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West Suffolk Recreational Disturbance Avoidance and Mitigation Study

Durwyn Liley & Zoe Caals

FOOTPRINT ECOLOGY, FOREST OFFICE, BERE ROAD,
WAREHAM, DORSET BH20 7PA
WWW.FOOTPRINT-ECOLOGY.CO.UK
01929 552444

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Summary

This study has been undertaken to support the West Suffolk Local Plan and its delivery. It sets out the mitigation requirements relating to the recreation impacts (associated with new development) on the important nature conservation sites in and around the district. This study builds on previous work that includes an initial desk-based review of sites, advice from Natural England and, the collection of visitor survey data and/or recreation impact assessment work.

The key focus for the study are the European sites in the Breckland area, namely the Breckland Special Area of Conservation (SAC) and the Breckland Special Protection Area (SPA). Mitigation requirements are set out for these sites, dovetailing with a similar strategic approach to mitigation established in Norfolk.

Mitigation measures comprise two different approaches:

- Strategic Access Management and Monitoring (SAMM) that comprise a suite of access management and monitoring projects; and,
- Alternative green infrastructure away from the European sites. These largely comprise measures that relate to providing alternative recreation provision at or close to development sites, typically referred to as Suitable Alternative Natural Greenspace (SANG).

SAMM include measures, such as increased ranger presence, that can be targeted to the areas and locations that are most vulnerable within the Brecks. Alternative Greenspace will come forward as part of developments as well as through a suite of projects overseen by the council. Guidelines relating to SANG delivery are part of the study.

Measures will be funded through developer contributions and a zone of influence is identified which covers virtually all of the district.

In addition, there are two other European sites where the need and level of mitigation will need to be secured on a case-by-case basis:

- Devil's Dyke SAC; and,
- Fenland SAC (Wicken Fen component)/Wicken Fen Ramsar – hereafter referred to simply as Wicken Fen.

For these two European sites, only development that comes forward in a small part of West Suffolk, near Newmarket, will be relevant. The relevant zone and potential mitigation options are set out within the report.

Looking outside the European sites, there are also 3 Sites of Special Scientific Interest (SSSIs) that are of national (rather than international) importance for nature conservation and also vulnerable to recreation impacts. These SSSIs all have public access and vulnerable interest features:

- Bradfield Woods SSSI;
- Maidscross Hill SSSI; and,
- Red Lodge Heath SSSI.

These sites are not subject to the same level of protection as the European sites and form a separate section at the end of the report. Potential mitigation options and zones of influence are identified.

This study therefore ensures the council is adequately protecting both international and national wildlife sites from the impacts of recreation and ensures that housing delivery is not delayed due to a lack of mitigation. It provides clarity for developers when bringing forward sites for development.

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1. Introduction & purpose of the study

Overview

1.1 This study has been undertaken to support the West Suffolk Local Plan and its delivery. The study primarily relates to housing growth within West Suffolk and sets out the mitigation requirements relating to the impacts from recreation on the important nature conservation sites in and around the district. It ensures the council is adequately protecting the wildlife sites from the impacts of recreation.

1.2 The study ensures that housing is not delayed and provides clarity for developers when bringing forward sites for development.

West Suffolk & the West Suffolk Local Plan

1.3 West Suffolk District is a predominantly rural district that includes a range of internationally important and nationally important nature conservation sites (Map 1). The local housing need assessment has determined 13,005 dwellings and the local plan identifies that 14,875 homes have been identified in this local plan to meet the overall housing requirement for the period 2024 to 2041. This represents a marked increase in housing within the district over the plan period (to 2041).

Impacts of recreation

1.4 In the UK there is considerable overlap between nature conservation and recreation. People use nearby greenspaces for a range of recreation, which includes dog walking and physical exercise. Many of our most important nature conservation sites have legal rights of access, for example through Public Rights of Way or Open Access through the Countryside and Rights of Way Act (CRoW) 2000. It is now increasingly recognised that access to the countryside is crucial to the long-term success of nature conservation projects, for example through enforcing pro-environmental behaviours and inculcating a greater respect for the world around us (Richardson et al., 2016). Access also brings wider benefits to society that include benefits to mental/physical health (Lee and Maheswaran, 2011; Keniger *et al.*, 2013; Olafsdottir *et al.*, 2020) and economic benefits (Sandbrook, 2010; ICF GHK, 2013; Keniger *et al.*, 2013; Stebbings *et al.*, 2020).

1.5 There are also considerable challenges as the use of sites for recreation can damage the nature conservation interest and hinder potential for nature recovery. There is a strong body of evidence showing how increasing levels of access can have negative impacts on wildlife. Issues are varied and there is an extensive body of literature documenting a wide range of types of impact (for general reviews see: Liley et al., 2010; Lowen et al., 2008; Ross et al., 2014; Underhill-Day, 2005).

1.6 A large increase in visitors to greenspaces during the Coronavirus pandemic (Burnett et al., 2021; Lemmey, 2020; Ugolini et al., 2020) has resulted in further significant visitor management challenges, at times putting a huge strain on sites.

Legislative protection

1.7 Sites that are important for nature conservation are subject to a range of legal protection. Sites that are designated or classified under the Habitats Regulations ('Habitats Sites') comprise Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) and these, along with Ramsar sites (listed in response to the Ramsar Convention), are afforded the highest degree of protection. Together these are referred to as 'European' sites.

1.8 The designation, protection and restoration of European sites is embedded in the Conservation of Habitats and Species Regulations 2017, as amended, which are commonly referred to as the 'Habitats Regulations'. The most recent amendments (the Conservation of Habitats and Species (amendment) (EU Exit) Regulations 2019) take account of the UKs departure from the EU.

1.9 Under the Habitat Regulations, a competent authority should only give effect to a plan, or authorise or undertake a project after having ascertained that it will not adversely affect the integrity of the European site, either as a result of the plan or project alone or in-combination with other plans or projects. This means that in the absence of certainty, the plan or project should not normally proceed (subject to the further exceptional tests set out within the legislation). Mitigation measures are counteracting measures that serve to avoid, cancel or reduce harmful effects. Guidance (Tyldesley & Chapman, 2021) is clear that, to be taken into account, at the appropriate stages, all 'mitigation measures' should be effective, reliable, timely, guaranteed to be delivered and as long-term as they need to be to achieve their objectives.

1.10 The Habitats Regulations Assessment (HRA) report that accompanied the Issues and Options (Regulation 18) version of the emerging West Suffolk

Local Plan identified a number of designated sites in West Suffolk that were potentially vulnerable to recreational pressure. The HRA concluded that a study should be undertaken once the allocations had been more firmly identified.

1.11 It should be noted that the Government published its Planning and Infrastructure Bill in March 2025. This contains the proposed legislation intended to implement the changes identified in the DEFRA / MHCLG Planning Reform Working Paper: 'Development and Nature Recovery' published in December 2024. The Bill introduces legislation required to deliver Environmental Delivery Plans (EDPs) and a Nature Restoration Levy (NRL), whereby developer contributions can be secured to secure mitigation and deliver improvement for European sites.

1.12 There is also strong protection through the planning system for Sites of Special Scientific Interest (SSSIs). The National Planning Policy Framework (NPPF) states that when determining planning applications, development on land within or outside a SSSI, and which is likely to have an adverse effect on it (either alone or in-combination with other developments), should not normally be permitted. The NPPF acknowledges that this may mean that strategic planning documents may need to restrict the overall scale, type, or distribution of development in the plan area in order to provide the necessary protection.

Need for this study

1.13 Mitigation measures for recreation impacts typically involve a range of interventions on or around the nature conservation sites themselves, protecting the nature conservation interest, changing visitor behaviour or influencing where people go in space or time. In addition, measures typically comprise provision of alternative greenspace to divert access entirely.

1.14 The nature conservation sites included in this study are owned and/or managed by a range of organisations and cover a wide area. In such cases, mitigation is difficult to establish if secured in a piecemeal fashion from individual developments. In particular with multiple developments coming forward it is difficult to be confident that cumulative, in-combination effects are adequately addressed. Mitigation is therefore best secured upfront, and strategic mitigation schemes have now been adopted at many European sites around the country. Examples (see Appendix 1 for more details) include the Dorset Heaths, the Solent, the Thames Basin Heaths, the New Forest, the

Chilterns Beechwoods and South-East Devon. These strategies often cover multiple Local Planning Authorities and some have been running for many years.

1.15 This study sets out further detail relating to Plan-led growth in West Suffolk and the requirements for mitigation around recreation impacts and nature conservation. It is therefore a solution to the legislative duties placed on West Suffolk Council. The study enables development by unblocking potential assessment and mitigation issues at the individual development project level where recreation pressure is difficult to mitigate on a piecemeal basis because it relies on a suite of integrated activities. The study also ensures the necessary measures are secured to protect the nature conservation interests of the relevant sites.

1.16 Advice from Natural England as part of the formal consultation at the Issues and Options stage in 2020 identified the need for a strategic approach to address cumulative impacts of development at Devil's Dyke SAC and SSSI. As part of their response to the Preferred Options in 2022, Natural England welcomed the consideration of recreational impacts of new residential development and noted the inclusion of a financial contribution from developers as a means to address the issue at a strategic level. The advice recommended West Suffolk Council made contact with nearby local authorities to learn about the strategic approaches to recreation mitigation in place (Norfolk and Suffolk Coast).

1.17 In line with the HRA recommendations and advice from Natural England, West Suffolk commissioned an initial study to review which sites recreation impacts were relevant, and this included visitor work and impact assessments at selected sites (Caals, Shellswell and Liley, 2023). This report follows from the work by Caals *et al.* and sets out the necessary mitigation and how it will be implemented.

1.18 Relevant policies[1] in the West Suffolk Local Plan include:

- **Policy LP15 Protected sites, habitats and features** which ensures protection for sites designated for their biodiversity value;
- **Policy SP8 Recreational effects of development** which states that all new development which would result in a net increase in dwellings and therefore likely to increase recreational pressure on

[1] Note that the policy numbers used in this report are those included in the submission draft and they may change in the adopted version of the plan.

any European or nationally designated site for nature conservation, will be required to demonstrate that adequate measures are put in place to avoid or mitigate potential adverse effects; and,

- **Policy SP4 Green Infrastructure** which recognises that green infrastructure plays a significant role in mitigating the effects of recreational pressure on nature conservation sites and sets a requirement that all major residential development of 50 homes or more located on greenfield sites should provide around 40 per cent green infrastructure within the site.

1.19 With respect to the Breckland SAC and SPA, this study dovetails with European site mitigation in Norfolk which has also been established strategically. Some of the measures in the two strategies overlap and will be funded jointly from both strategies.

2. Relevant nature conservation sites

2.1 This study covers 4 European sites:

- Breckland SAC;
- Breckland SPA;
- Devil's Dyke SAC; and,
- Fenland SAC (Wicken Fen component)/Wicken Fen Ramsar – hereafter referred to simply as Wicken Fen.

2.2 In addition, there are 3 SSSIs that are entirely outside the European sites, but are also potentially vulnerable to recreation impacts. These SSSIs are treated separately to the European sites in the subsequent sections of the report. While they are not the primary focus for this report, given the potential risks from recreation they are included to ensure risks are identified and potential mitigation options are described and available. These SSSIs are:

- Bradfield Woods SSSI;
- Maidscross Hill SSSI; and,
- Red Lodge Heath SSSI.

2.3 These European sites and the SSSIs are shown in Map 1. They have been carefully selected following initial review, advice from Natural England and, for some sites, the collection of visitor survey data and/or recreation impact assessment work. The initial review and the recreation impact assessment work (Caals, Shellswell and Liley, 2023) provide background evidence to this study. All the sites covered in the study have public access and are within relative proximity of the locations in the West Suffolk Local Plan where housing growth is proposed. Concerns around recreation impacts at sites such as the Breckland SPA have long been recognised and mitigation approaches for new development long established.

2.4 Further information about the sites, particular risks and justification for inclusion in the study are given in Table 1. Further background to each site is also provided in Appendix 2 (European sites) and Appendix 3 (SSSIs).

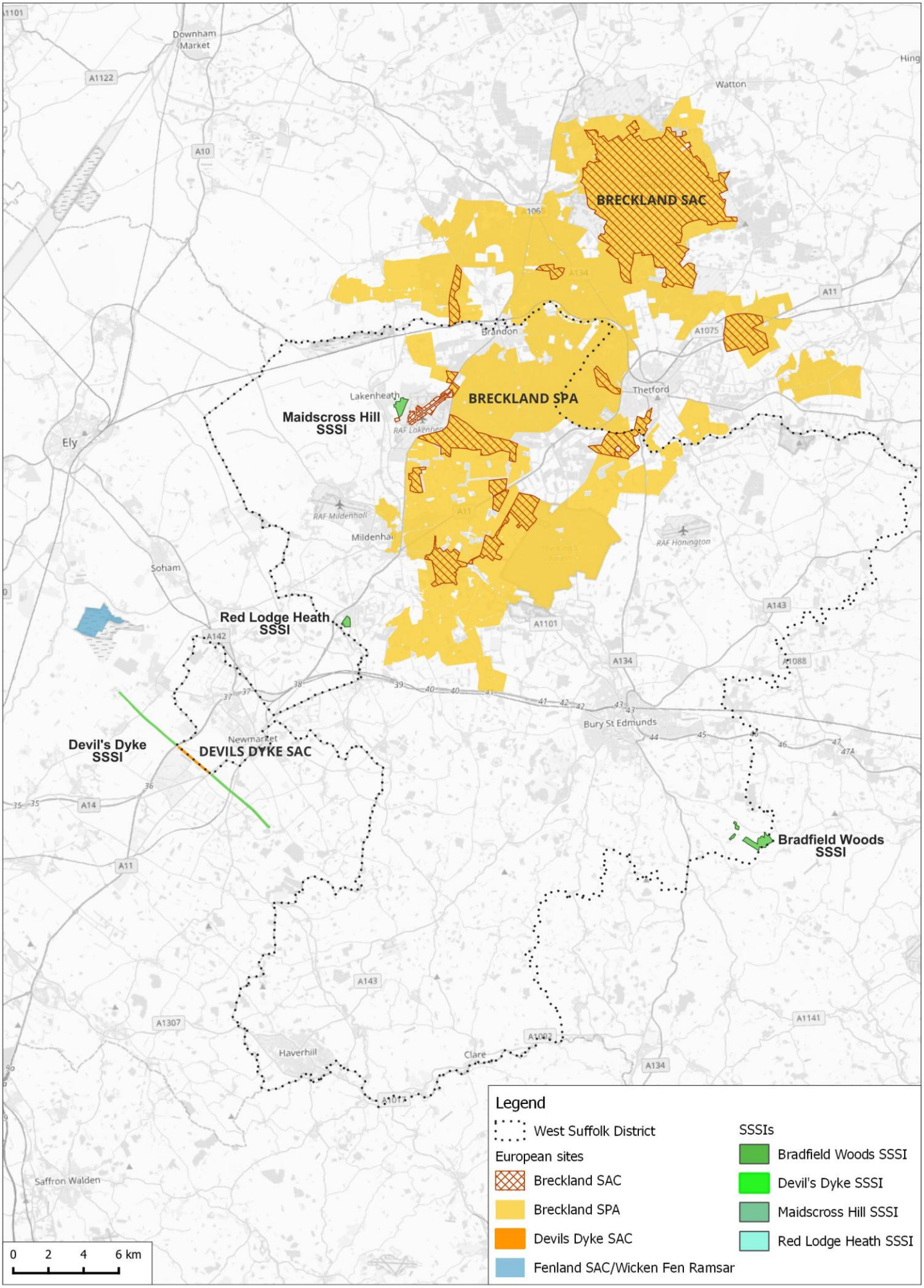
2.5 Subsequent sections of the report (Section 3, mitigation and Section 4, implementation) relate to the European sites only. SSSIs are considered separately in Section 5, at the end.

Table 1: Relevant sites (those in bold, above the dotted line, are European sites).

Site	Qualifying features or interest	Key concerns	Justification for inclusion in study
Breckland SAC	**Inland dunes, Natural Eutrophic lakes, Dry heaths, Calcareous grassland, Wet woodland, Great-crested Newt**	**Contamination (from dogs in particular, including dog fouling and contamination of water bodies from dogs entering the water), trampling, increased fire risk, spread of non-native species and disease, disturbance to rabbits**	**European site with areas easily accessible (for example Cavenham, Barnham Cross, Lakenheath Warren, Berner's Heath). Access restrictions for Stone Curlew only part of year. Other authorities have established strategic mitigation in place (Norfolk GI RAMS).**
Breckland SPA	**Stone Curlew, Nightjar, Woodlark**	**Disturbance to ground-nesting birds, impacts on rabbits affecting habitat, increased fire risk. Nutrient enrichment impacting habitat quality.**	**All three qualifying features vulnerable to recreation impacts as evidenced by a range of studies. Other authorities have established strategic mitigation in place (Norfolk GI RAMS).**
Devil's Dyke SAC	**Calcareous grassland**	**Dog fouling, trampling**	**Impact assessment shows evidence of impacts. Visitor surveys show use of site by West Suffolk residents. Natural England advice as to need for strategic approach at Issues and Options consultation. Recreational impacts (specifically dog fouling) are listed as a current, active pressure for the SSSI (that underpins the SAC) by Natural England.**
Wicken Fen	**Purple Moor Grass Rush Pasture, Calcareous Fen, Spined Loach, Great-crested Newt, Wetland invertebrate assemblage, Wetland plant assemblage**	**Contamination (from dogs in particular), impacts to grazing, public perception limiting conservation management, increased fire risk**	**Natural England have raised concerns about the impacts of housing growth. Visitor survey (Saunders *et al.*, 2019) highlights risks to site and shows use by West Suffolk residents. Issues likely to relate to those visitors avoiding the main visitor hubs or car parks and accessing via public footpaths.**
Bradfield Woods SSSI	Mixed deciduous woodland	Trampling of woodland ground flora, soil damage and dog fouling	Reserve is well managed and wardened (by Suffolk Wildlife Trust). However, this a well-known site and destination that draws people from wide area within which marked level of

Site	Qualifying features or interest	Key concerns	Justification for inclusion in study
			housing change set out in Plan. Recreation impacts possible in future.
Maidscross Hill SSSI	Calcareous grassland, Acid grassland, Vascular plant assemblage, Lizard Orchid	Dog fouling, trampling, increased fire risk, spread of non-native species and disease, disturbance to rabbits	Small site subject to high levels of current pressure. Impact assessment and visitor survey quantify issues. Natural England's condition assessment (from 2013) highlights a declining plant interest. Local housing growth. Overlap with wider Breckland area with recreational use likely to also involve the European sites (particularly Thetford Forest).
Red Lodge Heath SSSI	Invertebrate assemblage, Vascular plant assemblage, *Cerceris quinquefasciata*	Contamination (from dogs in particular and including dog fouling and contamination of water bodies from dogs entering the water), trampling, increased fire risk, spread of non-native species and disease, disturbance to rabbits	Small site subject to high levels of current pressure. Impact assessment and visitor survey quantify issues. Local housing growth. Overlap with wider Breckland area with recreational use likely to also involve the European sites (particularly Thetford Forest). NE condition assessment (from 2024) does indicate site is in favourable condition or unfavourable recovering.

Map 1: Sites included in this study



3. Mitigation measures for European sites

3.1 Mitigation for the European sites comprises two different approaches:

- **Strategic Access Management and Monitoring (SAMM)** that comprise a suite of access management and monitoring projects that relate to the specific sites.
- **Alternative green infrastructure** away from the European sites or SSSIs. These largely comprise measures that relate to providing alternative recreation provision at or close to development sites, typically referred to as Suitable Alternative Natural Greenspace (SANG).

3.2 A suite of mitigation measures should function together to provide confidence that impacts arising from recreation have been prevented. This is because the combination of measures working together reduces risk and builds in contingency if some measures do not perform as well as envisaged, once implemented. Other measures can still be functioning in the short term whilst others are revised. An integrated suite of measures delivered together also improves efficiency, which in turn adds to effectiveness with improved value for money. For this reason, both SAMM and SANG measures should be delivered with each development or a contribution made towards both these aspects of mitigation.

Strategic Access Management and Monitoring (SAMM)

3.3 SAMM measures have been identified through a series of workshops and discussion with landowners, managers and other interested parties and informed by data from visitor surveys and impact assessment (e.g. Caals, Shellswell and Liley, 2023).

The Brecks (Breckland SAC/Breckland SPA)

3.4 Mitigation needs to allow a conclusion of no adverse effects on integrity to Breckland SAC and Breckland SPA from recreation, as a result of the West Suffolk Local Plan, alone or in-combination with other plans or projects.

3.5 Potential impacts relate to an extensive area that comprises forestry, open heath, grassland and farmland, with access relatively dispersed. Within the forestry plantations disturbance to ground nesting birds is the principal concern, focussed around areas of open habitat (the distribution of which will change over time). Dogs off-lead are likely to be one of the main causes of disturbance. Other risks include off-road vehicles. Mitigation in the forest

will need to involve supporting Forestry England (who manage the Forest) to influence visitor behaviour and distribution, with the aims to:

- Ensure no increase in dogs off-lead in the open habitat within the Forest;
- Ensure no escalation of incidents involving off road-vehicles;
- Raise awareness around fire risk and helping to limit risk of large wildfires.

3.6 Most areas of semi-natural habitats have relatively limited access from March – October due to access restrictions and risks here relate to dog fouling, trampling, increased fire risk, spread of non-native species and disease, disturbance to birds and disturbance to rabbits. Mitigation should in particular aim to:

- Ensure no recreational use in the areas covered by CRoW access restrictions at the relevant times of year;
- Boost or support rabbit populations to ensure they are resilient at sites with access;
- Limit dogs off leads and dog fouling impacts;
- Raise awareness around fire risk and helping to limit risk of large wildfires;
- Encourage visitors to stick to the clearly defined routes through potentially sensitive areas;
- Raise awareness with visitors about the site's importance for nature conservation.

3.7 In the farmland areas, access is restricted to public rights of way and potential risks relate to disturbance to ground-nesting birds. Mitigation should focus on those footpaths that are likely to be used by new residents and go through sensitive areas. The aim should be to ensure no increased disturbance by reducing use or making the routes more resilient (for example with screening).

3.8 In all habitats the mitigation will need to be flexible to changing issues and patterns of access. Monitoring of visitor numbers, distribution and behaviour will be important to pick up change and inform mitigation delivery.

3.9 A project manager post will be established to oversee implementation and liaise with partners and stakeholders. A key role for this post will be to ensure mitigation delivery is tied to the locations and phasing of housing growth so that it is relevant to the locations where housing comes forward. Housing growth in Norfolk, particularly Breckland District will also be

relevant and mitigation measures should be coordinated across both areas to effectively address in-combination growth. The project manager post will need to ensure this happens.

3.10 Mitigation projects are summarised in Table 2.

Table 2: Specific mitigation measures relating to the Brecks

Mitigation measure	Description	Parties involved in delivery	Justification	Notes
Strengthening CRoW access restrictions	Signage and other infrastructure to ensure always clear where access permitted and when. For example Cavenham.	NE, various landowners	Access restrictions provide fundamental protection and are established. Potential need to ensure clarity for new visitors and that the most vulnerable sites have signage etc in place and at right locations	Likely to require regular checks of existing signage
Interpretation panels at Cavenham Heath	Installation of 4 to 5 new interpretation panels will further inform site users about the value of the site and expected behaviours.	NE	Part of specific project at Cavenham to address increased recreation pressure with new signage to address specific concerns at this location	Cavenham particularly sensitive given locations of development
New dog bin installation at Cavenham Heath	2 new bins plus collection at Cavenham.	NE, WSDC	Dog bins provide a means to ensure some of the impacts from nutrient enrichment and dogs is reduced	Cavenham particularly sensitive given locations of development
Fire consultancy support	Budget to cover review of fire management plans and vulnerability of sites and potentially extending to training and joint working to ensure all prepared	multiple	Ensures joined up approaches to fire risk and provides confidence that suitable measures in place	Not jointly funded with Norfolk, however scope for overlap with Norfolk as similar project (but county wide rather than Brecks specific) identified for Norfolk
Rabbit focus group	Support to establish group that can enable and deliver work on rabbits.	RSPB, NE, Forestry England, SWT and others	Rabbits are key to maintaining short sward and bare ground patches. Decline in Rabbit population as a result of disease has had marked impact. Access, particularly dogs, potentially part of the problem. Solutions likely to be complex and require some coordination. Monitoring important.	
Signage and interpretation	Multiple long-term signage or Interpretation Panels or Info Boards promoting importance of the forest within environment, forest management techniques, forest landscape	Forestry England	Improve visitor experiences and understanding of the landscape. Tackling on-going negative public behaviours with desire for an improvement in behaviours and more respectful recreational use. Promoting the forest as a source of well-being and	

Mitigation measure	Description	Parties involved in delivery	Justification	Notes
	info, historical points of interest etc across the Thetford Forest Estate SSSI/SPA		green space for recreation to positively contribute to societal needs. Educate dog walkers and other recreational users on the ecological sensitivities.	
Rebranding & Repurposing of Sensitive Site - Signage & Visitor Experience Enhancements	Removal of existing signage and provision of paid parking ANPR (solar) Interpretation boards detailing trails and historical sites of interest Rebrand of 'St Helens Picnic Site' to 'Santon Historical Site' Protective work to the riverbank reducing erosion	Forestry England	To reduce impacts of increasing number of visitors, damage to the riverbank and increase in dogs at the site Habitat loss and decrease in habitat quality and increased disturbance for ground nesting birds Increase in vehicles has impact on ecosystem protection. Decreases in breeding density and productivity Increase in people and vehicles has caused damage to Historic Ancient Monument - therefore need to effectively manage and educate the visitors to site sensitivity	
Installation of hard (barrier) infrastructure at selected access points	Infrastructure that limits vehicular access to forest at key points - barriers or obstacles preventing certain vehicles to access	Forestry England	Reduction of human and vehicle impacts to habitats causing disturbance, damage or degradation, anti-social behaviours and irresponsible use of the forest and it's habitats for recreation that is polluting - motorbikes for example. This in turn causes species to move or relocate from areas.	
Dog project	Targeted work around dog ownership and walking in the local countryside, with pop-up events, posters for vets and some training events. Staffed project with membership	wide range	Dogs are key issue and need to influence people's behaviour. This provides a positive and proactive means to do so.	Other projects such as Dorset Dogs, Devon Loves Dogs and work by Bird Aware Solent provide useful context and case studies.
Gazetteer of where to walk dog	Online resource highlighting locations to walk dogs.	wide range	Positive measure to promote robust sites and highlight ones where particular issues.	Dynamic and easily updated resource that allows site managers or owners to provide specific instructions and guidance.

Mitigation measure	Description	Parties involved in delivery	Justification	Notes
Visitor monitoring at relevant sites	Visitor surveys to identify how people are using sites, routes taken and awareness of nature conservation issues	Range of organisations	Monitoring picks up trends and changes at sites and informs future management or mitigation	
Ranger coverage	Ranger coverage with face-to-face presence on site, meeting visitors and promoting responsible access	Forestry England, NE and others	Face-to-face engagement provides key mechanism to influence behaviour and inspire visitors about wildlife	Able to target problem behaviours and issues (for example dogs on leads). Covering large area but ability to roam and target locations where issues arise. Scope for staff to be hosted by WSDC, Natural England (Cavenham Heath) and/or Forestry England.
Project Manager post	Post to oversee infrastructure works, budget oversight	W Suffolk Council	Post necessary to drive works forward and manage budget	Project manager post not necessary in-perpetuity and part time role sufficient.
Review of footpaths	Review of footpaths with aim of identifying robust routes to promote and vulnerable paths to protect.	W Suffolk Council	Assessment of path network and site checks required	
Enhancements to rights of way network within or directly adjacent to sites	Work to make routes in more robust areas more appealing to visit (for example increased parking, signs and route maps etc) and more sensitive routes more robust (for example planting up gaps in hedges to provide screening along linear routes).	various	Enhancements can help focus visitor use away from more sensitive paths or locations and where there are risks (for example disturbance to Stone Curlew) improvements such as screening or planting etc may help reduce risks	Positive measure with improvements to path network
Promotion of footpaths and walking routes within or directly adjacent to sites	Online and printed material promoting routes	various	Promotion is necessary alongside enhancements to ensure they are effective	Routes carefully selected for promotion to draw people away from sensitive locations

Devil's Dyke

3.11 Mitigation needs to allow a conclusion of no adverse effects on integrity to Devil's Dyke SAC from recreation, as a result of the West Suffolk Local Plan, alone or in-combination with other plans or projects. The SSSI that underpins the SAC extends beyond the SAC, and it is important to ensure that any mitigation measures on the SAC do not simply deflect problems onto the SSSI. The main parking for the SAC also allows access to part of Newmarket Heath SSSI and any mitigation measures relating to Devil's Dyke must not lead to impacts occurring on Newmarket Heath.

3.12 Key concerns at Devil's Dyke relate to dog fouling and trampling damage, particularly to the chalk grassland habitat. Mitigation measures should aim to:

- Ensure no further increase in eutrophication from dogs;
- Ensure no further increase in trampling damage;
- Raise awareness with visitors about the site's importance for nature conservation.

3.13 Housing growth in a wide area beyond West Suffolk, including growth at Ely and around the periphery of Cambridge, will also be relevant. Mitigation measures should function effectively to address in-combination growth. This may require some coordination and joint funding across authorities.

3.14 Mitigation projects are summarised in Table 3.

Table 3: Specific mitigation measures relating to Devil's Dyke

Mitigation measure	Description	Parties involved in delivery	Justification	Notes
Visitor and access management plan	Plan to set out interventions to better protect part of Dyke alongside Newmarket Heath with potential to add new promoted route to west (off SAC), dog bins, more signage and monitoring	Jockey Club	Opportunities to deflect and better manage access but requires scoping on the ground and detailed discussion with landowners and stakeholders	Initial planning work to involve site visits, liaison with relevant parties and map or set out in detail required interventions
Signage and interpretation	Signs and interpretation in line with access management plan	Jockey Club	Signage and interpretation ensures key messages can be communicated on site	Good quality interpretation will help ensure understanding of place and help

Mitigation measure	Description	Parties involved in delivery	Justification	Notes
				raise awareness of wildlife importance. Likely to form part of plan and as necessary to indicate issues, where to go, how to behave etc.
Additional access infrastructure in line with access management plan	Interventions as set out in plan, potentially involving new path option off the SAC	Jockey Club		Dependent on outcome of management plan

Wicken Fen

3.15 Mitigation needs to allow a conclusion of no adverse effects on integrity to Fenland SAC/Wicken Fen Ramsar from recreation, as a result of the West Suffolk Local Plan, alone or in-combination with other plans or projects.

3.16 Key concerns relate to contamination, impacts to grazing, public perception limiting conservation management and increased fire risk. The site is a National Nature Reserve and managed by the National Trust. Mitigation needs to support the National Trust to:

- Limit dogs off leads and dog fouling impacts;
- Increase resilience of the site to increased footfall and visitor numbers;
- Raise awareness with visitors about the site's importance for nature conservation;
- Raise awareness around fire risk and helping to limit risk of large wildfires.

3.17 There is already good guidance online regarding access, dogs etc[2] and there are rangers that currently cover the site. Mitigation projects relate to infrastructure projects that increase the resilience of the site. Measures are summarised in Table 4.

Table 4: Specific mitigation measures relating to Wicken Fen, all proposed by the National Trust specifically to address the concerns raised.

Mitigation measure	Description	Parties involved in delivery	Justification
Improve existing footpaths	2.4km of path improvements	NT	Ensuring circular and destination routes to guide visitor journeys and prevent encroachment
Repair cycle network	Intermittent repairs along 1400m	NT	Increasing resilience of existing cycle network and ensuring use is focussed there
Car park expansion and upgrade	Adventurers (Harrisons car park)	NT	Ensures car park fit for purpose and works to focus recreation use and engagement

Alternative Green Infrastructure including SANG

3.18 Alternative green infrastructure will provide access or enhance existing countryside away from the European sites, with the aim of drawing some visitors and recreation use to alternative destinations. Three different approaches (see Figure 1) are possible and relevant to different types of development or locations.

[2] For example see the guidance on the National Trust website relating to visiting Wicken Fen with your dog

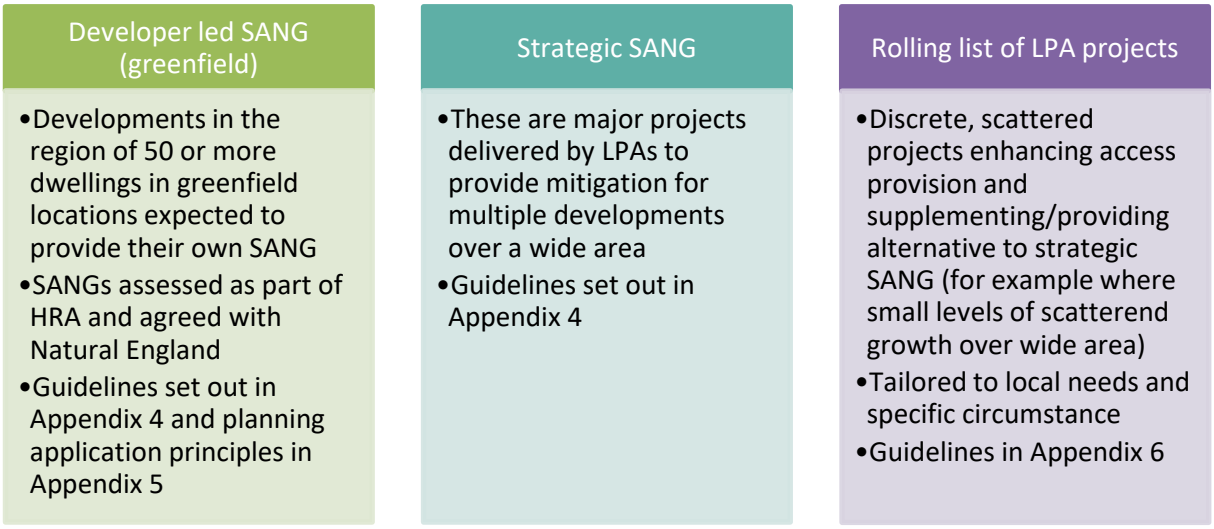


Figure 1: Different alternative green infrastructure away from the designated nature conservation sites

3.19 Further details on alternative green infrastructure provision, including size, quality and planning application principles are provided in Appendices 4, 5 and 6. Developer-led SANGs will be delivered directly by developers through on-site provision. Other types of infrastructure will be led by the local planning authority and funded from contributions.

3.20 For large sites coming forward in greenfield locations, provision of SANGs should form part of the overall infrastructure provision of that site. These developer led SANG will be incorporated into the site design from the outset. SANGs provision should be delivered in advance of occupation of dwellings, however for larger proposals mitigation may be structured so as to tie in with development phasing.

3.21 For sites that can't deliver their own SANG (typically because the site is too small), there will be the option to contribute to strategic SANG (that will be LPA led) or projects that enhance recreation use of the wider countryside with the aim of deflecting visitor use from more sensitive sites. These wider countryside projects provide the opportunity to deliver mitigation that is spatially relevant to small, scattered development that might not be close to a strategic SANG.

3.22 Some of the SAMM projects identified will have cross-over with these small projects and there may be scope to add value or further expand particular projects relating to:

- Enhancements to rights of way network;
- Promotion of footpath and walking routes
- Increases in parking capacity or improvements to parking
- Dedicated facilities for dog and dog-walking
- Improved access within existing sites.

3.23 Some specific measures have been identified in the West Suffolk Local Plan site allocations.

4. Implementation

Types of development

4.1 The study relates to residential development and some other types of use including some tourist-related development, as summarised in Table 5.

Table 5: Relevant types of development

Use Type or Class	Mitigation requirements
Dwelling houses (C3) Any net increase	Per dwelling contribution
Dwelling houses (C3) Extension or 'Granny 'Annexe	Per dwelling contribution if necessary. Case-by-case decision and depends on whether functions as a separate unit
Dwelling houses (C3) Replacement dwelling	none
Residential Institutions (C2 or C2A) Accommodation and care to people in need of care including nursing homes, hospitals and secure institutions	Per unit contribution if necessary. Case-by-case decision and depends on the type of scheme and level of mobility of residents
Residential Institutions (C2 or C2A) School, college or training centre	none
Hotel (C1) Including boarding houses and guest houses	Per unit contribution if necessary. Case-by-case decision depending on potential to rule out tourist use of site
Houses in Multiple Occupation (C4 or Sui Generis) Including managed student accommodation	Per dwelling contribution
Holiday Dwellings (Sui Generis)	Per unit contribution if necessary. Case-by-case decision depending on potential to rule out tourist use of site
Gypsy and Traveller Pitches (Sui Generis) Net new pitches that are either temporary or permanent	Contribution per pitch decided on a case-by-case basis as relevant
Café, food outlet or visitor attraction	Contribution decided on a case-by-case basis as relevant

4.2 Contribution to the strategic mitigation will enable applicants to secure the appropriate avoidance or mitigation measures and enable the Council to conclude through appropriate assessment that there is no adverse effect on the integrity of the relevant European sites from recreation. For the SSSI

sites outside the European site boundaries the mitigation will ensure impacts from recreation are addressed.

4.3 The strategic mitigation is established primarily to address the cumulative and in-combination effects of widespread residential housing growth. Furthermore, mitigation will also be relevant to non-residential development, including tourism but due to the varied nature of potential applications these will also need consideration on a case-by-case basis, as set out in Table 5. For residential development contributions will be on a per unit basis, and this may not necessarily be directly transferable to other situations such as visitor attractions, food outlets or tourist development. Nonetheless it should be possible for such applications to be mitigated through the strategic approach, on a bespoke basis. Such cases will require more detailed consideration and the mitigation checked through appropriate assessment.

Multi-stage consents

4.4 The HRA provisions apply to any consent, permission, or other authorisation, this may include post-permission approvals; reserved matters or discharges of conditions. The requirement for mitigation, as set out in this study, therefore applies to multi-stage consents such as the approval of reserved matters, in line with other mitigation strategies, national guidance and government advice[3]. Where there is a mitigation solution agreed and established at outline (prior to this document), a transitional arrangement may be relevant, as along as the mitigation is effective, can be delivered in full and checked at the HRA at reserved matters.

Linking SAMM mitigation spatially to housing growth

4.5 The standard approach to identifying likely significant effects and the area within which mitigation might be required is to establish a zone of influence, based on visitor survey data and applied as a buffer around the boundary of the European site (see Liley, Panter and Chapman, 2021 for background). As described by Liley, Panter and Chapman, home postcodes of visitors, collected as part of visitor survey data, can be used to calculate the distance between where people live and where they are interviewed. The 75th

[3] For example see HRA guidance (see section E.19 in Tyldesley and Chapman, 2013) and Ministerial Statement UIN HCWS258 from 20/7/2022,

percentile for these data provide a means to define a zone within which the majority of visitors live. These zones can be adapted as necessary to reflect local geography (e.g. estuaries or other barriers to movement) or characteristics of visitors (e.g. potentially excluding holiday-makers).

4.6 These zones are summarised in Table 6 and shown in Appendix 9. Table 6 also summarises the level of housing growth within the relevant zone for each site. These levels reflect current (2023) housing within the entire zone and then the level of change within the West Suffolk Local Plan alone, based on the allocations within the Plan.

4.7 It should be noted that the zone for the Brecks is considerably larger than the 7.5km previously applied to development in West Suffolk. That 7.5km figure was derived from visitor surveys undertaken in 2010 (see Fearnley, Liley and Cruickshanks, 2011) while the 26.3km figure is from more recent data, with surveys undertaken in 2015 and 2016 (Panter, Liley and Lowen, 2017). Panter et al. undertook surveys at 9 different locations and the surveys were timed to coincide with the bird breeding season (covering a period from March – July) rather than the early July focus in 2010. In the more recent surveys, there were marked differences between survey locations in the distances interviewees had travelled, indicating that different locations have a different draw. The median distances (for those on a short visit from home) ranged from 1.4km (Barnham Cross) to 36.8km (St. Helens). There were three locations (St. Helens, Lynford Stag and High Lodge) where visitors had come considerable distances (medians all above 22km and 75th percentiles all above 40km). Of the 9 locations, all but 1 (Barnham Cross Common) had third quartiles above 7.5km.

4.8 While the Panter, Liley and Lowen survey was commissioned by Norfolk authorities, it included a number of Breckland survey points within or directly adjacent to West Suffolk. 38% of those interviewed at the Breckland survey points lived outside Norfolk, mostly in West Suffolk, with visitors originating from settlements that included Brandon, Lakenheath, Newmarket and Bury St. Edmunds.

4.9 In applying the zone for the Brecks we have applied the 26.3km buffer to the SPA, excluding the farmland on the assumption that it is the recreation opportunities associated with the heaths and forestry that have the particular draw. This means the zone doesn't cover the whole of the West Suffolk District and there is part (around Haverhill) that falls outside the zone. Future visitor surveys should include some locations within the

Breckland farmland to check that these sites do have a lesser draw than the forest and heathland areas.

4.10 This means that most of West Suffolk falls within the zone of influence for the Brecks (shown in Map 2) and there is a single, broad area within which a uniform tariff is applied. Within this zone, there are also small areas to the west of the District (particularly around Newmarket) that fall within the zone of influence for other European sites.

Map 2: Overall, single tariff area

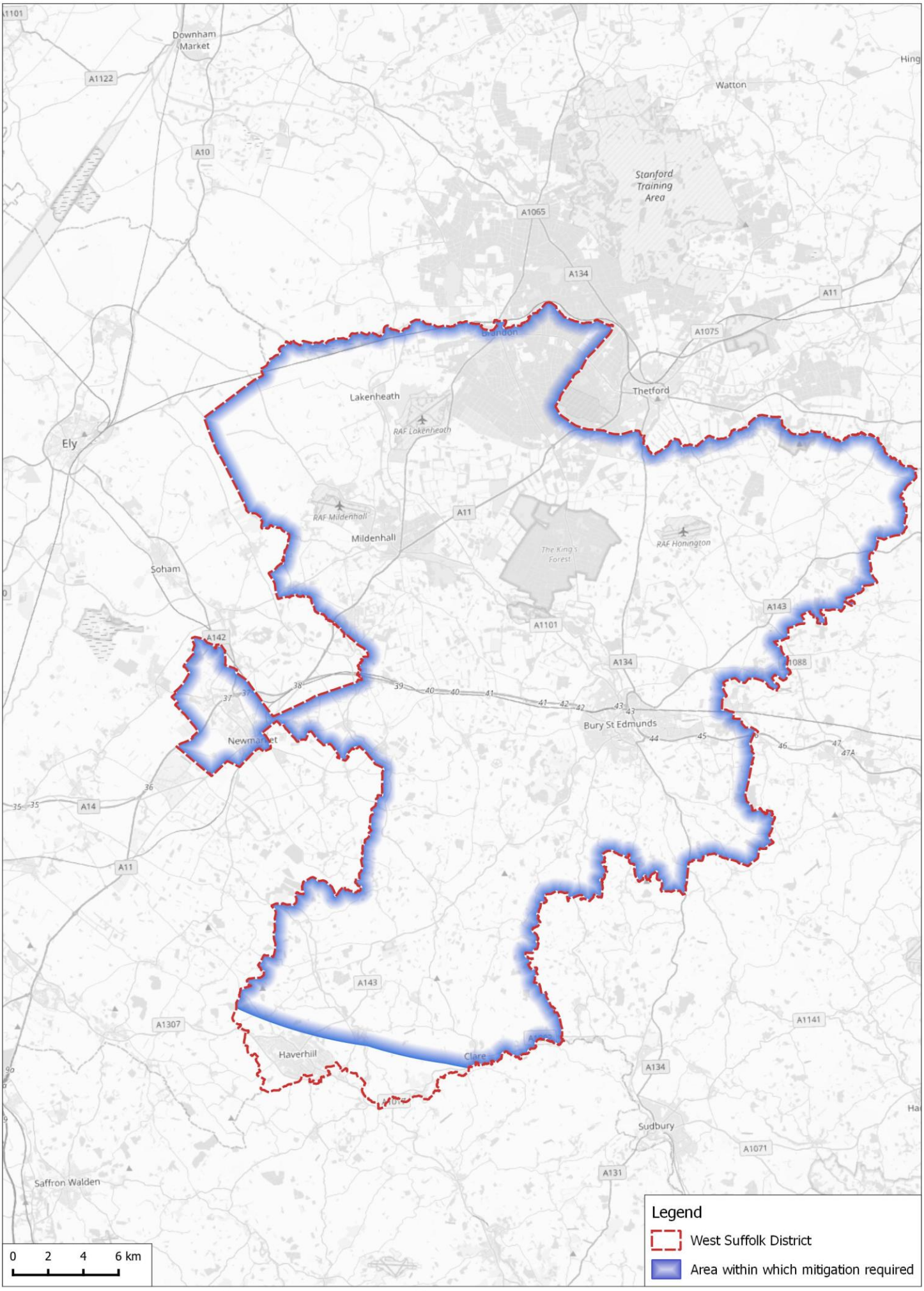


Table 6: Relevant zones of influence for respective sites

Site	Visitor survey data	Zone distance (km)	Notes as to how zone calculated	Current housing within zone (including outside W. Suffolk)*	Indicative capacity of allocations (in West Suffolk Local Plan)**	% change***
The Brecks (Breckland SAC/Breckland SPA)	Dolman et al. (2008); Fearnley et al. (2011); Panter et al. (2017)	26.3	75th percentile for those visiting from home only, 2016 survey applied to SPA and SAC boundary (excluding the Breckland farmland component as assumption that farmland will have less draw).	281,414	6,996	2.5
Devil's Dyke (SAC and SSSI)	Caals, Shellswell et al. (2023)	5.5	75th percentile from visitor survey (Newmarket Heath car park) was 5.5km, essentially just Newmarket	9,515	538	5.7
Wicken Fen	Saunders et al. (2019)	10.3	75th percentile was 10.3km (essentially just Newmarket and slither of western edge of district).	44,091	548	1.2

*Derived from postcode data from 2023

**This column is based on allocations (allocations include small sites, which account for around 380 dwellings of the total). The column does not include windfall which are estimated to be around a further 523 homes on sites that are not allocated.

*** Percentage change reflects the percentage increase of the allocations compared to current houses. % change does not include windfall

Costs per dwelling

4.12 A single SAMM tariff of £391.97 per dwelling[4] will apply to the whole zone of influence. This is based on an overall cost of SAMM for the Brecks of £2,938,333 (see Appendix 7) and a total number of dwellings of 7,496[5] likely over the plan period. The tariff will be revised annually to reflect inflation and subject to regular review.

4.13 Additional costs will be necessary to secure mitigation where likely significant effects are identified with respect to Devil's Dyke SAC and/or Wicken Fen SAC. Given the low levels of growth proposed within the West Suffolk Local Plan, mitigation will need to be secured on a case-by-case basis. Provisional costs of mitigation for these sites are set out in Appendix 7 and partnership working with other local planning authorities and relevant bodies (such as the National Trust at Wicken Fen) will be necessary to identify options.

Legal mechanism to secure developer contributions

4.14 Applicants can make a payment to the Council upfront. Once a resolution to permit the planning application has been agreed, payment in lieu of a planning obligation or contributions will be secured via a s106 legal agreement, with the contributions to be paid prior to commencement of the related development. A minimum legal fee and s106 monitoring fee will also be paid upon signing the s106.

Review and phasing of measures

4.15 This study covers the period through until 2041. Appendix 7 identifies which measures are longer term and which can be implemented rapidly. The overall cost includes a project manager post and ranger coverage, with some measures extended well beyond the Plan period and the ranger coverage extended to 50 years (full-time), with the expectation that this will allow in-perpetuity coverage (as for example the 50 years could be extended considerably by the posts dropping to part-time). It is anticipated that the need for rangers will reduce over time as access infrastructure (such as access restrictions in the Brecks, alternative route at Devil's Dyke), and

[4] This is excluding an administration fee which will be additional

[5] The number of dwellings that will contribute is an estimate and there is some uncertainty around windfall in particular. Total assumes 6996 in allocations and around a further 500 windfall.

SANGs etc become fully functional and there is wider recognition or behaviour shifts around the issues.

4.16 The whole mitigation approach should be reviewed and updated on a 5-year basis (alongside annual reviews of budget and measures to be funded), with tariffs adjusted annually for inflation. These reviews will ensure mitigation can be adjusted in line with changing priorities, results from monitoring and any variation in the amounts of housing coming forward. Mitigation priorities may need to shift and the amount of money put aside to cover in-perpetuity costs may also need to change.

Oversight & governance

4.17 It will be important, looking forward, that there is flexibility and regular review as to how money is spent and what is needed on the ground. A number of factors (such as Covid, extreme weather conditions, the cost of living crisis) have had an impact on visitor behaviour, visitor numbers, access infrastructure etc. in recent years. Changes in housing delivery will effect how much mitigation revenue is collected. Uncertainty can only be addressed through good monitoring, adaptive mitigation and regular review.

4.18 Certain elements within the mitigation package have the scope to adapt and flex as conditions and priorities change. Furthermore, it is possible that additional opportunities may arise, for example as a result of changing land ownership, changes in access patterns or similar. It is important therefore that the overall management is flexible and responsive enough to enable developer contributions to be shifted to different components of the study easily. Annual reviews of budgets and the ability to adjust finances as appropriate (with rapid approval) will be key.

4.19 A suggested initial governance structure is shown in Figure 2. The Project Manager post will oversee mitigation delivery and liaise closely with relevant landowners, managers etc. An oversight group will be established by the Council, potentially involving Natural England, to agree mitigation priorities, amount put towards particular projects and the best use of the available funds (recognising that levels of development may fluctuate with time with

implications for the money available for delivery). The existing sign off process (used for open space, sport and recreation) will be applied.

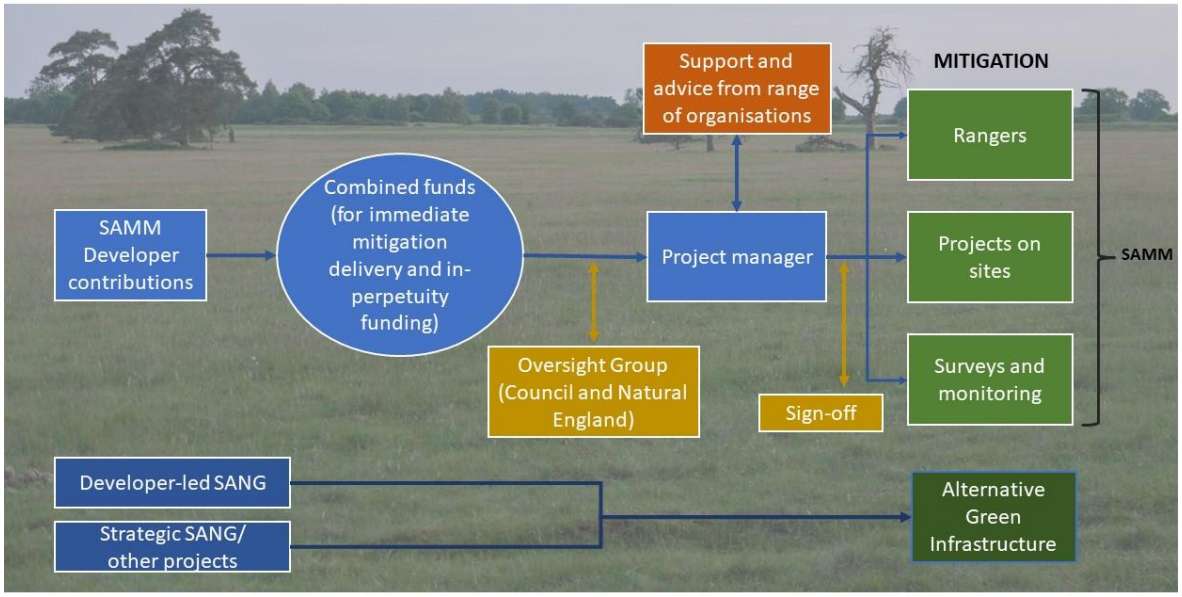


Figure 2: Potential governance structure

5. SSSIs

5.1 The relevant SSSIs are considered separately within this section, which sets out mitigation options for each site to enable the Council to deal with any future potential impacts on these sites from development on a case by case basis. Approximate costs for the measures proposed are set out in Appendix 8.

Bradfield Woods SSSI

5.2 The visitor survey (Caals, Shellswell and Liley, 2023) recorded a 75th percentile (based on surveys conducted at the main car park) of 12.4km. Plan-led growth within this zone will result in a marked uplift (over 7%) in the amount of housing around the site. There is therefore potential for recreational impacts in the future. The need for mitigation will need to be considered on a case by case basis and in the main modifications for allocations AP3 Land north of Rougham Tower Avenue, Bury St Edmunds and AP7 Land to the north of Mount Road, Bury St Edmunds, the need for mitigation at Bradfield Woods is flagged.

Mitigation aims

5.3 Mitigation needs to ensure that the SSSI is not impacted from increased recreation use associated with the Plan. Key concerns relate to trampling of woodland ground flora, soil damage and dog fouling. The risks are potentially relatively low as the site is relatively rural, there is one main car park (with fairly limited capacity) and the site is managed as a nature reserve by the Suffolk Wildlife Trust. Mitigation measures will support the Suffolk Wildlife Trust with the aim to:

- Establish monitoring and early warning of any impacts associated with increased recreation;
- Ensure adequate measures are in place to address issues as and if they arise.

Potential mitigation projects

5.4 Measures are summarised in Table 7.

Table 7: Specific mitigation measures relating to the Bradfield Woods

Mitigation measure	Description	Parties involved in delivery	Justification	Notes
Recreation impacts monitoring strategy and early warning plan	Monitoring strategy would set out what would be monitored and frequency, with design and details. Strategy would also identify how the results would be triggered to any management and what interventions might be relevant.	SWT	Would establish baseline and adaptive management to reflect scale of issues and impact	Needs to set out a range of measures that could be deployed if issues become of concern and need to ensure money available to deliver. Funding for these measures could be sorted through review of mitigation strategy and updates over time
Monitoring	Monitoring in line with strategy	SWT	Funds need to be available if mitigation required.	Needs to be reviewed and updated once strategy in place

Maidscross Hill SSSI

5.5 The visitor survey (Caals, Shellswell and Liley, 2023) recorded a 75th percentile of 1.6km, reflecting local visitor use from a relatively small area. The West Suffolk Local Plan has no additional sites within 1.6km that have not already got outline planning permission (and mitigation for recreation effects already secured as part of that permission). The only additional allocation in Lakenheath, AP37 Land north of Burrow Drive and Briscoe Way (allocation for 100 homes on a 9.3ha site, which includes a buffer to the cut off channel of around 3ha) is 1.7km at its closest point. As such risks from the West Suffolk Local Plan for this SSSI are potentially relatively low and mitigation options are summarised here as potential measures that could be implemented should other development (e.g. windfall) come forward.

Mitigation aims

5.6 Mitigation would need to ensure that the SSSI is not impacted from increased recreation use. Key concerns relate to dog fouling, trampling, increased fire risk, spread of non-native species or disease and disturbance to rabbits. These issues are relevant across the Brecks and engagement and awareness raising here will also be relevant to the Breckland SAC/SPA. Maidscross Hill is important for a suite of species associated with early successional habitats and low nutrients, and the SSSI condition assessment, albeit very dated (2013), highlights declining plant interest. Management

should aim to avoid stabilised vegetation and rank grass or scrub. Bare ground is important and trampling can have a role to play in maintaining and creating bare ground, however heavy continual footfall creating areas of churned sand while other parts of the site are rank grassland will not be sustainable. Mitigation should therefore aim to:

- Promote collection of dog faeces and need to keep dogs on a lead;
- Allow more dynamic movement of visitors around the site;
- Raise awareness with visitors about the site's importance for nature conservation;
- Raise awareness around fire risk and helping to limit risk of wildfires;
- Ensure regular checks of the site to address emerging issues (such as non-natives).

Potential mitigation projects

5.7 Measures are summarised in Table 8.

Table 8: Specific mitigation measures relating to the Maidscross Hill

Mitigation measure	Description	Parties involved in delivery	Justification	Notes
Potential relocation of parking area	Potential to close parking area and move to Maidscross Hill road, however initial feasibility study and check required. May require planning permission and consultation.	WSDC; Elveden Estate	Allows for better engagement and shifts parking to more robust location	
Potential removal of perimeter fence	Removal of fence and measures at relevant locations to stop vehicles accessing without permission	WSDC; Elveden Estate	Fence encourages dog walkers and dogs off lead as contains dogs	Requires further consideration and planning
Dog bins	Single bin at entrance to SSSI	WSDC; Elveden Estate	Provides means for people to pick up and dispose of dog waste	
Signage and interpretation	Signage and interpretation to raise awareness that site important for wildlife. Signage to extend to temporary signs that could be	WSDC; Elveden Estate	Raises awareness and highlights conservation importance	Potential to direct visitors more to use path to north

Mitigation measure	Description	Parties involved in delivery	Justification	Notes
	used to direct access to different areas (potentially linked to bare ground creation and habitat management)			

Red Lodge Heath SSSI

5.8 The visitor survey (Caals, Shellswell and Liley, 2023) recorded a 75th percentile of 0.6km, reflecting very local visitor use from the immediate vicinity of the SSSI. The West Suffolk Local Plan has no additional sites within 0.6km. As such risks from the West Suffolk Local Plan for this SSSI are potentially relatively low and mitigation options are summarised here as potential measures that could be implemented should other development (e.g. windfall) come forward.

Mitigation aims

5.9 Mitigation needs to ensure that the SSSI is not impacted from increased recreation use associated with the Plan, particularly windfall development. Key concerns are broadly similar to Maidscross Hill and relate to contamination (particularly associated with dogs and including dog fouling and dogs entering water bodies), fouling, trampling, increased fire risk, spread of non-native species or disease and disturbance to rabbits. These issues are relevant across the Brecks and engagement and awareness raising here will also be relevant to the Breckland SAC/SPA. Red Lodge Heath is important for a suite of species associated with early successional habitats and low nutrients, including a rare solitary wasp. Management should aim to avoid stabilised vegetation and rank grass or scrub and recent condition assessments by Natural England (2024) indicate that management is working well for the invertebrate interest.

5.10 Bare ground is important and trampling can have a role to play in maintaining and creating bare ground, however heavy continual footfall creating areas of churned sand while other parts of the site are rank grassland will not be sustainable and therefore mitigation should aim to:

- Promote collection of dog faeces and need to keep dogs on a lead;

- Allow more dynamic movement of visitors around the site and spread visitor use more evenly within the site;
- Raise awareness with visitors about the site's importance for nature conservation;
- Raise awareness around fire risk and helping to limit risk of wildfires;
- Ensure regular checks of the site to address emerging issues (such as non-natives).

Potential mitigation projects

5.11 Measures are summarised in Table 9.

Table 9: Specific mitigation measures relating to the Red Lodge Heath

Mitigation measure	Description	Parties involved in delivery	Justification	Notes
Visitor and access management plan	Plan to set out circular route and direct visitors, potentially linked to management of woodland and opening up. Measures to protect sensitive features (water bodies) and potentially zoning of site	WSDC; Upton Estates	Plan needed to link visitor management to habitat management. Potential for circular route around site and options for more dynamic use and redistribution of access.	
Access infrastructure in line with plan	Costs to allow visitor and access management plan to be implemented	WSDC; Upton Estates	Plan would set out costed prioritised list of actions	Costs would need to be determined once the visitor and access management plan was produced
Dog bins	2 bins likely to be required, however plan will set out locations and number	WSDC; Upton Estates	Provides means for people to pick up and dispose of dog waste	

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Appendix 1: Selected examples of other European site mitigation schemes

This appendix summarises a selection of other European site mitigation schemes and broad approaches for mitigation in-place. The table only gives examples of schemes relating to recreation and urban effects[6]. The table only includes schemes that are established, and it should be noted that there are also a number of schemes in development. Hyperlinks relate to project specific websites or relevant local authority pages with further information and details. ZOI refers to zone of influence (for example for collection of developer contributions).

Area	Issues & sites addressed by mitigation strategy	'Exclusion zone'	ZoI	SANGs/GI	Wardening	Other mitigation measures	Monitoring measures	Further details and notes
Dorset Heaths	Recreation and urbanisation; heathland SPA and 2 heathland SACs	400m	5km	Heathland infrastructure projects (including SANG) for all development. Bespoke SANG for sites with around 50 dwellings or more.	Dedicated wardening team (Urban Heaths Partnership) and through local authorities	Dog project, fire projects (including education and awareness raising) and variety of other projects	Automated counters, vehicle counts, interviews, bird monitoring.	Long-running scheme with joint study.
Thames Basin Heaths	Recreation and urbanisation; heathland SPA	400m	5km	Minimum of 8ha of SANGs per 1,000 residents	Thames Basin Heaths Partnership, currently c. 9 full time equivalents	Dog Project, education work and dedicated education officer.	Automated counters, vehicle counts, interviews, fire records, bird monitoring.	Long-running scheme. Each local authority has produced their own study/mitigation in

[6] Note that there are also schemes addressing water quality, air quality etc.

Area	Issues & sites addressed by mitigation strategy	'Exclusion zone'	ZoI	SANGs/GI	Wardening	Other mitigation measures	Monitoring measures	Further details and notes
								line with agreed strategic approach.
South-east Devon	Recreation and urbanisation; sand dune SAC, heathland SPA/SAC and estuary SPA/Ramsar.	400m around heath-land only	10km	Some SANG at strategic locations identified in strategy	2 Full-time equivalents.	Dog Project, bird refuges on estuary, patrol boat on estuary, codes of conduct.	Targeted work on effectiveness of refuges; some visitor survey work	3 local authorities, and various zones reflecting the relevant European sites.
Solent	Recreation impacts for 3 coastal SPA/Ramsar sites	No	5.6km	Some SANGs plus other infrastructure set out in mini 'Access Management Assessments' each focussed on different sections of coast.	Team of rangers, engagement staff and a monitoring officer.	Awareness raising and wider promotion, dedicated dog post	Automated counters, vehicle counts, interviews, targeted work testing effectiveness of ranger presence.	Bird Aware Project established with strong branding. More site-specific projects and awareness raising work still being developed.
Cannock Chase	Recreation impacts to heathland SAC	400m	15km	No	Delivery Officer and Engagement Officer only so far	Parking strategy and access management strategy for the SAC with series of interventions and targeted measures.	Vehicle counts, interviews.	6 local authorities have signed a joint memorandum of understanding which ensures joint approach
North Kent	Recreation impacts for 3	No	6km	No	3 rangers	Dog Project, Codes of Conduct, Signage and	Liley & Underhill-Day (2013)	4 local authorities, each with slightly different

Area	Issues & sites addressed by mitigation strategy	'Exclusion zone'	ZoI	SANGs/GI	Wardening	Other mitigation measures	Monitoring measures	Further details and notes
	coastal SPA/Ramsar sites					Interpretation and Site-Specific Enhancements		approaches to developer contributions.
Essex Coast	Recreation impacts for 9 coastal SPA/Ramsar sites and 1 SAC	No	4.5-20.8km	No	Ranger team being built up over time, will include water-based ranger.	Education and communication, codes of conduct, habitat-based measures.	Visitor surveys, bird monitoring and vegetation monitoring	11 local planning authorities, joint study in preparation.
Burnham Beeches	Recreation and urbanisation impacts for a woodland SAC	500m	5.6km	No	1 Engagement Ranger/SAC Ambassador	Electronic interpretation, events and promotion, access plan/carrying capacity study	Visitor surveys, soil and ecological impacts	Each local authority will develop their own mitigation approach. Chilterns and South Bucks described.
Suffolk Coast	Recreation impacts for 8 coastal/estuary sites including mix of SAC, SPA and Ramsar	No	13km	Large sites only	Delivery officer and team of rangers	Dog Project, codes of conduct, signage and interpretation, awareness raising, range of site-specific projects	Visitor surveys (counts and interviews), bird monitoring,	4 local authorities and joint strategy covering numerous sites along large stretch of coast
South Tyneside	Recreation impacts for coastal SAC and a coastal SPA	No	6km	No	Delivery office and 0.5 full time equivalent ranger post	Dog Project, review of parking.	Automated counters and bird surveys	Interim strategy established.
Poole Harbour	Recreation impacts for coastal SPA and Ramsar	No	Variable, not based on	Rolling 5-year programme of Infrastructure Projects	Project coordinator and a warden	Leaflets, litter clearance and engagement	Visitor and bird surveys	2 local authorities with a joint study

Area	Issues & sites addressed by mitigation strategy	'Exclusion zone'	ZoI	SANGs/GI	Wardening	Other mitigation measures	Monitoring measures	Further details and notes
			specific distance					
South Pennine Moors SPA	Recreation, urban effects and supporting habitat for moorland SPA and SAC	400m	7km for recrea-tion; 2.5km for support-ing habitat	Improvements to existing GI	3 rangers and a delivery officer	Interpretation, awareness raising, access infrastructure, parking.	Visitor surveys, ecological monitoring	study
Northumberland Coast	Coastal SPA/Ramsar and suite of coastal SSSI. Wintering, passage and breeding bird interest plus dune plants/habitats.	none	0-7km (all develop ment); 7-10km (develop ments of 10+ units, tariff 50% of the 0-7km rate)	None	2 wardens and support costs	Wardens key element to the mitigation. Wardens have enforcement powers in relation to dogs (PSPOs).	Monitoring	
Ashdown Forest	Heathland SPA/SAC	400m	7km	Strategic SANGs and developer led SANGs	Ranger managed by Ashdown Forest Conservators	SAMM strategy updated in 2023 and includes a range of plans and further studies	Bird and visitor monitoring	
All Cornish sites	3 different coastal/marine SAC sites and 1 SPA site classified	none	12.3-12.5km	Developer led	Dog warden visits 5hrs per month to Penhale Dunes	Campaigns around dog fouling, measures to control/better manage parkling		Single study covering all European sites in Cornwall

Area	Issues & sites addressed by mitigation strategy	'Exclusion zone'	ZoI	SANGs/GI	Wardening	Other mitigation measures	Monitoring measures	Further details and notes
	for wintering waterbirds							
Chilterns Beechwoods	Beech woodland and grassland SAC	500m	12.6km	8ha per 1000 residents; developer led or LPA	2 rangers and a delivery officer	Tree protection measures, ride management, signage, interpretation, gateway/hubs and parking changes	Visitor numbers, ecological impacts, tree health.	Focuses on the Ashridge Estate part of the SAC
Cotswold Beechwoods	Beech woodland and grassland SAC	none	15.4km	8ha per 1000 residents; developer led or LPA	2 rangers and a delivery officer	Parking changes, interpretation, signage, awareness raising strategy	Production of a monitoring strategy, visitor interviews,	

Appendix 2: Relevant European sites

Links in the table cross-reference to the Natural England website and the relevant page with the site's conservation objectives. In the qualifying features column, for SPAs NB denotes non-breeding and B breeding features. For SACs, # denotes features for which the UK has a special responsibility. The descriptive text is adapted from Natural England's site improvement plan or citation. For Ramsar sites, the qualifying features and description are drawn from the Ramsar spreadsheet on the JNCC website[7], and the link cross-references to the Ramsar site information page.

European site	Designated features	Description
Breckland SAC	H2330 Inland dunes with open *Corynephorus* and *Agrostis* grasslands H3150 Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition* H4030 European dry heaths H6210 Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*), (note that this includes the priority feature "important orchid rich sites") H91E0# Alluvial woods with *A. glutinosa, F. excelsior* S1166 Great crested newt, *Triturus cristatus*	Breckland in the heart of East Anglia is a gently undulating plateau underlain by bedrock of Cretaceous Chalk, covered by thin deposits of sand and flint. The conditions during the last glaciation have given rise to the patterned ground features and ice depressions (pingos) that we see today and that are of high geological and biological importance. The continental climate, with low rainfall and free-draining soils, has led to the development of dry heath and grassland communities. Relatively lush river valleys provide a gentle contrast to the drier harsher surroundings.
Breckland SPA	Nightjar, Caprimulgus europaeus - A224, b Stone-curlew, *Burhinus oedicnemus* - A133, b Woodlark, *Lullula arborea* - A246, b	The Breckland of Norfolk and Suffolk lies in the heart of East Anglia on largely sandy soils of glacial origin. In the 19th century the area was termed a sandy waste, with small patches of arable cultivation that were soon abandoned. The continental climate, with low rainfall and free-draining soils, has led to the development of dry heath and grassland communities.

[7] https://hub.jncc.gov.uk/assets/bc9b0905-fb63-4786-8e90-5f7851bb417d

European site	Designated features	Description
		Much of Breckland was planted with conifers through the 20th century, and elsewhere arable farming is the predominant land use. The remnants of dry heath and grassland that have survived these changes support heathland-breeding birds, where grazing by sheep and rabbits is sufficiently intensive to create short turf and open ground. These species have also adapted to live in forestry and arable habitats. Woodlark *Lullula arborea* and Nightjar *Caprimulgus europaeus* breed in recently felled areas and open heath areas within the conifer plantations, while Stone Curlew *Burhinus oedicnemus* establishes nests on open ground provided by arable cultivation in the spring.
Devil's Dyke SAC	H6210 Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia)	Devil's Dyke holds one of the best and most extensive areas of species-rich chalk grassland in Cambridgeshire. The grassland is of a type characteristic to chalklands of south, central and eastern England and represents a habitat type now very restricted in distribution and extent throughout its British range. The Dyke is an ancient linear earthwork comprising a deep ditch and high bank, originally colonised by plants from adjacent calcareous grassland. For this reason the Dyke is important as one of the few remaining areas still supporting these relict chalkland vegetation communities, once traditionally maintained by sheep grazing.
Fenland SAC	H6410 Molinia meadows on calcareous, peat or clay-silt soil H7210# Calcareous fens with *C. mariscus* and species of *C. davallianae* S1149 Spined Loach, *Cobitis taenia* S1166 Great Crested Newt, *Triturus cristatus*	The individual sites within Fenland SAC each hold areas of calcareous fens, with a long and well-documented history of regular management. There is a full range from species-poor Great Fen-sedge *Cladium mariscus*-dominated fen to species-rich fen with a lower proportion of Great Fen-sedge and containing such species as Black Bog-rush *Schoenus nigricans*, Tormentil *Potentilla erecta* and Meadow Thistle *Cirsium dissectum*. There are good transitions to the tall herb-rich East Anglian type of Purple Moor-grass *Molinia caerulea*–Meadow Thistle fen-meadow and rush pastures, all set within a mosaic of reedbeds and wet pastures.

European site	Designated features	Description
Wicken Fen Ramsar	Fen Wetland invertebrate assemblage Wetland plant assemblage	Wicken Fen is a component of the Fenland SAC (see above for description)

Appendix 3: Relevant SSSIs

SSSI details drawn from Natural England's designated sites view[8].

SSSI	Species and other features	Description
Bradfield Woods SSSI	W10 - Quercus robur - Pteridium aquilinum - Rubus fruticosus woodland W8 - Fraxinus excelsior - Acer campestre - Mercurialis perennis woodland	Ancient coppiced woodlands, owned and managed by the Suffolk Wildlife Trust.
Devil's Dyke SSSI	CG3 - *Bromus erectus* lowland calcareous grassland CG4 - *Brachypodium pinnatum* lowland calcareous grassland CG5 - Bromus erectus - Brachypodium pinnatum lowland calcareous grassland Vascular plant assemblage W21 - Crataegus monogyna - Hedra helix scrub W8 - Fraxinus excelsior - Acer campestre - Mercurialis perennis woodland	Ancient linear earthworks comprising a deep ditch and bank. Supports extensive areas of species-rich chalk grassland grading to woodland to the east.
Maidscross Hill SSSI	CG7a,b,d,e - Festuca ovina - Hieracium pilosella - Thymus preaecox grassland Lizard Orchid SD11 - Carex arenaria - Cornicularia aculeata dune community U1 b,c,d,f - Festuca ovina - Agrostis capillaris - Rumex acetosella grassland Vascular plant assemblage	Dry Breck grassland site including areas of gravel workings. Supports calcareous and acidic grassland and a range of rare plant species.
Red Lodge Heath SSSI	Invertebrate assemblage Population of RDB aculeate - *Cerceris quinquefasciata*, a solitary wasp Vascular plant assemblage	A mosaic of dry acid grassland, chalk grassland, lichen heath and wet woodland with ponds, important for a range of invertebrates and plants.

[8] https://designatedsites.naturalengland.org.uk/

Appendix 4: Suitable Accessible Natural Greenspace (SANGs) guidelines

The role of SANGs is to provide an alternative destination to those visitors who would otherwise visit the relevant nature conservation sites around West Suffolk. SANGs will be most effective if targeted to those visitors who have a big impact, such as dog walkers.

The effectiveness of SANGs will also depend very much on the design and location, these need to work such that the SANGs has a draw equal or greater than the nature conservation sites. In these guidelines we set out design and selection criteria for SANGs, drawing on that produced for other areas such as the Dorset Heaths (Dorset Council and BCP Council, 2020) or the Thames Basin Heaths (anon, 2021). The guidelines do not address or preclude other functions of green space, such as biodiversity net gain. Other functions may be provided within SANGs as long as these do not conflict with the specific function of mitigation.

SANGs may be created from:

- Existing open space of suitable size and quality, with no existing or limited public access. Such sites would be 'opened' for public access and promoted as such.
- Land in other uses, such as golf courses, which could be converted into SANGs.

Access on the relevant European Sites

Visitor surveys on the relevant sites have involved interviews with a random sample of visitors (Panter, Liley and Lowen, 2017; Saunders *et al.*, 2019; Caals, Shellswell and Liley, 2023) and provide context for SANGs design. Dog walking is clearly a target group to focus on (78% of interviewees in the Caals *et al.* survey had dogs with them). Visits are typically short (77% of interviewees in the Caals *et al.* survey were visiting for less than an hour) and interviewees tended to visit frequently (making, on average 170 visits per year per person, based on the figures in Caals *et al.*). The choice of location was driven by proximity to home (44% in the Caals survey). The median route length (i.e. length of walk/cycle/jog, all activities combined) reported by Caals *et al.* was 2.23km.

Attributes of SANGs

In order to have confidence that greenspace is of a suitable size and quality the following attributes will need to be met:

- The aim should be to provide SANG at a guideline rate of 8ha per 1000 new residents; this per ha standard is equivalent to 0.0192ha per dwelling (assuming an occupancy rate of 2.4 people per dwelling). This standard is widely used and supported by a range of evidence (e.g. Liley, Panter and Rawlings, 2015; Liley, 2019; Brookbank and Jack, 2021), as such it represents a robust starting point to assess individual sites.
- Sites with sports grounds, playing fields or children's play areas are unlikely to meet the criteria for SANG or if such features are present they should not be counted towards the per ha standard.
- Where sites have existing visitor use, this existing use will need to be taken into account when applying the per ha standard. This will require visitor survey data to be available. Sites are likely to have additional capacity where average visitor use is less than 1 person per ha per hour[9]. Where existing sites are already well used, there will be a need to demonstrate that the measures will be effective, and this may require some delivery upfront.
- The focus for the SANGs should be large sites of at least 40ha (which will accommodate suitably long routes), however smaller sites may work, depending on the location and quality.
- SANGs should provide parking that is free or significantly cheaper than parking at the nearby nature conservation sites.
- A guide to parking provision should be in the region of 1.5-2 spaces provided per ha of SANG[10].
- SANG should have a sense of space, openness and provide viable alternatives to the nature conservation sites.
- They should contain a variety of habitats and be scenic, ideally with views.
- They should provide attractive, informal areas for dog walking: a range of walk lengths on relatively dry terrain, including some of at least 3km where dogs can be safely off the lead during the walk.

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[9] This provides a guide or approximate benchmark, typically busier than the relevant European sites but less than an urban park (see Liley, Panter and Rawlings, 2015). Sites will need to be considered on a case-case basis.

[10] This figure will depend on how close the SANG is to housing and the proportion of visitors that might arrive on foot or by bicycle. A busy SANG site might be expected to have up to 1 person visiting per ha per hour. Visitor data from Caals et al. (2023) suggests on average a group would spend around 96 minutes per visit and there were 1.7 people per car, suggesting a level of parking provision of around 0.4 spaces per ha to accommodate 1 person per ha per hour. Given that visitor numbers will not be constant every hour (i.e. there will be peak times of visiting) and easy parking is likely to be an important draw (meaning a need to ensure confidence to park), we suggest 1.5-2 spaces per ha.

- They should provide routes that attract walkers, potentially including families. Walks are likely to need to be circuits with some interest (such as viewpoints, heritage features etc.).
- The site(s) should provide access all year round, without paths becoming waterlogged or inaccessible due to wet or muddy terrain.
- They should provide routes that work for cycling, potentially accommodating family cycling groups and mountain bikes as a low-key destination.
- Access points to the SANG(s) should be primarily within a 5km radius or 10 minute drive and easily accessible by road from the development. Some direct foot access and good access routes for cyclists would be ideal. Direct access on foot would mean some SANG provision within around 500m radius of proposed housing locations.
- New SANGs should be recognisable as a 'destination' such that sporadic visitors are drawn from a wide area and such that the site also attracts more regular (at least weekly) visitors. As such they will need to be positively promoted and welcoming.
- On-site infrastructure can include the following as appropriate:

    - Small scale visitor centre/shelter (not necessarily staffed);
    - Interpretation (providing information about the area);
    - Wayfinding infrastructure to direct people around the site;
    - Some surfaced paths/boardwalks;
    - Wildlife viewing facilities (such as screens);
    - Range of paths (some waymarked) that provide a range of different routes and circuits, potentially including some longer routes for cycling (perhaps family groups and relatively low-key mountain bike circuits) but not such that other access (for example appeal to dog walkers) is compromised;
    - Access to water for dogs to drink, bathe and splash in;
    - Benches/informal seating;
    - Viewpoints;
    - Natural Play (particularly for larger, strategic SANG);
    - Catering facilities (particularly for larger, strategic SANG).

- SANGs will need to be promoted through a range of different ways, including signage, so that they are easy to find and local residents (both new and existing) are well aware of the site.
- SANGs will need to provide access in perpetuity, and therefore require some legal mechanism to ensure this.
- Sites with significant nature conservation interest (SSSI) or particularly vulnerable species present are unlikely to be suitable as SANG.

Appendix 5: SANGs planning application principles (where SANG delivery is developer-led)

The following principles are adapted from the advice issued in Dorset (Dorset Council and BCP Council, 2020), with changes to reflect the local circumstance. The principles summarise the details that will be required by Natural England and the Local Planning Authority (LPA) at the time at which a proposal is considered, this may be either at outline or a full application where outline has not been submitted. Natural England will need to advise the authority that full details of the mitigation proposed are considered and secured:

1) SANG maintenance and function should be secured and demonstrated to be in place for perpetuity (effectively the development needs to maintain a level of mitigation for the duration of any impact, extending to at least 80 years).
2) Applications for developments requiring a SANG are likely to require a Change of Use application for the SANG itself. This may be done through a separate planning application.
3) When the Local Authority considers the application for the development that the SANG is designed to mitigate, it will need to be certain that the SANG:

    - meets the SANG criteria;
    - is deliverable, i.e. ownership and appropriate management is secured;
    - can be managed in a suitable condition in perpetuity;
    - will be monitored for the first 5 years.

    This typically involves a draft Section 106 agreement, an implementation plan, long-term management plan and monitoring arrangements being submitted for agreement with Natural England and the LPA.

4) Where the application for development is at an outline stage the applicant will need to provide sufficient information on the SANG to allow the SANG proposal to be considered.
5) The SANG land will have been assessed for its biodiversity features and the applicant will have confirmed that the proposal will not in principle lead to net harm to biodiversity. Where harm to biodiversity features is predicted then the capacity of the SANG will need to be adjusted.
6) A full SANG Management Plan will be required as part of a reserved matters application if not previously provided at outline stage. This will set out the implementation and maintenance of the SANG – it will record initial infrastructure (photographically) and management objectives by compartment. This will allow for future evolution of the SANG within the broad SANG criteria rather than a rigid approach.

7) If part or all of the SANG is already accessible to the public a visitor survey will need to be submitted as part of the application (outline or full where no-outline is submitted), and the SANG capacity discounted if necessary
8) Where a SANG is not co-located with a proposal Natural England will provide advice to the applicant concerning the SANG capacity/catchment on a case by case basis. Guidance is available from the Thames Basin Heaths mitigation approach.

Natural England will provide written confirmation to the relevant authority that the proposed measures (SANG, SAMM) are appropriate to secure the necessary avoidance and mitigation measures and have been secured for a duration proportionate to the timescale of the development's effects.

SANG Visitor Monitoring

Large developments may come forward in phases, monitoring should commence prior to first occupation where there is existing SANG use. It need not be when the land has no existing public access. Monitoring should be phased at two/three years after each substantive phase and also at five years after the development is completed. It may be the case that monitoring will need to include nearby European sites. The primary aims of visitor monitoring are to inform the SANG delivery and allow for adjustments as well as demonstrating the SANGs functionality and use by existing local residents. Effective monitoring will provide a robust baseline which can be observed in future strategic monitoring events.

From 5 years after the final phase of a development future SANG monitoring can be incorporated into the ongoing SAMM programme on a strategic basis. SANG monitoring methodology may include visitor questionnaires, remote sensors and observational studies.

Strategic Access Management and Monitoring (SAMM)

SANGs are not intended to avoid all new residents accessing the protected site. It is therefore necessary, as established in the Thames Basin Heaths area and Dorset, for applicants to secure SAMM relative to the level of residential development. As for SANGs, the mitigation needs to be secured in perpetuity.

Appendix 6: Guidance for other off-site infrastructure projects

For small developments where there are no options for strategic SANG other infrastructure projects will be delivered by the LPA. These could include (but are not limited to):

- Enhancements to public rights of way and path network to provide for better recreation opportunities very local to new development;
- Increases to the parking capacity or improvements to parking at existing sites to make them better accessible to new residents;
- Dedicated facilities for dogs, such as fenced exercise areas, dog training areas etc;
- Improved access within existing greenspace sites – such as boardwalks, better paths, improved drainage etc to open up areas previously under-used or inaccessible;
- Making existing sites feel more safe and welcoming, for example by addressing anti-social behaviour, litter, dog mess or other issues;
- Promotion of footpath and walking routes in the wider countryside.

West Suffolk District Council will maintain a rolling list of projects that have the potential to provide sufficient mitigation for the growth coming forward. Projects that are included on the list will need to have sufficient housing growth within a suitable catchment to ensure they can be funded and delivery may need to be phased to ensure mitigation delivery is in line with local housing growth. The list could include projects within a green infrastructure strategy and ideas for projects could be generated from parish councils, community groups, NGOs and other suitable delivery bodies.

Each project will have an estimated uplift in terms of increased recreational use it will achieve, expressed as additional person visits per day. This uplift can then be used to determine the number of houses it might mitigate or the equivalent area of SANG (as per Table 10).

Table 10: Potential mitigation provided by different levels of uplift.

Uplift categories	Approx target value for additional person visits per day	Houses worth of mitigation*	SANG equivalent (ha)**
Negligible uplift	1	4.3	0.1
Low uplift	2.5	10.9	0.2
Moderate uplift	12.5	54.3	1
High uplift	50	218	4.2

* Calculated on the basis that of 8ha SANG would provide for 1000 new residents (416.7 dwellings at 2.4 occupancy). A typical, fairly well used SANG might provide access at a level of 1 person per ha per hour (before it became too crowded) and therefore 1ha would provide mitigation for 96 person visits per day (8 person visits per ha per hour over a 12 hour day). A visit rate of 0.23 people per day could therefore be anticipated as a level of mitigation equivalent to a single dwelling.
** Based on the figure in the previous column and 8ha per 1000 residents (or 416.7 dwellings at 2.4 occupancy).

Each project will also need to have a clearly defined catchment, which could be defined by visitor data for the site (if available/relevant) or the following general guidelines:

- 400m catchment: projects that deliver access on sites with very limited or no parking, typically very small sites (<5ha) and where there is little or no promotion;
- 2.5km catchment: projects on sites with limited parking provision (i.e. no formal car park), typically relatively small sites (<10ha) with little or no promotion;
- 5km catchment: larger sites able to provide for longer visits, with formal car parks and some promotion (for example web presence, road signage etc).

Where there is uncertainty about the level of uplift, it would be possible for measures to be established prior to new housing growth. Monitoring data could then be used to identify the additional capacity created and visitor survey data could show visitor origins (postcodes) and visitor numbers clearly to justify measures as mitigation and the relevant uplift. This would be a means to ensure compliance with the regulations while maximising capacity.

Appendix 7: Mitigation costs for European sites

The table below summarises the mitigation measures as set out in the strategy and the relevant costs for each. These have been used to calculate the overall cost of mitigation.

European Site	Mitigation measure	Implementation timing	One-off/Capital cost	Rolling cost	Multiplier for rolling cost	Total cost	Notes on how cost calculated	Cross-over with Norfolk	Cost for WSDC Strategy
Brecks	Strengthening CRoW access restrictions	Immediate (quick wins and easy to implement)		£2,000	10	£20,000	Flexible pot to fund additional signage as required	Norfolk contributing 70% of cost	£6,000
Brecks	Interpretation panels at Cavenham Heath	Immediate (quick wins and easy to implement)	£10,000	£10,000	3	£40,000	£2,500 per board for production of timber frame and graphic panel, delivery and installation. Estimate of 4 boards. Costs allowed for 3 replacements	Norfolk contributing 70% of cost	£12,000
Brecks	New dog bin installation at Cavenham Heath	Immediate (quick wins and easy to implement)	£1,200	£920	30	£28,800	£600 per bin initial cost for timber-fronted dual waste bin. £400 per bin per year to empty. 2 bins. Replacement on 10 year basis.	Norfolk contributing 70% of cost	£8,640
Brecks	Fire consultancy support	Immediate (quick wins and easy to implement)	£10,000			£10,000	Small budget to allow specialist consultancy support (for example review of fire management plans) and potential for collaborative event/workshop/discussion	Not jointly funded with Norfolk, however scope for overlap with Norfolk as similar project likely in Norfolk	£10,000

European Site	Mitigation measure	Implementation timing	One-off/Capital cost	Rolling cost	Multiplier for rolling cost	Total cost	Notes on how cost calculated	Cross-over with Norfolk	Cost for WSDC Strategy
Brecks	Rabbit focus group	Immediate (quick wins and easy to implement)		£2,500	10	£25,000		Norfolk contributing 70% of cost	£7,500
Brecks	Signage and interpretation	Immediate (quick wins and easy to implement)	£90,000	£5,000	5	£115,000		Norfolk contributing 70% of cost	£34,500
Brecks	Rebranding & Repurposing of Sensitive Site - Signage & Visitor Experience Enhancements	Medium term (projects that may require further build up of funds or longer lead in time)	£30,000	£2,000	5	£40,000	Initial capital spend to rebrand and manage the site effectively with the change in use for visitor experience, away form water and picnic to historic interest and walking Rolling cost is maintenance of signage	Norfolk contributing 70% of cost	£12,000
Brecks	Installation of hard (barrier) infrastructure at selected access points	Medium term (projects that may require further build up of funds or longer lead in time)	£200,000	£5,000	5	£225,000	Initial infrastructure creation plus maintenance	Norfolk contributing 70% of cost	£67,500
Brecks	Dog project	Medium term (projects that may require further build up of funds or longer lead in time)	£30,000	£31,088	10	£340,875	capital costs to cover website design, branding and equipment (such as gazebos). Running costs to pay for part time post with support costs, 0.75 fte equivalent post with costs extended to cover 10 years. £27,000 annual salary, plus 35% (to cover NI, superannuation, etc.) and		£340,875

European Site	Mitigation measure	Implementation timing	One-off/Capital cost	Rolling cost	Multiplier for rolling cost	Total cost	Notes on how cost calculated	Cross-over with Norfolk	Cost for WSDC Strategy
							£5000 per annum support costs.		
Brecks	Gazeteer of where to walk dog	Medium term (projects that may require further build up of funds or longer lead in time)	£15,000	£2,000	10	£35,000	estimated costs to set up and as dynamic, costs to update regularly		£35,000
Brecks	Visitor monitoring at relevant sites	Immediate (quick wins and easy to implement)		£20,000	4	£80,000	20,000 per survey, with cost to be repeated 4x. Budget should allow surveys of multiple Breckland locations as well as repeat of work undertaken in 2023	Potential to collaborate with Norfolk for added value, however no contribution from Norfolk allowing coverage of different areas	£80,000
Brecks	Ranger coverage	Immediate (quick wins and easy to implement)		£64,200	50	£3,210,000	1.5 fte equivalent post with costs extended to cover 50 years. £27,000 annual salary, plus 40% (to cover NI, superannuation, etc.) and £5000 per annum support costs. 50 years ensuring long term provision, with scope to review and adjust over time (for example scope to increase provision in short term or extend the provision while dropping number of staff). 2 posts	Norfolk contributing 70% of cost for one fte post and the part time post entirely funded by WSDC	£1,790,208

European Site	Mitigation measure	Implementation timing	One-off/Capital cost	Rolling cost	Multiplier for rolling cost	Total cost	Notes on how cost calculated	Cross-over with Norfolk	Cost for WSDC Strategy
							proposed. 1 full time post funded by Norfolk (with Norfolk funding 70% of cost)		
Brecks	Project Manager post	Immediate (quick wins and easy to implement)		£32,875	15	£493,125	£45,000 annual salary, plus 40% (to cover NI, superannuation, etc.) and £5000 per annum support costs. Costed for 15 years at part time (half fte)		£510,000
Brecks	Review of footpaths	Immediate (quick wins and easy to implement)	£10,000			£10,000	budget to allow report and site visits	Norfolk contributing 70% of cost	£3,000
Brecks	Enhancements to rights of way network	Medium term (projects that may require further build up of funds or longer lead in time)	£50,000			£50,000	approximate budget and aim should be for small pot to fund works identified in review	Norfolk contributing 70% of cost	£15,000
Brecks	Promotion of footpaths and walking routes	Medium term (projects that may require further build up of funds or longer lead in time)	£20,000			£20,000	approximate budget to allow promotion of paths and routes (for example through online material, leaflets etc)	Norfolk contributing 70% of cost	£6,000
Devil's Dyke	Visitor and access management plan	Immediate (quick wins and easy to implement)	£7,500			£7,500	Estimated cost for plan		£7,500
Devil's Dyke	Signage and interpretation	Medium term (projects that may require further build up of funds or longer lead in time)	£7,500	£7,500	3	£30,000	£2,500 per board for production of timber frame and graphic panel, delivery and installation. Estimate of 3 boards. Costs allowed for 3 replacements		£30,000

European Site	Mitigation measure	Implementation timing	One-off/Capital cost	Rolling cost	Multiplier for rolling cost	Total cost	Notes on how cost calculated	Cross-over with Norfolk	Cost for WSDC Strategy
Devil's Dyke	Additional access infrastructure in line with access management plan	Medium term (projects that may require further build up of funds or longer lead in time)	£25,000			£25,000	flexible pot to allow implementation of measures in plan		£25,000
Devil's Dyke	Ranger coverage	Immediate (quick wins and easy to implement)		£20,725	25	£535,000	0.5 fte equivalent post with costs extended to cover 25 years. £27,000 annual salary, plus 40% (to cover NI, superannuation, etc.) and £5000 per annum support costs. 25 years ensuring reasonable time coverage but given focus on dog fouling, in-perpetuity unlikely to be necessary. Post should be reviewed with scope to and adjust over time (for example scope to increase provision in short term or extend the provision while dropping the number of hours)		£535,000
Wicken Fen	Improve existing footpaths	Immediate (quick wins and easy to implement)	£115,000			£115,000	indicative costs provided by NT		£115,000
Wicken Fen	Repair cycle network	Immediate (quick wins and easy to implement)	£35,000			£35,000	indicative costs provided by NT		£35,000
Wicken Fen	Car park expansion and upgrade	L Longer term (projects requiring	£90,000			£90,000	indicative costs provided by NT		£90,000

European Site	Mitigation measure	Implementation timing	One-off/Capital cost	Rolling cost	Multiplier for rolling cost	Total cost	Notes on how cost calculated	Cross-over with Norfolk	Cost for WSDC Strategy
		long lead in time, preparation or where there are further checks or steps needed)							
Total Brecks									**£2,938,223**
Total Devil's Dyke									**£597,500**
Total Wicken Fen									**£240,000**
Total all sites combined									**£3,775,723**

Appendix 8: Mitigation costs for SSSIs

The table below summarises the mitigation measures for SSSIs and the relevant costs for each.

SSSI	Mitigation measure	Implementation timing	One-off/Capital cost	Rolling cost	Multiplier for rolling cost	Total cost	Notes on how cost calculated
Bradfield Woods	Recreation impacts monitoring strategy and early warning plan	Immediate (quick wins and easy to implement)	£5,000			£5,000	Indicative cost for production of strategy, assuming commissioned externally
Bradfield Woods	Monitoring	Medium term (projects that may require further build up of funds or longer lead in time)		£2,000	10	£20,000	flexible pot to fund necessary monitoring on rolling basis

Maidscross Hill	Potential relocation of parking area	Longer term (projects requiring long lead in time, preparation or where there are further checks or steps needed)	£30,000			£30,000	Cost dependent on need for planning permission etc.
Maidscross Hill	Potential removal of perimeter fence	Medium term (projects that may require further build up of funds or longer lead in time)	£10,000			£10,000	estimated cost to remove fence and install necessary barriers etc.
Maidscross Hill	Dog bins	Immediate (quick wins and easy to implement)	£600	£460	30	£14,400	£600 per bin initial cost for timber-fronted dual waste bin. £400 per year to empty. Replacement on 10 year basis.
Maidscross Hill	Signage and interpretation	Immediate (quick wins and easy to implement)	£7,500	£7,500	3	£30,000	£2,500 per board for production of timber frame and graphic panel, delivery and installation. Estimate of 3 boards. Costs allowed for 3 replacements
Red Lodge	Visitor and access management plan	Immediate (quick wins and easy to implement)	£7,500			£7,500	Estimated cost for plan
Red Lodge	Access infrastructure in line with plan	Medium term (projects that may require further build up of funds or longer lead in time)	£50,000			£50,000	flexible pot to allow implementation of measures in plan
Red Lodge	Dog bins	Medium term (projects that may require further build up of funds or longer lead in time)	£1,200	£920	30	£28,800	£600 per bin initial cost for timber-fronted dual waste bin. £400 per bin per year to empty. 2 bins. Replacement on 10 year basis.
Total Bradfield Woods							**£25,000**
Total Maidscross Hill							**£84,400**

Total Red Lodge							**£86,300**
Total all SSSIs							**£195,700**

Appendix 9: Respective zones of influence for different sites (European sites and SSSIs)

Map 3 overleaf shows the respective zones of influence within West Suffolk District for the different sites, derived from the 75th percentiles from visitor data.

Map 3: Zones of influence for respective sites