

Oare Gunpowder Works Country Park Land Management Plan 2022 - 2026



Friends of
Oare
Gunpowder
Works

Contact details for Oare Gunpowder Works Country Park:

Kris Staples – Ranger

krisstaples@swale.gov.uk

Graeme Tuff – Greenspaces Manager

graemetuff@swale.gov.uk

This plan has been prepared by White Horse Ecology on behalf of Swale Borough Council. Mike Phillips of White Horse Ecology has more than 20 years' experience working in nature conservation and has been working at Oare Gunpowder Works since 2012. He has worked with community groups, helping them to develop their own plans that suit the needs of their site and the resources they have at their disposal. He is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM). He has also been a committee member of the Kent Reptile and Amphibian Group since 2004.

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Thanks also to all of those people who have contributed wildlife records that have informed this plan

In this plan, Oare Gunpowder Works Country Park is also referred to as The Country Park, and Oare Gunpowder Works

White Horse Ecology

E: info@whitehorseecology.co.uk

W: www.whitehorseecology.co.uk

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1 Introduction

Oare Gunpowder Works Country Park (OGWCP) is leased by Swale Borough Council (SBC) and managed for both its built heritage and biodiversity value as an amenity for local people and visitors. This document forms part of a suite of documents that inform the management of the site as a whole. It replaces the previous Nature Conservation Action Plan 2015-2019 and reflects the changes that have taken place on the site and the increased understanding of how habitats can be managed at OGWCP. The uses of the document include:

- Clearly identifying management objectives for each of the distinct habitats;
- Updating knowledge about species present on site, ensuring that protected flora and fauna are identified and that works enhance and conserve the habitats of these species;
- Acting as a guide to the Friends of Oare Gunpowder Works (FOGW) for their task days and other activities;
- Supporting external funding applications;
- Allowing Swale Borough Council to prioritise capital expenditure and work programmes undertaken by contractors.

This plan has been put together with the help of the site ranger, Kris Staples and the Friends of Oare Gunpowder Works. It has been developed following a series of annual meetings to



Figure 1: Location of Oare Gunpowder Works Country Park

assess progress and update the previous plan as well as by meeting to discuss the priorities for this plan. The aim of this document is to be an introduction to the wildlife of the site that is readable, identifies achievable outcomes and maximises the biodiversity potential for the Country Park.

1.1 Location

Oare Gunpowder Works is situated to the west of Faversham and to the south of the village of Oare. The centre of the site is located at TR 003 624. It has sizable communities within walking distance to the south and east. Significant amounts of development have taken place in this area in the last ten years making OGWCP an even more strategically important space for local people.

1.2 The purpose of this management plan

White Horse Ecology has been commissioned by Swale Borough Council to provide a management plan for Oare Gunpowder Works Country Park. This replaces the 2015-2019 nature conservation management plan that was written by Kent Countryside Management Partnerships and a c.2010 plan written by Groundwork. These plans have evolved and grown into this plan. Although this plan has been rewritten the aims and objectives can be traced back through these previous documents. This is not a radical departure from previous management, more an update that reflects the emerging priorities of SBC, FOGW and other stakeholders.

The plan is designed to be a user-friendly text that gives an overview of the value of OGWCP as well as attempting to provide prescriptions and guidance on how management can take place over the next five years to achieve the objectives of SBC, FOGW and those that use The Country Park. It will also bring together information about the policies and documents that underpin the overall aims and ensure the smooth running of the site. A work plan will also be produced. This is a working document that details the tasks that should be carried out as well as assigning responsibility for those actions. It will be reviewed on an annual basis by FOGW, SBC and the steering group and will be adjusted as needed. Experience shows that if work plans are short, simple to use and reviewed regularly they are more likely to be used and trusted than large, detailed and inaccessible plans.

The management plan will include:

- A description of the site, its designations and links to strategic documents
- Aims and objectives for Oare Gunpowder Works Country Park
- An analysis of strengths, weaknesses, opportunities, constraints and threats
- Sections describing different elements of The Country Park and how they should be developed and managed including:
 - Habitats

- Species
- Heritage
- Access and enjoyment
- Understanding
- Community involvement
- The recommendations from each of the sections above will form the work plan

How to use this management plan

Management plans are not designed to be static documents that never change. They are part of a process that involves identifying aims and objectives, putting a plan into place and then reviewing the success of the plan and adjusting, as necessary. A typical management flow diagram can be found overleaf.

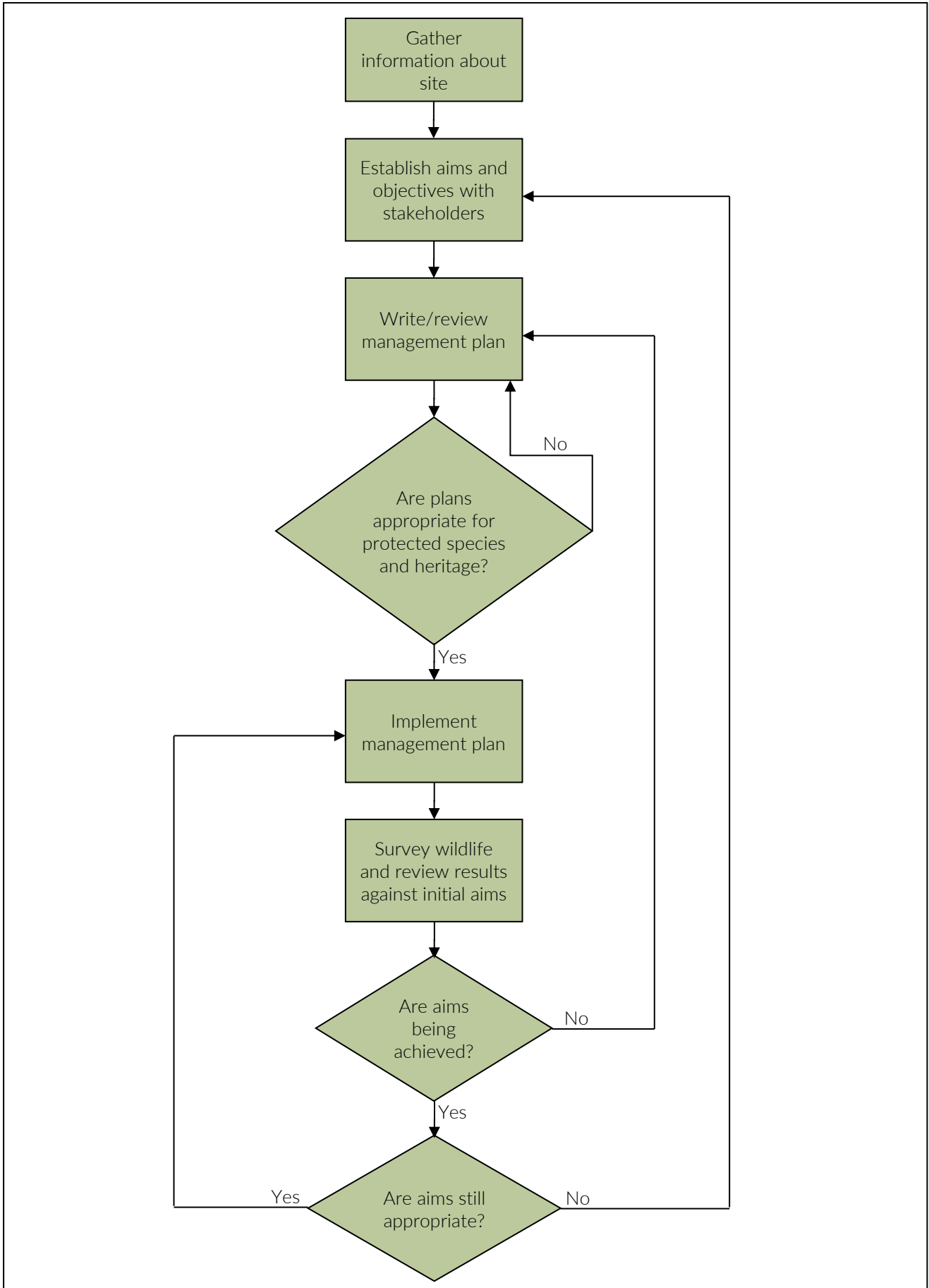
This document is designed to be a working document that can be added to at any time as the management needs for the area evolve. Costs may change and management strategies may not bring the intended results. They should be reviewed at regular intervals. Equally, the delivery mechanism for each of the objectives may change as new contractors are identified; volunteer group activity changes or different management techniques are trialled.

1.3 Progress since last management plan

The last management plan produced in 2015 (Kent Countryside Management Partnerships) has been used to guide the work at Oare Gunpowder Works over the last seven years. This plan has been updated on an annual basis and was successful in providing a structure to guide the work of the friends group and the Swale Borough Council ranger who was employed shortly after the plan was written. In the intervening years, more open areas have been created, the dominance of sycamore has been reduced in some areas and there has been some sensible tree planting to help increase tree species diversity. The efforts of FOGW and others to increase the level of wildlife recording has also been bearing fruits. The species list found in appendix 2 of this plan is significantly larger and more comprehensive than it was in 2015.

However, there is still more to be done. A rotational coppice regime in the woodland and more glade creation activities in the wetter areas are still required, some of the infrastructure is now in need of repair and there are still some species groups for which there is little information available. This plan will aim to address some of these matters.

Management plan flow chart



2 Site description

Oare Gunpowder Works is an 8 hectare site (19.5 acres) at the location of a former gunpowder works. It consists of a lower area that is damp and contains a series of waterways, a higher area of woodland, some of which may be ancient in origin and a large pond at the site's north-eastern border. This short section will provide an overview of what can be found at Oare Gunpowder Works Country Park. More detail and recommendations for management will be provided in later sections.

2.1 Habitats and compartments

2.1.1 Habitats

There are three broad habitat types found at the Country Park. Even though there is considerable variation within these habitats they will be grouped based on the broad habitat types of woodland, grassland and wetland. More detail about habitats and wildlife will be included when discussing the specific objectives for management of The Country Park.

Woodland

Most of the site is covered by woodland and the majority of this is secondary woodland that has grown since the gunpowder works was abandoned as a working site. Much of the woodland is dominated by sycamore.

Grassland

There is very little grassland on site, and certainly none that could be described as unimproved, species rich grassland. However, the work of SBC and FOGW in recent years has established some areas that are developing the characteristics of grassland. An area of amenity grassland is maintained in compartment 1a at the test range. An area of wet grassland with a boardwalk running through it has also been established and some permanent glades are beginning to be established on site.

Wetland

There is a large pond at the north-eastern end of the site and the remainder of the lower levels of the site contain a series of leats (freshwater channels) that are relicts from the days of the gunpowder works when they were used to transport volatile materials around the site safely.

Oare Gunpowder Works - Broad Habitats



Broad habitats

- Woodland
- Wetland
- Grassland
- Visitor Centre

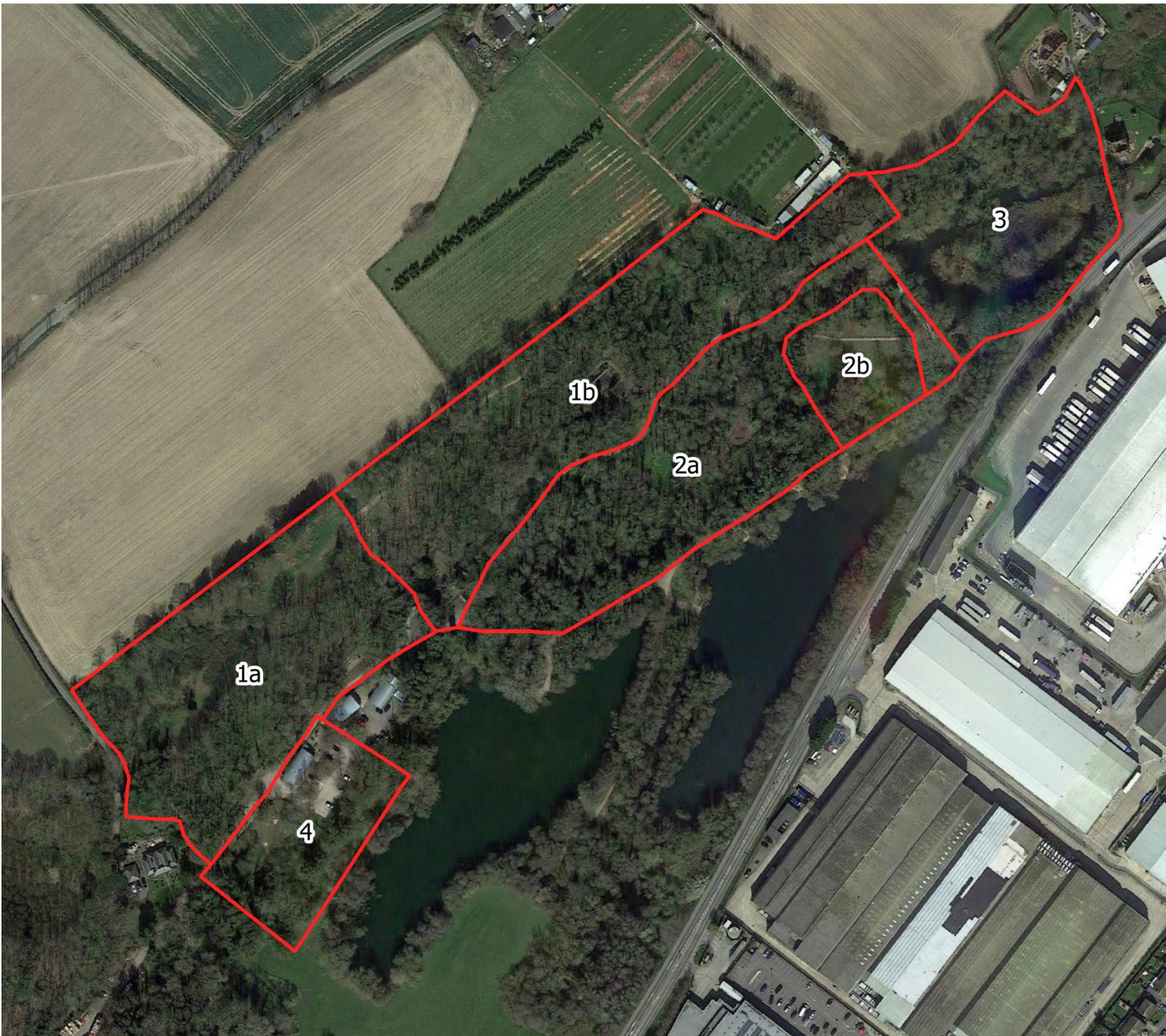
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0 40 80 120 160 200 m





Base map © Google Maps 2021

Oare Gunpowder Works - Compartments



Compartments

-  1a. Test Range
-  1b. Woodland
-  2a. The Leats
-  2b. Boardwalk
-  3. Lower Mill Pond
-  4. Visitor Centre

© White Horse Ecology 2021

0 40 80 120 160 200 m



Base map © Google Maps 2021

2.1.2 Compartments

Six compartments have been identified based on a combination of the kind of habitats that are found at OGWCP and the identifiable boundary features such as paths. This has been done simply to allow different areas of the site to be identified. The compartments will be broken down further, if necessary, for management prescriptions.

Compartment 1a: Test Range – 1.79 hectares

This compartment is the first of the two compartments that are on slightly higher ground and, as such, are drier in nature than compartments 2 and 3. It contains an area of woodland as well as a leat that feeds the Glazing House. However, the main feature is a test range that contains mown grass as well as a more open area of zonal ride management to the north.

Compartment 1b: Woodland – 2.13 hectares

This area is continuously wooded and also contains a large area of minimum intervention woodland where only safety works will be carried out. A coppice rotation will be introduced in the remainder of the area.

Compartment 2a: The Leats – 1.74 hectares

This is a low-lying area of the park where a series of waterways known as leats connect various parts of the historic gunpowder works. Between these leats are largely wooded areas that contain a large percentage of sycamore and ash.

Compartment 2b: Boardwalk – 0.41 hectares

An area formed by the deposition of silt from the Lower Mill Pond when it was cleared as part of site restoration works almost 20 years ago. This area is wet in nature and is highly fertile due to the silt deposition but receives an annual cut and contains some interesting moisture loving plants.

Compartment 3: Lower Mill Pond – 1.24 hectares

This area contains not only the Lower Mill Pond, the largest waterbody on the site, but also an area of relatively undisturbed woodland that forms the northern boundary of this part of the site.

Compartment 4: Visitor Centre – 0.67 hectares

The visitor centre and car park as well as what used to be a depot used by Brett during the time the site was used for aggregate extraction. The depot has developed into a low fertility area of grassland due to the surfacing that was used during its previous use.

2.2 Designations

Bysing Wood and Oare Gravel Pits Local Wildlife Site¹

This Local Wildlife Site covers not only Oare Gunpowder Works but also Bysing Wood and the complex of angling lakes that were formed by the extraction of aggregates. It has been designated due to the ancient woodland as well as the opportunities afforded to birds at the gravel pits and their associated woodland.

The Swale Site of Special Scientific Interest²

This site is also a Ramsar site and a Special Protection Area, making it of significance at an international level. It is a wide ranging, largely coastal SSSI that begins in Whitstable in the east and extends to Sittingbourne in the west. The Lower Mill Pond forms a tiny part of this designation. The area is noted for its internationally significant number of winter migrant wildfowl and waders, as well as breeding bird species. The site contains the largest area of freshwater grazing marsh in Kent and also has mudflats and saltmarsh. Invertebrate species are diverse and help support the birdlife. Plant diversity is also high.

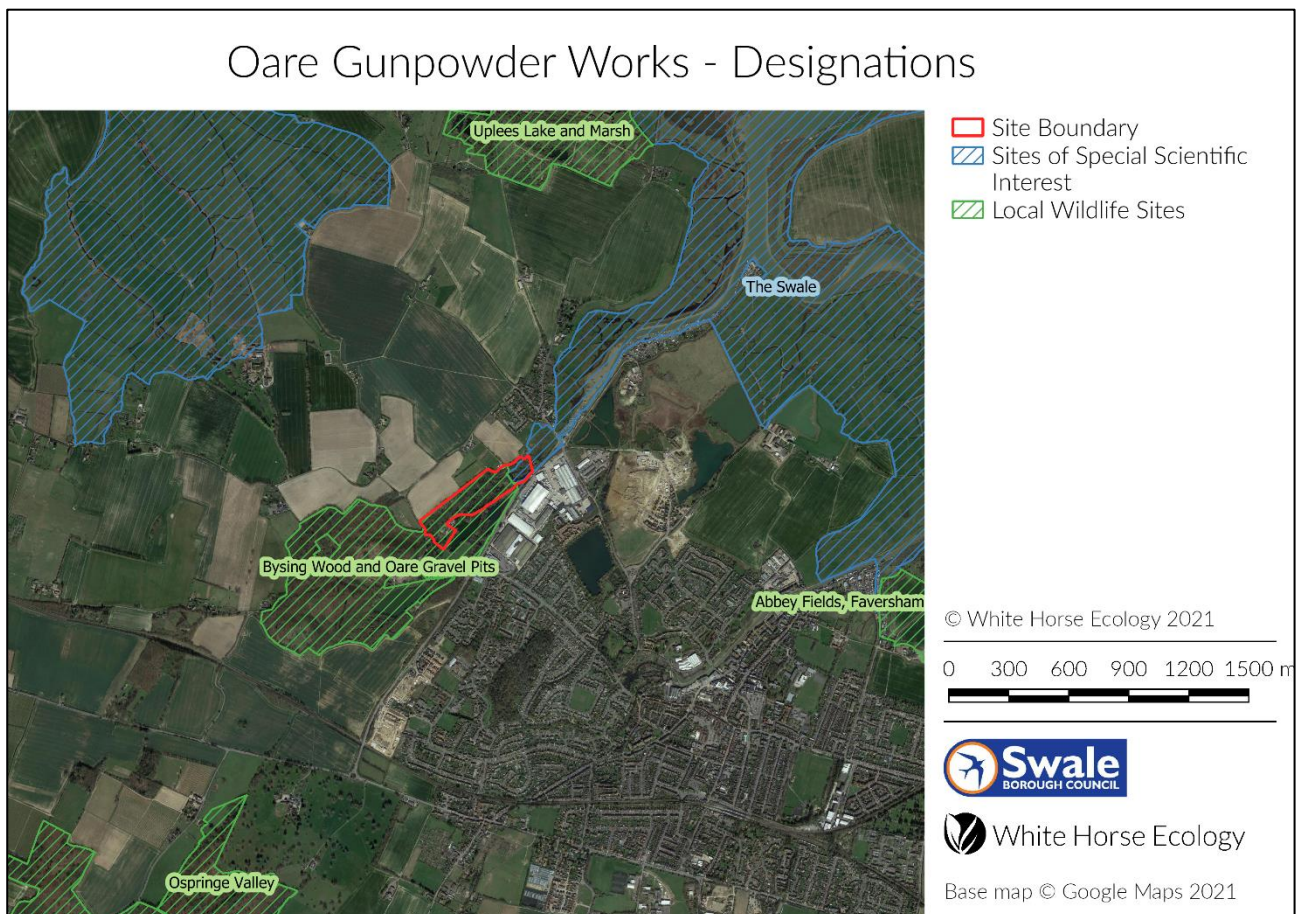


Figure 4: Designated Sites around Oare Gunpowder Works

¹ Kent Wildlife Trust (2004)

² Natural England (1990)

Oare Gunpowder Works – Scheduled Monument³

Historic England has designated Oare Gunpowder Works as a scheduled monument. The consequence of this is that certain management activities are not allowed on the site. Permission from Historic England is required for any disturbance of the soil that involves the potential to damage buried remains. All of the buildings as well as the leats are covered by the schedule and it is thought that there may be many buried remains in parts of the site.

North Kent Marshes Biodiversity Opportunity Area⁴

The Lower Mill Pond forms part of one of Kent's Biodiversity Opportunity Areas (BOAs). These areas are considered to have the best potential for biodiversity enhancements and this particular BOA has the potential for wetland areas and grasslands as the basis for its designation. Opportunities to connect habitat and provide corridors for wildlife are particularly beneficial in BOAs. Much of compartment 3 is included within the BOA.

2.3 Morphology and geology

Oare Gunpowder Works is located in an area of low-lying ground at the landward end of Oare Creek. The historic land use has created a series of waterways with land rising gently to the east and sharply to a small plateau on the north and west of the Country Park.

The underlying bedrock geology for the whole of Oare Gunpowder Works is sandstone. These Thanet Beds were laid down after Kent's chalk deposits. The sands and clays of the Thanet Beds are typical of rocks laid down in shallow seas.

Alluvium and brickearth clays form the drift geology found in the lower lying areas of the site. There is no drift geology on compartment 1 where the land is a little higher. Many of the gravel aggregates laid down in the area have since been excavated.

2.4 Links to the wider countryside

The importance of links to the wider countryside should not be underestimated when assessing the biodiversity potential of a site like Oare Gunpowder Works. Adjacent land use will have a significant impact upon the ability of wildlife to disperse from and colonise the site. The presence of species that require a home range larger than that provided by Oare Gunpowder Works may also be dependent upon nearby habitat. The most important habitats found near to Oare Gunpowder Works are:

- Bysing Wood - an extensive area of semi natural ancient woodland to the south-west. The woodland is under an active coppice management making it ideal habitat for

³ Oare Gunpowder Works schedule - <https://historicengland.org.uk/listing/the-list/list-entry/1016497>

⁴ North Kent Marshes BOA - http://www.kentnature.org.uk/uploads/files/Opportunity_Area_Statement_-_North_Kent_Marshes_FINAL.pdf

woodland flora, small mammals and reptiles that all have the capability of colonising Oare Gunpowder Works.

- Extensive areas of standing open water and secondary woodland can be found to the east and south of the site. Although these are managed as fishing lakes, they still provide opportunities for wildlife and attract birdlife that will visit the Country Park.
- To the north is Oare Meadow which provides links to Oare Marshes. This area is managed predominantly for its flora. This provides an argument for providing more open areas within the Country Park itself, particularly the marshy areas south of the Lower Mill Pond.
- Road side verges, arable margins and gardens also offer grassland, trees and ponds that support links to the wider countryside.

2.5 Access

Providing good quality access is an essential part of the value of Oare Gunpowder Works. It is well used and there is a network of well used paths throughout the site. Some of the paths are surfaced, some have wood chip regularly added and some are simply desire lines. However, despite the elevation changes, limited mobility access with high quality surfaced paths, is available from the car park to most parts of the site.

Oare Gunpowder Works - Access



2.6 Historic site usage

This document will not carry a large amount of information about the historic use of the gunpowder works. Detail about the industrial history of the site can be found on the website and in the Visitor Centre.⁵ However, where the industrial past is relevant to the management of the site for wildlife is that it leaves a legacy that shapes habitats to this day. The leats, the Lower Mill Pond, the test range and many of the trees present on site are all a consequence of previous land uses.

The scheduling description provided by Historic England states that gunpowder was being produced at Oare Gunpowder Works by 1719 at the latest. Initially, the works were water powered, though steam power was introduced in the 19th century. The leats were used both to power the mills as well as to transport materials around the site by punt. Even as late as the 1920s, Oare Gunpowder Works was the biggest producer of gunpowder in the United Kingdom. The strategic weakness of Faversham and its vulnerability to invasion led to the decommissioning of the works in 1934 and they were sold off in 1935.

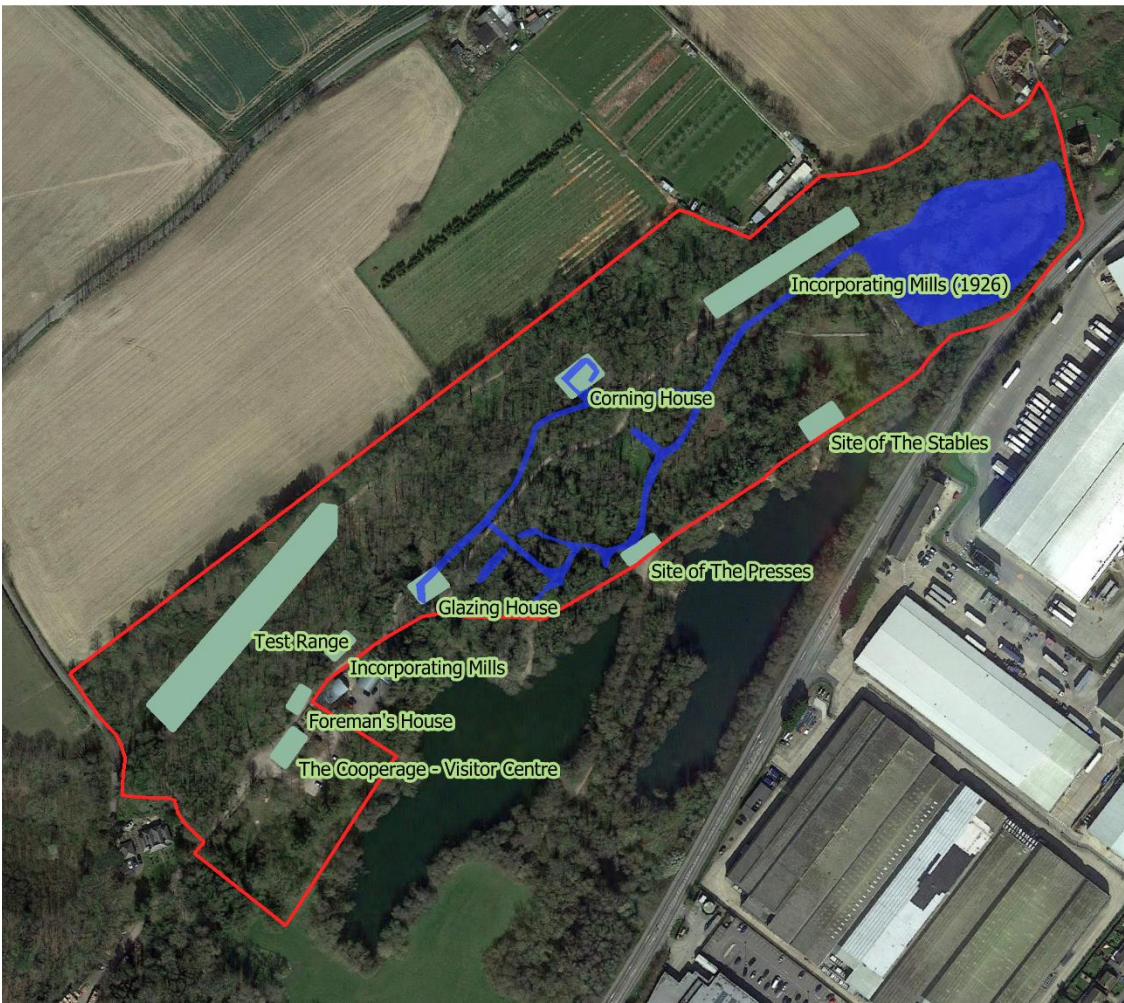
Aerial photography from 1940 (shown overleaf) shows that the site, in many ways, has changed little in the last 80 years. The test range is clearly an open area as is the boardwalk area (perhaps due to the proximity of stables) but the rest of the site is heavily treed. In fact, mapping from 1870 also suggests that these same areas were covered in trees. So even though the woodland at Oare has many characteristics of secondary woodland, it has been a treed landscape for at least 150 years. Only when maps are traced back to 1797 (shown opposite) does the landscape around the gunpowder works appear to be largely, but not completely, treeless (especially compartment 1b). What is difficult to tell from these early maps and photos is the tree species composition at Oare. It is likely that the dominance of sycamore is a relatively recent occurrence.

By 1990, the site appears to be in a state of neglect. The tree canopy has closed almost completely and, although it is not easy to be certain, the Lower Mill Pond appears to be completely covered by vegetation. The exception to this is the area in the north-eastern section of compartment 1b which is open. This area still has relatively few trees and has been enriched by nutrients, making nettles vigorous. Anecdotal evidence suggests this was previously used to keep pigs and this photography supports this assertion.

By 2007 Oare Gunpowder Works has been restored by Swale Borough Council. The test range is back in evidence, the car park and Visitor Centre are in place and a network of paths has been created. This has been accompanied by significant amounts of tree removal giving the site a more open feel.

⁵ Oare Gunpowder Works - <http://www.gunpowderworks.co.uk/gunpowderworks/control/controller.php?id=142>

Oare Gunpowder Works - Historic Features



- ▭ Site Boundary
- ▭ Historic Features
- ▭ Leats and Lower Mill Pond

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Base map © Google Maps 2021

Oare Gunpowder Works - 1797



Base map © Merston Map 1797

Oare Gunpowder Works - 1940

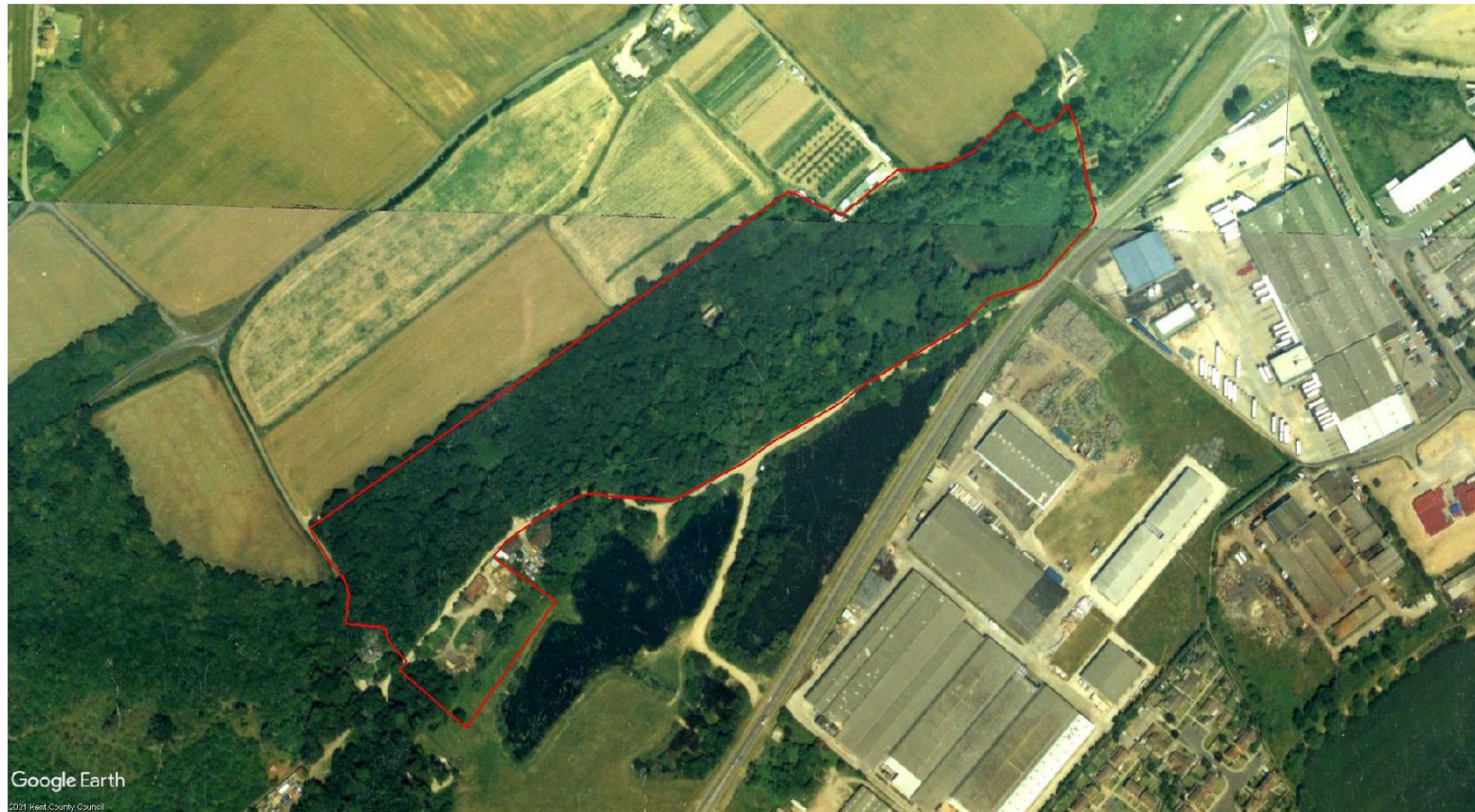


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Oare Gunpowder Works - 1990



Google Earth
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Base map © Kent County Council 2021

Oare Gunpowder Works - 2007



Base map © Kent County Council 2021

Oare Gunpowder Works - March 2021



Base map © Google Maps 2021

3 Links to strategic documents

There is a selection of strategic documents at a national, county and district level that are relevant to the purpose, aims and objectives of Oare Gunpowder Works Country Park.

3.1 National

Although many documents could be quoted in this section, for the sake of brevity, just one national level document will be referenced.

25 Year Environment Plan (2018)⁶

This is the overarching plan for the environment over the next 25 Years. It is a high-level document but has some clear goals:

1. *Clean air.*
2. *Clean and plentiful water.*
3. *Thriving plants and wildlife.*
4. *A reduced risk of harm from environmental hazards such as flooding and drought.*
5. *Using resources from nature more sustainably and efficiently.*
6. *Enhanced beauty, heritage and engagement with the natural environment.*

In addition, we will manage pressures on the environment by:

7. *Mitigating and adapting to climate change.*
8. *Minimising waste.*
9. *Managing exposure to chemicals.*
10. *Enhancing biosecurity.*

Oare Gunpowder Works contributes to almost all these goals. The ecosystem services benefits of a site like Oare Gunpowder Works Country Park should be valued highly and be recognised for the contribution they make at a local and district level.

3.2 County level

Kent Environment Strategy (2016)⁷

This is a high-level document outlining environmental priorities for Kent County Council. The vision for this document neatly encapsulates the value of Oare Gunpowder Works Country Park to local communities:

⁶ 25 Year Environment Plan -

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-year-environment-plan.pdf

⁷ Kent Environment Strategy - <https://www.kent.gov.uk/about-the-council/strategies-and-policies/environment-waste-and-planning-policies/environmental-policies/kent-environment-strategy>

“The county of Kent is benefitting from a competitive, innovative and resilient economy, with our natural and historic assets enhanced and protected for their unique value and positive impact on our society, economy, health and wellbeing.”

Kent Nature Partnership Biodiversity Strategy (2020-2045)⁸

This strategy looks specifically at targets for biodiversity over the next 25 years, linking broadly with the government’s 25 Year Environment Plan

The goals of this document relate to the quality of terrestrial habitat, how connected it is and how much of it there is. This management plan looks to contribute to these goals. Another goal is to increase the number of people from a more diverse range of backgrounds that access nature. Research shows that people from areas of deprivation access greenspace less than people in other areas, making place like Oare Gunpowder Works, that are in the heart of urban areas, extremely important to help deliver this goal.

Kent Nature Partnership Strategic Priorities and Action Plan (2018-2023)⁹

This document sits below the Environment Strategy (KES) as the mechanism for delivering the biodiversity elements of the KES. The document highlights four priorities, all of which are relevant to Oare Gunpowder Works Country Park:

Priority 1 - Strengthening the consideration of biodiversity within local plans and the growth agenda

Priority 2 - Embedding natural capital into planning and decision making

Priority 3 - Taking forward the health and nature agenda

Priority 4 - Improving the quality, extent and connectivity of our high value habitats

3.3 District level

Swale Climate and Ecological Emergency Action Plan (2020)¹⁰

Swale Borough Council declared a climate emergency in 2019 and released this action plan in 2020 to help The Council become carbon neutral by 2025 and for the borough to be carbon neutral by 2030. As well as these ambitious targets this document commits to make space for nature as a key priority, and safeguard our wild places, ancient woodlands and hedgerows.

Of the ten priorities outlined by the document the following are relevant to Oare Gunpowder Works Country Park and will be included within this management plan.

- *Replace SBC fleet vehicles with electric vehicles;*

⁸ Kent Biodiversity Strategy - <http://www.kentnature.org.uk/uploads/Kent%20Biodiversity%20Strategy%202020%20-%202045.pdf>

⁹ KNP Strategic priorities and Action Plan - <https://www.kentnature.org.uk/uploads/files/About-Us/Kent%20Nature%20Partnership%20-%20Strategic%20Priorities%20and%20Action%20Plan%202018%20-%202023.pdf>

¹⁰ Swale Climate and Ecological Emergency Action Plan - <https://data.climateemergency.uk/media/data/plans/swale-borough-council-52e3b96.pdf>

- *Tree planting on council land (target; 148,100 trees or 60 acres of woodland) to offset 20% of council emissions;*
- *Install EV charging points across the borough;*
- *Improve facilities and incentives for walking and cycling.*

Swale Open Spaces and Play Area Strategy (2018-2022)¹¹

This strategy assesses the provision of open space in the borough, how it fits into planning policy and local strategic planning and identifies an action plan. The plan acknowledges that the funding situation is difficult at present but also makes the following recommendation:

“Destination (Strategic) Sites should be recognised through protection and enhancement.”

This explicitly includes Oare Gunpowder Works Country Park and the recommendation goes on to state:

“The Council should seek to ensure the role and quality of these sites through continued enhancement so providing a diverse range of features.”

This management plan will provide a framework to achieve this recommendation.

The strategy action plan also states that the following targets will be put in place:

- To invest at least £100,000 capital spending per year for 5 years on existing open spaces through developer contributions, grants, capital works and disposals.*
- To invest £500,000 in a rolling programme to refurbish several play areas during the life of the strategy.*
- To achieve at least 3 Green Flag parks and open spaces in the next 5 years.*
- To review our open space portfolio and identify relevant sites for investment, disposal or alternative uses by September 2018, linked to our successful programme of Community Asset Transfer and in consultation with the relevant Ward Members.*
- To actively promote our open spaces in partnership with other agencies and voluntary groups as places to sustain and improve health and wellbeing.*
- To increase the amount of open space under a wildlife management regime by 5 hectares and by December 2022.*
- Seek improvement of horticulture in our open spaces to enrich the biodiversity*
- To increase community involvement in open space management by providing support to new or existing community groups.*
- To ensure actions in relation to Local Plan Policy DM 17 are put in place to protect existing open space and private playing fields, to help negotiate new open space in future housing developments and to continue the designation of Local Green Space across the Borough.*
- Look at new methods of operation and potential commercial ventures to help meet the ongoing cost of maintaining open space facilities*

¹¹ Swale Open Spaces and Play Area Strategy - <https://services.swale.gov.uk/meetings/documents/s10121/Appendix%20I%20-%20SWALE%20BOROUGH%20COUNCIL%20OPEN%20SPACES%20AND%20PLAY%20STRATEGY%20FINALSENT%20TO%20CABINET.pdf>

- k. *A Borough wide review of public conveniences to also consider an audit of existing Changing Places toilets provision.*

These priorities form the basis for this management plan's approach to The Country Park.

Health and Well Being Improvement Plan (2020-2023) – currently in draft form

This document highlights the importance of good health, especially in the wake of the Covid-19 pandemic, and the importance of taking regular exercise. Green spaces play an important part in how people take their exercise. One of the priorities identified in this document is:

“Work with Leisure and Technical services and Comms to consider how we use and promote our open spaces to encourage physical activity and improve wellbeing.”

Swale Biodiversity Action Plan (updated 2016)¹²

This plan focuses on the habitats and species that make Swale's biodiversity special. It includes priority habitats relevant to Oare Gunpowder Works:

- *Woodland*
- *Wildflower grassland*
- *Built up areas and gardens*

These are all habitats that are found at or adjacent to The Park

Swale Green Grid Strategy (2016)¹³

This document examines how the borough's green spaces can be enhanced and monitored via a partnership of organisations.

There are also other documents relevant to Oare Gunpowder Works Country Park

Swale Volunteering Strategy (2013-2016)¹⁴

Swale Cycling and Walking Guidance Statement (2018-2022)¹⁵

¹² Swale Biodiversity Action Plan - <https://www.swale.gov.uk/assets/Strategies-plans-and-policies/Biodiversity-Action-Plan-2016.pdf>

¹³ Swale Green Grid Strategy - <https://services.swale.gov.uk/meetings/documents/s6079/Green%20Grid%20Strategy%202016%20proof%20Aug%202016.pdf>

¹⁴ Swale Volunteering Strategy - <https://archive.swale.gov.uk/assets/Strategies-plans-and-policies/Swale-Volunteering-Strategy-May-2014.pdf>

¹⁵ Swale Cycling and Walking Guidance Statement - <https://services.swale.gov.uk/meetings/documents/s11291/Item%208%20Appendix%20I.pdf>

4 Vision Statement and aims for Oare Gunpowder Works

4.1 Vision statement

Over the last years of community and stakeholder discussions, the overall purpose of a site like Oare Gunpowder Works has been discussed many times. This has been distilled for the purposes of this plan into a vision statement and several overarching aims that will guide the work that takes place at the Country Park. These statements cover not only the management of the site for nature conservation but the historic interest, community involvement and the importance of OGWCP to local people. The aims could be distilled to the following vision statement:

Oare Gunpowder Works Country Park will be a focal point for local people to enjoy and learn about one of the finest wildlife and industrial heritage sites in the borough. The restored habitats for nature and the part that local volunteers have played in this work will become a template for local authority site management.

4.2 Aims

This vision statement will be delivered by the following aims:

1. Habitats and species

Oare Gunpowder Works will be managed to create a diverse mosaic of habitats. The focus will be to create habitats where a wide range of species can thrive, new species will arrive and those that are already present will flourish. This aim will be achieved through the following objectives established in 2015.

- a. Gain a better understanding of the range of species found at Oare Gunpowder Works Country Park.
- b. Carry out works that do not conflict with protected species and habitats regulations.
- c. Increase diversity within habitats to maximise the number of appropriate species that thrive in the Country Park.
- d. Reduce the dominance of sycamore and other invasive species within wooded areas.
- e. Control invasive vegetation growth within open water.
- f. To not make drastic changes to any of the habitats over a short time period as this does not allow wildlife currently present (and possibly unrecorded) to adapt to changes in habitat.
- g. Maintain the park as a safe place for people to enjoy.

2. Access, engagement and enjoyment

Oare Gunpowder Works is an important place for local people. It is well used and loved. Local people are also involved in management decisions and carrying out work on site. This plan will

aim to build on this excellent work and maintain Oare Gunpowder Works as a destination for the community.

3. Industrial heritage

The industrial heritage of Oare Gunpowder Works has led to the scheduling of the site by Historic England. The work on site will aim to maintain and promote this heritage. The site management for nature conservation will respect and work in harmony with the historic usage of the site.

4. Financial resilience

The exceptional work that has taken place over recent years has been possible due to the commitment shown by Swale Borough Council and the Friends of Oare Gunpowder Works to the Country Park. Financial times have been challenging for local authorities since the recession of 2008. The Covid-19 pandemic has stretched these resources even further. The delivery of the management prescriptions in the work plan can be delivered within the existing budget with the help of volunteer effort. However, the recommendations within the work plan are uncostered and cannot be achieved without additional external funding being raised. The work at Oare over the next five years will take place within this context.

Figure 12: Incorporating Mills (1926)



5 Strengths, Weaknesses, Opportunities, Threats and Constraints

A traditional SWOT analysis was carried out in preparation for this management plan. These results have been added to through conversations with staff and other stakeholders. Strengths and opportunities have been combined as have weaknesses and threats for simplicity. The legal and other constraints will be dealt with at the end of this section.

5.1 SWOT analysis

Strengths and Opportunities	Weaknesses and Threats
<p>Ranger Having a ranger dedicated to the site has made a big difference to the activities that have taken place at OGWCP and the level of confidence local communities have in The Council's commitment to Oare Gunpowder Works.</p>	<p>Work load and support The loss of the ranger's apprentice last year has been keenly felt. This support is essential to maintain the level of support given to the park, particularly as other sites in the Council's portfolio also demand staff resources.</p>
<p>Friends of Oare Gunpowder Works The Friends group have been fundamental in the implementation of the previous management plan. The enthusiasm and dedication to the siter extends beyond carrying out practical work and extends to site management and fundraising.</p>	<p>Group sustainability The group is dependent upon several key members that drive the group's work. Although volunteer numbers are healthy, individuals who can take on senior roles in the group should be identified and encouraged as part of continuity planning.</p>
<p>Volunteering Oare Gunpowder Works benefits from active volunteers. The weekly Thursday tasks are well attended with a core of interested and well-trained volunteers. There is an opportunity to increase the amount of wildlife monitoring and habitat management that is carried out by volunteers</p>	<p>Long-term maintenance of heritage and access features The paths at Oare receive a lot of wear and the boardwalk needs regular maintenance. Additionally, some of the heritage requires maintenance if it is to be retained. Without proper planning this can place stresses on regular maintenance budgets.</p>
<p>Social media presence Oare Gunpowder Works Country Park has been well served by its Facebook Page which has over 3000 followers. This has transformed publicity for events and has helped to engage the local community. It is</p>	<p>Limited scope for growth Car parking at Oare Gunpowder Works is limited and the car park is often full during busy times. Capacity for large events and to expand the visitor offer are limited without encouraging alternative travel options.</p>

used both by the friends group and council staff.	
<p>Serving the community</p> <p>Oare Gunpowder Works Country Park is surrounded by an ever increasing number of housing estates to the east. These communities regularly use The Country Park and value the green space. Some of the local communities are in the 20% most deprived areas in the country.</p>	<p>Financial health of The Council</p> <p>Financial pressure may require reviews of funding levels. Oare Gunpowder Works must continue to justify the commitment to the park shown by The Council in the Open Spaces and Play Area Strategy.</p>

5.2 Constraints

There are a number of constraints, many of them legal, that need to be considered when planning work. These are considerable at Oare Gunpowder Works. They include but are not limited to:

Felling licences/Forestry Commission approved management plans

To manage woodland, a felling licence is required, and these are issued by the Forestry Commission. Although up to five cubic metres of wood can felled each quarter without a felling licence, the amount of work suggested by this plan will require a felling licence. This plan can be used as a basis for making the application which will cover the five years of this plan. Additionally, this process allows the plan to be considered by a forestry expert and effectively be endorsed by the commission. Preliminary discussions suggest that the aim of increasing structural and species diversity is an approach that will be supported.

Scheduled monument

The scheduling of the site provides protection for the heritage of the site, both above and below ground. Any works that have the potential to impact the scheduled heritage of the site will require consent from Historic England. An example of where consent is required is the creation of a pond in compartment 2b.

Site of Special Scientific Interest

Although only a small part of the site is a very small part of a rather large SSSI, consent from Natural England is required for activities that take place in this area. This effectively includes any work carried out to the Lower Mill Pond.

Protected species

Oare Gunpowder Works Country Park contains a range of protected species. Unlike the heritage, it does not stay in one place and needs to be considered whenever management work takes place. However, by avoiding certain management activities, most possible impacts

on protected species can be avoided. Some of the plant, beetles and amphibian species that are either present, or thought to be present, on site are protected against trade but this is not particularly relevant to the management of the Country Park. However, those species that are afforded protection under the Wildlife and Countryside Act 1981 and The Conservation of Habitats and Species Regulations 2017 are relevant and need to be taken into consideration. The table below will summarise which protected species are either known or thought to be present and how this might impact management.

Species	Locations (if known)	Notes
The Conservation of Habitats and Species Regulations 2017		
This is the highest level of UK designation and provides protection against killing, injury and disturbance. The breeding and resting habitat of these species is also protected		
All bat species	Bat walks, trapping and hibernation roost checks have revealed that bats use Oare Gunpowder Works extensively. Hibernation occurs in the Incorporating Mill (1926). Maternity roosts have been observed in the roof of the Visitor Centre. Many of the larger trees have the potential to contain summer bat roosts.	The retention of large trees (likely to provide roosting opportunities) and retaining minimal intervention areas will help to maintain good bat habitat. Large trees with high bat roosting potential should be surveyed before felling Only licenced bat workers should attempt to disturb or record bats when they are roosting or hibernating.
Great crested newt (<i>Triturus cristatus</i>)	Despite extensive survey work having been carried out, great crested newts have not been recorded at Oare Gunpowder Works though they have been observed as close as Ospringe. Their presence should not be completely discounted, especially if a fish free pond is constructed in compartment 2b.	Pond management should take place outside of the breeding season and when larvae are unlikely to be in the pond (optimum timing November to January). Any works that include mechanical control or removal of long grasses or other vegetation should be avoided between February and October.
Dormouse (<i>Muscardinus avellanarius</i>)	Survey work in 2019 failed to detect dormice. However, dormice have been recorded in Bysing Wood so their presence	Removal of hedgerows would require survey work. Coppicing should not take place before the middle of November as

should not be discounted as habitat improves.

animals may still be nesting in trees. Disturbance of the woodland floor should be minimised during the winter to avoid damage to hibernating animals.

Wildlife and Countryside Act (1981) – protection under Schedule 5 of the act
 Species identified under schedule 5 of the act have protection against killing or injury.
 Water vole burrows are also protected, and they should not be disturbed whilst in burrows.

Grass snake (*Natrix helvetica*)

Grass snake and slow-worm have been recorded in high numbers on site. Grass snake breed on site.

Any works that include mechanical control of long grasses or other vegetation should be avoided between

Slow-worm (*Anguis fragilis*)

Not thought to be present on site though adders have been recorded at Conyer to the west. Lizards are present on adjacent sites and despite their absence during survey work, colonisation of the site is likely

March and October as should major ground disturbance in winter months where reptiles may be hibernating.

Adder (*Vipera berus*)
Viviparous lizard (*Zootoca vivipara*)

Water vole (*Arvicola amphibious*)

The North Kent marshes are a stronghold for water voles, and they have been recorded in and around Oare Gunpowder Works, though record keeping is sketchy. Formal survey work should be prioritised.

Water voles are active all year round. Management of leats and the Lower Mill Pond should not risk the collapse of burrows and should be carried out on a rotational basis to ensure that not all burrows are exposed at the same time.

Management works that are likely to displace animals will need full mitigation.

Wildlife and Countryside Act (1981) – protection under Schedule 1 of the act
 Wild birds are protected against killing as well as damaging or destroying nests and eggs.
 Schedule 1 species are protected from disturbance.

All wild bird species

Found throughout the site. Firecrest, kingfisher and Cetti's warblers are also present on site and are listed in schedule 1 giving them protection from disturbance

Vegetation management of potential nesting sites should not take place during the breeding season (usually March to August) unless using hand

tools and checks are made for nests.

Other commonly encountered protected species

All shrews	Protected but only from certain types of trapping
Badger (<i>Meles meles</i>)	Not known to be present on site though could be possible visitors to Oare Gunpowder Works. Should not be entirely discounted.

Public access

Although there are no public rights of way at Oare Gunpowder Works (with the exception of the restricted byway that marks the north-eastern boundary of the site, public access is allowed at all times. Any works need to take public access into account and access should be blocked where necessary.

Figure 13: Fungi on decaying timber



6 Current Status and Objectives

This section of the plan will evaluate the key components of Oare Gunpowder Works in three of the four key areas that have been identified in the aims section. These are the **habitats and species**, **industrial heritage** and **access, engagement and enjoyment**. The fourth aim was financial resilience, and this is the context against which all objectives and recommendations will be made. Each of the three aims will be dealt with in order and will cover:

- A description of the current status.
- A list of objectives.

The recommendations found in section 7 will be derived from these objectives and will form the basis for the site work plan.

6.1 Habitats and species

In order to make appropriate management decisions it is necessary to assess the habitats that are found at the Country Park. This ensures that any future management does not compromise the rare and protected species on the site. The site can be split into broad habitat types.

Oare Gunpowder Works - Broad Habitats



Oare Gunpowder Works - Compartments



6.1.1 Grassland

There is relatively little of what could be described as grassland at OGWCP. However, these areas provide important structure within the park and are highly valued.

Marsh

A marshy area with a boardwalk forms compartment 2b. This area is flail mown once a year preventing the growth of woody species. The area is a complex of temporary ponds with tall herbaceous vegetation dominating in summer. The marsh is valuable for the diversity of plants that grow and the sunny, sheltered, nectar rich habitat afforded by current management. It is used by butterflies, dragonflies, damselflies and other invertebrates. **Willow herbs, gypsywort, water figwort, water mint, ragged-Robin** and other moisture loving plants can be seen in summer months. Survey work needs to take place here to establish a better understanding of species found. Currently, the annual flail prevents this area from being invaded by scrub. However, the area is often dominated by **nettles** and **field bindweed**. It is uncertain whether an additional cut at a different time of year would be beneficial and improve botanical diversity here. A trial is suggested.



Figure 16: Boardwalk marsh area

Test range grassland

The test range in compartment 1a is the only area of open grassland within the Country Park. This is a heritage feature that was maintained with **Wellingtonia** trees planted on either side of the avenue to catch stray projectiles during testing. An amenity cut is maintained in this area and although there are only several **Wellingtonia** remaining, they act as a fitting reminder of the area's former use. From a wildlife perspective, the margins of this area have greater interest. Over the last five years, zonal ride management has been implemented with an area to the north of the range being cut annually and shrub planting forming the third zone of this management that provides a gradual interface from grass to woodland. These areas have provided additional vegetation structure and plants such as **red campion**, **nettle-leaved bellflower**, **herb Robert** and **comfrey** do well in the area cut annually. Large areas are also dominated by **nettle** and **bracken** and this is cut and beaten by volunteers on a regular basis. Additional grassland is maintained in this area as a path to a glade with seating.

Ex-depot in compartment 4

There is also an area next to the car park in compartment 4 that contains species that can tolerate the large amounts of concrete and hardcore including **soapwort** and occasionally **bee orchid**.



Figure 17: Test range

Grassland objectives

The objectives for the grassland areas include:

- Maintain the 3-zone ride management at the test range. Trial an area in May as well.
- Maintain annual cut in marsh area.
- Trial cutting a small area of marsh area in April and perhaps June as well.
- Continue to bruise bracken in test range to reduce its dominance.
- Maintain open area in ex depot (compartment 4).

Specific management recommendations and maps will be given in section 7

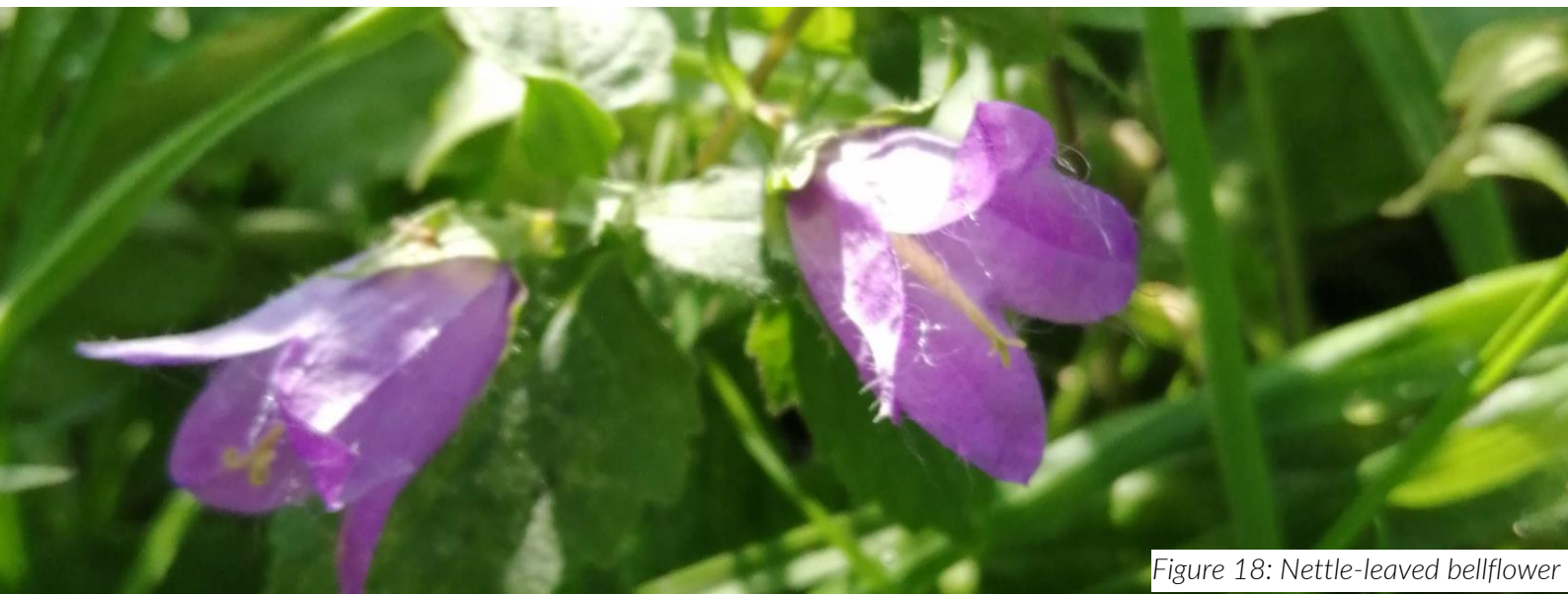


Figure 18: Nettle-leaved bellflower

6.1.2 Woodland

The majority of Oare Gunpowder Works is woodland. For the purposes of this plan it will be split into wet woodland and plateau woodland as the character of these two areas are significantly different, as are the proposed management systems.

Wet woodland

This area of secondary woodland extends throughout compartment 2a and also includes the area of woodland adjacent to the Lower Mill Pond in compartment 3. This woodland is characterised by trees that have regenerated in the mostly damp soils that occur in this low-lying area. As well as this, there are a number of planted specimen trees including **London plane** and **horse chestnut** that give an indication of what this area may have looked like when the treed landscape was more formally planned than it is today.

The trees that dominate in this kind of woodland include **sycamore** (which accounts for approximately 50% of the canopy) and **ash** (approximately 25% of the canopy). Additionally, moisture loving trees such as **alder** and **willows** also thrive in this area as well as **wych elm**. Occasional finds include **yew**, **elder**, **hawthorn** and **hazel**. The ground flora is dominated by **ivy**, **bramble**, **nettle** but **hart's tongue fern** is also present. Deadwood can be found throughout the secondary woodland.

The age of some of the trees makes them susceptible to being blown over in strong winds and FOGW spend a lot of time clearing wood after storms. Additionally, many of the ash trees are in an advanced stage of ash dieback. Tree safety is something that needs to be addressed, particularly amongst the ash trees.

The volunteer group have also cut some glades in the area. Some of these have been planned and some have just happened as a response to clearing felled trees. These areas have either been turned into permanent glades with seating or replanted to help increase species diversity. The regrowth in some of the places has been impressive with **figwort**, **purple loosestrife**, **bittersweet** and **help agrimony** thriving in the newly created areas.

This plan will focus on continuing the work of reducing the dominance of sycamore as well as creating short rotation coppice to help the moisture loving ground flora thrive.

Firecrest have also been heard in this area and are thought to breed in the yew trees. Consequently, it is important not to fell yew as part of the glade creation management work.

Figure 19: Newly created open glade



Figure 20: Path through wet woodland

Plateau woodland

Woodland found on the northern plateau in compartments 1a and 1b is different in nature and structure to that in the lower lying areas. The soils are derived from the Thanet Beds and contain sand, silt and clay. Although not listed in the Ancient Woodland Inventory, the area does have characteristics typical of ancient woodland and appears to have been a woody area for around 200 years. Ancient woodland indicator species such as **moschatel**, **wood anemone**, **sanicle**, **wych elm**, **cherry** and **holly** suggest that this area has contained trees for a considerable length of time and may well have been woodland before the gunpowder works was built in the early eighteenth century. Today, the area is dominated by sycamore which has colonised the woodland. A survey of the woodland in compartment 1a conducted by Nick Stewart in 2010 showed that 65% of the canopy is dominated by sycamore. The area has a dense canopy in most places but is occasionally broken providing areas where the ground flora is more diverse and is used by butterflies.

The woodland in the north-east of compartment 1b has been left as non-intervention woodland. However, the rest of this woodland would benefit from being in a rotational coppice regime. This would involve cutting small areas of the woodland every year in a cycle of twenty to thirty years. The impact on the character of the woodland would be minimal at any one time but the coppicing could also be associated with replanting and cutting back regrowth of sycamore.

This has already been done in the area to the north of the test range where significant planting has led to a dramatic increase in the diversity of tree cover.

Woodland objectives

The primary objectives of the woodland areas include:

- Survey all woodland to identify potentially dangerous trees and fell as appropriate.
- Create additional glades in compartment 1a – some replanted and some on a short rotation coppice.
- Introduce a coppice regime in plateau woodland and planting to increase tree diversity.
- Retain minimal intervention in area of compartment 1b
- Implement short rotation coppice in compartment 3



Figure 21: Plateau woodland and bug hotel



Figure 22: Recent coppice in area of fallen trees

6.1.3 Wetland areas

As Oare Gunpowder Works finds itself in a valley that ultimately goes on to become Oare Creek, the water table is naturally fairly close to the surface. A legacy of the industrial history of the site is the manged water levels. They would have originally been managed to maintain the waterways used to transport hazardous materials around site and to keep water levels high in the Lower Mill Pond. Today, these water levels are used to help prevent flooding and to ensure that the fishing lakes just 'upstream' of the gunpowder works do not dry out.

Additionally, the wetlands are important for biodiversity as they contain a range of plants, invertebrates, amphibians and fish as well as impacting the nature of the terrestrial habitats around them.

The leats

The leats or canals in compartment 2a form a significant area of open water on the site. The leats were used to transport materials around the gunpowder works but now provide the opportunity for wildlife to flourish. Water levels can fluctuate but can also be controlled by pumping from the main lakes. The importance of the leats for wildlife include the abundance of aquatic and moisture loving invertebrates and plants that can be found. The invertebrates are currently under-recorded but provide an important source of food for bats and bird life. Where the canopy is broken around the leats, plant diversity increases dramatically with **flag iris**, **gypsywort**, **purple loosestrife** and other moisture loving plants present. The leats, particularly those where the water is slowest moving, provide ideal habitat for **palmate newts** with **smooth newts** with **common frogs** also recorded.

However, the leats are also in a poor state of repair. They have become silted, partly due to a lack of maintenance but also because the flow rate through the site has slowed. As a consequence, the leats have become shallower and wider with dissolved oxygen levels dropping. There is also a leak in one of the leats at TR 00301 62413 which compromises flow rates and water levels. The input into the system from the fishing lake is also not as fast as it should be and requires attention. A lime solution (Siltex) was used with limited success to remove some of the silt but this only treated the symptoms rather than the underlying cause. Duckweed also dominates at times on some of the leats.

Lower Mill Pond

The Lower Mill Pond is the largest area of standing open water on site, though it is in fact an online pool that is fed by the leats and drains into Oare Meadow and ultimately Oare Creek. The pond has an abundance of invasive **common reed** with **reed mace**. The pond does provide habitats for other plants such as **hemp agrimony** and **water plantain** with **pond sedge** and **wood small-reed** having been recorded in the past. The reed beds provide cover and breeding habitat for a range of bird species including reed warbler, sedge warbler and occasionally the schedule 1 listed Cetti's warbler. Smooth newts and palmate newts have been observed in

Figure 24: A leat



Figure 23: Lower Mill Pond

the pond though amphibian populations are limited by the presence of fish. **Eels** have also been observed in the pond and future monitoring is planned.

It is the succession of common reed across the pond that is the greatest cause for concern. Retaining open water is a high priority for both aesthetic reasons and to maintain the heritage feature. There are also biodiversity benefits for retaining a mosaic of freshwater habitats. Although hand pulling and cutting the reeds has been attempted, the job is too large to realistically be undertaken using hand tools. A digger was used successfully to reverse the succession of reeds during the last management plan cycle and this should be repeated.

Pond creation

There are currently no still freshwater bodies on site that are free from fish. The creation of just such a pond has been a long-standing ambition for the site and remains so. This pond has the potential to provide the best newt habitat on site, provide a niche for marginal and submerged plants as well as being an education tool for visiting groups.

Duckweed

Planks of wood fixed to the sides of a slow flowing leat can be used to stop the spread of duckweed through the site. This effectively blocks floating material from moving through the leat system which can be scooped out at regular intervals. It has been used very successfully at Gazen Salts in Sandwich and could be worth trying at Oare.

Wetland objectives

The main objectives for the wetland areas are:

- Resolve flow issues in leats.
- Create a pond in the marshy area (compartment 2b).
- Clear one third of vegetation in the Lower Mill Pond.
- Repair leak in leat at TR 00301 62413.
- Install device to block spread of duckweed.
- Investigate inflow issues from angling lakes.
- Remove rubbish from leats but retain some deadwood where possible.

6.1.4 Botanical species

Many of the botanical species have already been mentioned within the text about habitats. The niches within wetlands provide the opportunity for a range of different and some uncommon species to thrive. The woodland itself is nutrient rich and often the ground flora is dominated by species such as **nettle** and **bramble**. However, a suite of ancient woodland indicators such as **moschatel**, **nettle-leaved bellflower** and **wood anemone** provide a welcome incentive to manage the plateau woodland on a coppice regime and prevent all ground flora being shaded out by sycamore. **Bee orchid** has been recorded in the former depot in compartment 4 and keeping this area clear as well as maintaining the three zone ride

management around the test range will provide continued opportunities for meadow and partial shade loving flowering plants.

Botanical objectives

- Prioritise survey work to establish a more complete species list.
- Instigate a coppice regime in compartment 1
- Maintain a 3 zone ride management regime in compartment 1a.

6.1.5 Mammals

Relatively limited effort has been made to monitor terrestrial mammals at Oare Gunpowder Works though records of **fox**, **rabbit**, **mole**, **bank voles**, **wood mice** and **yellow-necked mice** have been recorded. Although formal records do not exist, **water vole** and **mink** have also been recorded. More needs to be known about the presence or otherwise of these species.

Kent Bat Group has carried out significant amounts of survey work at Oare and a considerable amount is known. The Incorporating Mill (1926) has been blocked to the public and **Natterer's**, **Long-eared brown**, **Daubenton's** and **Nathusius' pipistrelle** bats have also been found hibernating. **Soprano pipistrelles** also have a maternity roost in the Visitor Centre. Bat boxes have been located in places in the woodland that are well used. Bat walks have also revealed the presence of **common pipistrelle bats**.

Mammal objectives

- Survey for water voles
- Continue bat surveys

6.1.6 Invertebrates

Some invertebrate surveys have been conducted at Oare Gunpowder Works Country Park with butterflies, bees, dragonflies, moths and numerous fly species having been recorded. Most of these surveys have been observations from volunteers rather than formal surveys. The exceptions are a moth survey that took place in 2014 and fly records contributed following a Kent Field Club visit. There are some dedicated volunteers who contribute bee, butterfly and odonata records regularly meaning that knowledge of species present is probably fairly complete.

Although a freshwater invertebrate training session has been held, no records were available at the time of writing this plan. This is a recording gap that should be addressed as a matter of urgency. The freshwater habitats could be of significance in this area.

15 butterfly species have been recorded on site, five bumble bees and 16 dragonfly and damselfly species. None are especially rare though the Willow Emerald Damselfly is a recent

arrival to the UK and worthy of note. These species will benefit from increasing the diversity of plants on site as well as maintaining a variety of wetland habitats and vegetation structures. The overarching aim for enhancing and conserving habitats and species should achieve this.

Invertebrate objectives

- Continue ad hoc recording of butterflies, odonata and bees
- Prioritise aquatic invertebrate surveys
- Invite species group experts to the site whenever possible

6.1.7 Reptiles and amphibians

Survey work for both amphibians and reptiles has been conducted with the help of the Kent Reptile and Amphibian Group. The site is thought to be outside of the range of the **adder** but is a potentially important **grass snake** site with breeding confirmed in 2020. **Slow-worms** are also widespread throughout the site though, strangely, **viviparous lizards** have not been recorded. This is a surprise as, although lizards may struggle to find suitable hibernations sites in the damper areas of the site, the woodland plateau appears to be suitable and the species has been recorded nearby.

The presence of fish in all of the fresh waterbodies limits the usage of the site by amphibians. **Common toads** have not been recorded and nor have **great crested newts**. **Common frogs** are only occasional visitors though **palmate newts** in particular as well as **smooth newts** are often found in the leat systems, particularly in the shallower areas where they can avoid predation from fish. The non-native **marsh frog** is also regularly heard calling and it is likely that they breed on site.

The addition of a fish-free pond on site would benefit amphibians whilst coppicing, glade creation and other vegetation management that produces a complex mosaic of different vegetation structures and sward heights will benefit reptiles.

Amphibian and reptile objectives

- Create a fish free pond in compartment 2b
- Full amphibian surveys and reptile surveys should be carried out during this management plan cycle

6.1.8 Birds

Significant effort has been given to recording birdlife on site. There are several keen bird enthusiasts who visit the site on a regular basis and a total of 56 different species have been recorded. This has been augmented by popular bird survey walks led by Simon Ginnaw. The range of bird species reflect the habitats available and three species listed in Schedule 1 of the Wildlife and Countryside Act have been observed. These are:

- Firecrest
- Cetti's warbler
- Kingfisher

The firecrest is thought to breed on site and was heard in the yew trees of compartment 2a. **Long-eared owl** and **reed warbler** are also thought to be important birds for the site. Also of note is the potential of the site for **nightingale**. This species is increasingly becoming associated with scrub near wetland habitat. For this reason, a short, rotation coppice has been recommended in part of the woodland in compartment 3.

Bird objectives

- Manage succession of habitat with rotational cutting to provide a variety of suitable habitats
- Manage certain areas of scrub in compartment 3 specifically for nightingale
- Allow scrub to encroach some areas of the reed beds
- Don't cut any yew to encourage firecrest breeding

6.1.9 Areas where survey effort is required

Although excellent progress has been made in the last five years to survey and record several priority species groups at Oare Gunpowder Works there are still some blind spots as far as understanding of wildlife is concerned. Many of these have been highlighted within the species group notes as little is known about water vole and aquatic invertebrates. Although there are moth records these are not comprehensive. Other areas where very little is known is fungi and lichen. Specialist knowledge is required for these groups and often it can be difficult to arrange for a species expert to visit. An opportunistic approach to inviting species experts to the site should be taken. Knowledge is power!

Other wildlife objectives (where not already mentioned)

- Fungi surveys
- Beetle surveys
- Lichen surveys

6.1.10 Non-native and invasive species

There are also a number of non-native invasive species that have been identified at Oare Gunpowder Works. These species have the potential to spread rapidly and threaten the status of native species. Those identified include:

- **American mink** (*Neovision vision*) – a threat to water voles and water shrews.
- **Harlequin ladybird** (*Harmonia axyridis*) – a threat to native ladybirds.
- **Winter heliotrope** (*Petasites fragrans*) – a moisture loving winter flowering plant that can dominate if left unchecked.
- **Marsh frog** (*Pelophylax ridibundus*) – a large and noisy frog (in late spring) that is thought to compete with native frogs and toads.

- **Sycamore** (*Acer pseudoplatanus*) – a rapidly spreading tree that can shade out regeneration of native species.

Whilst little can be done about ladybirds and marsh frogs, non-native invasive plants should be removed if safe to do so and where this does not compromise protected species. Kent Wildlife Trust carried out some trapping of mink at Oare Gunpowder Works but it is uncertain how effective this was. However, it is sycamore that poses the biggest threat to biodiversity at Oare Gunpowder Work simply due to its dominance as a canopy tree all across the site.

Non-native species objectives

- Woodland thinning and coppicing aim to reduce dominance of sycamore
- Sycamore saplings should be pulled whenever they are seen

6.2 Industrial heritage

Managing the long-term future of the industrial heritage is not something that will be covered by this management plan. It requires a more specialist approach by those with the relevant skills in the conservation of such heritage features.

However, there are several areas where the industrial heritage of the site has relevance to the day to day management of the site.

Repointing

Several member of the Friends of Oare Gunpowder Works received training in repointing structures using lime mortar. Whilst some of the walls are inaccessible there are areas where repointing can be carried out. An assessment of where this work needs to be carried out and a series of jobs identified and put into the volunteer work programme.

Wildlife/built heritage interface

There are a number of examples on the site where the interaction of wildlife with the industrial heritage is positive. Examples include the colonisation of the leats and Lower Mill Pond by wildlife. The warm, south facing walls can also attract invertebrates that require warm conditions. Perhaps the area where this has been most studied is the use of the Incorporating Mills (1926) and the Visitor Centre by bats. These same places are also used by overwintering moths and other invertebrates. This wildlife/heritage interaction requires further investigation.

However, not all of these interactions are positive. Ivy and other plants can grow into the cracks between the brickwork and even buddleia, elder and sycamore can grow in these areas. Additionally, trees have grown on the tops of walls and are both compromising the integrity of the brickwork but are also like to fall in winds. Some vegetation can and should be removed by volunteers but an assessment of work that can't be done by volunteers should be made and contractors used to carry out remedial work where appropriate.

Figure 25: Incorporating Mill (not 1926) with vegetation growth



Figure 26: Corning House and steep drops

Wildlife as industrial heritage

There are also instances of wildlife forming an integral part of the scheduled monument itself. Most notably, this includes the Wellingtonia trees that were planted on either side of the test range. Although some of these trees were replaced when the site was first restored by Swale Borough Council, many of these failed or were vandalised and there is a case for planting Wellingtonia to replace those that were lost. These trees are expensive but can be bought from £35 for a 1.4m high tree. Cheaper alternative species could be sourced but these would not return the same character to the test range. Another alternative is to abandon plans for replanting. The trees would ultimately cast shade over the zonal ride management area, compromising the wildlife benefit of this area.

Managing people

The safety of visitors is important, especially where walls are steep and drops are significant. Subsequently, fencing should be secure in areas where potentially dangerous drops occur. Equally, people clambering over the built heritage can damage the resource and disturb the wildlife that might be using it. Of particular concern are some entrances to the Incorporating Mill (1926) that are used in the winter and may disturb bats. These entrances should be blocked and fencing added if needed.

Industrial heritage objectives

- Identify and carry out lime mortar repointing where possible.
- Remove vegetation from heritage features using contractors if necessary.
- Encourage additional surveying of wildlife (as well as bats) in the buildings.
- Identify where human access needs to be blocked.
- Make a decision over tree species on the test range and implement.

6.3 Access, enjoyment and engagement

The final element of this section is to look at the broad area of access, engagement and enjoyment. This is not something that the previous nature conservation management plan broached in any detail. However, it is an important part of the offer of Oare Gunpowder Works and will be looked at here in the context of both how day to day maintenance can assist with access and understanding but will also act as a framework for Swale Borough Council to address some of the broader social engagement issues of the park.

OGWCP is an important part of the greenspace offer for west Faversham. The good quality access, parking and welcoming feel of the place makes it a popular place for families, dog walkers and wildlife enthusiasts alike. The communities around the Country Park have mixed levels of deprivation. Some of the communities in the area are in the 10% most deprived in the country. Access to greenspace can be particularly important to these groups of people, especially access to free, high quality spaces. This section will not only deal with access, but

some of the other ways that local communities can be engaged to increase their enjoyment and understanding of the local built and natural heritage.

6.3.1 Access

Oare Gunpowder Works is a successful visitor attraction. It is open every day and has good quality paths in most places. Visitors with limited mobility can access the main features of the site. Although there are entrances to Oare Gunpowder Works in several places, the majority of visitors use the main entrance and the car park. The arrangement to shut the gates at dusk is an excellent one and ensures that the site stays open every day whilst minimising the anti-social behaviour at night.

It is not thought that major improvement work needs to be carried out to the access infrastructure, but maintenance is a continuous issue. The Friends of Oare Gunpowder Works have spent a lot of time formalising desire lines through the wood using wood chip and log edging to encourage people to stay on paths. This has been very successful and as well as providing a better visitor experience, it limits damage to ground flora caused by braided paths. There are areas of the Country Park with limited access and this plan will not encourage people to visit these areas.

Oare Gunpowder Works - Access



Access objectives

- To check paths and access furniture regularly and maintain the paths to a high standard
- Check the car park and make repairs as necessary

6.3.2 Health and wellbeing

There is an increasing understanding of the role that open spaces and contact with nature plays in the health and wellbeing of people. This is well documented elsewhere, though the Nature Connectedness Research Group¹⁶ at the University of Derby has created clear, easy to use resources that help both understand the value of greenspace and how to make the most of it. The new Health and Wellbeing strategy being developed now will help to develop mechanisms to make the most of the benefits of the Country Park. Additionally, the Community Engagement and Social Inclusion officer at Swale Borough Council will be able to help highlight the value of the park and find ways for more people to benefit. Organisers of events that provide health and wellbeing benefits such as yoga, healthy walks etc. should be encouraged to use the Country Park as a meeting place (at least during quieter hours).

Health and wellbeing objectives

- Attract more people to the park to benefit from nature connectedness



Figure 28: Visitor Centre

¹⁶ Nature Connectedness Research Group - <https://www.derby.ac.uk/research/about-our-research/centres-groups/nature-connectedness-research-group/>

6.3.3 Visitor Centre

The Visitor Centre provides an excellent opportunity to engage with people who come to the Country Park. Although it is not possible to leave the Visitor Centre open all the time, it is staffed at weekends through the summer and not only allows visitors to find out about the history of the Gunpowder Works but also to speak to the steward about how the site is managed and what wildlife lives there. The steward is also able to lead guided walks around the park as an additional community engagement tool.

Visitor Centre objectives

- Retain the number of days the centre is open and a steward is present.
- Continue to run steward led events.
- Monitor the condition of the building and repair as necessary.

6.3.4 Anti-social behaviour

Oare Gunpowder Works is fortunate that it does not suffer from high levels of anti-social behaviour. As a park on the edge of an urban area there is obviously some misuse, especially during evenings. Fires are lit and litter is left. Gaining vehicular access is not easy when the main gates are shut. However, the overall feeling when visiting the Country Park, certainly during the day, is that it is a safe place and well-managed. This is a testament to both the ranger and the Friends of Oare Gunpowder Works, whose on-site presence and willingness to talk to people in the park helps to ensure that anti-social behaviour is challenged. Additionally, the work of volunteers who clear litter and keep the site in good order is essential in creating this atmosphere.

Anti-social behaviour objectives

- Continue to challenge anti-social behaviour and eradicate signs of poor behaviour quickly.
- Continue to provide rubbish bins and dog waste bins.

6.3.5 Interpretation and seating

There are a variety of different types of interpretation on site. This ranges from the interpretation at the Visitor Centre to the panels around the Country Park. The on-site interpretation is in the process of being updated, a project funded and managed by the Friends of Oare Gunpowder Works. In addition, the network of paths is waymarked so visitors can find their way around easily. There are also the carved Green Man sculptures that provide imaginative and beautiful visitor attractions.

Benches and tables are provided at the car park and a series of volunteer made seats dot the park. A welcome side effect of storm blown timber.

The Oare Gunpowder Works site contains the remains of the former gunpowder factory that is known to have produced gunpowder from the late seventeenth ... See more

3,371 people like this, including 4 of your friends



3,709 people follow this

5,570 people checked in here

<http://www.gunpowderworks.co.uk/>

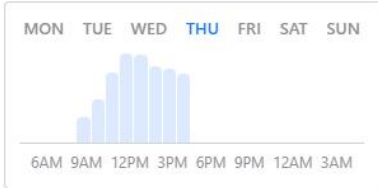
01795 424341

Send message

Price range · £

countryparks@swale.gov.uk

Open now
09:00 - 17:00



Park

Suggest edits

Does this place have a street address?

No

25 October

Hope you all had a great time today, we was very lucky today with the weather.



24 likes

6 comments 2 shares

Like

Comment

Share

Most relevant

Write a comment...



We had great fun, thank you

Figure 30: Recent Social Media Post

Figure 29: The Green Man



Interpretation objectives

- Keep existing interpretation in good condition and graffiti free
- Look for opportunities to install creative interpretation that complements the interpretation panels.

6.3.6 Social and other media forms

One of the successes of Oare Gunpowder Works has been the use of a Facebook page. The page has over 3000 followers. Having this many followers has multiple benefits:

- A way for staff and FOGW to update the public;
- Users of the park can report issues within the Country Park – and staff can show how these issues are being dealt with;
- Events can be more effectively advertised on the Facebook page than any other form of media;
- Communication can be quick and reactive.

The success of the social media strategy is largely down to the amount of time that is committed to the Facebook page. Regular updates are posted, and comments are reacted to quickly. This is only possible by having a dedicated ranger to monitor and react to the page, often outside normal working hours. Care must also be taken to ensure that Facebook is not the only way that people can find out about the things that are going on at Oare. Although there are 44 million Facebook accounts in the UK and 44% of people use Facebook daily, one third of people do not have accounts at all.

OGWCP also has a noticeboard which is a great way of informing regular visitors about events and happenings. The Country Park also has a website. However, it has a rather unloved feel and isn't updated. Events are not posted on the website and many of the links do not work properly with many photos not showing and content being incomplete. The site should either be updated regularly, converted to a static site which does not need updating or removed completely.

Media objectives

- Maintain the high level of Facebook activity
- Review the website and either remove or update

6.3.7 Educational visits and classroom

The Visitor Centre has an education area, substantial amounts of equipment and is an ideal place to run all sorts of educational activities. The toilets in the Visitor Centre also make running events for all sorts of different groups easier.

A third-party organisation can offer educational visits for schools, both locally and from further afield. This relationship can be promoted by The Council but the cost is borne by the schools who would pay the third-party directly. Funding can be applied for which would provide free sessions to local schools.

Education objectives

- Continue to be able to offer educational activities

6.3.8 Events

The ranger, as well as other third parties, run a huge variety of events at Oare Gunpowder Works. The Council is keen to encourage as many organisations as possible to use the Country Park and offer high quality events. This approach allows more events to be run at low cost or no cost to the The Council. The events serve several different purposes including:

- Providing fun activities for families, particularly during school holidays;
- Providing educational activities for people to learn more about wildlife, heritage or other features of Oare Gunpowder Works;
- Building skills within volunteers;
- Collecting wildlife records and increasing understanding of the natural history of the Country Park.



Figure 31: Wildlife craft event

Event objectives

- To continue to run a variety of interesting, engaging and popular events
- Events should be either free or cheap to attend
- To become increasingly self-sufficient by raising money through donations to Friends of Oare Gunpowder Works and raising money to run events

6.3.9 Friends of Oare Gunpowder Works

One of the most valuable assets that the Country Park has is the Friends of Oare Gunpowder Works. This volunteer led and run group works alongside Swale Borough Council to help make the most of this community asset. The group is very active on the ground, running their own monthly task and working with the ranger every Thursday carrying out jobs around the Country Park. As well as this, the group is an active part of the Steering Group that make decisions about the park. Furthermore, the group are constituted and able to raise funds to help carry out work in the park. Most recently, £8000 was raised to revamp the interpretation at the park.

The work of the group has transformed the level of activity at Oare Gunpowder Works. Their dedication to the community resource is evident from top to bottom. The enthusiasm and dedication ensure that projects are moved forwards and that the Country Park always has a strong advocate.

The presence of the group can also provide support to run larger events at Oare and they have regularly helped to make the Artists in the Woods event a great success.

Friends objectives

- Ensure that the Friends of Oare Gunpowder Works are supported and given the opportunity to maximise their positive impact.
- Actively promote the work of the Friends and value their work

6.3.10 Volunteering

Volunteering is another of the success stories at Oare Gunpowder Works. The Friends of Oare Gunpowder Works run monthly tasks and give people the opportunity to simply turn up and get stuck in as well as to join the organising committee and help make decisions about what the group does.

Additionally, since the ranger has been employed, regular weekly task days have become even more popular. These now take place every Thursday. These regular events have greatly increased the amount of work that can be carried out on site and that is reflected in the increased ambition of this management plan compared to previous iterations.

The work of volunteers will be crucial to the implementation of this management plan. The amount of work that is being planned simply cannot be carried out by contractors as funds will not support this. Volunteers can make this plan happen. Additionally, the care and precision that volunteers can work with when cutting back scrub simply can't be achieved using heavy machinery. The high levels of skills within the volunteer group and their ability to use power tools has transformed what can be achieved at Oare.

Volunteering objectives

- To continue to offer high quality volunteering opportunities
- Provide training to key volunteers
- Recognise the contribution that volunteers make to the smooth running of the Country Park and for the things that can only be achieved because of the efforts of volunteers



Figure 32: Volunteers clearing vegetation from walls

7 Management recommendations and rationale

This section will outline some of the management recommendations that will be made within the work plan. This section simply aims to add detail and rationale to some of the more complex management prescriptions that are being proposed for Oare Gunpowder Works Country Park.

7.1 Management prescriptions throughout the site

The following recommendations can be applied throughout the site.

7.1.1 Monitor for hazards

Regular checks at Oare Gunpowder Works should be carried out by the ranger as well as volunteers. The ranger is on site regularly and members of the public will report issues via Facebook as well as by phoning The Council. It may be necessary to use contractors to carry out detailed tree inspections due to the high number of old trees and diseased ash trees. Items that need to be checked on a regular basis include:

- Path surfacing and boardwalks
- Fallen trees
- Entrances
- Seating
- Visitor Centre
- Fencing

7.1.2 Monitoring wildlife

Significant progress has been made over the last ten years to help understand the wildlife that uses Oare Gunpowder Works Country Park. There is more work needed in this area in order to establish baseline data for some species groups. For those key species that the site is being managed for ongoing monitoring programmes need to be established. These surveys will ultimately determine the success of the habitat management prescriptions.

Wildlife monitoring priorities

Baseline surveys (in approximate order of importance)	Long-term monitoring (not in order of priority)
Water voles and mink	Amphibians
Aquatic invertebrates	Reptiles
Flowering plants (a full survey should be completed if possible)	Birds (especially the schedule 1 species)
Fungi	Bat surveys are carried out annually as well as inspections of hibernation sites.

Moths

Ad hoc recording of odonata, hymenoptera
and lepidoptera

7.1.3 Legislation

It is important that management work does not lead to offences being committed. This relates to legislation protecting species as well as the regulation of tree felling and woodland management. It is recommended that the following is done to minimise the chances of committing an offence:

- Keep to the timing of works as stipulated in this management plan;
- Apply for a felling licence;
- Continue to survey for protected species and review this plan as well as best practice guidance on a regular basis.

7.2 Grassland prescriptions

There are three areas of grassland management at Oare Gunpowder Works. These three areas all require separate different management regimes

7.2.1 Area in depot (compartment 4)

This area doesn't require mowing as grass growth is very slow. In fact there is very little grass here at all. However, the hostile condition for plants makes it difficult for anything to grow, meaning niche species can thrive here. The management objective is simply to prevent the area being overtaken by sycamore, buddleia or other scrub. A once annual cutting back of vegetation should be sufficient to maintain this area. If scrub can slowly be pushed back this would be even more beneficial.

7.2.2 Boardwalk area

This area has received an annual cut for many years which has served to keep the area from closing over. However, this probably hasn't maximised the botanical diversity of the site. Consequently, some small changes are proposed:

1. Collect the arisings following the annual cut and leave them in a pile that may provide nesting and egg-laying opportunities for grass snakes, especially if they are left in an area that receives sun. If contractors are not able to do this, a volunteer task could achieve this.
2. Cut two small test areas with a mower or with hand tools in late April.
3. Cut the second area again at the end of June.

It is hoped that these trial plots will give a better understanding of how the area responds to different management.

7.2.3 Test range and other amenity areas

Amenity cuts take place when needed through the growing season at various parts of the site. Although the area that this is most visible is at the test range in compartment 1a, they also take place around the car park. This is covered by Swale Borough Council's agreement with external contractors, Blenwood.

Three zone ride management

Wildlife benefits when the interface or ecotone between different habitat types (grassland and woodland in our example) is 'soft' and gradual. To help achieve this, zonal ride management will be adopted to grade the change from grass to woodland and this is shown in the figure below. Zone 1 (is the well managed and mown area of the test range that that can be used by visitors; Zone 2 (approximately 5m from the path) would be cut once a year in autumn or winter; and Zone 3 (5 to 15m from the path) will be cut every five years during the winter and allowed to regrow. Zone 3 should be cut on a rotation with approximately 20% being cut each year. This is an activity that can be carried out by volunteers and this zone has now grown enough for this management to take place. Zonal management is currently only done on one side of the test range but after coppicing is instigated, the zonal management can take place on both sides. Cut wood can be used to create habitat piles where possible.

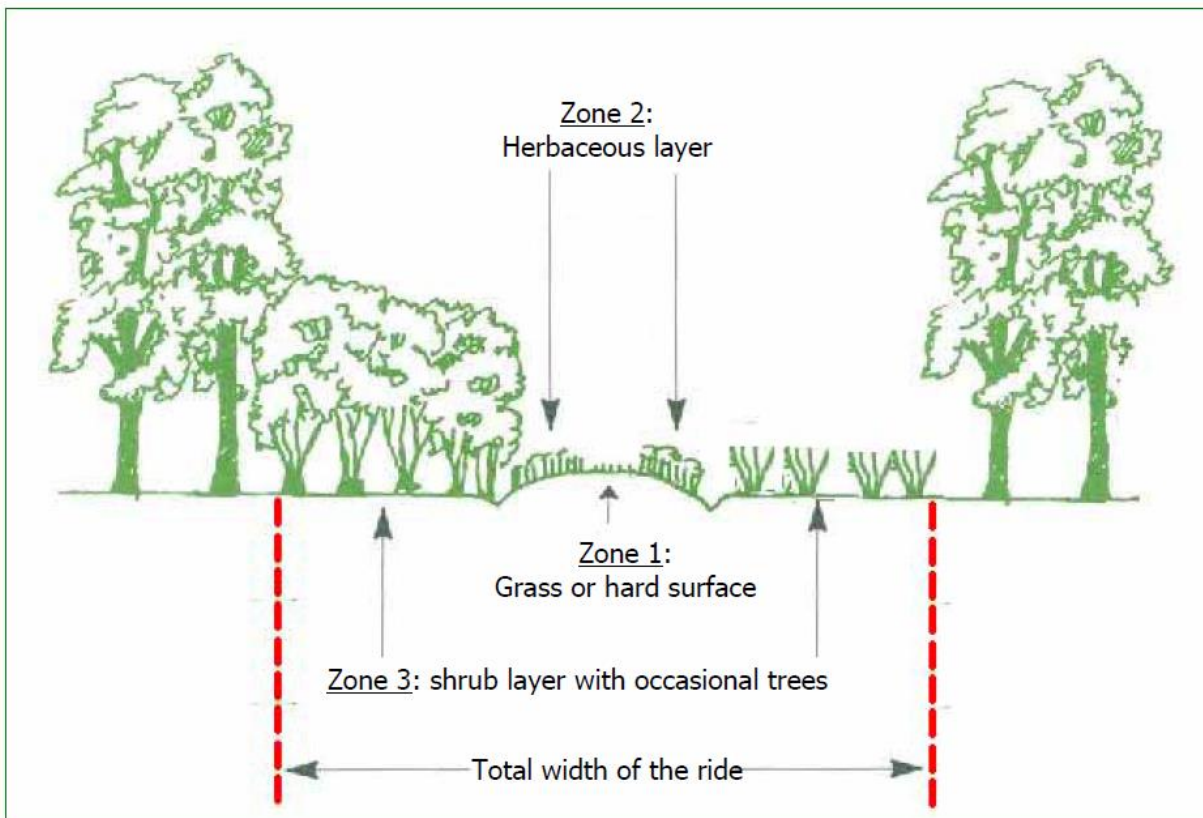


Figure 33: Three zone ride management. Source (Forestry Commission)

Oare Gunpowder Works - Grassland Management



Grassland Management

- Amenity cut
- Annual cut
- Cut April
- Cut April and June
- Cut every five years
- Cut scrub annually

Compartments

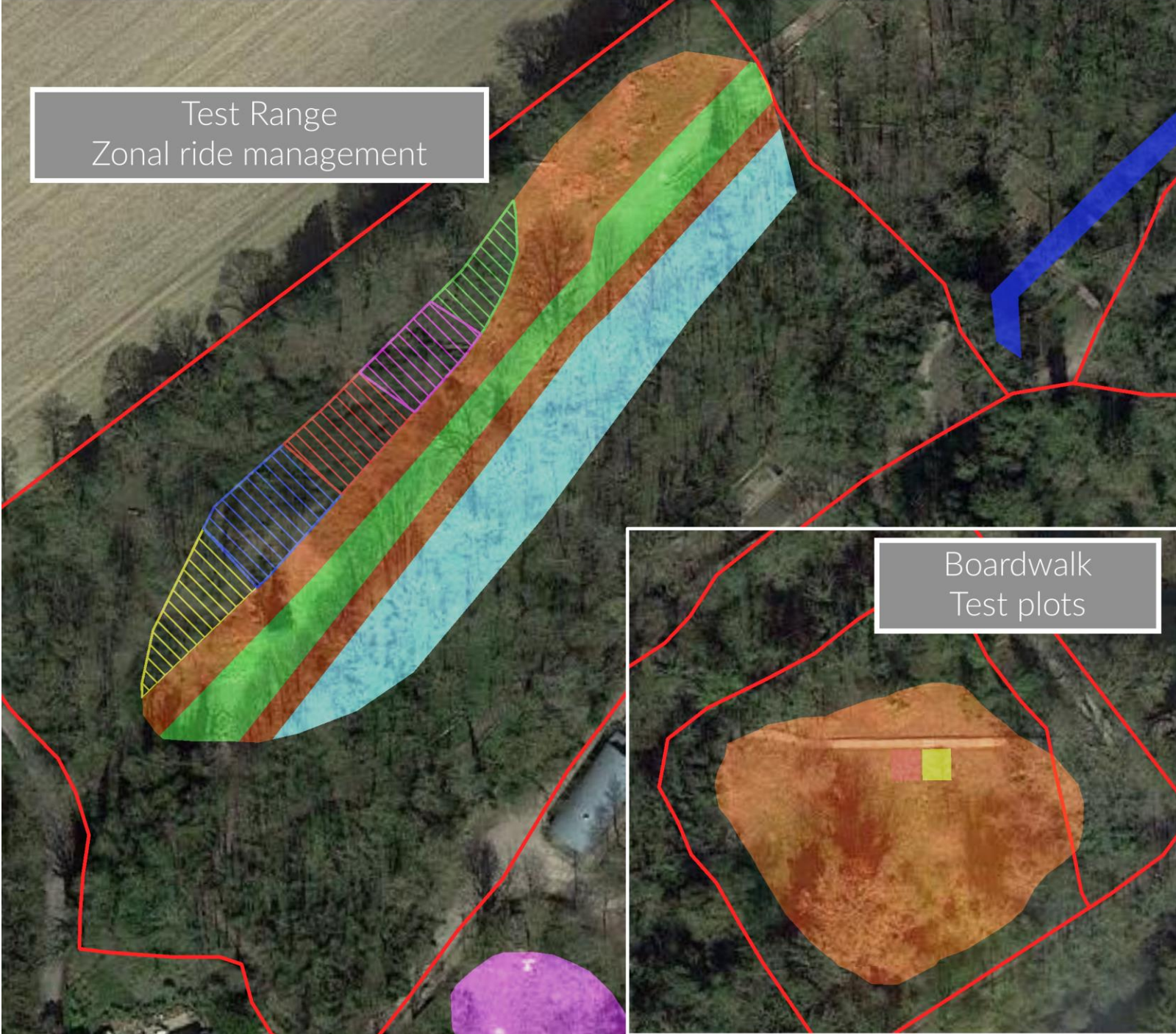
- 1a. Test Range
- 1b. Woodland
- 2a. The Leats
- 2b. Boardwalk
- 3. Lower Mill Pond
- 4. Visitor Centre

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Base map © Google Maps 2021

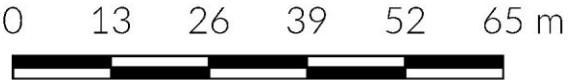
Oare Gunpowder Works - Grassland Management Detail



Grassland Management

- 2022/23
- 2023/24
- 2024/25
- 2025/26
- 2026/27
- Amenity cut
- Annual cut
- Cut April
- Cut April and June
- Cut every five years
- Cut scrub annually

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Base map © Google Maps 2021

7.3 Woodland prescriptions

The objectives of the woodland prescriptions at Oare Gunpowder Works are to:

- Introduce a coppicing regime in compartment 1;
- Identify minimal intervention areas;
- Introduce a short cycle coppice regime in compartment 3;
- Identify glade creation opportunities in compartment 2a.

These objectives will create structure within the treed areas of Oare Gunpowder Works and will provide suitable habitat for nightingale, numerous songbirds, mammals, reptiles and amphibians. It will also create suitable conditions with varying levels of shade for a variety of different plants.

The prescriptions within the plan are ambitious and would be costly if they were implemented by contractors. However, this is work that can be carried out by volunteers, particularly those that are given training in chainsaw work and brushcutting. The prescriptions made in this plan will be dependent upon the level of volunteering that can be facilitated and the plan should be amended as needed.

7.3.1 Minimum intervention areas

There are certain species that benefit from woodland that is left to mature naturally with no management other than maintaining boundaries and removing trees that may be hazardous to human health. A minimal intervention area was established as part of the last management plan and this will be retained. A second area has been added within compartment 3.

7.3.2 Coppicing (six-year rotation)

Oare Gunpowder Works had been identified as an area that may be suitable for nightingales. These birds increasingly are becoming associated with wet areas and it is felt that creating some areas of scrub and short-rotation coppice could be enough to attract them. At the very least, it will add some diversity to the woodland in compartment 3 and be beneficial for reptiles and plant species.

The areas identified for coppicing on a six-year rotation are largely areas of naturally regenerated trees with limited species diversity. The aim of the management is to create habitat that might be suitable for breeding nightingales, where most of the scrub is not taller than around two metres high. Six compartments have been identified within compartment 3 for the six-year rotation. These areas range in size from 250m² and 400m².

These areas should be cut to ground level once every six years in the years identified on the mapping. The outer edges of these compartments can be layered (pleached and laid down like in hedgelaying) to discourage human access though this may not be necessary. All coppicing should take place between October and early March before nesting starts.

Oare Gunpowder Works - Woodland Management



Wetland

Woodland Management

20 year coppice regime

6 year coppice regime

Cut every five years

Annual cut

Zonal ride management

Minimal intervention woodland

Compartments

1a. Test Range

1b. Woodland

2a. The Leats

2b. Boardwalk

3. Lower Mill Pond

4. Visitor Centre

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0 40 80 120 160 200 m



Base map © Google Maps 2021

Oare Gunpowder Works - Woodland Management Detail



Woodland Management Detail

- ⋯ 20 year coppice
- ⋯ 6 year coppice regime
- Annual cut
- Cut every five years

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0 30 60 90 120 150 m



Base map © Google Maps 2021

7.3.3 Coppicing (twenty-year rotation)

Areas within compartment 1 have been identified as suitable for the introduction of a twenty-year coppice rotation. This is a more traditional management regime for woodland. Twenty areas (or coups) have been identified, one of which should be cut each year. None of these coups are larger than 600m² or the equivalent of 25m by 25m. All coppicing should take place between October and early March before nesting starts.

Once these areas have been cut an attempt should be made to stop the sycamore from regrowing and to encourage all other tree species to coppice. This can be done by cutting into the stumps and by manually removing regrowth.

Sycamore saplings that appear in the newly coppiced areas should be removed by hand before they become established. The coppiced areas should also be replanted with native, locally sourced trees to help encourage species diversity. It is recommended that species that are already found in the plateau woodland are used as a priority.

7.3.4 Cut every five years

Five areas have been identified as areas to cut every five years. This will create a network of glades within the leats that will allow sunlight to reach both the woodland floor and the leats. The areas will begin to shade over again before being cut again. As with the twenty year coppice regime, limiting the ability of sycamore to coppice will be favoured.

7.3.5 Cut annually

One of the areas in compartment 2a will be cut annually. This can be done with strimmers and brushcutters and is an experiment to see what happens to the leat if an area is kept permanently free of trees. It also gives the chance for moisture loving plants to establish. This area can be compared to the areas that are cut just once every five years.

7.4 Wetland prescriptions

There is a substantial amount of uncertainty around the management of the leats in particular due to ongoing problems with leaks and flow rates. Until these are resolved it is difficult to give specific prescriptions for the leats. However, the cutting regime within compartment 2a should increase the amount of light that reaches the leats over the next five years and this could have a transformative effect on the plant life and invertebrate assemblage.

7.4.1 Pond management

A five year rotational cutting regime was suggested for the previous management plan. This proved impossible to achieve using hand tools and has since been abandoned. A digger was used to clear reeds in the interim period.

The problem with using a digger is that the cost of getting machinery onto site is so high that this can only be done occasionally. The consequence of this is that a large part of the pond is disturbed at a single visit. The rotational cutting regime attempted to stop this from happening. Consequently, it is recommended that only one third of the pond is cleared of reeds during a single visit. Ideally, there should be one visit from the digger in every management plan cycle and, where possible, different areas of the pond are cleared each visit. The logistics of accessing different parts of the pond will dictate whether this is actually possible.

7.4.2 Minimal intervention at Lower Mill Pond

There are areas of the reed bed that should be left to develop as scrub. These wet scrub areas will be used by birds that are tolerant of wet conditions. This will be easily achieved as some areas of the lake are inaccessible to a digger.

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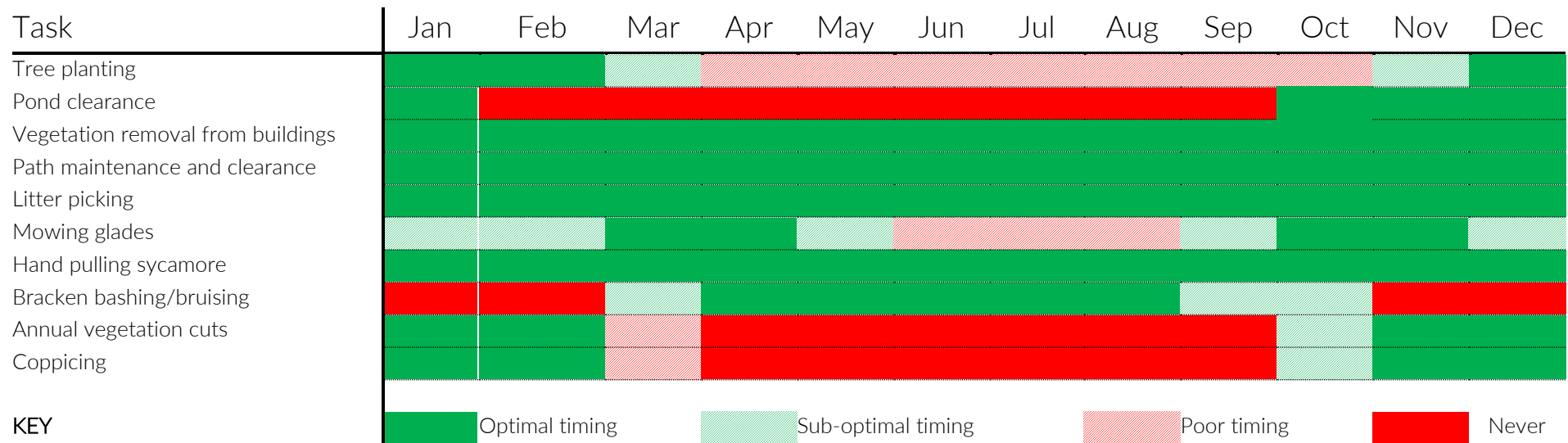
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Appendix 1: Timing of conservation tasks



Appendix 2: Species list

The following species list has been put together based on records collected by FOG volunteers, Kent Mammal Group, Kent Reptile and Amphibian Group and Kent Field Club. It has also been augmented by records contributed to iRecord as well as a walkover survey of the site by Mike Phillips of White Horse Ecology in August 2021. Like any species list, it is incomplete but also shows the great progress that has been made in recent years to better understand the wildlife present at OGWCP.

Table 1: Species list for Oare Gunpowder Works Country Park

Species	Scientific name	Compartment (if known)	Last recorded
Plants			
Yarrow	<i>Achillea millefolium</i>	3	2021
*Moschatel	<i>Adoxa moschatellina</i>	1a	2021
Agrimony	<i>Agrimonia eupatoria</i>	2a	2021
Water-plantain	<i>Alisma plantago-aquatica</i>	3	2021
Garlic Mustard	<i>Alliaria petiolata</i>	1a, 1b, 2a, 4	2021
*Ramsons	<i>Allium ursinum</i>	2b	2021
Scarlet Pimpernel	<i>Anagallis arvensis</i>	4	2021
*Wood Anemone	<i>Anemone nemorosa</i>	1a	2021
Wild Angelica	<i>Angelica sylvestris</i>	2b	2021
Cow Parsley	<i>Anthriscus sylvestris</i>	1a, 1b	2021
Fool's-water-cress	<i>Apium nodiflorum</i>	2a	2021
*Columbine	<i>Aquilegia vulgaris</i>		2018
Lesser Burdock	<i>Arctium minus</i>	1a, 1b, 2a, 3	2021
Mugwort	<i>Artemisia vulgaris</i>	1a, 3	2021
Lords-and-Ladies	<i>Arum maculatum</i>		2021
Common Michaelmas-daisy	<i>Aster novi-belgii x lanceolatus</i> = <i>A. x salignus</i>		2019
Daisy	<i>Bellis perennis</i>	1a	2021
White Bryony	<i>Bryonia dioica</i>	1a	2021
Butterfly-bush	<i>Buddleja davidii</i>	2a, 4	2021
Water-Starwort	<i>Callitriche sp.</i>	2a	2021
Marsh-marigold	<i>Caltha palustris</i>		2021
Hedge Bindweed	<i>Calystegia sepium</i>	1a, 2a, 2b	2021
*Nettle-leaved Bellflower	<i>Campanula trachelium</i>	1a	2021
Shepherd's-purse	<i>Capsella bursa-pastoris</i>		2018
Hairy Bitter-cress	<i>Cardamine hirsuta</i>		2018

Cuckooflower	<i>Cardamine pratensis</i>		2019
*Pendulous Sedge	<i>Carex pendula</i>	3	2021
Common Knapweed	<i>Centaurea nigra subsp. nigra</i>	2b	2021
Common Centaury	<i>Centaureum erythraea</i>		2019
Mouse-Ear	<i>Cerastium sp.</i>		2017
Rosebay Willowherb	<i>Chamerion angustifolium</i>	1a, 1b, 2a, 3, 4	2021
Fat-hen	<i>Chenopodium album</i>	1a, 3	2021
*Enchanter's-nightshade	<i>Circaea lutetiana</i>	1a, 1b, 2a	2021
Creeping Thistle	<i>Cirsium arvense</i>	1a, 2a, 2b, 4	2021
Spear Thistle	<i>Cirsium vulgare</i>	1a, 1b, 2a	2021
Traveller's-joy	<i>Clematis vitalba</i>	1a, 2a	2021
Field Bindweed	<i>Convolvulus arvensis</i>	2b	2021
Wild Carrot	<i>Daucus carota</i>	3	2021
Foxglove	<i>Digitalis purpurea</i>	1a	2021
Black Bryony	<i>Dioscorea communis</i>	3	2021
Wild Teasel	<i>Dipsacus fullonum</i>	2a, 4	2021
Male-fern	<i>Dryopteris filix-mas</i>	1b, 2a	2021
Great Willowherb	<i>Epilobium hirsutum</i>	2b	2021
Horsetail	<i>Equisetum sp.</i>		2018
Hemp-agrimony	<i>Eupatorium cannabinum</i>	2a, 2b, 3	2021
Snowdrop	<i>Galanthus sp.</i>		2021
Cleavers	<i>Galium aparine</i>	1a, 2b, 4	2021
Hedge Bedstraw	<i>Galium mollugo</i>		2019
*Woodruff	<i>Galium odoratum</i>		2018
Long-stalked Crane's-bill	<i>Geranium columbinum</i>		2019
Cut-leaved Crane's-bill	<i>Geranium dissectum</i>		2018
Dove's-foot Crane's-bill	<i>Geranium molle</i>		2021
Herb-Robert	<i>Geranium robertianum</i>	1a, 1b, 2a, 2b, 3	2021
Round-leaved Crane's-bill	<i>Geranium rotundifolium</i>		2018
Herb Bennet	<i>Geum urbanum</i>	1a, 1b, 3	2021
Ground-ivy	<i>Glechoma hederacea</i>	1a, 1b, 2a, 4	2021
Ivy	<i>Hedera helix</i>	1a, 1b, 2a, 3, 4	2021
Hogweed	<i>Heracleum sphondylium</i>	1a, 2a	2021
Bluebell	<i>Hyacinthoides non-scripta</i>	1a	2021
*Tutsan	<i>Hypericum androsaemum</i>	4	2021
*Imperforate St John's-wort	<i>Hypericum maculatum</i>	2b	2021
Perforate St. John's-Wort	<i>Hypericum perforatum</i>	4	2021

Square-stalked St John's-wort	<i>Hypericum tetrapterum</i>		2021
*Stinking Iris	<i>Iris foetidissima</i>	1a	2018
Yellow Iris	<i>Iris pseudacorus</i>		2021
Common Ragwort	<i>Jacobaea vulgaris</i>	1a, 2a, 4	2021
Soft-rush	<i>Juncus effusus</i>		2021
White Dead-nettle	<i>Lamium album</i>	1a	2020
Red Dead-nettle	<i>Lamium purpureum</i>	3	2021
Nipplewort	<i>Lapsana communis</i>	1b, 2b	2021
Common Duckweed	<i>Lemna minor</i>	2a	2021
Oxeye Daisy	<i>Leucanthemum vulgare</i>		2019
Wilson's Honeysuckle	<i>Lonicera nitida</i>	3	2021
Gypsywort	<i>Lycopus europaeus</i>	2a, 2b	2021
Purple-loosestrife	<i>Lythrum salicaria</i>	2a, 2b, 3	2021
Common Mallow	<i>Malva sylvestris</i>	3	2021
Water Mint	<i>Mentha aquatica</i>	2a, 2b	2021
Bogbean	<i>Menyanthes trifoliata</i>		2019
Dog's Mercury	<i>Mercurialis perennis</i>	1a, 1b	2021
Field Forget-me-not	<i>Myosotis arvensis</i>	1a	2021
Wood Forget-me-not	<i>Myosotis sylvatica</i>		2018
Daffodil	<i>Narcissus sp.</i>	1a	2017
White Water-lily	<i>Nymphaea alba</i>	3	2021
Water-Lily	<i>Nymphaea marliacea</i>		2020
Cotton Thistle	<i>Onopordum acanthium</i>		2019
Bee Orchid	<i>Ophrys apifera</i>	4	2017
Green Alkanet	<i>Pentaglottis sempervirens</i>		2018
Winter Heliotrope	<i>Petasites fragrans</i>	2a, 3	2021
Butterbur	<i>Petasites hybridus</i>		2018
Common Reed	<i>Phragmites australis</i>	3	2021
Hart's-tongue	<i>Phyllitis scolopendrium</i>	2a	2021
Bristly Oxtongue	<i>Picris echioides</i>	1a, 2a	2021
Greater Plantain	<i>Plantago major</i>	1a, 1b, 2a, 3	2021
*Solomon's-seal	<i>Polygonatum multiflorum</i>		2018
Knotgrass	<i>Polygonum aviculare</i>	1a	2021
Creeping Cinquefoil	<i>Potentilla reptans</i>	4	2021
Cowslip	<i>Primula veris</i>		2019
*Primrose	<i>Primula vulgaris</i>		2021
Selfheal	<i>Prunella vulgaris</i>	1b, 2a, 4	2021
Bracken	<i>Pteridium aquilinum</i>	1a	2021
Common Fleabane	<i>Pulicaria dysenterica</i>	2b	2021
Lesser Celandine	<i>Ranunculus ficaria</i>	1a	2021

Creeping Buttercup	<i>Ranunculus repens</i>	1a, 1b, 2a, 2b, 3	2021
Bramble	<i>Rubus fruticosus</i> agg.	1a, 1b, 2a, 3, 4	2021
Common Sorrel	<i>Rumex acetosa</i>		2019
Sheep's Sorrel	<i>Rumex acetosella</i>		2019
Broad-leaved Dock	<i>Rumex obtusifolius</i>	2b	2021
Wood Dock	<i>Rumex sanguineus</i>	1a	2018
Dock	<i>Rumex</i> sp.	1b, 2a, 2b, 3, 4	2021
Sanicle	<i>Sanicula europaea</i>		2018
Soapwort	<i>Saponaria officinalis</i>	4	2021
Water Figwort	<i>Scrophularia auriculata</i>	2a	2021
Red Campion	<i>Silene dioica</i>	1a, 4	2021
Bittersweet	<i>Solanum dulcamara</i>	1a, 2a, 3	2021
Prickly Sow-thistle	<i>Sonchus asper</i>	1a	2021
Smooth Sow-thistle	<i>Sonchus oleraceus</i>	1b	2021
Hedge Woundwort	<i>Stachys sylvatica</i>		2021
Common Chickweed	<i>Stellaria media</i>		2018
Snowberry	<i>Symphoricarpos albus</i>	4	2021
Common Comfrey	<i>Symphytum officinale</i>	1a, 1b, 2a, 4	2021
Russian Comfrey	<i>Symphytum officinale</i> x <i>asperum</i> = <i>S. x uplandicum</i>		2017
White Comfrey	<i>Symphytum orientale</i>		2021
Dandelion	<i>Taraxacum officinale</i> agg.		2021
Upright Hedge-parsley	<i>Torilis japonica</i>	2a	2021
Goat's-beard	<i>Tragopogon pratensis</i>		2019
White Clover	<i>Trifolium repens</i>		2017
Coltsfoot	<i>Tussilago farfara</i>	2a	2021
Reed Mace	<i>Typha latifolia</i>	2a, 2b, 3	2021
Common Nettle	<i>Urtica dioica</i>	1a, 1b, 2a, 2b, 3, 4	2021
Great Mullein	<i>Verbascum thapsus</i>	4	2021
Vervain	<i>Verbena officinalis</i>	4	2021
Hybrid Verbena	<i>Verbena x hybrida</i>		2019
Germander Speedwell	<i>Veronica chamaedrys</i>	1a, 2a, 4	2021
Ivy-leaved Speedwell	<i>Veronica hederifolia</i>	1a	2021
Common Vetch	<i>Vicia sativa</i>		2018
*Sweet Violet	<i>Viola odorata</i>		2020
Common Dog-violet	<i>Viola riviniana</i>		2019
*Ivy-leaved Bellflower	<i>Wahlenbergia hederacea</i>		2017

* Ancient woodland indicator

Trees

*Field Maple	<i>Acer campestre</i>	1a, 3, 4	2021
#Sycamore	<i>Acer pseudoplatanus</i>	1a, 1b, 2a, 2b, 3, 4	2021
Horse-chestnut	<i>Aesculus hippocastanum</i>	1b, 2a, 2b, 3, 4	2021
#Italian Alder	<i>Alnus cordata</i>	4	2021
*Alder	<i>Alnus glutinosa</i>	1a, 2a, 3, 4	2021
Silver Birch	<i>Betula pendula</i>	1a, 2a	2021
#Birch	<i>Betula sp.</i>	4	2021
*Hornbeam	<i>Carpinus betulus</i>	1a	2021
Dogwood	<i>Cornus sanguinea</i>	1a, 2a, 2b, 4	2021
Hazel	<i>Corylus avellana</i>	1a, 2a, 3	2021
Hawthorn	<i>Crataegus monogyna</i>	1a, 1b, 2a, 3, 4	2021
*Spindle	<i>Euonymus europaeus</i>	1a	2017
Beech	<i>Fagus sylvatica</i>	1a, 1b	2021
Ash	<i>Fraxinus excelsior</i>	1a, 1b, 2a, 3, 4	2021
*Holly	<i>Ilex aquifolium</i>	1a, 1b, 2a, 3	2021
Wild Privet	<i>Ligustrum vulgare</i>	1a, 2a	2021
Apple	<i>Malus sp.</i>	1a, 2a, 4	2021
Scots Pine	<i>Pinus sylvestris</i>	1a	2021
#London Plane	<i>Platanus occidentalis x orientalis</i> = <i>P. x hispanica</i>	2a	2021
*Wild Cherry	<i>Prunus avium</i>	1a, 1b, 2a, 2b, 3	2021
#Cherry Laurel	<i>Prunus laurocerasus</i>	1b	2021
Blackthorn	<i>Prunus spinosa</i>	1a, 2a, 4	2021
*Pear	<i>Pyrus communis</i>	4	2021
#Turkey Oak	<i>Quercus cerris</i>	3	2021
#Evergreen Oak	<i>Quercus ilex</i>	3	2021
Pedunculate Oak	<i>Quercus robur</i>	1a, 2a, 3	2021
Red Currant	<i>Ribes rubrum</i>	1a	2021
Flowering Currant	<i>Ribes sanguineum</i>		2021
Field-rose	<i>Rosa arvensis</i>	3	2021
Dog-rose	<i>Rosa canina</i>	2a, 3	2021
Goat Willow	<i>Salix caprea</i>	1a, 2a, 2b, 3, 4	2021
Willow	<i>Salix sp.</i>	2a, 3	2021
Elder	<i>Sambucus nigra</i>	1a, 1b, 2a, 2b, 3, 4	2021
#Wellingtonia	<i>Sequoiadendron giganteum</i>	1a	2021
*Rowan	<i>Sorbus aucuparia</i>	1a, 2b	2021
Yew	<i>Taxus baccata</i>	2a, 3	2021

*Small-leaved Lime	<i>Tilia cordata</i>	2a	2021
*Wych Elm	<i>Ulmus glabra</i>	1a, 1b, 2a	2021
English Elm	<i>Ulmus procera</i>	1a, 1b	2021
Wayfaring-tree	<i>Viburnum lantana</i>	4	2021
Guelder-rose	<i>Viburnum opulus</i>	1a, 2a, 2b, 4	2021
* Ancient woodland indicator # non-native species			

Birds

Sparrowhawk	<i>Accipiter nisus</i>		2021
Reed Warbler	<i>Acrocephalus scirpaceus</i>		2021
Long-tailed Tit	<i>Aegithalos caudatus</i>		2021
*Kingfisher	<i>Alcedo atthis</i>		2020
Teal	<i>Anas crecca</i>		2019
Mallard	<i>Anas platyrhynchos</i>		2021
Greylag Goose	<i>Anser anser</i>		2021
Tufted Duck	<i>Aythya fuligula</i>		2021
Buzzard	<i>Buteo buteo</i>		2020
Goldfinch	<i>Carduelis carduelis</i>		2021
Treecreeper	<i>Certhia familiaris</i>		2021
*Cetti's Warbler	<i>Cettia cetti</i>		2015
Black-headed Gull	<i>Chroicocephalus ridibundus</i>		2020
Jackdaw	<i>Coloeus monedula</i>		2021
Stock Dove	<i>Columba oenas</i>		2021
Woodpigeon	<i>Columba palumbus</i>		2021
Carrion Crow	<i>Corvus corone</i>		2021
Blue Tit	<i>Cyanistes caeruleus</i>		2021
Mute Swan	<i>Cygnus olor</i>		2021
House Martin	<i>Delichon urbicum</i>		2017
Great Spotted Woodpecker	<i>Dendrocopos major</i>		2021
Robin	<i>Erithacus rubecula</i>		2021
Hobby	<i>Falco subbuteo</i>		2019
Kestrel	<i>Falco tinnunculus</i>		2021
Chaffinch	<i>Fringilla coelebs</i>		2021
Brambling	<i>Fringilla montifringilla</i>		2018
Coot	<i>Fulica atra</i>		2021
Moorhen	<i>Gallinula chloropus</i>		2021
Jay	<i>Garrulus glandarius</i>		2021
Swallow	<i>Hirundo rustica</i>		2018
Herring Gull	<i>Larus argentatus</i>		2021

Gadwall	<i>Mareca strepera</i>	2020
Red Kite	<i>Milvus milvus</i>	2017
Pied Wagtail	<i>Motacilla alba yarrellii</i>	2018
Grey Wagtail	<i>Motacilla cinerea</i>	2021
Great Tit	<i>Parus major</i>	2021
Coal Tit	<i>Periparus ater</i>	2019
Cormorant	<i>Phalacrocorax carbo</i>	2020
Chiffchaff	<i>Phylloscopus collybita</i>	2021
Magpie	<i>Pica pica</i>	2021
Green Woodpecker	<i>Picus viridis</i>	2021
Dunnock	<i>Prunella modularis</i>	2021
*Firecrest	<i>Regulus ignicapilla</i>	2021
Goldcrest	<i>Regulus regulus</i>	2021
Nuthatch	<i>Sitta europaea</i>	2020
Siskin	<i>Spinus spinus</i>	2021
Common Tern	<i>Sterna hirundo</i>	2017
Collared Dove	<i>Streptopelia decaocto</i>	2021
Tawny Owl	<i>Strix aluco</i>	2020
Blackcap	<i>Sylvia atricapilla</i>	2021
Little Grebe	<i>Tachybaptus ruficollis</i>	2020
Wren	<i>Troglodytes troglodytes</i>	2021
Redwing	<i>Turdus iliacus</i>	2020
Blackbird	<i>Turdus merula</i>	2021
Song Thrush	<i>Turdus philomelos</i>	2021
Mistle Thrush	<i>Turdus viscivorus</i>	2021

* Wildlife & Countryside Act Schedule 1 listed species

Fungi

Haresfoot Inkcap	<i>Coprinopsis lagopus var. lagopus</i>	2018
Inkcap	<i>Coprinus</i>	2020
King Alfred's Cakes	<i>Daldinia concentrica</i>	2015

Fish

European Eel	<i>Anguilla anguilla</i>	2018
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Beetles

7-spot Ladybird	<i>Coccinella septempunctata</i>	2019
Great Diving Beetle	<i>Dytiscus marginalis</i>	2018
Glow-worm	<i>Lampyrus noctiluca</i>	2018
22-spot Ladybird	<i>Psyllobora vigintiduopunctata</i>	2018

24-spot Ladybird	<i>Subcoccinella vigintiquattuorpunctata</i>	2019
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Butterflies

Peacock	<i>Aglais io</i>	2021
Orange-tip	<i>Anthocharis cardamines</i>	2021
Silver-washed Fritillary	<i>Argynnis paphia</i>	2019
Holly Blue	<i>Celastrina argiolus</i>	2018
Brimstone	<i>Gonepteryx rhamni</i>	2021
Meadow Brown	<i>Maniola jurtina</i>	2021
Large Skipper	<i>Ochlodes sylvanus</i>	2019
Speckled Wood	<i>Pararge aegeria</i>	2021
Large White	<i>Pieris brassicae</i>	2021
Green-veined White	<i>Pieris napi</i>	2021
Small White	<i>Pieris rapae</i>	2021
Comma	<i>Polygonia c-album</i>	2021
Gatekeeper	<i>Pyronia tithonus</i>	2020
Red Admiral	<i>Vanessa atalanta</i>	2021
Painted Lady	<i>Vanessa cardui</i>	2019

Moths

Magpie Moth	<i>Abraxas grossulariata</i>	2019
Spectacle	<i>Abrostola triplasia</i> (Linn.)	2014
	<i>Acleris shepherdana</i> (Steph.)	2014
	<i>Agriphila straminella</i> [D.& S.]	2014
	<i>Agriphila tristella</i> [D.& S.]	2014
	<i>Blastobasis adustella</i> (Wals.)	2014
Common Wave	<i>Cabera exanthemata</i> (Scop.)	2014
Light Emerald	<i>Campaea margaritata</i> (Linn.)	2014
	<i>Cataclysta lemnata</i> (Linn.)	2014
Red Underwing	<i>Catocala nupta</i>	2021
Green Carpet	<i>Colostygia pectinataria</i> (Knoch)	2014
Scalloped Oak	<i>Crocallis elinguaris</i> (Linn.)	2014
Tree Lichen Beauty	<i>Cryphia algae</i> (Fabr.)	2014
	<i>Cydia splendana</i> (Hubn.)	2014
Burnished Brass	<i>Diachrysis chrysitis</i> (Linn.)	2014
Pebble Prominent	<i>Eligmodonta ziczac</i> (Linn.)	2014
	<i>Epiphyas postvittana</i> (Walk.)	2014
Common Carpet	<i>Epirrhoe alternata</i> (Mull.)	2014
	<i>Eudonia mercurella</i> (Linn.)	2014
Tawny Speckled Pug	<i>Eupithecia icterata</i> (Vill.)	2014

Wax Moth	<i>Galleria mellonella</i> (Linn.)	2014
Vine's Rustic	<i>Hoplodrina ambigua</i> [D.& S.]	2014
Snout	<i>Hypena proboscidalis</i> (Linn.)	2014
Riband Wave	<i>Idaea aversata</i> (Linn.)	2014
Old Lady	<i>Mormo maura</i>	2017
Common Wainscot	<i>Mythimna pallens</i> (Linn.)	2014
Lesser Yellow Underwing	<i>Noctua comes</i> (Hubn.)	2014
Broad-bordered Yellow Underwing	<i>Noctua fimbriata</i> (Schreb.)	2014
Lesser Broad-bordered Yellow Underwing	<i>Noctua janthe</i> (Borkh.)	2014
Large Yellow Underwing	<i>Noctua pronuba</i> (Linn.)	2014
Iron Prominent	<i>Notodonta dromedarius</i> (Linn.)	2014
Flame Shoulder	<i>Ochropleura plecta</i> (Linn.)	2014
	<i>Olethreutes lacunana</i> [D.& S.]	2014
Brimstone Moth	<i>Opisthograptis luteolata</i> (Linn.)	2014
	<i>Pandemis corylana</i> (Fabr.)	2014
	<i>Parapoynx stratiotata</i> (Linn.)	2014
Willow Beauty	<i>Peribatodes rhomboidaria</i> [D.& S.]	2014
Angle Shades	<i>Phlogophora meticulosa</i> (Linn.)	2014
Ruby Tiger	<i>Phragmatobia fuliginosa</i> (Linn.)	2014
	<i>Pleuroptya ruralis</i> (Scop.)	2014
Maple Prominent	<i>Ptilodontella cucullina</i> [D.& S.]	2014
Common Purple & Gold	<i>Pyrausta purpuralis</i>	2021
Straw Dot	<i>Rivula sericealis</i> (Scop.)	2014
Purple Thorn	<i>Selenia tetralunaria</i>	2021
Cinnabar	<i>Tyria jacobaeae</i>	2017
Setaceous Hebrew Character	<i>Xestia c-nigrum</i> (Linn.)	2014
Square-spot Rustic	<i>Xestia xanthographa</i> [D.& S.]	2014
Dragonflies and damselflies		
Southern Migrant Hawker	<i>Aeshna affinis</i>	2021
Brown Hawker	<i>Aeshna grandis</i>	2021
Migrant Hawker	<i>Aeshna mixta</i>	2021
Emperor Dragonfly	<i>Anax imperator</i>	2017
Banded Demoiselle	<i>Calopteryx splendens</i>	2021
Beautiful Demoiselle	<i>Calopteryx virgo</i>	2021
Willow Emerald Damselfly	<i>Chalcolestes viridis</i>	2021

Azure Damselfly	<i>Coenagrion puella</i>	2018
Common Blue Damselfly	<i>Enallagma cyathigerum</i>	2020
Red-eyed Damselfly	<i>Erythromma najas</i>	2018
Small Red-eyed Damselfly	<i>Erythromma viridulum</i>	2016
Blue-tailed Damselfly	<i>Ischnura elegans</i>	2021
Black-tailed Skimmer	<i>Orthetrum cancellatum</i>	2017
Large Red Damselfly	<i>Pyrrhosoma nymphula</i>	2017
Ruddy Darter	<i>Sympetrum sanguineum</i>	2021
Common Darter	<i>Sympetrum striolatum</i>	2020

Hymenoptera

Red-tailed Bumblebee	<i>Bombus lapidarius</i>	2017
White-tailed Bumblebee	<i>Bombus lucorum</i>	2016
Common Carder Bee	<i>Bombus pascuorum</i>	2017
Buff-tailed Bumblebee	<i>Bombus terrestris</i>	2014
Vestal Cuckoo Bee	<i>Bombus vestalis</i>	2021
Hornet	<i>Vespa crabro</i>	2019

Other insects

Dock Bug	<i>Coreus marginatus</i>	2015
Hairy Shieldbug	<i>Dolycoris baccarum</i>	2015
A true fly	<i>Anthomyia liturata</i>	2009
A true fly	<i>Anthomyia procellaris</i>	2016
Dotted Bee-fly	<i>Bombylius discolor</i>	2019
A true fly	<i>Botanophila fugax</i>	2016
A true fly	<i>Botanophila fugax</i>	2013
A true fly	<i>Botanophila fugax</i>	2010
A true fly	<i>Delia florilega</i>	2013
A true fly	<i>Delia platura</i>	2016
A true fly	<i>Delia radicum</i>	2016
A true fly	<i>Eristalis pertinax</i>	2019
A true fly	<i>Heteromyza rotundicornis</i>	2010
A true fly	<i>Hydrophoria ruralis</i>	2016
A true fly	<i>Hylemya vagans</i>	2016
A true fly	<i>Hylemyza partita</i>	2016
A true fly	<i>Lasiomma strigilatum</i>	2010
A true fly	<i>Myathropa florea</i>	2020
A true fly	<i>Paregle audacula</i>	2016

A true fly	<i>Pegoplata annulata</i>	2016
A true fly	<i>Pegoplata infirma</i>	2016
A true fly	<i>Pegoplata nigroscutellata</i>	2013
A true fly	<i>Sarcophaga bulgarica</i>	2010
A true fly	<i>Sarcophaga dissimilis</i>	2016
A true fly	<i>Sarcophaga incisilobata</i>	2010
A true fly	<i>Sarcophaga vagans</i>	2010
A true fly	<i>Sarcophaga variegata</i>	2016
A true fly	<i>Suillia variegata</i>	2016
Hoverfly	<i>Syrphidae sp.</i>	2020
A true fly	<i>Syrphus sp.</i>	2019
A true fly	<i>Tephrochlaena oraria</i>	2014
A true fly	<i>Tephrochlamys rufiventris</i>	2010
A true fly	<i>Trixoscelis similis</i>	2010
A true fly	<i>Volucella pellucens</i>	2021
Hornet Hoverfly	<i>Volucella zonaria</i>	2021
A true fly	<i>Zaphne divisa</i>	2012

Bats

*Daubenton's Bat	<i>Myotis daubentonii</i>	2017
*Natterer's Bat	<i>Myotis nattereri</i>	2016
#Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	2017
#\$Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	2017
*#Nathusius' Pipistrelle	<i>Pipistrellus nathusii</i>	2017
*Long-Eared Bat Brown	<i>Plecotus auritus</i>	2017
* Hibernating animals observed # Summer roost \$ Maternity roost		

Other Mammals

Yellow-necked Mouse	<i>Apodemus flavicollis</i>	2019
Wood Mouse	<i>Apodemus sylvaticus</i>	2019
Bank Vole	<i>Myodes glareolus</i>	2019
European Rabbit	<i>Oryctolagus cuniculus</i>	2021
Eastern Grey Squirrel	<i>Sciurus carolinensis</i>	2021
European Mole	<i>Talpa europaea</i>	2019
Red Fox	<i>Vulpes vulpes</i>	2021

Reptiles

Slow-worm	<i>Anguis fragilis</i>	1a, 1b, 2a, 2b, 3, 4	2017
Grass Snake	<i>Natrix helvetica</i>	1a, 2a, 2b	2020

Amphibians

Palmate Newt	<i>Lissotriton helveticus</i>	2a, 3	2018
Smooth Newt	<i>Lissotriton vulgaris</i>	2a, 3	2018
Marsh Frog	<i>Pelophylax ridibundus</i>	1a, 2a, 3	2018
Common Frog	<i>Rana temporaria</i>	2a	2015