Watnall Spinney

Local Nature Reserve

Management Plan

2021 – 2026

Broxtowe Borough COUNCIL

THE wildlife TRUSTS Nottinghamshire

Contents

This management plan was produced by Nottinghamshire Wildlife Trust in partnership with Broxtowe Borough Council and the Friends of Watnall Green and Spinney.

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INTRODUCTION

Watnall Spinney Local Nature Reserve (LNR) (also known as Spinney Wood) is centred on OS grid reference SK 50020 45850. The site is located towards the north-west of the town of Watnall, approximately 1.2km west of the M1.

The reserve is owned and managed by Broxtowe Borough Council. The council is keen to improve biodiversity throughout the borough and works closely with many groups as well as the Nottinghamshire Wildlife Trust to enhance the diverse range of habitats and species which can be found in the Borough.

Broxtowe Borough Council have formerly designated fifteen Local Nature Reserves and has a policy to declare more sites whenever possible.

This Management Plan covers a five-year period, after which it should be reviewed and updated. A previous Management Plan (2011 – 2015) was compiled by Nottinghamshire Wildlife Trust on behalf of Broxtowe Borough Council.

Site Overview

Watnall Spinney LNR is noted by Natural England as "*a delightful mixed ash dominated woodland with good access and the remnants of ancient fishponds*". The site is listed by Natural England as "Urban Fringe."

The site covers an area of approximately 0.9 hectares and comprises a linear band of mixed woodland (c. 175m long & 60m wide). Two historic fishponds can be found towards the southernmost tip of the woodland.

Access

The site contains a series of surfaced footpaths with access points at the north-east (from Trough Road) and south-west (from Trough Lane).

The footpath entrance to the North-east of the site is via a set of wooden steps off Trough Road. However, access for less abled people can be gained from the footpath to the South-west of the woodland. Paths within the site are crushed gravel and generally smooth and level.

There is no dedicated car park. However, there is ample car parking on the roads adjacent to the site.

The Robin Hood Way, Nottinghamshire longest recreation walking routes passes through Watnall Spinney. It is a 105-mile linear route starting at Nottingham Castle, before meandering its way around the County and finishing at Edwinstowe Church.

The location and boundaries of the site can be viewed in Appendix 1 and Appendix 2.

PART 1: ROLES & RESPONSIBILITIES

1.1 Broxtowe Borough Council

The site is owned by Broxtowe Borough Council https://www.broxtowe.gov.uk/. The Corporate Plan (2020 – 2024) which sets out the Council's priorities for the next four years incorporates five key priorities alongside a series of corresponding objectives and targeted outcomes. The overriding vision of the Plan is:

Vision

A greener, safer, healthier Borough, where everyone prospers.

The objectives that are most relevant to this plan are:

Priority – Environment: Protect the environment for the future.

Key Objectives

1. Develop plans to reduce the Borough's carbon emissions to net zero by 2027 and start implementing them.
2. Invest in parks and open spaces.
3. Increase recycling and composting.

1.2 Natural England

Natural England is an executive non-departmental public body, sponsored by the Department for Environment, Food & Rural Affairs (Defra). It is the Government's adviser for the natural environment in England, helping to protect England's nature and landscapes for people to enjoy and for the services they provide. Natural England provides advice on the declaration of LNRs in England and maintains a database of these sites.

https://www.gov.uk/government/organisations/natural-england

http://www.lnr.naturalengland.org.uk/Special/lnr/lnr_search.asp

1.3 Environmental organisations

The Council works in partnership with many organisations to deliver improvements on open spaces for wildlife. For instance, the Nottinghamshire Wildlife Trust, Nottinghamshire Biodiversity Action Group and Nottinghamshire Biological and Geological Record Centre (NBGRC). Members of the 'Friends of Watnall Green & Spinney' also play an active part in the ongoing management of the site.

PART 2: DESCRIPTION

2.1 Location and Map Coverage

The site runs parallel with Trough Road and is situated towards the north-west of Watnall in Nottinghamshire (OS grid reference: SK 50020 45850). The site can be found on OS Landranger map no. The site can be found on Ordnance Survey Landranger map no. 129 (1:50,000 scale) and Ordnance Survey Explorer map no. 260 (1:25,000 scale). A location map is provided at Appendix 2.

2.2 General Site Description

Woodland Structure & Species Diversity

Watnall Spinney is a small linear band of woodland comprising a diverse range of tree and shrub species. Many of the woody species are naturally occurring and characteristic of the types of woodland found in this area. However, the species composition also contains species that are unlikely to have colonised naturally and have therefore been introduced by man.

Tree species present within the woodland include English oak, common ash, English yew, lime, Field maple, common beech, cherry, horse chestnut, and sycamore. The latter has begun to dominate the composition in certain parts of the woodland, notably to the north-eastern edge.

The understorey consists of a diverse range of species including hawthorn, wych elm, elder, holly, rowan, and hazel. Self-set saplings of ash, cherry, and sycamore are prevalent throughout. In certain sections of the woodland there is also patches of introduced cherry laurel, a non-native species that become invasive and outcompete other species if left unmanaged.

The ground flora is varied and includes typical woodland species such as common nettle, wood avens, wood forget-me-not, bramble, wood dock, herb Robert, enchanter's nightshade, garlic mustard, hedge woundwort, ivy, and cleavers. There are also several grass species present. A full species list can be found in Appendix 3, along with their scientific nomenclature.

Ancient Woodland Indicators

Several 'ancient woodland indicator' (AWI) species are present within the woodland including ransoms, wood anemone, lesser celandine, dog's mercury, lords and ladies, early dog violet, primrose, and wood millet. Certain plant species provide an indication of the age of a woodland. However, the cumulative number of species is important, the more AWI's present, the stronger the likelihood that the woodland is 'ancient'. AWI's should also be considered alongside other evidence such as historic mapping.

'Ancient Woodlands' are considered "*as woodlands which have had a continuous woodland cover over a period of some centuries*". They are typically more ecologically diverse than more recently planted woodland due to the complex nature in which the various tree, plant, and mycorrhizal communities

have co-evolved. Ancient woodlands also tend to have a "*higher nature conservation value than those developed recently or those where woodland cover on the site has been intermittent*".

Historic Ponds

The spinney also contains three ponds, two of which are historic and have been present on site since at least 1885 and are purported to have been used as carp ponds by the Watnall Hall estate, which once encompassed much of the surrounding landholding.

Two of the ponds are rectangular in shape, the other is much smaller and circular. All three waterbodies are situated along the eastern edge of the woodland, towards the south-eastern corner.

Other Habitats

The woodland supports a good resource of standing and fallen deadwood. Deadwood plays a key role in the functioning and productivity of woodland ecosystems through effects on biodiversity, soil nutrient cycling, hydrological processes, and natural regeneration of trees. The decaying wood provides important habitat for small mammals, invertebrates, cavity nesting birds, and a host of lichens, bryophytes, and fungi.

Towards the southern end of the woodland there is a bird feeding zone (Appendix 2; Target Note 2), where several bird feeders are present.

Bird boxes have been installed on a small number of trees within the woodland.

A gabion wall is present along the southern end of one of the ponds. The habitat is likely to provide artificial refugia for a range of species particularly common amphibians such frogs and toads, small mammals, and invertebrates.

The woodland also contains an underground bunker(s) which is thought to date back to WWII. There are two distinct areas where the roof the bunker(s) is discernible beneath the ground flora. However, it is not known how extensive the bunker system is since there is very little publicly accessible information relating to their creation.

2.3 Geology and Soils

The 1:50 000 scale bedrock geology map (http://mapapps.bgs.ac.uk/geologyofbritain/home.html) records the site as being situated within "*Edlington Formation - Mudstone and Sandstone. Sedimentary Bedrock formed approximately 252 to 272 million years ago in the Permian Period. Local environment previously dominated by lakes and lagoons*". "*These sedimentary rocks are lacustrine or shallow-marine in origin. They are detrital, generally fine-grained (but can include layers of coarser material) and form beds of carbonate-rich deposits sometimes including precipitated beds of evaporites*".

The site sits within Soilscape 5 "Freely draining lime-rich loamy soils" which is typically associated with "herb-rich chalk and limestone pastures; lime-rich deciduous woodlands" (Soilscapes: http://www.landis.org.uk/soilscapes/index.cfm).

2.4 Aspect, Topography and Altitude

The spinney lies approximately 122m above sea level and slopes quite gently to the east. The topography of the wood is generally quite flat, but some undulations occur, mainly created by the footprint of several buildings which no longer exist.

2.5 Land Use History

Historic maps dating from 1899 (Appendix 4) shows the strip of land that is now known as Watnall Spinney was once part of the much larger Watnall Hall estate. The land immediately west of the spinney is mapped as wood pasture and parkland, leading up to what is still referred to as Watnall Wood. However, Watnall Spinney appears to be mapped as wet woodland. The illustrations on the map appear to show rushes in addition to icons of scattered conifer and broadleaved trees.

An earlier map that was published in 1885 (surveys between 1879 to 1881) also records Watnall Spinney. However, the predominant habitat is less pronounced and therefore it cannot be stated with certainty what the overriding habitat of the Spinney was in earlier times.

Many of the species within the woodland are uncharacteristic of woodlands occurring naturally in this area. It is therefore certain that even if the woodland originally occurred naturally, it has been supplementary planted by man in recent years. The presence of horse chestnut, sycamore and yew would confirm this.

2.6 Designations

Statutory Sites

Watnall Spinney was designated a LNR in 2012. LNRs are a statutory designation made under Section 21 of the National Parks and Access to the Countryside Act 1949 by principal local authorities.

LNR status applies to land of at least local wildlife interest and allows the local authority (which must have close involvement through ownership or written agreement) to protect that interest through the creation of special byelaws. LNRs are usually close to or within urban areas and provide considerable opportunities for introducing large numbers of people to sustainable enjoyment of the countryside.

Watnall Green LNR is situated approximately 156m south of Watnall Spinney LNR. The site is also owned and managed by Broxtowe Borough Council. Watnall Green LNR covers an area of approximately 0.9ha and comprises unimproved neutral grassland bordered by mature hedgerows.

There are several other statutory designated sites in the wider landscape, the closest being Kimberley Railway Cutting Site of Special Scientific Interest (SSSI), situated approximately 530m south of Watnall Spinney LNR. Natural England lists the description and reason for SSSI designation as "*A key*

palaeobotanical locality yielding a distinctive Permian flora. Dominated by its common conifer remains this flora is also remarkable for the rare specimens of the pteridosperm Lepidopteris martinsii*. A nationally important locality for its Permian gymnosperm floras, particularly representative of the predominantly Mesozoic Peltaspermaceae*".

Non-Statutory Sites

There are no non-statutory designations on this site. However, there are several Local Wildlife Sites (LWS) and Local Geological Sites (LGS) in the wider landscape. The closest being Watnall Wood LWS and Watnall Wood LGS, which are situated approximately 500m north-west of Watnall Spinney.

PART 3: MANAGEMENT RECOMMENDATIONS AND IMPLEMENTATION OF HABITATS

3.1. High Canopy Trees

Overall, the woodland is structurally and species diverse and therefore only minimal intervention in regard to the high canopy trees is deemed necessary during the 5-year period covered by this management plan.

Towards the north-western section of the woodland the species composition is dominated by mature sycamore. Sycamore trees are known to support a wide range of invertebrate species and may provide opportunities for nesting birds and / or roosting bats. However, the seed is extremely fertile and the trees relatively fast-growing in comparison to other tree species. Consequently, sycamore often outcompete other more desirable tree species which may result in a 'single species' monoculture in the absence of management, gradually reducing the species diversity of the woodland over time.

The sycamore stand would benefit from selective thinning to maintain a diverse species composition throughout the woodland. Reducing the stocking density of trees in that area would also allow more sunlight to penetrate the woodland floor, benefiting the ground flora.

Ash Dieback

Some of the ash saplings within the Spinney appear to be in the early stages of ash dieback (*Hymenoscyphus fraxineus*), a fungus which affects the vascular system of ash trees, inhibiting the tree's ability to draw nutrients up into its upper branches. It is estimated that the fungus will kill around 80% of ash trees across the UK.

Watnall Spinney LNR contains a high proportion of ash, and consequently there is likely to be some losses due to the fungus. This has the potential to alter the species composition from what is currently classified as 'Mixed Ash Dominated Woodland', a Priority Habitat that is subject to a local Habitat Action Plan (HAP) https://nottsbag.org.uk/lbap/lbap-habitat-action-plans/.

Eradication of the disease is not possible and therefore it may become necessary to 'restructure' the woodland in the future, allowing a range of other native tree species to become established through natural regeneration.

Management Prescriptions

Currently, it is anticipated that intervention in regard to ash dieback is unnecessary. However, annual health checks of the mature ash trees, particularly those in proximity to footpaths, should be undertaken to identify significant damaged and / or diseased trees. This is also true of other mature tree species. Trees identified as health and safety hazards may require felling.

It is essential that any remedial pruning and / or felling operations are undertaken with due regard to wildlife. Vegetation removal must be undertaken outside of the main breeding bird season (March to September, inclusive) to avoid impacting breeding behaviours. Avoid felling any trees with features that have the potential to support roosting bats such as woodpecker holes, rot holes, flaking bark or

fissures. Furthermore, fell trees away from other sensitive habitats such as the various deadwood habitats and ponds to avoid inadvertently harming or disturbing sheltering wildlife.

Once the sycamore trees have been felled the stumps should be treated with herbicide to prevent regrowth. Following the selective removal of the sycamore trees there may be an increase in seed dispersal due to the increase of open ground. If this occurs, any seedlings pulled by hand as they occur.

3.2. Understory

The woodland understory contains a broad range of species including hawthorn, wych elm, elder, holly, dogwood, raspberry, and hazel. Laurel has also become established on site. There has also been some recent planting of self-set saplings relocated from other areas of the woodland by members of the 'Friends of Watnall Green and Spinney' group, which have helped to increase the understory habitat.

Management Prescriptions

Any non-native shrubs within the understory, such as laurel, should be removed to encourage native flora, and be replaced with native whips or translocated 'natural regeneration' found elsewhere on site.

When removing the laurel, it is important to ensure that the cut vegetation is removed from the woodland floor as it has the potential to regenerate. Further information on laurel removal can be found here: https://www.kentwildlifetrust.org.uk/sites/default/files/2018-06/KWT%20Land%20Mgt%20Advice_Sheet%209%20-%20Woodland%20management%20-%20control%20of%20rhododendron.pdf

To maintain a diverse understory further 'translocation' planting should be undertaken. However, it is recommended that further planting of beech is avoided as once established, it is likely to shade-out other species due to the large canopy. Beech trees also have shallow and extensive root systems and consequently are more vulnerable to the elements and prone to 'toppling over'.

It is not recommended that ash is planted given the potential to spread ash dieback. English oak should be included in the planting mix along with understory species such as hazel, wych elm holly and hawthorn. All of which are already present within the woodland species composition. Planting new tree species that are not already present within the woodland composition should be avoided where possible. Introducing new species may upset the natural balance of the woodland and will in time alter the composition through natural regeneration processes.

The trees should be planted at spacings of approximately 1.5m to 2m apart. Ideally, they should be planted in curved lines or spaced at random, rather than in straight lines. This will help to maintain a natural feel to the woodland.

To ensure the continuation of understory habitat it may be necessary to prune back or 'coppice' some of the shrubs on a relatively short rotation (<10 years). Coppicing encourages the tree or shrub to

produce new shoots, resulting in a 'scrubbier' composition. It also prevents the trees or shrubs from growing into 'high canopy' trees.

3.3. Woodland Boundaries

Since the Spinney has been under the ownership of Broxtowe Borough Council there has been a level of hedgerow planting along the northern and southern boundaries of the woodland.

Hedgerows are important habitats for wildlife and once they have become established, they have the potential to support a broad range of species. In a fragmented landscape, hedgerows provide vital wildlife corridors linking up isolated habitats and providing a safe commuting route into the wider landscape. Hedgerows also provide opportunities for foraging and nesting birds, foraging, and commuting bats, as well as shelter and foraging potential for species such as small mammals, amphibians, and hedgehogs, in addition to hibernation habitat for hedgehogs.

The newly planted hedgerows are dominated by hawthorn, which will provide a good foraging resource. The hedgerows will also buffer the site from any impacts of the adjacent road (Trough Lane) and provide an aesthetically pleasing screen.

The hedgerow along the eastern boundary of the woodland (adjacent with Trough Road) is now of an age suitable for hedgelaying. The technique is often used to rejuvenate derelict hedgerows, but it also encourages vigorous growth, making the resulting hedgerow thicker and increasing the fruiting yield. The hedgerow was cut during 2020/21 and therefore will require a period of at least two years to reach a height suitable for laying.

3.4 Waterbodies

The surface of Pond 1 and Pond 2 (Appendix 2) is covered with duck weed, leaving very few areas of open water. Pond 3 (Appendix 2) appears to hold less water and is heavily vegetated by reed species and tall ruderal plants including common nettle, willowherb, and encroaching bramble scrub. The ponds also have a deep layer of silt comprising brash and leaf litter, which has accumulated over time.

All stages of pond establishment have ecological value and even ponds that are heavily silted and / or dominated by aquatic vegetation will have wildlife value. If the ponds show no sign of pollution, intervention at this stage is not considered to be vital. As such, only remedial management is required and should include periodic pruning of any overhanging branches and / or encroaching scrub.

The sycamore stumps along the eastern side of Pond 2 continue to produce numerous shoots and consequently require regular management to maintain an open aspect. To provide a permanent solution to the encroaching scrub it is recommended that the stumps are treated with ecoplugs. These will kill off the stump and prevent continual regeneration of shoots. In time the stumps will rot down.

Litter should also be cleared from the waterbodies whenever it is noted to be present.

3.5. Artificial Habitats

Birds

Woodland habitats are known to support a range of bird species, including woodland specialists such as woodpeckers, treecreeper, nuthatch, chiffchaff, and tawny owl. The more common, habitat neutral species such as wren, robin and other small passerines will also forage, roost and nest within woodland habitats.

Between 1970 and 2018, woodland specialists are thought to have declined by 45%, whereas generalist woodland species, typically those that also breed in gardens or wooded areas of farmland, have increased overall, by 3% (Defra, 2019).

The major factors behind the declines are thought to be a lack of woodland management and increasing browsing pressure from deer. The vegetation structure of woodland is a major determinant of the character of bird communities; factors such as the density of understory vegetation and size of trees affect which species are likely to occupy the habitats (Defra, 2014).

Habitat Establishment / Implementation

To further enhance nesting opportunities within the woodland it is recommended that additional bird boxes are installed on site. Appendix 5 includes details for building simple bird boxes from planks of timber. The designs are such that the boxes can be built by volunteers, following the instructions provided. It is therefore envisaged that the 'Friends of' group can undertake a program of bird box creation and installation over the forthcoming years.

The best height for the boxes is between 1.5m and 3m high, and open nest boxes should be sited in undergrowth such as ivy to provide cover for the nest. Varying the heights will attract more species as different birds occupy different niches within the canopy.

The boxes should face between north and east, thus avoiding full sun and prevailing wind (RSPB, 2020). Boxes can be installed at any time of year, however, if they are installed over the winter, this allows birds more time to find them prior to the next spring.

Bird Box Management / Maintenance

Any active nest receives legal protection under the Wildlife and Countryside Act (1981) (as amended). This legislation protects the adult birds, the eggs, the chicks, and the nest itself. However, nests that are no longer active do not receive legal protection. To avoid detrimental effects on active nests, any work to bird boxes should be undertaken over winter (October to February inclusive). This should consist of an annual check for signs of deterioration, as well as a full clean (where appropriate), with all old nesting material removed. In the unlikely event that an active nest is found during this check, the nest must remain unaffected until all chicks have fledged. Any replacement of, or repairs to, nest boxes can be undertaken by volunteers whilst there are no active nests present.

Any works to clear suitable nesting bird habitat should be timed outside of the bird nesting season to avoid causing offence if there are actively nesting birds.

Bats

Seventeen species of bat are currently known to breed in Britain, twelve of these species have been recorded in Nottinghamshire. Several bat species are known to roost in trees and frequently forage within woodland including common and soprano pipistrelle, noctule and brown long-eared. Each of these species are also common in the wider landscape and therefore considered likely to utilize the site.

During the 20th Century, British bats underwent significant declines. However, the latest results from the National Bat Monitoring Programme suggest that populations are slowly starting to recover. Appropriate habitat management, sensitive lighting (where required) and the installation of artificial bat roost features such as purpose-built bat boxes and the creation of veteran features in trees can all benefit local bat populations.

Habitat Establishment / Implementation

It is recommended that several bat boxes are installed on mature trees within the Spinney to enhance the roosting potential for bats on site. Appendix 6 includes details for building a simple bat box design from planks of timber. The design is such that the boxes can be built by volunteers, following the instructions provided. It is therefore envisaged that the 'Friends of' group can undertake a program of bat box creation and installation over the forthcoming years.

The boxes should be installed on trees at a height of at least 4m to prevent disturbance, with clear flight access into the entrance (no overhanging branches / scrub blocking the way). The boxes should face south-west or south-east, where possible. Installing the boxes to face different directions will provide bats with an increased range of environmental options, thus increasing potential uptake.

Bat Box Management / Maintenance

The bat boxes are low maintenance boxes that do not need cleaning since any bat droppings will fall out of the open bottom, and not accumulate at the bottom of the box like in some designs. They also enabled easy monitoring as the crevices can be torched from ground level (must be undertaken by a bat licensed person).

As all bats and their roosts are legally protected, once boxes are in position, they should remain undisturbed, unless a licensed bat worker is present. A licensed bat worker must check any damaged boxes that need to be replaced, to ensure that bats are not present.

Deadwood Habitat

This site already supports an impressive amount of deadwood habitat, particularly fallen deadwood in the form of felled trees left in situ and log piles scattered throughout the site. There is also a large mature deadwood tree situated along the northern boundary (Target Note 3).

It is envisaged that further log piles will be created following the selective thinning of the sycamore trees towards the north-eastern edge of the woodland. Given the locale of the site in context to its urban surroundings, stored timber logs may be vulnerable to theft for firewood. Therefore, careful consideration should be given to the size of the 'cross-cuts' and the way in which they are stored on site. Larger timber is less likely to be taken but may be less aesthetically pleasing in large quantities.

Stacking smaller logs and covering them with brash and / earth may reduce the likelihood of the log piles being disturbed. Partially burying logs also has the added benefit of encouraging specialist invertebrates that feed on decaying wood beneath the soil's surface.

During felling operations, it is recommended that a small number of the sycamore trees are retained on site in the form of standing deadwood. This can be achieved through the method or ringbarking (girdling). However, it is essential that all trees earmarked for ringbarking are sited at a safe distance from any footpaths to avoid creating Health & Safety hazards in the future.

To increase the biodiversity value of retained trees, avoid selecting trees that are straight / healthy and instead opt to retain trees that are misshapen or damaged.

It is likely that there will be a large volume of cut material following felling operations on the sycamore, and therefore it may be necessary to remove some of the timber off site so as not to choke the woodland with timber stacks / brash piles.

PART 4. MONITORING AND DELIVERY OF OBJECTIVES

4.1 Monitoring

Ongoing monitoring of the habitats and species on site is an important element of the site management as the results help to inform future management objectives / actions. There have already been some positive strides in regard to surveying / monitoring on site by members of the 'Friends of Watnall Green and Spinney' group, with the creation of a comprehensive botanical species list (Appendix 3).

It is envisaged that as newly planted habitats become more established and derelict habitats are restored (eg. the ponds), further species will start to inhabit the site. Therefore, monitoring should incorporate additional taxa including amphibians, small mammals, bats etcetera. This is likely to require some specialist input and therefore it is envisaged that a level a of partnership working may be required and is likely to include assistance from other conservation groups such as the Nottinghamshire Wildlife Trust, Nottinghamshire Bat Group, Nottinghamshire Amphibian and Reptile Group, and Nottinghamshire Mammal Group.

The following elements are recommended for monitoring, but realistically not all will be achievable to the level described below:

- Fixed-point photographic monitoring would be particularly valuable for assessing improvements to woodland structure over time (same date each winter).
- Birds - walked transect, using slimmed down Common Bird Census methodology (3 visits March to June). Annual (winter) nest box checks.
- Bats - fixed transect with specific listening points and a period of static monitoring. Occasional bat box checks (will require a licenced bat worker).
- Amphibians - eDNA and / or full amphibian survey (eg torchlight surveys, bottle trapping etc.) the latter will require a licenced great crested newt surveyor.
- Small mammals – live trapping.
- Record ad-hoc sightings throughout the year.

PART 5. MANAGEMENT PRESCRIPTIONS

5.1 Five-year Management Prescriptions

Task / Operation	Year					Partner
	2021/22	2022/23	2023/24	2024/25	2025/26	
Carry out litter picks & remove any fly- tipping	✓	✓	✓	✓	✓	FO/BBC
Selective thinning of sycamore stand at north-west corner	✓	✓			✓	BBC/FO
Ringbark selective sycamore to create standing deadwood (away from paths)	✓	✓				BBC/FO
Create log piles with felled sycamore timber	✓	✓	✓			FO
Maintain annual health & safety check on trees	✓	✓	✓	✓	✓	BBC
Treat sycamore stumps in north-west corner with ecoplugs (or equivalent)	✓	✓				BBC
Remove laurel (& any other undesirable shrub)	✓	✓				BBC/FO
Augment understory (where laurel was removed) using native whips or translocated self-set saplings		✓	✓			FO
Prune / coppice understory				✓		FO
Lay hedge along eastern boundary			✓			BBC/FO
Prune overhanging branches / clear encroaching scrub around ponds	✓	✓	✓	✓	✓	BBC/FO
Treat sycamore stumps by pond with ecoplugs (or equivalent) to prevent regeneration	✓	✓				BBC
Install bird & bat boxes		✓	✓			FO
Maintenance check of bird boxes / clean	✓	✓	✓	✓	✓	FO
Visual inspection of bat boxes from ground level	✓	✓	✓	✓	✓	FO
Monitoring						
Monitoring bat boxes (licensed bat worker)		✓	✓	✓	✓	NWT/FO
Undertake walked bat activity transect / static monitoring		✓			✓	NWT/FO
Walked bird monitoring transect		✓	✓	✓	✓	FO
Fixed point photography	✓	✓	✓	✓	✓	FO
Small mammal trapping		✓		✓		NWT/FO
Amphibian survey (torching, eDNA, Bottle traps) of ponds		✓			✓	NWT/FO
Ad hoc species recording	✓	✓	✓	✓	✓	FO

5.2 Annual Management Prescriptions

Task / Operation	Month											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Litter pick (if & when necessary)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Selective thinning of sycamore stand at north-west corner	✓	✓								✓	✓	✓
Ringbark selective sycamore to create standing deadwood (away from paths)	✓	✓								✓	✓	✓
Create log piles with felled sycamore timber	✓	✓								✓	✓	✓
Maintain annual health & safety check on trees	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Treat sycamore stumps with ecoplugs (or equivalent)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Remove laurel (& any other undesirable shrub)	✓	✓								✓	✓	✓
Augment understory (where laurel was removed) using native whips or translocated self-set saplings	✓	✓								✓	✓	✓
Prune / coppice understory	✓	✓								✓	✓	✓
Lay hedge along eastern boundary	✓	✓								✓	✓	✓
Prune overhanging branches / clear encroaching scrub around ponds	✓	✓								✓	✓	✓
Treat sycamore stumps by pond with ecoplugs (or equivalent) to prevent regeneration	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Install bird & bat boxes	✓	✓								✓	✓	✓
Maintenance check of bird boxes / clean	✓	✓								✓	✓	✓
Visual inspection of bat boxes from ground level	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Monitoring												
Monitoring bat boxes * (licensed bat worker)	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓
Undertake walked bat activity transect / static monitoring *	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Walked bird monitoring transect (summer) *			✓	✓	✓	✓	✓	✓	✓			
Walked bird monitoring transect (winter) *	✓	✓										
Fixed point photography												
Small mammal trapping *	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Amphibian survey (torching, eDNA, Bottle traps) of ponds	✓	✓	✓	✓	✓							
Ad hoc species recording	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

*Denotes months that they can be undertaken. Only need to be undertaken once in given year.

REFERENCES

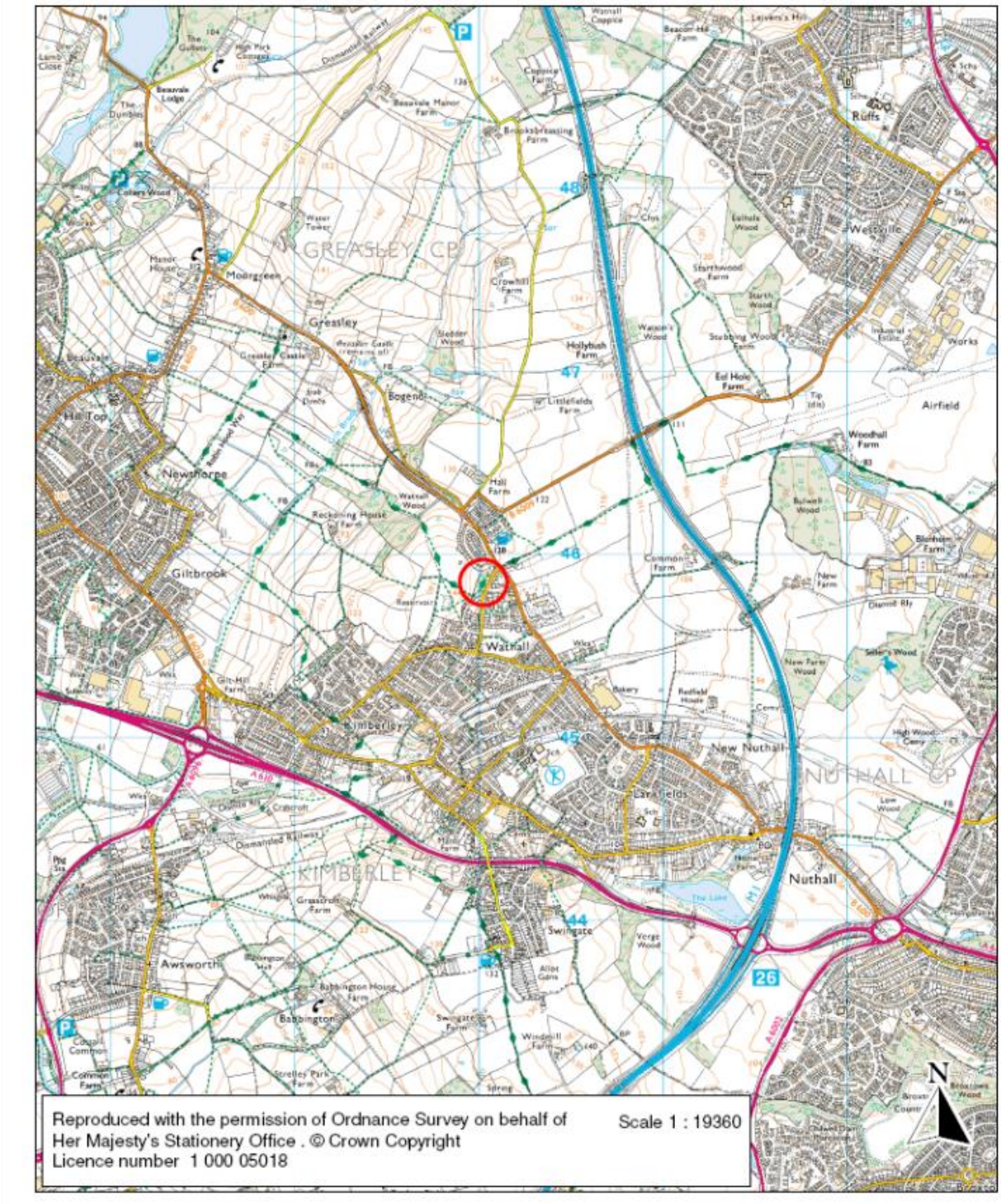
Defra (2019) Wild Bird Populations in England. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/878014/England_Wild_Birds_1970-2018_final_accessv2.pdf

Defra (2014) Effects of woodland structure on woodland bird populations. An assessment of the effects of changes in woodland structure on bird populations as a result of woodland management practices and deer browsing - WC0793. http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=17511&FromSearch=Y&Publisher=1&SearchText=WC0793&SortString=ProjectCode&SortOrder=Asc&Paging=10#Description

RSPB (2020) Making and placing a bird box. https://www.rspb.org.uk/birds-and-wildlife/advice/how-you-can-help-birds/nestboxes/nestboxes-for-small-birds/making-and-placing-a-bird-box/

APPENDICES

APPENDIX 1: SITE LOCATION MAP



APPENDIX 2: BOUNDARY MAP OF WATNALL SPINNEY LOCAL NATURE RESERVE

APPENDIX 3: SPECIES LISTS

Common Name	Scientific Name	Conservation Status
Birds		
Blackbird	*Turdus merula*	Green listed SoCC
Buzzard, common	*Buteo buteo*	Green listed SoCC
Crow, carrion	*Corvus corone*	Green listed SoCC
Chiffchaff	*Phylloscopus collybita*	Green listed SoCC
Grey heron	*Ardea cinerea*	Green listed SoCC
Kestrel, common	*Falco tinnunculus*	Amber listed SoCC
Mallard	*Anas platyrhynchos*	Amber listed SoCC
Nuthatch	*Sitta caesia*	Green listed SoCC
Robin	*Erithacus rubecula*	Green listed SoCC
Tit, blue	*Cyanistes caeruleus*	Green listed SoCC
Tit, great	*Parus major*	Green listed SoCC
Tit, long tailed	*Aegithalos caudatus*	Green listed SoCC
Treecreeper	*Certhia familiaris*	Green listed SoCC
Wren	*Troglodytes troglodytes*	Green listed SoCC
Woodpecker, greater spotted	*Dendrocopos major*	Green listed SoCC
Woodpigeon	*Columba palumbus*	Green listed SoCC
Trees & Shrubs		
Ash	*Fraxinus excelsior*	
Beech	*Fagus sylvatica*	
Elder	*Sambucus nigra*	
English elm	*Ulmus procera*	
Field maple	*Acer campestre*	
Hawthorn, common	*Crataegus monogyna*	
Hazel	*Corylus avellana*	
Holly	*Ilex aquifolium*	
Horse chestnut	*Aesculus hippocastanum*	
Lime	*Tilia* sp.	
Oak, English	*Quercus robur*	
Rhododendron	*Rhododendron* sp.	Schedule 9 species *(R. ponticum* only)
Rowan	*Sorbus aucuparia*	
Sycamore	*Acer pseudoplatanus*	
Wild cherry	*Prunus avium*	
Wych elm	*Ulmus glabra*	
Yew	*Taxus baccata*	
Grasses & Forbs		
Bluebell, hybrid	*Hyacinthoides x massartiana*	
Bramble species	*Rubus fruticosus agg.*	
Broad buckler-fern	*Dryopteris dilatata*	
Brome, barren	*Brachypodium sylvaticum*	

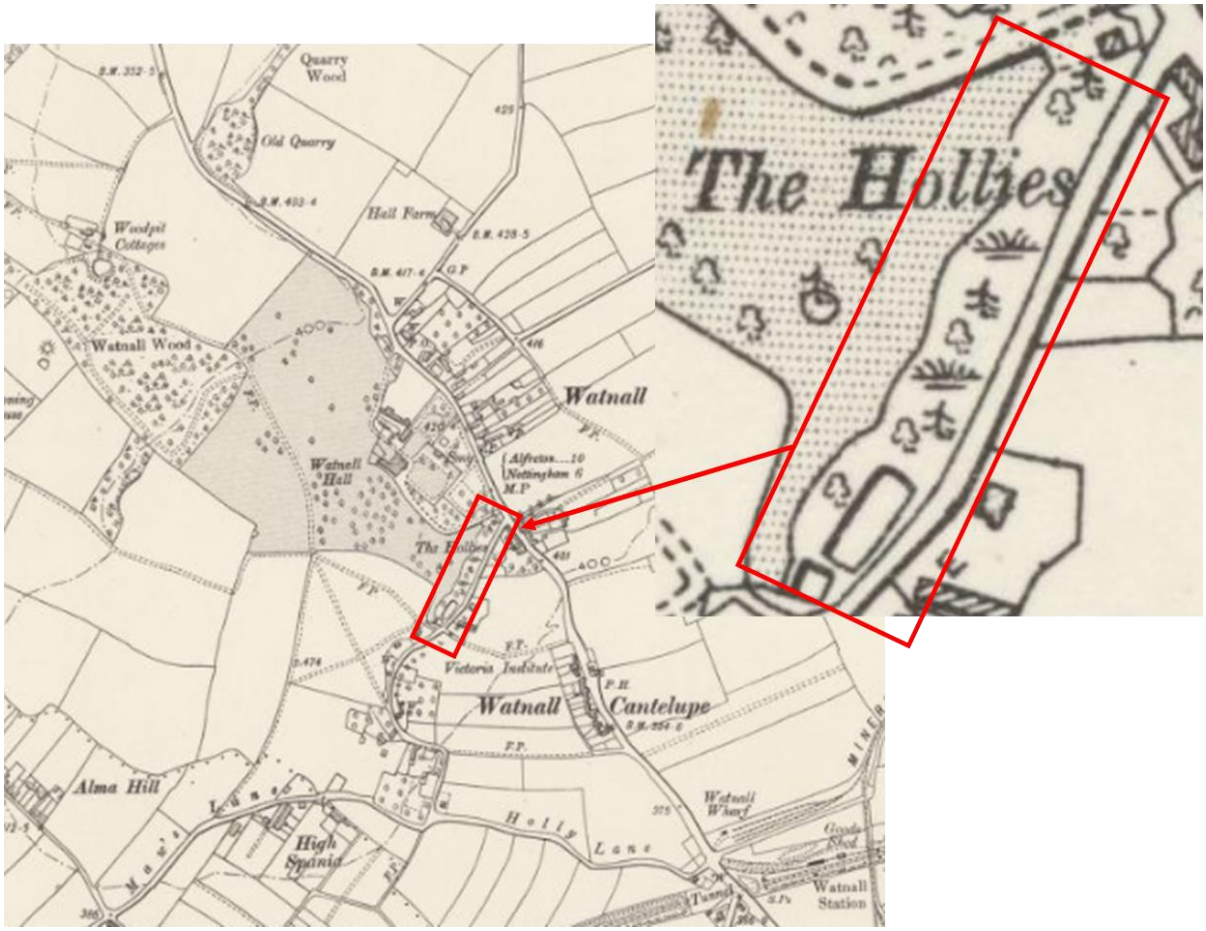
Common Name	Scientific Name	Conservation Status
Brome, false	*Brachypodium sylvaticum*	
Bulrush, common	*Typha latifolia*	
Buttercup, bulbous	*Ranunculus bulbosus*	
Buttercup, creeping	*Ranunculus repens*	
Buttercup, goldilocks	*Ranunculus auricomus*	
Cleavers	*Galium aparine*	
Cock's-foot	*Dactylis glomerata*	
Couch, common	*Elytrigia repens*	
Cow parsley	*Anthriscus sylvestris*	
Dandelion species	*Taraxacum officinale* agg.	
Dock, broad-leaved	*Rumex obtusifolius*	
Dock, wood	*Rumex sanguineus*	
Dog's mercury	*Mercurialis perennis*	
Enchanter's nightshade	*Circaea lutetiana*	
Fescue, sheep's	*Festuca ovina*	
Forget-me-not, wood	*Myosotis sylvatica*	
Foxglove	*Digitalis purpurea*	
Garlic mustard	*Alliaria petiolata*	
Groundsel	*Senecio vulgaris*	
Hedge woundwort	*Stachys sylvatica*	
Herb bennet (wood avens)	*Geum urbanum*	
Herb-robert	*Geranium robertianum*	
Hogweed, common	*Heracleum sphondylium*	
Iris, yellow flag	*Iris pseudacorus*	
Ivy	*Hedera helix*	
Lesser celandine	*Ranunculus ficaria*	
Lesser periwinkle, white	*Vinca minor 'alba'*	Garden escapee, can be invasive
Lords-and-ladies	*Arum maculatum*	
Marsh marigold	*Caltha palustris*	
Nettle, common	*Urtica dioica*	
Nettle, white dead	*Lamium album*	
Plantain, broadleaf	*Plantago major*	
Primrose, common	*Primula vulgaris*	
Ramsons	*Allium ursinum*	
Raspberry	*Rubus idaeus*	
Red campion	*Silene dioica*	
Rush, smooth	*Juncus effusus*	
Snowdrop	*Galanthus nivalis*	
Sow-thistle, Perennial	*Sonchus arvensis*	
Sow-thistle, prickly	*Sonchus asper*	
Sow-thistle, smooth	*Sonchus oleraceus*	
Speedwell, common field	*Veronica persica*	

Common Name	Scientific Name	Conservation Status
Thistle, creeping	*Cirsium arvense*	
Thistle, spear	*Cirsium vulgare*	
Violet, early dog	*Viola reichenbachiana*	
Willowherb, rosebay	*Chamerion angustifolium*	
Wood anemone	*Anemone nemorosa*	
Wood millet	*Milium effusum*	
Yarrow	*Achillea millefolium*	

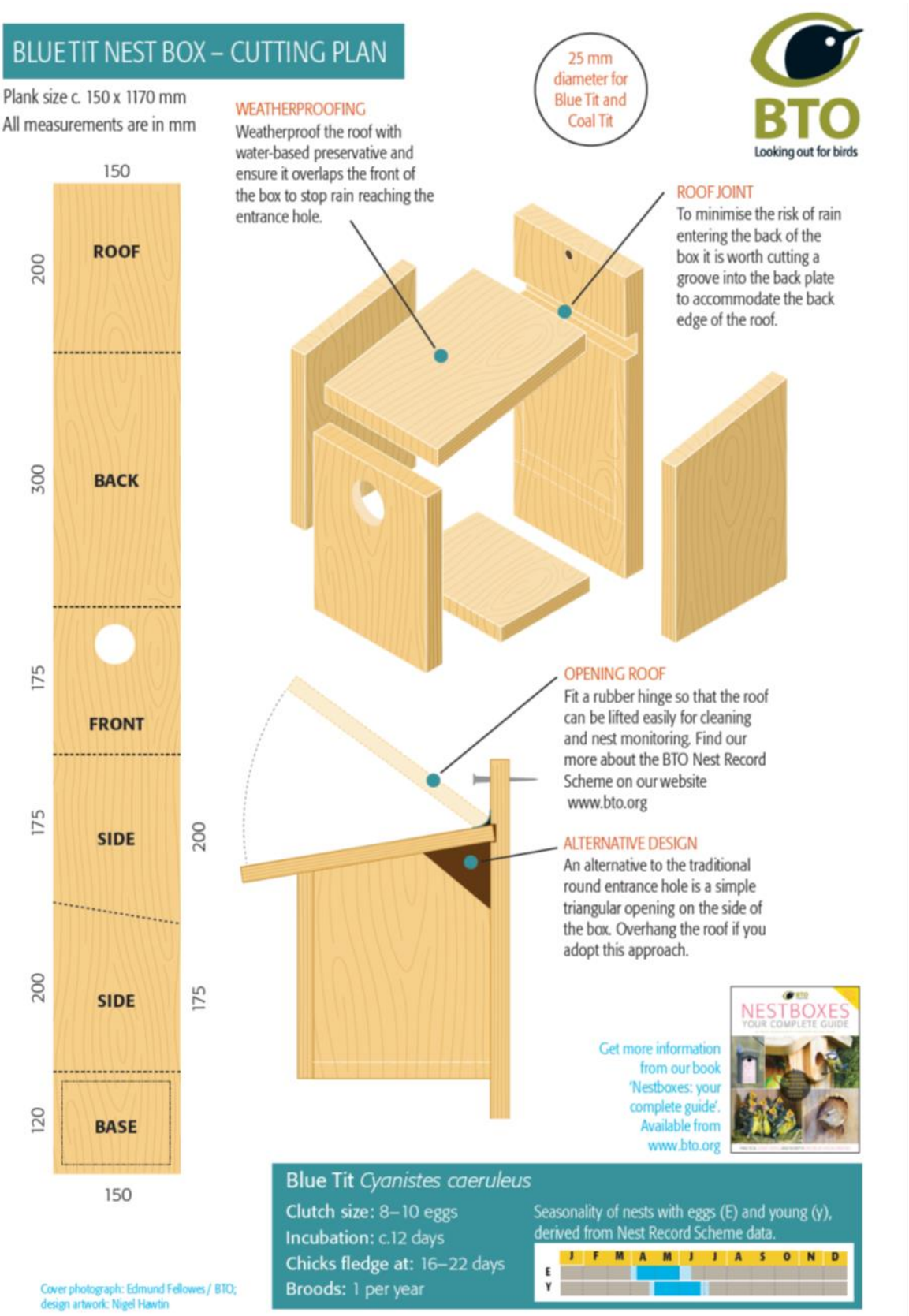
Socc = Species of Conservation Concern

APPENDIX 4: HISTORICAL MAP

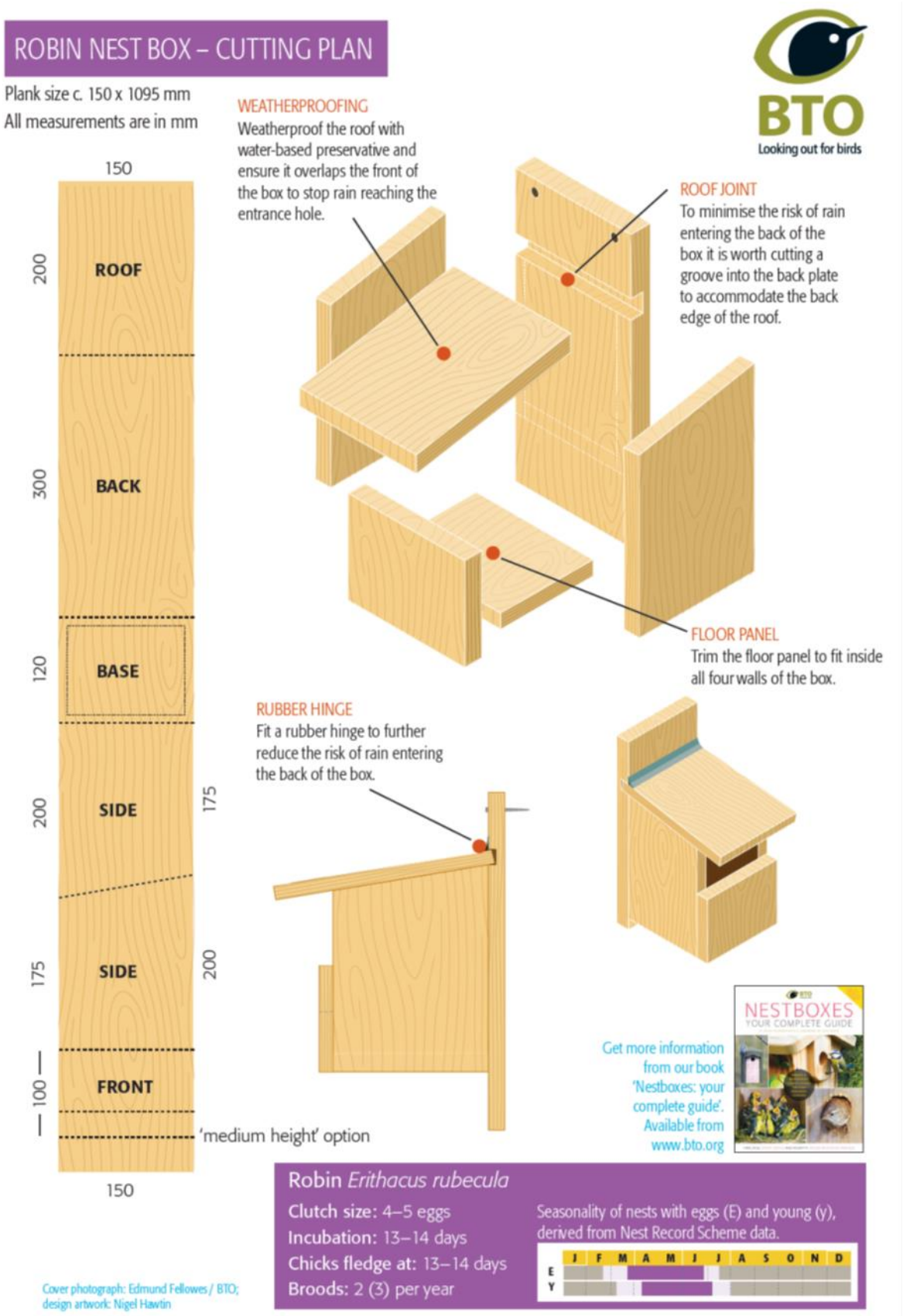
Nottinghamshire XXXVII.NE (includes: Greasley; Hucknall Torkard; Revised: 1899, Published: 1901



APPENDIX 5: BIRD BOX DESIGN PLANS



https://www.bto.org/sites/default/files/blue_tit_nest_box_plan.pdf



https://www.bto.org/sites/default/files/robin_nest_box_plan.pdf

APPENDIX 6: BAT BOX DESIGN PLANS

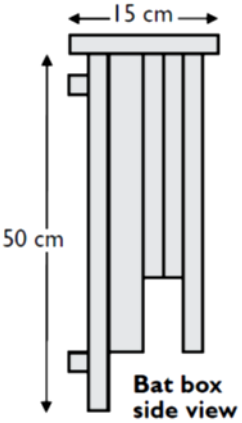
This box is simple to make and is low maintenance - it doesn't need cleaning as bat droppings will fall out of the crevices.

Instructions:

1. Mark wood to length using a pencil and ruler
2. Cut all pieces using a saw
3. Score one side of the back and middle plank pieces using the end of a nail - this is to help the bats grip the wood when they are inside the box
4. Nail the 40 cm battens (thick) on the 50 cm plank
5. Nail the 40 cm plank on the 40 cm battens
6. Nail the 25 cm battens (thin) on the 40 cm plank
7. Nail the 25 cm plank on the 25 cm battens
8. Nail the 15 cm battens on the back
9. Nail the roof on
10. Fix nails and wire to the front

Materials:
Timber should be untreated, rough-sawn, and certified as sustainably sourced by the Forest Stewardship Council (FSC).

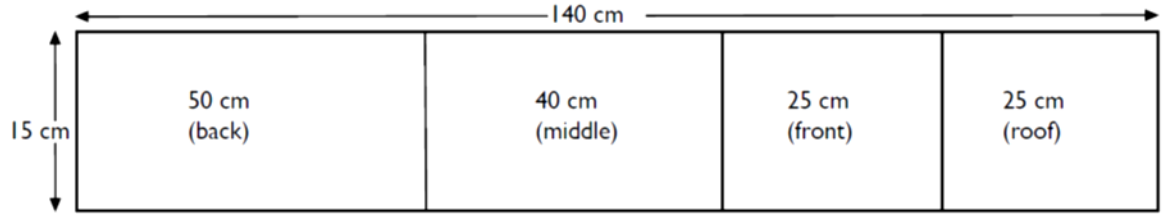
You will need:
- 140 cm x 15 cm x 1.5 cm plank
- 110 cm x 2.5 cm x 2.5 cm thick batten
- 50 cm x 2.5 m x 1.5 cm thin batten
- 3.5 cm length galvanised nails (about 40)
- Strong wire (about 50 cm in length)



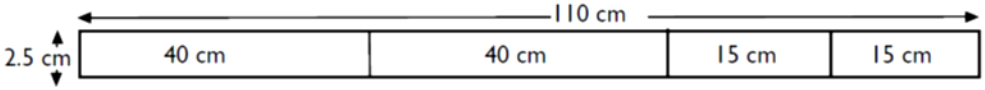
Bat box side view


Bat box front view, on garden shed

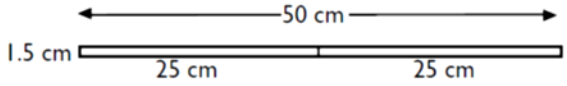
Main plank



Thick batten



Thin batten



Thanks go to the Kent Bat Group, www.kentbatgroup.org.uk, for supplying the design and allowing it to be reproduced. If you see that bats are using your box please let the Kent Bat Group know, contacts on their website.