play/games area for young people was provided adjacent to Bourne Valley. Combined seating and exercise posts were also installed and access was improved by surfacing a gravel track to guarantee all weather use. A fully DDA compliant access gate was also installed.
- 5.16 Several counts of the number of adults and children in Scott road were made before the multiuse play area was installed when only two goal ends were present (Figure 22). People counts showed these were not used and since the installation of the play area people have been observed in the play area using the equipment each time counts have been undertaken.
- 5.17 To consider whether the play area has reduced visitor pressure on Bourne Valley the remote sensor data and incident data will need to be analysed.

Partner: Borough of Poole

Funded: £27,288



Figure 22: Scott Road before the project started



Figure 23: Scott Road after project completion. Note the surfaced path in the foreground

#### Poor Common – Block 15

- 5.18 Undergrowth was removed and a new path network was created in a wooded open space. Events were also organised as part of this project to encourage dog walkers to use Poor Common as an alternative to Parley and Ferndown Commons.
- 5.19 Prior to any project work a community questionnaire was distributed to properties adjacent to Poor Common in 2006, and after project completion in 2009 the UHP conducted on site visitor surveys. The post project surveys showed that of the groups interviewed 31% had started using Poor Common within the past 2 years, after the IPF project was completed. From these visitors 44% stated that they started visiting the site because of the new paths and improvements to the paths, 37% of the visitors gave other reasons such as 'enjoyable place' and 'have more time now' and 11% of the visitors said they started using the site as they now have a new dog. None of the interviewed visitors mentioned the promotional events of Poor Common as a reason why they started using the site, which indicates that the promotional events were of limited value. However, 40% of the interviewed groups knew about the East Dorset Play Rangers free play sessions for children and 12% had attended one

of the sessions, which suggests these sessions were more successfully promoted and advertised than the promotion and awareness raising of the site itself.

Partner: East Dorset District Council

Funded: £34,500

#### Potterne Park –Block 12

5.20 Accessibility to Moors Valley Country Park was improved for residents of Verwood from the sensitive heathland areas in Verwood. The project also created a traffic free link for walkers, horse riders and cyclists from Verwood to Ringwood Forest and the Castleman Trailway.

5.21 It is understood that 40 visitor surveys were undertaken. This data has yet to be verified and analysed.

Partner: East Dorset District Council

Funded: £88,839

#### Stony Lane BMX – Block 16

5.22 A BMX track and skate park was set up as an alternative area for BMX activity away from St. Catherine’s Hill.



Figure 24: Skate park graffiti art



Figure 26: Skate park and BMX arena



Figure 25: Skate park and BMX arena



Figure 27: BMX track

5.23 In the year after the arena was completed counts of arena users were made. A total number of 98 BMX users were recorded in the first year along with 82 skateboarders, 19 mountain bikers and 2 motocross users. The most popular use of the arena is with BMX users followed

by skateboarders. A high number of walkers and dog walkers were also recorded in the area with an average of 2.6 walkers with dogs and 3.4 walkers recorded throughout the duration of the arena counts. The walkers were often in large groups.

- 5.24 It is difficult to determine whether the BMX arena has deflected use from St. Catherine's Hill because there is limited data on the incidence of BMX use on St. Catherine's Hill before the arena was installed. What is evident is that the arena is used and can now be used as a tool to direct heathland BMX users away from the heaths.
- 5.25 Independent of the heathland mitigation works, the park is developing organically and graffiti artwork is being put up and onto the skate ramps and users are encouraged to share their designs with the artists if they would like them on the kit in the park. It appears that even though it is difficult to quantify whether the skate park / BMX arena has reduced mountain bike pressure on the sensitive areas of St. Catherine's Hill, the park / arena and is clearly used and valued by the community.

Partner: Christchurch Borough Council

Funded: £64,757

#### **Upton heath estate and woods – Block 8**

- 5.26 Access to Upton Woods was improved with new path trails and vegetation clearance. Summary information shows that 107 people were recorded using the site in 2009 and 52 were recorded in 2008, a 67% increase in people. The percentage of people recorded with dogs was slightly lower in 2009 (59%) when compared with 2008 (62%). However 27 dogs were recorded in 2008 in comparison to 88 dogs in 2009.
- 5.27 Virtually all (93%) of visitors to the site were walking and the remainder were cycling. Most (83%) of those interviewed had a dog and 28% of these people had more than one dog. Half (50%) of those interviewed were exercising the dog and 32% stated they visit regularly as they are local residents, with 14% using the site as a cut through or route to another destination.
- 5.28 Visitors were asked how long they have been bringing their dog to Upton woods and 22% responded less than a year, although no further information was collected as to why the visitors started using Upton woods,
- 5.29 Interviewees were also asked whether they also visited Upton Heath;- 84% did visit Upton Heath and the remainder did not. Of those who visited Upton Heath, 40% visited either daily or several times a week and 76% of those that visited Upton Heath did so to dog walk.

Partner: Purbeck District Council

Funded: £15,170 (with previous monies of £13,888 for phase one)

## Summary of the on going capital projects

Table 9: Summaries of on going capital projects

Lead Partner	Project	Description	Update	Aim	Monitoring
BBC	Meyrick Park and Pugs Hole  Start: 30.05.07  Estimated completion: April 2011	Work to improve and extend path network opening up a currently inaccessible area.  Outstanding: Surfacing of trails and associated signage, improvements to access points and installation of interpretation boards	On hold until completion of Strouden Project  Estimated Resume date: October 2010	To attract visitors from Talbot Heath	Reliable sensor data from 2 locations in Meyrick Park and 1 at Pugs Hole from 12.02.09 to date.  Reliable sensor data from 3 sensors at Talbot Heath from 12.03.09 to date  Spurious visitor surveys were conducted between 14.02.08 – 18.06.09. No robust analysis can be conducted on visitor patterns but comments could be collated.
BBC	Strouden Park  Start: 29.02.08  Estimated completion: April 2011	Improve accessibility and attractiveness of site with improvements to vegetation management, tree planting and infrastructure.	Tree work, new and surfaced shared cycle route and footpath.  Interpretation panels complete and ready for installation (September 2010). Waymarking signage landscape work outstanding.	To promote and increase the diversity of usage of an under utilised major Public Open space within the central conurbation of Bournemouth.  To reduce the impact of public pressure on Hengistbury Head, Turbury & Kinson Commons.	Visitor surveys undertaken in 2009 and 2010. Approx 60 questionnaire forms completed. Questionnaires are not digitised and currently with BBC.

				<p>To provide a more user friendly and more welcoming space.</p> <p>To ultimately provide an integrated network of Open Spaces, linking Strouden Park, Queens Park, Kings Park and the Stour Valley Way.</p>	
BBC	<p>Gulliver's Trail</p> <p>Start: 26.09.07</p> <p>Estimated Completion: December 2010</p>	Linkage of eight green spaces in north Bournemouth.	<p>Site works complete.</p> <p>Outstanding interpretation and signage being finalised.</p>	<p>Reduce public pressure on Kinson and Turbary Common and encourage greater and more responsible use of less sensitive sites.</p> <p>Increase awareness of the wide diversity of north Bournemouth's Open Spaces</p> <p>Generally raise the profile of the importance of north Bournemouth's cultural and natural heritage.</p> <p>Provide a physical, cultural and</p>	<p>Two remote sensors were installed on 10.02.2010 at Millhams Mead.</p> <p>Sensor one was vandalised a week after installation, hence no data is available and sensor has not yet been replaced.</p> <p>Sensor two has reliable and continual data from installation to date.</p>



				historical link between a number of sites in north Bournemouth.	
BBC	Hengistbury Head Start: 29.02.08  Completed: September 2010.	Path work to direct visitors and minimise erosion.	Site works completed.  Waiting for trail booklet to be printed.	Create network of well maintained paths around the headland to direct visitor access from the sensitive heathland areas of the headland and reduce erosion rate.	Three remote sensors installed one in June 2008, one January 2009 and one in May 2009.  Reliable data from first sensor is available from 14.06.08 – 18.10.08 and 10.06.09 to date. There were some problems with the installation of the second and third sensor with reliable data available from 07.08.09 to date for both sensors.  114 visitor questionnaires and, 20 car park counts were undertaken- 6 in November 2009, 6 in December 2009, 6 in January 2010 and 2 in February which will provide an indication of visitor pressure
CBC	Chewton Bunny Start 26.09.07	Acquisition of land to improve the woodland path from Lymington Road to the	Leases are in place. Tree surveys are complete. Signage interpretation and complete path resurfacing	Encourage visitors to walk to Highcliffe Beach (not take a car) by the refurbishment of the woodland walk. This also	1 remote sensor installed at Chewton Bunny on 15.05.09. Reliable data from 15.05.09 to 19.01.10. Sensor currently not

	<p>Start 23.06.09</p> <p>Estimated completion: January 2011</p>	<p>sea, creating a SANG.</p> <p>Acquisition of further land Hoburne / Naish Land</p>	<p>with edging for safety and protection against erosion, wooden seating and tree work to open up views are due to commence in October 2010.</p> <p>Estimated completion: January 2012.</p>	<p>encourages physical activity and improves and protects the quality of the site.</p>	<p>working.</p> <p>119 visitor surveys carried out between 09.06.08 – 05.08.09.</p>
CBC	<p>Chewton Gateway</p> <p>Start: 29.02.08</p> <p>Estimated completion: Work can not start until DCC finish the lease agreements.</p>	<p>Acquisition of land and creation of a woodland walk to access and link with Chewton Common</p>	<p>Waiting lease completion by DCC. Draft design of woodland path in progress.</p>	<p>To deflect users from sensitive heathland areas of St. Catherine's Hill. By opening and creating alternative access to the common away from the busy, main road. This will link into future projects to open up the common as a SANG.</p>	<p>1 remote sensor installed at Chewton Gateway on 12.11.09. Reliable data from 12.11.09 to date.</p> <p>4 people counts between 06.10.08 and 31.03.09 at Chewton Common. 12 people counts at Chewton Gateway between 30.05.08 and 31.03.09.</p>

## Details of the ongoing capital projects

### Meyrick Park and Pugs Hole – Block 10

- 5.30 The habitat was opened up and the path network improved between and within Pugs Hole (a mixed woodland LNR) and Meyrick Park to deflect visitors from Talbot Heath. The project work was concentrated on rhododendron clearance and woodland management to improve access for both walkers and dog walkers.
- 5.31 Three remote sensors were installed, two at Meyrick Park and one at Pugs Hole in Spring 2009; all have been fully functional and the data appear reliable. In Spring 2009, 3 sensors were installed at Talbot Heath (under management by Borough of Poole) which will allow us to monitor longer terms visitor trends between Meyrick Park and Pugs Hole and Talbot Heath.
- 5.32 A small number of on-site visitor surveys and counts were conducted at Meyrick Park between February 2008 and June 2009. The interviews and counts were undertaken infrequently and on an ad hoc basis, making it difficult to identify visitor patterns and trends over the 18 month period. The interviews do contain constructive comments from the visitors which could be summarised.
- 5.33 This project is currently on hold with surfacing and signage of trails outstanding as well as improvements to access points and installation of interpretation panel. This project will resume on completion of the Strouden project during October 2010 and should be completed by April 2011. A copy of the interpretation panel and marked routes can be found in Appendix 9.

Partner: Bournemouth Borough Council

Funded: £70,000

### Strouden Park

- 5.34 This project was to improve the attractiveness and accessibility and improvements to infrastructure, vegetation management and tree planting at Strouden Park. The major change to the infrastructure is the new and surfaced shared footpath and cycleway.
- 5.35 No remote sensors are currently installed at the site but approximately 60 visitor questionnaires have been completed which are still with the partner. Estimate completion for the works is April 2011.

Partner: Bournemouth Borough Council

Funded: £201,250

### Gullivers Trail – Block 10

- 5.36 Gullivers trail links these eight green spaces and is specifically targeted at dog walkers to deflect use from Kinson and Turbary Common. Gullivers Trail links Duck Lane, Kinson Common, Millhams Mead, Pelhams Park, Puck's Dell, Kingsliegh Field, Fernheath Valley and Turbary Common to provide a new recreational opportunity. It is hoped that visitors will be especially attracted to the Millhams Mead area. As part of the project, path and access improvements have been made especially to Millhams Mead and currently work on signage and interpretation is underway. The new routes across the sites and existing footpaths will be waymarked.

- 5.37 Two sensors were installed at Millhams Mead. One was vandalised within a week of installation and needs replacement. An additional sensor is in situ at the main entrance to Turbary Common and a further two sensors are at Kinson Common. No visitor monitoring has been undertaken.
- 5.38 The estimated completion date is December 2010. A map of Gullivers Trail can be found in Appendix 9.

Partner: Bournemouth Borough Council

Funded: £82,300

#### **Hengistbury Head – Block 17**

- 5.39 Path improvements at Hengistbury Head were undertaken to direct access away from wildlife and habitat sensitive areas of the headland and to reduce the current rate of erosion of the informal path.
- 5.40 A substantial amount of monitoring has been undertaken at Hengistbury Head. Two remote sensors have been installed providing continual and reliable data from 10.06.09 (sensor 1) and 07.08.09 (sensor 2 and 3) to date. Comprehensive visitor surveys, car park counts and visitor counts were undertaken between 04.11.09 to 05.02.10, with the majority carried out by the seasonal warden funded by the Access Management Grant Scheme.
- 5.41 The visitor data from the surveys between 04.11.09 and 05.02.10 are comprehensive. In total 59 visitor questionnaires were completed at Hengistbury Head. 20 car park counts (of all cars within car parks in walking distance of Hengistbury Head) were undertaken; 6 in November 2009, 6 in December 2009, 6 in January 2010 and 2 in February 2010. In addition 70 tally counts of visitors were carried out between October 2009 and February 2009 at 4 different locations along the headland.
- 5.42** Popular sites that were visited by interviewees included Stanpit Marsh, Tuckton Gardens, St. Catherine’s Hill, the beaches and The New Forest. The most important feature of Hengistbury Head given by 55% of the interviewees was the beauty / scenery with 25% of people giving travel distance. 50% of all visitors interviewed were aware of one or more of the designations at Hengistbury Head. Other important features highly valued by interviewees were the tarmac paths, ease of walking the paths, fresh air, site safety for children and dogs, the lack of mud and current weather conditions.
- 5.43** Seventy snapshot surveys were undertaken counting the number of visitors at each location. The people counts showed that the site has heavier visitation at weekends than in the week. Visitation was lower in the winter and on poor weather days. Visitation was not equally distributed across the site with consistently more visitors recorded east and west of Double Dykes than on the beaches, Warren Hill or Mudeford Spit.
- 5.44 Jones (2009) estimated the number of visitors to Hengistbury Head arriving by car per year as 729,935 and this was estimated by extrapolating on-road and the car park count data. The car park counts were only conducted over the winter 2009/2010 and may not be representative of the true numbers of visitors. Should monitoring of visitor numbers and parked cars continue, it is recommended that the original data in Jones (2009) are reanalysed and visitor monitoring is continued regularly through the year including bank holidays, weekends and weekdays.

Partner: Bournemouth Borough Council  
Funded: £184, 620

### **Chewton Bunny**

- 5.45 Land was acquired for a woodland walk from Lymington Road and the edge of Chewton Common to the beach at Highcliffe, to create an uninterrupted access route and pathway from Chewton Common, through the woodland area and down to the sea at Highcliffe beach. This has subsequently been revised as certain land leases were not complete, and £9,167.80 was handed back to the DHIPF. Access is now from Lymington Road and Mill Lane to the sea and Highcliffe Beach. It is hoped the access route will be well used as it will be the only off road route to the beach. This area will then become a SANG.
- 5.46 The access route and pathways to Highcliffe beach, Highcliffe cliff top and the Cliffhanger cafe are targeted towards walkers and dog walkers. It is hoped the access route will appeal to a wide range of people and will reduce car travel.
- 5.47 The initial visitor surveys were conducted to establish how frequently the bunny paths are used by which type of users- 'cyclists, walker, joggers, dog walkers - and why people used them; whether it was just for leisure and recreation or as a direct route to the beach / work.

Partner: Christchurch Borough Council  
Funded: £69,145 + additional £10,938 for acquisition of further land

### **Chewton Gateway**

- 5.48 This project was for the creation of green space and to link access to Chewton Common and for financial support for public consultation about future projects for Chewton Common and maintenance of the area over 15 years.
- 5.49 This project (land acquisition and creation of green space) was phase one of a four phase vision. The land pending acquisition is Chewton Gateway and is a stretch of woodland joining the South West corner of Chewton Common. It stretches between Jesmond Avenue and Lymington Road, behind the recent Globe Inn development. There are still outstanding issues with the lease agreement that are currently with DCC legal department. Until these are finalised the project is unable to progress.
- 5.50 Phases two and three of project are specifically aimed at deflecting users from St. Catherine's Hill by making Chewton Common into a large SANG. Currently Chewton Common is a large area of overgrown land without public access. Phase four of the project is the work associated with the Chewton Bunny project and is running simultaneously.

Partner: Christchurch Borough Council  
Funded: £148,224

### **Capital Projects with no monitoring**

- For completeness projects which were funded under the IPF but required no visitor monitoring, are listed in Table 10

**Table 10: Summaries of the capital projects with no monitoring**

Lead Partner	Project	Funding (£'s)
Purbeck District Council	Design and consultation on works to deflect use from Upton Heath by improving access to open spaces and woods on Upton Estate and creating links to Upton Country Park (phase 1)	13,888
Borough of Poole	Purchase of pressure pads and break beam counters to carry out access monitoring for Interim Planning Framework.	20,000
Dorset County Council	Dog access management project. Project to encourage responsible dog walking (phase 1).	2,000
Borough of Poole	Installation of additional fire hydrants on Canford Heath to improve fire fighting ability (the number and size of fires on the Dorset Heaths are recorded in Dorset Explorer).  Start: 29.02.08 and Complete: 19.03.10	110,000
Upton Heath/Urban Wildlife Centre	Contribution to education project including creation of trails on Upton Heath and purchase of equipment for Upton Wildlife Centre education room.	15,170

**Implications for the DPD:**

- SANGs with access points directly onto heathland could actually increase the footfall on heathland if the improvements to the alternative space bring new visitors to the area. Adequate visitor monitoring needs to be undertaken to ensure the project will either shorten or deflect visitor routes on the heathland.
- Promotion of new alternative spaces should be targeted at existing local users, especially dog walkers and not general residents so as not to encourage a higher proportion of dog ownership amongst residents.
- The mitigation projects with complimentary feedback from visitors have been those which have engaged with the community at the early stages of the project and encompassed the needs of the community in the design and improvements to the existing site.
- Baseline visitation data must be gathered by installing sensor counters on mitigation at project inception.
- The future provision of alternative greenspaces should be multifunctional and endeavour to link with existing resources to cater for dog walkers, walkers, joggers and cyclists who prefer to take longer routes.
- The household survey data could be used to identify the areas where high densities of people regularly make visits to sensitive areas, especially to dog walk. Identifying sites suitable for use as alternative greenspaces should be prioritised as should improvement works to existing greenspace areas.
- Mid to Long term project monitoring should be included for all future projects.

## 6. Overall mitigation project conclusions and recommendations

- 6.1 Looking across all the projects it is possible to highlight the following general results which will be relevant for the DPD.
- 6.2 The IPF projects have gathered a vast amount of data on visitor numbers, parked car counts and visitor survey information. Some excellent baseline sets of data have been established for most of the mitigation projects. It is strongly recommended to build on this baseline data sets to examine and monitor visitor patterns at these mitigation sites. This will allow investigation into whether the projects have succeeded in acting as a sink for visitors and whether they have indeed met their intended purpose and deflected users from the more sensitive areas of heathland. It is important to investigate the visitor patterns not just in the short term but also the longer term.
- 6.3 As well as the continual monitoring of visitor pressure of alternative greenspaces it is of importance to continually monitor visitor pressures on the heaths, especially those adjacent to the projects. With both sets of data, analysis can then be undertaken to determine how the number of visitors to the Dorset heathlands has been impacted by the investment in mitigation projects. This type of analysis is currently restricted due to inconsistencies and irregularities in monitoring methods and data.
- 6.4 The collation, entry, screening, cleaning and analysis of data collected under the IPF is not a smooth process. The complexities are those typical of working with numerous organisations with several ongoing projects, and inconsistencies in recording methods and submission of the gathered data have restricted the analysis to date. Difficulties in accessing project data have also occurred through staff changeover, computer upgrades with resulting loss of data and the heavy workloads of those currently working within local authorities.
- 6.5 Difficulties with analysis of the data fell into two categories: The format of the data submitted to Footprint Ecology; and the lack of monitoring consistency between and within the projects. It was ambitious to anticipate that all capital project data could be analysed collectively. Different methods were used to gather car park counts, people counts and the visitor surveys across all projects and as such collective analysis will not be possible. The standardisation of pre and post project monitoring would be beneficial at all sites.
- 6.6 A concern relating to the project monitoring is the limited amount of data collected at most sites before the mitigation works commenced. This makes it very difficult to quantify whether or how visitation to the site has changed following the project. In a sense, pre project monitoring is more important than post project monitoring as it is used as the baseline to identify any changes in visitor patterns.
- 6.7 Several of the post project monitoring visitor surveys have not successfully captured the data required to identify whether the site has deflected or limited the number of visits to the more sensitive areas of heathland. A standard questionnaire is recommended which then tailors additional questions to specifically address why the visitor uses the site, and if the visitor has started using the site since the works or whether their frequency of visit to the heathlands has been reduced. Concurrently it is also important to standardise the car park and visitor counts to each location so that annual and seasonal short longer and trends can be identified. Standardising the monitoring of future capital projects would greatly improve the quality of data collected and make analysis more robust.

- 6.8 Our main suggestion is therefore a standardised approach to monitoring which is conducted by the same organisation using the same methodology with one central co-ordinator. It is also advised that the application process for IPF monies be revised to ensure that partners can demonstrate the potential of an alternative site to either deflect use from sensitive areas or provide alternative recreational opportunities to mitigate against any local population increases. Such a revision to the application process could include results from pre project monitoring with estimates of the type and number of visitors it hopes to attract and also the anticipated catchment area of the site.
- 6.9 A great deal of constructive information has been gathered from pulling together the data from capital projects especially relating to the needs of dog walkers. With further analysis it will be possible to identify which sites have the most dog walkers (from the interviews) and what features of each site, or indeed any site, dog walkers prefer, which in turn could be used to aid with the design of future mitigation projects. There is a need to ensure the results from existing IPF projects feed into the design of future projects.
- 6.10 The results of the visitor questionnaires also indicate that people are using the newly improved areas because they have a new dog. However, the data gathered were not able to identify whether this is because residents have got a new dog because there is somewhere local to walk the dog or whether those visitors getting a new dog would have done so independently of the project. Similarly it would be valuable to quantify whether improving access, the recreational areas and paths on project sites is encouraging people who would not otherwise spend time outside to do so. Unintentionally this could be increasing the number of people and dogs who are using the SANGs which could also be increasing the number of visitors to the heathlands.
- 6.11 Partners of future projects should liaise at project conception with the Open Access Officer whose role it is to encourage responsible and increased footfall and who would also be aware of other emerging project within in the region. Community consultation is also strongly encouraged as shaping and tailoring projects to meet the needs of the community is fundamental to providing successful alternative greenspaces. Conversely consultation may also help identify potential projects which are unlikely to deflect users from the heathlands.

#### **Implications for the DPD:**

- Tighter protocols on monitoring are necessary to ensure consistency and rigor.
- All monitoring should be centrally managed.
- Data storage should be managed and maintained by a single partner.
- Data collection for capital projects should place as much emphasis on monitoring visitor behaviour at mitigation and heathland site before completion as monitoring post project completions.
- Capital projects monitoring should be tailored to suit the project. It may not always be appropriate to conduct extensive visitor surveys.
- Partners to consider what user type each project hopes to target and from where and provide estimates of the number of visitors it would hope to deflect. This would show understanding of current visitation patterns.
- There is a need to identify where the monitoring should continue in the mid to long term and when the monitoring programme should look to move from comprehensive to selective. The progressive results of the monitoring programme should be used to inform these decisions. Of critical importance will be the differences between visit patterns and sensitive wildlife distribution on the rural and urban heaths.
- Traditionally countryside staff have not engaged with dog walkers or off road cyclists from a positive point of view and a proactive educational approach should be developed with local



visitor groups to help them gain a better understand of why they are being asked to modify their behaviour.

- To date only passive measures have been used to deflect visitors from the heaths and no active measures have been taken to encourage visitors to use SANGs. Byelaws could be brought forward (such as the requirement to keep all dogs on leads; or to close permissive bridleways at sensitive times of the year) to widen their countryside visits to less sensitive areas. Should these be implemented, comprehensive monitoring should be undertaken to evaluate their effectiveness in comparison and in combination with passive measures.
- The use of access management could also prove another useful tool to deflect visitors to alternative sites to limit footfall on the heaths.
- Exploring how and when to implement active and access management measures to discourage visitors from the heaths at sensitive times of the year should be trialled and comprehensively monitored at sites with a good provision of alternative recreational areas nearby. The ability of these techniques and the SANGs to absorb the behaviour most likely to cause disturbance to sensitive species can be evaluated.

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## 8. Appendix 1: Site Quality Checklist for SANGS (Based on Natural England guidance for the Thames Basin Heaths, modified by Footprint Ecology in 2009)

The attributes that follow as `must haves` should be provided for all SANGS. Some features are also given which should be desirable on an individual SANGS. However, Local Authorities will also need to propose a suite of SANGS which will, taken together, mitigate the potential effects on the SPA from the proposed new residential development in their area. Although not all SANGS can provide all the desirable features, a suite of SANGS should seek to provide the following:

- Some walks of over 5km
- Routes for cyclists and horse riders of over 5km
- Some routes suitable for wheelchair users
- Some sites where users such as dog walkers and horse riders are separated on marked routes
- Water features
- Viewpoints
- Walks within deciduous woodland
- Areas free from traffic noise

The wording in the list below is precise and has the following meaning:

- Requirements referred to as “must” haves” are essential. If any one is missing, the site will be unlikely to qualify as a SANG.
- Each SANGS should have at least one of the “desirable” features.

### **Must haves**

- SANGS should be able to offer the features described below without their functionality being compromised by unsuitable size, shape, location, topography or other inherent characteristics.
- For all sites there must be adequate parking for visitors, unless the site is intended for local pedestrian use only, i.e. within easy walking distance (400m) of the developments linked to it. The amount of car parking space should be determined by the anticipated numbers using the site and arriving by car.
- If the site is intended for local pedestrian use only, then there must be excellent access for people arriving by foot, with a range of access points directly linking housing and the SANG.
- All SANGS with car parks must have a circular walk which starts and finishes at the car park.
- It should be possible to complete a circular walk of 2.3-2.5km around the SANGS, and for larger SANGS a variety of circular walks.
- Car parks must be easily and safely accessible by car and should be clearly sign-posted.

- The accessibility of the site must include access points appropriate for the particular visitor use the SANGS is intended to cater for.
- Access points should have signage outlining the layout of the SANGS and the routes available to visitors
- The SANGS must have a safe route of access on foot from the nearest car park and/or footpath/s.
- SANGS must be designed so that they are perceived to be safe by users; they must not have trees and scrub covering parts of the walking routes.
- Paths must be easily used and well maintained but most should remain unsurfaced to avoid the site becoming too urban in feel. A majority of paths should be suitable for use in all weathers
- SANGS must be perceived as semi-natural spaces without intrusive artificial structures, except in the immediate vicinity of car parks. Visually-sensitive way-markers and some benches are acceptable.
- All SANGS larger than 12 ha must aim to provide a variety of habitats for users to experience (e.g. some areas of woodland, scrub, grassland, heathland, wetland, open water).
- Access within the SANGS must be largely unrestricted with plenty of space provided where it is possible for dogs to exercise freely and safely off lead.
- SANGS must be free from unpleasant visual, auditory or olfactory intrusions (e.g. derelict buildings, intrusive adjoining buildings, dumped materials, loud intermittent or continuous noise from traffic, industry, sports grounds, sewage treatment works, waste disposal facilities,).
- SANGS should be clearly sign-posted or advertised in some way.
- SANGS should have leaflets and/or websites advertising their location to potential users. It would be desirable for leaflets to be distributed to new homes in the area and be made available at entrance points and car parks.

### **Desirable**

- It would be desirable for an owner to be able to take dogs from the car park to the SANGS safely off the lead.
- Where possible it is desirable to choose sites with a gently undulating topography for SANGS
- It is desirable that SANGS provide a naturalistic space with areas of open (non-wooded) countryside and areas of deciduous woodland and water features
- Where possible it is desirable to have a focal point such as a view point, monument etc within the SANGS
- It is desirable that smaller SANGS do not have grazing stock and that on larger SANGS there are always areas free from grazing stock.

## 9. Appendix 2: Heathland sites monitored under the IPF for bird surveys

Table 11: Sites where nightjar, woodlark and Dartford warbler territories were mapped under the IPF. Those sites with \*\* were only surveyed from 2009.

Site	Owner/manager
Hengistbury Head	BBC
Kinson Common	BBC
Redhill Common	BBC
Turbary Common	BBC
Bourne Bottom (Valley)	BoP
Canford Heath	BoP
Corfe Hills	BoP
Ham Common	BoP
Haymoor Bottom	BoP
Talbot Heath	BoP
Slop Bog	DCC
Turnerspuddle Heath	DCC
Alder Hills	DWT
Sopley& Troublefield	DWT
Tadnoll& Winfrith heath	DWT
Upton Heath	DWT
Dewlands Common	EDDC
Stephens Castle	EDDC
Corfe Bluff	HCT
Creech Heath	HCT
Dunyeats Hill	HCT
East Holme	HCT
Ferndown Common	HCT
Gallows Hill	HCT
Great Ovens	HCT
Lions Hill	HCT
Lytchett East& Central	HCT
Noon Hill	HCT
Parley Common/DCC	HCT
Ramsdown	HCT
Town Common/SCH	HCT/CBC
Sandford Heath	NE
Stoborough Heath	NE
Holt Heath& Whitesheet**	NT/FC
Avon Heath North**	DCC
Avon Heath South**	DCC



## 10. Appendix 3: Summary values per heathland block

Summary statistics for each block of heathland illustrate the different characteristics of each block (see map 1 for block grouping). The remote sensor details refer to the number of sensors on the designated areas of heathland and the number of sensors adjacent to the heathland areas. Sensors are generally installed at access points to the heathland which may not be within the designated area.

The bird data was extracted from the territory centre GIS layers where the centre points of each territory centre fell within the boundaries of the heathland blocks. At times the centre point of a territory may fall just outside the boundaries of a heathland block, in these cases the bird data will be under represented and all values presented in this summary should be taken as minimum bird numbers.

### Block 1 Warmwell, Winfrith and Tadnoll

There are no sensors in situ in block 1.

Area of designation (ha)	340.88		
Number of houses within 400m of block	104		
Number of houses within 5km of block	5318		
Total number of access Points	18		
Foot only access points	1		
Informal car parking locations	13	Informal car parking spaces	42
Formal car parking locations	4	Formal car parking spaces	20
Total car parking locations	17	Total car park spaces	62

Year	Nightjar	Woodlark	Dartford warbler
2004	23		
2005			
2006		1	18
2007			
2008			23
2009	12		18
2010		1	11

## Block 2 Povington, Coombe and Holme

There are no sensors in situ on block 2.

Area of designation (ha)	1077.54		
Number of houses within 400m of block	20		
Number of houses within 5km of block	6376		
Total number of access points	3		
Foot only access points	0		
Informal car parking locations	2	Informal car parking spaces	2
Formal car parking locations	1	Formal car parking spaces	1
Total car parking locations	3	Total car park spaces	3

Year	Nightjar	Woodlark	Dartford warbler
2004	41		
2005			
2006		10	20
2007			
2008			
2009			
2010			

### Block 3 Stoborough, Middlebere and Arne

There are 6 sensors installed at access points adjacent to Stoborough Heath.

Area of designation (ha)	1371.11		
Number of houses within 400m of block	448		
Number of houses within 5km of block	28102		
Total number of access points	67		
Foot only	26		
Informal car parking locations	38	Informal car parking spaces	120
Formal car parking locations	3	Formal car parking spaces	133
Total car parking locations	41	Total car park spaces	253

Year	Nightjar	Woodlark	Dartford warbler
2004	71		
2005			
2006		10	117
2007			
2008	8		17
2009	19	1	12
2010		1	12

#### Block 4 Studland and Godlingston

There are no sensors installed in block 4.

Area of designation (ha)	944.94		
Number of houses within 400m of block	124		
Number of houses within 5km of block	26591		
Total number of access points	29		
Foot only access points	11		
Informal car parking locations	13	Informal car parking spaces	339
Formal car parking locations	5	Formal car parking spaces	1393
Total car parking locations	18	Total car park spaces	1732

Year	Nightjar	Woodlark	Dartford warbler
2004	63		
2005			
2006		3	44
2007			
2008			
2009			
2010			

### Block 5 Brownsea Island

There are no sensors in situ on Brownsea Island

Area of designation (ha)	161.10		
Number of houses within 400m of block	12		
Number of houses within 5km of block	40115		
Total number of access points	0		
Foot only access points	0		
Informal car parking locations	0	Informal car parking spaces	0
Formal car parking locations	0	Formal car parking spaces	0
Total car parking locations	0	Total car park spaces	0

Year	Nightjar	Woodlark	Dartford warbler
2004	2		
2005			
2006		0	1
2007			
2008	0		0
2009	0	0	0
2010		0	0

### Block 6 Wool, Stokeford, Higher Hyde, Chamberlaynes and Tonerspiddle

There are no sensors in situ on the heathland in block 6

Area of designation (ha)	672.74		
Number of houses within 400m of block	639		
Number of houses within 5km of block	9421		
Total number of access Points	41		
Foot only access points	20		
Informal car parking locations	17	Informal car parking spaces	44
Formal car parking locations	4	Formal car parking spaces	63
Total car parking locations	21	Total car park spaces	107

Year	Nightjar	Woodlark	Dartford warbler
2004	55		
2005			
2006		4	18
2007			
2008			
2009			
2010			

## Block 7 Great Ovens, Morden and Wareham Forest

There are 2 sensors in situ at Great Ovens.

Area of designation (ha)	861.99		
Number of houses within 400m of block	1218		
Number of houses within 5km of block	24410		
Total number of access Points	36		
Foot only access points	12		
Informal car parking locations	16	Informal car parking spaces	48
Formal car parking locations	8	Formal car parking spaces	94
Total car parking locations	24	Total car park spaces	142

Year	Nightjar	Woodlark	Dartford warbler
2004	45		
2005			
2006		14	38
2007			
2008			17
2009	8	2	16
2010		1	16

Note surveys in recent years have been limited to only part of the heathland block

### Block 8 Upton and Ham Common

There are 2 sensors on Upton Heath and 1 adjacent to it and 4 on Ham Common.

Area of designation (ha)	267.01		
Number of houses within 400m of block	6966		
Number of houses within 5km of block	47100		
Total number of access points	29		
Foot only access points	16		
Informal car parking locations	9	Informal car parking spaces	46
Formal car parking locations	4	Formal car parking spaces	181
Total car parking locations	13	Total car park spaces	227

Year	Nightjar	Woodlark	Dartford warbler
2004	0		
2005			
2006		1	30
2007			
2008			29
2009	12	0	32
2010		0	22



### Block 9 Canford, Dunyeats and Corfe Hills

There are 7 sensors on Canford heath and one adjacent to it and 1 sensor on Corfe Hills West and 2 adjacent to Dunyeats Heath.

Area of designation (ha)	508.5		
Number of houses within 400m of block	5253		
Number of houses within 5km of block	102,098		
Total number of access Points	46		
Foot only access points	30		
Informal car parking locations	15	Informal car parking spaces	31
Formal car parking locations	1	Formal car parking spaces	12
Total car parking locations	16	Total car park spaces	43

Year	Nightjar	Woodlark	Dartford warbler
2004	25		
2005			
2006		0	90
2007			
2008	0		64
2009	43	0	82
2010		0	49

### Block 10 Bourne Valley, Talbot, Kinson and Turbary

There are 6 sensors on Talbot Heath, 2 at Bourne Valley, 2 at Kinson Common and 1 at Turbary.

Area of designation (ha)	105.84		
Number of houses within 400m of block	10700		
Number of houses within 5km of block	121342		
Total number of access points	54		
Foot only access points	23		
Informal car parking locations	30	Informal car parking spaces	70
Formal car parking locations	1	Formal car parking spaces	24
Total car parking locations	31	Total car park spaces	94

Year	Nightjar	Woodlark	Dartford warbler	Total
2004	0			21
2005				
2006		0	7	7
2007				
2008	1		11	12
2009	0	0	6	6
2010		0	0	0

## Block 11 Cranborne

There are no sensors in block 11.

Area of designation (ha)	133.00		
Number of houses within 400m of block	26		
Number of houses within 5km of block	11075		
Total number of access points	11		
Foot only access points	4		
Informal car parking locations	6	Informal car parking spaces	8
Formal car parking locations	1	Formal car parking spaces	4
Total car parking locations	7	Total car park spaces	12

Year	Nightjar	Woodlark	Dartford warbler
2004	9		
2005			
2006		4	6
2007			
2008			
2009			
2010			

## Block 12 Horton, Dewlands, Lower and Verwood

There are no sensors in block 12.

Area of designation (ha)	125.53		
Number of houses within 400m of block	2462		
Number of houses within 5km of block	18998		
Total number of access points	46		
Foot only access points	26		
Informal car parking locations	14	Informal car parking spaces	34
Formal car parking locations	6	Formal car parking spaces	845
Total car parking locations	20	Total car park spaces	879

Year	Nightjar	Woodlark	Dartford warbler
2004	11		
2005			
2006		1	1
2007			
2008	2		3
2009	5	1	2
2010		0	0

### Block 13 Holt and West Moors

There are no sensors in block 13.

Area of designation (ha)	616.03		
Number of houses within 400m of block	644		
Number of houses within 5km of block	29501		
Total number of access points	43		
Foot only access points	22		
Informal car parking locations	20	Informal car parking spaces	52
Formal car parking locations	1	Formal car parking spaces	20
Total car parking locations	21	Total car park spaces	72

Year	Nightjar	Woodlark	Dartford warbler
2004	29		
2005			
2006		5	105
2007			
2008	0		
2009	28	1	89
2010		2	60

### Block 14 Lions Hill, Avon and Barnsfield

There are 2 sensors on Avon Heath and 1 on the Castleman Trailway at Lions Hill. There are a further 2 sensors adjacent to Avon Heath.

Area of designation (ha)	454.06		
Number of houses within 400m of block	1564		
Number of houses within 5km of block	34609		
Total number of access points	34		
Foot only access points	19		
Informal car parking locations	4	Informal car parking spaces	8
Formal car parking locations	11	Formal car parking spaces	1029
Total car parking locations	15	Total car park spaces	1037

Year	Nightjar	Woodlark	Dartford warbler
2004	47		
2005			
2006		14	30
2007			
2008	2		5
2009	24	11	22
2010		7	19

### Block 15 Parley, Ferndown and Merritown

There are 4 sensors on Parley Common, 1 on Ferndown Common, and 2 at Slop Bog. There is also 1 sensor adjacent to Ferndown Common.

Area of designation (ha)	347.23		
Number of houses within 400m of block	4787		
Number of houses within 5km of block	58589		
Total number of access points	67		
Foot only access points	40		
Informal car parking locations	26	Informal car parking spaces	66
Formal car parking locations	1	Formal car parking spaces	15
Total car parking locations	27	Total car park spaces	81

Year	Nightjar	Woodlark	Dartford warbler
2004	24		
2005			
2006		3	26
2007			
2008	13		44
2009	19	2	61
2010		0	42

### Block 16 Sopley, Ramsdown and Town Common

There are 2 sensors on Town Common and 1 on St. Catherines Hill.

Area of designation (ha)	255.35		
Number of houses within 400m of block	1245		
Number of houses within 5km of block	68133		
Total number of access points	29		
Foot only access points	13		
Informal car parking locations	13	Informal car parking spaces	25
Formal car parking locations	3	Formal car parking spaces	40
Total car parking locations	26	Total car park spaces	65

Year	Nightjar	Woodlark	Dartford warbler
2004	7		
2005			
2006		0	28
2007			
2008	19		38
2009	21	0	50
2010		0	29



### Block 17 Hengistbury Head

There are 3 sensors adjacent to Hengistbury Head.

Area of designation (ha)	36.04		
Number of houses within 400m of block	0		
Number of houses within 5km of block	37128		
Total number of access points	6		
Foot only access points	4		
Informal car parking locations	0	Informal car parking spaces	0
Formal car parking locations	2	Formal car parking spaces	1277
Total car parking locations	2	Total car park spaces	1277

Year	Nightjar	Woodlark	Dartford warbler
2004	1		
2005			
2006		0	4
2007			
2008	0		2
2009	0	0	0
2010		0	0

## 11. Appendix 3: Results of the 2007 Natural England Open Access Questionnaire

### Natural England Open Access Questionnaire

Natural England's national open access monitoring study includes two sites from the Dorset Heaths (Canford Heath and Morden Bog NNR/Decoy Heath) which were monitored in 2006, 2007 and 2008. In addition to the national survey Natural England developed a monitoring toolkit for local partner organisations to collect visitor information which would be fully compatible with the national data. This toolkit was adopted by the Urban Heaths Partnership in 2007 as a means of profiling visitors and gaining information about their visits. UHP wardens have been using this toolkit to conduct questionnaire surveys across the heaths within the partnership. The sites included and the numbers of survey days conducted by UHP staff for each are given in Table 12. In 2007 the 37 interview days resulted in 349 interviews. Full analysis of the 2007 data are presented.

Table 12 Number of survey days, with questionnaires conducted, conducted by UHP staff on the heathland sites within the UHP

Site Name	2007	2008	Total	Number of questionnaires completed in 2007
Arne	4	7	11	16
Avon Heath	7	0	7	74
Canford Heath	4	15	19	49
Dewlands Common	3	2	5	23
Ferndown Common	1	7	8	Data processed with 2008
Great Ovens	2	10	12	12
Lions Hill	1	2	3	Data processed with 2008
Lytchett East & Central	2	3	5	7
Parley Common	0	7	7	0
Town Common/SCH	1	6	7	Data processed with 2008
Turbary Common	2	3	5	20
Upton Heath	8	8	16	134
Winfrith Heath	2	10	12	14
<b>Total</b>	<b>37</b>	<b>80</b>	<b>117</b>	<b>349</b>

Below are some broad findings from all sites for which surveys were conducted in 2007 by the UHP. The data from 2008 is yet to be released.

#### Visitor profile

Knowing who visits a greenspace site can be an important tool in targeting information for potential site users. Early results indicate that most visitors to the majority of the sites on which interviews were conducted considered themselves to be local (Figure 28), with only local visitors interviewed at half of the sites. These sites included Canford Heath, Dewlands Common, Turbary Common and Winfrith. The only exception to this was Arne RSPB reserve, for which approximately 20 % were day visitors and 50 % were tourists. This is unsurprising considering the nature of the site and the small local population in the vicinity of the site. For most sites the majority of visitors interviewed were over 45 years old and nearly all were over 25 years old (Figure 29). The exception to this was Turbary Common, where 40 % of those interviewed were under 25. However it must be noted that due to the design of the questionnaire, children may be underrepresented. This

may be due to children being less likely to stop to answer a questionnaire, the interviewers being instructed not to talk to unaccompanied children, or in a group the adult may answer the questions. Across all the sites approximately a third of visitors were retired, with the majority of the remainder being employed (Figure 30). On Dewlands Comon, Great Ovens and Winfrith Heath 50 % of people were retired, while on Turbary Common only 15 % were retired.

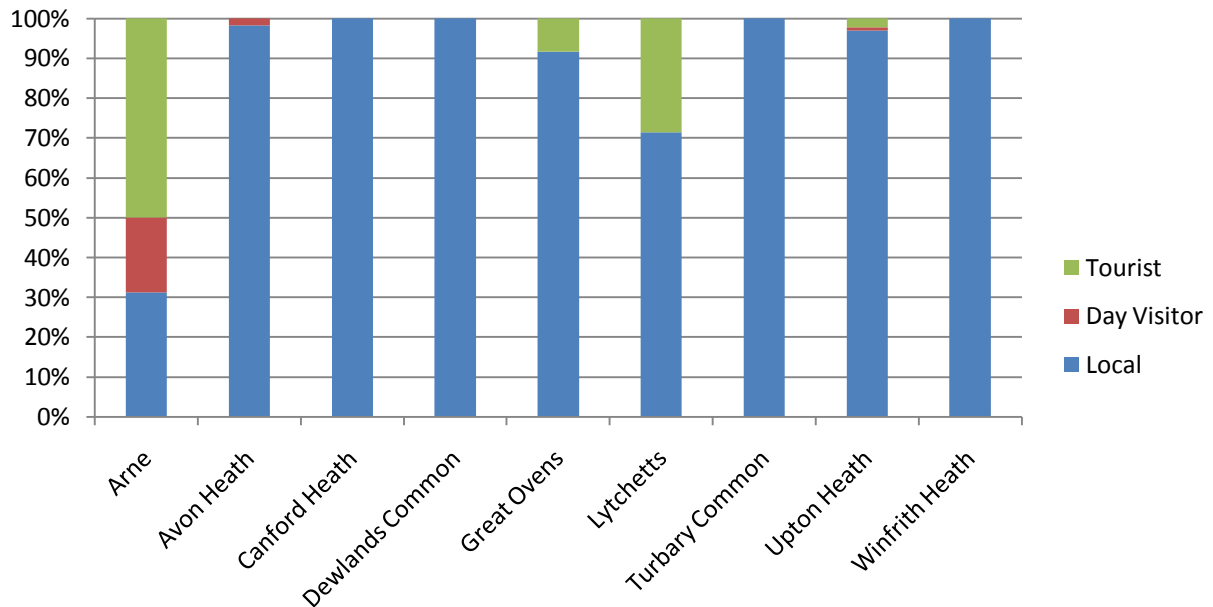


Figure 28 Response to the question ‘Do you live locally, are you on a day trip from home or are you on holiday?’ by interviewees on all sites for which data is available. Sample sizes can be found in Table 12.

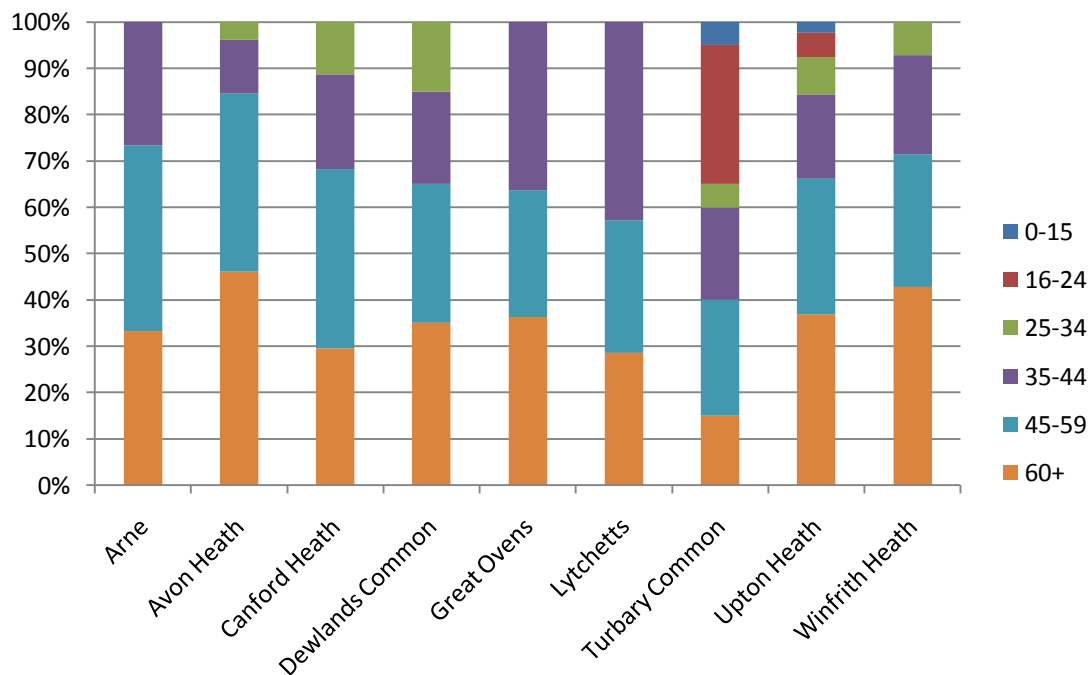


Figure 29 Response to the question ‘Which of these best describes your age group?’ by interviewees on all sites for which data is available. Sample sizes can be found in Table 12.

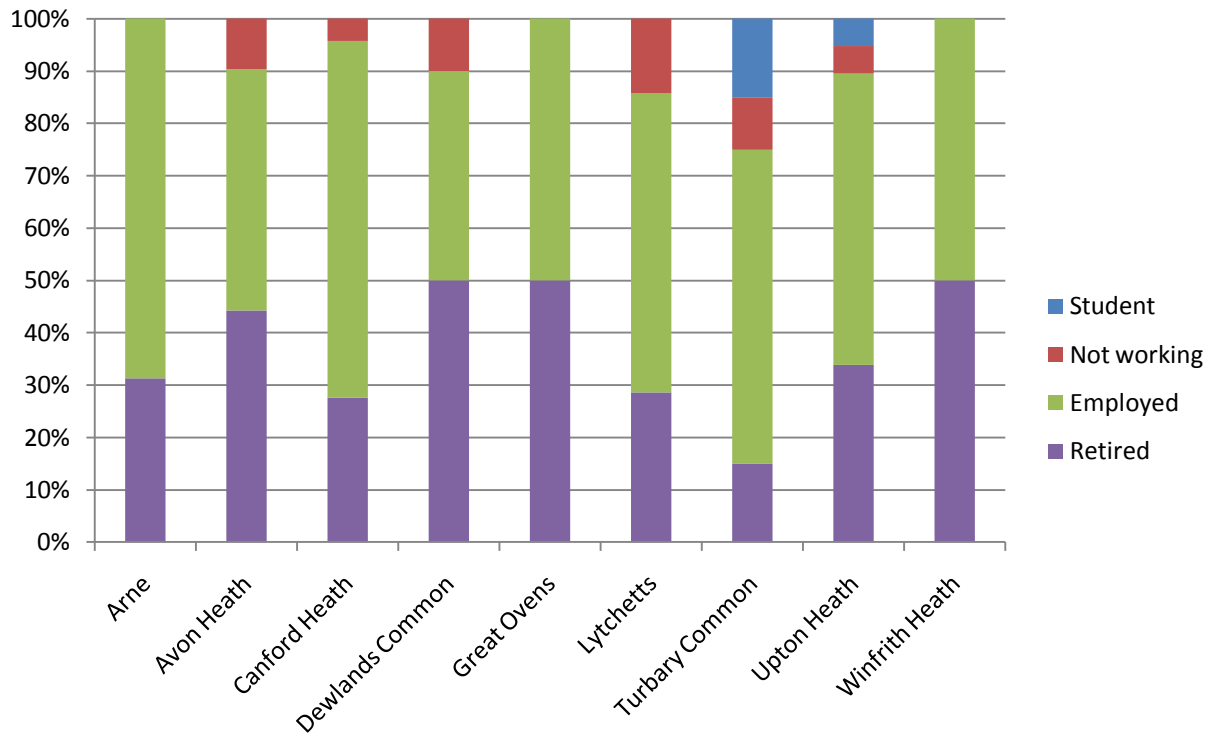


Figure 30 Response to the question ‘Which of these best describes your employment status?’ by interviewees on all sites for which data is available. Sample sizes can be found in Table 12.

These results suggest that the majority of visitors to the urban heaths (excluding Arne) live local the heath they visit, they are mostly over 45 years of age and are either employed or retired.

### Characteristics of their visits

Obtaining information about how often people visit a site and what activities they undertake on-site can provide useful insight and enable more targeted access management. Figure 31 shows that for all sites up to 60 % of visitors visit the site daily, with the majority of visitors to most sites visiting at least several times a week. The exception to this is Canford Heath for which only 36 % of visitors visit at least several times a week, and the majority visiting at least monthly. When asked how long interviewees had been visiting the site, for all sites at least 60 % of interviewees said that they had been visiting for at least five years, with this figure rising to as high as 85 % on some sites (Figure 32). This highlights the long time periods over which the patterns of access have developed.

What activities visitors undertake on-site are varied and Figure 33 shows the percentage of individuals that gave responses within the predefined answers. It shows that for all sites, except Arne, over 50 % of interviewees were dog walking, with values over 80 % at Avon Heath, Lytchetts and Great Ovens. While dogs are allowed anywhere on Arne, they must be under close control at all time and kept on a short lead while on Open Access ground between 1 March and 31 August. Going for a short walk or stroll was also another popular activity of these sites. Very few people visited these Dorset heaths for serious walking or hiking. Other activities that were given by respondents (with the number of groups) included biking (9), bird watching (12), horseriding (5), family outing (6), natural history/wildlife (not including bird watching) (5), photography (2), walking for health (2), jogging/running (4) and as a shortcut (3).

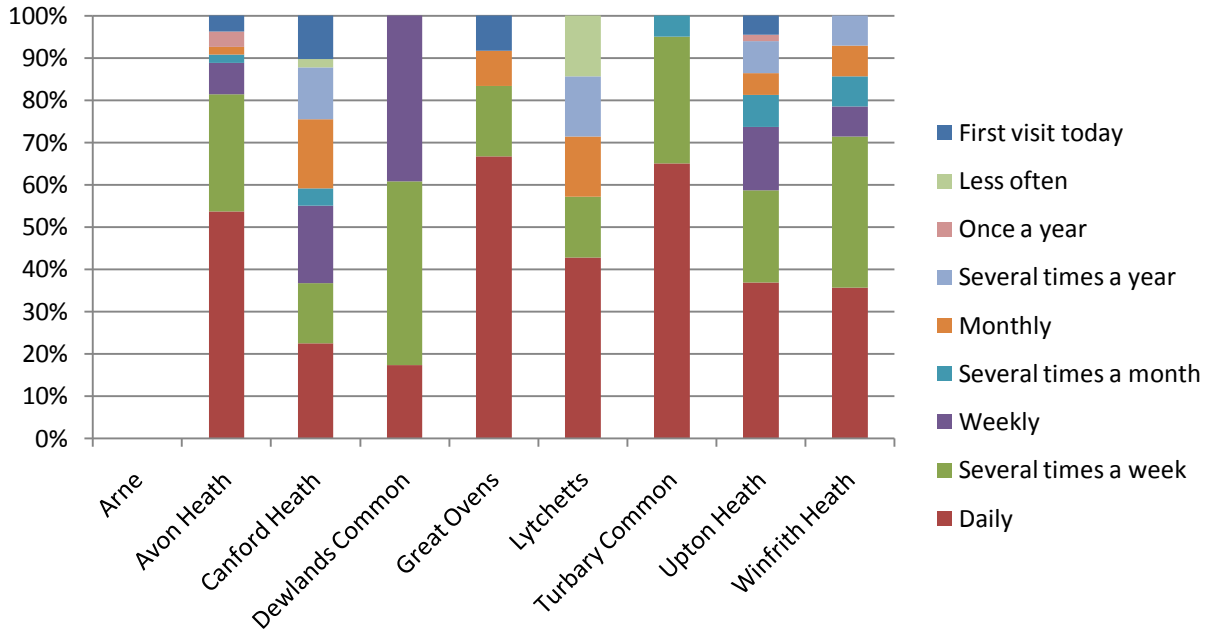


Figure 31 Response to the question ‘About how often do you visit this area of land?’ by interviewees on all sites for which data is available (No data available for Arne). Sample sizes can be found in Table 12.

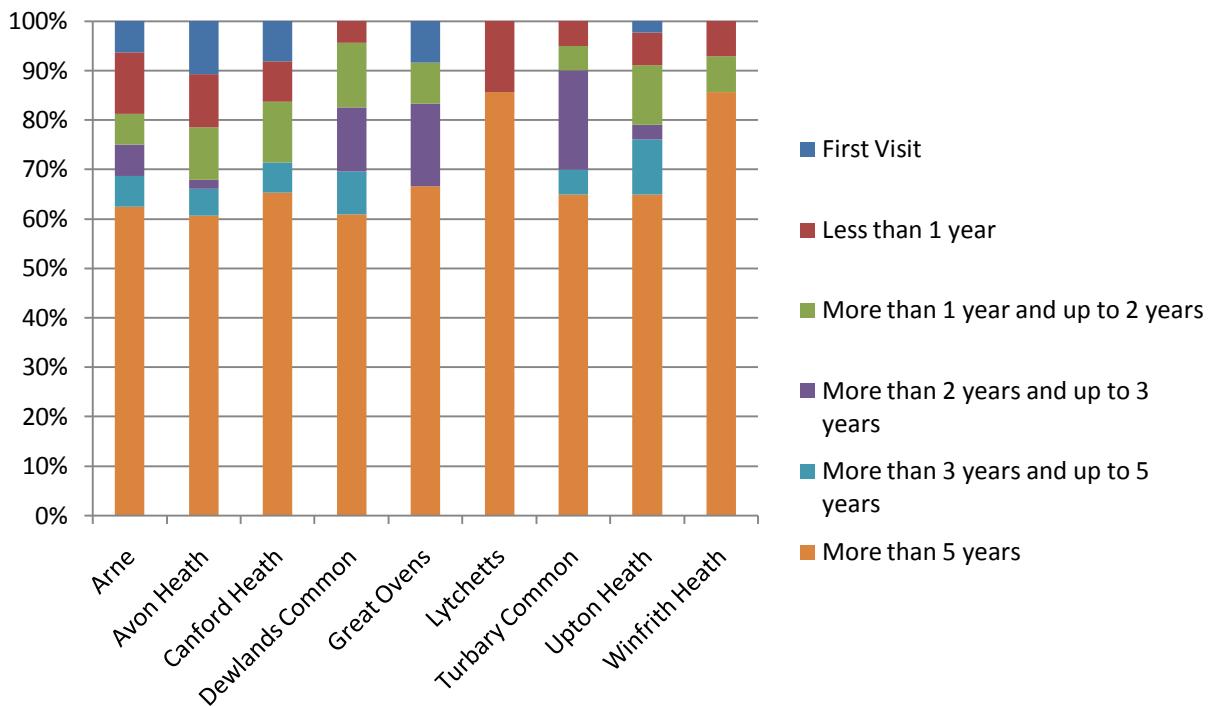


Figure 32 Response to the question ‘How long have you been visiting this area of land?’ by interviewees on all sites for which data is available. Sample sizes can be found in Table 12.

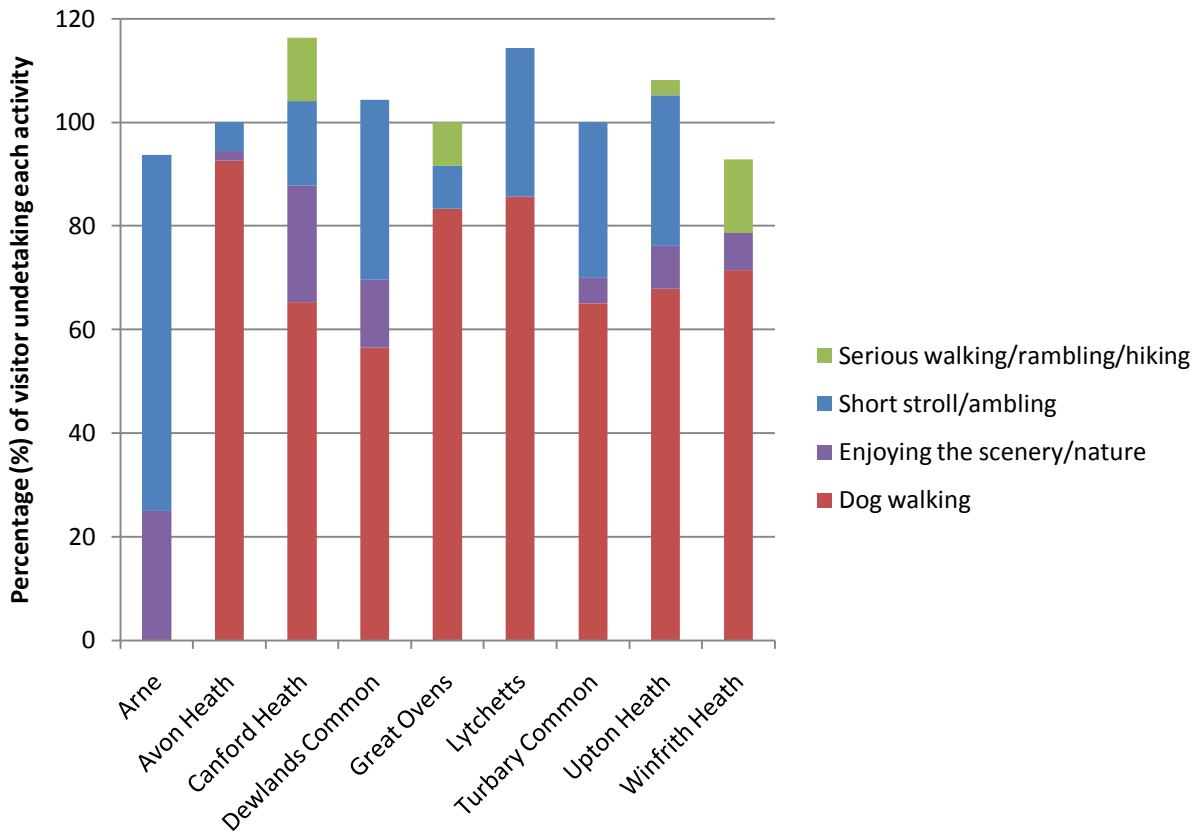


Figure 33 Response to the question ‘What activities do you plan to do here today?’ by interviewees on all sites for which data is available. Multiple answers acceptable. Figure only shows those responses to predefined answers given in the questionnaire. Sample sizes can be found in Table 12.

When asked why respondents visited the particular site they were interviewed at, as opposed to another site, there were a number of responses. Table 13 shows the percentage of people who gave answers similar to that of the predefined answers. Unsurprisingly for most heaths provision of amenities was not a reason for visiting. The proportion of interviewees giving the attractiveness of the scenery and the remoteness or quietness of a site as a reason for visiting varied between sites. Visitors interviewed on the larger sites, such as Arne, Avon Heath and Canford Heath tended to give this as a reason for visiting. For all sites except Arne visiting regularly or it being a local site was one of the primary reasons to visit that particular site over alternative sites. Other reasons for visiting given (with the number of groups) were birds/natural history (7), cleaner/drier (particularly for dog walking) (13), close/convenient (19), different/circular walks (4), dog can be off lead / safe (23), enjoyable (12), fewer bicycles (1), fewer people (2), free parking (3), good for bikes (4), good for children (2), good parking (3), short cut (1) and varied landscape (3).

Table 13 Response to the question ‘Why did you decide to visit this area of land today (rather than anywhere else)?’ by interviewees on all sites for which data is available. Multiple answers acceptable. Figure only shows those responses to predefined answers given in the questionnaire. Sample sizes can be found in Table 12.

Site Name	Provision of amenities	Attraction of the scenery/landscape	Quietness/remoteness	Regularly visit/local	Exercise/health benefits	Open access land
Arne	0%	63%	13%	6%	0%	0%
Avon Heath	2%	48%	15%	24%	13%	9%
Canford Heath	0%	53%	57%	57%	37%	20%
Dewlands Common	0%	4%	4%	87%	35%	0%
Great Ovens	0%	17%	0%	50%	8%	8%
Lytchetts	0%	0%	0%	100%	0%	0%
Turbary Common	0%	30%	20%	55%	15%	0%
Upton Heath	0%	34%	30%	63%	28%	6%
Winfrith Heath	0%	7%	14%	36%	0%	0%

These results indicate that visitors to the heaths visit very frequently, have been visiting for a long time, most visit to walk a dog or for a short walk or stroll, and they choose the particular heath because it is close or convenient, they would like to exercise or because it is attractive.

### **Dog walking**

Due to the access monitoring toolkit being specifically designed to collect information relating to access provision and the CROW act (2000) there were a number of questions relating to access with dogs and dog behaviour that were asked of interviewees with dogs. As shown in Figure 33 a large majority of visitors to the sites surveyed were walking dogs. It is therefore suitable for the data resulting from these questions to be presented as it may provide insight into a large heathland user-group.

When respondents were asked about why it was good to bring a dog here the most popular answer was because the dog did not need to be on a lead (Table 14). Other popular answers given included because there were no restrictions on dogs being here, the dog liked it and because it was close to home. Other non-predefined answers given (with the number of groups) included adventure/exciting (3), away from roads/safe/enclosed (24), clean/dry (11), convenient/close (5), good paths/network (7), meet other dogs/dog owners (4), open space (5), pleasant /quiet/nice place (9) and wildlife (2).

Table 14 Response to the question 'What aspects about this area of land make it good for bringing dogs here?' by interviewees with dogs on all sites for which data is available. Interviewees were not prompted with predefined answers. Multiple answers acceptable. Figure only shows those responses to predefined answers given in the questionnaire.

Site Name	Able to let dog run off lead	No/not many other dogs	No/not many other people	No restrictions on dogs being here	Dog enjoys it here	Don't have to pick up dog mess	No livestock	Things for dogs to chase (e.g. rabbits)	Nothing in particular/ I like the walk/ convenient for me	Sample size
Arne	No dog walkers interviewed									0
Avon Heath	56%	6%	2%	35%	35%	0%	0%	8%	8%	65
Canford Heath	53%	14%	8%	41%	51%	2%	12%	4%	16%	32
Dewlands Common	30%	22%	26%	0%	17%	0%	0%	0%	39%	15
Great Ovens	33%	17%	8%	33%	25%	0%	0%	0%	25%	10
Lytchetts	71%	0%	0%	29%	0%	0%	0%	0%	29%	6
Turbary Common	63%	0%	5%	32%	47%	0%	5%	0%	16%	13
Upton Heath	52%	17%	10%	26%	43%	1%	2%	1%	15%	93
Winfrith Heath	50%	29%	21%	29%	50%	29%	29%	14%	50%	11

Interviewees were also asked questions about the behaviour of their dog under certain circumstances. It must be noted however that questions relating to the behaviour of dogs may not accurately reflect what is taking place on-site, due to respondents giving the answer they think they should give rather than what they actually do, and that the interviews undertaken in 2007 were conducted outside the breeding season.

When asked what they would do if there were a sign asking dog owner to keep dogs on the lead, unsurprisingly over 80 % of people on all sites said they would comply (Figure 34). However on Lytchetts and Turbary over 10% of dog owners said they would continue to let their dog roam freely. On most other sites the remaining interviewees said that they would keep the dog to heel.

When asked a similar question about if a wild bird were close by, on most sites over 50 % of dog owners said they would put their dog on a lead (Figure 35). However, on Dewlands Common this value was 36 %. On Turbary, Lytchetts and Great Ovens all those who didn't say they would put their dog on a lead, said they would keep their dog to heel. For the remaining sites only a small proportion (less than 15 %) of respondents said they would continue to let their dog roam freely, except on Winfrith Heath where over 40 % of dog owners said they would continue to let their dog roam freely.

Finally when they were asked about their actions and the behaviour of their dog during nesting season, on half of the sites less than 50 % of dog owners would put their dog on a lead (Figure 36). A large proportion of interviewees would keep their dog to heel. Figure 36 also shows that on Turbary Common 25 % of dog owners would allow their dogs to roam freely. For Avon Heath, Canford Heath, Dewland and Great Ovens this figure is around 10 %. It is only on Lytchetts and Winfrith Heath did all dog owners say they keep their dogs under close control during nesting season.



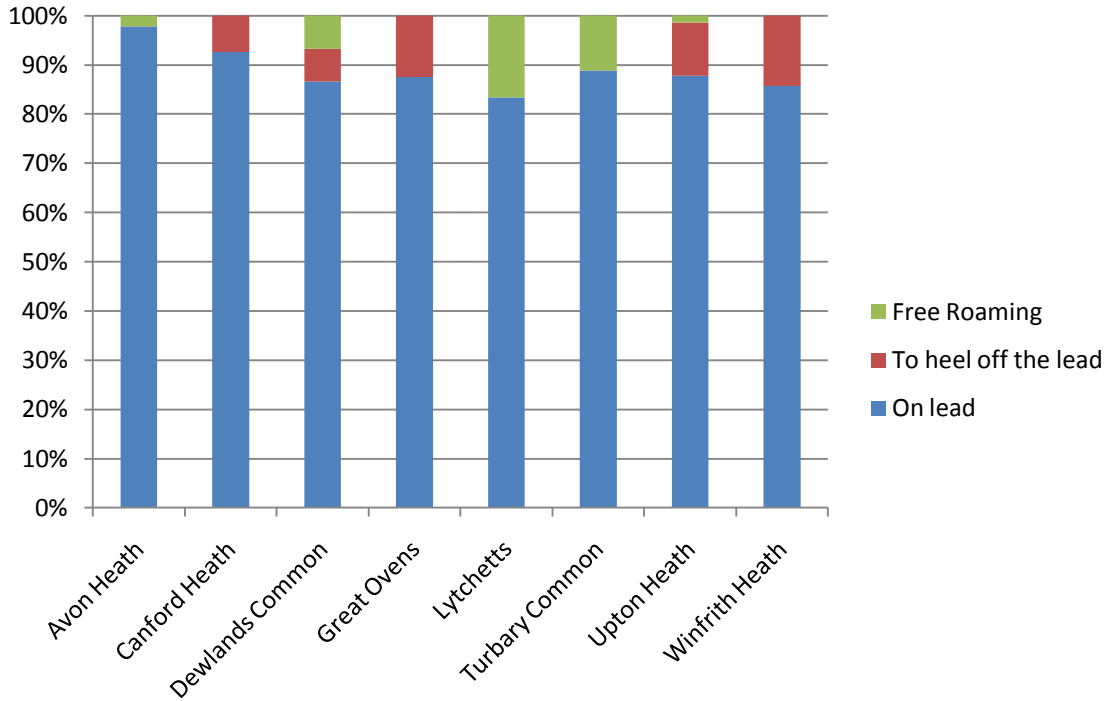


Figure 34 Response to the question ‘Under what circumstances do you keep your dog(s) on a lead, to heel off the lead, or free roaming off the lead on this site? – If signs/ information say to keep on lead.’ by interviewees with dogs on all sites for which data is available. Sample sizes can be found in Table 14.

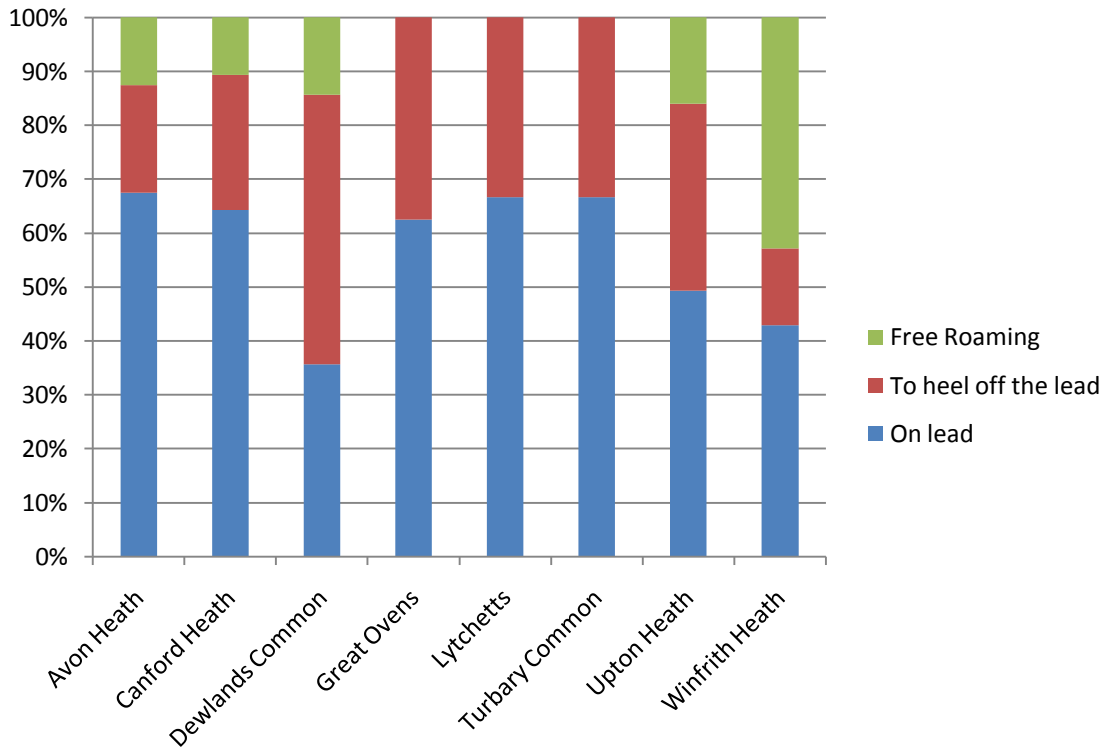


Figure 35 Response to the question ‘Under what circumstances do you keep your dog(s) on a lead, to heel off the lead, or free roaming off the lead on this site? – If wild birds are close by.’ by interviewees with dogs on all sites for which data is available. Sample sizes can be found in Table 14.

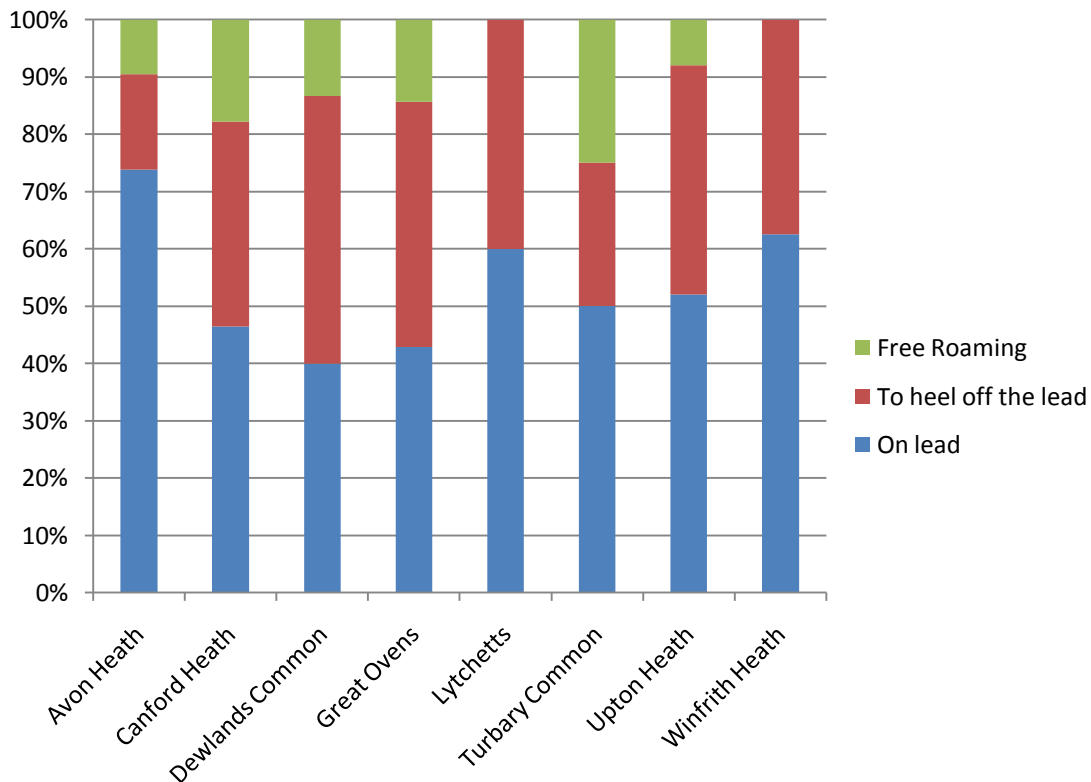


Figure 36 Response to the question ‘Under what circumstances do you keep your dog(s) on a lead, to heel off the lead, or free roaming off the lead on this site? – In nesting season.’ by interviewees with dogs on all sites for which data is available. Sample sizes can be found in Table 14.

These results indicate that there is a wide range of reasons as to why dog walking is popular on these heathland sites. The most popular were because the dog didn't need to be on a lead, there were no restrictions on dogs being there, the site was safe and clean/dry, the dog liked it and because it was close to home. These results also indicate that across all sites 90 % of dog owners said they would keep their dog on a lead or to heel if there were a sign telling them to do so, while only 54 % of dog owners said they keep their dog on a lead in nesting season or if a wild bird is close by. If this is extended to include keeping dogs to heel, 98 % of dog owners said the sign would encourage them to put their dog on a lead or keep it to heel, while currently only 88 % of dog owners say they keep their dog on a lead or to heel during nesting season, and 83 % say they do when a wild bird is nearby.

The data collected during 2007 using the access monitoring toolkit indicates that the heathland sites for which data is available are used by a wide variety of people for a range of activities. However, they also show that the user group most frequently interviewed (except at Arne) are over 45 years of age, visit very regularly and have been doing so for a long period of time, are walking a dog and do so because it is good for dog walking and it is close to home or convenient. These data both highlight the main user group that should be targeted, and also the characteristics that make heathland attractive to visitors which would need to be reproduced in alternative sites.



**Appendix 4. IPF monitoring flow charts for data exchange and handling from the UHP.**

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Bird Monitoring	8
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## **Introduction**

This document contains flow charts to diagrammatically represent the processes involved in the monitoring that is being carried out across the Urban Heaths Partnership area. They show the process and who is carrying out that process, each blue arrow represents an exchange of data whether in paper copy or electronically. The following gives a brief description of each type of monitoring.

### **Automated Visitor Counting Sensors**

A network of automated visitor counters has been established across the UHP area. These are made up of a combination of different types of sensors including pressure pads under paths, infra red beams and induction loops, all record the numbers of people passing them on to electronic devices buried close to the sensors. These record visitor numbers and can identify trends etc.

### **Car Park Counts**

Simultaneous (snap shot) counts

Counts are co-ordinated for 2 hour period at a chosen time at all the identified heathland parking areas collecting information on how many cars are at each area.

Random Counts

UHP wardens keep count of cars at any identified parking area they visit within their working day. Field recording sheets are supplied to all wardens along with maps identifying the parking areas concerned.

The flow chart under car park counts reflects the process used for both simultaneous and random counts.

### **Natural England Open Access Monitoring Toolkit**

Site user surveys carried out to find out who visits the heaths and why, what they do on the heath and where they go, how and where they are travelling from, and what they think of the heaths.

Surveys were carried out on a representative sample of heathland sites. The survey was originally designed for open access areas by Natural England. Additional questions were included to cater for the specific needs of Development Mitigation monitoring.

This was last carried out in 2007/2008 and it is anticipated to repeat in 2012 with a refined questionnaire.

Public Perception Surveys were carried out in 2005; there is not a flow chart for this monitoring however it is expected to carry out similar surveys in 2011.

### **Bird Monitoring**

Bird Distribution monitoring is carried out by the RSPB using Common Bird Census type methodology, Nightjar breeding success monitoring is also being carried out by the RSPB.

### **Housing Close to Heathland Sites**

Record of the location and date of occupancy of new housing to allow data on visitor numbers etc to be related back to new housing allocations. This can be used to ensure that the projects within the IPF are strategically placed and provide an indication of any gaps, for example, particular concentrations of new housing where there are no SANGS and no alternative access locations besides the heathland sites nearby.

### **Incident Reporting on Dorset Explorer**

The Dorset Explorer database run by Dorset County Council dates back to 2002 and records unwanted activities such as heath fires, motor vehicle trespass, ramp and den building etc. The incident database can be accessed by all partners from any computer with internet access. These records can be used to inform wardening effort and also monitor trends in unwanted activities. Incident recording is via an online form which feeds directly into Dorset Explorer.

As well as gathering information on the nature of unwanted activities on the heaths the incident reports gather information which can be used to quantify the effects of these incidents, particularly fires, on the heathland habitats. The location and extent of fires are plotted on a site map so that the future recovery of the area can be monitored and any changes to Phase 1 habitat types can be recorded.

### **Capital Projects Programme (Funded Through Interim Planning Framework IPF)**

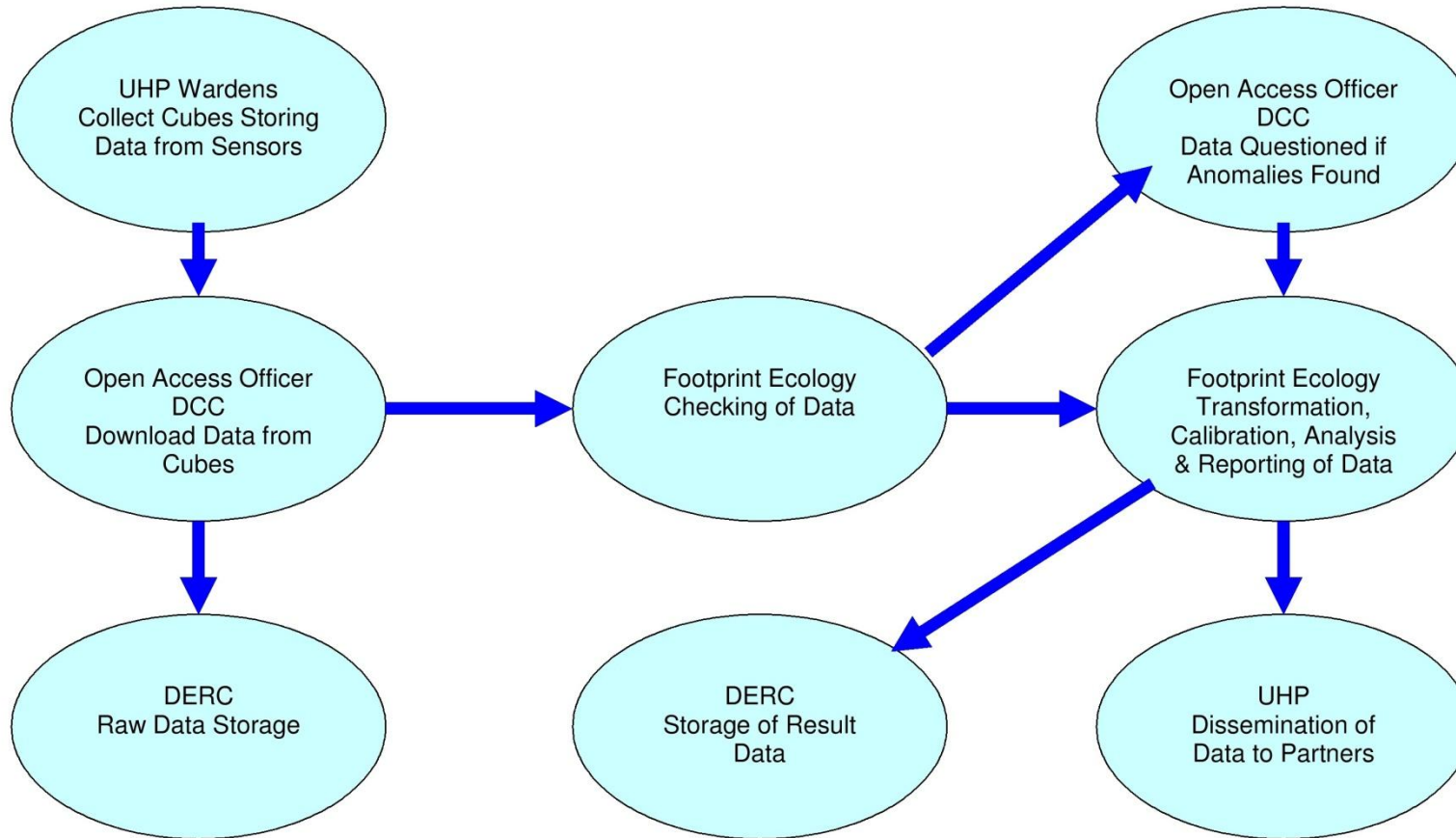
The UHP Partnership Manager keeps records of past, present and future IPF projects and collects information as to their progress.

### **Interim Planning Framework Capital Project Monitoring**

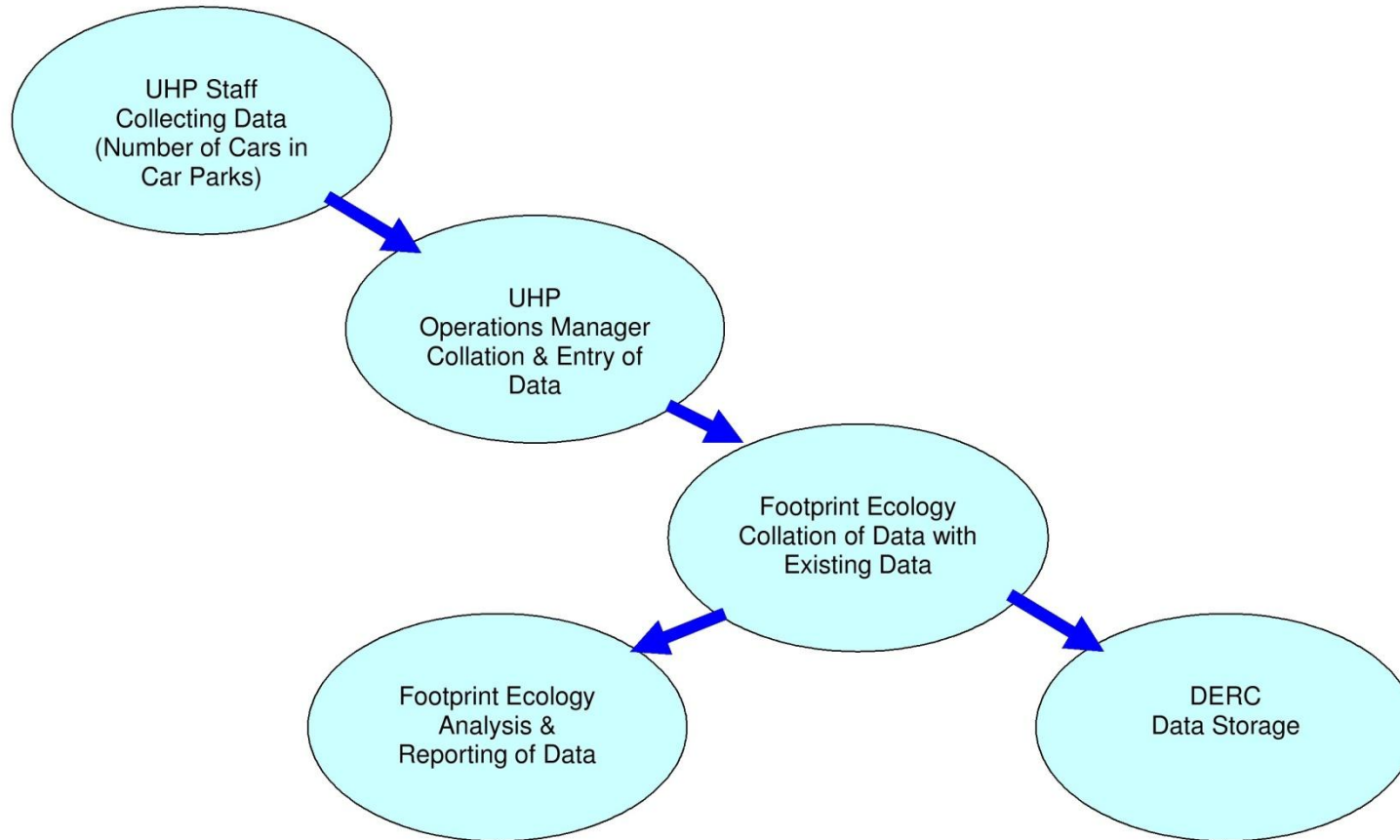
Monitoring on sites where capital projects are funded is vitally important to gain knowledge using before and after monitoring to quantify the success of the project. The responsibility of this monitoring is down to the project manager, agreement as to the methodology should be reached with Footprint Ecology before being undertaken. The actual monitoring could however be carried out by UHP staff or others under a contract.

**More information regarding monitoring can be found in the Monitoring Strategy for Dorset Heathlands Interim Planning Framework.**

### Automated Visitor Counting Sensors

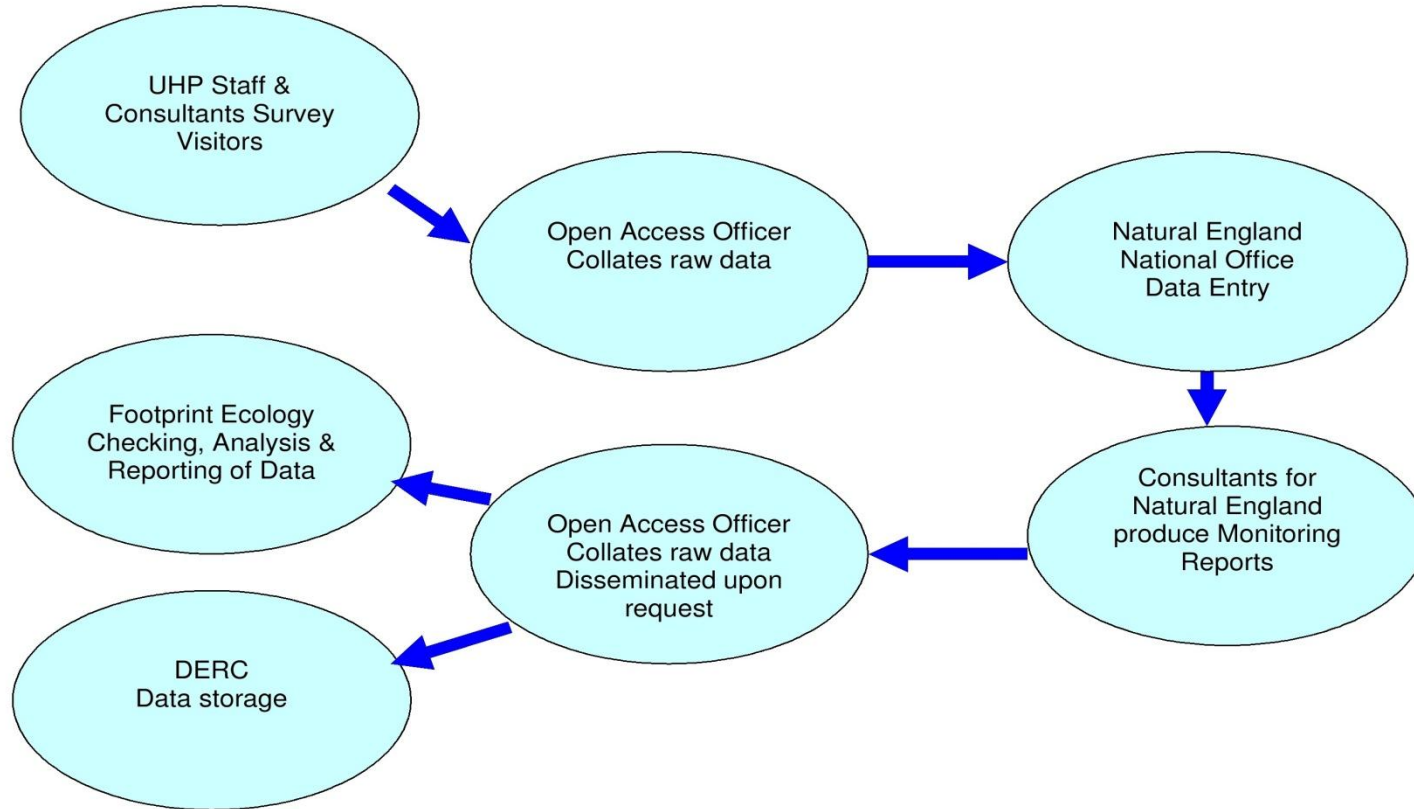


### Car Park Counts

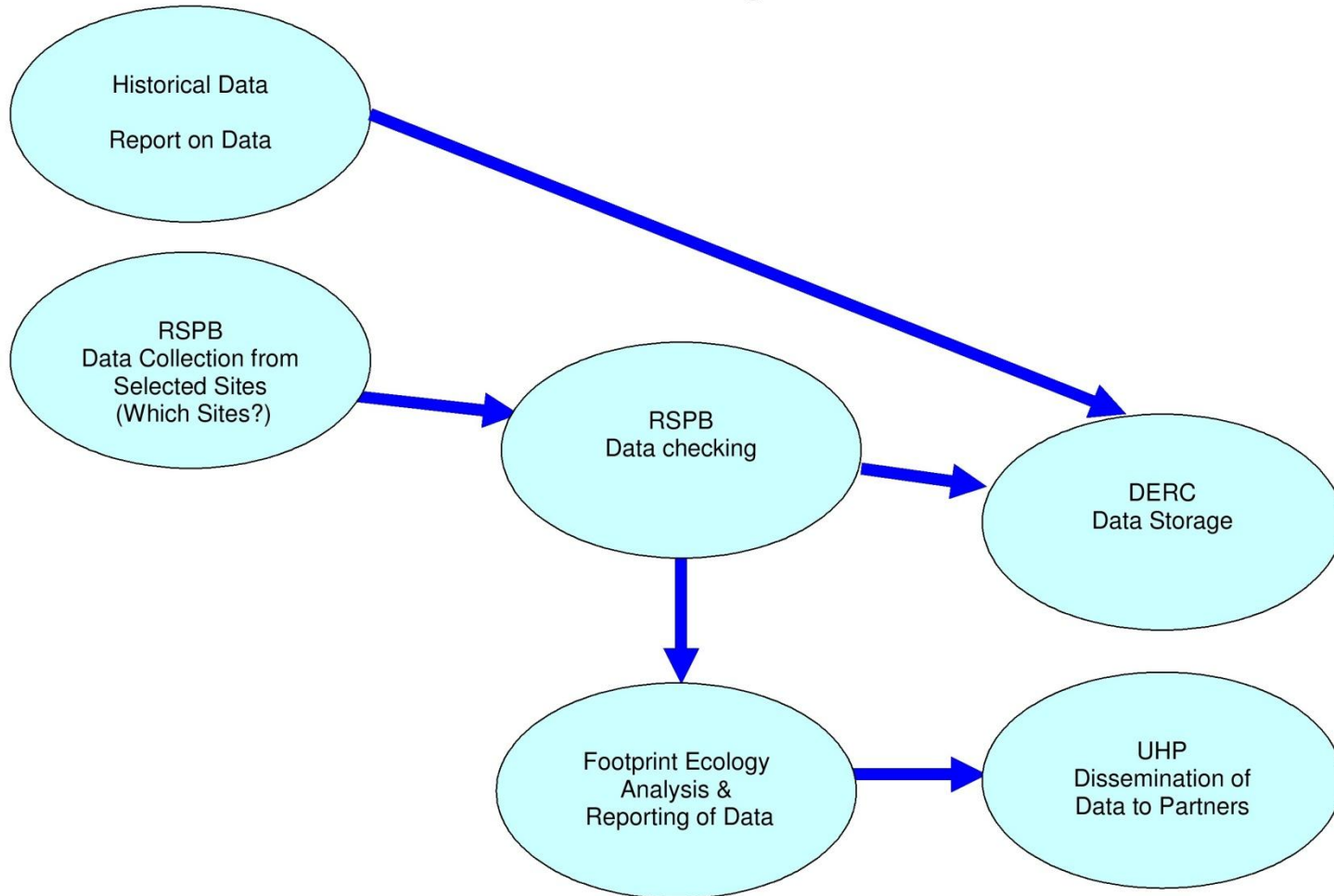




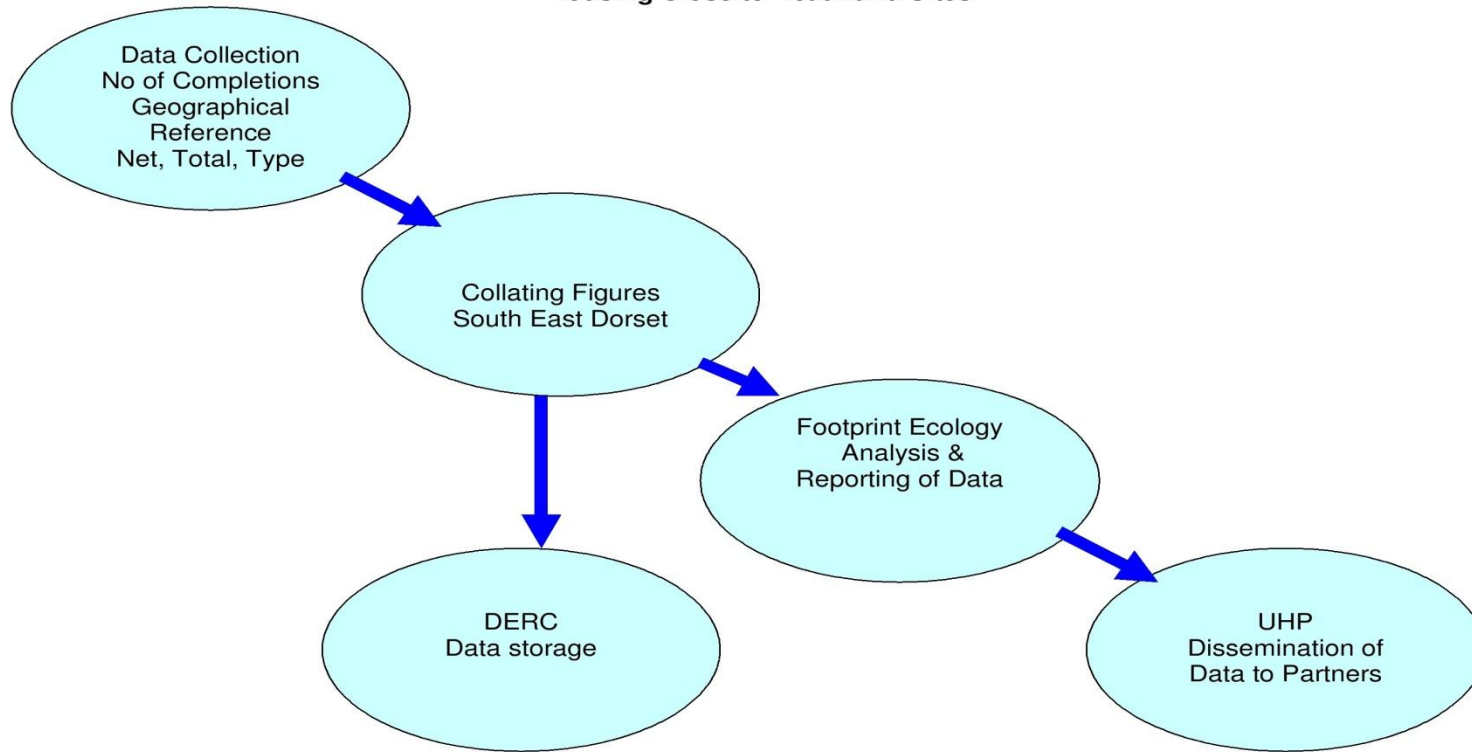
**Open Access Monitoring – (Natural England Open Access Visitor Monitoring Toolkit- Modified)**



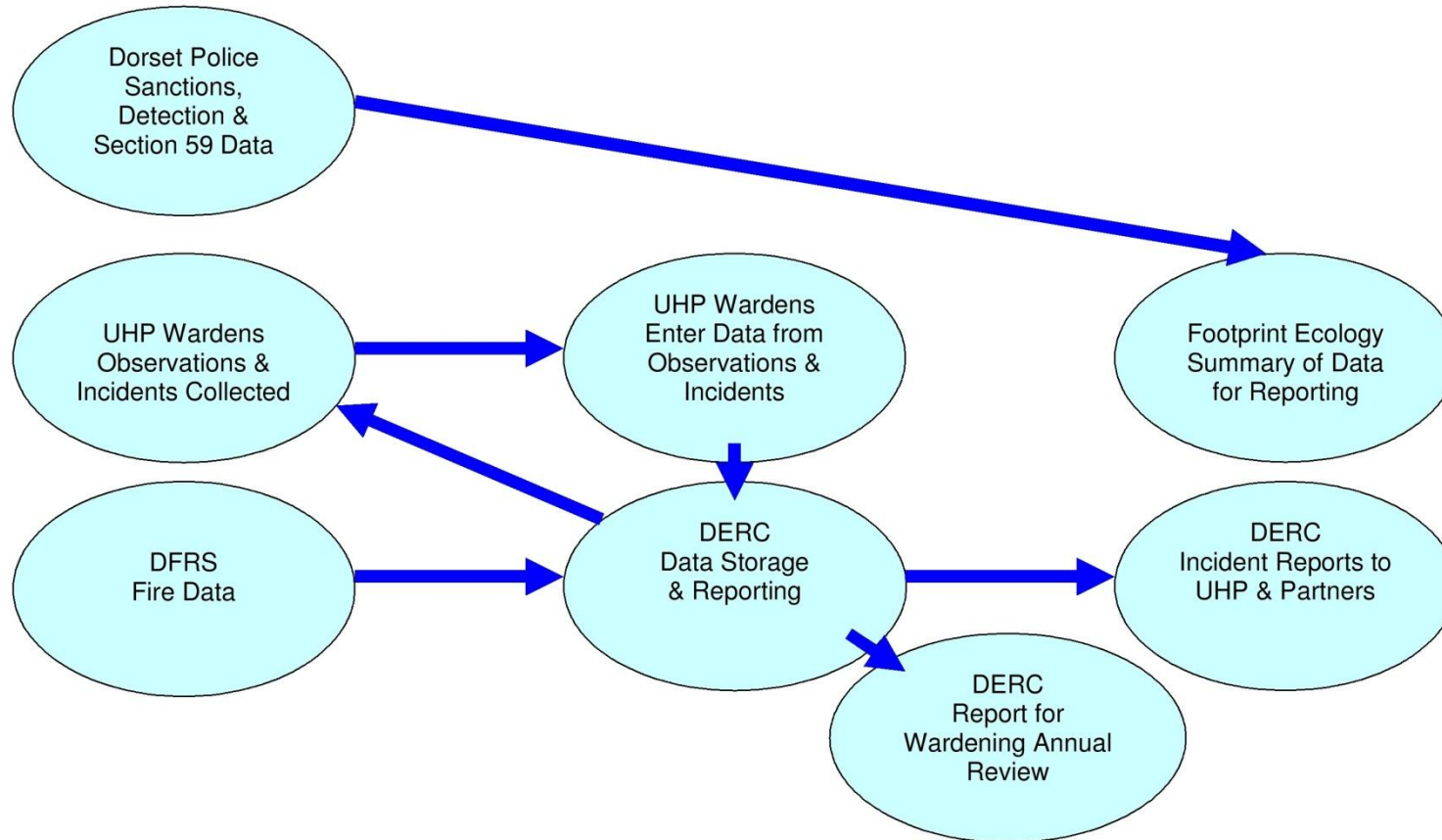
### Bird Monitoring



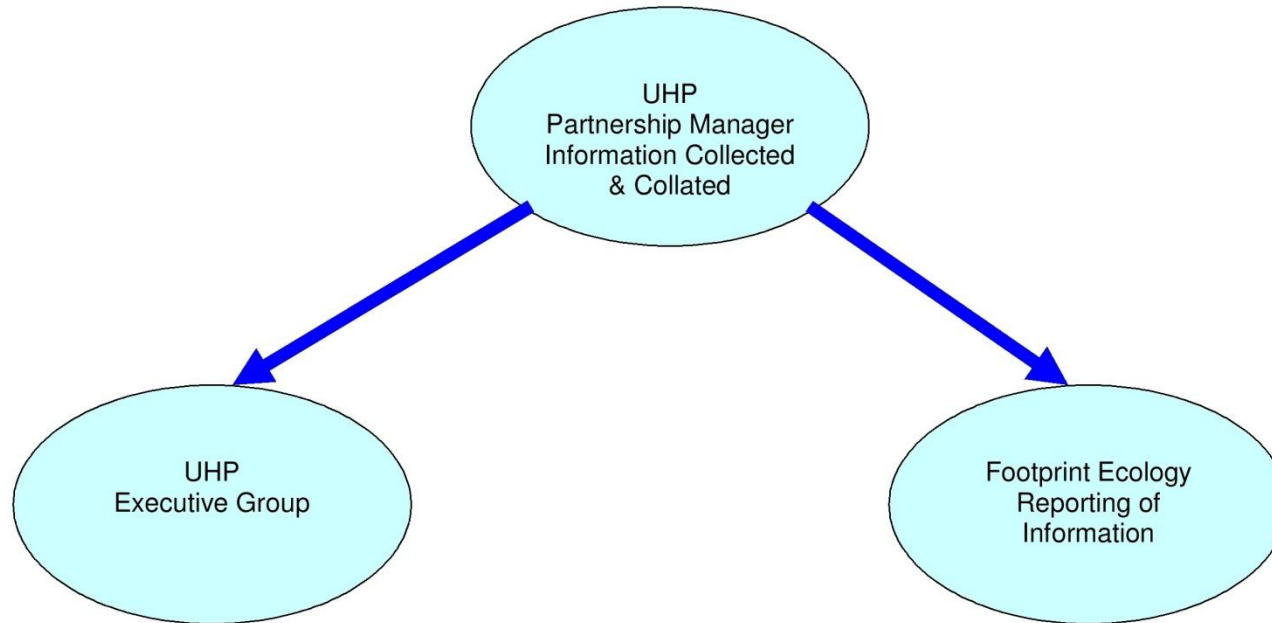
### Housing Close to Heathland Sites



### Incident Reporting on Dorset Explorer



### Capital Projects Programme



## 12. Appendix 6: Descriptions of the different types of sensors counters

Four types of sensors have been installed across the SPA. Each are described below:

### Slab

The slab is a PVC laminate 15mm thick and is buried under the substrate; once buried it is invisible to visitors. The slab needs to be cabled to the recording device so these need to be buried near to the slab. The slab works by detecting pressure changes as a person steps on the ground above it. The slab should not be installed in grazed areas as the animals may damage the equipment and trigger counts. The slab will not work if the path freezes as no pressure is transmitted to the buried slab but once it thaws the slab will be functional.

Slabs are ideal for visitor monitoring in small kissing gates, steps and paths where walkers will generally move in single file. Paths do change with time so checks are needed to ensure the slabs are still recording a consistent number of visitors.

Figure 37 shows one on the large slab counters installed on the many of the heathland sites and Figure 38 illustrates how the development of new, or movement of old paths, can cause misleading count records.

The sensitivity of the slab can be adjusted if it is found to be over or under recording.



Figure 37: Large slab counter



**Figure 38: A slab counter is located in the kissing gate but a path has developed around the gate so the number of visitors recorded on the slab may not be representative of the true number of visitors.**

### **Heat sensitive long and short range pyro**

Pyros work differently from slabs in that they register counts of people from body heat. Generally the tubes are hidden in a fence or post and the device is approximately 16mm in diameter. Narrow gaps along paths and gated access points where visitors walk in single file make ideal installation (Figure 39 and Figure 40).

Long range pyros can detect visitors up to 4m and therefore do not have to be installed directly on a path. As with the slabs the pyro needs to be cabled to the data logger

Pyro body heat sensors do not work well in freezing conditions as visitors wrap up warm to minimise their own heat loss. Any obscurities (vegetation, ice) that cover part or all of the sensor will also limit the effectiveness of the counter (Figure 41). In addition sunlight hitting the pyro can also warm the sensor which leads to high count values during these times of day. Choosing the correct installation location for the pyro is imperative if the counts are to accurately reflect visitation patterns.

The sensitivity of the pyros can-not be adjusted and if the counter is found to be consistently over or under recording the raw count data will need adjustment.

### **Inductive loop sensors**

Inductive loop sensors detect all types of metal and consist of several turns of insulated wire. The oscillation of the loop changes when a metal object is directly on top which is logged as a count record. The sensor only records counts when a vehicle passes directly over the sensor and so needs to be installed in the path.

The installation of the loop is a substantial job as loop shape must not change. This requires the loop to be installed in tarmac paths or covered by a concrete block to prevent damage / change in loop shape<sup>6</sup>.

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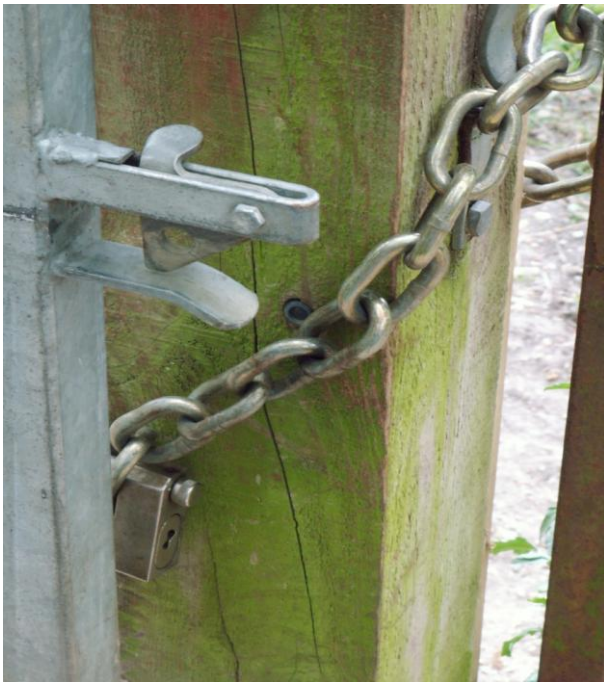
<sup>6</sup> [www.linnetop.co.uk](http://www.linnetop.co.uk)



**Figure 39: A pyro at an access location in the Borough of Poole**



**Figure 40: A long range pyro at a Borough of Poole site**



**Figure 41: An obscenity across a pyro at an access location to one of the Dorset heaths.**



### **13. Appendix 7: Sensor calibration**

Every automated counter was calibrated after installation as concerns were raised about the performance and comparability of results between different sensors and different sensor types. It was preferable to leave calibration until 6 and 12 weeks after installation (to ensure the path surface has settled), but in reality calibration often occurred a few months after installation.

Calibration of all the sensors involved passing through / over each sensor 100 times. If the number of passes on the sensor was less than 90 or greater than 110 (a 10% error) the sensitivity of each sensor was adjusted.

The number of passes recorded by each sensor was noted and where the sensitivity of the counter was adjusted to improve the recording accuracy, the historic count data were also adjusted by the same error margin. It is not possible to adjust the sensitivity of pyro counters so the raw count data were adjusted by the sensor error margin noted in calibration prior to analysis. All calibrations were conducted by the UHP.

### **14. Appendix 8: – Monitoring methods and detailed results from IPF capital projects**

#### **Longfleet Drive**

After completion of the main project works 40 visitors to Longfleet Drive were interviewed during May and June 2009. The interviews represent data from 60 visitors, most of which were visiting alone. Almost all (98%) of the interviewed visitors lived locally and one interviewee was on a day trip to the area. 72% of the people interviewed had at least one dog with them. Two-thirds (66%) of interviewees were dog walking and the other responses included cycling, enjoying the scenery / nature and taking a short stroll. Virtually all (95%) of the visitors use the site at least weekly with 58% of these regular users visiting daily.

The majority of groups interviewed (83%) arrived at the site by foot which shows that a high number of local residents were using the site. One in ten (10%) of people interviewed arrived by car and the rest by alternative transport methods. Of the visitors interviewed, 10 people also regularly visited Canford Heath. Other heathlands that interviewees stated they visit included Broadstone Heath, Upton Heath, Corfe Hills, Turbary Common, Ham Common and Hengistbury Head. Of interest the following other places were given by interviewees as other sites they visit which have had works and monitoring from the IPF; Pugs Hole, Broadstone Recreation Ground, Delph Woods and Upton Country Park.

The questionnaire also asked whether visitors were aware of the recent work that had been undertaken as part of the heathland mitigation projects and 88% were aware of the works and of these 84% responded 'good' when asked what they thought of them. No interviewees thought the works that had taken place were bad and 12% had an indifferent opinion.

Interviewees were also asked whether they had started visiting Longfleet Drive within the past 2 years. Nearly 1 in ten of (9%) of the interviewees who answered the question had recently starting visiting the site and the remainder were long term site users. A third of interviewees (33%) confirmed they now visited the site more frequently in the last two years and half of these respondents advised it was because they got a dog. Other responses included 'do more exercise', moved into the area', 'had children and take them on walk', 'now walk the dog more'. Just under two-thirds (62%) of interviewees advised their use of the site had remained consistent over the two years and 5% advised they used the site less often because they have moved away

from area. When asked which areas the interviewee previously visited instead of Longfleet Drive 8% made reference to Canford Heath.

Totals of the number of people observed entering and leaving the area at different access points were made on 7 different dates. The number of people, dogs and children observed in different parts of the area were noted. Two of these access points were onto Canford Heath. One count was made in September 2007 before the works commenced and the remainder after the works completion in May 2009. Before the works the data show that 32% of visitors (i.e. the total number of people and dogs) were recorded at the heathland access points. Counts made after the works show 15% of visitors were recorded at the heathland access points (either entering or leaving Canford Heath). The visitor counts after works completion show a significant reduction in the number of visitors observed at access points to Canford Heath in comparison to those at other access locations (paired t-test,  $t=-2.74$ ,  $P=0.41$   $n=6$ ). As the count data were only collected on one date prior to the works commencing it is difficult to establish whether the reduction in the number of visitors recorded at the heathland access points is attributable to the mitigation project.

A remote sensor is installed at the access point onto Canford Heath at Culliford Crescent, a road adjacent to Longfleet Drive. A remote sensor is also installed where the Longfleet Drive pathway meets Canford Heath

#### **Project Monitoring Recommendations**

It would be valuable to conduct further visitor questionnaires at Longfleet Drive a year, two years and five years after project completion. The visitor surveys should mirror the initial questionnaires conducted in 2009 but some adjustments to the questions should be made to establish why visitors (if they have recently started using the site) are using the site, how they heard about it, what activities they undertake and whether they visit the heaths any less. It is also important to establish whether the creation of open areas for recreational use actually encourages people who would not usually spend time outside to change their behaviour, either by becoming motivated to exercise or getting a new dog. These events could lead to an increase the number of visitors to the Dorset heathlands and is something that post project monitoring must start to address. Visitor surveys are the only way to gather this information and the question wording should be carefully considered to tease out these details.

It would be valuable to repeat the visitor counts using the same methodology. Levels of site use could then be investigated over time to determine the mid to long term effectiveness of the mitigation works. Further data would also provide the opportunity to look at visitor patterns at different access points in Longfleet Drive. It would also be valuable to establish the routes visitors take when they use the site. The route information could be used to identify what proportion of visitors and what proportion of their routes take them onto the heathland and why. From this it may be possible to identify further mitigation measures which could help reduce and limit the visitor pressure on Canford Heath.

#### **Longmeadow Woods**

Borough of Poole used £35,500 of IPF funds to improve this woodland site adjacent to Upton Heath. The dense understory of rhododendron and laurel was removed. The streams running through the site were dredged and some ponds were created. The Roman Road which also runs through the site was also resurfaced. A dog 'playground and exercise area' was created with poles, jumps and a tunnel.

Longmeadow woods and adjacent areas on Upton Heath were surveyed in October 2007 before the start of the mitigation project. The results of the people counts showed that only 14% of the people observed were using Longmeadow woods, the rest were observed in areas adjacent to the site. The woods and adjacent areas

were then resurveyed in May 2009 following completion of the mitigation works and 26% of the observed people were using Longmeadow woods, a 12% increase in site usage.

Visitor questionnaires were carried out in June 2009 and 37 people were interviewed representing visitor information from 61 visitors accompanied by 40 dogs. Of the visitors interviewed 54% arrived at Longmeadow woods by car, 40% walked and 6% cycled. Most (89%) of the interviewed visitors gave postcodes which could be geocoded (i.e. located within the GIS) and the average linear distance from a visitor's home postcode to the site was 2.04km and the median distance was 1.4km, indicating that half of all visitors to the Longmeadow woods live within 1.40km of the site. The minimum distance from a visitor's home postcode was 176m and the maximum distance 8km

Interviewees were asked how frequently they visited the site and 50% responded daily, 20% responded several times a week and 10% weekly. 20% of the remaining visitors used the site at least once a month with 10% using the site less frequently. Visitors were also asked what other local countryside or greenspaces they visit and how often.

Summarising the responses statistically is difficult as each interviewee gave a different number of answers and there are data omissions for several of the responses. However what is clear that the visitors interviewed do visit heathland sites as Ham Common was regularly visited by 24% of interviewees, Canford Heath by 8% and Upton Heath by 11%. Other locally used sites with IPF mitigation works which were regularly visited by users of Longmeadow Woods included Delph Woods, Upton Country Park, Broadstone and Hengistbury Head. Sites further afield which were also visited by several of the interviewees included Wareham Forest, Sandbanks, the coastal path, Poole Park, the Purbecks and the New Forest.

Of the 37 interviews carried out, 53 activity responses were given (people could be undertaking more than 1 activity at a time, for example enjoying the scenery and walking). Of these responses, just over half 53% of people were dog walking, 26% were enjoying the scenery, 15% were out for a short walk or stroll. Dog walkers were asked specifically why Longmeadow Woods is a good place to bring a dog and the surveyor categorised the answers where possible into predetermined categories. For 23% of these dog walkers, the ability to let the dog off the lead was important and 25% of responses were because the dog enjoys it, and 12.5% of responses mentioned 'nothing in particular'. Just under a third (31%) of interviewees provided alternative responses which included, easy parking, pond for dog swims, water for dog, lots of smells, they feel safe, open habitat so can see other dogs coming and no traffic.

Each interviewee was asked about the recent works that had taken place at Longmeadow Woods as part of the mitigation project and 86.5% of those interviewed were aware of the work and of these 81% thought the works were good and 6% thought they were bad. Visitors were also asked whether they had started visiting Longmeadow Woods within the last two years (which given the works were only completed the month previous to the visitor surveys is unlikely to identify the realistic number of visitors who now use the site following the improvements). Three-fifths (80%) of interviewees were long term users of the site and 20% started using the site within the past 2 years; of these 20% (6 interviewees) only 4 responded to why they now visit the site. One interviewee was new to the area, another had a new dog and 2 people liked the improvements. All interviewees were asked whether their frequency of visit to the area had changed within the last two years and 30% of interviewees visit more often, 4% visit less often and 65% had no change in their frequency of visit. Reasons for changes in visit frequency included new dogs, like the improvement works, moved to the area, new running path and has more time as now retired. Interviewees started visiting the site for dog walking, exercise, countryside feel but the majority people started using the site because it was close to home.

The people counts show that the percentage of people observed using Londmeadow Woods in comparison to the adjacent areas has increased by 12% following the improvement works to the site. The visitor surveys revealed that this site is well used by local residents and dog walkers. Six interviewees had started visiting the site within the past two years. One had started visiting because of a new dog and the other two because of the works but neither of these interviewees mentioned they also visited or had visited Upton Heath.

Longmeadow Woods is visited by people who also visit a variety of other sites which include country parks, forests, heathlands, woods and recreational grounds. It is not clear from the results of the visitor survey how usage of the site has or could have deflected users from the more sensitive sites in particular the areas of adjacent heath. This is possibly because of the questionnaire design and because the surveys were conducted almost immediately after works completion. As such, it would be valuable to conduct further visitor surveys and people counts not only to monitor the mid to long term use of the site but also to elicit specific information from visitors about:

- where else they visit (specifically the heaths and other IPF project sites)
- whether the improvement works have encouraged them to spend more time at the site (at the expense of other locations)
- whether these other location are the more sensitive areas or areas that are further away.

It would also be valuable to record the routes of visitors. These routes could then be used to identify the distance and type of route users take for different activities and how much of that route includes Longmeadow Woods and how much is within Upton Heath.

The sensor at Longmeadow Woods will also provide data of counts of visitors as will the sensors on Upton Heath. It will be difficult to identify how the works at Longmeadow woods have impacted on the number of visitors to Upton Heath as another project has also been completed to deflect use from Upton Heath to Upton Woods and the Country Park. We suggest that the sensor results for both this and the other project are collectively analysed. Route data could also be used to assist in the interpretation of the sensor visitor counts at Longmeadow Woods and at Upton Heath.

### Poor Common

Undergrowth was removed and a new path network was created in a wooded open space. Events were also organised as part of this project to encourage dog walkers to use Poor Common as an alternative to Parley and Ferndown Common.

Prior to any project work a community questionnaire was distributed to properties adjacent to Poor Common in 2006, and after project completion in 2009 the UHP conducted on-site visitor surveys.

It has not been possible to trace the raw data from the community questionnaires but we have been provided with a summary of the key findings. Between May and June 2006 (before the project work), 103 residents local to Poor Common took part in a community questionnaire. The questionnaire response rate was high (65%) and 98% of respondents were aware of Poor Common. The common was used more than once a week by 65% of respondents with walking the most frequented activity, and half of walkers accompanied by their dogs. The biggest dislikes of the site were the presence of motorcycles, BMX's and litter. The most appreciated characteristic or features of the site was the natural and unspoilt nature of the site.

After project completion 85 groups were interviewed on site capturing visitor information from 128 people with 73 dogs. Of the groups interviewed 69 had dogs and 58% of people noted dog walking as the reason for visiting the common. Just under a fifth of interviewees (18%) were taking a short walk and 4% were cycling.

Poor Common is well used by local residents with 82% of the interviewed groups arriving to the site on foot, and 14% of visitors arrived by car. Just under half (47%) of interviewed groups lived within 250m of the common, 23% within 500m and the remaining 30% within 2.3km. There appears to be a loyal user group with 67% of interviewed groups using the site daily and approximately 30% of interviewed groups use the site either weekly or several times a week.

Each interviewee was asked which other local open spaces they visit. Nearly a third (28%) of 109 responses (some interviewees gave more than one response) show that those people interviewed at Poor Common regularly visit Ferndown and Parley Commons. An additional 9.8% of responses made reference to the regular use (at least weekly) of other areas of heathland within the Natura 2000 network.

Of the groups interviewed 31% had started using Poor Common within the past 2 years, after the IPF project was completed. From these visitors 44% stated that they started visiting the site because of the new paths and improvements to the paths, 37% of the visitors gave other reasons such as 'enjoyable place' and 'have more time now' and 11% of the visitors said they started using the site as they now have a new dog. None of the interviewed visitors mentioned the promotional events of Poor Common as a reason to why they started using the site which indicates that the promotional events were of limited value. However, 40% of the interviewed groups knew about the East Dorset Play Rangers free play sessions for children and 12% had attended one of the sessions which suggests these sessions were more successfully promoted and advertised than the promotion and awareness raising of the site itself.

#### **Christchurch BMX and skate Park**

Christchurch Borough Council created a BMX track and skate park with £64,757 of mitigation funds to provide an alternative area for BMX activity away from St. Catherine's Hill.

A total number of 98 BMX users were recorded in the first year along with 82 skateboarders, 19 mountain bikers and 2 motocross users. The average number of BMX users during each count was 7.5 which is higher than the mean number of mountain bike users noted in each count, which was 1.46. The most popular use of the arena is with BMX users followed by skateboarders with an average number of 6.3 skateboarders recorded on each survey. A high number of walkers and dog walkers were also recorded in the area with an average of 2.6 walkers with dogs and 3.4 walkers recorded throughout the duration of the arena counts. The walkers were often in large groups.

The arena is used by BMX, mountain bikers, motorcross and skateboarders but whether these users have been deflected from undertaking their activities on the heath remains to be seen.

A total of 200 visitor surveys were carried out at St. Catherine's Hill between October 2007 and August 2008. The visitor questionnaire did not capture the number of people or dogs associated with each interviewee. However the survey information provides insight into the activities and users of St. Catherine's Hill. Over-half (52%) of the interviewed visitors to St. Catherine's Hill lived within 1 mile of the site and 44.7% of interviewees lived over 1 mile and within 5 miles of the heathland. Of the 200 visitors the most popular activity was dog walking cited by 62% of the interviewees, the second most popular activity was walking given by 28.5% of respondents, with 5% on site to enjoy the scenery and nature. Only 3% (6 interviewees) of interviewees were on their bikes. Of the visitors which were on bikes only 1 was under 15 and the only respondent who expressed interest in assisting with the design of the arena. The other interviewees biking were over 25 and enjoyed biking at St. Catherine's Hill because of the terrain, cycle routes and the scenery and the installation of an arena would not deflect their use of the site. It is not surprising that so few BMX users and cyclists were interviewed as many of the BMX users were minors (and could only be interviewed by approved CRB surveyor) and most cyclists would not stop for an interview.

It is difficult to determine whether the BMX arena has deflected use from St. Catherine's Hill because there is limited data on the incidence of BMX use on St. Catherine's Hill before the arena was installed. What is evident is that the arena is used and can now be used as a tool to direct heathland BMX users away from the heaths. We recommend that arena counts are still conducted at times outside of the school day, at weekends and during holidays. Value could be added to the data by interviewing the users of the arena to establish whether use has been deflected from the heath or whether they started skating / riding because of the arena installation. The skate park and BMX arena now has a friends group on the social networking internet site 'Facebook' and hold regular meetings to discuss the progression of the park/arena. Minors should only be interviewed by individuals approved by the CRB (Criminal Records Bureau). There would also be merit in regularly reviewing the arena counts and heathland incident log (through Dorset Explorer) to ensure that bike activity remains in the arena and does not migrate to the heaths. If increased incidents of BMX activity are observed on the heathland it would be worth considering improvements or changes to the arena. Potential improvements could be elicited from interviews if they are conducted.

Independent of the heathland mitigation works, the park is developing organically and graffiti artwork is being put up and onto the skate ramps and users are encouraged to share their designs with the artists if they would like them on the kit in the park. It appears that even though it is difficult to quantify whether the skate park / BMX arena has reduced mountain bike pressure on the sensitive areas of St. Catherine's Hill, the park / arena is clearly used and valued by the community.

#### **Upton heath estate and woods – phase two**

Purbeck District Council was provided with £15,170 (with previous monies of £13,888 for phase one) to improve access to Upton Woods with vegetation management and new path trails.

Nine hours of visitor observations were made in 2008 and nine hours of surveys in 2009 but no dates are available for the counts. We do not have access to the data files but have summary values for the people counts. The summary information shows that 107 people were recorded using the site in 2009 and 52 were recorded in 2008, a 67% increase in people. The increase is in reality probably larger as 8 hours of monitoring took place in 2009 across 3 locations, whereas in 2008, 9 hours of observations took place over 5 locations. The percentage of people recorded with dogs was slightly lower in 2009 (59%) when compared with 2008 (62%). However 27 dogs were recorded in 2008 in comparison to 88 dogs in 2009.

Several visitor surveys were undertaken at Upton Woods during July and August 2008. The data are not available and the following results are taken from summary reports of the surveys. It has been assumed that the visitor surveys were conducted after completion of the project. In total, 105 individuals or groups of people were recorded visiting the woods with an average of 6 people per hour during surveying times. A large number of children was also recorded visiting the site and 73% in groups unaccompanied by adults.

Virtually all (93%) of visitors to the site were walking and the remainder were cycling. Most (83%) of those interviewed had a dog and 28% of these people had more than one dog. All the interviewees lived locally (within 5 miles of the Upton woods) and 88% arrived by foot. A relatively high proportion (43% of those interviewed) visited the site daily 23% stated that they visit several times a week and 2% weekly. Half (50%) of those interviewed were exercising the dog and 32% stated they visit regularly as they are local residents with 14% using the site as a cut through or route to another destination.

Visitors were asked how long they have been bringing their dog to Upton woods and 22% responded less than a year, although no further information was collected as to why the visitors started using Upton woods. It is possible to speculate that either they had recently moved to the area, got a new dog or perhaps most likely started using the site after the improvement works.

Dog walkers were asked what aspects of the area make it good for dog walking, 25% of the responses gave 'the ability to let the dog off the lead' and 255 also mentioned that their dog enjoyed it. Other factors (29% gave 'other' answers besides the categories offered) included feel safe, lots of smells, sticks, close to home, summer shade, no roads, clean paths, dog swims in streams, water and a variety of paths.

Interviewees were also asked whether they also visited Upton Heath; 84% did visit Upton Heath and the remainder did not. Of those who visited Upton Heath, 40% visited either daily or several times a week and 76% of those that visited Upton Heath did so to dog walk.

When asked about the Upton Heath Estate and Woods project, 68% of those interviewed were aware of the project.

It is difficult to establish how the use of the Upton Woods has changed since the project as currently only summary data is available which does not address the key question of visitor use before and after the works.

It would be valuable to conduct further visitor monitoring aimed at establishing whether users are now visiting the site as a result of the works and whether this is reducing the frequency of their visits to Upton Heath and other sensitive heathland areas. It would also be good to investigate whether new users to the area are a result of becoming new dog owners. It would also be worthwhile to conduct more people counts at Upton Woods especially if the original data for the people counts can be located.

As with the Longmeadow Woods project it will be difficult to quantify the impact of visitation to Upton Heath as a direct / indirect result of this project. Interpretation of the sensor data should take into account the possible impacts of both projects of visitor counts.

## Appendix 9: Publicity documents associated with IPF capital projects



Figure 42: The route of Gulliver's Trail, an IPF funded capital project managed by Bournemouth Borough Council



# Pug's Hole

## Local Nature Reserve

### History

A local theory is that the name Pug's Hole is taken from a local smuggler known as "Captain Pug," who is said to have hidden smuggled goods here. It's also been documented that another local smuggler, Isaac Gulliver, transported smuggled goods along a path from Branksome Chine and through Pug's Hole on his way to Kinson, which was known for being a centre of smuggling activity. The second theory is that Pug comes from the old name Puck meaning a meddlesome spirit. There is another small woodland called Puck's Dell near Kinson.

The site was once part of an estate dominated by heathland. This all changed when Pug's Hole and the surrounding area was planted up with pine trees during 1816 - a common practice in the area where pines provided a cash crop on land unsuitable for farming. It's unclear who paid for the planting work, but it was rumoured that local labourers were paid so little that half the saplings were planted upside down.

In 1852 the Talbot sisters bought the area known as Talbot Woods, which by then was an expanse of woodland with woodmen's cottages. The line of today's Glenferness Avenue follows the course of an ancient footpath which connected the Bourne Stream with heathland at Moordown. The surrounding area began to be developed around 1910 and the estate planners turned Talbot Woods into a residential district laid out in a grid system.

### Pugs hole today

Pug's Hole was designated a Local Nature Reserve (LNR) in 2001. LNR's are places with wildlife or geological features that are of special interest locally. As an old pine plantation from the 19th century, the woodland still contains a large number of Scot's pine trees. The area around the Glenferness Avenue entrance is dominated by holly, laurel and oak trees. Small patches of relic heathland remain, whilst the large oak in the valley to the south of the site also pre-dates the pine plantation.

The woodland is currently managed to create more open areas which will encourage heather and grasses to establish naturally. Where possible dead trees are left standing and felled trees left on site to rot, providing food and habitats for numerous fungi and invertebrates, such as the rare stag beetle.

Native plant species are being allowed to develop naturally, whilst non native invasive species are being removed. This will support a wider variety of insects and plants in the future, which in turn will provide more important food sources for our native birds and small mammals.

### TALBOT HEATH



Profile of Immature Scots Pine



Oak Tree

### Wildlife

Scot's pine can be easily recognised by its pink/red coloured bark. Male and female flowers are found on the same tree with the pollen being dispersed by the wind. The fertilised female flowers take two years to develop into a cone.

The oak tree can live in excess of 1000 years and supports a greater variety of life (such as insects, birds and fungi) than any other tree in Britain.

Groat Spotted Woodpecker



In spring listen for the drumming of the great spotted woodpecker and watch out for it as it climbs the trunks of trees looking for grubs to eat.

You may be lucky enough to catch a glimpse of a goldcrest, the UK's smallest bird, which has a distinctive yellowy stripe on the top of its head.

Goldcrest



Speckled Wood Butterfly

The male speckled wood butterfly is very territorial and can often be seen spiralling up and down in sunny glades fighting with other males and looking for females to mate with. The speckled wood caterpillar feeds on grasses and the adult butterfly feeds on honeydew - a sugary liquid that aphids secrete as they feed on the juice of plants. They can be seen anytime between March and October.

Jay



The Jay can be a shy bird. Listen out for its screaming call and watch out for a distinctive flash of blue and white as it flies between trees. Jays are well known for eating acorns and in autumn you may see them busy burying them. A single jay may bury as many as 4,500 acorns for winter food every year; many of those that remain hidden will germinate the following spring into new oak seedlings.

Produced by English Nature 01202 451145



This board works to clear invasive vegetation from the nature reserve has been funded through Bournemouth's Local Improvement Fund, allocated by your local ward councillors in 2008.

Bournemouth Parks  
Tel: 01202 451696  
Out of hours - urgent issues:  
01202 451145  
email: parks@bournemouth.gov.uk  
www.bournemouth.gov.uk/parks



Please take your litter home



Please clean up after your dog

Figure 43: The interpretation board at Pug's Hole an IPF funded project managed by Bournemouth Borough Council.

# Longmeadow Lane Woods: the project in photos.

Jan 2008  
Guided walk as part of public consultation



Feb/March 2008  
The Berti Flail is brought in to cut the first Rhody and Laurel

Winter 2008/09  
Ditches are cleared and re-profiled



Spring 2009  
New footpaths are laid, improving access.

Winter 2008/09 and 2009/10  
Many volunteer days over 2 winters, clearing vegetation the machines could not get to. DWT bonfire specials included: roasted veggies, pancakes, treacle tart along with the ubiquitous jacket spuds!!



Feb/March 2009  
Ponds are dug out to turn a widespread boggy area into a more defined and usable area.



March 2009  
An old fibre glass play tunnel is salvaged and installed on site. A trench was dug and then the tunnel put in its place and backfilled. Tommy liked walking over rather than through it!!

March 2009

Sweet chestnut poles harvested from wind-blown trees are sculpted into way-marker posts and installed at the start of the new woodland trails.

Woodpecker Way-marker posts are also installed along new routes.



March 2009

A natural play landscape has been created through the Rhody and Laurel clearance:

- Fallen trees to climb on,
- tyre swings,
- the tunnel,
- logs over the streams and ponds.



March 2009

And there is fun for the dogs too... Hurdle jumps, Weave poles the tunnel and the pond all make for great doggy fun without disturbing any wildlife.

Summer 2010

A year on from completing the project, the end result is an open, inviting piece of woodland with good access, seating, well-marked footpaths and points of interest for young people, dogs and grown ups all to enjoy.

Martin Whitchurch,  
Greenspace Development  
Officer,  
Leisure Services,  
Borough of Poole.  
Tel: 261323  
m.whitchurch@poole.gov.uk



Figure 44: Photo diary of Longmeadow Woods project managed by Borough of Poole.