Alexandrina Plantation and Sandy Lane Local Nature Reserves

Management Plan

2019 – 2024

Broxtowe Borough Council

The Friends of Bramcote Ridge

The Wildlife Trusts Nottinghamshire

This management plan was produced by Nottinghamshire Wildlife Trust in partnership with Broxtowe Borough Council and Friends of Bramcote Ridge.

March 2019

CONTENTS

INTRODUCTION

This management plan was produced by Nottinghamshire Wildlife Trust (NWT) on behalf of, and in partnership with Broxtowe Borough Council and Friends of Bramcote Ridge. The LNRs are managed by Broxtowe Borough Council, with support from the friends.

The plan area includes two Local Nature Reserves (LNRs), Alexandrina Plantation and Sandy Lane. The statutory LNR status will continue to help protect the wildlife and other interest of the site and increase local people's awareness and appreciation of it and to encourage local community involvement with the site in general.

The site is located just north of the A52 Nottingham to Derby trunk road, approximately 6km (4 miles) to the west of Nottingham. It lies between the suburbs of Wollaton, Bramcote Hills and Lenton Abbey. It lies mainly within the Broxtowe Borough Council boundary but is close to and extends slightly into the City of Nottingham.

The key interest of the site is the mix of acid woodland, acid grassland and broom/ gorse scrub habitats, supporting a diverse range of flora and fauna. The site qualifies as Local Wildlife Site for its acid woodland and acid grassland plant communities, along a sandstone ridge.

The LNRs forms a key part of a recognised green corridor, stretching approximately 4-5 km from Trowell to the west and Wollaton Park to the east.

There is a very active and long established friends group associated with the site, *The Friends of Bramcote Ridge,* which formed in 1999.

The previous management plans for Alexandrina Plantation and Sandy Lane LNR covered the period 1998/9-2004/5 (G Fewkes, 1998 & 1999). A brief management plan update was produced by C Langtree in 2016.

This plan does not aim to collate extensive information on the wildlife interest or currently activities on the site; these are detailed on the Friends of Bramcote Ridge website www.bramcote-ridge.org.uk/. The purpose of this updated management plan, which covers both LNRs, is to outline the current status of the site, its value and put forward a work plan detailing how the site could be maintained and enhanced.

Key aims and objectives are to continue restoration and sympathetic management of the key habitats, alongside balancing the recreational potential in an ecologically sustainable manner, promoting the educational potential and encouraging community involvement in the LNRs, including its long term maintenance.

PART 1: ROLES AND RESPONSIBILITIES

1.1 Broxtowe Borough Council

Alexandrina Plantation and Sandy Lane LNRs are owned by Broxtowe Borough Council and the council works in partnership with the Friends group to manage this site, with input from Nottinghamshire Wildlife Trust and other local environmental groups. The Borough Council is keen to support partners who can undertake site work (either directly or through developing funded projects) to enhance wildlife habitats, as laid out in the management plan. As landowner, Broxtowe Borough Council has a duty of reasonable care to ensure people's safety and all events and work on this site should comply with their procedures.

For more information visit
https://www.broxtowe.gov.uk/for-you/parks-and-nature-conservation/

1.2 Natural England

Natural England is an executive non-departmental public body, sponsored by the Department for Environment, Food & Rural Affairs. 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 with many organisations to deliver improvements for wildlife. Partnerships with organisations such as the Nottinghamshire Wildlife Trust have helped to enhance the diverse range of habitats and species which can be found in the Borough. The council is supportive of The Broxtowe Wildlife Forum. The aim of the forum is to raise awareness, share information, to deliver a coordinated approach to enhance the biodiversity in the area and encourage more collaborative working.

The Nottinghamshire Biodiversity Action Group has the responsibility for overseeing and monitoring the Nottinghamshire target habitats and species.

The Nottinghamshire Biological and Geological Record Centre (NBGRC) also has interest in LNRs in the context of their function to map Local Wildlife Sites, update county Phase 1 Habitat survey and maintain protected species records.

Other groups that could provide advice/ assistance have included BTCV and TCV (now Practical Conservation Volunteers CIC), scout / guides, groups etc. as well as local schools and universities.

1.4 Nottinghamshire Wildlife Trust

Nottinghamshire Wildlife Trust (NWT) cares for over 50 Nature Reserves across the county, engages with the local community through events, education and volunteering opportunities and provides specialist ecological advice and support to partners and its members. http://www.nottinghamshirewildlife.org.

1.5 Friends of Bramcote Ridge

The Friends of Bramcote Ridge was formed in 1999. Their aim is to enhance the LNR for the benefit of the local community and for flora and fauna. The Friends act as a partner in the management of the LNR, to help conserve and protect it, to provide a vehicle for local people to voice their ideas and concerns, and allow them to raise funds for facilities or events they would like to see on site that existing budgets cannot accommodate. Some of the ways they achieve this are:

- promoting and carrying out species and habitat monitoring;
- raising awareness and public support for the LNR, including highlighting what site improvements are most important for local people;
- holding events and carrying out practical management tasks on site;
- raising funding for site specific projects.

More information on the Friends group can be found here: www.bramcote-ridge.org.uk/

1.6 Local businesses

Local businesses are invited to contribute to the delivery of this management plan. This could include supporting the Friends group on volunteering days, providing financial support for interpretation or other infrastructure projects, or providing technical or other assistance in enhancing the site for nature conservation.

PART 2: DESCRIPTION

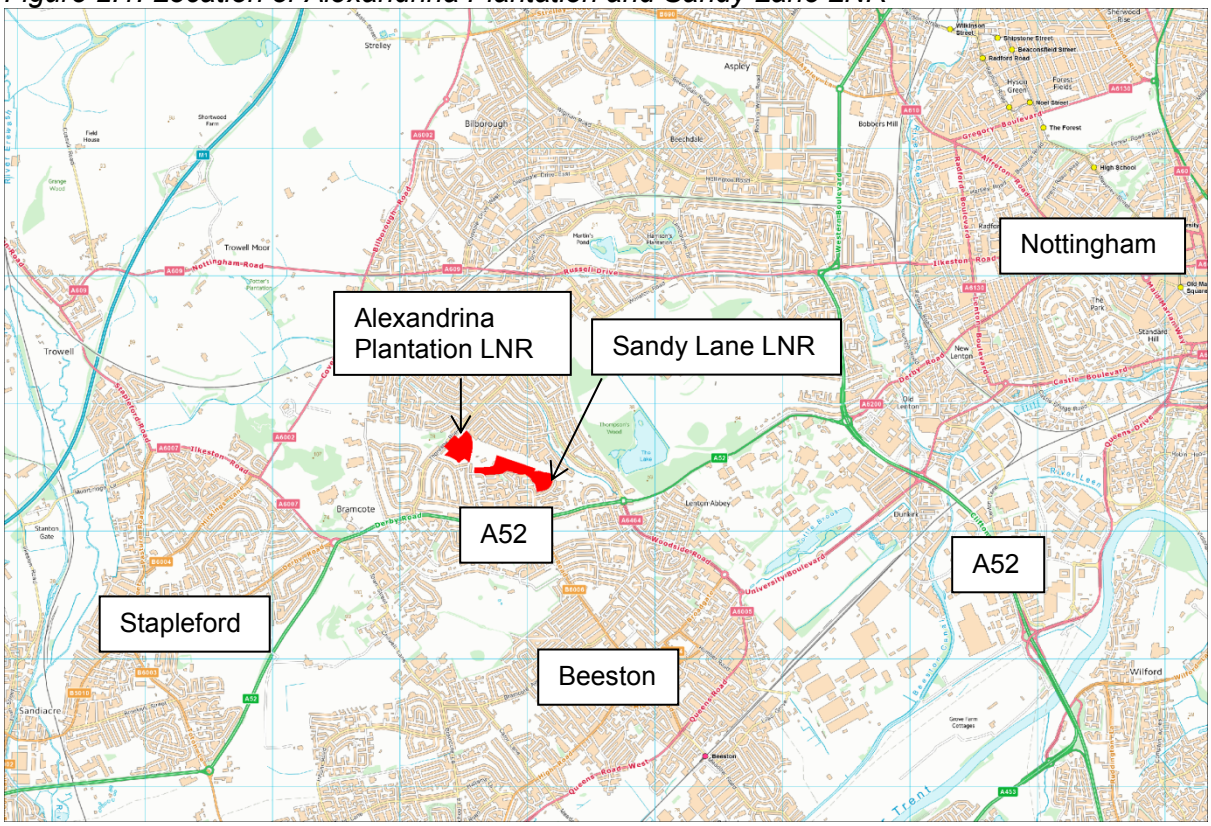
2.1 Location

Alexandrina Plantation LNR and Sandy Lane LNR are situated just to the north of the A52 Nottingham to Derby trunk road, approximately 6km (4 miles) to the west of Nottingham and lies between the suburbs of Wollaton, Bramcote Hills and Lenton Abbey. The Ordnance Survey grid reference is SK 518 386.

It is located mostly within the Borough of Broxtowe, with a small part of the site in the City of Nottingham.

It lies within Vice County 56 (Nottinghamshire) and is on the boundary of the National Character Area 49, Sherwood and 38, Derbyshire, Nottinghamshire and Yorkshire Coalfield. A map showing the site location is provided in Figure 2.1.

Figure 2.1: Location of Alexandrina Plantation and Sandy Lane LNR

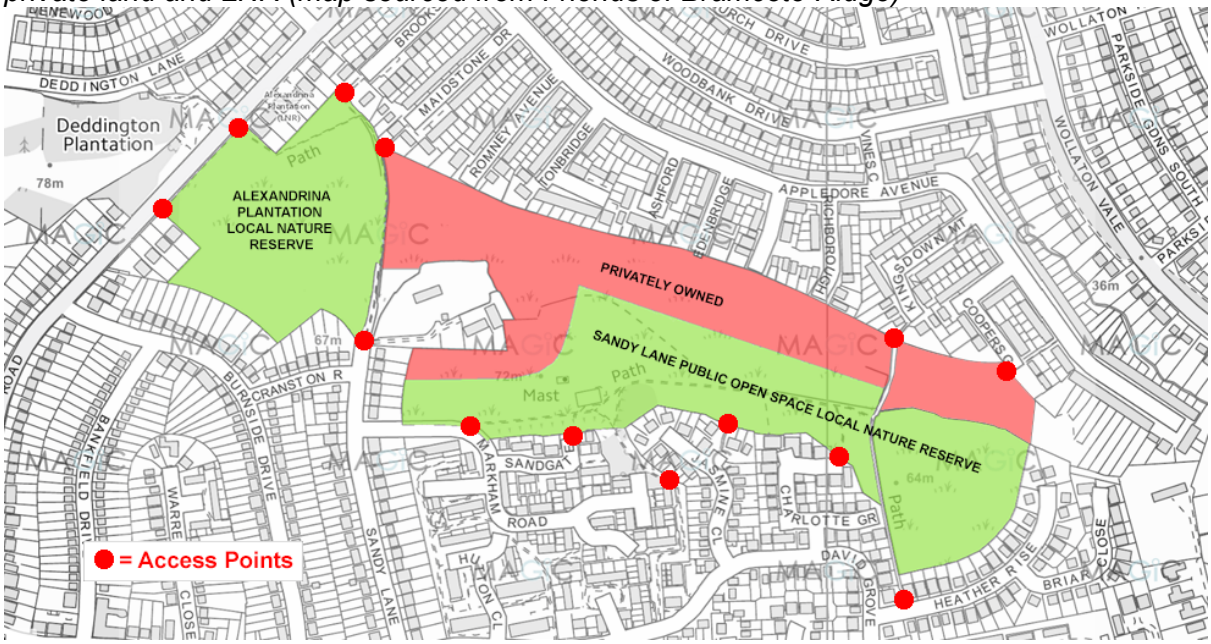


Contains OS data © Crown copyright and database rights (2019)

2.2 Map Coverage

The site can be found on Ordnance Survey Landranger map no.129 (1:50,000 scale) & Ordnance Survey Explorer map no. 260 (1:25,000 scale). An LNR boundary map, with formal and informal access points highlighted, is provided overleaf.

Figure 2.2: LNR boundary and access points with approximate boundary line between private land and LNR (map sourced from Friends of Bramcote Ridge)



Contains OS data © Crown copyright and database rights (2019)

2.3 Ownership

The LNRs are owned and managed by Broxtowe Borough Council. Land between the two LNRs, which lies mostly within the Nottingham City boundary and shaded in red, is privately owned.

2.4 Size

Alexandrina Plantation is 3.57ha in size, whilst Sandy Lane LNR covers 5.71ha, giving the two LNRs a combined area of 9.28ha. Including the privately owned land, the wider site is considered to be approximately 12 hectares (30 acres) in area. This management plan relates to the LNRs only but does refer to potential management of the adjacent land because the two areas support similar habitats which function as a single ecological unit.

2.5 Soil and geology

The following description has been provided by Friends of Bramcote Ridge:

The substrate underlying the Ridge is known as 'Bunter Sandstone Pebble Beds', which is a yellow or buff coloured sedimentary rock, characterised by multi-coloured pebbles embedded in the strata.

These pebbles consist of various types of rock, with quartzite and vein quartz predominating. The term 'Bunter' is of German origin and means 'bright-coloured'.

The Pebble Beds were laid down approximately 246 to 251 million years ago in the Triassic Period when much of the Midlands was a low-lying desert plain. In the Nottingham area, this rock extends to a depth of about 200ft (60m).

In the main the rock is relatively soft and consequently easily cut, however, where the sandstone is cemented by barite it is hard and far more difficult to work. Many of the

outcrops throughout the Nottingham area are comprised of this harder stone. There are three sizeable outcrops on the site.

Erosion over the years has created the present low ridge, lying between the 50m and 75m contours (160ft and 245ft), with a predominately north/north-easterly aspect.

The soil is described as 'well drained and coarse loamy soils over soft sandstone' by The Soil Survey of England and Wales (1983) - Classified as 551b Bridgenorth - with a slightly acid average pH of 5.0 and, due to the minimal disturbance, a deep humus layer.

Due to the topography of the site, virtually all water input is via rainfall, which quickly soaks away into the porous bedrock. The 'quick drainage' means that the site is characteristically low in nutrients, as they are leeched straight down into the ground. This is especially true at the top of the site, but water run-off means that the lower areas are slightly higher in nutrients.

2.6 Aspect, topography and altitude

The site is on a prominent east to west orientated ridge, sloping down to housing to the north and south. At its highest points (top of Alexandrina Plantation) the site lies at approximately 75m (246ft) above sea level down to around 55m (180ft) at the south eastern corner.

2.7 Access

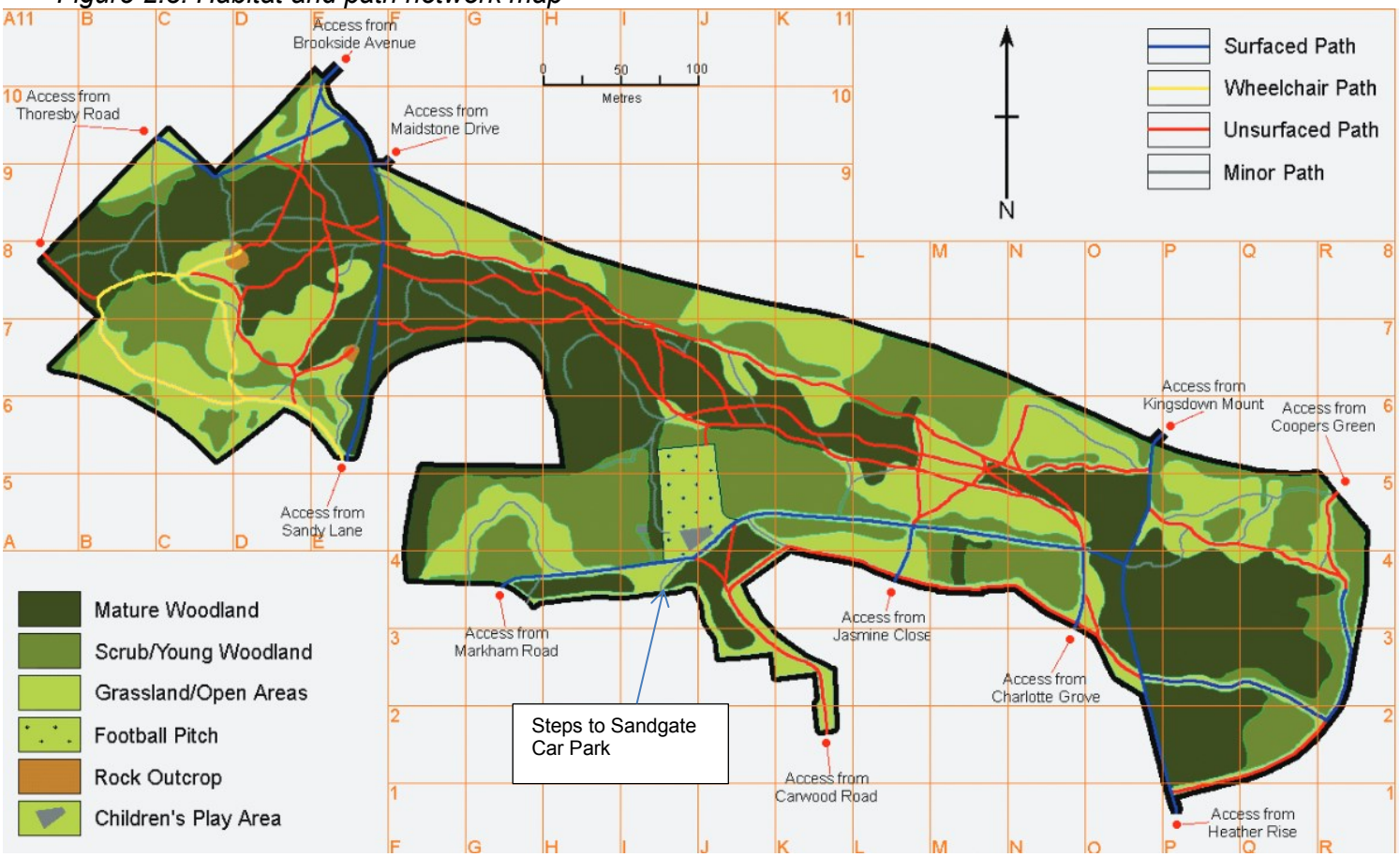
The local community has enjoyed open access to the land to Alexandrina Plantation since the late 1950's when the surrounding residential development was constructed. Access to Sandy Lane became established much later. The area owned by Broxtowe Borough Council was, until the mid-1970's, part of Lowes Nursery, who specialised in roses. The section that falls within the city boundary used to be completely fenced off, but over time the fences have fell into disrepair and now numerous informal paths criss-cross the site. The local community have had unrestricted access to the entire site, including land outside the LNR, for decades. The numerous access points are shown on Figures 2.2 and 2.3.

A map showing the path network is provided at Figure 2.3.

Wheelchair access is available from the top of Sandy Lane, where a 400 metre (440 yard) surfaced path has been installed. This leads gradually to the highest point on the Ridge.

There is one formal car park at Sandgate, which is highlighted on Figure 2.3.

Figure 2.3: Habitat and path network map



2.8 Surrounding land use

The site is on the western edge of Nottingham, with housing the main adjacent land use type. The A52 Derby Road is located approximately 350m to the south.

The LNRs are a substantial part of Bramcote Ridge, a sandstone ridge that forms a linear east to west orientated series of connecting open green spaces that serve as a wildlife corridor, extending over 2 ½ miles from Wollaton Park in the City of Nottingham to agricultural land south of Trowell.

2.9 Site Description

The LNR is a mosaic of acid woodland (predominantly mature oak plantation), scrub and acid grassland in an urban setting along a sandstone ridge. It is also well-used as an open space amenity land, popular with local residents for dog walking, cycling, running and adventure play. English plant names are used in the main part of the management plan.

The Nottinghamshire Biological and Geological Rerecord Centre (NBGRC) description for the overall site is as follows:

> The areas of woodland are predominately planted with coppiced pedunculate oak, sweet chestnut and silver birch above a sparse shrub layer supporting hawthorn, broom and wild cherry. The woodland floor contains much bare ground and leaf litter with patches of bramble, bluebell, wavy hair-grass and creeping soft-grass in places.

The Southern end of the site supports dense areas of Hawthorn scrub with a few garden relicts including Italian lords and ladies. The Eastern side of the ridge supports an area of coarse grassland with cock's-foot, cow parsley and rosebay willowherb.

The ridge supports areas of acid grassland and bracken with sandstone outcrops amongst scrub. Typical species of the acid grassland include wavy hair-grass, sheep's sorrel, catsear with pill sedge and notably the county rare native Goldenrod. An area is currently being restored to lowland heathland with the establishment of heather and there are a number of places reseeded with wildflower mixes.

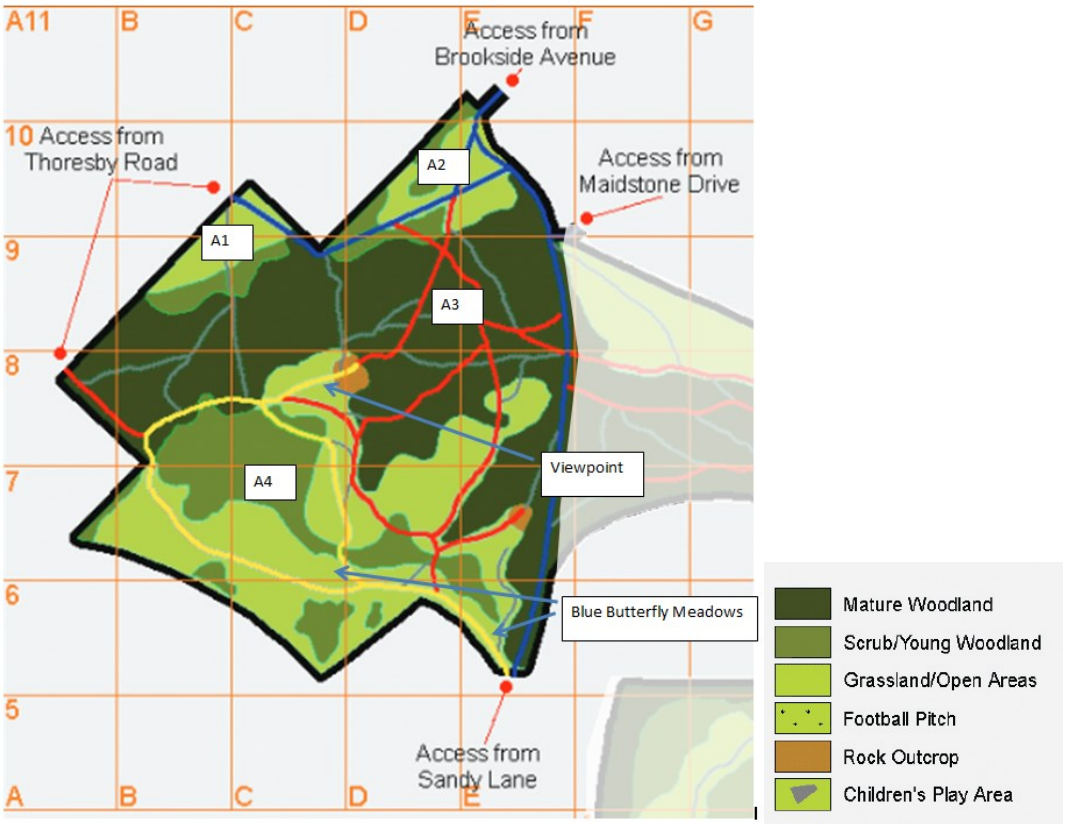
The site also has areas of amenity grassland, especially next to Thoresby Road and at the playing fields and in the vicinity of the play area at Sandy Lane. These are less valuable for wildlife but of importance as a community facility.

2.10 Management Compartment Descriptions

To allow management planning to a fine scale, the site has been divided into distinct management compartments, as shown on Figures 2.4 and 2.5. The boundaries are based on information contained within the previous management plans (Fewkes 1998 & 1999). For this updated plan, Compartments A to D of Alexandrina Plantation has become A1 to A4 respectively; Compartments A to E of Sandy Lane has become S1 to S5 respectively, with the sown acid grassland/ meadow (formally an area of bracken in S5) has now become S6. Boundaries have been tweaked further allow for changes in current vegetation cover, based on recent aerial photography.

<u>Alexandrina Plantation</u>

Figure 2.4 Alexandrina Plantation Compartment Map



A1. An area of amenity grassland alongside Thoresby Road. It has been partially sown with a high visual impact wild flower mix for the last few years, with the non-wildflower areas managed on an amenity cut.

A2. A mix of open habitats and scrub. Part of this land was sown with a wild flower mix but has since become dominated by mugwort, an annual plant of disturbed ground. Tall herb such as creeping thistle, nettle and rosebay willowherb occur along with bramble, broom and hawthorn scrub. Medium sized oak trees, along with rowan and other young tees have established towards the rear of the Thorseby Road properties.

A3. This area comprises the more established trees, a regenerating plantation of pedunculated oak, with pockets of bramble and other scrub species. The oaks show signs of pollarding; it was over half a century since they were last managed, possibly just after WW2. As a result of this pollarding, the tree cover is largely even aged. The understorey is sparse but contains hawthorn, blackthorn, rowan and bramble. There are several glades becoming dominated by bracken and sycamore is becoming established, particularly towards the western side of the compartment.

The ground layer is often bare, with deep leaf litter and some areas of grass, dominated by Yorkshire-fog, sheep's fescue and wavy hair-grass. There are some areas which support bluebell and ransoms.

A4. These are the more open habitats, comprising grassland, mixed-aged scrub and tall herb. The grassland areas are classified as semi-improved, supporting coarser grasses such as cock's-foot, false-oat grass amongst others grasses, with herbs including cow parsley, ribwort plantain and sheep's sorrel.

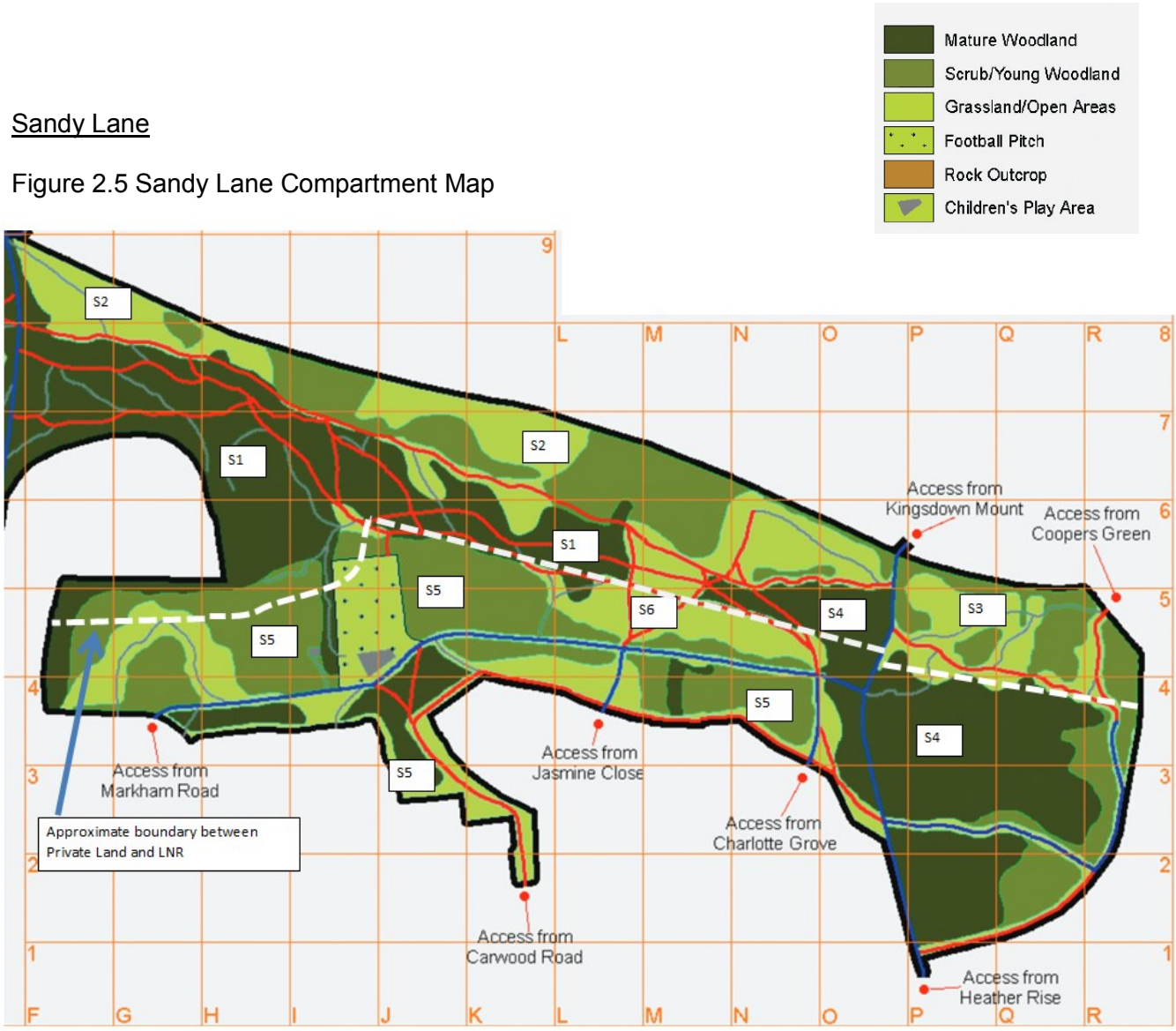
Two large sections of grassland in this compartment were reseeded and are now managed as 'Blue Butterfly' meadows (highlighted on Figure 2.4). The main meadow now supports a diverse sward, with field scabious, ox-eye daisy, musk mallow, common knapweed and bird's-foot trefoil. This area is managed under an annual cut and remove. The second Blue Butterfly meadow is currently down to cornfield annuals.

Scrub in this area includes dog-rose, bramble, common gorse, broom and hawthorn. Areas to the south of the path are vulnerable to tipping of garden waste and include areas of tall herb vegetation, dominated by nettle and rosebay willowherb. Extensive tracks of bracken can be found to the east of the compartment.

The view point around the rocky outcrop at the centre of the compartment is being lost due to the height of surrounding oak trees. The compartment contains a second, rocky outcrop (location highlighted on Figure 2.4). At the time of survey (August 2018) fires had been set earlier in the summer, which were fortunately contained within the vicinity of the view point and second outcrop.

Sandy Lane

Figure 2.5 Sandy Lane Compartment Map



S1. This compartment, which not owned by Broxtowe Borough Council, includes a mixed aged plantation of pedunculated oak, with signs of old coppicing. Silver birch and common ash are also in the canopy. The understorey supports rowan, elder, hawthorn, broom and holly, with scrambling species such as bramble and raspberry. Sycamore is becoming established in the western end of the compartment.

The ground flora is generally poor, except for sizable stands of native bluebell in several locations. There are some pockets of grassland, supporting Yorkshire-fog, Sheep's fescue and Wavy hair-grass. Stands of bracken also dominate in some locations.

There are numerous desire lines and signs of disturbance within the wood. Large, dense stands of Japanese Knotweed are found in this compartment.

S2. This compartment, which not owned by Broxtowe Borough Council, comprises a mosaic of mixed aged scrub and semi-improved grassland, located mainly outside of the LNR. Scrub species include peduncualte oak, hawthorn, crab apple and elder, with broom and dog-rose occurring with bracken and bramble in patches. The grass sward comprises cock's-foot, perennial ryegrass, false oat-grass, cow parsley, ribwort and greater plantain, common ragwort and sheep's sorrel.

S3. This compartment, which not owned by Broxtowe Borough Council, comprises a mosaic of acid grassland and scrub. Hawthorn, silver birch and pedunculated oak are dominant woody species, with bramble and brome. The sward comprises red fescue, perennial ryegrass, hairy brome, creeping buttercup, lesser celandine, common cat's-ear and dandelion. Pignut, an indicator of unimproved grassland and acid woodlands, is found in this compartment. Species indicative or disturbance and high nutrient levels, such as nettle and rosebay willowherb, is found near the entrance points.

S4. The compartment, which is part owned by Broxtowe Borough Council and part private land, is made up of a dense stand of broadleaved woodland, with some glades. Pedunculate oak, ash, cherry and silver birch are the main canopy trees, with hawthorn, blackthorn, rowan, elder, field maple and holly making up the shrub layer. Mature hawthorn and prunus species, including blackthorn tend to dominate the northern part of the compartment. This northern part of the compartment appears to be on clayey soils and is wetter underfoot. Yew, with sweet violet, wood avens, hedge woundwort, male fern and non-native tutsan are found in this area.

Scrub is prominent on the eastern fringes and is made up of stands of bramble, raspberry and dog-rose, becoming tall (up to 2m) and dense. Ground elder, nettle, cow parsley and hogweed and coarse grasses are typical ground flora species. A mature hedge defines the western boundary of the site.

S5. This compartment, which is part owned by Broxtowe Borough Council and part private land, comprises woodland and scrub habitats to the south of the main footpath and to the west of the play area.

The woodlands comprises pedunculate oak, ash, birch, cherry, field maple, hawthorn, sycamore and rowan.

The more open, scrubby habitats in this compartment, which are situated north of the Jasmine Close properties, support dense stands of bramble and dog-rose. The scrub habitats north of the Charlotte Grove entrance comprise dense stands of bramble, with ruderals such as hedge bindweed, hogweed, nettle and creeping thistle.

The scrub areas in the woodland west of the play area/ south of Hill Top house properties supports pockets of rank grassland and ruderals, with some stands of Japanese knotweed. A line of mature poplar under planted with cherry laurel can be found west of the informal football pitch / play area.

Some trees in this compartment support bat and nest boxes. Large, dense stands of Japanese Knotweed are found in this compartment.

S6. This area, which entirely owned by Broxtowe Borough Council, was largely dominated by bracken but it has now been reseeded with a grassland mix and heather brash. A few mature bushes of heather, which is native to the site, persist in the western margins of the compartment. Scrub is starting to invade this edge of the compartment, with pine saplings and damsons/ plums spreading from the adjacent compartment.

The main grassland area supports common cat'-ear, sweet vernal grass, cock's-foot, broom, bracken (especially in the hedgeline), yarrow, bird's-foot trefoil, black knapweed and yellow-rattle.

A native hawthorn and blackthorn hedge, which has been laid in the last few years, makes up the southern boundary of this compartment.

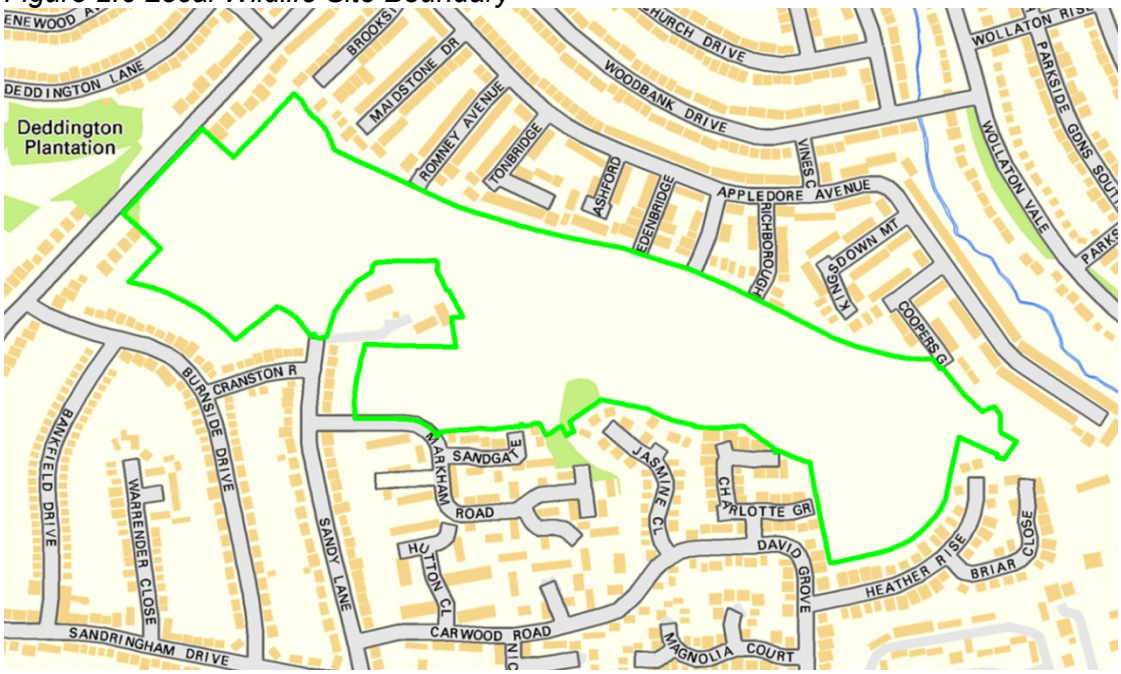
2.11 Statutory Designations

The site was designated as a Local Nature Reserve in 2005. Local Nature Reserves are statutory designated under Section 21 of the National Parks and Access to the Countryside Act 1949 and amended by Schedule 11 of the Natural Environment and Rural Communities Act 2006. The site is recognised for its importance to wildlife and as a public open space.

2.12 Non-statutory Designations

The site is designated as a Local Wildlife Site (LWS). It is known as LWS Ref 2/314 Alexandrina Plantation. It has been identified because it supports 13 acid woodland qualifying species and 9 acid grassland qualifying species. The LWS boundary is shown in Figure 2.6.

Figure 2.6 Local Wildlife Site Boundary



©Data provided by NBGRC (2016). Contains OS data © Crown copyright and database rights (2016)

Recognition as a LWS provides a level of formal recognition of the considerable interest of the site in a county context and provides the site with some protection through local planning policies.

2.12 Broxtowe Green Infrastructure Strategy

Broxtowe Borough Council has published a Green Infrastructure (GI) Strategy covering 2015 – 2030. In this strategy, linear GI corridors have been classified as primary (core) corridors, and secondary corridors. The Biodiversity Opportunity Mapping exercise (BOM) (Broxtowe BOM Report, Notts Biodiversity Action Group, 2014) fed into the development of this strategy. The BOM has identified habitats which could be created and extended in the corridors, to create greater ecological connectivity and habitat enhancement.

The site is within corridor 2.10, which extends from the western edge of Stapleford, through Bramcote to the northern edge of Beeston (see Figure 2.7). The corridor includes Stapleford

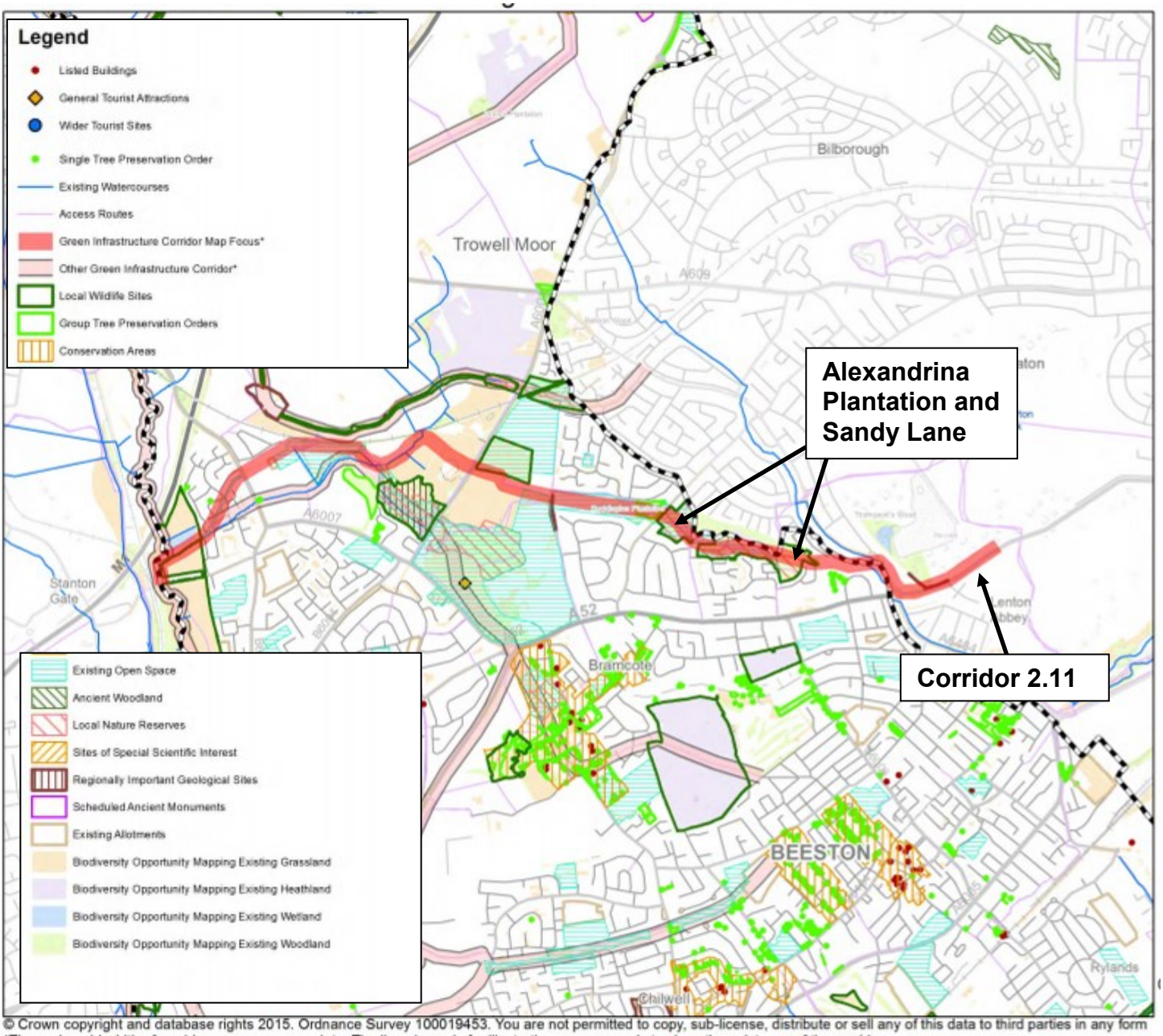
Hills Wood LNR, Bramcote Hills Park, Alexandria Plantation LNR and Sandy Lane LNR, as well as Moorbridge Wetland LWS and Bramcote Moor Grassland LWS.

The BOM identified the potential to extend woodland (plantation and semi-natural) and grassland habitat (comprising semi-improved neutral grassland, unimproved acid grassland and marsh/marshy grassland types) along these corridors.

2.13 Future Land Use

As the demand for infrastructure and housing developments are ever increasing, there is the possibility the private land north of the LNRs may be of interest for development. However, it is not included as a site allocation in the Nottingham City Local Plan Part 2, which at the time of writing has been submitted to the Government to start the Examination. In addition, Policy EN6 applies in relation to Local Wildlife Site protection.

Figure 2.7: Extract from Broxtowe Green Infrastructure Strategy showing the Erewash to Wollaton Green Corridor (2.11)



*The real-world width of corridors vary as appropriate. The line shown is for illustrative purposes only to show the existence of the corridor.

PART 3: EVALUATION & OBJECTIVES

3.1 Evaluation of site features (Ratcliffe's criteria)

3.1.1 Size

At 9.3ha the two LRNs provide a significant ecological resource in this urban setting. However, when considered as part of the much larger green corridor, between the Trowell and Wollaton, it becomes even more significant, providing opportunities for movement of species between urban and rural areas.

3.1.2 Diversity

This site contains a diverse range of habitats and is of high botanical diversity, as it qualifies as LWS for acid grassland and acid woodland, based on the presence of certain indicator plant species.

In places, structural species diversity of the woodlands is fairly low, which is the result of a number of factors including the geology, the introduction of alien species and high visitor numbers.

However, since the previous management plan, habitat structure has been much improved due to woodland management work, such as coppicing and thinning, the planting of native shrub species and infrastructure and access improvements undertaken. Areas of created wildflower meadow and heather establishment trials adds further to the diversity.

In order to maintain diversity, measures will need to continue in order to control encroachment of invasive species and disturbance by visitors. Further planting of native shrubs could also be undertaken. Further coppicing of selected shrubs may also need to be considered.

3.1.3 Naturalness

From studying old maps, the main woodland area (known as Alexandrina Plantation) appears to have been planted between 1836 and 1880, possibly to commemorate the marriage of Edward VII to Princess Alexandra in 1863.

Many of the older trees appear to have been coppiced at some in the past, possibly during the Second World War, when wood for timber and fuel would have been scarce. Natural regeneration of the wood is occurring, especially of pedunculate oak, hawthorn and rowan.

Following former agricultural use, areas of grassland and scrub have developed naturally over time.

The name 'Bramcote' is derived from 'cottages in the Broom', so the areas of broom present may be considered to be indicative of the area long ago when the first Anglo-Saxon settlers arrived.

3.1.4 Rarity

The site is a remnant of what was once a much larger area that has been lost to residential development since the 1950s, so the habitats present are extremely scarce in the local area. Although some areas have been sown or planted, the majority of the site itself has largely naturally regenerated; such land is becoming rare in the landscape.

The LNRs are located at the southernmost tip of Sherwood Natural Area and within a predominantly urban environment. This makes the site very unusual and a valuable ecological and recreational resource.

The acid woodland and acid grassland habitats present on site are recognised as locally important in the Nottinghamshire Biodiversity Action Plan priority habitat and 'habitat of principal importance', under the NERC Act 2006.

Additionally, the site supports a county rare plant, the native Goldenrod *Solidago virgaurea*.

3.1.5 Fragility

Although heavily used, the site is fairly robust, showing some signs of natural regeneration. The encroachment of scrub or the spread of aggressive species (e.g. bramble, nettle, rosebay willowherb or bracken) into grassland areas is a potential threat. Likewise, the presence of invasive alien species, particularly knotweed which has been brought in on garden waste, or nutrient input from dog faeces and anti-social behaviour (e.g. direct vandalism of trees or fire etc) is a further threat to the site's botanical and structural diversity.

If further development were to occur adjacent and/or near to the woodland boundary, there is the possibility of increased anthropogenic disturbance, as well as habitat fragmentation.

3.1.6 Typicalness

The site supports semi-natural habitats comprising characteristic sandstone plant communities, which is typical of the underlying geology.

Signs of anthropomorphic influence are present, such as nutrient enrichment and historic woodland planting, which has altered the site. However, the trees planted comprise pedunculate oak; this is typical species of acid woodland.

3.1.7 Recorded history

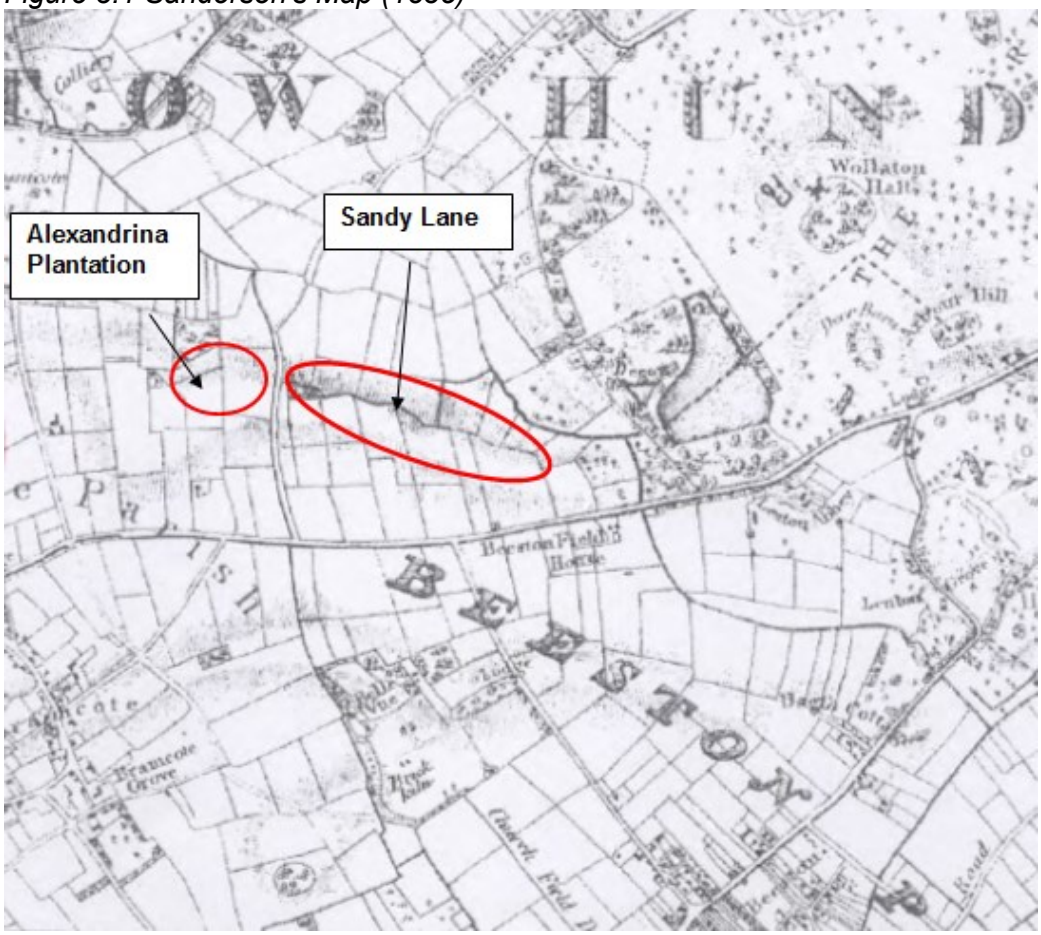
Although very little is known about the history of the site, the general area of Bramcote was enclosed by Act of Parliament in 1771, and the land was put over to (unknown) agricultural use, possibly the grazing of stock.

An extract from the Sanderson's Map (1835) is provided at Figure 3.1 (overleaf). This shows the previous agricultural use of the area.

3.1.8 Position in an ecological/geographical unit

The LNRs form part of a much bigger, 5km long wildlife corridor, which stretches from Wollaton Park in the City of Nottingham to agricultural land south of Trowell, leading into open countryside. Its individual value, although great, is far outweighed by its value as part of this corridor connecting urban habitats to rural habitats, enabling the movement of wildlife.

Figure 3.1 Sanderson's Map (1835)



3.1.9 Potential value

With continued appropriate management, the LNRs have and will continue to have great value for recreation, nature conservation and as an educational resource. It also has potential for continued restoration to typical Sherwood oak/birch woodland and areas of heath/ acid grassland; both are Nottinghamshire Biodiversity Action Plan priority habitat types.

Securing the future sympathetic management of the adjacent land for biodiversity would add huge value to the site, making it a larger, more robust wildlife site. This would be in line with the conclusions arising from the Lawton Review of wildlife sites (2010); the need for *more, bigger, better, and more joined up* sites.

3.1.10 Intrinsic appeal

The range of habitats, together with the geological and historical features of the site, makes the reserve a valuable resource from both recreational and biodiversity perspectives. Furthermore, the excellent views towards Nottingham add to its intrinsic appeal.

3.2 Objectives

To safeguard the conservation value of the site, any longer term management action should be directed towards maintaining and enhancing the habitats present. The main objectives are to:

- Continue the sympatric management and restoration of the mosaic of acid woodland, acid grassland and scrub habitats by:
    - Protecting and enhance the floral and structural diversity of the woodland and scrub
    - Maintaining and enhance the potential of the woodland to support a diversity of fauna
    - Protecting and enhancing deadwood habitats
    - Managing the natural acid grassland areas sympathetically
    - Maintaining and managing the areas seeded with heather and wild flower mixes
- Ensure that the site is a safe environment for recreational purposes, promoting and enhancing the recreational potential in an ecologically sustainable manner.
- Promote and enhance the educational potential including awareness of issues and ecological impacts.
- Promote and enhance community involvement, including its long term maintenance.
- Continue with a research and monitoring programme and use the results to inform future management regimes.

3.3 Factors Influencing Management

- Timescale – the need to do things gradually to ensure that the visual appeal of the LNR is not lost during management.

- Nature Conservation – the need to ensure that only native species of vegetation, indigenous of local provenance is introduced into the natural areas of the site.

- Nature Conservation – the need to remove invasive species that are a threat to the vegetative diversity (e.g. Japanese knotweed) should they appear or recolonise.

- Safety - in the interest of public safety, all possible measures should be taken to ensure public safety whilst work is being carried out, including temporary closures of paths if required.

- Community involvement - local community and volunteer groups should continue to be consulted on the strategic management and continue to be involved with the practical management of the site.

- Legal obligations - work likely to cause disturbance to breeding birds i.e. felling and scrub clearance cannot be undertaken during the bird breeding season (March to September). Therefore, all felling and scrub clearance must be undertaken during the autumn and winter. It is an offence to disturb any wild bird (with the exception of pest species) while it is tending a nest containing eggs or young. To do so would be an offence under The Wildlife & Countryside Act 1981.

- Protected species - mature trees identified for felling, likely to provide roosting opportunities for bats should be surveyed by a licensed bat worker prior to felling. All species of British bat plus their roosting sites are protected by the Conservation of Habitats and Species Regulations 2010, Wildlife & Countryside Act 1981, Countryside and Rights of Way Act 2000, and by the Natural Environment and Rural Communities Act 2006.

- The need to accommodate and, where appropriate, enhance the recreational value of the site.

- Annual meetings regarding the management of the site are recommended to identify work programme and schedule of works. Meetings should involve Broxtowe Borough Council and the Friends Group, potentially alongside Nottinghamshire Wildlife Trust, Practical Conservation Volunteers, contractors and anyone else likely to carry out work on site.

- Ongoing funding for the management identified cannot be guaranteed for the full term of the plan. It may therefore be necessary for some tasks to be rolled over into subsequent years, to be completed when funding becomes available.

- Tree disease/ biosecurity. The time of writing there is an increasing focus on detection, prevention (e.g. implementation of biosecurity) and managing the impact of any disease outbreaks. The diseases/ pathogens that pose the highest risks at this site are:

    - *Phytophthora*
    - Acute Oak Decline
    - Oak Processionary Moth
    - Ash Dieback
    - *Xylella fastidiosa*
    - Sweet chestnut blight.

  The latest guidance on tree pests and disease is available from the Forestry Commission's Pests and Diseases website:
  http://www.forestry.gov.uk/pestsanddiseases

3.4 Management rationale

Natural succession of open habitats to woodland is the main factoring influencing the site, which is occurring in the absence of grazing. Grass gives way to bramble, scrub and eventually woodland. The open habitats have value, both in terms of maintaining sightlines and a feeling of visitor safety, but crucially in ecological terms. The open habitats are best continued being managed in a mosaic with mature woodland, scrub and grassland. This provides the greatest range of ecological niches, maximises floral diversity, which will be used by many generalist and specialist faunal species that are dependent on these habitats, either individually or in a mosaic.

Other considerations are timescale; the management plan should be implemented over a number of year. Succession of habitats on site has occurred slowly over a number of years. Reversing this, in parts of the site is best done gradually. This will be best in terms of safeguarding the ecology and will also be better from a user perspective, as tree felling is often contentious.

3.5 Current Management

This section is based on Friends of Bramcote Ridge description of current and recent management, described for each habitat.

Woodland

- Moving self-set seedlings from near the bases of larger trees to more favourable sites.
- Pruning small trees to promote strong, straight growth.

- Weeding seedlings to reduce competition from fast growing vegetation (grasses).
- Removal of damaged/unsafe branches from the older Oaks.
- Creation of habitat stacks using the removed branches.
- Introduction of selected trees to increase species diversity.
- Thinning of bramble thickets.
- Work with Broxtowe Borough Council in reducing the height of the trees near the summit of the site and restored the view over west Nottingham.

Scrub

- Management of the scrub is intentionally minimal, maintaining such area as a 'sanctuary' for wildlife.
- The main focus is to limit access, especially during the breeding season. This is achieved by using vegetation (such as bramble), cut from elsewhere to block the desire lines leading into the scrub.
- The only real regular active vegetation management undertaken is the removal of burnt dead shrubs. Ideally they are left in-situ to limit disturbance and access whilst the surrounding vegetation regrows, and then removed in the following year.
- The group has also created a few 'experimental clearings' deep within the scrub in order to see what species will regenerate once the dominant broom has been removed. The information gained from this will be used to plan any future management, if any is felt necessary.

Rough Grassland

- Control of scrub encroachment, restricting any shrubs and trees to their present extent.
- Removal of washed-down sand and encroaching vegetation from footpaths, and resurfacing where necessary.
- Control of nettle encroachment.
- Control of Bracken and Raspberry encroachment
- Introduction of a mowing regime and removal of cut vegetation in order to reduce nutrient levels and dense thatch layer.

Grassland

- Management of these areas of grassland has been predominantly through the implementation of a mowing regime. Working in close partnership with Broxtowe Borough Council, the larger of the blue butterfly meadows in Alexandrina Plantation and the main meadow in Sandy Lane is mown once a year, in early-mid September, and all cuttings are then removed from the site. Some small areas are deliberately left uncut to provide cover and over-wintering sites for many of the invertebrates present in the grassland.
- This will slowly reduce nutrient levels available to the vegetation and allow more characteristic sandstone species to thrive. Also, raking up the cut material removes some of the deep thatch layer that has built up over the years of neglect, allowing more seeds to reach the soil level and germinate.

- Other management tasks involve control of invasive species, such as Rosebay Willowherb and Nettle - once the plants have flowered, they are cut down/pulled up to prevent them from setting seed. A sizeable section on the Sandy Lane Open Space LNR has been restored to more typical grassland.

Bracken

- Management has been aimed at reduction and control of the Bracken stand. This involved bashing/cutting the stems twice a year - in June and August. To date the Friends have reduced both the height and density of the stand, which has presented the grasses and herbs with more opportunity to compete.

Rock outcrops

- Management of these outcrops is minimal and normally involves removal of graffiti and accumulated litter, as the outcrops are a popular meeting point with local teenagers.
- Broxtowe Council installed two benches at the summit outcrop, so that visitors can rest whilst savouring the extensive view over western Nottingham. Other management indirectly concerned with the outcrops is the periodic management of the surrounding trees to ensure that the views are maintained

PART 4: MANAGEMENT DETAILS

BBC = Broxtowe Borough Council
FOBR = Friends of Bramcote Ridge
NCC = Nottinghamshire County Council
PCV = Practical Conservation Volunteers

Compartments A1-A4 Alexandrina Plantation (BBC ownership)
Compartments S1-S3 Sandy Lane (Private ownership)
Compartments S4-S5 Sandy Lane (part BBC, part Private ownership)
Compartment S6 Sandy Lane (BBC ownership)

4.1 Management Projects and Prescriptions

Objective 1 Continue the sympathetic management and restoration of the mosaic of acid woodland, acid grassland and scrub habitats					
Ref	**Task name**	**Task description**	**Season**	**Compartment**	**Responsibility**
1.1	Mowing	Mow Blue Butterfly Meadow each year in September	Au	A4, S6	BBC
1.2	Scrub Management - grasslands	Scrub management and / or mowing of invasive annuals (where encroaching on grassland)	Au	A1, S6	FOBR PCV
1.3	Annual wildflower plots	Continue maintaining the annual wildflower plots through scarifying and toping up seed each year	Sp	A1, A4	BBC (if funding allows)
1.4	Woodland ride creation/ management	Reopen some of the woodland rides and glades and / or create new ones through scrub management. In certain areas, such as east part of Sandy Lane, this will also help facilitate access along existing narrow paths.	Au/ Wi	A3, S4, S5	FOBR (hand tools) PCV BBC (if funding allows)

Objective 2 Ensure that the site is a safe environment for recreational purposes, promoting and enhancing the recreational potential in an ecologically sustainable manner.					
Ref	**Task name**	**Task description**	**Season**	**Zone**	**Responsibility**
2.1	Path maintenance	Check for hazards relating to paths (e.g. surface deterioration, dangerous trees etc) Some Tree felling along bridleway might help reduce leaf litter and help the path dry out more quickly and make it less slippery in autumn/ winter (additional biodiversity benefits in relation to increasing light levels)	All year Au, Wi (tree removal)	All	BBC to monitor and arrange any works
2.2	Keep viewpoint open	Contractor work to prune trees to keep viewpoint open on top of Alexandrina Plantation	Au, Wi	A4	BBC (subject to funding)
2.3	Litter pick	Remove rubbish/litter and fly tipping at least once per month, or as soon as possible after significant dumping	All year	All	BBC and FOBR to monitor and arrange any removal
2.4	Reporting	Report any other amenity issues, such as anti-social behaviour to Broxtowe and other interested parties (emergency services, community police officers, schools etc)	All year	All	FOBR
2.5	Boundary between Alexandrina Plantation and private land	Look into visually improving the boundary, e.g. through removal of concrete fence posts. Needs agreement with adjacent landowner.	Au, Wi	A3	BBC (subject to funding)
2.6	Keep outcrop open to help maintain area	Keeps outcrops clean and open up vegetation to deter anti-social behaviour	Au,Wi	A4	FOBR (hand tools) BBC (if funding allows)
2.7	Access point improvements	Access from Markham Road Secure funds to create a more gentle, ramp access Heather Rise Stile -repair	All year	S4, S5	BBC to oversee (subject to securing funds) NCC (Rights of Way)

Objective 3 Promote and enhance community involvement, including its long term maintenance					
Ref	**Task name**	**Task description**	**Season**	**Zone**	**Responsibility**
3.1	Update Interpretation	Provision of interpretation covering history and heritage (e.g. former use as nursery, old hedgeline reinstated etc)	All year	All	BBC (subject to securing funds)
3.2	Practical management	Friends group, other local community groups, Wildlife Trust, Broxtowe Borough Council will continue to encourage community participation in practical management. If required, seek appropriate training opportunities for volunteers and work party leaders.	N/A	N/A	Volunteers, supported by BBC and NWT
3.3	Encourage membership	Support the Friends group to ensure its continuing viability and capability to undertake the plan's objectives.	N/A	N/A	Volunteers, supported by BBC, NWT and PCV
3.4	Business and corporate links	Develop links with business community and local partners for possible funding and volunteering to encourage responsible use of the site. Write to local businesses inviting them to donate funds/equipment or supply volunteers	N/A	N/A	Volunteers, supported by BBC and NWT

Objective 4 Continue with a research and monitoring program and use the results to inform future management regimes					
Ref	**Task name**	**Task description**	**Season**	**Zone**	**Responsibility**
4.1	Ecological survey and monitoring	Undertake or commission ecological surveys to obtain baseline data on amphibians, reptiles, invertebrates, mammals, flora and birds	Sp,Su, Au	All	Volunteers, supported by BBC and NWT
4.2	Management plan update	Review, evaluate and update management strategies and tasks on a 5 yearly cycle or more frequently if required	N/A	All	Volunteers, supported by BBC and NWT

4.2 Five Year Work Plan

Priority - 1 is high, 3 is low
This plan may need to be altered in response to site monitoring and should be reviewed after a 5 year period.

Ref	Task Name	Years				
		1	2	3	4	5
		2019	2020	2021	2022	2023
1.1	Mowing	1	1	1	1	1
1.2	Scrub Management -grasslands	2	2	2	2	2
1.3	Annual wildflower plots	2	2	2	2	2
1.4	Woodland ride creation/ management	2	2	2	2	2
2.1	Path maintenance	1	1	1	1	1
2.2	Keep viewpoint open			2		
2.3	Litter pick	1	1	1	1	1
2.4	Reporting	1	1	1	1	1
2.5	Boundary between Alexandrina Plantation and private land			3		
2.6	Keep outcrop open to help maintain area	1	1	1	1	1
2.7	Access point improvements		2			

3.1	Update Interpretation			2		
3.2	Practical management	1	1	1	1	1
3.3	Encourage membership	1	1	1	1	1
3.4	Business and corporate links		2		2	
4.1	Ecological survey and monitoring	1	1	1	1	1
4.2	Management plan update					1

PART 5: REFERENCES

Broxtowe Borough Council (2015). Broxtowe Borough Council Green Infrastructure Strategy 2015 – 2030.

Fewkes, G (1998). Management Plan for Alexandrina Plantation

Fewkes, G (1999). Management Plan for Alexandrina Plantation (east of Sandy Lane)

Langtree, C (2016). Management brief for Alexandrina Plantation and Sandy Lane

Lawton, J (2010). Making Space for Nature: A review of England's Wildlife Sites and Ecological
Network

Nottingham City Council (2018). Local Plan Part 2 Submission Version

Sanderson, G. (1935). Sanderson's Map, Twenty Miles round Mansfield. Technical Print Services Ltd, Notts.