

Conservation Report:

State of Nature Reserves - 2025

Ecology Team – March 2026



Acknowledgements

The survey data contained within this report has been diligently collected and processed by many hundreds of volunteers, staff and contractors for over 20 years, and we would like to express our thanks for their time, effort and dedication in collecting all this invaluable information.

We would also like to thank the many and varied volunteers who help the Trust carry out conservation management on nature reserves without their help we would be unable to make such an amazing positive difference to local wildlife.

Finally, but definitely not least, we would also like to thank all the Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust members, donors and grant giving bodies whose financial support makes our work possible.



Contents

Executive Summary	3
1. Introduction	7
2. Reserves Overview	9
2.1 Reserves Statistics	9
2.1 Reserves Wildlife Value	10
2.2 Reserves in the Landscape.....	11
3. Reserve Feature Condition	14
3.1 Feature Condition – Overview	14
3.2 Feature Condition - Changes Overtime	16
3.3 Feature Condition - 2025 Snapshot	18
3.4 Feature Condition – 2025 Habitat Breakdown	19
4. Challenges and Solutions – Site based	30
4.1 Challenges.....	30
4.2 Solutions	31
5. Novel solutions – Across Sites	34
5.1 Income	34
5.2 Innovative Technology and Research	38
5.3 Volunteering	39
5.4 Landscape Connectivity	40
5.5 Climate Change Mitigation	42
6. Case studies	43
Case Study 1 – Cholsey Marsh Restoration and Desmoulin’s Whorl Snail in the Wider Landscape	43
Case Study 2 – Re-connecting Adder Populations at Greenham Common	46
Case Study 3 – Homefield Wood Military Orchids	48
Case Study 4 – The Importance of Nature Reserves for Nature’s Recovery	50
Case Study 5 – Natural Capital	52
Case Study 6 – Biodiversity Net Gain.....	54
Appendix 1a – Condition Status Definition Table	56
Appendix 1b – How to Calculate Condition Status.....	57

Executive Summary

BBOWT nature reserves play a pivotal role in supporting the recovery of wildlife at landscape scale. These special sites are wildlife-rich core areas from which species can spread out across a restored and connected countryside.

Approximately 73% of reserves are considered in good or recovering condition. Over the last 3 years the proportion of reserves which are recovering has increased, demonstrating concerted conservation management effort. However, the proportion of land which is at risk of becoming unfavourable has also increased; mainly due to increasing external factors.

The issues affecting reserves include ash dieback, deer browsing, climate change and high levels of scrub. The solutions to these challenges include using novel technology and machinery to develop adaptive conservation management; further developing income streams to fund activities, such as Countryside Stewardship agreements, BNG and large specifically funded projects; developing new ways of recruiting and using volunteers and ensuring that, where possible, reserve management promotes landscape connectivity.

There is an ever-increasing wealth of evidence that wildlife and wild places are essential for the health and wellbeing of people; as well as being an integral part of a functioning planet. And yet, despite this, wildlife is under threat and is declining at an alarming rate, not just nationally, but here in Berkshire, Buckinghamshire and Oxfordshire.

Since 2005, the Berkshire, Buckinghamshire, and Oxfordshire Wildlife Trust (BBOWT), has regularly assessed the impact that nature reserve conservation management work has had on wildlife. This is the seventh such report. This report aims to provide a balanced and objective overview of the status of wildlife on BBOWT reserves. Therefore, the report details both successes and situations where activities have been less successful in benefiting wildlife. The overarching drivers behind challenges and their potential solutions are also discussed.

All data presented in this report is accurate up to and including December 2025.

The key findings from the report are summarised below.

Reserve Overview

- BBOWT's nature reserves currently cover 2593 hectares and are considered as 83 different sites. This represents a 4% decrease in landholding since 2022. The decrease is driven by the loss of land due to the termination of leases, and land taken by HS2. In some cases, the land has been deliberately rationalised by the Trust in order to spend our limited resources most effectively for wildlife conservation.
- 51% of the landholding is owned freehold, 39% is under lease agreement and 10% is under a management agreement.
- Greenham, Chimney and the Upper Ray together comprise nearly 40% of the landholding.
- The median size of reserves is 9.6ha. Approximately half the reserves are smaller than c.10ha.
- Woodlands, heathlands and meadows dominate nature reserve habitats.

The Value of Nature Reserves

- Over one million biological records have been collected from nature reserves, covering 10,078 different taxa. Including over 300 species of birds and over 40 species of butterfly. 15% of taxa recorded on reserves have a priority, rarity or legal designation.
- Reserves are important for 'bio-abundance' by supporting many individuals of common species. For example, 35,000 records have been made for meadow brown and over 10,000 records have been made for dunnoek.
- 60% of reserves, by area, are mapped as having Biodiversity Action Plan (BAP) habitats. Some of these habitats are internationally rare such as calcareous fen.
- For some habitats BBOWT is responsible for managing a significant proportion of the local or national cover. For example, the Trust manages c.10% of the UK's cover of species-rich (MG4) floodplain meadows.
- Nature reserves are essential parts of a wildlife-rich, connected landscape. They form corridors and stepping stones and most critically are core areas, rich in wildlife, from which species can recolonise restored areas. For example, Ham Green Wood which provides important connectivity essential for the survival of the Bechstein's bat in the landscape.
- 95% of reserves are in key landscape areas such as Biodiversity Opportunity Areas (BOAs) or Conservation Target Areas (CTAs). While in Berkshire, 90% of reserves are also in the Landscape Recovery Network.

Condition

- 47% of the whole estate is considered as being 'favourable - maintained': this proportion is comparable to assessments in 2018 and 2022. The maintenance of these 1165ha in good condition is no mean feat and requires ongoing conservation management. This status is a major achievement for the Trust.
- However, the absolute hectarage in favourable condition has declined since 2022. This is driven in part by – the loss of good condition chalk grassland at Hartslock (our lease was not renewed by the new landowners); the decline in hay meadow condition at Chimney Meadows due to a breach in the River Thames Bund (outside BBOWT management control); and the efficiency drive which means lower priority secondary features are no longer assessed for condition, many of these were previously considered favourable.
- In 2025 nearly a quarter of features were considered 'favourable – vulnerable' (ie. at risk of moving to an unfavourable category). There is a long-term increasing trend of more land being considered as vulnerable. This is mostly due to issues such as ash dieback, deer browsing and climate change, as well as site specific problems.
- Land which is considered 'unfavourable – improving' in condition has increased (from 18% to 26%). This demonstrates that large amounts of work have successfully been undertaken to improve the condition of reserves and the positive change is being expressed in the habitat. This includes reserves such as Decoy Heath where extensive scrub management has taken place. Reflecting this shift, there has been a decline in the amount of land considered 'unfavourable – declining' or 'unfavourable – no change'.
- When considering high wildlife value land only; 89% is considered as being favourable or 'unfavourable recovering' this is a significant achievement for the wildlife.

- Overall, meadow habitats have the highest proportion in a favourable condition (91%); and heathlands are in the worst condition, with only 12% considered in a good condition (although this is an improvement since 2022 when 0% were considered favourable).

Challenges and solutions

- Key overarching issues negatively affecting features (making them unfavourable or favourable - vulnerable) have been identified to help develop appropriate solutions. These issues are over-grazing by livestock, too much scrub, and forestry and deer management.
- Examples of site-based activities currently being explored to address key issues include the use of new cutting-edge technology such as a robo-flail which is more efficient at scrub control. Following an 8-year long legal process in which BBOWT was instrumental – 2024 saw the introduction of new grazing regulations at Greenham Common. These regulations will help address the over-grazing issue on site.
- Project funding represents one of the key mechanisms in which reserve management can be delivered. Over the past three years over 35 different projects have been run across nature reserves, together bringing in approximately £2m of additional funding. These have delivered some amazing wildlife benefits including better habitat for wading birds, new deer fencing to protect coppice regrowth and establishment of scrapes to promote juniper regeneration.
- Other income streams important for funding nature reserve work include governmental agri-environmental schemes (currently worth c.£500,000 per annum), while green finance through BNG has realised £1.895m to date.
- New and emerging income streams include Landscape Recovery Schemes. These are government funded schemes, administered through third parties such as environmental NGOs. To date the Trust has signed up to one agreement, covering Foxholes, which will bring in £14,000 a year to manage the site. The schemes are legally complex but potentially of high value, as such significant staff time is being put into them to assess their suitability.
- Trialling new and innovative technology will also ensure that the Trust remains able to deliver conservation management into the future. This includes the use of new fencing such as metal clipex which lasts longer than wooden posts, GPS collars for livestock, drones and AI for habitat mapping, and acoustic recording to monitor species hard to locate with traditional methods.
- The Trust's involvement with cutting edge research into the storage of carbon in floodplain meadows has also resulted not only in a better understanding of how these habitats store carbon, but also in changes to agri-environment schemes and appropriate higher payment rates for floodplain meadows.
- With an aging volunteer work force and a hostile economic climate, new and different ways to recruit volunteers and offering new appealing roles will need to be explored.
- Reserves form a key element of a wider, ecologically functioning landscape. As such, good condition of site and landscape feed in and out of each other, and both are essential for long-term resilience. An example of this is the restoration of the Sulham Brook at Moor Copse, where the improvement of the brook on site has resulted in wider catchment level benefits improving water quality and connectivity to adjacent habitats. Now both the site and the landscape are in better condition and are better able to cope with external environmental challenges.
- Climate change mitigation activities are essential for future-proofing reserves in good condition. Projects the Trust has, and will, undertake include the re-wetting of areas of Parsonage Moor to ensure previously dried out peat can act as a carbon store; a hydrology survey at the Upper

Ray to develop strategies to retain water for longer during increasing hot and dry weather; and creating fire breaks at our large heathland sites to reduce the risk of wildfires spreading.



Cattle Grazing at Dry Sandford pit © Debbie Lewis

1. Introduction

Biodiverse wild places are uplifting and beautiful. For generations they have inspired people to care for the world around them. Now more than ever before, it is understood that humanity needs healthy, functioning ecosystems to provide the natural services people rely on – from clean water and air to food provision and wellbeing support.

However, not only is wildlife important for people. There is also a powerful moral argument that wildlife is important in its own right. It has an intrinsic value and should be respected and protected. Future generations should inherit a world as rich and diverse as previous generations inhabited.

These two powerful arguments coupled with the ever-increasing wealth of evidence that species and habitats are being pushed towards an ecological precipice, mean that now more than ever, is the time to act.

Since it was formed in 1959, The Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust (BBOWT) has been a champion for wildlife across the three counties. In this time of a climate and nature emergency, nature needs a voice and BBOWT is rising to respond to the 21st century challenges which affect the world around us. BBOWT's strategy recognises the need to restore nature to address this imbalance by identifying a target of '30% of land well-managed for nature'. This target will be achieved by ensuring nature reserves are rich in wildlife and by creating wilder, more connected landscapes.

The establishment and ongoing management of a network of high-quality nature reserves is key in ensuring not only are the reserves rich in wildlife themselves but that they are also able to play a pivotal role in connecting landscapes.

In order to understand progress towards wildlife objectives a review has been carried out to assess the current wildlife status of our nature reserves. Since 2005, this assessment has been carried out every 3 years. The data generated can be used to show not only a current 'snapshot' of condition status but also longer-term trends.

It is relatively easy to understand that management activities such as coppicing or creating a new pond are good for biodiversity, however, activity alone cannot be used to categorically state that the desired biodiversity benefits have been achieved. Therefore, this report uses quantitative flora and fauna outcomes to assess wildlife condition. For example, the population size and trend of small blue butterflies on a given site, rather than management activity data, such as the number of metres of fencing installed or hectares grazed. Wherever possible the link between conservation management actions and biodiversity outcomes is highlighted.

A rigorous monitoring programme has been in place across nature reserves since 2002, and the collated data enables an accurate assessment of nature reserve condition to be generated. It is important to be able to compare what is happening on nature reserves with national, regional and local wildlife statuses, so that BBOWT data can be put into context. This helps show whether a species trend is driven by site management or reflects a national trend due to factors outside the control of an individual nature reserve's management.

This report aims to provide a balanced and objective overview of the status of wildlife on BBOWT nature reserves. Therefore, the report details both successes and situations where activities have been less successful in meeting conservation targets. Underlying drivers of challenges and their potential solutions have also been identified to help ensure that BBOWT is best placed to achieve

wildlife restoration in the coming years. The report finishes with a small number of case studies to help put the overarching condition status statistics into context with some real-world examples.

All data in this report is accurate up to and including December 2025. The core reporting data years are 2023, 24 and 25.

2. Reserves Overview

This section of the report provides an overview of the estate that BBOWT manages, both in terms of the reserves themselves and how they support wildlife, but also how they contribute to a wildlife-connected landscape.

The statistics presented below are generated from all the land which falls within the legal boundary of a site, through land ownership or lease agreements. This includes areas such as car parks, buildings, access tracks and land used for educational activities.

2.1 Reserves Statistics

BBOWT's nature reserves currently cover 2593 hectares and are considered as 83 different sites. This represents a 4% decrease in landholding since 2022.

Since the previous report in 2022, c.100ha of nature reserve have been relinquished. These included: the extension at Hartslock where the Trust was unable to negotiate a new lease with the new landowners; parts of Calvert and Finemere lost to High Speed 2 and Paices Wood and Burghfield Mill Island which were deliberately removed from the estate due to the lack of wildlife interest and complexity to manage.

Approximately 4ha of land has been added to the reserve portfolio through the leasing of an ex-pony paddock immediately adjacent to Yoesden Bank.

Figure 1 shows the changes in the Trust landholding over time.

51% of the Trust's landholding is currently owned freehold, 39% is under lease agreement and 10% is under a management agreement.

The smallest and largest nature reserves remain unchanged: Burrows at 0.3ha and Greenham and Crookham Commons at 450ha.

The mean size of nature reserves is 30.9ha. However, the mean size is somewhat misleading as the value is heavily skewed by a handful of large sites. These are Greenham, Chimney and the Upper Ray, which together are nearly 40% of the Trust's landholding. Therefore, the median size is a more useful indicator of the size of an 'average' reserve. The median is currently 9.6ha meaning that approximately half of reserves are smaller than c.10ha (see Fig 2).

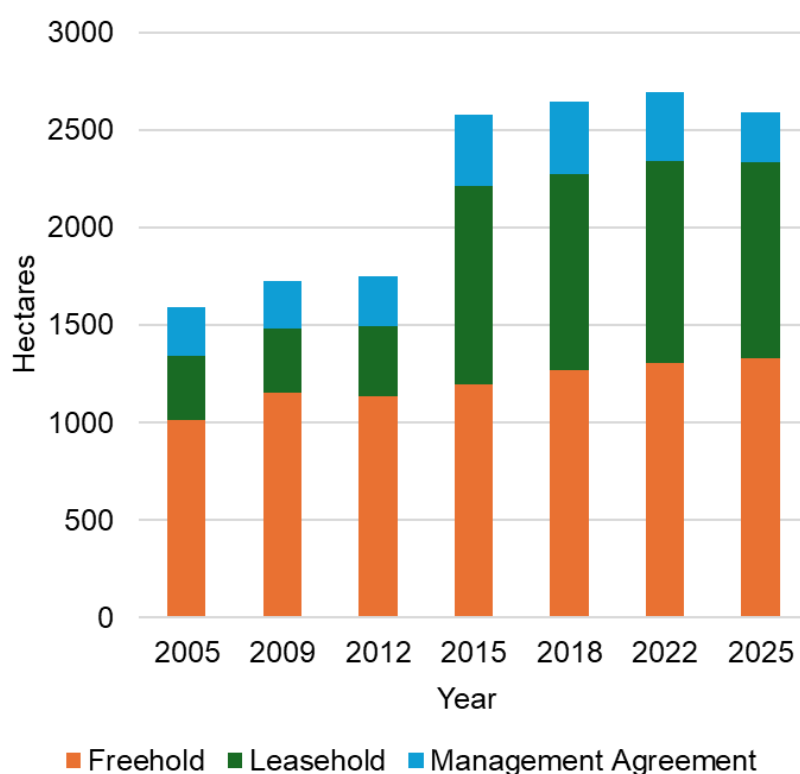


Fig 1: Reserve ownership status and size over time

Note that the significant increase in landholding in 2013/14 relates directly to the Trust taking on management responsibility for sites owned by Bucks and West Berks Local Authorities.

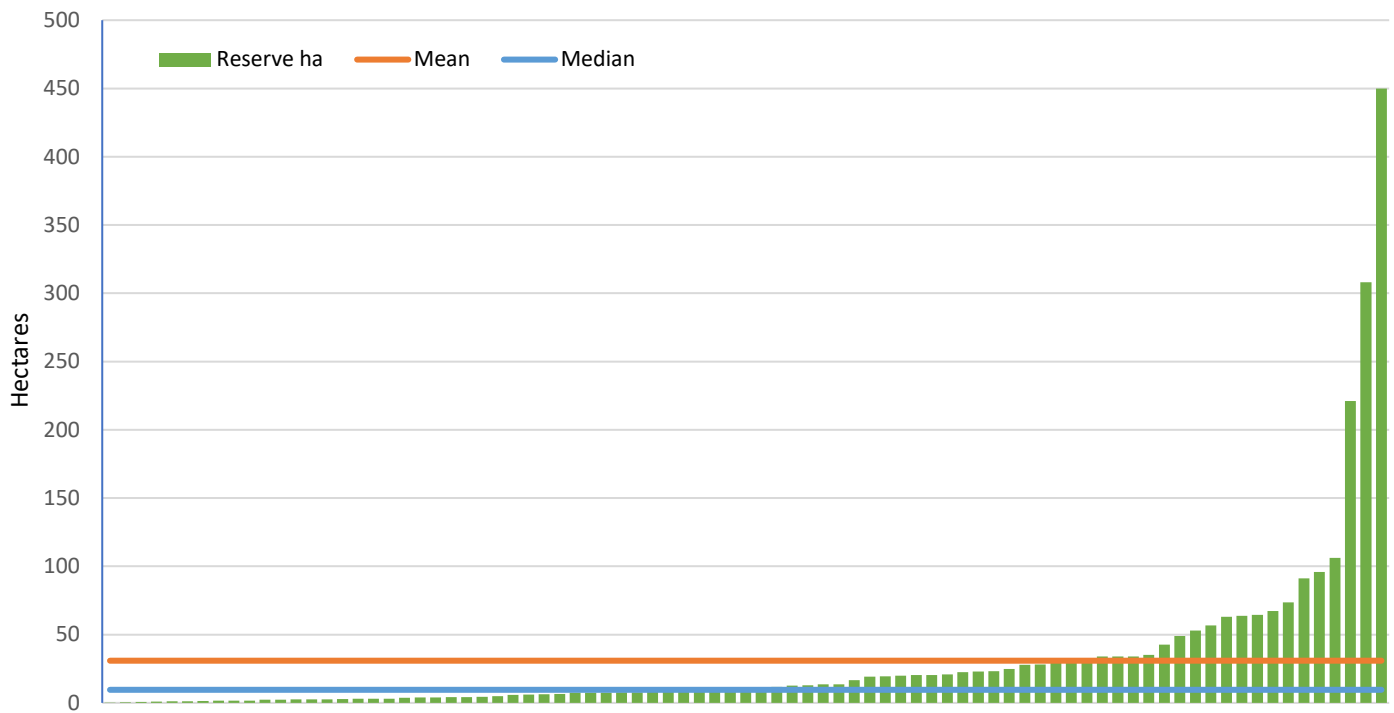


Fig 2: Size of each nature reserve in 2025.

Each individual reserve is represented by one green bar, showing the reserve size. The orange line is the mean, the blue line is the median

2.1 Reserves' Wildlife Value

It is important to note that small reserves do not, by default, have less wildlife value; some small sites have significant wildlife interest. For example, Aston Clinton Ragpits is only 2.5 hectares but supports a very diverse orchid population which number in their thousands in the summer. While other small sites, such as Cholsey Marsh, play a critical role in landscape connectivity. More information on the importance of reserves in the landscape can be found in section 2.2.

To date the Trust has made over a million biological records from across its nature reserves, covering 10,078 different taxa, including over 300 species of birds, and more than 40 species of butterfly being recorded. Many of these species are specialists and therefore rare because they are limited to living in the habitats found on reserves. To date, the reserves managed by the Trust are known to support 1477 taxa with a priority, rarity or legal protection designation; this is 15% of taxa recorded on reserves. But the actual number could be significantly larger than this.

However, reserves are not just about rare species. It is well understood that 'bio-abundance'¹ of more common species is important for ecosystem health, and nature reserves are great reservoirs for these species. For example, over 35,000 records have been made for the meadow brown butterfly and over 10,000 records have been made for dunnock.

Reserves also support a wide range of habitats; from those which are considered internationally rare, such as lowland heath and calcareous fen, to those which are more common, like secondary woodland and scrub. Approximately 60% of reserves (by area) are mapped as having Biodiversity Action Plan (BAP) habitats; these are habitats recognised by the UK government as having special wildlife value.

¹ the number of individuals of the same species living in a specific area, such as a nature reserve

For some habitats the Trust manages a significant proportion of the national or regional cover and therefore has an additional responsibility to manage the habitat well, as the fortunes of the habitat at a large scale are therefore dependent on those at a nature reserve scale. For example, BBOWT manages approximately 10% of the UK's cover of species-rich (MG4) floodplain meadows. Looking more locally, across Berks, Bucks and Oxon, BBOWT manages approximately half of the cover of reedbeds, and roughly a third of the combined area of lowland heathland and acid grassland.

This recognition of the importance of nature reserves can be clearly seen in the fact that three quarters of reserves have some level of wildlife designation (51% are SSSIs and 26% are Local Wildlife Sites).

2.2 Reserves in the Landscape

The Trust manages 0.53% of the area of Berkshire, Buckinghamshire and Oxfordshire (BBO). Of land designated for wildlife in BBO, reserves cover 11% of SSSIs and 4.5% of Local Wildlife Sites.

At first glance this might appear to suggest that reserves are just too small to have any significant impact on nature's recovery in the three counties. Happily, however, this is however far from the truth, partly because nature reserves 'punch above their weight'.

While the Lawton Report – "Making Space for Nature"² rightly highlights that large reserves are usually more beneficial for nature, the reverse is not necessarily true. Not only can small reserves be important for wildlife in their own right (as shown in section 2.1) they can also be vital in creating a connected and resilient landscape. Figure 3 shows the components of a functioning

ecological network, nature reserves, even small ones, fulfil the roles of stepping stones, corridors and restoration areas, but they are perhaps best known for being core areas. These are areas which are wildlife rich, from which species can move, using corridors and stepping stones, to recolonise restoration areas. If core areas, such as reserves did not exist the very unpinning of a functioning landscape would be broken. The importance of this role cannot be overstated.

It is clear that reserves are well placed to provide these critical landscape roles with 95% of reserves in Biodiversity Opportunity Areas (BOAs) or Conservation Target Areas (CTAs); while in Berkshire 90% of reserves are in the Landscape Recovery Network.

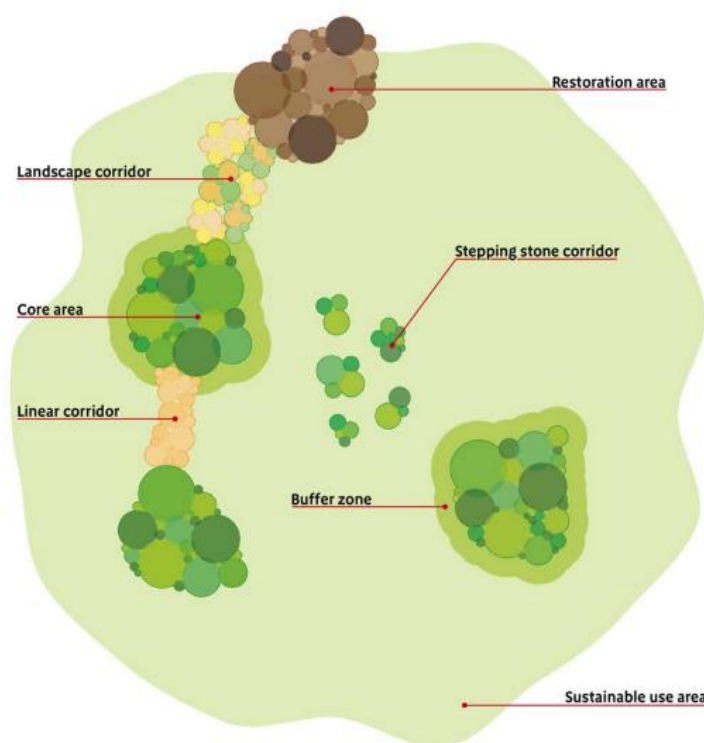


Fig 3: Components of ecological networks detailed in 'Making Space for Nature'

² Lawton, J.H., Brotherton, P.N.M., Brown, V.K., Elphick, C., Fitter, A.H., Forshaw, J., Haddow, R.W., Hilborne, S., Leafe, R.N., Mace, G.M., Southgate, M.P., Sutherland, W.J., Tew, T.E., Varley, J., & Wynne, G.R. (2010) Making Space for Nature: a review of England's wildlife sites and ecological network. Report to Defra.

Other important landscapes in which BBOWT reserves play a significant role include the Oxford 'Important Freshwater Landscapes'. This is one of 24 nationally important areas for freshwater habitats and associated species, identified as a priority by The Freshwater Habitats Trust³. Several key wetland reserves including the Cothill Fens fall within this area. This landscape forms the basis of a developing 'Landscape Recovery Project' in which BBOWT is a key delivery partner. Figure 4 shows how the Cothill Reserves fit into, and are a critical part of, a connected landscape covered by the Important Freshwater Landscape and the local BOA. Other reserves such as the Upper Ray form a critical part in active landscape projects such as Reconnecting Bernwood, Otmoor and Ray (RBOR).

Reserves do not need to be physically connected in order to provide ecological connectivity. As such they play a key role in providing landscape linkages for species which function as metapopulations. These species require a number of smaller, ecologically linked sites which together provide the basis for a sustainable sub-population. For example, many butterfly species, like marsh fritillary, thrive in connected sites, which may be physically separated, but are close enough for individuals to fly between. It is also important to remember that connectivity comes at different scales depending on whether you are a mobile bird, or a tiny snail.

A good example of reserves providing a critical connectivity function, is the addition of Ham Green Wood to the estate portfolio. This site supports a Bechstein's bat maternity roost. These sorts of roosts are found under very specific environmental conditions and are not easily replaced. Therefore, the protection of this feature is important to the survival of the species in the area. However, this is not the end of the story. The Bechstein's bats could not function on a single isolated site, because they need a wide landscape area in which they can forage, mate and roost at other times of the year. It is only when the resources provided at Ham Green Wood, are located together in a connected landscape can they form a sustainable, resilient population.

Other species which need the unique resources provided by nature reserves, together with those found in surrounding land include Common Cranes which breed at Otmoor but use Chimney Meadows and the Upper Ray for feeding at roosting. The tracking of colour ringed birds between these sites, shows that for larger, more mobile species connectivity can be achieved across a large area. While species such as stonechat breed at Greenham Common in the spring, they over-winter on grassland sites, such as Seven Barrows. Another example is Cholsey Marsh and Desmoulin's whorl snail connectivity along the River Thames. Further information on this can be found in Case Study 1.

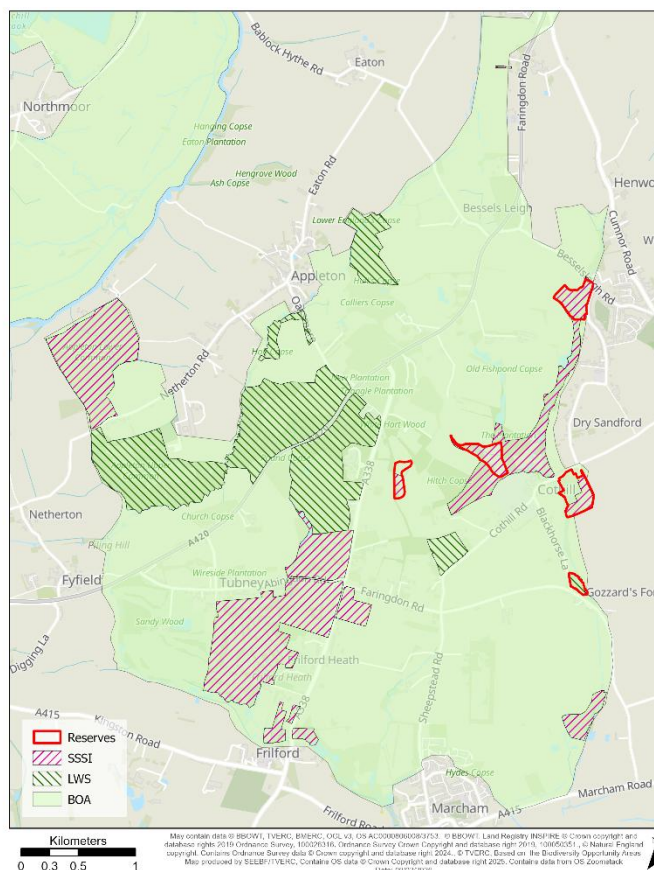


Fig 4: Map of Cothill Fen Reserves showing how they form essential part of a connected landscape.

The reserves provide linkages between SSSIs and Local Wildlife Sites as part of the heart of the Oxford Heights – West Biodiversity Opportunity target area

³ <https://freshwaterhabitats.org.uk/freshwater-network/important-freshwater-landscapes/>

Although not directly related to the needs of key species, reserves are also a great way of inspiring neighbouring landowners within a landscape to take action for wildlife. Over 50% of the Trust's landholding is currently within farmer cluster groups, demonstrating what opportunity there is for influencing others.

3. Reserve Feature Condition

3.1 Feature Condition – Overview

The reserve statistics discussed in section 2 include areas such as car parks, buildings, access tracks and land used for educational activities or layback⁴. However, when considering the biodiversity value of a reserve these areas are excluded from the assessment as they have limited, or no, wildlife value and are not the focus of conservation management.

All areas of reserves with biodiversity interest are mapped and assigned as having primary or secondary wildlife value. This status is based on a number of factors including size, current species diversity and potential for improvement. For example, a small block of secondary woodland on the edge of a large floristically diverse chalk grassland would be considered as being of secondary value, while the chalk grassland itself would be of primary value. Primary and secondary value areas are both included in this section of the report. From section 3.3, (which provides more detail on individual areas and their biodiversity status in 2025) onwards, only primary value areas are shown, as this is where conservation efforts are focused.

In 2025 excluded areas cover 10.5% of the total landholding, secondary features cover 17.8%, and the remaining 71.7% (1968ha) are features of primary conservation value.

The assessment of the biodiversity condition of nature reserves takes place at the ‘feature’ or individual ecological unit level. In most situations, ‘features’ roughly equate to a habitat e.g. woodland or heathland. Individual reserves may have several features depending on the complexity of habitats present. The location of each feature is precisely mapped, thus providing area data for each feature. The condition status for each individual feature on each site is then assessed. This is based on survey data covering key species groups such as birds, butterflies and reptiles and also results from bespoke habitat condition monitoring. Further details on how condition status is derived, and the definitions of condition categories can be found in Appendix 1. Individual features are then grouped together (for example, all woodland and scrub parcels) and, using the area data, the proportion and absolute cover in each condition status can be calculated.

For the first time in the 2025 condition assessment, areas which are considered to be of secondary value for wildlife have not had their current status assessed. While resources are limited both for ecological surveys and conservation management the focus for these efforts has been directed towards areas of primary wildlife value, where the most gains can be achieved.

Figure 5 shows the cover in hectares of each of the different feature groups. As in previous years, woodland and scrub makes up the largest feature group (1016ha), with meadows and then heathland making up the next largest components of nature reserves (451ha and 422ha respectively). The smallest features are archaeology at 1.5ha and geology at just over 1ha.

⁴ Layback land is used for livestock when they are not carrying out conservation grazing, and is considered a resource, like a tractor, rather than land where biodiversity is the primary focus.

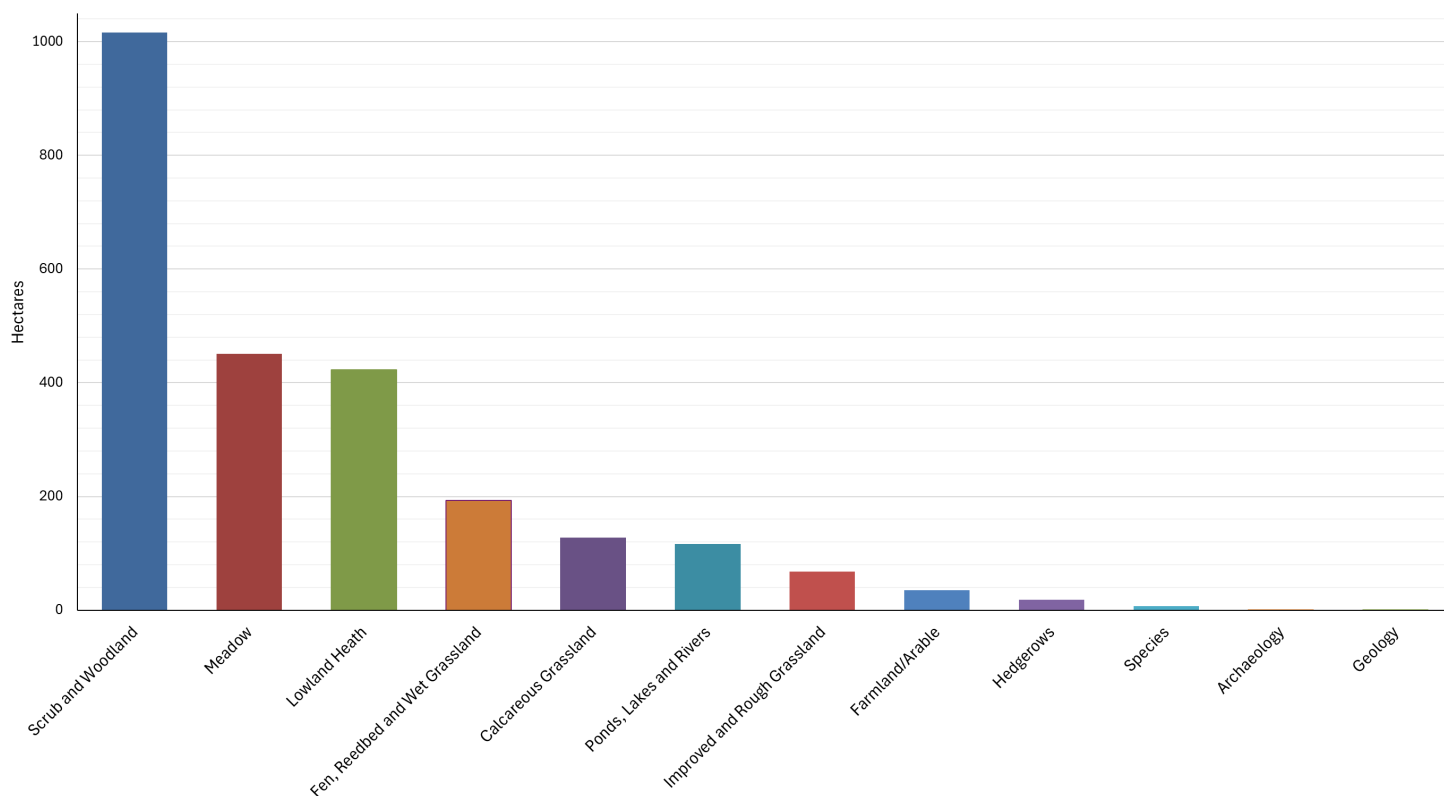


Fig 5: Feature composition across nature reserves
Archaeology and Geology features each cover <1.5ha



Bluebells: found in good condition scrub and woodland features ©
Laura Cronin

3.2 Feature Condition - Changes Overtime

Assessing the condition status of nature reserve features over time helps provide information on whether reserves in general are getting better or worse for wildlife. It is however important to recognise that the Trust's suite of reserves is not directly comparable between years, as individual reserves are gained and lost. While condition assessments were carried out in 2005 a different approach was taken so that results are not comparable with the current method and have been excluded from this report.

The condition trend of all reserve features (primary and secondary) between 2009 and 2025 can be seen in Figure 6.

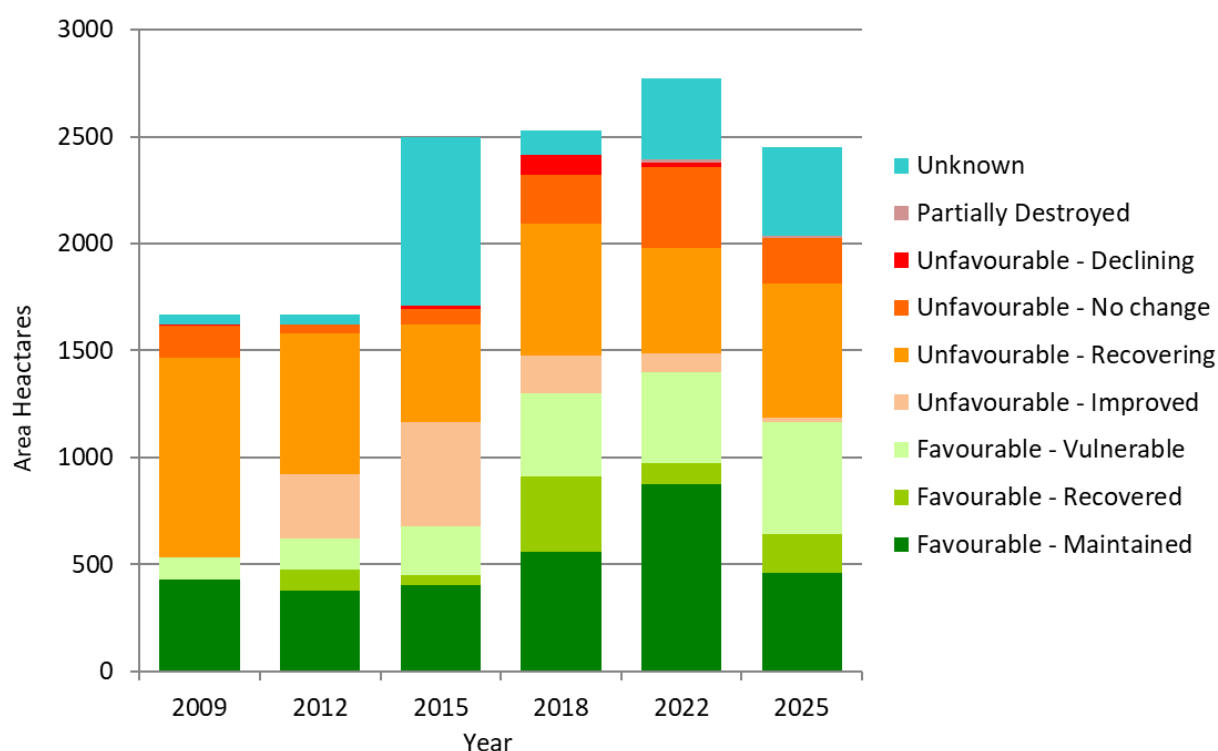


Fig 6: Condition of all nature reserve features, over time

A number of trends are shown in Figure 6. Firstly, it can be very clearly seen that the Trust's estate significantly increased in size in the 2015 reporting period. This was a result of the Trust taking on responsibility for managing land on behalf of West Berkshire Council and Buckinghamshire Council. In 2025 there has been a decline in the size of the estate. This directly relates to not renewing leases at a number of sites (further details on these sites can be found in section 2.1).

Unknown

The area of land which has an unknown condition assessment has varied significantly over time. Prior to 2025 features which were assigned an 'unknown' condition status tended to be those which had been recently acquired and had not yet been surveyed. This is particularly evident in 2015, where the large number of unknown hectares related to the significant new council landholding. In 2021 the unknown status was assigned to the new reserves Pixey and Ludgershall Meadows. From 2025 onwards the intention is that secondary features will remain as an 'unknown status' due to resource efficiencies focusing surveying and conservation effort on primary features.

Movement within the remaining condition categories is complex between years.

Favourable categories

In 2025 approximately half the estate (47%) was considered as being in the favourable categories. Although the total hectares have decreased since the last assessment, this proportion is very similar between 2018, 2022 and 2025. Prior to this, a smaller proportion of the estate was considered favourable (c. 30-40%). This is good news, in that since 2012 the Trust has been responsible for managing a larger absolute area but has still managed to improve condition from that point. On the downside, there have been no significant increases in the proportion of land in good condition over this period.

It is also worth noting that even if the proportion of favourable and unfavourable areas is similar, the absolute hectareage of features in good condition has declined by about 200ha since 2022. This is driven by a range of factors. In previous condition assessments, the vast majority of low value secondary features were assessed as being favourable, because they had low, easily met targets. With these features now not being assessed, there is movement from favourable to unknown. Some of this movement is masked by the additional loss of land from the unknown category, through relinquishing Paices Wood.

The loss of Hartslock extension from the estate has resulted in the direct loss of favourable land. Additionally, better-quality mapping has enabled more detailed recording of condition status across larger sites. This has allowed the National Nature Reserve at Chimney Meadows to be assessed separately to the rest of the site. Here, loss of condition is a direct result of a breach in the levee around the reserve which is allowing too much water on to site and causing a significant decline in the quality of the grassland. (The responsibility for repairs to this structure falls outside BBOWT's responsibility and following lengthy discussions with the relevant statutory bodies, repairs are planned for the summer of 2026).

It is also worth highlighting that there has been a shift with more sites (hectares and proportion) being considered as favourable – vulnerable. In 2025, just over a fifth (21%) of features were assessed as being in this category. Perhaps most worryingly this is an increasing trend (6% in 2009, 16% in 2021 and 21% in 2025). Many features contributing to this are woodland ones, where ash dieback and deer browsing pressure remain significant issues. Elsewhere, climate change impacts are starting to be felt. The trend also includes sites with very specific problems such as Moor Copse hay meadow, where issues with TB threaten the ability to appropriately graze the site and Homefield chalk grassland, where management to maintain good condition is very labour intensive and the feature could be quickly lost if this ceased for only a year or two.

Finally, it is very important to recognise that the 1165ha of good condition features require significant resources and associated ongoing site management to keep them in this status, and this is a major achievement for the Trust.

Unfavourable – recovering/improved

Land considered as unfavourable, but recovering towards good condition has increased since 2022 from 496ha to 628ha. This is a shift from 18% to 26% and represents significant management effort across reserves. This includes sites such as Asham Meads, where the fencing out of a stretch of hedgerow has prevented issues with grazing by sheep and benefited the hedgerow and associated hairstreak populations. The marshy grassland at Cholsey Marsh has shifted to unfavourable-recovering after extensive tree works to restore the habitat for Desmoulin whorl snails, following funding from the 'Mend the Gap' project. The lowland heathland at Decoy Heath has also moved to

unfavourable – recovering (from no change) following the establishment of a Countryside Stewardship Agreement and significant scrub removal.

Unfavourable – declining/no change/destroyed

Reflecting the shift of more hectares in unfavourable but improving condition, the area of land which is considered to be unfavourable and not getting better has reduced from 412ha (15%) to 222ha (9%). Features within this category include the woodland at Whitecross Green where the lack of resources has prevented the removal of the remaining conifers, and there is little to no recruitment of new saplings under the conifers or in ash dieback dominated areas, and Rushbeds Wood where ash dieback is restricting the areas of woodland which can be deer-stalked.

3.3 Feature Condition - 2025 Snapshot

Figures 7a and b, shows the condition in 2025 of all primary features across all nature reserves (omitting low wildlife value secondary features and exclusions such as car parks and buildings).

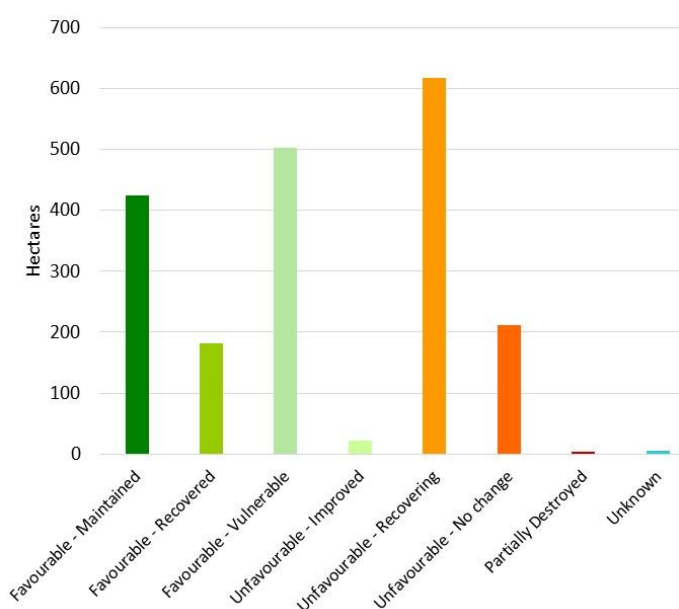


Fig 7a: Condition status of all primary features in 2025 by hectare

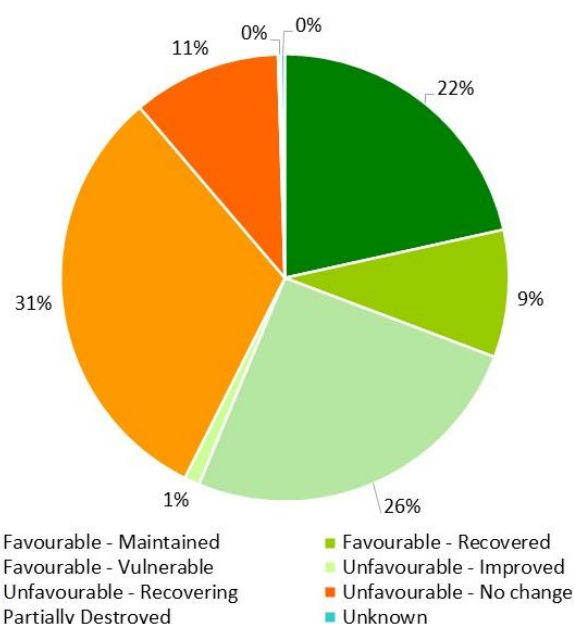


Fig 7b: Condition status of all primary features in 2025 by percentage

(percentages <1% are unknown and partially destroyed)

The data shows that in 2025, 56% (1108ha) of features are in favourable status. However, 26% are defined as being vulnerable, and thus at risk of becoming unfavourable.

33% (640ha) are unfavourable but getting better for wildlife and 11% (216ha) are poor for wildlife and showing no signs of improvement.

When combined, 89% of features are in favourable or unfavourable recovering condition. This represents a significant achievement for wildlife across the Trust's Estate.

3.4 Feature Condition – 2025 Habitat Breakdown

Figure 8 shows the breakdown of condition status for each feature and the hectarage.

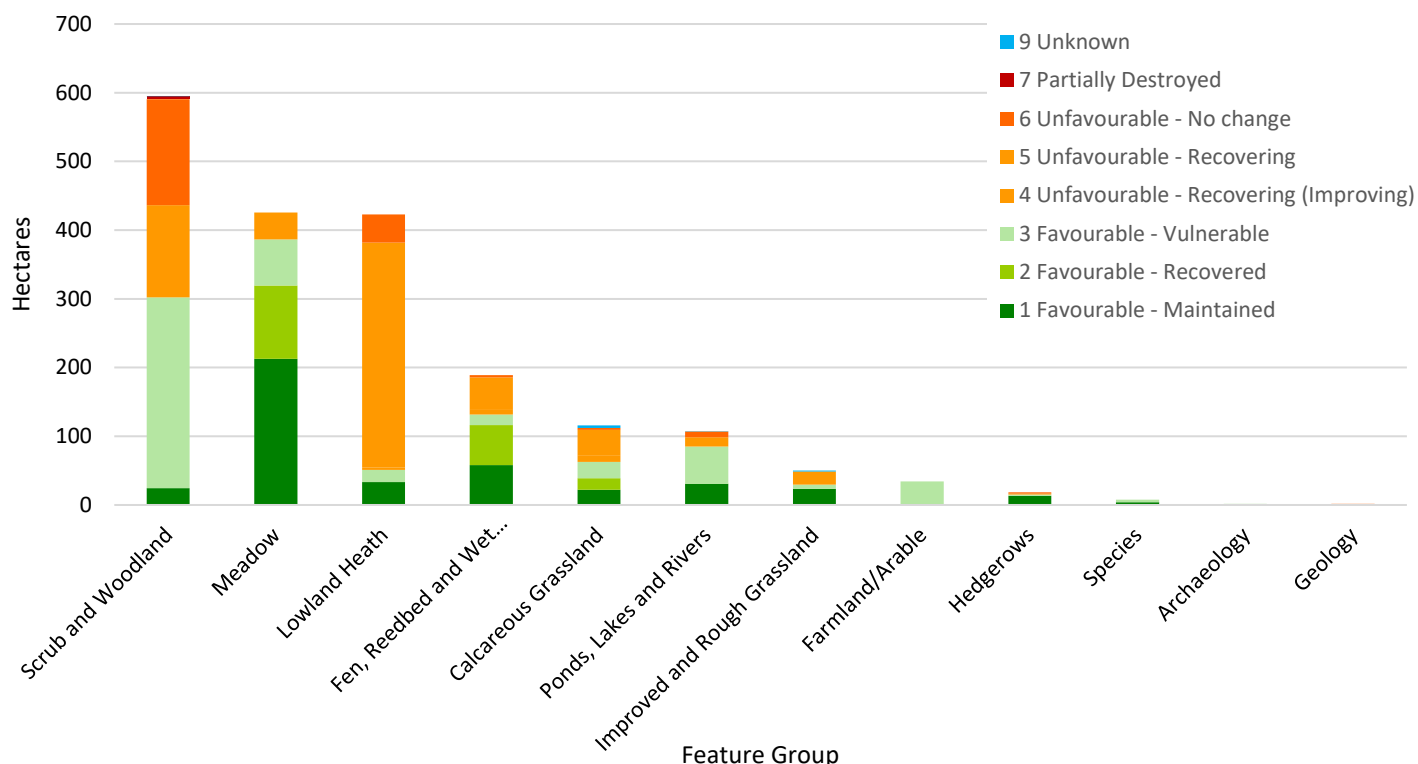


Fig 8: Condition status, by habitat, of primary features in 2021

The chart shows that species, archaeological and geological features make up a tiny proportion of the land managed by the Trust, accounting for approximately 10ha. They are included in this assessment as there are legal requirements to manage them to maintain a good condition.

When looking at the remaining important wildlife-rich habitats, it can be seen that the habitat in best condition overall is hay meadows (91% are favourable). This is followed by lakes, ponds and rivers, which are 79% favourable, and next are fen, reedbed and wet grassland, with 70% favourable.

Roughly half of chalk grasslands are favourable (54%).

Approximately half of woodlands are considered favourable, but with 92% of these considered vulnerable there is a high risk of the majority of the habitat becoming unfavourable.

At the other end of the scale only 12% of heathland is considered in good condition.

Further information on the condition status and the drivers behind the condition status, for each of the features, is covered in the rest of this section. Features are detailed in size order starting with woodland and scrub which covers the greatest area at nearly 600ha.

3.4.1 Woodland and Scrub

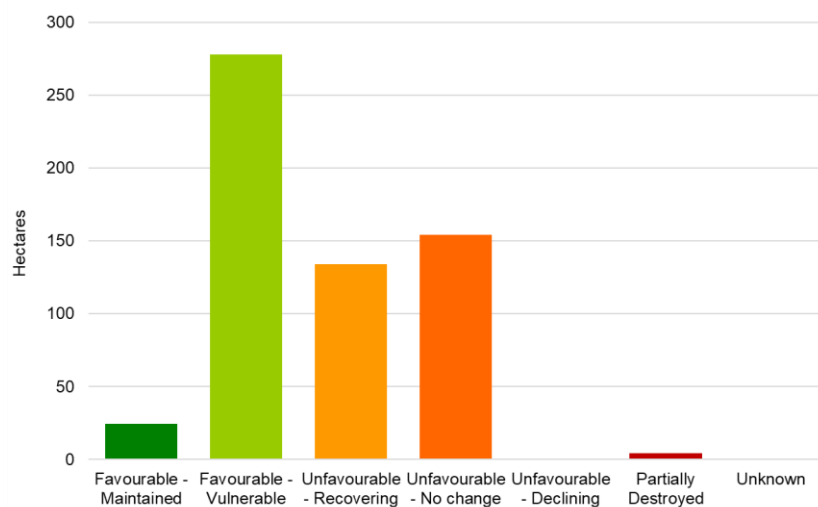


Fig 9a: Condition status of woodland and scrub primary features in 2025

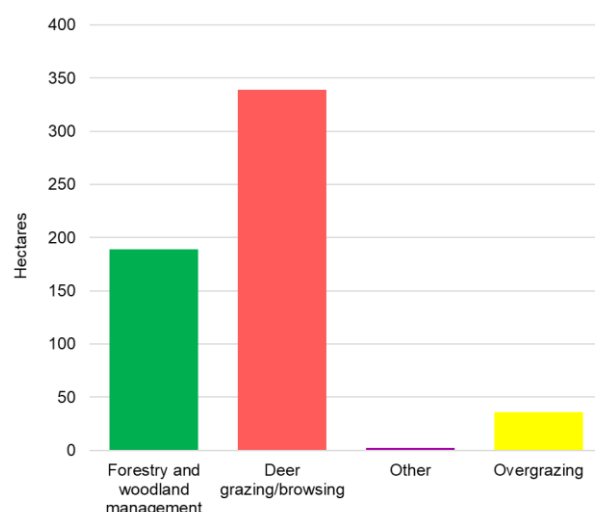


Fig 9b: Drivers of unfavourable and vulnerable condition for woodland scrub primary features in 2025

**51% of woodlands are favourable, 23% are unfavourable recovering
26% are unfavourable no change**

There are two main drivers causing woodlands to be considered unfavourable or favourable but vulnerable. These are ash dieback and deer browsing pressure. These issues are very much interlinked, with deer browsing exacerbating the problems caused by ash dieback. Issues relate to a lack of woodland structure and regeneration of tree seedlings, prevented by deer browsing. The inability to manage woodlands which remain overstood by dead and dying ash, through activities such as coppicing, ride cutting and deer stalking, also significantly constrain the ability to mitigate against the impact of these problems.

Where possible funding has been used to address this, for example at Moor Copse where ash trees overstanding coppice have been lowered in height and “veteranized” for bats, enabling coppicing to safely continue.

It should also be highlighted that woodland management work is particularly resource heavy in terms of the amount of time it takes to coppice a coupe or cut a ride. At some sites, such as Bowdown the reduction of volunteer led work parties has restricted the coppicing that can take place. The planned programme of diseased ash removal for health and safety reasons is reaching its end, which will release some staff time to consider what steps should be taken next.

Finally, it is worth noting that the woodland at Calvert Jubilee has been partially destroyed through land take by HS2.

3.4.2. Meadow

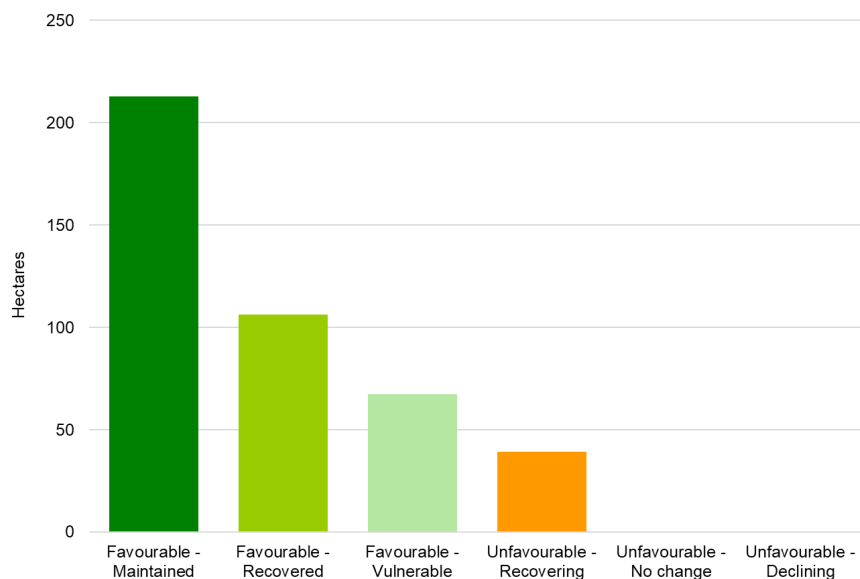


Fig 10a: Condition status of Meadow primary features in 2021

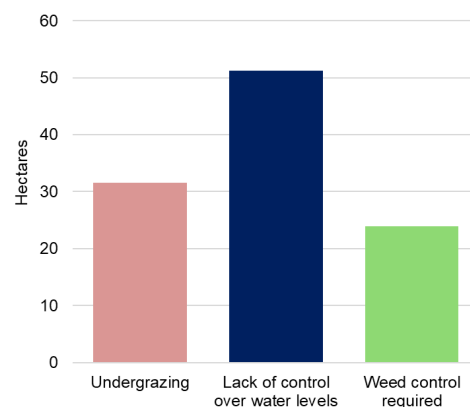


Fig 10b: Drivers of unfavourable and vulnerable condition for meadow primary features in 2021

91% of Meadows are favourable, 9% are unfavourable recovering

The vast majority of meadow features are favourable representing significant management effort.

Issues affecting hay meadows include lack of control of water levels. This is affecting Iffley Meadows and the National Nature Reserve (NNR) at Chimney Meadows. At Chimney there is a breach in the levee which surrounds the NNR. This is allowing too much water from the Thames on to site and the composition of the grassland is shifting away from flower rich towards a community dominated by coarse wet loving species such as tufted hairgrass. The issue is not within BBOWT's management control; and in the past few years there have been extensive negotiations with Natural England (the land owner), the Thames Path and the Environment Agency to reach a resolution. The results are currently looking promising, with work planned for the summer of 2026.

Other issues include a lack of grazing at Moor Copse where issues with TB outbreaks have prevented the Trust from using our own cattle to graze the site. A local grazier's sheep are being trialled instead, to see if this can maintain the quality of the grassland.

Finally, weed control is required on some of the land at Ludgershall, where creeping thistle is more abundant than desired. This is partly because the site is still newly in restoration management following a period of intensive sheep grazing; prior to the Trust taking on the site. Targeted management is underway to reduce the weed burden.

3.4.3 Lowland Heath

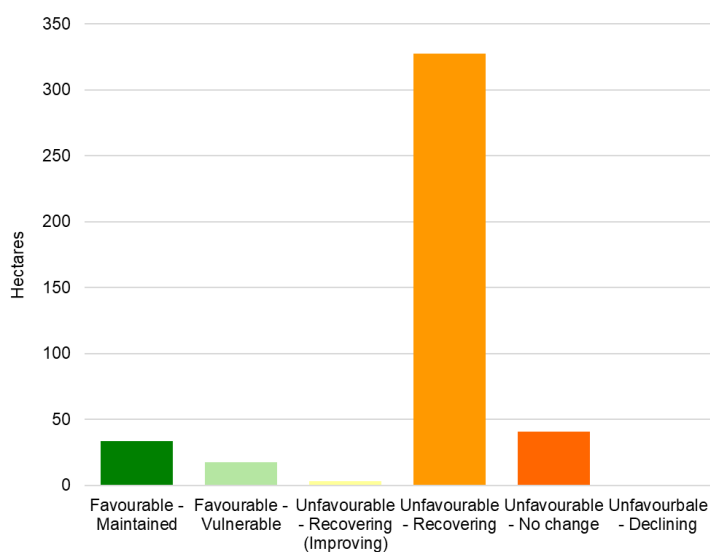


Fig 11a: Condition status of heathland primary features in 2025

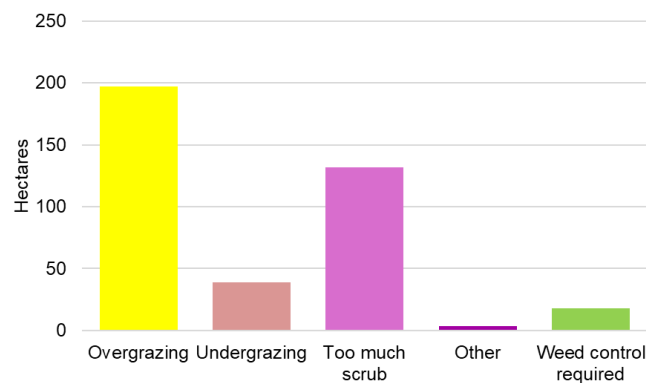


Fig 11b: Drivers of unfavourable and vulnerable condition for heathland primary features in 2025

**12% heathlands are favourable, 78% are unfavourable recovering
10% are unfavourable with no change**

It is worth highlighting that while most heathland features are not in good condition, the results from the 2025 assessment show a significant improvement since 2022. At this point in time no heathland was considered favourable (now 12%) and 37% were unfavourable with no change (now 10%). This marked improvement represents a significant investment in time and resources, primarily in removal of scrub.

Increasing levels of scrub remain a problem across many of our heathlands. Succession takes place quickly on open heathland in the absence of traditional management practices, and keeping on top of encroaching scrub takes up a lot of resources in terms of cost and staff time. Some sites, such as Padworth Common, have seen extensive scrub removal over the past few winters, and while scrub control will be required into the future, this is now considered to be in a maintenance phase. This feature is now considered to be favourable maintained (previously assessed as unfavourable recovering).

The primary driver for heathland in unfavourable condition is overgrazing. This is entirely located at Greenham and Crookham Commons, where grazing is delivered by graziers, who operate outside the direct control of the Trust. The area of heathland and heath mosaic at Greenham is very large (c. 200ha) and therefore this drives the bulk of the issues across the heathland features. Since the last assessment much effort has been put in to change the situation. This has resulted in the heathland now being considered as unfavourable recovering, which is a very positive movement. Further details are provided in the solutions section 4.2.

Other issues include under-grazing, which is primarily located at Wildmoor Heath and Padworth Common. At Wildmoor grazing has not taken place since 2016 due to antisocial behaviour and vandalism, which has resulted in fences being cut, amongst other issues. Plans continue to develop to establish viable long-term grazing, from spring 2026, along with contracting out a management and hydrological assessment of the site. The assessment is funded through Natural England as phase one of developing a new agri-environmental scheme application.

3.4.4 Fen, Reedbed and Wet Grassland

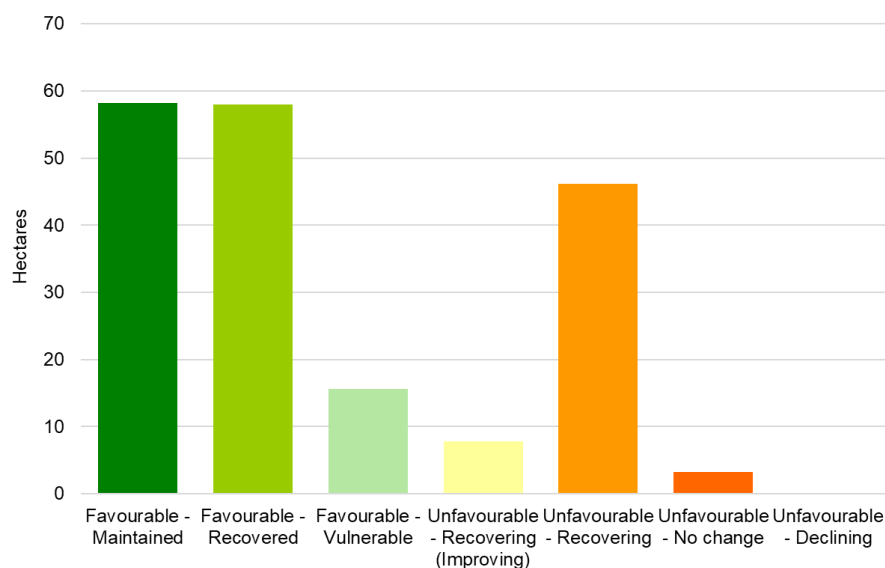


Fig 12a: Condition status of Fen, Reedbed and Wet Grassland primary features in 2025

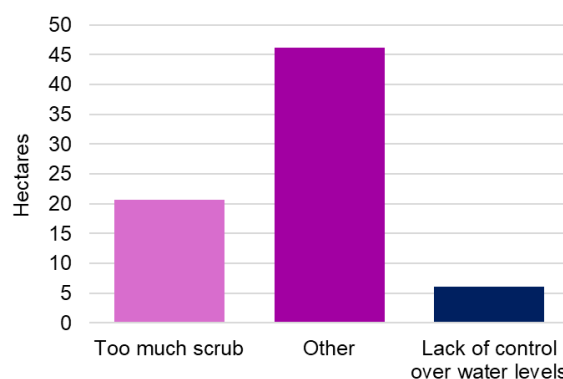


Fig 12b: Drivers of unfavourable and vulnerable condition for Fen, Reedbed and Wet Grassland primary features in 2025

70% of Fen, Reedbed and Wet Grasslands are favourable, 29% are unfavourable recovering 1% are unfavourable and are getting worse.

The issue making the largest area of fen, reedbed and wet grassland unfavourable is 'other'. This is focused on Duxford where the wet grassland area is being managed using a 'nature-led' approach. There is no specific issue which needs to be addressed here, simply more time is required for the wet grassland mosaic to develop and reach its full potential.

Other issues include, too much scrub at sites such as Cholsey Marsh and Dry Sandford Pit, where the levels of scrub are threatening the Desmoulin whorl snail and floristic diversity respectively. At Cholsey Marsh work is underway to reduce the cover of scrub and restore areas of sedgy grassland to support the Desmoulin whorl snail population. This work needs to be undertaken sensitively as the site is also important for breeding warblers, which thrive in the areas of dense scrub.

Lack of control over water levels is currently an issue at Thatcham Reedbeds. In the past there have been concerns that the site was getting too dry for the rare fenland species it supports, and additional water control structures were installed. However, in recent years the site appears to have become wetter due to an increase in water coming on to site. Further investigations are underway to ascertain if it is possible to better control water levels.

It is also worth noting that a significant area of fen, reedbed and wet grassland has become favourable from a previously unfavourable assessment (ie is now 'favourable recovered') – this is the wet grassland at the Upper River Ray. While the numbers of breeding waders, and especially their productivity rate (the number of young they fledge) remains a concern, it is now felt that the habitat is in good condition. Thanks to the creation of further shallow scrapes and the addition of a new large predator fence, and that there is little else remaining within the Trust's control which could improve condition.

3.4.5 Improved and Rough Grassland

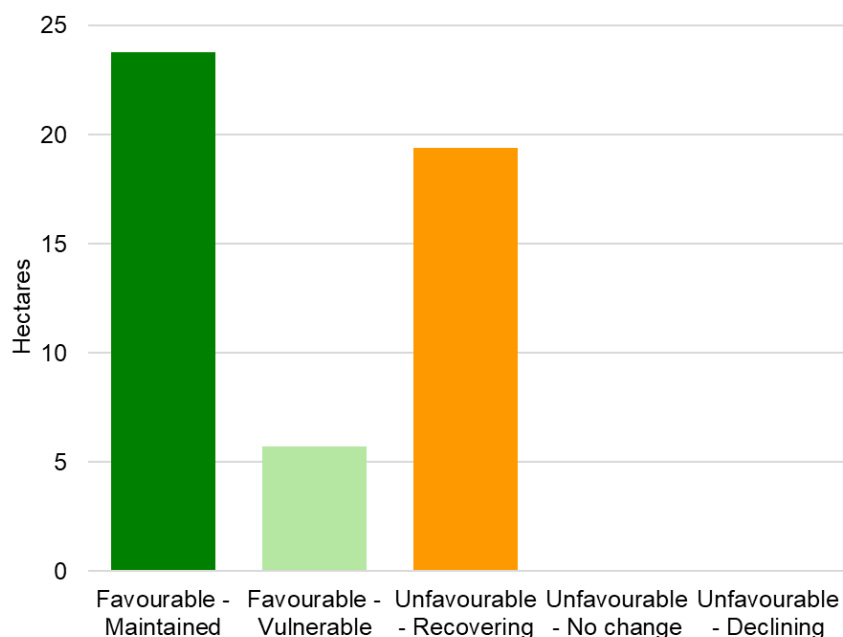


Fig 13a: Condition status of Improved and Rough Grassland, primary features in 2025

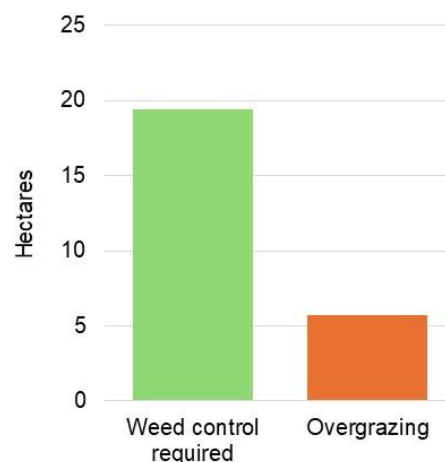


Fig 13b: Drivers of unfavourable and vulnerable condition for Improved and Rough Grassland primary features in 2025

59% of Improved and Rough Grasslands are favourable, 39% are unfavourable recovering

The main issue affecting improved and rough grassland is too high a weed burden. This is chiefly located in a few fields at the Upper Ray, including Cowleys. The land here was enhanced using green hay; this was unsuccessful and there is now a significant issue with docks. Discussions are underway with the local grazier how best to control this with the long-term view of a softer nature-led management objective of rough grassland and scattered scrub.

The rough grassland at College Lake is considered unfavourable due to heavy grazing pressure. This occurs due to the lack of layback grazing available in Buckinghamshire, with the rough grassland being one of the few areas livestock can go, when they are not conservation grazing other sites. Livestock are currently being reviewed and a new mix of animals and graziers is likely to be tried in 2026.

3.4.6 Calcareous Grassland

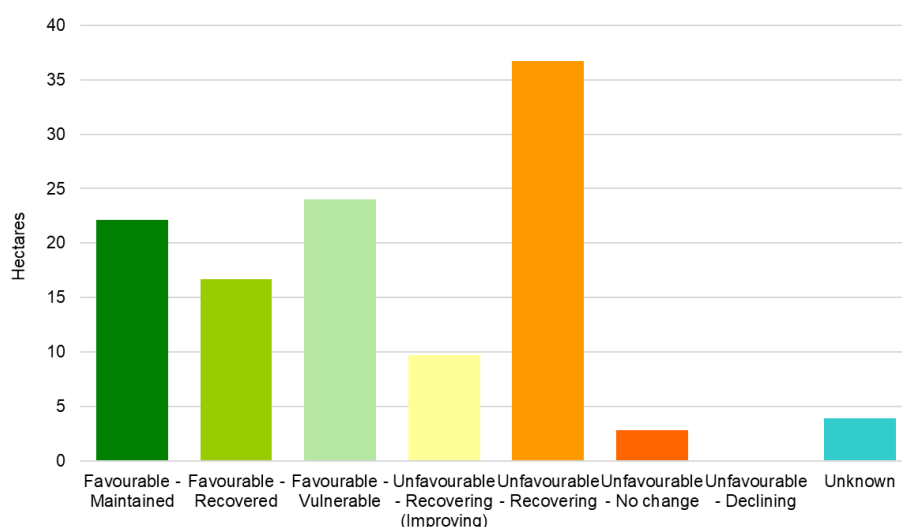


Fig 14a: Condition status of Calcareous Grassland, primary features in 2025

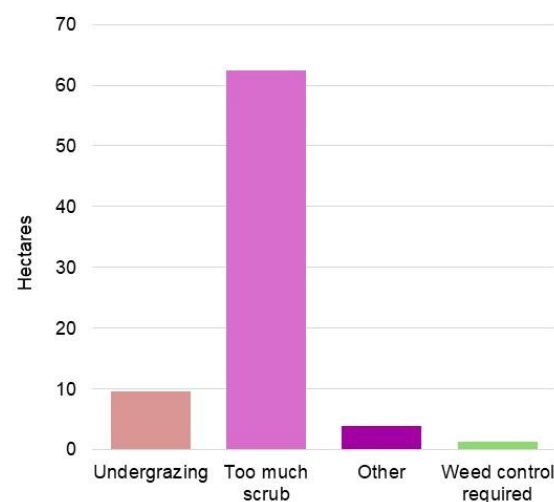


Fig 14b: Drivers of unfavourable and vulnerable condition for Calcareous Grassland, primary features in 2021

**54% of Calcareous Grasslands are favourable, 40% are unfavourable recovering
2% are unfavourable no change
3% are unknown**

The main reason that calcareous grassland is considered unfavourable is the presence of too much scrub. Open short-sward calcareous grassland can quickly succeed to scrub and eventually woodland if left unchecked. While grazing can help prevent the growth of scrub, other mechanical methods are essential, such as cutting and herbicide application. Scrub issues are located across a wide range of chalk grassland sites. The use of new machinery and an extended cutting period is being trailed to try and address the problem and return scrub control to a maintenance phase. It is important to note that there will always be a requirement to control scrub.

Under-grazing is an issue at sites such as Hartslock, where the loss of adjacent land makes grazing the remaining nature reserve challenging as there is less flexibility to move livestock around. At Seven Barrows a grazer is being used for the first time (instead of Trust owned livestock) and how well this works for the grassland is not yet known.

Weed control continues to be a concern for the glades at Homefield Wood. While the Military Orchids are thriving and the grassland is considered in good condition, maintaining this status quo requires a huge amount of ongoing effort to control dogwood and clematis and the feature is extremely vulnerable if this management input were to reduce or cease.

Areas which have an unknown status are the newly acquired chalk grassland restoration site at Valley Farm. Following reseeding in 2025 as part of a BNG project the land will be surveyed in the coming years to assess progress.

3.4.7 Farmland and Arable

100% of farmland features are favourable vulnerable

These features are located at Wells Farm, where there is an important farmland bird population including yellowhammer, grey partridge and skylark, and other associated species such as brown hares. Over the last three years the sustainable management of the arable fields has come under threat. The previous tenant farmer passed away, leaving the fields to turn fallow for a year, while deliverable plans for the fields were discussed. The Trust was about to apply for an SFI scheme (Sustainable Farming Incentive) when the government froze applications. Details about what the new scheme will include and when it will open for applications have only been released at the end of February 2026. In the meantime, a new tenant has been found and is currently on a short-term business tenancy agreement. However, the ongoing management of the land remains vulnerable as it has proved hard to find a tenant who is willing to manage the fields quite as 'wildlife sympathetically' as desired by the Trust.



Yellowhammer © Amy Lewis

3.4.8 Ponds, Lakes and Rivers

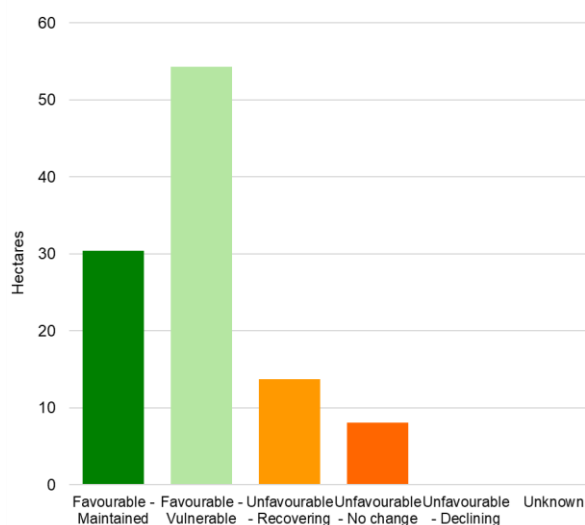


Fig 15a: Condition status of Ponds, Lakes and Rivers, primary features in 2021

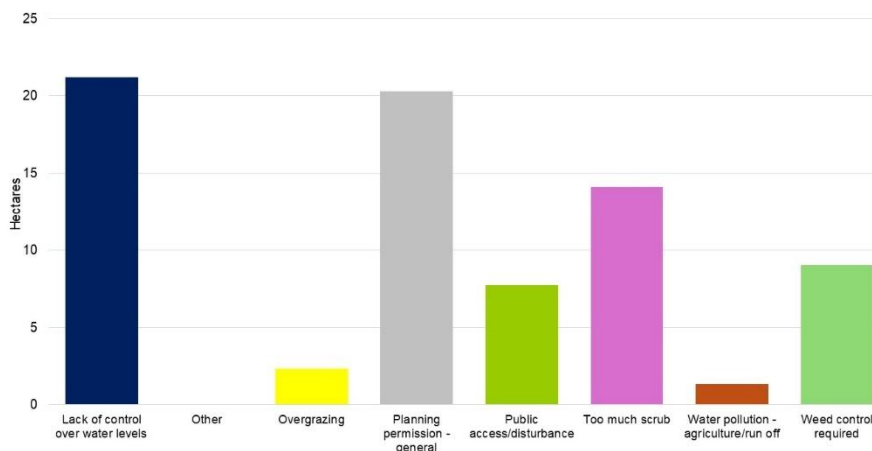


Fig 15b: Drivers of unfavourable condition for Ponds, Lakes and Rivers primary features in 2021

**80% of Ponds, Lakes and Rivers are favourable, 13% are unfavourable recovering
7% are unfavourable and getting worse**

This feature group covers a wide range of different sites and elements from small ponds to large expanses of open water, and therefore there are a wide range of factors driving the condition status. Planning permission is affecting condition at Calvert Jubilee where HS2 have taken over the land adjacent to the open water and machinery and intensive construction adjacent to the site is affecting the open water and associated bird populations.

Water level control remains an issue at College Lake, where the bund is stable but at risk of erosion from wave action on the large open lake, potentially putting the marsh and islands in danger of flooding. A significant injection of funding is required to address this complex issue. It is hoped that there will be funding available from HS2, but staff time to develop a project remains the limiting factor in delivering this.

Water pollution concerns have made the river features at the Upper Ray favourable – vulnerable. The Trust has done all it can within its own landholding to improve flow and connectivity between the river and the floodplain, but water quality remains an issue in the wider Upper Ray catchment area. It is hoped that work through the RBOR⁵ project will reduce this impact.

Public disturbance is a significant issue at Weston Turville Reservoir, where the landowner permits fishing and sailing activities on the open water. Negotiations are ongoing to reduce the area of the reserve the Trust is responsible for, to restrict our interest to the adjoining fen and reedbed.

High levels of scrub are an issue for the network of smaller ponds across sites, where time and resources can be limited to focusing only on the larger areas or priorities on sites. This includes the ponds at SCEEC which support a large population of great crested newts. Work is planned here to reduce scrub cover in the near future.

⁵ Reconnecting Bernwood, Otmoor and Ray

3.4.9 Hedgerows

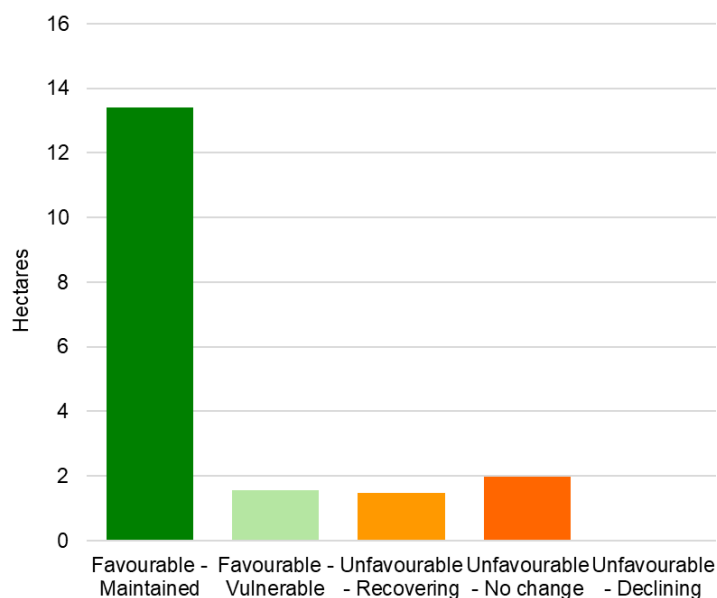


Fig 16a: Condition status of Farmland and arable, primary features in 2021

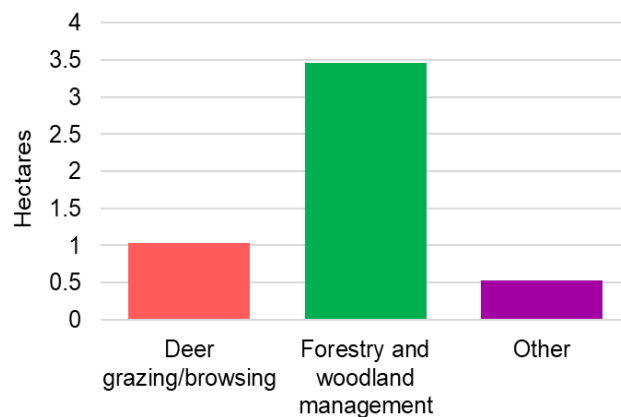


Fig 16b: Drivers of unfavourable condition for Farmland and arable, primary features in 2021

**81% of Hedgerows are favourable, 8% are unfavourable recovering
11% are unfavourable and getting worse.**

The biggest issues affecting hedges is that of a lack of management – the reason why hedges are becoming too big and tall and overrun by bramble. This is specifically a problem at Asham Meads and Rushbeds. It is hoped that additional funding through the RBOR project will address this.

Deer browsing at Woolley Firs has negatively impacted on newly planted and coppiced hedges.

3.4.10 Geology, Species and Archaeology

The final three feature groups have been combined as they only cover 10ha (Geology 1ha, Archaeology 1.5ha and Species 7.5ha). However, they are important as they are all legal requirements for the Trust to manage.

Geology

Geological SSSIs are located on five nature reserves. 42% are favourable and 52% are unfavourable-recovering with the main reason for this status being the cover of scrub. However, this is a significant improvement on the previous report when approximately 90% of geological features were unfavourable due to high levels of scrub. The remaining cliff faces needing work are located at Ardley Quarry and Hitchcopse Pit where lack of resources (a digger is needed) has prevented works from taking place.

Archaeology

The Trust is responsible for 4 Scheduled Ancient Monuments, these include a number of pre-historic barrows and the site of a medieval fortified manor house. All of these are in favourable condition.

Species

Species features are monkey and military orchids and red helleborine. Each of these are considered to be in favourable condition with populations stable or increasing.



Monkey Orchid at Hartslock
@ Debbie Lewis

4. Challenges and Solutions – Site based

This section on the report summarises the key overarching issues making features unfavourable, in order to be able to identify potential solutions. Whilst it is obviously critical to address issues, it is important to remember that maintaining features in good condition takes up a significant proportion of time and financial resources. Maintenance of favourable features should always be considered the priority before restoration of unfavourable ones when choosing where to spend resources and effort.

4.1 Challenges

It can be seen from Figure 17, that although different habitats often have different habitat-specific challenges, there are a number of issues which consistently occur across features or are responsible for a significant proportion of the Trust's estate being in unfavourable condition categories.

There are four overarching themes, which together account for 80% of land being considered as unfavourable on nature reserves. These are: overgrazing by livestock (27%); too much scrub (23%); forestry management (22%) and deer browsing (8%). These are not new issues and have been highlighted in previous reserve condition reports. Some of these issues such as deer control are not easy to solve at a site level, while for others much work has been undertaken to address the issue.

Many of the challenges facing wildlife exacerbate each other, for example longer growing seasons due to climate change, coupled with TB restrictions limiting livestock flexibility mean that controlling scrub is increasingly difficult. Although the solutions detailed below are broken down into different sections for ease, wherever possible a holistic approach to problem solving is taken. Progress and constraints for these issues are detailed in the following section.

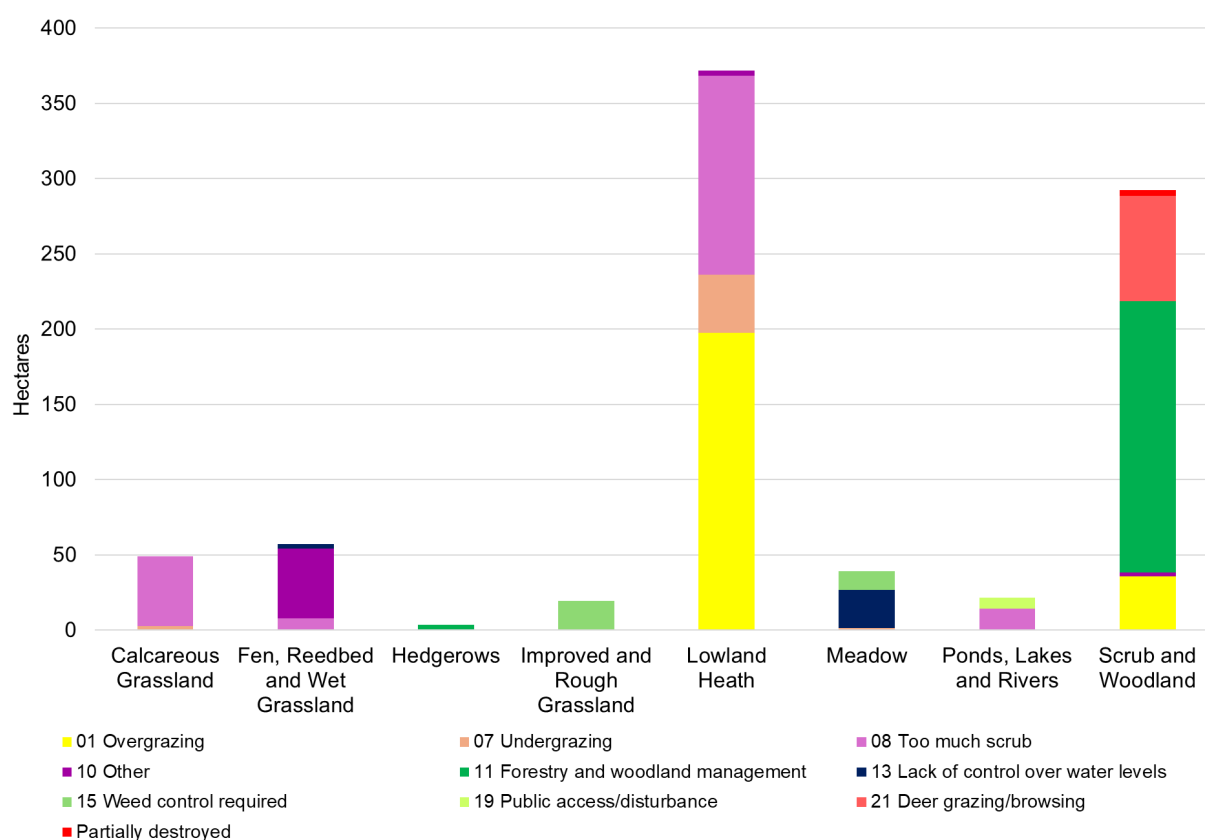


Fig 17: Reasons for being unfavourable, by habitat, of primary features in 2025

4.2 Solutions

4.2.1 Deer and Forestry Management

Deer browsing pressure and ash dieback continue to have a significant impact on our woodlands, threatening regeneration of trees, structural integrity and survival of woodland specialists such as bats. These issues are prevalent across our woodlands and together account for 29% of unfavourable features.

In order to address this issue deer stalkers are engaged at all core woodland sites and time and effort is spent on ensuring that the right infrastructure is in place to make the stalking as efficient as possible. However, deer issues are much wider than a single site, with control best placed at a wider landscape level. The Trust actively engages with wider area control opportunities when they arise. For example, the Chilterns National Landscape commissioned a drone survey to assess deer populations across the south Chilterns and this included several of our nature reserves. Following the results from this the Trust attended a workshop with landowners, other NGOs and Government Bodies to discuss a co-ordinated way forward to control deer in a large landscape level area.

Ash dieback impacts are more easily addressed at a site level and when funding allows, proactive management has already taken place. The survival of rare species such as dormice are doubly impacted upon by the loss of natural nesting sites when ash trees collapse and the lack of dense hazel, when coppicing can no longer take place in dangerous woodlands. At Moor Copse this has been mitigated for by carrying out work on mature ash trees in coppice areas, thus enabling coppicing to continue into the future. Project money also enabled repairs to the deer fence which encircles approximately 19ha of woodland and protects the coppice regrowth from browsing damage.



Deer high seat in newly created glade at Finemere to enable better deer management
© Debbie Lewis

Natural regeneration on sites significantly affected by ash dieback like Rushbeds Wood and Whitecross Green Wood is carefully being monitored and when levels are deemed too low, restocking of trees will take place. These will likely be large scale projects and need external funding sources.

4.2.2 Overgrazing

The issue of 'over-grazing' on reserves is focused at Greenham Common, where the site is grazed by people exercising Commoners Rights. The Trust has for many years been concerned that levels of grazing are too high for some of the conservation features of interest on the site, such as species-rich grassland, nightjar and adder.

Greenham Common is legally regulated by the Greenham and Crookham Common (GCC) Act 2002, with the Greenham and Crookham Commons Commission overseeing the implementation. The Act enables the Commission to develop new bylaws to support the delivery of the duties identified within the Act.

Approximately 8 years ago the Commission started the process of trying to introduce regulations to limit the timing, duration and stocking density of livestock using the Common. This process has been extremely difficult to implement in part because the Commission is comprised of volunteers, who donate their time and effort to its running. Over the development period there were 4 different Commission Chairs, and 8 different drafts of the regulations were consulted upon before there was final agreement across the Commission. Other difficulties included strong opposition by the graziers and a lack of expertise, as a land agent was not used to steer the process.

Once the regulations had been agreed the challenges did not stop, as DEFRA (who's role it was to approve the regulations) were frequently unclear about the legal process, with the guidance about how the process should be undertaken, inconsistent. This was in part due to the fact that Commons Regulations have only been implemented in a handful of cases across England, so it was difficult to navigate the requirements, especially in relation to the GCC Act, under which regulations were implemented. Finally, after two years of complex discussions DEFRA formally signed off the regulations and in April 2024 they came into force.

Stocking density is now controlled by the Commission. Stocking rates are reviewed annually, with graziers provided with the annual number of cattle they can put on the Common in the coming year with adequate notice, in line with regulation requirements. The Commission are currently working through the process of how to implement the regulations, specifically if graziers and commoners do not comply. To date non-compliance has not been an issue.

It is still early in the enforcement process and detailed monitoring of both cattle numbers and sward development will help demonstrate the effectiveness of what has been a very lengthy and complicated process.

4.2.3 Scrub levels

Scrub is a particular issue on chalk grassland and heathland sites where vigorous scrub growth can create large dense stands to the detriment of wildflowers and heather and their associated key species, such as butterflies. As such, removal of scrub is a core ongoing conservation management activity. Over the reporting period of this report, work has been undertaken to assess whether there are more efficient ways of carrying out scrub control.

This has included expanding the use of 'tree poppers', a manual tool which removes the tree roots and reduces the likelihood of scrub regrowth. The trialling of new cutting-edge equipment has also taken place on some of our chalk grassland sites where we have used a 'Robo-flail'. This kit is controlled remotely by an on-site operator and enables areas which are less accessible to people to be cut; it is also vastly more efficient than a group of people with brushcutters. The possibility of funding the purchase of this equipment is currently being looked into.

The effectiveness of using herbicides in preventing scrub regrowth has been experimentally investigated at Snelsmore Common by two dedicated volunteers. They found that scrub treated with herbicide had a 14.6% regrowth rate while 93.3% of untreated scrub regrew; showing clearly that the use of herbicide remains an effective way of reducing scrub levels in the long term. The volunteers also investigated the timings of application and the size of the cut stem and found that there was no significant trend; meaning that it is just as effective to treat cut stumps in the early winter as late winter and that all size scrub was equally impacted. This helps ensure scrub control work can be planned efficiently throughout the winter season.

In some situations, the conservation objectives for sites have been reviewed to ensure that scrub removal or reduction is still the most appropriate action to benefit wildlife. If appropriate, higher levels of scrub are retained. For example, following an unsuccessful restoration of species-rich grassland at Cowleys, the objective for the site has been changed to follow a softer, more nature-led approach, to develop a mix of scrub and rough grassland.



Robo flail in action removing scrub at Dancersend © Mark Vallance

5. Novel solutions – Across Sites

There are a number of delivery opportunities which are already helping, and could be expanded further to drive positive reserve management. These mechanisms provide benefits which can be achieved across a suite of reserves and include elements such as accessing specific project funding, developing diverse and sustainable volunteer groups and utilising new technology.

Solutions to wider important ecological constraints such as climate change and landscape connectivity are also discussed here.

5.1 Income

A sustainable income source for nature reserve management is vital in order to be able to carry out the required conservation management on a site.

5.1.1 Project Funding

One of the most successful ways in which the Trust has realised funding to support work on nature reserves, is through the delivery of specifically funded projects. Over the past three years more than 35 different projects have been run across nature reserves, together bringing in approximately £2m of additional funding. These projects have been managed and delivered by existing staff as funding for new staff is extremely difficult to come by. Specific project funding, whilst providing a significant opportunity for reserve management delivery, is constrained by availability of staff time to develop and implement projects.

Table 1 shows the main land management projects delivered over the last 3 years, each having greater than £45k funding. These projects have achieved some fantastic additional conservation management. For example, the Wetland Project at the Upper Ray focused on improving the habitat for breeding wading birds such as redshank, curlew and lapwing. This was delivered by installing a new predator fence and creating an additional network of shallow scrapes. The project also enabled the Trust to generate longer term benefits through the purchase of weed wiping equipment and highly accurate GPS equipment for monitoring. New interpretation and improved access from the car park to the bird hides also ensures that visitors now have an inspiring experience at the reserve.

Based in a completely different habitat, the Woodland Wonders project at Moor Copse has also generated some great biodiversity benefits. The old and dilapidated deer fence was replaced to enable coppice regrowth to develop without deer browsing pressure, new fencing was installed to enable ongoing grazing of the hay meadows and following extensive ash dieback works, remaining mature trees were veteranised to provide bat roosting habitat. The project also paid for a bat survey using novel acoustic monitoring methods which picked up 12 different species bats using the reserve, including woodland specialists such as barbastelle.

Occasionally the Trust is involved in partnership projects, which may not bring in specific income, but desired work is carried out on reserves as part of the project. For example, three chalk grassland reserves were part of a Plantlife project to improve the population of juniper across the Chilterns. Plantlife paid for and organised the creation of chalk scrapes across these sites to promote juniper regeneration and associated early succession flora. These types of project are particularly beneficial as they bring good wildlife gains with minimal staff input.

Table 1: The main projects delivering reserve management over the last 3 years, each with >£45K income

Project	Key outcomes	Income over last 3 years
767 - Woodland Wonders of Moor Copse	Works delivered included ash dieback management, installation of new deer and stock fencing, solar borehole and water troughs.	£268,681
893 - Upper Ray Meadows Wetland Restoration Project	Habitat improvements for breeding waders (scrape creation, predator fence installation and removal of predator perches and purchase of weed wiper). Access and interpretation improvements. Site infrastructure improvements through stock fencing replacements. Purchase of GPS Monitoring equipment and hydrological survey of site.	£226,247
679 - Wardening & Access	Seasonal wardens to help manage public impact on ground nesting birds and a programme of access improvements including new footpaths and dipping platforms.	£166,290
894 - Adder Connections	Adder project installing tunnels to reconnect two parts of Crookham Common separated by a road.	£129,058
200 - College Lake LM	Access improvements.	£117,954
823 - Wildmoor Grazing Reintroduction	Increased capacity to be able to graze Wildmoor. New fencing installed/replaced and water trough installation. Machinery to facilitate livestock management, and Nofence collars. Aiming to restart grazing in spring 2026.	£100,000
705 - Thatcham Reedbeds	Planned habitat enhancement works in the reedbeds (project yet to be started).	£83,715
678 - NDC Access Works	Planned access improvement works in the reedbeds (project yet to be started).	£73,538
NRF900 - Floodplain Meadows	Funding included covering core staff time to help with delivering surveys across floodplain reserves. Installed new fencing and pollarded willows at Chimney Meadows.	£61,937
766 - Dancersend Celebration	Creation of site infrastructure including a stock pen and better facilities for volunteers. Conservation management of chalk grassland and purchase of equipment (tractor flail). Improved access, signage and events. Working with landowners in landscape.	£51,520
821 - Woolley Firs Arable Reversion	Taken arable fields back into BBOWT management and undertaken arable reversion to grassland for layback. Hedgerow creation, installed c.2000m of stock fencing and new water troughs to all fields.	£46,739
859 - Aston Clinton Conservation	Fencing at Dancersend. Delivering conservation objectives on neighbouring high value land. Conservation management such as scrub clearance and hedge planting.	£45,000

The Trust will continue to explore opportunities to develop funded projects to deliver work on reserves. At the time of writing several new projects are being progressed with a view to getting them funded through Natural England's Species Recovery Fund. These include work both on and off reserves improving the network of fen sites near Abingdon in Oxfordshire, and management of chalk grassland

sites for a range of rare chalk grassland specialist plants, such as Chiltern gentian and juniper. Both these projects would be delivered in partnership with other NGOs.

5.1.2. Agri-Environment Schemes

One of the main sources of income is agri-environment schemes administered by the UK Government (NE/DEFRA/RPA). Whilst these schemes provide income which covers the types of activities undertaken, they are volatile in their nature, changing as government objectives change. Figure 18 shows how income from the 'basic payment scheme' has been phased out, but that other income from schemes such as 'Higher Level' and Countryside Stewardship has increased. The Trust currently has 10 Countryside Stewardship agreements and 6 Higher Level Stewardship scheme agreements, covering 29 reserves between them. Additionally, 15 reserves currently have a Sustainable Farming Incentive agreement in place.

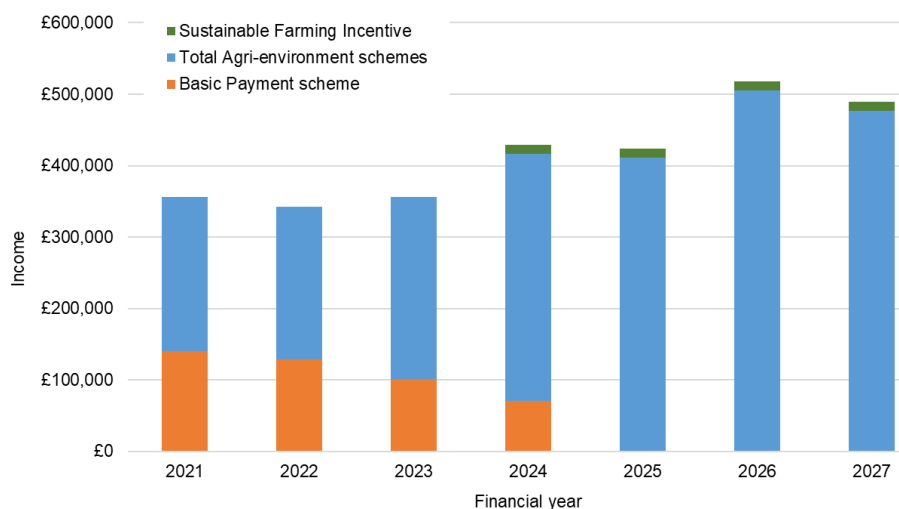


Fig 18: Agri-environment scheme income to the Trust

Much time and effort has been put in by staff to ensure that they understand the new schemes and can make the most of what they have to offer. New Countryside Stewardship applications are by 'invitation only' from Natural England and having a close working relationship with local staff is essential in ensuring we receive an invitation and can craft a strong application. A new CS application for the Upper Ray has just been submitted to DEFRA for approval; this application will be worth £97K annually.

5.1.3 District Licensing

Other funding streams the Trust have tapped into include the great crested newt District Level Licencing (DLL) Scheme. Instead of developers using a traditional site-by-site licence, the DLL offers a streamlined, landscape-scale approach, by increasing and connecting populations across a larger area through habitat restoration and pond creation away from the development site. The development money released through the scheme has been used to create over 25 ponds across 6 sites. This has been great for wildlife, with the majority of new ponds supporting great crested newts (GCN). The ponds at Moor Copse were particularly successful. Prior to creation the site did not have a population of GCN, but within the first year post-creation, the species was found to have colonised the ponds. The scheme is additionally beneficial for staff as all the practical delivery elements, such as scoping, design and organising contractors are covered by the scheme. And if the ponds fail to hold water once dug the scheme delivery organisation will come back and repair them. Additionally, all ponds come with a maintenance income agreement for the following 10 years. Consequently, this scheme provides not only creation of high value ponds for very little staff time input, but also an ongoing management income.

5.1.4 Landscape Recovery Schemes

A new income stream that the Trust is just starting to engage with is that of Landscape Recovery schemes (LR)⁶. This government funding stream is in its infancy, and like all new government schemes there is much detail yet to fully understand, never-the-less it provides a good alternative source of funding for nature reserve management.

In 2025 a 20+ year agreement for Foxholes was signed under the LRS. This will bring in c.£14,000 a year to manage the site and is part of a much bigger strategic project to promote environmental benefits such as biodiversity improvements within the northeast Cotswolds.

Eight nature reserves fall within the Ock and Thame LRS project area and the Trust is currently in discussions about management of these sites, and how the revenue might be focused to achieve the desired biodiversity gains. Further information on the wildlife benefits proposed for these sites, and how this links to wider landscape scale improvements, can be found in the section on Landscape Connectivity. The Ock and Thame LRS is still in the early stages of deciding how the project will be delivered at a practical level. The Trust is in discussions about staff resources and whether there is the potential for hosting additional staff. For example, this could include a Fen Project Officer who would work both on reserves and across the wider countryside. This would be a great opportunity for both funding practical works and ensuring the resources exist to enable their delivery.

BBOWT's own landscape scale project (Reconnecting Bernwood, Otmoor and the Ray - RBOR), funded by the Heritage Lottery also provides a great income opportunity for reserves which fall within the target landscape area.

5.1.5 Green Finance

Green finance has increasingly played an important role in providing a novel income source for nature reserves. To date this has been primarily focused on Biodiversity Net Gain, but may in the future include other streams such as carbon payments. The Trust currently has 2 BNG sites, with a third in the pipeline, awaiting the signing of the s.106 agreement (see case study 5 for further details). At the time of writing BBOWT has invoiced £1.895m and has in excess of £1.5m held in designated funds generating interest. There are currently 215 BNG units available for sale, which even allowing for additional competition from the increasing number of registered habitat banks, should generate in the region of £5m further income.

5.1.6 Sales of Products

Other opportunities to fund work are also utilised where appropriate. For example, timber generated through tree safety works is sold, when extraction is possible. In recent years, partly due to BNG there has been an increasing interest from third parties in buying green hay to restore grassland. The Trust is currently exploring a relationship with HS2 to help provide green hay for some of their restoration areas. Currently sales of products such as green hay, timber and charcoal generate in the region of £30-40k per annum.

⁶ The Landscape Recovery scheme is a UK government program that funds large-scale, long-term projects to restore nature, improve habitats, and address climate change in England. It is one of the three Environmental Land Management (ELM) schemes that support ambitious land-use change through bespoke agreements with farmers and landowners to achieve environmental goals like net zero, enhanced biodiversity, and better water quality. The scheme uses both public and private funding to support these projects, which can involve establishing nature reserves, restoring floodplains, or creating new woodlands and wetlands

5.2 Innovative Technology and Research

In order to ensure that management activities remain effective and efficient in achieving wildlife objectives and that the most up to date information is available, the Trust continually considers and, when appropriate, trials new technology, as well as supporting innovative research. As the environment changes, this will become an increasingly important strategy in ensuring good condition across reserves. Detailed below are some examples of how new technology has been used and the benefits it has already brought.

Wherever grazing is needed to manage a habitat, the area must be fenced. Traditional post and wire fencing does not last as long as it did, as the wood preservative now used to stop the posts from rotting is not as effective as it was previously (due to removal of toxic compounds). About 10 years ago, an alternative approach was introduced into the UK called 'Clipex'. This uses metal posts instead of wooden ones and while initial costs are high, replacement intervals are much longer, and with less maintenance, meaning Clipex is more cost effective in the long-term. When funding has allowed, for example at Duxford through BNG income, approximately 2.5 km of Clipex fencing has been installed. The wetland nature of the site here means that traditional wooden posts rot very quickly and it is anticipated that the metal Clipex ones could last almost three times as long.

Using collars on livestock to control where they graze through GPS has been tested by a number of conservation NGOs over the past 5 or so years. In 2025 the Trust started to use this technology to control and accurately record cattle grazing at Duxford. It is early days yet and 2026 will see their use across the first full grazing season, but it is anticipated that the project will be successful.



Clipex fencing at Hartslock - @ Roger Stace

New approaches to species conservation have been used with great success at Greenham and Crookham Common where tunnels were installed to enable adders (and other reptiles, amphibians and small mammals) to cross a road and reconnect two genetically isolated sub-populations. This was the first time the tunnels of this type had been installed for this purpose in the UK. Within only a few months records were made of a wide variety of species using the tunnels including the target species – adders. This is a testament to the benefit of trying new and different approaches. For further details, see case study 2.

Elsewhere ash dieback management has included 'veteranising' trees to provide habitat niches for bats which will be lost when mature ash trees die. Whilst the concept of this approach has been around for more than 20 years, it is only recently that studies have shown evidence that it works well; not only for bats but other small mammals and birds too. With the evidence base now in place, where appropriate, the Trust has been undertaking this activity.

Over the past three years the Trust has also been involved in helping deliver some cutting-edge research looking at the value of floodplain hay meadows for carbon storage. This partnership project with the Open University and a local conservation charity has demonstrated that meadows play a huge role in storing carbon and are just as valuable as woodland. The understanding and evidence collected has been used to shape the government agri-environment grant schemes, with floodplain meadows now specifically recognised as a target with appropriately higher payment rates (see Natural Capital Case Study 5 for further details).



Veteranised tree at Moor Copse,

The cuts mimic lightning strike damage, inset picture shows the chainsaw holes created for bats. © Lou Reeve

Data collection for nature reserves has also used new technology such as drones to create detailed habitat mapping, and a differential GPS unit to get location information to sub centimetre accuracy. AI powered tools are being investigated to assess how accurately they can automatically map scrub levels across reserves. Finally, the use of acoustic recording equipment is also providing more information about species such as bats and other small mammals, which can be hard to record using more traditional methods.

5.3 Volunteering

Volunteers play a significant role in delivering conservation management across nature reserves. This includes a vast array of activities from specialist roles such as species monitoring, hedge-laying, tractor driving, and complex construction, to more generalist roles such as 'scrub-bashing' or raking cut vegetation. All of which are vital to delivering work plans. However, an aging volunteer force and changes in society and the economy, requires the Trust needs to review its volunteer recruitment and retention strategy to ensure that it is fit for purpose in the future.

The first step to doing this will be to carry out a 'skills and needs' audit so that what is needed, where and what the priorities are, can be fully understood across all reserves. It is already known that work party leaders and reserve wardens will be a starting priority.

Putting in place better succession planning to support volunteers both when they ‘retire’ from warden roles and to identify and nurture new wardens will be key in ensuring long-term functioning of work parties. This may include measures such as an ‘ambassador’ role for wardens no longer able to carry out physical activities, to ensure their knowledge is not lost from the Trust and that they are not simply left without a way of contributing. Other key elements will include the potential to share tasks, so that some volunteers do the administrative roles, organising work parties, while others share the on-the-day delivery. Clear role descriptions and potentially interviews will help ensure that we open the door to new volunteers coming straight into these roles.

Alternative recruitment strategies might include offering different sorts of opportunities for volunteers, such as one-off, or taster days which can be more appealing to young people, or those with limited regular time availability.

There are also potential opportunities to partner with universities, such as Reading or Brookes, which have wildlife conservation courses with students wanting to gain experience. This kind of volunteer might be most appropriate for low skilled, large-scale jobs. For more precise skilled roles such as within the Field Teams, approaching engineering companies to offer taster days and advertise volunteering with the Trust as post-retirement option is likely to be a more successful approach.

5.4 Landscape Connectivity

It is clear that nature reserves play a pivotal role creating landscape connectivity and the provision of an ecologically functioning environment (section 2.1). To help ensure that nature reserves are in good condition the landscape must also be in good condition and vice versa; these two elements are intimately linked.

The imminent purchase of Ham Green Wood is a prime example of this working well. Ham Green is a 57ha site located

within the ‘Reconnecting Bernwood, Otmoor and Ray’ landscape-scale project area. The site is comprised of ancient woodland and 3 large pasture fields. The pasture fields provide a great opportunity for habitat restoration, which in turn will both buffer the existing woodland and increase cover of key habitats.

While it might appear that regardless of site-based activities,

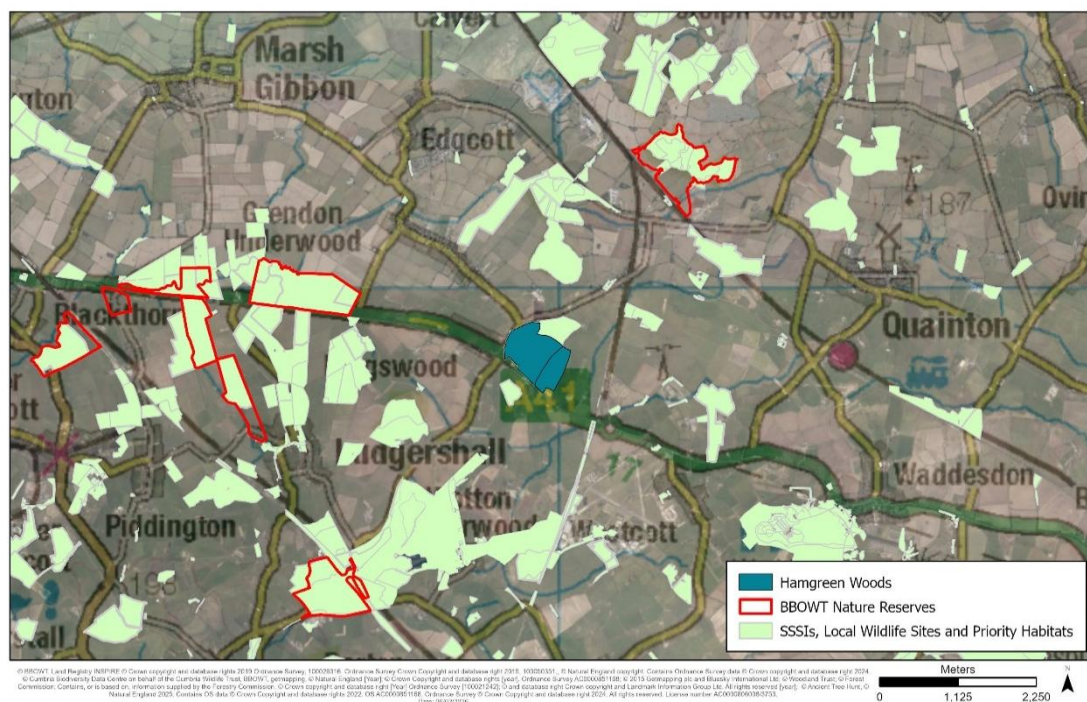


Fig 19: Map showing how Ham Green Wood is an important part of a functioning connected landscape

Ham Green will remain a single isolated site, this is very much not the case. In fact, Ham Green is 'functionally' connected to the other woodlands in the area (for example birds and bats can fly between this woodland and others) and site-based management will significantly strengthen this connection and thus the long-term survival of species in the landscape, which in turn will benefit Ham Green itself. The fortunes of wildlife across the landscape and within the individual sites are closely associated. Figure 19 shows how Ham Green Wood provides connectivity between other nature reserves and areas important for wildlife in a connected, functioning landscape.

Another example of where reserve management can be specifically targeted to bring about benefits, both on site and within the wider countryside, thus making the reserve itself more resilient into the future, is at Cholsey Marsh. BBOWT is currently helping to deliver a landscape-scale project along the Thames between Pangbourne in the south and Didcot in the north. The project is funded by 'Mend the Gap' and is focused on delivering a number of activities to enhance land impacted negatively by the electrification of the Great Western Railway around the Goring Gap. In the heart of this landscape is the Trust's Cholsey Marsh reserve. This wetland site supports the internationally rare Desmoulin's whorl snail. This species functions as a metapopulation with interconnected sites up and down water courses. Restoration of suitable habitat at Cholsey Marsh as part of this project will not only benefit the site but will also strengthen and bolster the population across the whole landscape (for more details, see case study 1).

A further example of conservation management on a nature reserve improving both the reserve and landscape condition, is the river improvement works along the Sulham Brook at Moor Copse. River restoration work best takes place at the catchment level and as one of a suite of landowners along the Brook the Trust held a critical position in being able to support a project with both site-based benefits and wider catchment benefits, including improving water quality and improving connectivity between the Sulham Brook and adjacent habitats. In this case the banks were re-profiled and the channel un-straightened.

Future projects on reserves, which will develop and sustain site condition by improving landscape connectivity, include Letcombe Valley which falls within the Ock and Thame Landscape Recovery project area. At first glance this reserve might appear to be small and have little wildlife. However, the reserve supports a stretch of the internationally important chalk stream, the Letcombe Brook, which is currently in poor condition due to the presence of a large dam and associated silted pool. Restoration of this stretch of the stream through dam removal will benefit not only the reserve but also approximately 12km of chalk stream.



Reprofiling and opening up of the Sulham Brook at Moor Copse © Debbie Lewis

A third example of where a new project is bringing multiple landscape scale benefits is the proposed restoration of fen habitat at a suite of reserves just to the southwest of Oxford, again through the Ock and Thame LRS. This area supports a nationally important collection of calcareous fens, with the next

nearest similar sites in Anglesey or the New Forest. Across this area there are currently 42.64ha of fen⁷. The Trust manages 6 reserves in this area, which include 7.78ha of fen. As such the Trust is currently responsible for the management of approximately 20% of the fen habitat across this landscape. If restoration takes place on these sites, then not only will the reserves themselves benefit, but so will the whole landscape. Indeed, due to the rarity of this habitat, work on these sites will significantly increase in cover of fen at a regional scale. Thus, making these extremely special habitats more resilient and connected at a landscape and regional scale.

Going forward the Trust will both proactively and reactively engage with appropriate large landscape-scale projects to bring biodiversity benefits at both the site and wider scale; making both more resilient and better able to sustain good condition into the future.

5.5 Climate Change Mitigation

2024 was the hottest year on record with a global mean near surface temperature of c.1.55°C above the 1850-1900 average⁸. Climate change impacts are being experienced now in the three counties and it is imperative that wherever needed and possible, mitigation is implemented. Over the past 3 years BBOWT has undertaken a number of actions to do this.

Heathland sites are increasingly vulnerable to extreme heat and associated fires. At the largest heaths, found at Greenham and Wildmoor fire breaks have been created to limit the damage should a fire break out.

At Parsonage Moor a partnership project has been undertaken to re-wet areas of the site and retain water for longer so that areas of drier peat are re-wetted and function fully as active carbon stores; as well as benefiting a host of fen specialist wildlife. At Duxford retaining flood water for longer and restoring the land to a wetland mosaic is also likely to increase the amount of carbon being stored on site.

In an increasingly warm environment retaining water on breeding wader sites, such as the Upper River Ray will become ever more challenging, putting the breeding success of species such as curlew even more under threat. In order to make the site as future-proof as possible a hydrological survey is currently being undertaken to identify potential mitigation scenarios, such as creating a large feeder pool on site from which other scrapes and ponds can be supplied with water during dry periods.

As the growing season gets longer and cold winter months shorter, it is becoming more challenging to control vegetation such as grass, bramble and scrub. To try and address this the Trust is trialling cutting vegetation earlier in the year than previously, while still avoiding impacts on nesting birds. The results of this will be assessed over the coming years. It is likely that going forward 'traditional' times for management may need to be more flexible and adaptive.

In an ever-changing environment good quality data is essential to understand impacts and make informed decisions. Data collected by the Trust and its numerous surveying volunteers feeds into national data sets and from there into the Government's biodiversity indicators and is used to inform policy decisions. The Trust has also been exploring the possibility of contributing to a Natural England dataset recording climate change impacts on National Nature Reserves.

⁷ Data from Priority Habitat Index

⁸ <https://wmo.int/publication-series/state-of-global-climate-2024>

6. Case studies

Case Study 1 – Cholsey Marsh Restoration and Desmoulin's Whorl Snail in the Wider Landscape

BBOWT are partners in a wider landscape restoration project called “Mend the Gap”. The project is led by the Chilterns and North Wessex Downs National Landscapes and funded by Network Rail, to mitigate the impact of electrification works of the Great Western Line, specifically in the area of the Goring Gap. Part of this project has identified key species facing threats at a landscape scale and has provided funding for practical conservation works where these will deliver direct benefits.

Desmoulin's Whorl Snail is a small wetland snail, confined to damp sedge and sweet-grass dominated communities, where the groundwater is calcareous in origin. Locally, the species is present in riverside meadows and wetlands in the Kennet and Lambourn Valleys in Berkshire, and also beside the river Thames in Oxfordshire, where calcareous flushes occur. The species is nationally scarce and declining in the UK, such that it is considered vulnerable to extinction, and it is also rare and declining in all parts of its northern European range, with habitat loss being the main threat. The species achieved some notoriety in the 1990s, when it was dubbed the “Newbury by-pass snail” due to efforts to save a population along the proposed route of the A34 upgrade.

The River Thames metapopulation occurs at a network of sites where the river passes through the Goring Gap and southern Chilterns. At sub-sites, populations naturally undergo fluctuations in numbers in response to habitat change or other environmental changes like floods. In a healthy, resilient landscape, local populations are re-stocked, as conditions become suitable once more, by movement of individuals between sub-sites. But as sites become fragmented and isolated, movement becomes harder and individual populations are more vulnerable to local extinctions (Fig 20).

Project funded survey work has shown that a number of former sites along the Thames no longer have Desmoulin's whorl snails. This raises a concern for the survival of the species in the area.

At BBOWT's Cholsey Marsh a small, core area of damp lush vegetation holds a population of the species, but the small size of the fen area makes this population vulnerable and isolated. There are 3 areas on site where Desmoulin's whorl snails are found. Figure 21 shows the core area where snails were found during 2025.

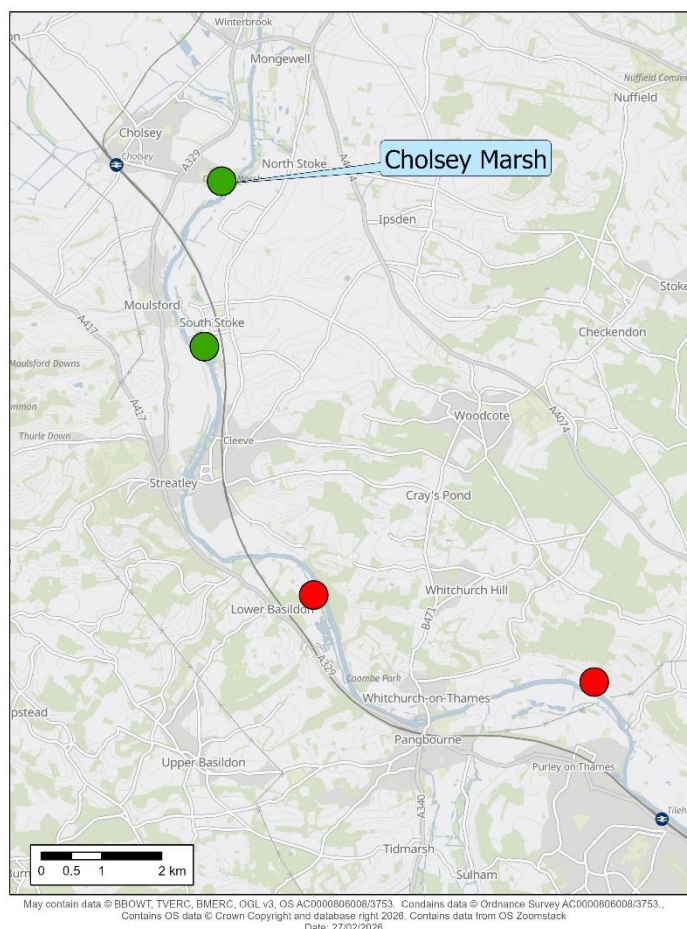


Fig 20: Map showing sites surveyed in 2025 for Desmoulin's Whorl snail.

Green dots = present, red dots = absent

Across the site as a whole 162 individual snails were recorded including numerous juveniles, indicating successful breeding. This number is down from the 2024 survey, as 2024 was a boom year due to the wet spring and summer, however 2025 results are in line with the average over the last 12 years.

In some parts of the reserve the fen habitat was being shaded by neglected willow pollards, whose crowns had become dense and heavy; this also threatens the trees' stability. However, these willows provide important ecological niches in the wetland landscape and are valuable for other wildlife, including birds and bats. As such, felling of mature willows was not desirable. Instead, restoration of the open fen areas was achieved through pollarding which will improve the ground flora and preserve the trees into the future.

In another area adjacent to an existing (but restricted) snail population is an area which had once been open, with suitable vegetation, but where willow scrub had grown up and shaded out the sedge and sweet-grass ground layer, to leave only bare mud. Mend the Gap has funded the clearance of nearly half a hectare of this dense willow scrub, restoring open, damp bare ground. Figure 22a shows the restored area after works have taken place, with the bare area where the dense willow scrub stood; there are also several of the pollarded willows. Figure 22b shows the survey results for the same area. The photograph was taken close to the three green dots (positive records) at the southern end and looks northeast, to the orange dots (negative records). The hope is that fen vegetation will re-colonise and that in future years the snail will spread into the restored areas.

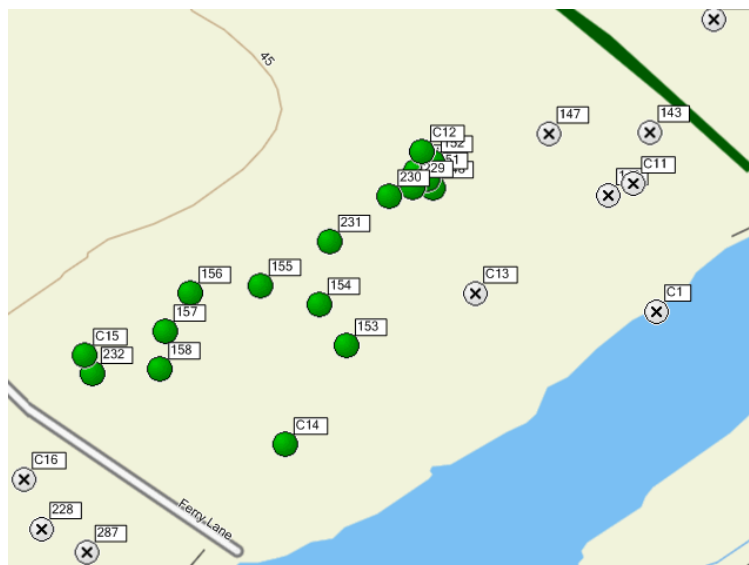


Fig 21: Positive (green) and negative (X) locations for Desmoulin's whorl snails at Cholsey Marsh reserve in 2025.



Fig 22a): View of restored area fen area at Cholsey following willow pollarding and scrub removal

Photo © Steve Gregory



Fig 22b): View in Fig 22a taken from the positive Desmoulin's whorl snail records (green dots) looking towards the negative records (orange dots).

It is worth highlighting that reserve management is always a balancing exercise. Cholsey Marsh supports good numbers of breeding warblers (regularly 10 or 11 species), species which rely on dense scrub. As such in areas where the scrub was not impacting on potential fen habitats, dense belts were retained. This can be seen in the background of Figure 22a.

A larger and more widely distributed Desmoulin whorl snail population at Cholsey Marsh, not only means the species are less likely to be lost from the site, but that they are better able to act as source of individuals for re-colonization of sites downstream. MEND the Gap funding has also paid for habitat restoration and improvements at identified former locations, making them suitable for recolonisation.

Case Study 2 – Re-connecting Adder Populations at Greenham Common

The adder has suffered a dramatic decline in recent decades, with surveys showing that 90% of monitored populations are shrinking and many sites now have fewer than ten individuals. Habitat loss, fragmentation, urbanisation, agricultural intensification, and disturbance from people and dogs have all contributed to this decline. Genetic isolation further threatens the species, as small populations are more vulnerable to disease and mutations. Without intervention, the adder faces the risk of extinction in the UK.



Male adder

Greenham and Crookham Commons provide a stronghold for adders, but populations are restricted to scattered pockets of suitable habitat around the edge of the reserve with heavily grazed grassland in the centre acting as a dispersal barrier. Radiotracking between 2015 and 2022 showed two distinct adder populations present on Crookham Common and the main part of Greenham Common, isolated from each other by Old Thornford Road.

In 2023 BBOWT secured £113,000 from Natural England's Species Recovery Programme to install two reptile tunnels under the road to reconnect these isolated groups. This was the first time such an approach had been attempted in the UK.

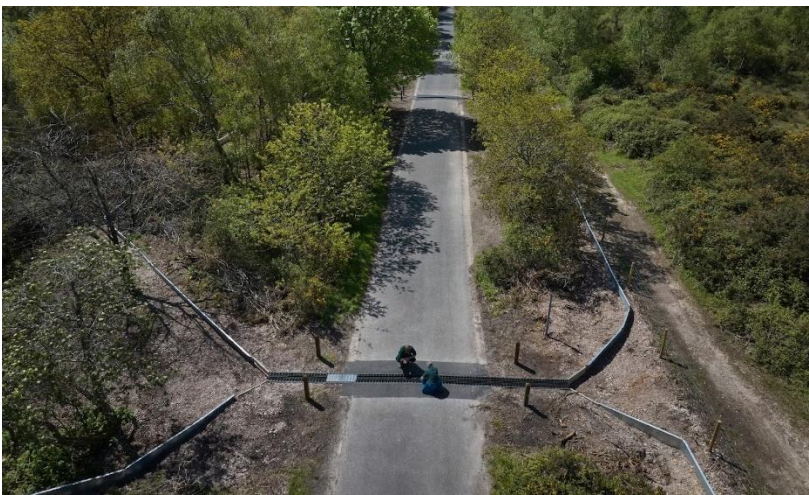


Fig 23: Drone image of tunnels © David Levene - The Guardian

The tunnels were installed in April 2024 with two tunnels constructed using a prefabricated tunnel section normally used to divert small mammals away from roads (see Fig 23). The product was selected because it had a removable grated roof to allow sunlight to enter and warm the tunnels making them more favourable for reptiles to enter, unlike other products which are fully enclosed. The removable grates also allow ongoing maintenance and cleaning. The tunnels were lined with a gravel

substrate and various refugia were installed inside to further encourage reptiles to enter. Metal reptile fencing was installed on each side of the tunnels to guide the snakes towards the tunnels.

Habitat management was also undertaken on the land adjacent to the tunnels to help facilitate adder movement from the core areas of heathland. This included scrub removal to create open corridors with brash piles to create shelter and basking areas during movement. These were immediately successful with grass snakes seen using them in a very short space of time.

Monitoring began after installation with five adders tagged and tracked using radio telemetry in autumn 2024. They showed limited movement due to the season but were active near the tunnels and fencing, suggesting that spring dispersal may lead adders to encounter the tunnels. Camera traps were also installed in the tunnels, initially recording wildlife including grass snakes, small mammals, and birds. In April 2025 an adder was successfully filmed using one of the tunnels, moving between Crookham and Greenham Commons. Figure 24 shows a still capture from the camera traps of this adder movement.



Fig 24: Adder using the tunnel

The project faced challenges, particularly delays caused by the complex permissions process relating to the site being a Common and needing to install infrastructure across a highway. The population of feral cats in the area also pose a predation risk to adders; this population was not known about until post construction. Despite these difficulties, the early use of the tunnels by an adder was a significant success. It demonstrates that such infrastructure can help reconnect isolated populations and offers a potential blueprint for future conservation projects across the UK. While long-term monitoring is needed to fully assess effectiveness, the Greenham Common project provides hope that targeted interventions can secure the survival of one of Britain's most threatened reptiles.

Case Study 3 – Homefield Wood Military Orchids

Once considered widespread in southern England, military orchids were thought extinct by the 1920's. The species was rediscovered in the Chilterns in 1947 and is still classified as 'vulnerable' in the UK. As well as the two BBOWT reserves, Homefield Wood and Swains Wood, it is only known from one other site in Suffolk.

Annual monitoring at Homefield by a dedicated group of volunteers has confirmed targeted habitat management work has significantly increased the population; a real conservation success story, however it remains a vulnerable species on the very edge of its range in Europe. Figure 25 shows the population trend of military orchids since 1975. The recent fluctuation in numbers is due to prolonged spring and summer droughts.

At 6ha this tiny reserve on the edge of an intensive conifer plantation could be considered as too small to hold any significant wildlife value. However, this is far from the truth. Not only does Homefield support a critically rare and important orchid population it is actually part of a wider connected chalk grassland landscape.



Military Orchid, Homefield Wood © Colin Williams

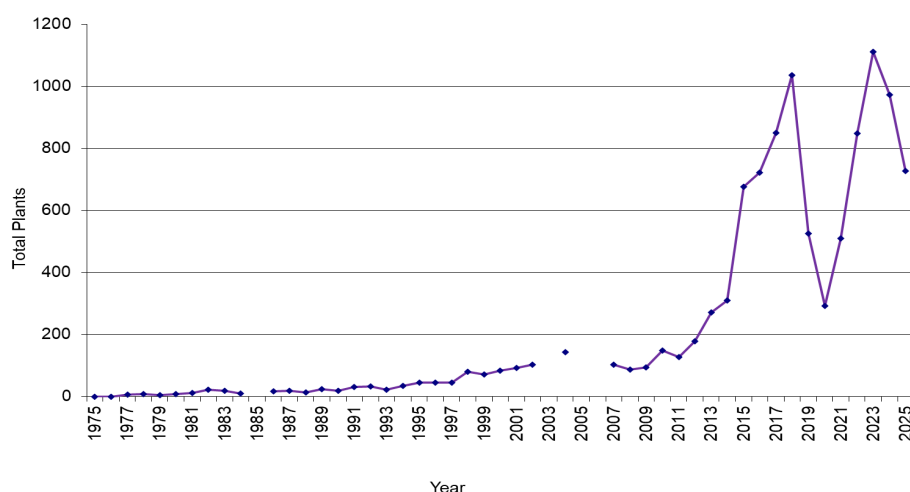


Fig 25: Military orchid population at Homefield Wood

In order to develop stronger ecological connectivity in the locality, over the past 10 years BBOWT has been working very closely with the adjacent landowner on the Kingsbarn Estate. Here large areas of chalk grassland have been restored and enhanced and recent woodland works, due to ash dieback, have opened up new areas. These sunlit rides will develop scrubby margins and flower rich

areas which will benefit woodland ground flora and associated species such as butterflies and birds.

It is very encouraging to report that, almost uniquely in the UK, military orchids have very recently been found at a completely new location, on one area of Kingsbarn, probably having spread from Homefield. Military orchids are not the only species to naturally colonise Kingsbarn with small blue and chalkhill blue butterflies spreading through a connected landscape. This is a clear example of a successful

partnership working as well, with individual sites managed to develop strong wildlife habitat connectivity beyond nature reserve boundaries.

The Trust will continue to carefully monitor the population of military orchids to assess the success or otherwise of ongoing targeted management work and to record the impact of climate change. Enthusiastic and committed volunteers spend many hours monitoring individual orchids to record plant health, flowering history and seed set (after hand pollination). They also protect plants in vulnerable areas from browsing deer. Visitors too can cause damage and on peak weekends during the flowering season, volunteers assist and advise visitors hoping to see and photograph the orchids, ensuring that these beautiful plants will thrive in the valley for generations to come.

Case Study 4 – The Importance of Nature Reserves for Nature's Recovery

Over the past 3 years over 100 volunteers have helped collect valuable information about the species and habitat condition of nature reserves. They have contributed thousands of records which are shared locally and nationally and help inform national species trends, used to inform the UK Government on the state of nature. Not only is this data important nationally, but it is also invaluable in revealing how important nature reserves are to help nature's recovery across the three counties.

In 2022 the Trust completed a £2m project at Chimney Meadows, to reconnect a section of the Thames, previously impassable to fish. In 2025 surveys were conducted to assess the success of the project. An electro-fishing survey recorded a total of 10 species of fish, which is an excellent result for a lowland river of this type and especially for one which was only created a few years ago. The total density of fish recorded was exceptional and reflects the site's success as a spawning and nursery channel; in addition to its primary function as a fish bypass channel. The 10 species recorded were – barbel, chub, dace, bleak, gudgeon, roach, perch, stone loach, minnow and bullhead.



Duxford Fish Bypass Channel, © Colin Williams



Abandoned Common Crane nest, Chimney © Roger Stace

In recent years there have also been several noteworthy breeding bird records from reserves. Common cranes are making a comeback in the UK, having been driven to extinction in the 16th century, with approximately 80 breeding pairs in 2023. In 2025 a pair of common cranes attempted to nest within the vast sedge bed on the NNR at Chimney Meadows. This represents the first ever breeding record by the species on a BBOWT reserve. Alas the breeding attempt failed, suspected to be due to fox predation at the egg stage. The NNR at Chimney provides the ideal habitat for feeding, roosting and now breeding for a species which is very prone to human disturbance, and it is likely that this species will colonise the reserve in the near future. The Hawfinch has been Red-listed in the UK since 2009 because of declines in breeding abundance. Its current breeding range is restricted to disparate sites, mostly in England and Wales. The species' winter range is bigger,

with individuals found in northern Scotland and Ireland. A family group of three hawfinch were discovered regularly visiting the drinking pool in front of the Warburg woodland hide. It is suspected they bred on the reserve. The large expanse of undisturbed and mature woodland at Warburg obviously proved attractive to this very shy and scarce species.



Birds are not the only new arrivals on nature reserves. As various species of odonata expand their ranges due to climate change, reserves are providing

Norfolk Hawker, College Lake, © Alan Nelson.

important opportunities for these species to establish new colonies. Willow emerald was recorded for the first time on several sites in 2024, and in 2025 Norfolk hawkers were recorded for the first time on a BBOWT reserve at College Lake. This was a species previously restricted to East Anglia but has been slowly expanding its range west and north.

As well as providing homes for newly colonising species, nature reserves are also important as reservoirs for new and previously undiscovered species. In July 2024, the Bucks Fungus Group discovered a fungus in Rushbeds Wood that they didn't recognise. A specimen was sent off for research and DNA analysis confirmed it was a 100% match for a newly described species, *Pseudosperma maleolens* (from *Inocybe* genus, Fibrecaps) and as such was a new species for the UK. This made a total of 3 new fungus species for the UK discovered at Rushbeds in recent years.

Along with new species records, nature reserves play host to several important ongoing research projects. Each year, Dr Amanda Lloyd from the local mammal group and volunteers conduct harvest mouse nest searches at Chimney Meadows. In 2025, 10 nests were found, including 8 nests in an area not previously surveyed. Amanda's long-term monitoring of harvest mice at Chimney is helping ecologists better understand the life cycle and habitat requirements of this elusive and charismatic mammal species.

Other research projects include a partnership with Kew which involves collecting environmental data at our Red Helleborine reserve to collect precise information about the conditions that red helleborines do best in. Duxford is also part of a research project run by Bangor University investigating carbon flux on restored floodplain soils.

Finally, nationally dormice populations are struggling. Between 2000 and 2022, the National Dormouse Monitoring Programme recorded a 70% population decline. Following ash dieback works and the ongoing mortality of ash across the Trust's woodland reserves there is much concern that small and vulnerable dormice populations will be unable to survive this potentially catastrophic change. However, several hazel dormice, including young, were discovered in monitoring boxes at Moor Copse in 2025. They were the first dormice recorded in boxes on the reserve since 2016. The dormice were in boxes in an area of the reserve not previously monitored. This is encouraging news for a species so under threat.



Dormice at Moor Copse © Lou Reeve

Case Study 5 – Natural Capital

In 2024 BBOWT commissioned a report into the natural capital on reserves and assessed the ecosystem services that the natural capital provides. The review also provided a comparison between nature reserves and the wider Berkshire, Buckinghamshire and Oxfordshire (BBO) region.

Natural capital refers to everything that nature has which provides value to humans. The more obvious examples of this include soils, water, minerals, and air. These elements provide ‘ecosystem services’ such as the provision of food, raw materials, clean air and water, energy and flood protection. Ecosystems services also include more esoteric elements such as recreation, well-being and cultural significance. Species and habitats are an important element of natural capital.

The basis of the assessment uses habitat classification data, recreational access data, flood mapping and agricultural land datasets, and a model called the NATURE-E tool, developed by the consultancy WSP⁹. The assessment looked at 19 separate ecosystem services and scored them by applying multipliers to the underlying habitat data. The multipliers vary by ecosystem service but include factors such as the presence of designations or protected species records, level of access and proximity to population centres.

When compared to the rest of the BBO region, BBOWT reserves scored higher in all but 2 of the 19 ecosystem service provision indicators, see Table 2. The least favourably comparable were related to commercial food and fish production, which understandably nature reserves don’t do. The most significant benefits delivered by nature reserves in comparison to an average parcel of land in BBO, occurred in the cultural and health ecosystem services, with ‘education and knowledge’ providing 411% more value. There were also significant benefits in carbon storage, and to a lesser extent in the prevention of flooding and soil erosion, water quality regulation and pollination.

The tool shows reserves have an estimated 1.17M tonnes of carbon dioxide equivalent (tCO₂e), or 450 tCO₂e per hectare of the Trust’s landholding; with a value of £264 million (at 2021 prices). This

Table 2: Summary scores for ecosystem service categories

Services & Benefits	Berkshire, Buckinghamshire and Oxfordshire Per-Ha Scores	Nature Reserve Per-Ha Scores	Per-Ha Score Difference	Score Difference in Percent
Natural Capital Score	2.5	3.9	+1.4	+55%
Cultural & Health	1.4	3.7	+2.3	+158%
Mental Health	1.3	3.6	+2.3	+182%
Physical Health	1.3	2.8	+1.5	+119%
Aesthetic Values	1.5	3.6	+2.1	+144%
Education & Knowledge	0.4	2.3	+1.8	+411%
Interaction with Nature	1.7	5.8	+4.1	+243%
Recreation	0.4	1.4	+1.0	+281%
Sense of Place	3.8	7.6	+3.9	+103%
Regulating & Supporting	2.9	4.7	+1.8	+63%
Air Quality Regulation	0.8	1.2	+0.4	+44%
Carbon Storage	1.2	3.2	+2.0	+163%
Cooling & Shading	0.5	0.8	+0.2	+41%
Erosion Protection	5.2	8.6	+3.4	+65%
Flood Regulation	4.0	6.5	+2.5	+63%
Water Quality Regulation	3.4	6.0	+2.6	+77%
Pest Control	5.0	7.2	+2.2	+45%
Pollination	4.4	6.9	+2.4	+55%
Provisioning	3.4	2.5	-1.0	-28%
Food & Fish Commercial	6.3	0.7	-5.6	-89%
Food & Fish Community	0.1	0.1	+0.1	+157%
Water Availability	6.0	5.3	-0.6	-11%
Wood Production	0.7	2.4	+1.7	+227%

⁹ WSP and Partners, 2025. NATURE Tool. WSP UK Ltd., Ecosystems Knowledge Network, Northumbria University and Partners, Birmingham

compares very well to the values for the rest of the BBO region, which averages 171 tCO₂e per hectare. However, the carbon market is still in its infancy, with only woodland and peat carbon codes in place to provide nationally recognised standards.

The Trust has also been involved in a three-year research project looking at the value of ancient flower rich floodplain meadows for storing carbon. This project was run in partnership with the Open University Floodplain Meadows Partnership and Thames Valley Wildflower Restoration Project. Soils are a significant carbon store, and in the UK over 95% of terrestrial carbon is held within soils.



Floodplain Hay Meadow in early spring © Debbie Lewis

The project sampled soils from 24 different meadow sites¹⁰. The results showed that organic carbon stored in the top 10cm of soils of ancient meadows was over twice that of the arable fields. The restored fields were more variable. This shows that restoration age was not necessarily a good indicator of carbon storage levels, which could be related to land use prior to restoration. Perhaps even more significantly, it was found that meadows store significantly more soil carbon than other habitats and are comparable with woodland. Woodland has a mean carbon density of 73 t ha⁻¹ while species-rich floodplain meadows store 76 t ha⁻¹ in the top 10cm and over 200 t ha⁻¹ of carbon in deeper soils. This is important as woodland is often considered the best option for improving carbon storage, which can come at the cost of other habitats such as grassland.

Ancient meadow soils are well structured and support plants with very deep roots. It is this structure which likely enables the carbon to be locked away from the atmosphere so effectively and provide such a large carbon store.

The results from this study show how important it is to protect ancient meadows and their locked away carbon, as well as restoring them to develop future carbon stores. This information has been used to lobby the UK government and has been instrumental in providing the evidence base to increase the payment for floodplain meadows now seen in CS and SFI schemes.

The natural capital analysis and meadow carbon project show that nature reserves, along with the traditional biodiversity benefits, are very valuable providers of wider environmental benefits to the whole of society. It is possible that over time markets will develop further and enable a reliable income source to support the provision of these benefits. In the meantime, the Trusts network of reserves acts as a demonstration of the wider value of nature reserves.

¹⁰ ancient meadows, arable fields, 1-9 year restoration and >9 year restoration

Case Study 6 – Biodiversity Net Gain

Funding for conservation management through traditional mechanisms like agri-environment schemes has become more uncertain, with a recent example being the sudden and unexpected withdrawal of the Sustainable Farming Incentive (SFI) scheme in 2024. The main funding mechanism for conservation work, the Countryside Stewardship (CS) scheme, has become harder to access as it is by invitation only, and is ever-more competitive as DEFRA and NE budgets are squeezed.

An alternative income stream is that of Biodiversity Net Gain. Developers are now required to calculate the impacts of the development on the habitats already present on the site. If this impact cannot be mitigated for on site, then developers can buy the additional biodiversity units required from an off-site provider. This is where the Trust can step in, by providing off-site units for sale, through the uplift in biodiversity value of a low-quality nature reserve or landholding.

BBOWT currently uses BNG money to fund the restoration of semi-natural habitats and their species, with 3 schemes: at Chimney Meadows (Oxon); Ludgershall Meadows and Valley Farm (both in Bucks). Duxford and Ludgershall schemes have been running for a couple of years, but Valley Farm is a much newer agreement (and at the time of writing is still awaiting the final sign off of the s.106 agreement by Bucks Council).

Valley Farm is a 3.75 ha site, located near Radnage in the Chilterns. The site has been leased on a long-term basis as BNG agreements are for a minimum term of 30 years. Previously the land was used for pony paddocks and was therefore of low biodiversity value. The intention for the site is to restore chalk grassland and a network of hedgerows, together with their associated invertebrate communities.



Fig 26: Restoration of grassland at Valley Farm © Andy Coulson-Phillips

The land borders the existing Yoesden Bank reserve, so restoration here will bring additional buffering benefits to the existing reserve and be likely to be successful with species close at hand to colonise the newly restored grassland. Crucially too, preliminary surveys showed there were signs that restoration of the degraded grassland would be possible as there were some calcareous indicator species persisting in the sward, albeit very sparsely. Soil analysis was carried out which revealed low nutrient levels, indicating that species diversity could be improved and sustained with appropriate management.

Grassland restoration began in the late summer of 2025, with the fields first being cut and grazed to achieve a short sward. About 50% of the fields' surface of was then lightly disturbed by flail to create fresh bare soil; and on to these "scuffed" strips, a seed mix appropriate to native lowland calcareous grasslands was sown. The seed mix contained a range of brush-harvested native grasses and herbs, found in typical Chilterns chalk grasslands. Figure 26 shows the fields just post restoration.

The initial outlay on habitat bank sites is considerable (roughly £8,000 was spent on seed alone), and this will be followed, in 2026, by new hedge planting and new fencing to allow grazing of the developing grassland whilst protecting the new hedges. This is estimated to cost around £40,000, and there will also be other infrastructure costs, including a water supply for livestock, and legal fees. It is anticipated that sales of units from Valley Farm will more than off-set these costs.

Without BNG to fund these sorts of restoration projects it would be hard to find sufficient funding. BNG provides an exciting opportunity to restore wildlife rich habitats. If planned well restoration can be especially valuable in situations like the one at Valley Farm, where an existing rich site can be further expanded and buffered, increasing landscape connectivity.

Appendix 1a – Condition Status Definition Table

Condition categories

Favourable – maintained	Feature in good condition for wildlife and was in previous assessment
Favourable – recovered	Feature in good condition for wildlife and was unfavourable in previous assessment
Favourable – vulnerable	Feature in good condition for wildlife but under serious threat, so that unless this is addressed the feature is likely to be out of condition in the near future
Unfavourable – improving	Feature in 'middle' condition for wildlife, management has significantly pushed it towards being favourable since last assessment
Unfavourable – recovering	Feature in 'middle' condition for wildlife, management has slightly pushed it towards being favourable since last assessment
Unfavourable – no change	Feature in poor condition and was poor in previous assessment
Unfavourable – declining	Feature in poor condition and has got worse since previous assessment
Unknown	Condition status is not known

Appendix 1b – How to Calculate Condition Status

