NORFOLK BIODIVERSITY ACTION PLAN

LOWLAND MIXED DECIDUOUS WOODLAND

Ref 2/H3	Tranche 2	Habitat Action Plan 3
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Plan Leader:		Norfolk County Council
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DEFINITION

Areas of trees, shrubs and associated plants and animals, excluding wood-pasture and wet woodlands.

1. CURRENT STATUS

National Status

- It is generally agreed that the most important woodlands for wildlife are those on what are termed Ancient Woodland Sites, or primary woodland. These woods are believed to have been in existence since at least AD1600. There are many biodiversity-rich woodlands which are not ancient.

- No precise data are available for the total extent of lowland mixed deciduous woodland in the United Kingdom. In the 1980s, the Nature Conservancy Council estimated the total extent of this type to be 250,000 ha. It is believed to have declined in extent by 30-40% over the last 50 years. These losses are attributed to clearance, overgrazing and replanting with non-native species.

Norfolk Status

- In Norfolk, there are also no precise measurements of the extent of this habitat. However, the 2001 census by the Forestry Commission gives the following figures:

	Forest Ownership in Norfolk					
Forest Type	Forestry Commission		Other		All Woods	
	ha	%	ha	%	ha	%
Conifer	10,071	72.8	3,739	12.3	13,810	31.2
Broadleaved	1,580	11.4	18,157	59.8	19,738	44.6
Mixed	1,117	8.1	5,193	17.1	6,310	14.3
Coppice	0	0.0	0	0.0	0	0.0
Coppice-with-Stds	0	0.0	343	1.1	343	0.8
Windblow	0	0.0	0	0.0	0	0.0
Felled	548	4.0	75	0.2	624	1.4
Open Space	515	3.7	2,869	9.4	3,384	7.7
Total	**13,831**	**100.0**	**30,377**	**100.0**	**44,209**	**100.0**

These general classifications, useful for modern forestry and countryside planning purposes, do not necessarily have much historical significance. In particular, many of these broadleaved woodlands would have originally been coppice-with-standards or wood pasture, but neglect has led to the emergence of high canopy and suppression of the understorey.

Not all Ancient Woodland Sites support mixed deciduous woodland and mixed deciduous woodland may be found on recent sites and in secondary woodlands. Recent woodland sites may also be of conservation importance.

This HAP category spans woodland growing on the full range of soil conditions, from acidic to base-rich, and includes most of the semi-natural Ancient Woodland Sites in Norfolk. Despite great variety in the species composition of the canopy layer and the ground flora, some features are common to many stands. Most were traditionally coppiced, particularly those on moderately acid to base-rich soils; *Quercus robur* is by far the commoner oak (although *Quercus petraea* may be abundant locally in a few sites) and may occur with virtually all combinations of other locally native tree species; most sites are relatively small and have well-defined boundaries compared with some of the recent planted woodlands.

Primary, semi-natural woodland is the nearest there is to natural woodland. Norfolk's semi-natural woodlands are very varied, their composition largely dictated by climate, soil and biotic influences, including the influence of man over many centuries. In order to describe and define the different woodland types, a National Vegetation Classification (NVC) system has been devised. Nineteen major types of woodland have been described for Great Britain, only eight of which are found in Norfolk. The table below gives the nineteen categories.

NVC	Semi-natural Woodland Type	Norfolk
W1	*Salix cinerea/Galium palustre*	Yes
W2	*Salix cinerea/Betula pubescens/Phragmites australis*	Yes
W3	*Salix pentandra/Carex rostrata*	No
W4	*Betula pubescens/Molinia caerulea*	No
W5	*Alnus glutinosa/Carex paniculata*	Yes
W6	*Alnus glutinosa/Urtica dioica*	Yes
W7	*Alnus glutinosa/Fraxinus excelsior/Lysimachia nemorum*	Yes
W8	*Fraxinus excelsior/Acer campestre/Mercurialis perrenis*	Yes
W9	*Fraxinus excelsior/Sorbus aucuparia/Mercurialis perennis*	No
W10	*Quercus robur/Pteridium aquilinum/Rubus fruticosus*	Yes
W11	*Quercus petraea/Betula pubescens/Oxalis acetosella*	No
W12	*Fagus sylvatica/Mercurialis perennis*	No
W13	*Taxus baccata*	No
W14	*Fagus sylvatica/Rubus fruticosus*	Yes
W15	*Fagus sylvatica/Deschampsia flexuosa*	No
W16	*Quercus spp/Betula spp/Deschampsia flexuosa*	Yes
W17	*Quercus petraea/Betula pubescens/Dicarnum majus*	No
W18	*Pinus sylvestris/Hyloconium splendens*	No
W19	*Juniperus communis/Oxalis acetosella*	No

The most commonly found classifications are W8 *Fraxinus excelsior – Acer campestre – Mercurialis perennis* woodland (sub-communities a. *Primula vulgaris – Glechoma hederacea*, b. *Anemone nemorosa*, c. *Deschampsia cespitosa* and d. *Hedera helix*), W10 *Quercus robur – Pteridium aquilinum – Rubus fruticosus* woodland (sub-communities a. Typical, b. *Anemone nemorosa*, c. *Hedera helix*, and d. *Holcus lanatus*) and lesser amounts of W16 *Quercus spp – Betula spp – Deschampsia flexuosa* woodland (mainly sub-community a. *Quercus robur*). Locally, it may form a mosaic

with other types, including patches of beech woodland, and small areas of wet woodland. Rides and edges may grade into grassland and scrub types.

Although useful for many purposes, this system fails to recognise the full range of woodlands found in Norfolk. For example, there is no obvious place in which to classify the distinctive hornbeam woodlands of South Norfolk, or the oak/birch woodlands found on the heathland areas of Breckland. This greater variation can be found in the stand type system of classification.

1. Ash-wych elm woods.
2. Ash-maple woods.
   - 2Aa. Wet ash-maple woods.
   - 2Bc. Poorly-drained ash-maple woods on light soils.
3. Ash-hazel woods.
   - 3Aa. Heavy soil variant.
   - 3Ab. Light soil variant.
4. Ash-lime woods.
   - 4a. Acid birch-ash-lime woods.
   - 4b. Lowland maple-ash-lime woods.
5. Acid oak-lime woods.
   - 5a. Acid pendunculate oak-lime woods.
   - 5b. Acid sessile oak-lime woods.
6. Acid oak-birch woods.
   - 6a. Acid birch-sessile oak woods.
   - 6c. Acid mixed oak woods.
   - 6d. Acid hazel-pendunculate oak woods.
   - 6e. Acid birch-pendunculate oak woods.
7. Alder woods.
   - 7a. Acid alder woods.
   - 7b. Fen alder woods.
   - 7ba. Dry fen alder woods.
   - 7c. Plateau alder wood.
   - 7Ea. Lowland birch-cherry-alder woods.
   - 7Bb. Wet fen alder woods.
8. Beech woods.
9. Hornbeam woods.
   - 9Aa. Hornbeam on light acid soil.
   - 9Ab. Hornbeam on heavy acid soil.
   - 9Ac. Hornbeam on heavy, neutral-calcareous soil.
10. Suckering elm woods.
12. Birch woods.

In the section that follows, the main woodland types, as defined by this system, are described.

<u>Stand type 1: Ash-wych elm woods</u>

Wych elm was common throughout the country in hedgerows and woods, but is rare in ancient woodlands. Where it is present, it generally occurs as a few stools, often on banks or on woodland edges. Certain woods, such as Little Wood in Hempnall and Barney Wood in Fulmodeston, only contain one wych elm stool in the entire wood.

<u>Stand type 2: Ash-maple woods</u>

Ash-maple woods are very common throughout the county on a wide range of soils. However, almost all of the soils on which they are found are poorly drained. Most stands occur as hazel-maple-ash coppice under oak, and occasionally ash, standards. The amount of maple can vary widely from scattered stools in a stand dominated by hazel, to abundant maple. Hazel is usually the most common species.

Stand type 2Aa: Wet ash-maple woods

This is one of the most common coppice types in Norfolk, found throughout the county on heavy, poorly-draining soils. Maple is a good coloniser and such stands can occupy disturbed areas within a wood or from secondary woodland on previously-cultivated land. On the heavy soils of south Norfolk, the stands usually occur in hornbeam dominated woods.

Stand type 2Bc: Ash-maple woods on poorly-drained light soils

These stands are found throughout the county but are less common than 2Aa stands, and are particularly uncommon in the heavy boulder clay areas of south Norfolk.

Stand type 3: Ash-hazel woods

Stands containing ash and hazel coppice occur throughout the county and are one of the most common coppice types. They often occupy the most acid or wet sites in boulder clay woods, or simply occur in an area where elm, or hornbeam have failed to colonise. The stands usually have oak standards over hazel and ash coppice. Other species generally associated with the group are birch, hawthorn, sallow and elder. As with the maple woods, the amount of hazel present in the coppice can vary considerably, possibly as a result of past management practice. It is almost always more common than ash. However extremes can vary from dominant ash coppice with only scattered hazel, to hazel coppice under ash standards with little or no ash present in the coppice.

Stand type 3Aa: The heavy soil variant of acid pendunculate oak, ash-hazel woods

These stands are frequently found in south-east Norfolk associated with other heavy soil types such as 9Ab, 2Aa and 10A, where a patchy light surface soil exists.

Stand type 3Ab: Light soil variant of acid pendunculate oak, ash-hazel woods

These stands are as common as 3Aa stands in Norfolk and seem to occur in two distinct areas – on patches of light soils overlaying the boulder clay in predominantly boulder clay woods; an on flushed soils in predominantly light soil woods. The latter are confined to north Norfolk. The species composition of the type is similar to 3Aa, with oak standards over ash-hazel coppice, but with birch and holly more common and fewer other shrub species present, although sallow is particularly common.

Stand type 4: Ash-lime woods

Small-leaved lime is uncommon in Norfolk, and this group occurs very rarely. Only five woodlands contain stand type 4, and in two of these, Horse Wood, Mileham and Horningtoft Great Wood, Horningtoft, lime was present as only two or three stools or pollards along a woodland edge. Stand types 4a and 4Ba are present in some woods in central north Norfolk, occurring on poorly-drained light soils containing clay either in the sub-soil, or as a surface sandy clay loam.

Stand type 4a: Acid birch-ash-lime woods

These stands are found in two woods, Hockering Wood and Swanton Novers Great Wood, both of which also contain large areas of other lime stand types, including 4Ba. This stand type tends to occupy small areas in woodlands. They occur in predominantly 5a stands at Hockering, where the soils are less well drained than elsewhere and in 7E stands at Swanton Novers.

Stand type 4Ba: The lowland variants of maple-ash-lime woods

This stand type occurs on slightly less acid soils than 4A. Only one wood, Swanton Novers Great Wood, has a relatively large area of this type, the other woods containing mere fragments.

Stand type 5: Acid oak-lime woods

This group is rare in Norfolk. In two woods, Hockering and Swanton Novers Great Wood, there are significant areas of oak-lime coppice. They are found on light soils.

Stand type 5a: Acid pendunculate oak-lime woods

This stand type contains small-leaved lime, oak, downy birch (*Betula pubescens*) and hazel coppice, under oak standards. *Salix caprea*, *Salix cinerea* and holly form minor components of the coppice, with a little gean, elder and hawthorn present.

Stand type 5b: Acid sessile oak-lime woods

This stand type is found in only one Norfolk wood, Swanton Novers Great Wood. It occurs on very acid soils. The coppice varies from lime, birch and hazel to lime and sessile oak with birch and holly, all under sessile oak standards. Rowan is occasionally found, but no other species.

Stand type 6: Acid oak-birch woods

These stands are scattered throughout the county, generally on the more acid and better-drained soils. On wetter and/or more calcareous soils, species such as ash, maple, hornbeam, and elm occur in the coppice. The stand types within the groups are based on the two native oak species, pendunculate oak and sessile oak, and although sessile oak is native in Norfolk, it is rare, and the pendunculate oak-birch stand types are much more common, generally in the form of pendunculate oak standards over a mixed coppice of hazel and/or birch (mostly *Betula pubescens*).

Stand type 6a: Acid birch-sessile oak woods

This type is known from only Swanton Novers Great Wood, where it occurs on highly acid sandy loams as sessile oak coppice under sessile oak standards. Holly, rowan and downy birch (*Betula pubescens*) are present in small numbers.

Stand type 6c: Acid mixed oak woods

These are stands containing both *Quercus petraea* and *Quercus robur*. This type is known from only two woods, both in North Norfolk: Swanton Novers Great Wood and Little Wood, Edgefield. In both woods, the oaks occur as mixed coppice under mixed standards, with *Quercus petraea* and *Quercus robur* in roughly equal amounts. Few other species are present, but birch (mostly *Betula pubescens*), holly and rowan are common.

Stand type 6d: Acid hazel-pendunculate oak woods

This type is found scattered throughout the county, except for the heavy soils of South Norfolk. The majority of 6d stands are found either on small patches of light surface soils overlaying the boulder clay, as at Hethel Wood, or on freely-drained sites away from wet valleys, as in Barney Wood and Guyben's Wood, Fulmodeston. Where the wood is on a very light, acid soil, hazel will only be found in locally enriched areas, as at Little Wood, Edgefield and Hull Wood, Field Dalling.

Stand type 6e: Acid birch-pendunculate oak woods

This type is found in only four woods: Little Wood and Great Wood, Swanton Novers; Wayland Wood; and Pulham Big Wood.

Stand type 7: Alder

Stand type 7 woods are dealt with in the Wet Woodland HAP.

Stand type 8: Beech woods

Beech is at the extreme northern limit of its normal range in Norfolk, but is not often found in ancient woods. Given the normal preference of beech for well-drained soils, one factor contributing to this scarcity must be the lack of suitable undisturbed sites away from the boulder clay. One site where it is found is at Felbrigg, where the ancient pollards suggests a wood pasture origin.

Stand type 9: Hornbeam woods

Hornbeam coppice forms one of the major woodland types on the boulder clays of South Norfolk. Virtually all ancient coppice woods in the Garboldisham-Norwich-Yarmouth triangle contain large areas of hornbeam, often to the exclusion of other stand types: as at East Wood, Denton; Little Wood, Hempnall; and Hedenham Wood. Outside this area, hornbeam coppice is still common, extending westwards to Necton Wood, Necton and northwards to Templewood Northrepps.

Hornbeam coppice occurs on a wide variety of soils ranging from acid sands to heavy calcareous boulder clays, but it is generally confined to damp ground, and even the light soils are generally poorly-drained due to an underlying, heavier sub-soil.

Stand type 9A: Variant on light, acid soil (usually with an impermeable sub-soil)

This sub-type occurs throughout the hornbeam range. The type is generally species-poor and often consists of virtually pure hornbeam.

Stand type 9Ab: Variant on heavy acid soils

This type is most abundant in South Norfolk where it forms the major hornbeam type. It is richer in tree and shrub species than 9Aa but less so than 9Ac. Ash, hazel, crab apple, *Betula pendula* and guelder rose are all quite frequent, but maple, dogwood, both hawthorns and *Betula pubescens* are less frequently found in Norfolk than nationally.

Stand type 9Ac: Variant on heavy, neutral-calcareous soils

This stand type occurs on less acid soils than 9Ab, as is indicated by the presence and/or higher frequency of maple, spindle and dogwood. Like 9Ab, it is largely confined

to South Norfolk and often occurs as scattered fragments in woods dominated by 2A, 3A or 9Ab.

Stand type 10: Suckering elm stands

These are stands containing suckering and other elms (excluding wych elm), are found throughout Norfolk, especially on heavy, poorly-drained, or enriched soils. In most woods, the elm has not been coppiced and is present as maiden trees, saplings and suckers; but in a significant minority it has been cut at least once, often where recent felling has taken place. In a few woods the elm coppice is long established with very large, non-suckering stools. Usually, suckering elms are also present.

Stand type 12: Birch woods

These are generally uncommon, but do occur where heathland is being colonised by natural regeneration. Oak usually succeeds the birch.

Number AWS in county - 240.
Original area ha 2,915
Current area ha 2,726
Semi-natural area ha 1,103
Planted area ha 1,623
Cleared area ha 189.

Some of these woodlands are designated as Sites of Special Scientific Interest (SSSIs). The SSSIs are:

Honeypot Wood, Wendling.
Horningtoft Wood.
Hockering Wood.
Foxley Wood.
Little Wood, Swanton Novers.
Swanton Great Wood.
Great Wood, Felbrigg.
Wayland Wood, Watton.
Lower Wood, Ashwellthorpe.
Sexton Wood, Hedenham.
Edgefield Little Wood.
Shotesham-Woodton hornbeam woods.
Gawdyhall Big Wood.
Potters Carr, Cranworth.
Hedenham Wood.
Tindall Wood.
Horse Wood, Mileham.
Pulham Market Big Wood.

Of the approximately 160,000 acres of ancient semi-natural woodland in 1086, only about 1,400 acres now remain.

Links to Species Action Plans

- Lowland mixed deciduous woodland is an important habitat for a number of priority species whose requirements should be taken into account during implementation of the plan. These include:

Dormouse	*Muscardinus avellanarius*
Pipistrelle bat	*Pipistrellus pipistrellus*

Song thrush	*Turdus philomelos*
Great crested newt	*Triturus cristatus*
Stag beetle	*Lucanus cervus*
Sandy stilt puffball	*Battarraea phalloides*
Orange-fruited elm lichen	*Caloplaca luteoalba*
Barbastelle bat	*Barbastella barbastellus*
Lesser horseshoe bat	*Rhinolophus hipposidereros*
Spotted flycatcher	*Muscicapa striata*
Bullfinch	*Pyrrhula pyrrhula*
Oak polypore	*Buglossoporus pulvinus*

2. CURRENT FACTORS CAUSING LOSS OR DECLINE IN NORFOLK

- Overgrazing through expansion of deer populations, leading to change in woodland structure, impoverishment of ground flora and low rates of regeneration, especially in coppice. In some sites formerly managed as wood-pastures there may be the contrasting issue of too little grazing by domestic stock.

- Invasion of ancient woodlands by non-native species leading to changes in the composition of the woods.

- Dutch elm disease has changed the structure and composition of many woods since the early 1970s, and recurrences are still affecting them. Canopies opened by disease may be subject to higher rates of windthrow, and invasion of gaps by unrepresentative species, eg climax elder scrub, becomes more likely.

- Recently there has been increasing concern about loss of oak through Sudden Oak Death.

- Development, including urban growth, quarrying, recreational development, and trunk road improvements has caused deterioration or destroyed parts of many woods in recent years, and continues to threaten others.

- Replacement of native trees with planted conifers occurred extensively in the 1960s and 1970s. Whilst this threat has receded large scale felling and modification of the composition of woodland, by intensive replanting, even of native broadleaved species, may contribute to the impoverishment of diversity in woods.

- Modern agricultural practices have led to simplification of landscapes and greater ecological isolation of woods through removal of hedgerows, isolated trees and small patches of scrub in fields, deep drainage of adjacent arable fields, and through cultivation hard up to woodland boundaries. Local nutrient enrichment from fertilisers may be leading to changes in woodland soils and ground flora, and woodland edges can suffer from spray drift or run-off from adjacent agricultural land.

- Cessation of traditional management practices such as coppicing has led to a reduction in structural diversity within many woods, and particularly to loss of temporary open space. This is required by many coppice-associated species, which are now rare and threatened.

- Climate change could potentially result in changes in vegetation communities, although woodland would be more robust in this respect than many other habitats.

- Poor restocking and management grant rates.

- Oak dieback.

3. CURRENT ACTION IN NORFOLK

- National forestry policy includes a presumption against clearance of broadleaved woodland for conversion to other land uses, and in particular, seeks to maintain the special interest of ancient semi-natural woodland. The Forestry Commission will continue to exercise this presumption unless there are overriding public benefits, for example, to restore important semi-natural habitats such as heathland or fen. Permission from the Forestry Commission is normally needed to fell growing trees; this is usually given in a Felling Licence. Some woods may receive additional protection through policies and strategies within development plans, by being subject to Tree Preservation Orders lying within Conservation Areas or being included as County Wildlife Sites (CWS).

- Designation as Sites of Special Scientific Interest (SSSI) ensures compulsory consultation with the statutory nature conservation agencies over management operations and development proposals.

- Several demonstration woodlands have been established and many events are held each year.

- Guided walks are held throughout the year.

- A fuelwood supply company, Anglian Woodfuels, has been set up, which should help stimulate management.

- Cluster mapping for ecological networks has been undertaken.

- The Anglian Woodland Project provides advice on woodlands.

- *In Leaf*, a woodland magazine, is published twice a year.

- Support is given to the Deer Initiative, including hosting training seminars.

4. ACTION PLAN OBJECTIVES AND TARGETS

National

- There is no national plan for this habitat, and therefore, no national targets.

Regional

- Maintain 100% of existing.
- Restore 1250ha by 2010.
- Create 1250ha by 2010.

Norfolk

- Maintain the current extent of ancient semi-natural woodland and the total extent and distribution of the woodland types.
- Achieve favourable condition in 95% (by area) of lowland mixed deciduous woodland within the SSSIs by 2010.
- Initiate restoration to lowland mixed deciduous woodland over at least 10% of replanted woodlands by 2010, where appropriate.
- Where appropriate, initiate colonisation or planting equivalent to 5% of the current lowland mixed deciduous woodland. Complete establishment of half of this by 2010 and all of it by 2015.
- The Norfolk targets established in this plan are based on the aim of maintaining the current extent of lowland mixed deciduous woodland, expanding it where appropriate and encouraging a balance of appropriate management regimes (for example minimum intervention, coppice, managed high forest and wood pasture) within regions and across the distribution of the type. The restoration targets are based on the desirability of restoring some of the former areas of ancient lowland mixed deciduous woodland that have been substantially planted with conifers in the last 50 years or that are currently dominated by other non-native species. Creation targets aim to encourage the expansion of lowland mixed deciduous woodland using natural colonisation or by planting species mixtures of site-native and local generic provenance.
- The targets will require review and adjustment during the course of the plan. As an early step in plan implementation, more precise estimates of extent, and distribution of lowland mixed deciduous woodland will need to be determined. Criteria for determining the appropriate balance of different management regimes and suitable areas for woodland expansion and restoration will also need to be developed in accordance with the national guidance.

Lowland Mixed Deciduous Woodland - Norfolk Action Plan

NORFOLK ACTION		RESPONSIBLE AGENCIES		TIMETABLE				
		Lead	Partner	2004	2005	2006	2007	2008
5.1	**Policy and Legislation**							
5.1.1	Work in partnership to deliver the objectives recorded in the East of England Woodland Strategy.	FC	ALL	*	*	*	*	*
5.2	**Site Safeguard and Management**							
5.2.1	Ensure that SSSI extent of important lowland mixed deciduous woodland sites is adequate through periodic review of the series.	NE			*			
5.2.2	By end of 2005, develop and agree criteria for identifying appropriate areas (ie avoiding other priority habitats) for restoration and expansion of lowland mixed deciduous woodland.	FC	NE, NCC, NWT		*			
5.2.3	Establish by 2005 a small number of sites that can be used to demonstrate good practice.	AWP	ALL		*			
5.2.4	Develop and promote the use of long-term management plans (20 years +) by woodland owners aimed at integrating the appropriate diversity of species and structure, in different regions, to benefit nature conservation (including restoration of replanted areas) with other management objectives.	FC	AWP, NCC, NE, LPAs	*	*	*	*	*
5.2.5	Promote and implement the management and restoration of lowland mixed deciduous woodland in state-owned forests.	FE	FC, NE	*	*	*	*	*

NORFOLK ACTION		RESPONSIBLE AGENCIES		TIMETABLE				
		Lead	Partner	2004	2005	2006	2007	2008
5.2.6	Contribute to the implementation of relevant priority species action plans, through the integration of management requirements and advice, in conjunction with relevant steering groups.	NCC	NE, FC, NWT	*	*	*	*	*
5.2.7	Maintain and improve the County Wildlife Site woodland list.	NWT	NE, FC, NCC	*	*	*	*	*
5.3	**Advisory**							
5.3.1	Develop and promote training on the conservation and management of lowland mixed deciduous woodland.	AWP	NE, FC, NCC		*	*	*	*
5.3.2	Provision of advice on the marketing and sustainable use of products.	AWP	FC, F&TA	*	*	*	*	*
5.3.3	Promote the control of deer, grey squirrels and rabbits in areas where they are (or might become) major limitations on the regeneration and spread of lowland mixed deciduous woodland.	FC	NE, NWT, AWP, Deer Initiative	*	*	*	*	*
5.5	**Future Research and Monitoring**							
5.5.1	Implement, as they become available, the national systems for recording the occurrence, distribution, management and composition of lowland mixed deciduous woodland, based on the National Inventory of Woodland and Trees.	FC	NE, NCC	*	*	*	*	*

Lowland Mixed Deciduous Woodland - Norfolk Action Plan

NORFOLK ACTION		RESPONSIBLE AGENCIES		TIMETABLE				
		Lead	Partner	2004	2005	2006	2007	2008
5.5.2	Support research on the history and past management of lowland mixed deciduous woodland in Norfolk to improve our understanding of their development, present condition, distribution and future management.	HIS	FC, NE, NCC	*	*	*	*	*
5.5.3	Implement appropriate surveillance and monitoring programmes to assess progress towards action plan targets.	FC	NE, NCC, AWP, NWT	*	*	*	*	*
5.6	**Communications and Publicity**							
5.6.1	Promote Woods for Life.	FC	ALL	*	*	*	*	*

Abbreviations

AWP	Anglian Woodland Project
EA	Environment Agency
FC	Forestry Commission
FE	Forest Enterprise
F&TA	Forestry and Timber Association
HIS	School of History, University of East Anglia
LPA	Local Planning Authority
NCC	Norfolk County Council
NE	Natural England
NWT	Norfolk Wildlife Trust

MANAGEMENT GUIDANCE

(This guidance is a general summary; for more detailed information or advice, please consult the references or contacts below.)

- There are a number of significant inventories on woodlands available, including the Forestry Commission's National Inventory of Woodland and Trees (NIWT), initiated in 1995, which provides information on the extent, distribution and composition of woodland in the whole of GB. Information on woodland type and management is also collected as part of the FC's Woodland Grant Scheme (WGS) documentation, through local woodland management initiatives or information held on Forest Enterprise's compartment database. The country conservation agencies also hold relevant information in Ancient Woodland Inventories as well as information from individual surveys of statutory protected sites.

- Other relevant information is gathered through Local Authority and non-governmental organisation site and species survey and monitoring programmes, and local and national recording schemes and centres covering relevant species and sites.

- All woodland is expected to be managed in accordance with the UK Forestry Standard.

- Grants for woodland work including regeneration, planting and some other operations, are available from Forestry Commission and in some circumstances from other government agencies and local authorities. Some Environmentally Sensitive Areas require the agreement holder to seek management advice. The Anglian Woodland Project provides advice on the management of these woods in their areas.

- The Forestry Commission guide to the management of lowland mixed broadleaved woodland was published in 1994; that on lowland acid oakwoods will also be relevant in places. Management should follow these guides, as well as other FC guidelines in order to qualify for grant aid or felling licences. Forest Enterprise are also expected to follow these guides on their land. Guidance on ways of creating new native woodland is also available in FC Bulletin 112.

- Research is undertaken by various bodies and individuals, for example, by the FC Research Agency (eg on methods for achieving natural regeneration, grey squirrel damage control, deer management, etc), by the conservation agencies (eg monitoring change in minimum intervention stands), by university departments (eg the regeneration dynamics of ash and sycamore), by NGOs and by other groups (eg ITE research on breeding birds in farm woods).

- Advice and guidance are well established and available through the Anglian Woodland Project.

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