


1	 2000	WOODLAND SURVEY SHEET. GENERAL SITE DESCRIPTION	County / Local Authority <i>West Midlands</i>
WGS REF. No. NWP/015/209		Site Name Bills Wood	District/Parish <i>Solihull</i>
Owner/tenant/agent <i>Solihull MBC</i>		Nature Conservation Status / Designation <i>EcoSite. SINC. Local Nature Reserve</i>	Total area (of included woodland) <i>6.6 ha</i>
Contact <i>David Lowe Solihull MBC, Ecologist Landscapes Section PO BOX 19, Council House, Solihull, West Midlands, B91, 3QT</i>		Other Designations / Protections <i>Midlands Plateau Natural Area (43)</i>	Grid ref (access) <i>SP 113 780</i>
		Ancient / Recent Semi-Natural / Plantation <i>ASNW</i>	Surveyor <i>Helen S Miller Middlemarch Environmental Ltd</i>
		Biodiversity Action Plan <i>Warwickshire, Coventry & Solihull BAP See Appendix A</i>	Date of survey <i>30 June 2004</i>

Woodland vegetation types (**mark on map**).

SEMI-NATURAL WOODLAND TYPE (HAPS):
Lowland mixed broadleaved (Forest Practice Guide 3)

NVC COMMUNITIES:
W10 with a transitional community towards W8 the south-west.

PLANTATIONS:
No data available

Adjacent land (**mark on map**)
Residential to north, west and south. Allotments gardens to north-east. School playing fields to the east.

Threats
Over use from recreation.
Invasion of exotics from neighbouring gardens.
Garden and household waste dumping.

Aspect <i>NA</i>	Slope <i>More or less flat</i>	Altitude <i>136 m</i>
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Soil – from Soilscape on www.magic.gov.uk

Ref/class	Name	Main surface texture class	Natural drainage type	Natural fertility
17	Slowly permeable seasonally wet acid loamy and clayey soils	Loamy	Impeded drainage	Low

Geology
No data a but most likely to be Reddish till

Climatic Factors From Met Office web-site for Stratford-Upon-Avon weather station, approximately 15 miles south of the Solihull Woodlands:

- Average annual rainfall 622.3 mm with 115.7 days experiencing less than 1 mm.
- Average annual days experiencing air frost and ground frost: 62.2 and 95-110 respectively
- Minimal risk from wind exposure.

WOODLAND SURVEY SHEET.
COMPOSITION AND STRUCTURE

County
Unitary
West Midlands

Ref. No. NWP/015/209

	Tx	Tp	Ts	Tc	Tn	Cx	Ct	Px	Pc	Sx	Sc	St	Js	Jp	Jv
Acer cam												R			
Acer pse	O						R					O		IF	
Aescu hip	R											R			
Alnus glu															
Betul pen	R														
Betul pub															
Carp bet												R			
Casta ast															
Conifer sp															
Coryl ave										IF					
Crata mon										F		O	R		
Crata oxy															
Euony eur															
Fagus syl												R		R	
Frang aln															
Fraxi exc	ID											O	IF	O	
Ilex aqu	F									F		F			
Junip com															
Larix sp															
Malus syl															
Picea sp															
Pinus syl															
Popul tre															
Prunu avi															
Prunu lau										R					
Prunu pad															
Prunu spi										R					
Querc cer															
Querc pet/hybrid															
Querc rob		D										O			
Rham cat															
Rhodopon										R					
Salix alb															
Salix aur															
Salix cap										R					
Salix cin															
Salix fra															
Salix pen															
Salix vim															
Samb nig															
Sorbu ari															
Sorbu auc	R									R		F		F	
Sorbu tor															
Taxus bac												R		R	
Thely san															
Tilia cor															
Tilia eur	R														
Tilia pla															
Ulmus car															
Ulmus gla												R			
Ulmus pro															
Vibur lan															

D = dominant A = abundant F = frequent O = occasional R = rare L = localised

The woodland is a mixed broadleaved woodland, with oak dominating the canopy. The woodland has a good undersorey with holly and hawthorn being the main components, along with ash, rowan and hazel. The age structure across the woodland is moderate with some species readily regenerating, notably ash, rowan and sycamore. The result is variable age and vertical structure within the wood. Ash is locally abundant in the south-east corner. The ground flora is primarily bramble and ivy with occasional bluebells and bracken. The NVC community is W10 with an indication of a transition towards W8 in the south-west corner. The wood is primarily high forest with a well developed understorey. Areas of the wood are quite dense in the canopy and understorey. There are no clear management compartments within the wood other than the fact that an extensive path network and occasional bank/ditch divide the woodland into areas. There is an area in the centre of the wood that has been recently coppice and has a partial brush boundary. With this area being an exception there is no clear indication of current management. The woodland is primarily used for local recreation. There are some formal pathways and many informal paths through the wood. The wood is included on the Ancient Woodland Inventory. The desk study suggests that the wood is a neglected coppice. The boundaries were fenced (metal linked or paling, wooden or garden fences). There is an old bank and ditch along the east side of the wood with the occasional old veteran oak coppice. There were indications of internal banks and ditches dissecting the wood. There does not appear to be any grazing, squirrel or deer problems.

stand description management & use history nature of boundaries grazing

Area of (ha)

Ancient Semi-nat ASNW	6.6	Recent Semi-nat OSNW	Ancient Replanted AWS	Recent Plantn.
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Area occupied by each NVC type

0-0.5 ha	0.5-2 ha	2-10 ha	10-20ha	20+ha
W8 transition		W10		

Tree layer	Height 10 m	Cover (%) 95	Shrub layer	Height 5 m	Cover (%) 80
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Age class abundance (all species, using DAFOR system)

D/mature	Mature	Young trees	Saplings	Seedlin	Coppice
	D	O	O	R	R

	Sx	Sc	Js	Jp	Jv	S	Sc	Js	Jp	Jv
Clem vit						Ribes syl	R			
Daph lau						Ribes uva				
Heder hel		A				Rosa arv				
Ligus vul						Rosa can	O			
Lonic per		O				Sarot sco				
Maho aqu						Ulex eur				
Myrica ga						Ulex gal				
Ribes nig						Vibur opu	R			

Tp Planted tree *Cx* Coppice *Sc* Climber
Tn Self-sown tree *Ct* Regrowth from stump *St* Young tree
Ts Standard in c-w-s *Px* Pollard (2.5m+) *Js* Seedling
Tc Grown from coppice *Pc* Pollard (1-2.5m) *Jp* Sapling
Tx Any other tree *Sx* Shrub *Jv* Sucker

Site name Bills Wood	Surveyor Helen S Miller Middlemarch Environmental Ltd	Date of survey 30 June 2004
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HABITATS, FEATURES & COMMUNITIES (MARK ON MAP)

Habitats

The NVC community is W10 with a suggestion of a transition towards W8 in the south-west corner, indicated by reduced bramble *Rubus fruticosus* and increased frequency of species associated with W8, including ash and field maple regeneration, enchanters nightshade *Circaea lutetiana* and abundant ivy *Hedera helix*. The age, vertical and spatial structure is good across the wood with good species diversity. These are detailed below (Target notes) and marked on the map.

Areas of dense growth indicated by 'D' on map. Overall there is a good understorey. The field layer has moderate species diversity although most species only occur occasionally or rarely. Bramble *Rubus fruticosus* is the dominant component. The most frequent common woodland forbs included Bluebell *Hyacinthoides non-scripta*, cleavers *Galium aparine*, honeysuckle *Lonicera periclymenum*, ivy *Hedera helix*, various ferns (including male *Dryopteris felix-mas*, shield *Polystriatum* spp. and buckler *Dryopteris dilatata*), nettle *Urtica dioica* and wood avens *Geum urbanum*.

Wetland features

There are no wetland features within the wood.

Veteran trees and deadwood

There are occasional log piles throughout the wood, otherwise dead wood habitat is rare.

There are some veteran coppiced oak along the east edge of the wood (Target note 13).

Notable species

Bluebell occurs within the wood – a UK BAP species.

There is a good woodland bird population.

There were several exotic species within the wood, including snowberry, cherry laurel and rhododendron (see Target notes 1, 4 and 11).

At present these species are not dominating.

Other features

There are indications of wood banks/ditch along the east side of the wood. There are also banks/ditches dissecting the wood (see map).

A winter assessment would identify these features more precisely.

Adjacent landuse

The adjacent land is residential. The north, west and south is residential housing. The north-east is allotments and the east is school playing fields.

Target notes for map

1. Snowberry.
2. Locally abundant poplars.
3. Lime – re-growth from fall/cut tree.
4. Cherry laurel.
5. Area of high frequency of holly, including some old mature specimens.
6. Area dominated by nettle and docks.
7. Area thinned to favour beech and oak. Some sycamore, willow and rowan re-growth from cut stools. Partial brash fencing around the area.
8. Laurel sps. – possibly escaped mezereon *Daphne mezereum*
9. Area of increased frequency of hazel with the potential for coppicing.
10. Bank notably more acidic with the presence of bilberry.
11. Rhododendron.
12. Dense etiolated oaks.
13. Old bank and ditch with occasional veteran oak coppice.

4**FC
2000****WOODLAND SURVEY SHEET
OTHER VALUES OF THE WOOD**

REF No. NWP/015/209

SITE NAME: BILLS WOOD

COMPILED BY: HELEN S MILLER MIDDLEMARCH
ENVIRONMENTAL LTD
DATE: AUGUST 2004**ARCHAEOLOGY & CULTURAL HERITAGE**

Bills Wood is identified on English Nature's Ancient Woodland Inventory as ASNW.

The desk study indicates that there is a medieval ditch and bank system within the wood. The desk study also suggests that the wood may have become a wood in medieval times since there is evidence of medieval spaced strip framing.

There is the suggestion of old banks along the east edge of the wood. There are also some indications of internal banks/ditches. A winter assessment would more clearly identify/locate these features.

LANDSCAPE

Bills Wood lies in the Countryside Commission/English Nature's Character Area "Arden (97)". This Character Area has a "wide variation of landscape character" and includes the "undulating wooded landscape and small hedges of the main plateau". This Character Area has a long history of wood-pasture with "deer parks and estate woodlands once widespread". Some remnant features, such as veteran trees, provide reminders of the past. "Broad-leaved woodland and hedgerow trees lend a well wooded character to the area". The "woodlands themselves vary in type from twentieth century plantations to species rich ancient woodland (with) oak and ash woods with bracken, bramble or dog's mercury are particularly distinctive". The mosaic of urban areas and woodland are characteristics of the Character Area.

Although the Character Area suggests the landscape has reasonable woodland, the Natural Area (Midlands Plateau, 43) is characterised by lowland heathland with woodland, grassland, freshwater and farmland with woodlands being under represented at just 4%. 40% of the land area of Natural Area 43 is urban. Woodlands are therefore an important feature of the landscape. Many of the woodlands within the Natural Area are less than 5 ha and are typically uncoppiced, even-aged stands regenerated from clear fells. However, about half are semi-natural in character. The woods cover a range of NVC communities, although they tend to be more acidic.

The land surrounding Bills Wood is relatively flat and the wood is a prominent feature in a landscape dominated by agriculture and urbanisation. Although greater than 5 ha at 6.6 ha, Bills Wood, it's locality and situation is fairly typical of the Character Area and Natural Area in which it occurs.

RECREATION / PUBLIC ACCESS

Bills Wood is primarily used for informal recreation and walking. There are footpaths and bridleways about 300 m south of the wood. Access to the wood is good with several access points to the wood along the north, west and south sides off Regan Avenue, Bills Lane, Armington Road and Dunton Hall Road.

There are no clear rides, although there are several formal and less formal paths throughout the wood.

WOOD PRODUCTION, GAME / LIVESTOCK & OTHER CONSIDERATIONS

There does not appear to be any formal wood production taking place within the wood at present. However there is evidence of recent ad-hoc coppicing and thinning, notably in the centre of the site. As a result of being entirely surrounded by urbanisation and two side (north and south) backing directly onto housing there is an issue of garden and household waste dumping.

The wood was covered by woodland grant scheme 6253 which ended on 31/3/01.

5	FC 2000	WOODLAND RECORD SHEET PHOTOGRAPHIC RECORD OF NVC TYPES (ONE PER NVC TYPE)	REF No. NWP/015/209
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PHOTO No. 1 (mark location and direction on map) Area of W8 transition. 93 ⁰	DATE: 30 June 2004	NVC TYPE: W8 transition
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PHOTO No. 2 (mark location and direction on map) Typical vegetation with developed/dense understorey. 179 ⁰	DATE: 30 JUNE 2004	NVC TYPE: W10
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6	FC 2000	WOODLAND SURVEY SHEET ECOLOGICAL EVALUATION & MANAGEMENT RECOMMENDATIONS	REF No. NWP/015/209
SITE NAME: BILLS WOOD		SURVEYOR: HELEN S MILLER MIDDLEMARCH ENVIRONMENTAL LTD	DATE OF SURVEY: 30 JUNE 2004
<p>ECOLOGICAL EVALUATION of the main features of interest (include an assessment of naturalness, representativeness, size, rarity, fragility, position in an ecological unit, diversity, recorded history, potential value, intrinsic appeal)</p> <ul style="list-style-type: none"> • The conservation significance of Bills Wood lies in the ASNW status and the potential to improve its condition through future management. • The wood has a high degree of native species and naturalising character. • Bills Wood is an Ecosite, SINC and Local Nature Reserve. • The woodland forms a valuable woodland island within an area dominated by agriculture and urbanisation; providing aesthetic as well as ecological value through breaking up a potentially monotonous, low diversity landscape. However, the woodland is isolated and not connected to other woodland or semi-natural habitats. • The floral diversity is relatively uniform with only one NVC community being represented (W10). Although the vegetation indicates a transitional community towards W8 in the south-west corner. One HAP type is represented. There is species and structural diversity across the woodland. Deadwood habitats are minimal. There is an area of recent coppice in the centre of the wood. • The wood has a good woodland bird population and suggestion of being suitable for invertebrates, notably butterflies in the more open areas. The desk study indicated that the wood is likely to be good for spiders with 105 species being recorded. • Badgers have been recorded in the local area. • There are some ancient woodland bank/ditches to the east edge and within the wood. • There is the potential for woodland improvement through re-introducing and establishing the coppice coups and favouring/encouraging the native species that are regenerating. The denser understorey/canopy layers may benefit from being opened up slightly. • There is potential to increase the quality and quantity of the deadwood habitats within the wood. • There is potential to increase the habitat diversity through management of the woodlands, re-introduction/continuation of re-established coppice management (notably the areas at Target Notes 9) and management/creation of rides or glades. The latter options would be of particular value for woodland butterflies and dormice. • Deer, rabbits and squirrels do not appear to be a major problem at the present. • Bluebells are locally abundant and are likely to be a major aesthetic asset to many of the woodlands in the spring. • There are several non-native invasive species within the wood – snowberry, rhododendron and cherry laurel. 			
<p style="text-align: center;">ECOLOGICAL MANAGEMENT PRIORITIES & RECOMMENDATIONS (based on conservation objectives and above evaluation)</p> <p>The management of this wood should be viewed in conjunction with the other woodlands managed by Solihull Metropolitan Borough Council (SMBC). For example some woodlands may lend themselves better to coppice; while in others may be more suited to minimal intervention. A range of habitats should be created across the district.</p> <p>Wildlife and public access are the key focus points for the management of woodlands within the SMBC District.</p> <p>The following management considerations should be considered to improve the future nature conservation values of the woodland:</p> <ul style="list-style-type: none"> • Any current and future native shrubs, including hazel, holly, hawthorn, field maple and wych elm, should be protected and/or encouraged and avoided during any forestry operations. • Opening up and allowing the oaks to mature with some being retained as future veteran trees. The older trees along the boundaries would be suitable candidates. Bramble control may be necessary if the canopy is opened up. • Re-creation/creation of rides with an irregular scalloped edge would allow greater light penetration and vary the habitat diversity and structure. This variation in habitat diversity and structure may encourage greater flora diversity and therefore be beneficial for birds and invertebrates. • Continuation/re-establishment of coppice management, especially where this has already begun and where there is increased frequency of hazel. Oak and ash could be incorporated as either coppices (young growth) or standards. • Control of non-native invasive species; snowberry, rhododendron and cherry laurel, to prevent then shading out the native ground flora. Sycamore should also be controlled/removed to avoid it becoming dominant. • Discourage garden and house hold waste dumping. • Create new standing/fallen deadwood where safe to do so. <p>The following guidelines should be followed to ensure continued/improved conservation and aesthetic appeal of the woodlands and landscape and that impacts are minimised:</p> <ul style="list-style-type: none"> • Establish/re-establish management coups/compartments. This will aid in the maintenance of a species and structurally diverse woodland. • Protect any native shrubs during forestry operations. • Forestry operations, particularly felling, should not be carried out during the bird breeding season (1 March until 31 August). • Prior to major forestry operations, the site should be checked for badger activity and the presence of setts. A licence from English Nature would be required for any works being undertaken within 30 m of a badger sett. • Care should be taken not to damage any of the old banks. • Thin areas where the canopy/understorey is particularly dense to allow the next generation of canopy and understorey species to develop and existing trees and shrubs to reach maturity. • Bramble may become overwhelmingly dominant where significant light is allowed to reach the woodland floor, therefore it may be appropriate to develop an understorey prior to opening up the canopy. • Management should favour native species in the canopy and understorey. Non-native invasive species should be removed, controlled and monitored. • Existing deadwood, both fallen and standing should be retained and protected. Some native trees should be retained to provide for future veteran trees and deadwood habitats. Some felled material should be left on site to create deadwood piles of value to invertebrates. Mature non-native broadleaves could be ringed barked to supply future standing deadwood habitat. • Natural regeneration is the preferred option if restocking is required although planting may be necessary for species that are not readily regenerating. If the latter is the case it should be after attempts to encourage natural regeneration and local provenance is preferred. • Standard forestry practices for nature conservation/enhancement should be followed. 			

SITE NAME: BILLS WOOD	COMPILED BY: HELEN MILLER
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OWNERS OBJECTIVES

For full details of the owners objectives please refer to ‘Woodland Strategy for Solihull’. The key objectives are summarised below.

1. ‘Protect, manage and enhance Solihull MBC woodlands with, and for the benefit of Solihull residents, recreation, nature conservation and visual amenity.’
 - a) Public safety – ensure it is not neglected
 - b) Recreation and public access – maintain or improve where appropriate
 - c) Wildlife conservation – maintain and wherever suitable restore natural ecological diversity
 - d) Landscape enhancement – maintain and where appropriate improve aesthetic value
 - e) Sustainable management of woodlands – taking opportunities to produce utilisable products such as woodchips for fuel, charcoal, fence materials and interpretation signs.

MISSION STATEMENT / LONG TERM VISION

The aim is to develop woodlands, which balances visual amenity, recreation and nature conservation while maintaining the landscape character of the Borough.

The ecological assessment clearly identified that the Solihull woodlands have high current and future ecological value. Several of the woodlands also have archaeological features. The assessments and desk study also indicated the value that these woodlands have for the local residents of Solihull.

LONG TERM MANAGEMENT PROPOSALS / OPERATIONAL OBJECTIVES

Further details and generic long term management proposals and operational objectives can be found in the ‘Woodland Strategy for Solihull’. A summary of the key points is provided below.

Aim

Long term objective

Operation objective

Public safety

Maintain public safety at all times in relation to trees
Monitor tree health. Undertake tree surgery only where necessary.

Maintain access for a range of users

Monitor access for all uses. Maintain multi-access paths in good conditions. Create new multi-access paths where appropriate.

Maintain safety in relation to dangerous plants

Control/remove plants known to be dangerous i.e. giant hogweed.

Maintain safety in relation to non-woodland product e.g. fly tipping

Monitor the woodlands for fly-tipping incidences. Clear up reported fly-tipping as soon as possible.

Recreation

Provide access

Create new multi access paths where appropriate. Create and maintain path networks through the wood.

Wildlife

Maintain a structurally diverse woodland.

Implement appropriate management e.g. selective felling, coppicing, group felling etc

Enhance structural diversity within the woodland

Selectively thinning areas of dense growth or introduce coppice management

Maintain ecological and historical character of ancient woodland

Implement sensitive and appropriate management

Protect trees and woodlands from development

Use additional statutory protection where appropriate e.g. TPOs, SINCS, LNRs, SSSIs etc

Protect from vandalism by fire, litter, garden and house hold waste dumping etc
Education to local residents e.g. leaflet dropping, interpretation boards, school visits. Open up areas where these problems are particular high e.g. create open vista habitats within the wood or at woodland entrances (i.e. at fly-tipping hot spots)

Enhance habitat for roosting bats
Erect a variety of bat boxes. Retain standing deadwood. Identify future veteran trees

Increase habitat diversity - veteran trees
Identify future veteran trees

Increase habitat diversity - deadwood
Create deadwood habitat through ring barking selected trees and leaving some cut trees on site.

Protect the woodlands and wildlife from unnecessary disturbance
Educate the public through interpretation boards etc. Create and maintain footpath networks within the wood and encourage people to stay on them.

Increase habitat diversity - glades
Create rides/glades. Manage those already present.

Enhance ecological character - invasive species
Remove and control non-native invasive species.

Landscape

Protect trees and woodlands from development
Use additional statutory protection where appropriate e.g. TPOs, Conservations Areas

Maintain current landscape value
Avoid large areas of clearfell.

Products

Identify products and local outlets
Introduce a range of management systems to provide a range of woodland products suitable for local use. E.g. a range of coppice rotation lengths across the Borough

SITE NAME: BILLS WOOD

COMPILED BY: ALAN GUY. MIDDLEMARCH
ENVIRONMENTAL LTD

LONG TERM PROPOSALS (Silvicultural systems, broad management strategies)

- A) **Silvicultural system: High Forest system**
 B) **Continued management in accordance with existing Forestry Commission WGS contract , signed 2000.**
 C) **Other generic proposals: see below:**

1. Thin stands to open up woodland canopy

- a. Excessive thinning will encourage fast-colonising, non-woodland plants.
- b. In very dense, neglected stands, thinning must be very gradual or wind-throw may result.
- c. Normally a maximum 15-25% of trees are renewed in a thinning when trees are young to semi-mature. This declines to 10-15% later in the rotation.
- d. Target final densities of stands when fully mature are:
 - i. Oak 60-90 stems/Ha.
 - ii. Ash 120-150 stems/Ha.
 (Forestry Commission Bulletin 62 (1984))

2. Establish, or re-establish coppice management

- a. Check whether the Wood was previously or is currently coppiced (a strong factor in favour of coppicing).
- b. Check sufficient labour resources will be available to continue coppicing long-term.
- c. Are existing coppice stools still viable? (e.g. for hazel, coppiced under 40 years ago)
- d. If not, a new coppice area must be established by planting. Over-mature coppice stools must be removed or grown-on as 'stored coppice' (standards).
- e. Choose management method i.e. pure coppice or coppice with standards; rotation length; size of coupes etc.

3. Coppicing

- a. Hazel and mixed b/leaved Coppice: Continue i.a.w. existing F.C. management plan which is for 8 coupes of approx. 0.14 ha each, total area 1.1ha (8 yr rotation). Continue extending coppiced area by one coupe per year until the full rotation has been reached, then recommence rotation sequence with the coupe last cut in year 1 of the rotation.
- b. Mixed Coppice: Other species e.g. Ash can be coppiced as part of the coppice area but does not have as ready a market for coppice products as does hazel. If planting new coppice, plant it at 1.5-2.5m. spacings.
- c. Coppice with standards: Density of standards between 30 and 50 per ha., preferably at the lower end for coppice to grow effectively.
- d. Renewing neglected coppice areas. Check that old coppice stools are no more than 40 years old (hazel). If they are older than this the coppice stools should be removed and replaced with newly planted hazel. These will require 3-4 years before first cutting.
Neglected stools of oak, ash, alder or sweet chestnut can be 'stored' (selected shoots grown on as standards)
- e. Single out mature multi-stem coppice oaks

4. Maintain a dead-wood resource

- a. Check availability of dead wood in woodland, both standing and lying
- b. If shortage of dead wood:
 - i. Select suitable areas away from main paths
 - ii. Use trees felled for thinning or group fellings for lying dead-wood.
 - iii. If no standing dead wood, select diseased or poorly formed trees for ring-barking. Treat birch in preference to oak or ash. Min. dia. 20cm.
 - iv. Do not ring-bark well-formed or healthy mature trees.
 - v. Ring-bark approx. 3-5 trees per hectare

5. Introduce Rides or Glades (secondary habitats)

- a. Rides: At least 10m width is desirable; introduce bends to avoid 'wind tunnelling' effect.
 - i. Check feasibility of rides in small woods: scallops (semi-natural circular glades) alongside existing narrow tracks may be more practical. Scallops should be min. 5m deep.
 - ii. Ride management is important: more diverse habitats are maintained if different sections of the ride are cut down or strimmed in rotation on a 2-3 year cycle (in autumn). Ride centres to be mown annually to provide areas of short grass.
- b. Glades: density of glades: one glade, dimensioned as below, per 3-4 ha of woodland.
 - i. Size of glades: One and a half canopy tree lengths across, for full daylight effect, and preferably rounded in shape.
 - ii. Existing glades: expand existing glades to the dimensions shown above.
 - iii. Location: Glades should be a 'stop-off' on clear ride(s) or path (s) as they will be used by the public.

Glades adjoining ponds are beneficial to both habitats. Glades can also be formed by removing corners from ride junctions.

- iv. Options: Consider planting native shrubs around edge of glade. Leave some felled trunks and short wood to minimise destruction of stands by some young adults.
- v. Maintenance: As for rides, above.

6. Weed Control

a. General Rules re Weeding

- i. Application by knapsack sprayer or weed wiper in compliance with all legislation for chemicals management, health and safety and code of practice – obtain detailed guidance on this matter.

b. Control Rhododendron and Laurel

- i. Seedlings and plants under 0.5m: treat with glyphosate, triclopyr or ammonium sulphate. Plants over 0.5m : clear with bill hook, handsaw and/or chainsaw down to stumps during autumn/winter. Spray stumps and all re-growth in mid-May to end June or before re-growth has reached 1.0m tall.

c. Control sycamore: Survey extent and age of sycamore presence. Consider ecological status of wood and owner's policy towards sycamore.

- i. If level of regeneration is limited and there are no mature sycamore of good form and size: sycamore can be eliminated by felling parent tree(s) and treating sycamore saplings and seedlings as for Rhododendron above.
- ii. If regeneration is well-established and/or there are mature, well-formed parent trees, consider a strategy of controlling regeneration within a defined area. The best formed saplings within the area will be selected at 3-4 years and protected (in shelters), and others will be manually cut back or sprayed.
- iii. Before taking any action, consult owner's senior ecological officer.

FIVE YEAR PLAN OF OPERATIONS (S.M.A.R.T.)

Years 1-5

A. Thinning

- i. Thin all areas shown on Plan i.a.w. protocol above and as per detailed instructions for each compartment in Forestry Commission WGS contract.

B. Thinning in coppice areas

- i. Thin all standards i.a.w. above protocol, favouring Oak & Birch for retention.

C. Coppicing

- i. Carry out coppicing, in central area of wood shown on Plan, i.a.w. above protocol.

E. Initiate natural regeneration

- i. Fell test areas and monitor for 3-4 years, i.a.w. protocol above.
- ii. Control weeds in regeneration areas, i.a.w. protocol, if required.

F. Selection and protection of natural regeneration

- i. Carry out in all test areas and other areas where regeneration of desired species has occurred; in accordance with protocol above.

H. Expand area of woodland

- i. Allow natural regeneration of native trees and shrub into the scrub area to the n.e. of the site.

I. Control invasive species

- i. Control invasive species i.a.w. 'Weed Control' protocol above.

J. Extraction of timber

- i. Extract all timber arising from thinning and group fellings, using either forwarder or, in wet/sensitive areas, horse or forwarder with low impact tyres.

K. Dead wood resource

- i. Leave sufficient felled trees as dead wood resource. Standing dead trees to be left, if necessary using ring barking i.a.w. protocol above.

L. Introduce new rides and/or glades

- i. Carry out felling as required to create new rides or glades, as identified on Plan, i.a.w. protocol above.

M. Ecological/archaeological procedures

- i. All operations to be carried out i.a.w. protocols concerning Protected Species (if any), Nesting birds, Water habitats, Archaeological features.

O. Scrub/grass habitats

- i. Carry out cutting regime in ex-allotment area, to the n.e. of site, i.a.w. above protocol.

P. Clearance around ponds

- i. Clearance around ponds: clear all large trees (over approx. 8m height) from a strip 7m wide around ponds. Maintain open grassed areas around pond.

Years 6-10

Q. Coppicing

- i. Continue coppicing in rotation, one coupe per year. If new coppice, then extend area by one 0.14ha coupe per year, until full rotation is reached, then recommence.

- R. Natural regeneration – extension of area**
 - i. If group fellings have produced successful regeneration, carry out further group fellings, as per Plan, with min. 40m. gaps between felled areas.
- S. Natural regeneration – protection and selection**
 - i. Carry out i.a.w. protocol above. This includes natural regeneration which is not in the areas of group fellings.
- T. Widen rides and glades**
 - i. Increase width of existing rides and size of existing glades as per Plan and i.a.w. protocol above, by felling.
- U. Control invasive species**
 - i. Control invasive species i.a.w. ‘Weed Control’ protocol above, in areas shown on Plan

9**FC
2000**

WOODLAND LONG TERM MANAGEMENT PLAN

REF No. NWP015/209

MONITORING & REFERENCES

SITE NAME: BILLS WOOD

COMPILED BY: ALAN GUY. MIDDLEMARCH
ENVIRONMENTAL LTD**MONITORING**

Survey Wood once per year for the following:

- successful regeneration anywhere on site, particularly in trial areas.
- general health of canopy and understorey
- dangerous trees near well-used paths
- damage to trees or ground layer: deliberate or accidental
- damage to paths or forest floor from pedestrians, cyclists etc
- disease
- squirrel or deer damage in trees
- rabbit or deer damage to regeneration areas, coppice areas or newly planted trees/shrubs
- invasive species
- dumping of inert matter or other waste NB do not try to inspect suspicious substances, bags or containers: contact Environmental Health

REFERENCES

Woodland Strategy for Solihull. Solihull Metropolitan Borough Council Environment Services July 2000