

Windlemere SANG Surrey Heath

Off-site Solutions for Biodiversity Net Gain (BNG) within
Surrey Heath



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An Opportunity for Biodiversity

The Environment Act of 2021 has taken a great step towards safeguarding our natural environment by making it mandatory to demonstrate a measurable biodiversity net gain (BNG) in new developments.

The BNG Policy is intended to ensure that development supports nature and the government's environmental objectives rather than against them. The regulation recognises that BNG may require offsite provision to demonstrate the minimum 10% BNG requirement. This new regulation has allowed Surrey Heath Borough Council to explore new opportunities to improve biodiversity within the area.

Windlemere SANG's off-site solution will create a strategic offset site to meet the potential demand of forthcoming development within Surrey Heath. By creating habitats at a landscape scale, the best biodiversity gains can be delivered most cost-effectively and efficiently.

The Project

Biodiversity plays a vital role in the processes that support all life on Earth, including humans. A diverse variety of animals, plants, and microorganisms is crucial for sustaining healthy ecosystems that supply us with the air we breathe and the food we consume.

The vision for Windlemere SANG is to develop a site that is abundant in biodiversity, comprising of a blend of species-rich grassland, native woodland, native mixed scrub, and ponds. By enhancing habitats and implementing long-term management strategies, Windlemere will be able to drive improvements in a wide range of ecosystems.

To enable this, we have;

- Completed Baseline surveys and condition assessment
- Undertaken Statutory Metric Biodiversity calculations
- Tested soils;
- Considered the project design and proposals; and
- Produced a 30-year Habitat Management and Monitoring Plan



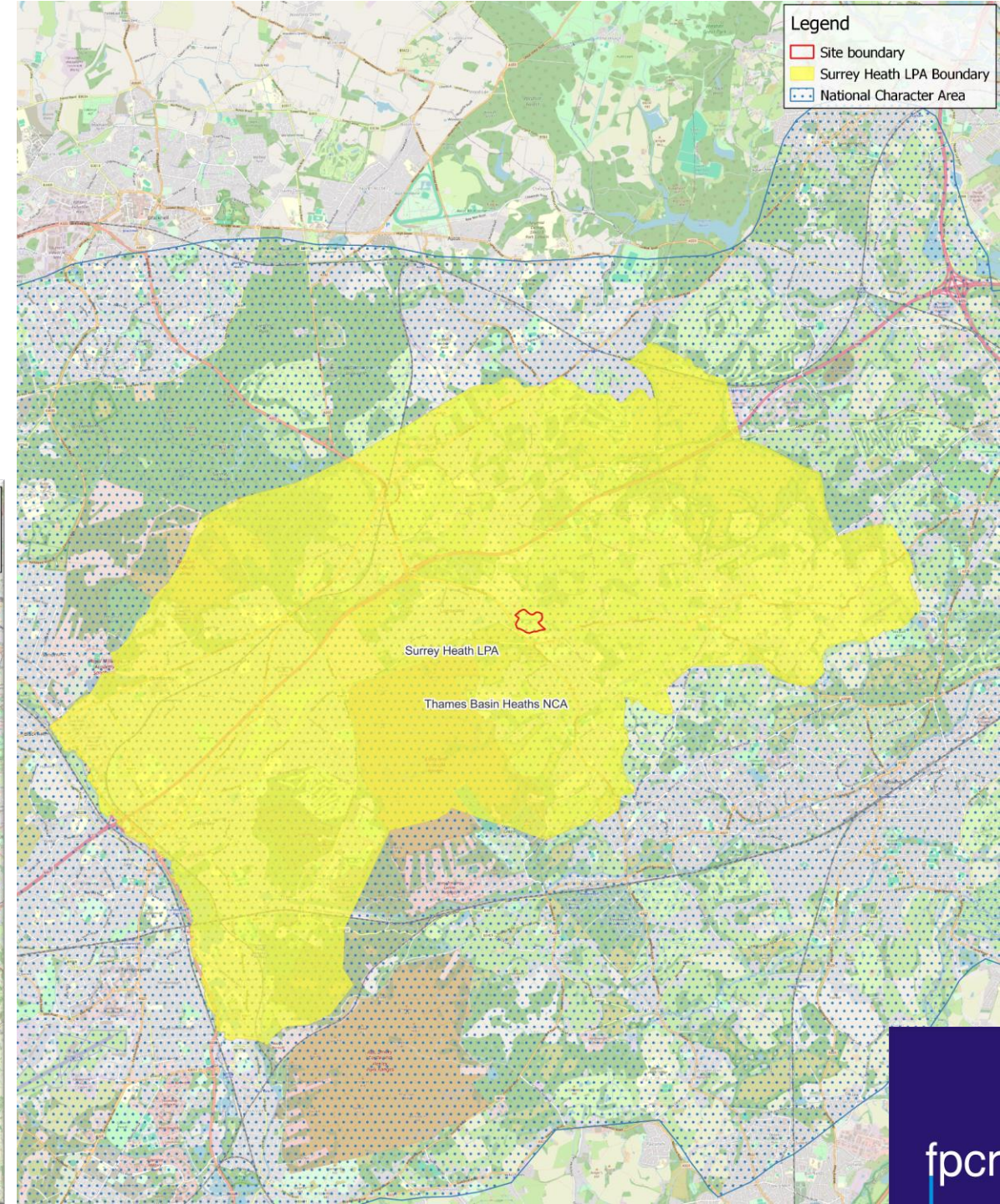
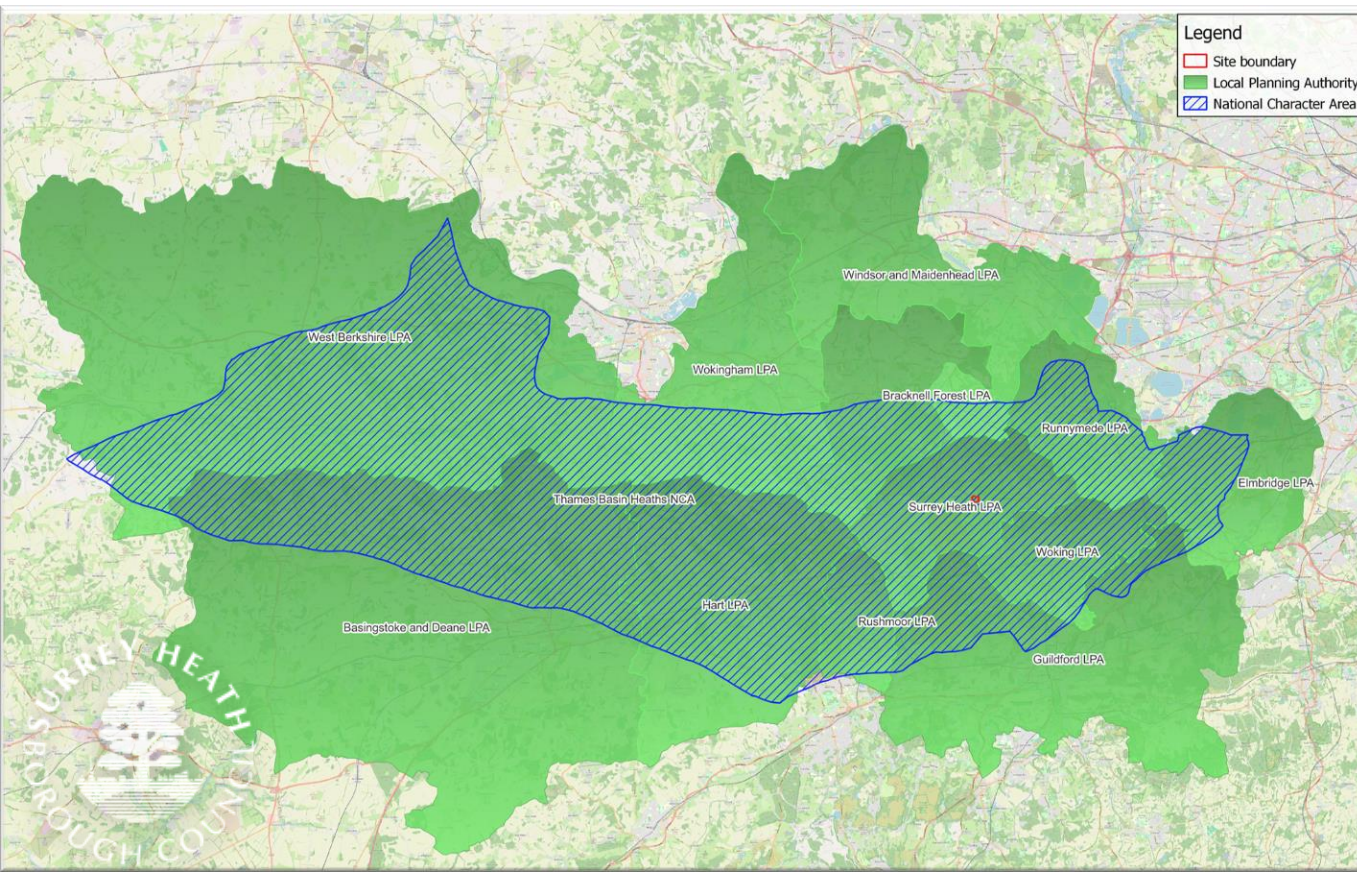
Site Background

- Windlemere SANG is a 15-ha former golf course that now protects Thames Basin Heath SPA from increased recreational impacts by new development in the area.
- SHBC acquired the site in 2018 and has been working to increase its biodiversity and provide public access.
- Some recognisable golf club features, such as bunkers and rows of conifer trees that formed the fairway, still exist.
- Four ponds on-site support a population of the protected Great Crested Newt (GCN).
- The site features a 2.3km circular walk and is frequently used and enjoyed by dog walkers.
- Habitats on-site include species-poor grassland habitats, mixed and coniferous woodland, ponds, and non-native shrubs.
- Despite the move towards rewilding the site, the majority of habitat are still impacted by the previous management.
- In 2022, a small community orchard was planted with 46 fruit trees, including apples, pears, plums, cherries and walnuts.

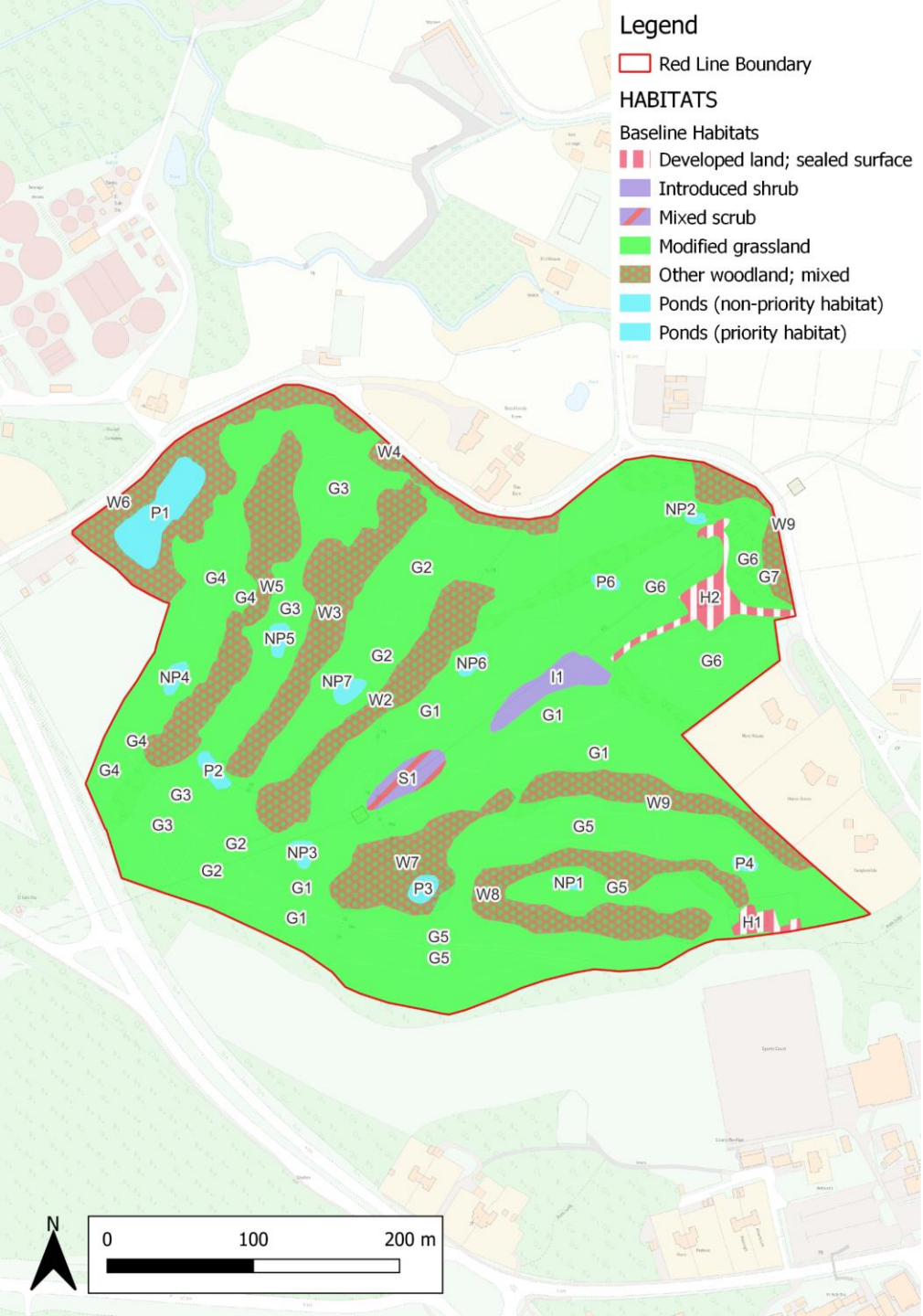


Location

- Located to the north of West End and southeast of Lightwater
- Within Surrey Heath LPA
- Within Thames Basin Heaths National Character Area (NCA)



Baseline Habitats





Design Principles

The key Principles that underpinned the project from the beginning were:

- Careful design to serve as both a SANG providing an appealing recreational environment and a biodiversity unit bank for BNG, ensuring that both purposes complement each other.
- Set realistic but ambitious goals within the limits of the site's primary purpose as a SANG.
- Provide additionality and commit to exceed the biodiversity requirements of the SANG.
- Prioritise ecological considerations over numerical ones.
- Follow the strategic aims of the Lawton Review to provide bigger and better areas for wildlife and nature conservation.

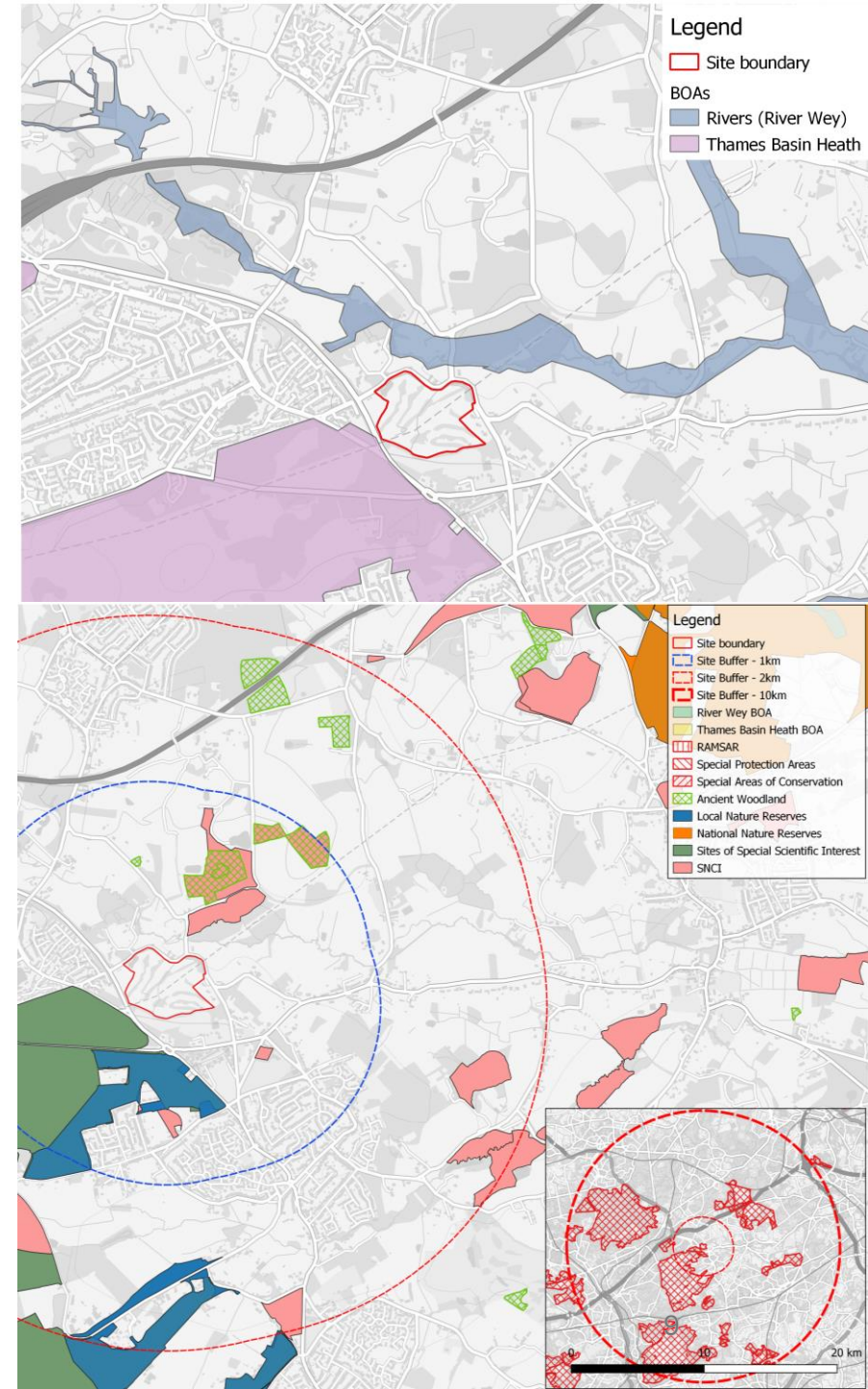
Landscape Scale Connectivity

This location is strategically placed to support biodiversity. It is close to various protected sites for nature and between two biodiversity opportunity areas, less than 100m away. Nearby protected sites include:

- Thames Basin Heaths SPA, Thursley, Ash, Pirbright, Chobham SAC, and Colney Bog and Bagshot Heath SSSI are all approximately 70 m southwest.
- There are Sites of Special Scientific Interest close to the site, with the largest, Colony Bog and Bagshot Heath SSSI, located 90m south. It comprises heathland, woodland, and acid grassland.
- Several woodland blocks are located near the site, including ancient woodland approx. 330m from the northern boundary.

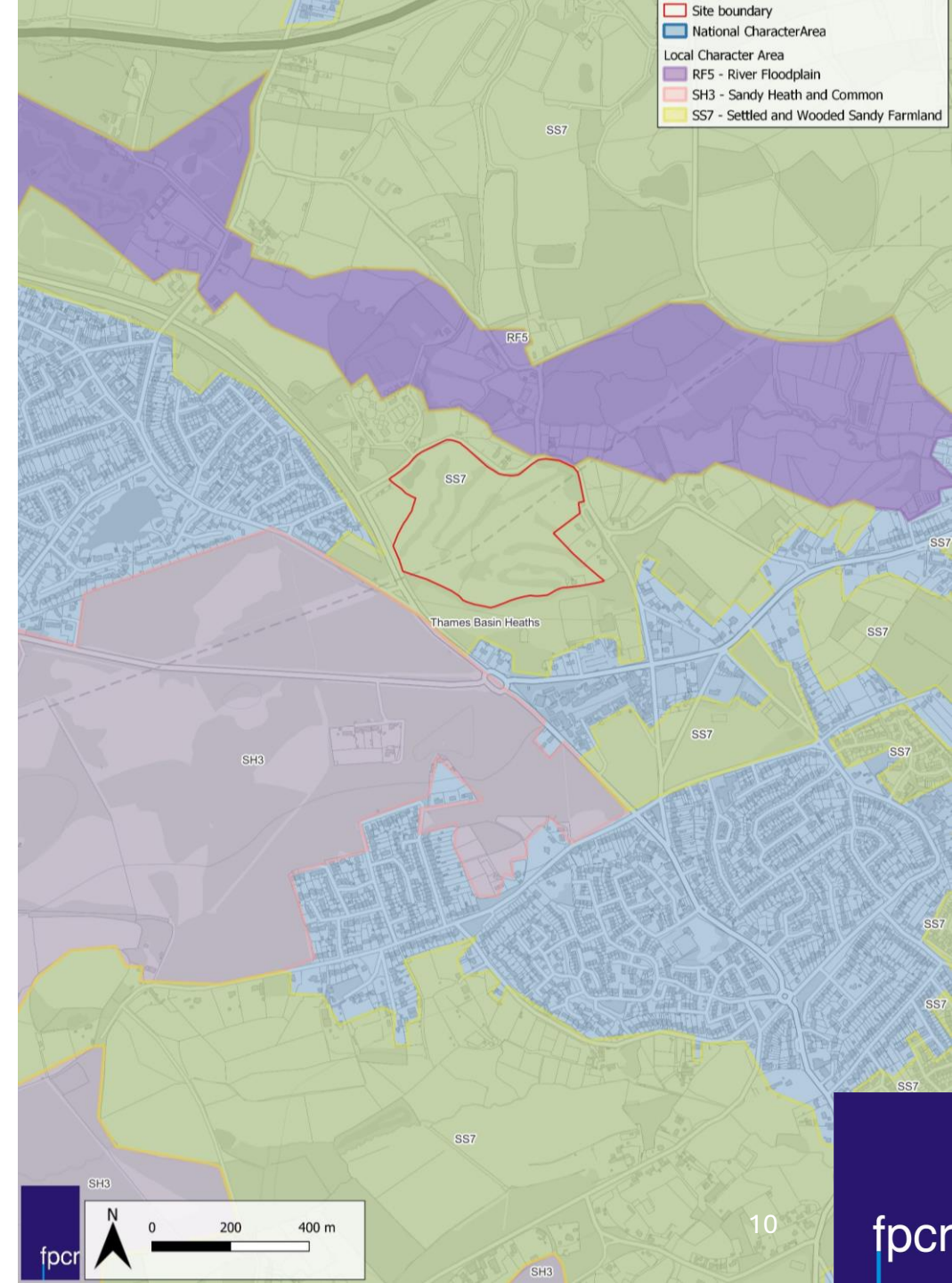
The project will connect areas of high ecological value, providing important ecological connectivity to support landscape-scale recovery.

The proposed mosaic of grassland, ponds, and deciduous woodland creates an ideal green corridor.



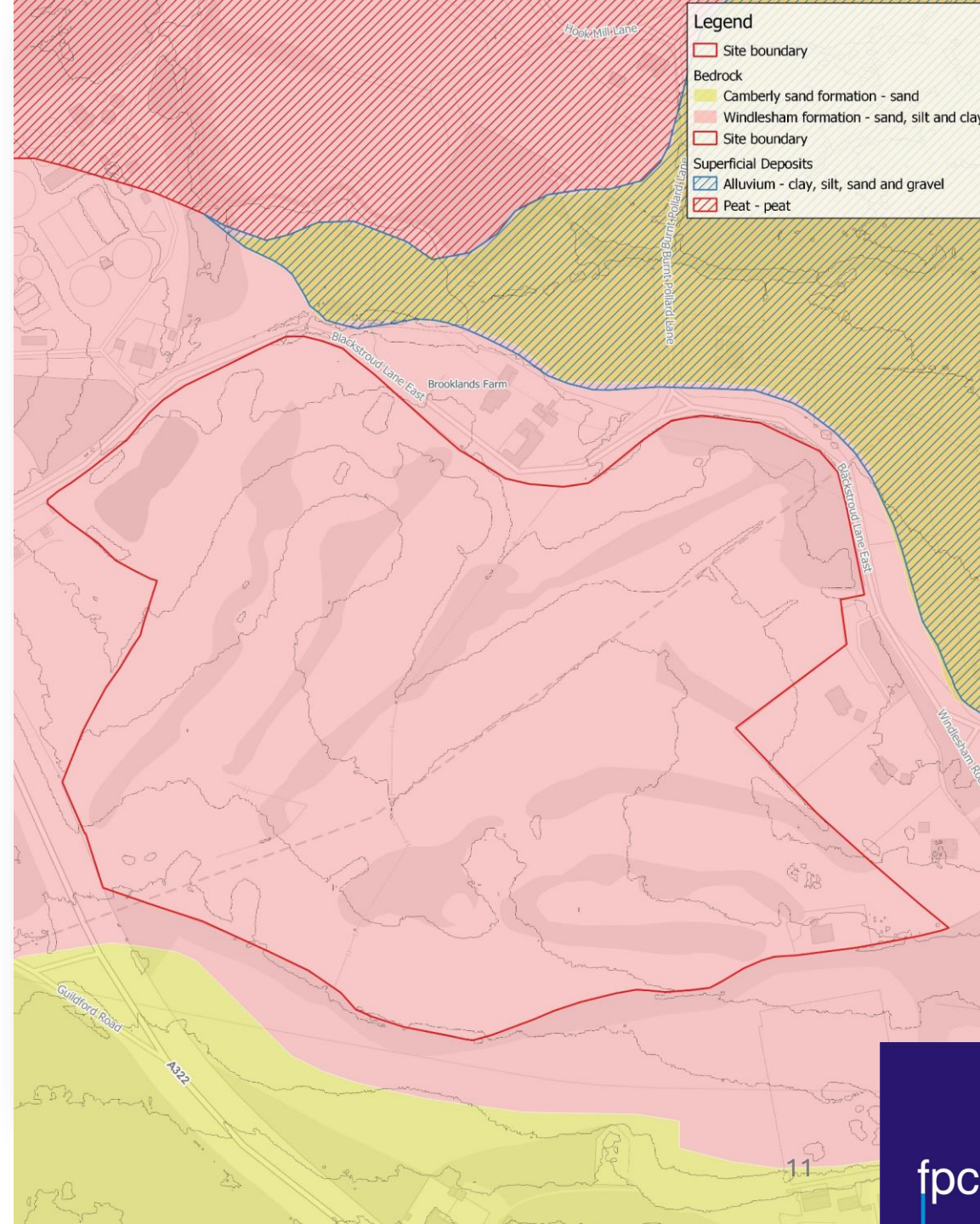
Landscape Character

- Woodlands account for around 25% of the Thames Basin Heaths National Character Area (NCA), the majority of which have grown or been planted on former heathland. The area's semi-natural habitats include mosaics of wet and dry heathland, woodland, and acid grassland.
- The site is in the Local Character Area SS7 Windlesham to Knaphill Settled and Wooded Sandy Farmland. This area is characterised by gently rolling hills and pastoral farmland. There are also scattered blocks of rectangular deciduous woodland, often including a significant amount of Holly.
- The area is a blend of farmland, woodland, and settlements, standing out from surrounding areas. It's divided into built-up areas and river floodplains of the Bourne and its tributaries. Boundaries follow identifiable features, including roads and field boundaries.
- The project is complementary to the existing landscape character of the area without altering it.



Geology and Soils

- Gently undulating landscape based on the sand solid geology formations.
- On-site soils are classed as loamy, with naturally impeded drainage and natural moderate fertility. This is characteristic of lowland seasonally wet pastures and woodlands (Soilscapes, 2024).
- The topsoil is classed as sandy, with a mix of light to heavy sandy soils.
- Soil sampling and analysis were carried out in December 2023. The findings indicated that most of the site has high Phosphorus (P) levels, with the P index ranging from 3 to 4. Therefore, suitable measures to reduce these levels will be implemented to ensure success when improving the botanical interest of the grassland.
- Neutral grassland types are the most suitable for the site, as soils had a neutral pH, with levels between 5.5-6, according to soil samples.

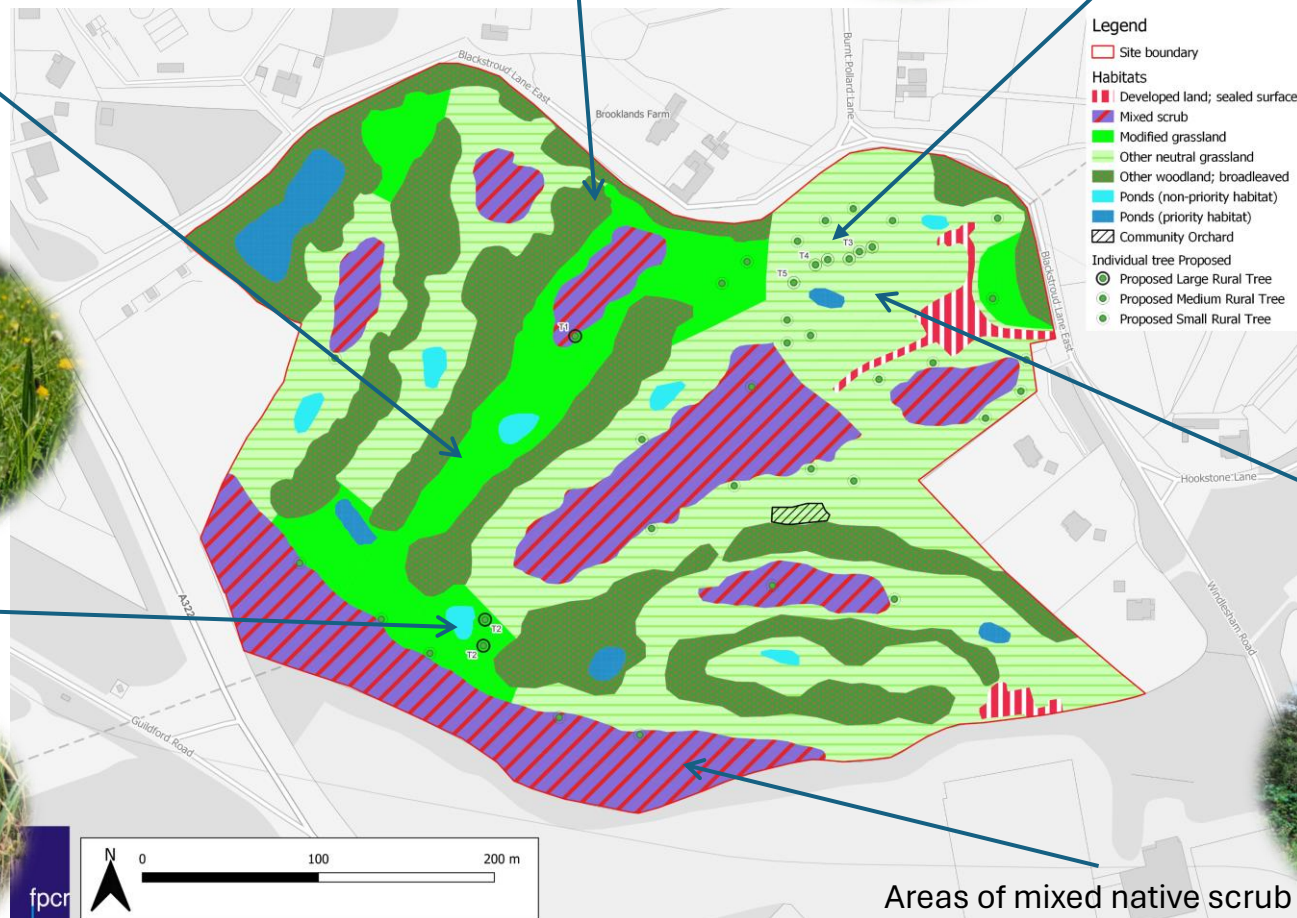


BNG Habitats

The condition of grass areas with high Phosphorus (P) will be improved for biodiversity by reducing levels to promote species-diversity.

Woodlands enhanced with native deciduous species

Individual native tree planting across the site



Ponds improved for wildlife



Grassland promoted with a diverse sward in the form of other neutral grassland in moderate condition



Areas of mixed native scrub created, with open areas such as rides and glades.



BNG Units Available

HABITAT TYPE	UNITS AVAILABLE
Grassland	27.76 units
Woodland	12.55 units
Scrub	21.25 units
Pond	0.34 units
Individual Tree	0.37 units

Grassland

An area of 7 hectares (ha) of grassland will be improved to create diverse species-rich, 'other neutral grassland'.

What is Other Neutral Grassland?

Other Neutral Grassland (ONG) is a commonplace type of grassland found throughout the country, often along railway lineside, road verges and unmanaged pastures. It is a moderately diverse habitat typified by commoner species than found in priority meadow types such as lowland meadows. Despite being only moderately diverse, a great number of species can be found here and is valuable for invertebrates, common and widespread reptiles and small mammals.

It is less sensitive to high soil nutrients and, therefore, easier to create in the short-term. Therefore, this grassland habitat lends itself well to being the first step in grassland enhancement. Following successful establishment, the habitat can then be enhanced to a more species-rich grassland where monitoring shows that the Site has the right conditions to achieve this.

It is thought that 97% of species-rich grasslands have been lost since the 1940's.

UK grasslands store 2 billion tonnes of carbon in their soils, making them significant carbon sinks

Grasslands are vital for bees and other pollinators, with butterflies reliant on the wildflowers found within them.

Scrub

Over 3 ha of mixed, native species scrub will be planted, forming areas of mixed density with open glades and rides. The scrub edges will be scalloped, providing shelter for invertebrates and other animals and creating perfect foraging opportunities for birds and bats.

Diverse scrub is highly valuable to wildlife

Scrub of various ages, species, and structures supports a diverse range of wildlife. Scrub also supports other plants like lichens and mosses, as well as fungi, which offer food and shelter to invertebrates. Some species require specific shrubs, while others need a mix of different ages and structures. The project aims to provide all stages of growth, starting from bare ground and progressing to young and old growth, as well as decaying wood.

Scrub edges are an important habitat

The edges of the scrub area will be carefully managed to have a rich structure and abundant flowering plants. This will serve as a shelter and food source for many insects and provide seeds and berries for birds and mammals. Additionally, the ruderal vegetation and tussocky grasses along the edge of the scrub will offer a haven for mammals and a place for birds to build their nests.

*10% of terrestrial Priority
Species associated with scrub
habitat*

*57 Species of bird
associated with Knepp
Castle Estate scrubland in
2018*

*450+ threatened species of
plant, insect and bird
associated with scrub*

Woodland

The 3.75 ha of woodland on site will be enhanced to create a more diverse structure and reduce the dark and acidic ground conditions caused by the conifer trees. This will create Medium distinctiveness 'other broadleaved woodland' units*.

The woodland at Windlemere SANG will be managed by initial felling of selected conifers with the replacement with native broadleaf species to:

- Create a diverse structure to cater for the widest range of wildlife needs
- Retain dead and decaying wood, whether fallen or standing
- Introduce a mix of native tree species when planting
- Thinning trees to increase light and encourage ground flora.
- Provide edge habitats in the form of rides and glade

1/3 of all woodland wildlife species are in decline

2300 Species supported by oak including, mammals, birds, invertebrates, fungi

25 Species of bird are woodland specialists

1 in 10 woodland wildlife species are at risk of extinction

* Note these units cannot be used to offset the loss of high distinctiveness woodland such as Lowland Mixed Deciduous Woodland

Ponds

Ponds can range from large, permanent bodies of water to small, temporary pools that appear seasonally

Research suggests that ponds support more freshwater life than any other UK freshwater habitat.

70% of ponds have been lost from the countryside over the last century.

Four ponds will be enhanced for biodiversity net gain. This will ensure that the ponds are maintained into the future to continue their role as dynamic and vital ecosystems.

Why are ponds important?

A well-designed and maintained pond is a haven for all sorts of plants, birds and animals. It is a complex habitat full of algae and plants, scavengers, predators, herbivores, decomposers and parasites. Ponds also provide essential drinking and bathing water for birds and mammals.

The ponds will be maintained in a way that ensures the presence of a variety of marginal plant species while preventing excessive nutrient accumulation. This will help avoid the growth of algae and maintain good water quality. Additionally, any trees or nearby shrubs will be managed to ensure sufficient light reaches the surface of the water.

Trees

Approximately 30 native trees will be planted across the site, a mix of native species to help ensure resilience.

Why is tree planting necessary for climate change?

Climate Regulation - Trees absorb CO₂, helping to regulate the climate and counteract the human-made emissions driving climate change.

Cooling effect – Trees provide shade and release water vapor into the air through transpiration, which has a cooling effect on the environment

Biodiversity - Trees support a wide range of biodiversity, and this diversity enhances their ability to store carbon and maintain ecosystem resilience.

Ecosystem Services - Beyond carbon storage, trees provide other ecosystem services such as flood prevention, pollution reduction, and soil enrichment.

Additional Benefits



- As a SANG, the site must remain accessible for people to enjoy. By enhancing the site's biodiversity, we can not only enable people to appreciate nature but also promote the mental and physical well-being of the communities that use it.
- Through enhancements like planting native scrub and broad-leaved trees, and improving grasslands, we can aid in carbon sequestration, water regulation, soil stabilization, and erosion prevention.
- New or enhanced habitats will benefit many species. Improve the site for a wider variety of plants and animals, increasing biodiversity and, in turn, resilience.
- Other measures will also be implemented to improve the site's value for a broad range of species, including;
 - Compost heaps for reptile egg-laying
 - Log piles and hibernacula features for reptiles and amphibians
 - Retained deadwood and dead hedges / brash piles

Next Steps



Cost price of management, maintenance and monitoring over length of project



Secure the site via a legal agreement



Register the site on Natural England's 'National Biodiversity Gain Register'



Implement Management Plan



Sell biodiversity units and update the National Register



Monitor success of habitats over length of agreement



Contact

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