

## Battlemead Common

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A review of the potential impact on wildlife  
of increased numbers of visitors with dogs.

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Client: Wild Maidenhead and WildCookham

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## 1. Summary

Battlemead Common is a countryside site to the northeast of Maidenhead. It has recently been acquired by the Royal Borough of Windsor and Maidenhead (RBWM) for nature conservation and public access.

A management plan (Foot & Austin, 2020) identifies a number of proposals that are likely to increase the number of visitors, many with dogs, to some of the more sensitive areas of the site.

Some local wildlife groups are concerned that this will have a negative impact on the wildlife, and are keen to explore alternative, less impactful options.

This report reviews evidence and finds that if there is an increase in the number of visitors, especially with dogs, there are likely to be significant negative impacts to the wildlife at Battlemead Common through disturbance and nutrient enrichment. In addition, proposed land management regimes, including hay cutting, will be less practicable.

The author recommends that access is not permitted in the East Field, but instead a circular route is provided using the Thames Path and a new route through the Wet Woodland to the south.

It is understood that any actions to reduce the impact on wildlife will need to be balanced with the aspiration to provide public access, but it is the author's opinion that the recommendations will protect sensitive wildlife from disturbance and provide a pleasant and varied visit to Battlemead Common.

## 2. Introduction

### 2.1 Brief

The brief provided by Wild Maidenhead and WildCookham:

We would like your opinion on three further aspects not covered in the Austin Foot report. This will further inform future discussions about the balance between the protection/conservation/increase in wildlife and increased access by people and dogs in the east field.

1. The potential impact (or not) of the increased access, including people with dogs, indicated on the 2020 master plan upon wildlife **currently** using the site. FYI, a pair of nesting barn owls may have deserted the west field since the site was opened last year – we are having further checks done on that.
2. For you to broaden your thinking to consider how increased public access, including with dogs might constrain or limit (or not) the potential for species richness and abundance.
3. Factor in the **scale** of human access. The proposed car park is for 30 spaces. If this were to fill to capacity - news of a rare species, for example - and there are additionally people who have cycled and walked to the site, there could be 100+ people (with an unknown number of dogs). Could you remark upon any potential effects upon wildlife of this scale of human presence?
4. Give your views on, from a wildlife/botanical perspective, the value/significance of the wet woodland in the south-eastern corner. There is a badger latrine near there and their sett is close by. This is also where we believe the otter(s) may forage.
5. Your views on impacts, if any, on the stream running through the site.

Dogs bring many people considerable pleasure. In the UK, visiting the countryside with a dog is a popular activity; approximately one third of all visitors to the countryside have a dog (Edwards, 2006). Owning a dog encourages people to exercise and walking can lead to social, physical and psychological benefits (Podbersek, Paul, & Serpell, 2000).

This report has been produced to explain the potential *effects* (short term, on individual animals and plants) and *impacts* (longer term, on populations) of visitors and their dogs to the wildlife at Battlemead Common. It draws upon scientific analysis of the behavior of people and their dogs, the likely impacts of this behaviour, and the experience of the author and other site managers. The discussions are not intended to be 'anti-dog', but to provide an informed, unbiased overview of the likely impact.

## 2.2 Background

Battlemead Common is a c45ha area of mostly grassland, with small areas of woodland, and permanent and ephemeral wetlands. (See Figure 1)

The site is located to the northeast of Maidenhead, between the A4094 and the River Thames, Grid Reference: SU 9044 8388

The Royal Borough of Windsor and Maidenhead (RBWM) purchased the land in December 2018. Austin Foot (2020) were commissioned by RBWM to produce a plan (summary in section 4.2), which recommends various habitat management prescriptions and the provision of new paths across East Field.

## 2.3 Ecology

Most of the site is considered 'floodplain grazing marsh' in Natural England's Priority Habitat Inventory (DEFRA, 2020). The West Field is the most 'flower-rich' of the fields, while the East and North Fields have been agriculturally improved and are dominated by coarse grasses.

The White Brook stream flows through the site, with a number of associated ponds and ditches. Areas of deciduous woodland (also a Priority Habitat) cross the site including wet woodland and what might be considered a 'gallery woodland' (an area of trees and scrub following the course of a river or stream) following the stream. Hedgerows and in-field mature trees add to the variety and connectivity across the area.

A detailed ecological appraisal has been undertaken (Foot & Austin, 2019) and a description of the main habitats is included in a report by the Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust (Philips & Stace, 2019).

# 3. Method

## 3.1 Personnel

The author, Alex Cruickshank MSc MCIEEM, has over 20 years experience of managing publically accessible sites with a high wildlife value. He has designed and implemented the management of Suitable Areas of Natural Greenspace (SANGs) associated with the Thames Basin Heaths Special Protection Area, has led projects working with dog owners on wildlife sites, and has undertaken studies into the impacts of disturbance on wildlife.

### 3.2 Site visit

A site visit was undertaken on Friday 14 August. It was drizzling on the day, following an extended warm period. All fields and the main areas of woodland were visited. The presence of notable fauna and visitors was recorded.

### 3.3 Desk study

Published literature, other relevant documents and information from reliable sources have been taken into consideration in the production of this document. See References for details.

## 4. Potential impacts

### 4.1 Potential impacts of increased visitors with dogs to the site in its existing condition.

Visitors with their dogs can have short-term 'effects', such as causing a bird to fly away, or longer-term 'impacts' such as decreasing the breeding success of a population of birds (Robinson and Pollitt, 2002). Effects are relatively easy to identify through observation, while impacts are more complex and may have to be deduced through evidence-based assumptions and long-term study. Any negative *effects* of visitors with dogs on wildlife are likely to cause negative *impacts* if they are repeated over the long term.

#### 4.1.1 Disturbance.

##### Evidence

All visitors to wildlife sites are likely to have a direct effect on wildlife, but visitors with dogs typically cause disturbance at a greater distance and for a longer period (Sunderland, 2006). Dogs that are away from their owners, off their leads, have a greater 'zone of influence' than those 'under close control' or on a lead, and therefore are likely to cause more disturbance effects (Taylor et al, 2005). There is data to suggest that different categories of dog and their individual behaviour will have differing likelihood of causing a disturbance effect. For example, a gun dog is likely to have a greater effect than a collie (Taylor et al, 2005). These differences are not considered in this paper, and references to walkers with dogs assumes an 'average' disturbance effect.

Disturbance of wildlife by visitors with dogs can have a number of negative outcomes including:

- the killing of an individual animal;
- increased mortality of offspring through predation (by corvids for example) or lack of incubation after the parent is disturbed from a nest;
- or decreased survival and reproduction because time is diverted away from 'resource acquisition', feeding, for example.

Wildlife has varying degrees of sensitivity to disturbance by dogs, measured using their 'disturbance distance'. Studies of waders, geese and ground nesting birds have found this to vary between 40 – 160m, depending on the species and situation (Taylor et al, 2005), (Randler, 2003).

The effect of dogs on mammals in the UK is less well understood. It is likely that dogs cause disturbance to all wild mammals, including otters and badgers. Otters are disturbed by dogs (Green et al, 1984) but this tends to be short-lived, causing the Otter to seek a vantage point and potentially escape to water, but appears not to cause any longer-term behavioural changes. Freshwater Otters are mostly active at night (Hung & Law, 2016), so will avoid most confrontations with visitors and dogs.

Badgers are also nocturnal, so interactions with dogs and people are limited. Where dogs are walked near setts, Badgers tend to emerge later in the evening and will spend less time playing around the sett but instead are more likely to go directly to their foraging areas (Neal, 1977). Badger numbers continue to increase in England (Judge et al, 2017), so it is unlikely that the presence of dogs has a significant negative impact on their population.

### **Local Context**

At Battlemead, wildlife is likely to suffer from the effects of disturbance if the number of visitors increases, especially if those visitors have dogs, and furthermore if those dogs are running off their lead, away from their owners. This is likely to have the effect of birds being flushed from their feeding and resting areas and the subsequent impact of a localised reduction in population of birds that nest, feed or rest on the ground or in the water such as ducks, geese, waders or Skylarks.

The main areas of wetland adjacent to The Causeway, where Mallards and a Little Egret were seen during the site visit, are well within the 'disturbance distance' of those species. Indeed, all of the visible ducks and egret flew off as the author carefully approached during the site visit.

Access to the Wet Woodland, where Badgers and Otters may be present, is likely to have some effect on these species, but is unlikely to have a significant impact.

Signs requesting dog-owners to keep their dogs on a lead are displayed around the site, but these signs are likely to be ignored by a significant number of dog owners (Edwards and Knight, 2006). Three other walkers were seen during the site visit, two of whom had dogs, one of which was off the lead, despite the signs.

The presence of dog-proof fencing around the site is likely to increase the prevalence of owners letting their dogs off their leads and allowing them to run free as the risk of the dog getting lost or running into a road is perceived to be lower (Edwards & Knight, 2006).

The provision of a circular route is desirable and the proposed path running north-south to the east of the East Field fulfils this requirement. However, this will significantly reduce the area of the field that is suitable for resting, feeding or nesting birds as it will bring many visitors within the disturbance distance of the birds. Using a 50-metre disturbance distance, the presence of this route reduces the 'usable' size of the field from 13.5ha to 8.4ha (see Figures 2 and 3), a reduction of 38 per cent.

The planting of a hedgerow to the west of this path is likely to reduce the effect of visitors, but this will take quite a few years to have the desired effect, and will make the field less suitable for ground nesting birds that prefer a good line of sight when choosing nesting sites, like Skylark (Wilson et al, 1997). Splitting this field will also make the site more difficult to mow efficiently.

The use of fences and hedgerows to manage the movement of visitors is likely to be effective; few visitors will jump a well-maintained fence to explore new areas, especially if they have a dog. Relying on mown paths is less satisfactory as visitors will soon create their own 'desire lines' and utilise the full area of the field.

#### 4.1.2 Nutrient Enrichment

##### **Evidence and Local Context**

The desired state of the grassland at Battlemead Common is of increased botanical diversity (Foot, 2020). This can only be practically achieved if the nutrient status of the grassland is reduced and kept low through repeated mowing and removal of the arisings.

Any increase of visitors with dogs to the site will inevitably lead to an increase in the amount of dog faeces, which will lead to enrichment of the soil, making the above aspiration more difficult to meet. This effect is difficult to quantify, but it will be more marked closer to the car park – most dogs defecate within 10 minutes of starting their walk (Taylor, 2005) but walkers are less likely to pick up faeces the further away from a bin they are, and if there are fewer other visitors to witness (Edwards, 2006). No bins are currently present at Battlemead, so there is unlikely to be a culture of picking up.

Dog urine will also have a significant enriching effect on soils at Battlemead (Taylor 2005). This will be more widespread across the site, and impossible to control on areas that are accessible to dogs.

#### 4.1.3 Land management

##### 4.1.3.1 Grazing

##### **Evidence**

Although no mention of an appropriate livestock grazing regime is included in the management plan for the site (Foot, 2020), the author would strongly recommend this be considered as an appropriate management for the grassland areas. Grazing can reduce the dominance of coarse grasses and increase the floristic diversity of grassland sites (English Nature, 2005).

The presence of walkers with dogs is likely to make the delivery of conservation grazing more challenging. Although uncommon, dogs are known to attack cattle on wildlife conservation sites (BBC, 2019) but will more often chase them, causing stress and potentially changing their behaviour (Taylor, 2005).

Dog faeces are a significant carrier of Neospora, the greatest cause of abortions in cattle in the UK (Davison, 1999).

Because of a perceived risk to themselves and their dogs, visitors with dogs are likely to oppose the introduction of livestock to a site, having the potential to seriously constrain effective management (Taylor, 2005).

##### **Local Context**

At Battlemead a conservation grazing regime is likely to be the most appropriate management technique. This might consist of a small herd of traditional-breed cattle grazing

the East Field in the autumn and early winter, after a hay cut has been taken. Cattle will be more able to access the wetter areas of the field than hay cutting machinery and will further reduce the nutrient levels of the soil, leading to increased floristic diversity. Sheep are likely to be unsuitable because of the presence of dogs; the wet nature of the site is likely to lead to health problems; and the way they graze will not create the desirable, tussocky conditions. Ponies, such as Exmoors or New Forest, may be more suitable, but are liable to problems with becoming 'over-friendly' on public sites.

The presence of visitors with dogs will make the delivery of a suitable grazing regime more difficult, reducing the options available to the site management team.

#### **4.1.3.2 Hay cutting**

##### **Evidence**

Vegetation cutting with the removal of arisings is recommended as a suitable management technique to meet the objectives for the site (Foot, 2020).

As stated above, dog owners are less likely to pick up their dog faeces away from the car park (Edwards, 2006), and dog faeces are a significant cause of Neosporosis (Davison, 1999), which can be transmitted through contaminated hay and bedding.

##### **Local Context**

In order to ensure that hay cutting is a sustainable form of management for Battlemead Common, it will be useful to sell the resulting hay for animal feed or bedding. The quantity of cut hay will be significant and dumping the hay on site will not be appropriate.

Allowing dogs into the East Field, the largest of the fields, will make disposal of the hay more difficult, and thus hay cutting a less sustainable management option.

#### **4.1.4 Impact on ponds and the stream**

##### **Evidence**

Visitors with dogs like to encourage their dogs into ponds and streams, and the presence of water features is seen as an attractive attribute of a site for dog walkers (Edwards, 2006).

Excessive use of ponds by dogs is likely to have a damaging impact on the wildlife value of the pond (Taylor, 2005). As well as the impact of repeated disturbance to animal species, increased disturbance of silt will increase turbidity causing a reduction in the ability of plants to photosynthesise. This will reduce aquatic vegetation cover and decrease the quality of the water (FHT, 2020), decreasing the suitability of the pond for a range of vertebrate and invertebrate fauna.

Invertebrate wildlife is extremely sensitive to insecticides that are used to treat dogs for fleas and ticks, such as pyrethroids (Werner & Moran, 2008). Recently treated dogs entering a pond or stream are likely to increase the amount of insecticide in the water, damaging the invertebrate fauna.

Dogs entering and exiting a stream on a regular basis will cause the bank to erode and may increase flooding events. This is unlikely to be a problem at Battlemead Common.

## Local Context

The stream and the ponds adjacent to The Causeway at Battlemead Common are likely to be rich in flora and fauna because of reduced agricultural inputs, their distance from the road and their ephemeral nature. Although geese and other wildlife can cause increased water turbidity, dogs entering the water are likely to increase it significantly. Stopping dogs from entering the ponds and stream, and causing the problems highlighted above, will be difficult if The Causeway is accessible to visitors with dogs.

### 4.1.5 Impact on other countryside visitors

#### Evidence

An impact that dogs have on publically accessible sites that is often overlooked is on those visitors without dogs. Non-dog walkers are more likely to avoid contact with dogs than welcome them, with young families and members of BAME groups most likely to avoid approach (Taylor, 2005). A 2003 survey of visitors to the nearby Burnham Beeches found that 20 per cent of visitors felt that their enjoyment was hindered by the presence of dogs (Barnard, 2003). A more recent study indicated that 45 per cent of non-dog walkers supported the idea of dog-free areas at Burnham Beeches (Liley, Floyd, & Fearnley, 2014). It is difficult to ascertain how many people do not visit countryside sites because of the presence of dogs, but visitors without dogs are more likely to state 'wildlife interest' and 'scenery' as the main reason for their visit (Liley, Floyd, & Fearnley, 2014).

#### Local Context

At Battlemead Common, dogs are likely to have a negative impact on visitors who do not have dogs. Prohibiting dogs from the site is clearly not a desirable objective, but enforcing 'dogs on leads' and 'picking up after your dog' policies is likely to attract more diverse visitors, including those who have a greater interest in wildlife.

### 4.2 Potential impacts of increased visitors with dogs to the site following biodiversity enhancement.

In its current state, Battlemead Common does not meet its full potential for supporting wildlife. The management plan (Foot & Austin, 2020) recommends a number of management techniques that should enhance biodiversity across the site. In summary, these are:

- Woodland
  - Protect trees from damage during car park construction
  - Thin woodland areas
  - Undertake tree safety works
  - Coppice and pollard in wet woodland
  - Create log piles in wet woodland
  - Mow nettles in wet woodland and remove arisings
  - Plant in-field oak trees
- Wetlands
  - Remove silt and vegetation from ponds
  - Plant reeds adjacent to causeway

- Grassland
  - Mow the grassland and remove arisings, followed by harrowing
  - Plant scrub in field margins
  - Introduce yellow rattle
  - Fence across East Field to prohibit access
  - Rotational cutting of ruderal vegetation
- Manage hedgerows by cutting

Further management prescriptions that the author recommends include:

- Introduction of a conservation grazing regime to further enhance the structural and species diversity of the grassland.
- Significantly increasing the area of open water in East Field by creating scrapes, pools and ditches. This will increase the area available for wetland birds as well as providing the ecosystem service of flood alleviation.

All of the above management prescriptions should, over time, enhance the site and lead to a greater diversity within habitats, including:

- More varied structure in woodlands, with a more diverse ground flora
- Enhanced recruitment of infield trees
- More open water and more reeds in the wetland areas
- More diverse flora in the grassland areas, with more flowering species

This should, in turn, lead to an increase in the number and variety of animal species including: birds that nest, feed and rest on the ground such as Greylag Geese, Skylarks and waders; woodland and farmland birds; invertebrates including butterflies and other pollinators; mammals including otters; and amphibians and reptiles. It would be expected that numbers of breeding and non-breeding animals would increase.

As described above, the presence of visitors with dogs will make some of these aspirations much harder to achieve (because of enrichment, disturbance and the difficulty of disposing of the hay, especially) and, once these enhancements have been realised at Battlemead Common, the effect of dogs may be perceived to be greater. Simply put, the more wildlife there is, the more disturbance events are likely to occur.

A frequently high number of visitors with dogs is likely to limit the number of individual birds and mammals that will make their home at Battlemead Common, and may prevent some species from inhabiting the site altogether.

However, the more suitable a habitat is for a particular species and the more individuals there are, then the more robust a population is against external influence. It is the author's view that the creation and maintenance of quality habitat will make the wildlife of Battlemead Common better able to cope with the negative impacts (rather than effects) of visitors with their dogs.

A 'biodiversity net gain' calculation has been undertaken by Austin Foot (Foot & Austin, 2020). This demonstrates an increase in biodiversity 'score' following the delivery of the management plan. This is primarily due 15ha of the semi-improved grassland changing from 'moderate' condition to 'good'. This assumption might be more difficult to achieve with a significant increase of visitors with their dogs.

### 4.3 Potential for high visitor numbers

Battlemead Common is likely to attract an increased number of visitors, especially when the car park is opened. The majority (72%) of visitors to a comparable countryside site, Englemere Pond near Bracknell, arrive by car (Cruickshanks & Liley, 2014). Dog walking visitors tend to be on their own, so the maximum capacity of the car park will dictate, to an extent, the maximum number of visitors. At Battlemead Common, with a car park capacity of 26 – 30 cars, this would equate to a maximum visitor number of approximately 36 – 42.

In addition, the number of regular visitors is likely to be self-regulating, as visitors with dogs do not like sites to be over-crowded with other visitors, especially those without dogs (Edwards & Knight, 2006).

There may be occasions when the number of visitors will spike, on a hot, summer weekend or if a 'twitch-worthy' bird appears, for example. These events are likely to cause an occasional increase in the disturbance of wildlife, but are unlikely to have a significant impact on species populations.

## 5. Recommendations

The following actions are recommended to reduce the impact of visitors and their dogs on the wildlife of Battlemead Common. They are based on the information provided in this document and the author's experience of managing publically accessible land with high wildlife value.

- 1 Design signs to comply with advice in Edwards & Knight (2006). This document emphasises the need to convey messages to dog owners in a manner that is more likely to change behaviour such as picking up after dogs or keeping them on a lead.
- 2 Implement any planned visitor management, such as the provision of dog bins, as early as possible so that undesirable habits are not formed.
- 3 Devote staff time to promoting desirable behaviour at the site. The presence of wardens on site is the most effective way of ensuring that requested practices, such as keeping dogs on leads, are followed.
- 4 Remove the proposed path running north-south in East Field from the scheme as it appears to be redundant (it is parallel to the existing Thames Path) and very likely to encourage disturbance to ground- and water-dwelling birds in the adjacent field. If a path down the eastern edge is absolutely necessary, relocate it as far east as possible and reduce its impact by planting a hedge as soon as is practical.
- 5 Remove the proposal to open The Causeway from the scheme as this route is very likely to encourage disturbance to ground- and water-dwelling birds in the adjacent East Field, and facilitate access by dogs into the adjacent wetlands.
- 6 If a circular route is required, identify a route through the wet woodland to the southeast for a boardwalk. As discussed above, this is unlikely to have a significant adverse impact on Badger or Otter populations. It is the author's opinion that the woodland habitat is more robust than the open wetlands, and visitors with their

dogs are more likely to keep to the boardwalk than they are to less well-defined mown paths.

- 7 Ensure that fences, locked gates and signs are well maintained. As site infrastructure begins to deteriorate, visitors will stray away from designated routes and begin to explore more sensitive areas of the site.
- 8 If grazing is decided to be an appropriate management prescription, then it should be implemented as early as possible so that it is in place before the number of visitors increases significantly.

## 6. Appendices

### 6.1 References

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## 6.2 Figures

Figure 1: Map of Battlemead Common showing existing and proposed paths in East Field.



Figure 2: Map of Battlemead Common showing the area of East Field that is 'undisturbed' (13.5ha), assuming a 50m buffer of 'disturbed' land around each of the paths currently in use. See section 4.1.1 for more details.



Figure 3: Map of Battlemead Common showing the area of East Field that is likely to be 'undisturbed' (8.4ha), assuming a 50m buffer of 'disturbed' land around all of the paths, both existing and proposed. See section 4.1.1 for more details.

