

Bagots Forest Plan

2016 – 2026

Summary

Bagots Forest Plan (FP) (490ha) comprises of 4 areas of woodland that lies 16km east of Stafford, Staffordshire (Bagots Forest, Kingstone Wood, Harts Coppice and Birch Wood). The woodlands lie on the Needwood and South Derbyshire Claylands Natural Character Area on a wide gently rolling floodplain which follows the River Dove. Each of the woodlands lies on gently sloping ground with the only exception to this being at the northeast edge of Bagots Forest which forms part of what remains of the scarp woodlands of the former Royal Forest of Needwood. Principal views are from Kingstone and Marchington village and commuters travelling along the B5013 and B5234 that run between Uttoxeter, Abbots Bromley and Burton on Trent.

The FP woodlands contain 360ha of conifers, 118ha of broadleaves and 11ha of open space. The woodlands are largely mature high forest which comprises of 82% Plantation on an Ancient Woodland Site (PAWs) 15% Ancient Woodlands (AWs) and 3% Secondary Woodland. The primary objective of this FP is to revert the woodlands back to broadleaves while conserving the conservation and heritage features and producing sustainable timber yields. Climate change, and more directly, pest and diseases are already having a major impact on health and productivity of the woodlands. The new FP will introduce a management programme that will make the woodlands more resilient in the face of a changing climate, pests and diseases and maximise economic potential of the forest. The sustainable harvesting programme will help diversify the current uniform structure and create both permanent and transitional open space that will increase the woodlands habitat for wildlife.

Management will have to become more reactive in the face of current and future pests, disease and climate change to ensure it can grow the economic, environmental and social value of the forest into the future.

The FP details management operations including felling and restocking for the next 10 years with outline proposals for the next 50 years.

Forestry Operations 2016 to 2026

Woodland Name	Grid Reference	Total Area (ha)	Felling (ha)	Natural Regeneration (ha)	Restocking (ha)	Open Space (ha)
Bagots Forest	SK076275	386	34.9	10.3	14	10.6
Kingstone Wood	SK060283	53.5	11	5.1	5	0.9
Harts Coppice	SK105266	20	6	3.5	2.5	0
Birch Wood	SK119244	49.5	4.1	2.1	1	1



Central Forest District - Bagots Forest Plan (FP)

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A Application for Forest Plan Approval

i Plan Area Identification:

Forest District:	Central Forest District	
Beat:	National Forest	
Name:	Bagots Forest Plan	
Nearest Town:	Uttoxeter	
Grid Ref:	Kingstone Wood	SK060283
	Bagots Forest	SK076275
	Harts Coppice	SK105266
	Birch Wood	SK119244
Local Planning Authority	Staffordshire	

ii Designations:

Ancient Woodland, Plantation on Ancient Woodland (PAWs), Secondary Woodlands, Site of Special Scientific Interest - Forest Bank SSSI and lies within the National Character Area Profile 68 Needwood and South Derbyshire Claylands.

iii Date of Commencement of Plan

As soon as possible once approved.

Operations	Conifers	Broadleaves
Felling	56	
Restocking (planting & natural regeneration)		43.5
Open Space	12.5	

Total felling area 56ha

- Forest Plan maps are attached

In addition 169ha (34% of FP) will be managed as Low Impact Silvicultural Systems (LISS) where a combination of shelterwood, small coupe felling, minimum intervention and single tree selection systems will be used to regenerate the ancient woodland. Operations will include; encouraging initial seeding, providing sufficient light to boost growth of understorey and ground flora, allowing adequate space for the development of crowns and stem form for quality timber and accelerate

individual tree growth. These operations will also be supported, where needed, by supplementary planting in order to increase species diversity.

Operations	Conifers	Broadleaves
Low Impact Silvicultural Systems (LIS)	10	6

I apply for Forest Plan approval for the area described above and in the enclosed Forest Plan. I undertake to obtain any permission necessary for the implementation of the approved plan.

Signed *A. Medley*

Approved *Ewan Calcott*

Forest Management Director

Ewan Calcott, Field Manager
NW&WM Area team

District Central

Conservancy

Date 29/2/16

Date 2016.05.13

1. Introduction

This Forest Plan (FP) is a new FP for a collection of woodlands in northeast Staffordshire and provides approval for felling and restocking over the next 10 years and sets out our management proposals for the next 50 years. FPs are operational plans and although they do take into account the presence of social and environmental features, their management will be dealt with in separate documentation.

This FP is guided and directed by a number of policies and strategies - the main documents are summarised in Fig.1. Delivering this plan will require the Forestry Commission (FC) to be responsive to shifts in our operating environment and increasingly flexible in our approach, and to sustain this responsiveness over decades to come.

Fig 1. Forestry Commission England's Planning Strategy

National Forest Policy

The FC sets out its vision and aims for Forestry in England at a **national** level. This is outlined in the Strategic Plan for the Public Forest Estate in England.



Forest District Strategic Plan

The District Strategic plan sits between the national and local planning levels and supports the aims and objectives within the districts, according to the FE England National Policy and gives direction for the management of woodlands at a **District** level.



Forest Plans

Forest Plans are used by the FC to demonstrate sustainable forest management on the public estate in the long term and to define a 10 year programme of approved work. They explain how a **local** area of forest will be managed and why and is produced in consultation with internal and external stakeholders, and following UKWAS, PEFC and UK Forest Standards.



Operational Site Plans (Ops 1's)

Management plan for **specific operations** on site, undertaken in accordance with the above and by following national guidance as set out in the UK Forest Standard.

1.1. Bagots Forest – Survey Data

Bagots Forest Plan (490ha) comprises of four woodlands that lie within northeast Staffordshire. Bagots Forest (386ha) is the main central block of forest with Kingstone Wood (53.5ha), Birch Wood (49.5ha) and Harts Coppice (20ha) surrounding it.

The woodlands comprise of 82% Plantation on an Ancient Woodland Site (PAWs) 15% Ancient Semi Natural Woodland (ASNW) and 3% Secondary Woodland. The only formal designation is a small area of Bagots Forest that forms part of Forest Banks Site of Special Scientific Interest (SSSI). A wide variety of species has been recorded in Bagots Forest some of which are LISSted as European Protected Species.

Scots pine is the dominant species covering 42% of the woodland area with broadleaves (25%), larch (12%), Corsican pine (10%), Lodgepole pine (4%), evergreen conifers (2%) with open ground (5%) covering the remaining areas.

The threat to timber production from climate change and more directly from pest and diseases is already having a major impact on Bagots FP woodlands. *Dothistroma* Needle Blight (DNB) is a fungus-like pathogen that is now affecting the Lodgepole and Corsican pine in these woodlands and which will lead to reduced yields and in some cases tree mortality. *Phytophthora ramorum* and *Chalara fraxinea* are two more pathogens killing larch and ash respectively and although not present in the woodlands in spring 2016, the Bagots FP woodlands lie in a high risk area close to infected sites to the east and west. To ensure sustainable timber production long term the species used to restock the woodlands will be diversified selecting species that are more resistant to the current and future threats. The new FP will ensure the continuation of sustainable timber production in balance with the nature conservation interests and access requirements.

Kingstone Wood and the southern end of Harts Coppice are freehold woodlands and are used on a regular basis by local villages and a Forest Schools project (Kingstone Wood) although the level of use is low. The remaining woodlands are leasehold and public access is limited to the network of public rights of way.

All planning and operations aim to satisfy our certification under the UKWAS, Programme for the Endorsement of Forest Certification (PEFC) and meet UK Forest Standard (UKFS).

Management Objectives

Economic - produce sustainable timber yields, encourage and support new and existing business activity associated to the public forest estate and to make the economic potential of our forests and woodlands more resilient in the face of a changing climate.



Environmental - To increase, where possible, the environmental contribution made by the Estate to the range of ecosystem services delivered and to protect and enhance its overall biodiversity and heritage value at both the landscape and local level.

Social - Enable everyone, everywhere to connect with the nation's trees and forests so that they understand their importance and act positively to safeguard forests for the future.



3.0 Forest Plan Objectives

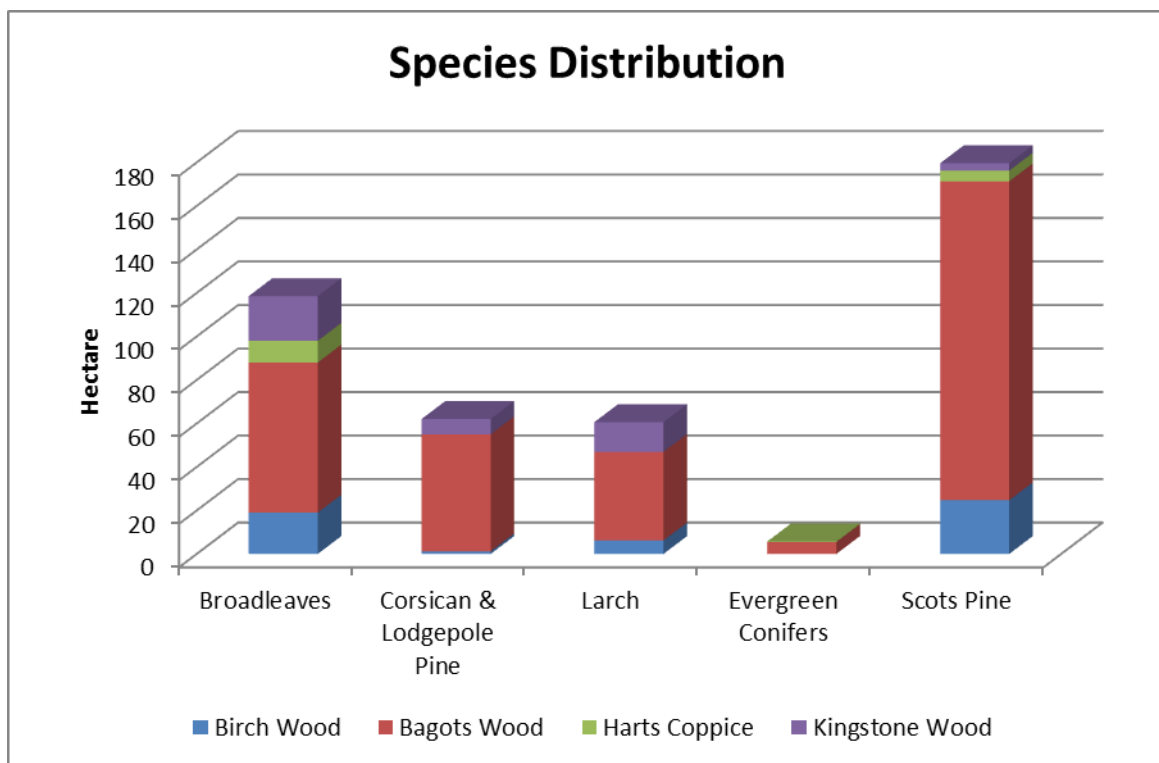
3.1 Woodland

The primary objective of this FP is to revert the conifer plantations back to broadleaved woodland over time while conserving the remaining ASNW, conservation and heritage features and producing sustainable timber yields.

Planting commenced in 1930s with the majority of the plan area being established during the late 1950s and early 1960s (71%). There are a few areas of ASNW remaining in Bagots Forest and some small areas of conifer restocking have taken place since.

The current stand structure comprises 70% conifers, 25% broadleaves and 5% open space, Fig. 2. The conifers are grown on a 45 to 55 year rotation with Scots pine being the most dominant species with an average yield class of 12, see Fig. 3, Table 1. The majority of the conifer stands have now reached the end of their economic rotation and are ready for harvesting, see Fig. 4 Current Age Structure.

Fig.2 Species Distribution Between Woodlands



Corsican and Scots pine are the most productive species in the area with an average annual yield of 12m³/annum but the fungal pathogen Dothistroma Needle Blight (DNB) is now affecting the pine stands leading to reduced yields and in a few cases tree mortality. The threat to timber production from climate change and more directly from pest and diseases is already having a major impact on Bagots Forest Plan woodland. To ensure sustainable timber production in the future the number of

broadleaf species currently present will be diversified in future rotations selecting species that are more resistant to the current and future risk from pests and disease

Table 1 Current Species (ha)

	Birch Wood	Bagots Wood	Harts Coppice	Kingstone Wood
Open Space	2.2	52.3	5.5	4.5
Broadleaves	19	69	10	20.5
Corsican & Lodgepole Pine	1.2	53.8		7
Larch	6.2	40.7		13.7
Evergreen Conifers		5.5	0.2	
Scots Pine	24.7	146.6	4.9	3.4
Grand Total	53.3	367.9	20.6	49.1

Fig. 3 Current Species

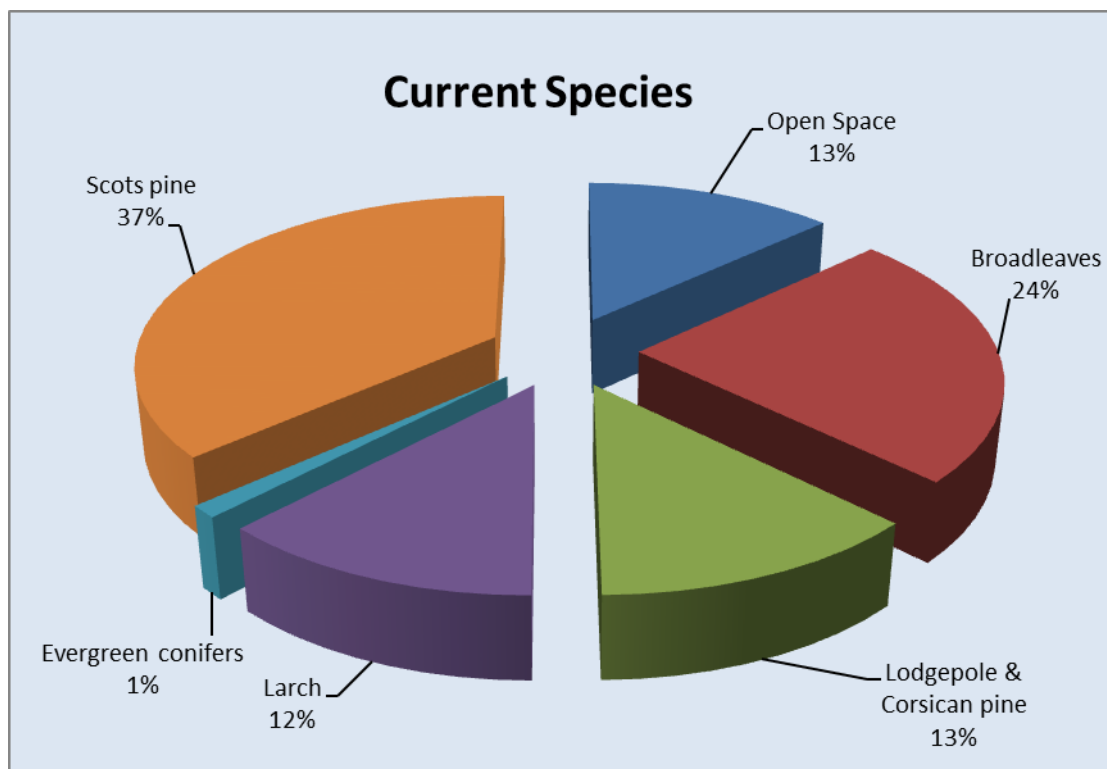
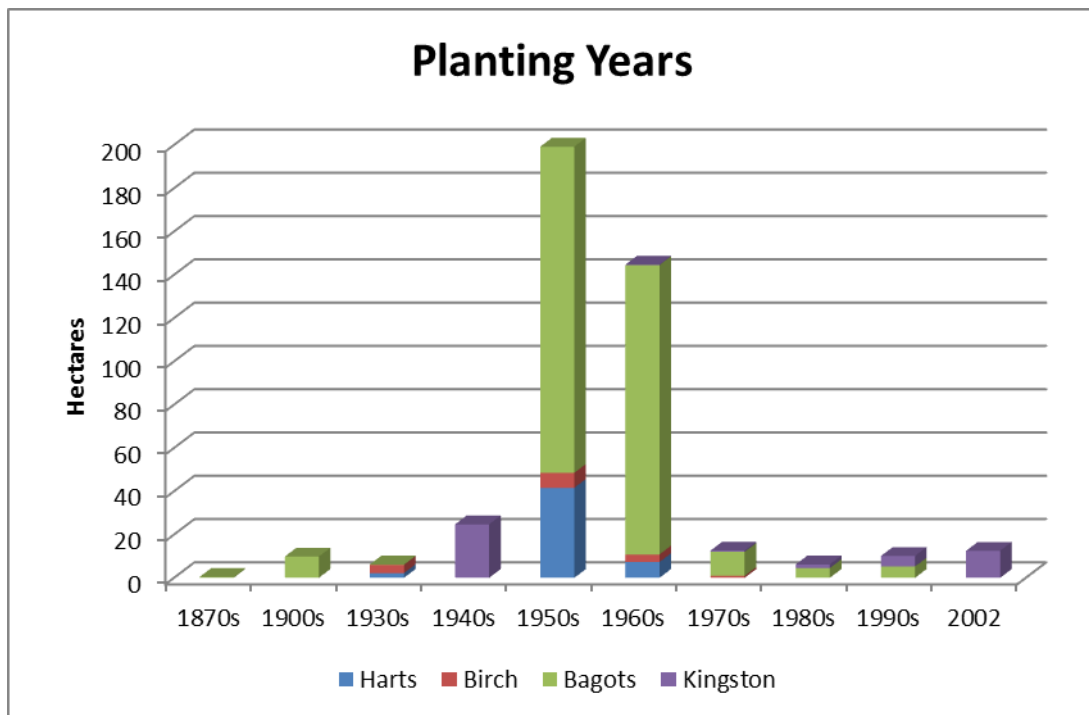


Fig. 4 Current Age Structure within the Bagots Forest Plan



A combination of clearfells and LISS will be used to break up the current uniform structure, remove the diseased trees and allow for the establishment of a more diverse species mix. These felling operations will be phased in over a 75 year period to allow the forest to gradually be reverted back to broadleaved woodland without a major short term impact on the woodland ecology.

3.2 Environmental

Bagots FP has a wide variety of habitats including mature broadleaves, water features, Trees of Special Interest (TSI) and deadwood habitats all associated with its ancient woodland status. The ASNW site identified show evidence that these are in fact plantation on an ancient woodland site (PAWs) with the oaks being planted in the 1950s.

These areas still retain indicator plants and individual TSI which date back over 100 years. A number of the habitats and species found in Bagots FP have been identified in Staffordshire Biodiversity Action Plan (SBAP) and Habitat Action Plan (HAP).

The presence of HAP and BAP species (Appendix II) will be taken into account when Operational Site Plans (Ops1) are written to conserve and enhance these key features wherever possible when forestry operations are undertaken.

A programme of conservation management has been undertaken by the Forestry Commission over the last 20 years. Two bat hibernacula have been created, nest box schemes and ride cutting programmes introduced to maintain and help expand both bat and bird populations. Both buzzards and ravens have been recorded nesting in the Bagots Forest.

Trees of Special Interest (TSI) and deadwood habitats will be retained wherever possible across the forest plan to create long term retentions. Individual and small groups of character trees, if identified during management operations, will be retained in perpetuity to create future TSI, conserving their landscape value, increasing deadwood habitat and diversifying the available woodland ecosystems. Two pine stands will also be managed as long term retentions and the trees allowed to reach their natural life cycle rather than being removed at the end of their economic rotation.

There is currently limited open space with the FP woodlands which has impacted on the available woodland edge habitat. This will be addressed in the new plan through road and ride widening and the introduction of a phased felling plan that will create several small clear fells (transitional open space) in every five year felling period. In addition 6 areas of permanent open space will be created for deer control.

Within the new FP a number of areas that have been designated as natural reserves and will be managed through minimal intervention. This will allow for a gradual increase in deadwood habitat to build across this site. These areas (29ha, 6% of FP) will be left to evolve naturally and the only future intervention will be where it may increase the conservation or biodiversity value or health and safety grounds. Standing snags and laid deadwood habitats will be retained wherever possible across the FP area to increase the distribution of deadwood habitats throughout the woodlands.

3.3 Social

Kingstone Wood lies adjacent to Kingstone village and is used on a daily basis by local residents for walking and horse riding. The village primary school has a Forest Schools project running where children enjoy outdoor lessons and storytelling in a quiet area set aside for them. The southern half of Harts Coppice is freehold, but very low usage. Bagots, Birch Wood and the north of Harts Coppice are leasehold woodlands and under the lease agreements there is no public access permitted other than along designated rights of way.

There are no scheduled ancient monuments but a number of historic relics do exist which include several buildings that date back to when Bagots Forest was used as a World War II army base; boundary features that link to Bagots Park; marl pits dug for the pottery industry and brick making which have in some cases created wet woodland features.

If in the future any more historical features were to be identified, these would be conserved wherever possible and where appropriate.

3.4 Restocking and Future Management

All areas of the FP will be reverted back to broadleaves over time and the reversion will be phased in over the next 75 years. Due to the impact of climate change, pests and disease that will affect the woodlands over the next 100 years a wider selection of honorary native species, not necessarily found in the region will be used to combat the predicted climatic impacts, with no one species dominating the woodlands. A combination of planting as well as natural regeneration will be used to achieve this and protective measures will be introduced to prevent predation by mammals as they will be increasingly palatable in comparison to the current pine and larch stands. The Forestry Commission is working in partnership with the Deer Initiative and local landowners to manage the local herds of fallow and muntjac deer.

The combination of clear fell / restock sites and LISS will provide ideal microclimates for pioneer species (light demanders) and late successional species (shade tolerant species) throughout the FP woodlands allowing for a wider variety of species to become established.

44ha (8.9%) of the FP will be managed as open space, open water, rides and roads. These areas will be cut periodically to create a diverse habitat which will create the appropriate microclimates for the sites biodiversity and further enhance the woodland ecosystem. Table 2 and Fig. 5 & 6.

Fig. 5

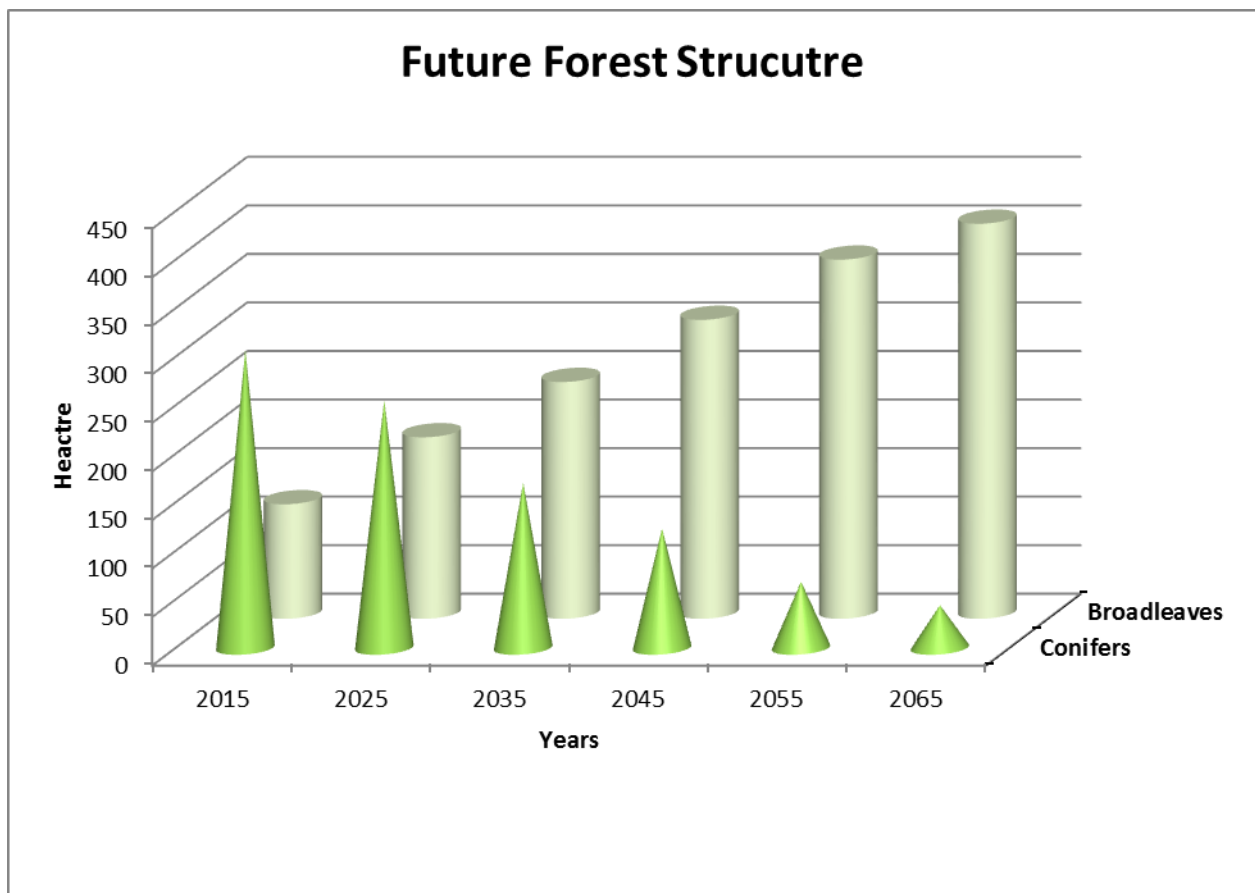
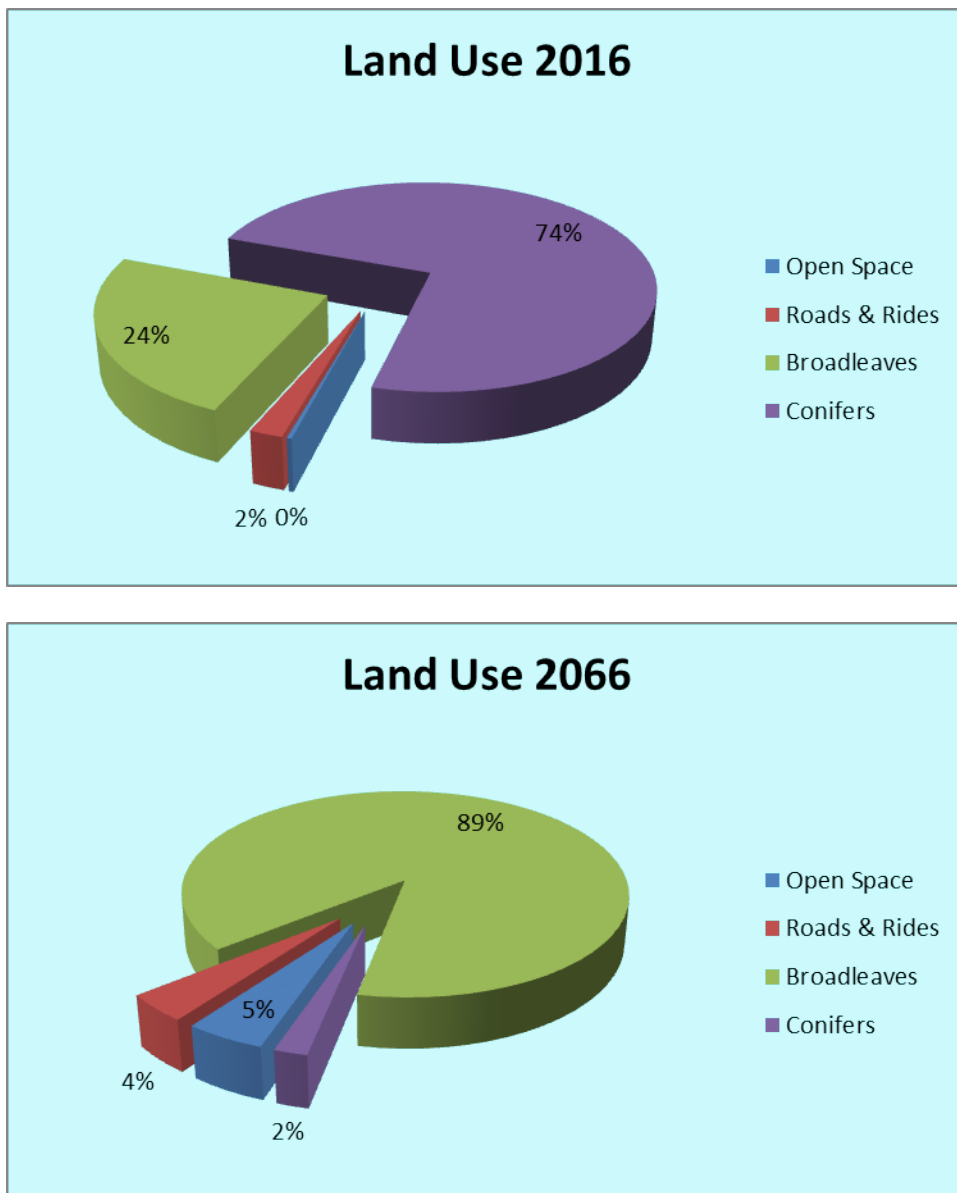


Table 2 Future Species Composition – 2065

	ha	Percentage
Open Space	24	5%
Roads & Rides	20	4%
Broadleaves	436	89%
Conifers	10	2%
Total	490	100%

Fig. 6 Current and Future Land Use



4. Meeting and Monitoring Management Objectives

Objective	Description	Proposals	Methods of Monitoring
<p>Woodland</p>	<p>The woodlands will be managed to produce commercial broadleaf and conifer timber using a variety of silvicultural systems which will be chosen to aid establishment.</p> <p>Reversion of the woodlands back to be broadleaves.</p> <p><i>Dothistroma</i> Needle Blight (DNB) is now affecting the pine stands. <i>Phytophthora ramorum</i> and <i>Chalara fraxinea</i> are now present in the region and the spread is likely to increase.</p> <p>Restocking and future species.</p>	<p>Felling operations will be phased in with many stands being retained beyond their normal economic rotation to ensure long term sustainable yields and allow time for the new broadleaf woodland to become established.</p> <p>The reversion to broadleaves will be phased gradually with several small felling coupes being cut during each plan period. This will minimise the impact on the woodland ecosystem and ensure a continuity of high forest across the FP plan area.</p> <p>Any stands badly affected by pests and diseases will be felled early and replanted with alternative tree species that will be more resilient. If <i>Phytophthora ramorum</i> is identified, then as a notifiable disease, infected stands will have to be clearfelled within a short timescale. Any infected Ash will be removed when felling/thinning operations take place to reduce the risk of spreading <i>Chalara fraxinea</i> to adjacent trees.</p> <p>Planting will be used to help diversify future broadleaf stands with planting stock which originates outside the normal seed zones. Natural regeneration will also be used where suitable seed source is available.</p>	<p>Monitored through Sub- compartment database.</p> <p>Monitored through Sub- compartment database and at FP review.</p> <p>Monitored annually by beat team.</p> <p>Monitored through Sub- compartment database and at FP review.</p>

Objective	Description	Proposals	Methods of Monitoring
Biodiversity	<p>Any BAP species and HAP features that lie within the woodlands will be identified and recorded.</p> <p>There is a good collection of trees of special interest (TSI) in the FP area but limited deadwood.</p> <p>Open space.</p> <p>Limited areas of deadwood</p> <p>Small areas to be left unmanaged to create Natural Reserves and to provide undisturbed areas for wildlife.</p>	<p>Future management operations and planned recreation activities will take into account the presence of these key species/habitats and the associated legislation.</p> <p>The existing TSI will be retained in perpetuity wherever possible. Potential TSI will be identified and conserved to provide future trees of TSI and increase the available deadwood habitat. The current and future TSI will be surveyed and tagged.</p> <p>Several areas of new open space will be created including an area of open woodland in Bagots Forest. A varied cutting programme will be used to maintain and gradually improve the diversity of open spaces and woodland edge habitats. Felling operations will create transitional open space across the forest. The management of riparian areas will help conserve water quality and wetland habitats.</p> <p>Standing snags will be left and individual and small groups of trees will be retained beyond their economic rotation, to become trees of special interest and provide additional deadwood habitats.</p> <p>Areas designated as Natural Reserves (29ha, 6% of FP) will be managed as minimum intervention areas.</p>	<p>Monitor annually by beat team and at FP review.</p> <p>Monitored by wildlife ranger and at FP review.</p> <p>Monitored by wildlife ranger and at FP review.</p> <p>No monitoring required.</p> <p>No monitoring required</p>

Objective	Description	Proposals	Methods of Monitoring
Social & Recreation	Kingstone Wood and the southern half of Hart's Coppice are designated as Open Access Land.	The Forestry Commission will continue to facilitate the future demand for access and provide an area for the Forest School project.	No monitoring required
Heritage	WWII buildings, Bagots Park boundary features and Marl Pits.	Any significant heritage features found will be avoided wherever possible during forest operations.	Monitoring at FP review

5. Consultees

<p><i>The consultation undertaken in the preparation of this plan has been wide ranging and extensive. Full documentation including letters, notes of conversations etc. is held at our District Offices.</i></p>				
Consultee	Date Contacted	Date Response Received	Issues Raised	Forest District Response to Issues
T Brooks - Environment Agency (EA)	22/01/16	12/02/16	Water opportunity mapping should be examined to look for opportunities to contribute towards natural flood measures. Management of woodland streams through removing shading and reducing acidification. Incorporating large woody material to hold up water allowing sediment to drop out and reduce peak flow downstream.	<p>The FC welcomed Mr Brook's suggestions and offer for advice and this information will be passed onto staff with regards to riparian zone management.</p> <p>The FC woodland management will continue to work towards and complement wherever possible EA Water Framework Directive projects in the local area.</p>
N Chatfield – Talbot First School	26/01/16	24/02/16	Continued access for <i>Forest Schools</i> project in Kingstone Wood.	FC confirmed that they would continue to provide an area for <i>Forest Schools</i> and ensure future forestry operations take this into account.
V Gibson – Uttoxeter Parish Council	22/01/16	05/02/16	Responded via online consultation; pleased with plans/objectives; no issues raised.	No response needed
K Jennings	22/01/16	21/2/16	Pleased with FP but has concerns over access restriction imposed by shoot.	Beat Forester has been on site to meet K Jennings and has asked wildlife ranger to investigate and ensure the shoot operates correctly with regards to public access.
A Swindells	22/01/16	15/2/17	Pleased with general objectives of the FP but reservations over one planned felling operation.	FC staff met A Swindells on site to discuss in more detail what the proposed felling would involve and timescale. This gave A Swindells the reassurance they needed about the planned operations.

S Perrins	22/01/16	29/02/16	Pleased with plan but wanted to know where public rights of way were in Bagots Forest.	FC sent out maps showing PROW in Bagots Forest and surrounding area.
S Meads – Abbots Bromley Parish Council	22/01/16	19/02/2016	Concerned over the restricted access into Bagots Forest for the local community. Pleased with the overall management objectives of the FP.	FC explained that forest is privately owned and the lease under which the FC manages it prohibits them from promoting public access. The FC will however continue to promote open access in all its freehold woodlands and any lease woodlands that place no access restrictions on them.
<p>As part of the local consultation letters were sent to 82 stakeholder and local residents, copies of the plan made available via the FC website, visitor centre, Parish Councils, local libraries and notices placed on site. Comments received and the Forestry Commission's responses are recorded above.</p>				

6. Glossary

Biological Diversity

The richness and variety of wildlife and habitats.

Biodiversity Action Plan (BAP)

Describes the UK's biological resources and details the protection of these resources, including 391 Species Action Plans, 45 Habitat Action Plans and 162 Local Biodiversity Action Plans.

Canopy

The mass of foliage and branches formed collectively by the crowns of trees.

Clearfell System

The removal of all trees in one operation > 0.5ha.

Continuous Cover Forestry (CCF)

Silvicultural systems where the forest canopy is maintained at one or more level, e.g. Shelterwood, Group Regeneration, Selective Felling, Regeneration Thinnings.

Coupes

Areas of forest that have been or will be managed together.

England Forestry Strategy (now England's Trees Woodlands and Forests)

Describes how the Government will deliver its forestry policies in England and sets out the Government's priorities for the next five to ten years.

Forestry Commission Guidelines

Outline the principles and standards of good management practices in forests and woodlands to enable landowners, land managers and their advisors to satisfy

Forest Plan (FP)

An approved plan that outlines felling operation over a 10 year period, outlining proposals over the next 50 years. The FDPs are reviewed every 5 years and redrawn and approved every 10 years.

Forest Stewardship Council (FSC)

An internationally recognised body made up of non-government organisations promoting sustainable forest management to the forest industry and consumers.

Habitat Action Plans (HAP)

Habitat recognised as internationally important, for example those designated under the EU Habitats Directive; nationally or locally important.

Historic Environment

These are the physical remains of every period of human development from 450,000 years ago and include earthworks, buried remains, structures and buildings.

Landscape Character

England is renowned for its rich, diverse and beautiful landscapes which have their own distinct local character. These have been shaped over many thousands of years by natural influences such as soil and landform and by generations of human activity.

Long Term Retention

Trees that are being retained beyond their economic rotation.

Low Impact Silvicultural Systems

Silvicultural systems including group selection, shelterwood or under-planting, small coupe felling, coppice or coppice with standards, minimum intervention and single tree selection systems which are suitable for windfirm conifer woodlands and most broadleaved woodlands

National Character Areas (NCAs)

England is divided into 159 distinct natural areas. Each is defined by a unique combination of landscape, biodiversity, geodiversity and cultural and economic activity.

Natural regeneration

The growth of trees from seed found in the soil or cast from adjacent trees and shrubs.

Operational Plans (Ops1)

Detailed site plans that are prepared in advance of all major forest operations and identify site constraints, opportunities and areas requiring special treatment or protection.

Public Rights of Way (PROW)

Access routes open to the public through legal designation.

Restocking

The re-establishment of trees where felling has taken place. Restocking may be achieved through natural regeneration but as a term it is more usually associated with replanting.

Ride

Forestry term for unsurfaced roads, paths and tracks within a woodland.

Scheduled Monuments

Nationally important archaeological sites which are protected under the Ancient Monuments and Archaeological Areas Act 1979.

Secondary Woodland

Woodlands that have been established on land that was formally used as pasture, meadows, arable, quarries etc. and have not continually been wooded.

Selective Felling

Where individual trees of varying sizes are selected and removed from a stand. The whole stand is worked and its aim is to maintain full stocking of all tree sizes and ages, from seedlings to mature trees, in any one area.

Silvicultural Systems

Techniques of managing a forest through a variety of cutting/felling patterns and timescale.

Sub-compartments

Areas of forest comprising a more or less homogeneous crop in terms of age, species composition and condition. Their boundaries may change as the forest develops after felling and restocking.

Strategic Plan

Serves as a guide to the management of woodlands within Central England Forest District. It divides the district into zones for the purpose of management and ensures that forestry activities reflect the local ecological, social and cultural individuality of woodland. Strategic objectives for each zone are presented within the context of the Government's strategic priorities for forestry in England (e.g. forestry for rural development; forestry for economic regeneration; forestry for recreation, access and tourism and forestry for the environment and conservation).

Thinning

The removal of a proportion of the trees in a sub-compartment to improve the quality of the remaining trees, accelerate individual tree growth and provide income.

UK Forestry Standard (UKFS)

Outlines the Government's criteria and standards for the sustainable management of forests in the UK.

UK Woodland Assurance Scheme (UKWAS)

A voluntary scheme for the independent assessment of forest management in the UK. The Scheme has been developed by a partnership of forestry and environmental organisations in response to the growing consumer demand for timber products from sustainably managed forests. It has been designed to ensure that it reflects the requirements of both the Government's UK Forestry Standard - and through this the guidelines adopted by European Forestry Ministers at Helsinki in 1993 - and the Forest Stewardship Council's (FSC's) GB Standard.

Trees of special interest (TSI)

A tree that is of interest biologically, aesthetically or culturally because of its age, or a tree that is in the ancient stage of its life, or a tree that is old relative to others of the same species.

Yield Class

Yield class is a measure of the growth rate of a tree crop and is the maximum average rate of volume increment (increase) that a particular crop can achieve. For example, a crop capable of a maximum annual increment of 14 m³ per hectare has a yield class of 14.

Appendix I

The Bagots Forest Plan Brief

The Bagots Forest Plan (FP) summaries proposals for 4 Forestry Commission Woodlands, Bagots (368.1ha), Kingstone (53.5ha), Harts Coppice (20.6ha) and Birch Wood (49.5ha) which lie in North East Staffordshire, 16km east of Stafford and 17km west of Burton on Trent.

Landscape Setting

The woodlands lie in the Needwood and South Derbyshire Claylands Natural Character Area No.68 on a wide gently rolling floodplain which follows the River Dove. There are frequent plantations and ancient woodlands of the former Forest of Needwood of which these woodlands form part of. The extensively hedged and pastoral landscape is dominated by mixed farming and features a dispersed pattern of villages and settlements. Each of the woodlands lie on gently sloping ground with the only exception to this being at the northeast edge of Bagots Wood which forms part of what remains of the scarp woodlands of the former Royal Forest of Needwood and has been designated as the Forest Banks Site of Special Scientific Interest (SSSI).

Environmental Issues

The FP area is predominantly ancient woodland (97%) which was largely cleared for the war effort and restocked with conifers in the 1950's. Only 74ha of ancient woodland remains with 401ha now planted with conifers, which is dominated by uniform Scots pine stands. There is little diversity in the canopy structure with no major felling operations taking place in the last 20 years which has limited the available woodland habitats.

There is a good collection of Trees of Special Interest (TSI) in each of the woodlands with the best examples in the northeast belt of Bagots Wood adjacent to Forest Banks SSSI. These provide valuable nest sites for a wide variety of birds, insects and a large bat population.

Hibernaculums have also been created in Bagots Wood for the bats to survive the winter and monitor populations. Future TSI will be identified and no longer managed for timber but retained in perpetuity for biodiversity.

A cutting programme of rides and glades takes place annually to creating feeding and breeding sites for the woodland flora and fauna, although there are currently limited open habitats (4%) across the FP area.

With the exception of Harts Coppice each of the woodlands contains a number of small streams and ponds and associated wet woodland habitat. This has been largely unmanaged in the past and will provide opportunities in the future for opening them up and create a more diverse wetland

habitat. The southern half of Bagots Wood is classified as W4 wet woodland and the damp soils across the flat woodland landscape provides ideal conditions for a wide variety of lichens and byrophtes.

Social Issues

Bagots, Harts Coppice and Birch Wood are managed under lease agreement for forestry purposes and public access is limited to public rights of way. Kingstone Wood is freehold and the Forestry Commission allows informal access throughout the whole woodland. There are a number of marl pits and wood banks that have been created through past land uses as well as World War II features which will be conserved wherever possible. Some of the pill boxes are now being used as hibernaculum and will be conserved as part of the areas social and cultural heritage.

Future forestry operations will be carried out at an appropriate scale to ensure that the current landscape value of the woodlands is maintained and enhanced.

Economic Issues

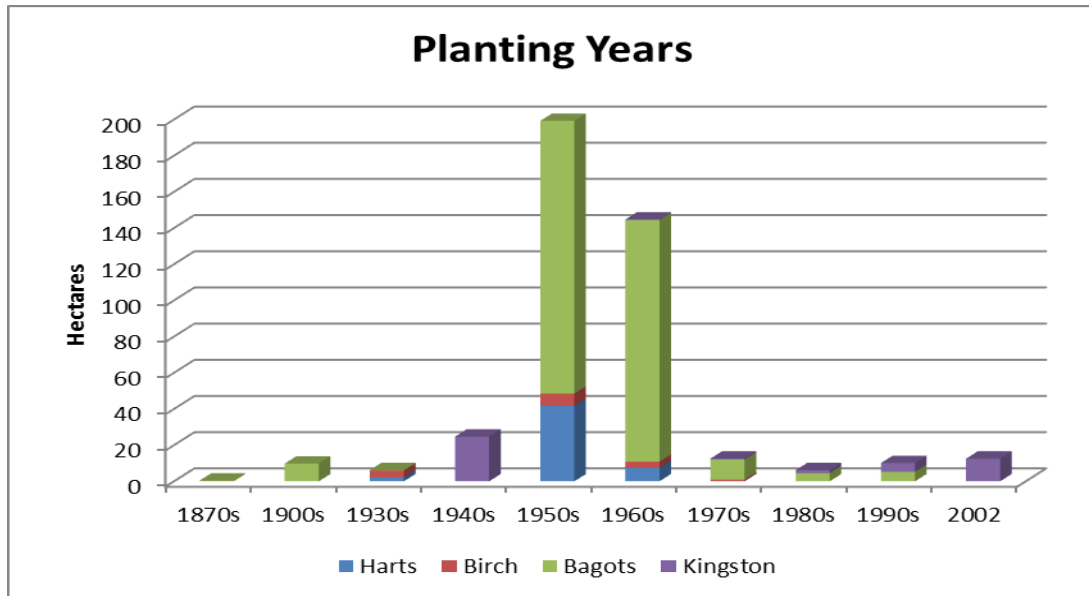
The woodlands structure comprises of 80% conifer and 20% broadleaved species.

Dothistroma Needle Blight (DNB) and Phytophthora ramorum are fungus-like pathogens that are affecting the pine in each of the woodlands and larch within the West Midlands. This is leading to reduced yields and in some cases tree mortality of both young and more mature stands of trees.

Future felling operations will target the removal of Lodgepole and Corsican pine that are currently the most susceptible to DNB. Management will, in the future, have to be reactive to the impacts that climate change, pests and disease now pose.

The current conifer stands are about 65 years old and reaching the end of their normal economic rotation, Fig. 1. Due to the uniform age structure felling will be phased in over the next 60 years gradually removing the less productive conifer stands, releasing broadleaf regeneration, seed trees and gradually converting the PAWs areas back to broadleaved woodland.

Fig. 1.



Low impact felling systems (LISS) will be used in some areas to regenerate native broadleaves where there is available seed source. But due to the light requirements of many native broadleaves small scale felling coupes will provide better establishment conditions where there is currently no regenerating taking place or available seed source. Future stocking will favour the natural regeneration of broadleaves but due to the limited seed source across the 400ha of PAWs enrichment planting will be needed to ensure full stocking and species diversity in the future. Both LISS and clearfell operations will be used to manage existing broadleaves, regenerate new broadleaf stands and help conserve ground flora.

Consultation

Key stakeholders, landowners, neighbours, tenants, wildlife and bat groups will be contacted by letter. Due to the limited public access throughout most of the FP woodlands, public consultation will be informal, notices will be placed in the woodlands and the FP made available via the internet to view and comment on prior to it be submitted for approval. The Forestry Commission woodland officer will be closely involved in the plans development. Public consultation will run from 25 January 2016 to 25 February 2016 after which the plan will be submitted for approval and placed on the public register.

Appendix II

Key Features Habitats and Wildlife

The table below identifies a number of the key species and habitats found in the Bagots FP woodlands and their status.

Key - European Protected Species (EPS), Staffordshire Biodiversity Action Plan (SBAP), Habitat Action Plan (HAP), Ancient Woodland Indicators (AWs Indicator).

Key Feature	Status
Newts (Common, smooth, Great Crested)	EPS, SBAP
Bats (piperstrelle, brown long-eared & daubenton's)	EPS, SBAP
Badgers	
Raven	
Sparrowhawk	
Buzzard	
Fieldfare	
Greater Spotted Woodpecker	
Hobby	
Spotted marsh orchid	
Cowslip	ASNW Indicator
Herb-Robert	ASNW Indicator
Bluebell	ASNW Indicator
Honeysuckle	ASNW Indicator
Yellow Pimpernel	ASNW Indicator
Bilberry	
Trees of special interest	SBAP
Lowland Wood-Pasture and Parkland	SBAP
Native Woodland	SBAP
Wet Woodland	SBAP
Ponds	SBAP